Consulting Civil Engineers

Foul and Surface Water Drainage Strategy Report

Victoria House, 2 – 4 Ennerdale Road, Kew Gardens, Richmond, Surrey TW9 3PG

For

The Park Property Group

Rev - **P**

Reference **C3247**

Date **11th November 2024**

Revision	Date of Issue	Comments	Prepared By	Checked By
P	11/11/2024	Initial Issue	LH	CS

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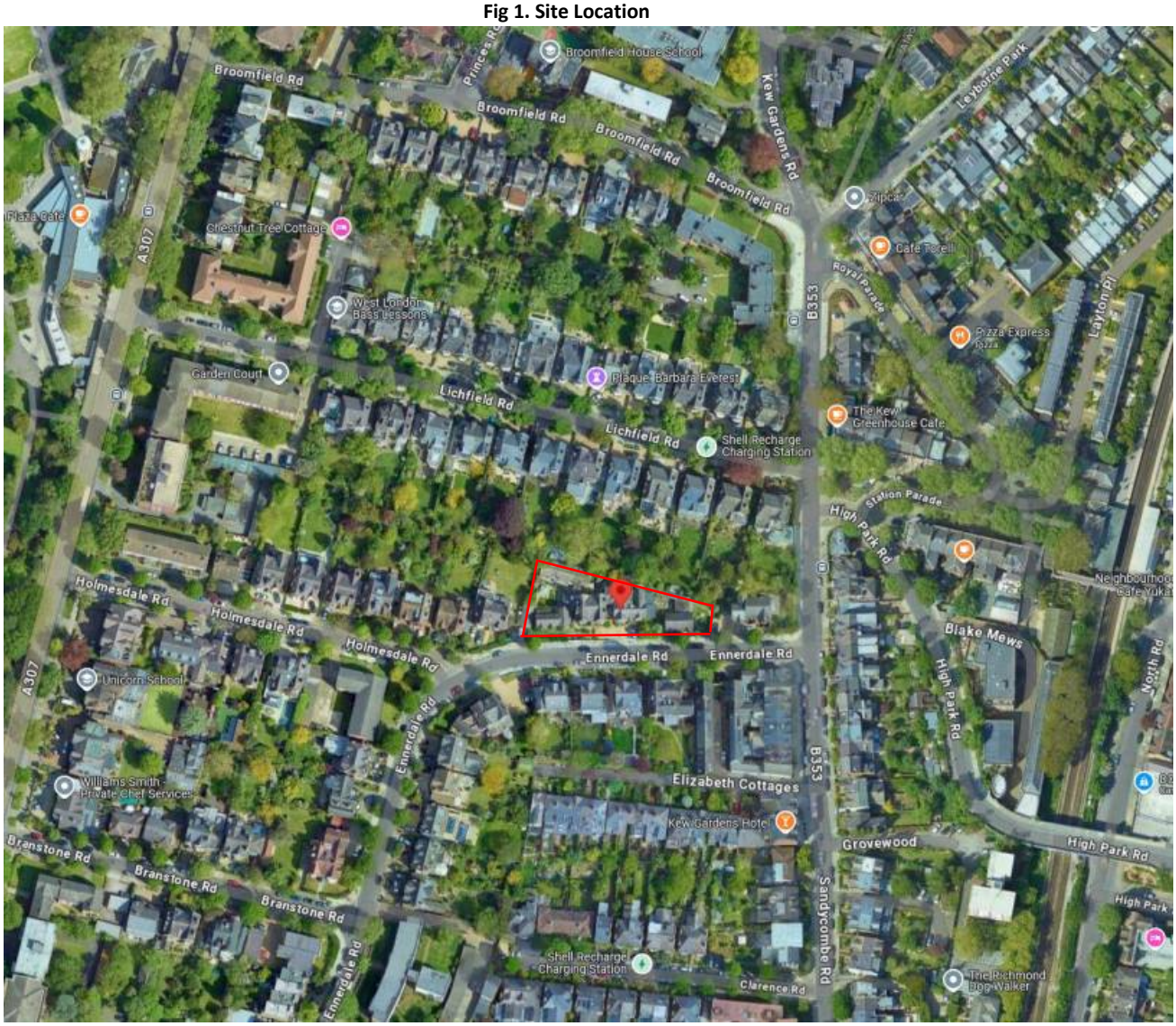
1 Introduction

1.1.1 CGS Civils Ltd has been appointed to undertake a drainage strategy report for a proposed development at Victoria House, Ennerdale Road in Kew Gardens, Richmond.

1.1.2 The purpose of this drainage strategy is to demonstrate how the development area can be satisfactorily drained without increasing flood risk onsite and elsewhere.

1.1.3 The proposed development will consist of the demolition of an existing care home followed by the construction of 7 No. new dwellings. The proposed development is located as OS Grid Reference TQ 19001 76706 and has the post code TW9 3PG.

Fig 1. Site Location



2 Executive Summary:

2.1.1 The Surface Water discharge from the site is to be split into two separate locations depending on the space available around the plots. Plots 1, 2 and 7 are to be discharged into ground via infiltration at an assumed rate of $1x10^{-5}$ m/s. The surface water runoff from Plots 4, 5, 6 and 7 are to be discharged into the local surface water sewer within Ennerdale Road at a restricted rate of 2.0 l/s. All SuDS features have been designed to cater for the 1 in 100-year +45% storm.

2.1.2 The Foul water will discharge into an existing foul water sewer within Ennerdale Road via a new connection into an existing private foul water chamber on site. Remedial works are required.

2.1.3 Due to the revision of the drainage network which serves the site; the surface water connection into the existing foul water sewer is to be removed which will alleviate flows from the overburdened foul sewer. The flows are then to be discharged into the larger surface water sewer at a restricted flow rate which provides a **67%** betterment within the 1 in 2-year storm.

2.1.4 Both connections to the Thames Water sewer are subject to a Section 106 application.

3 Site Geology

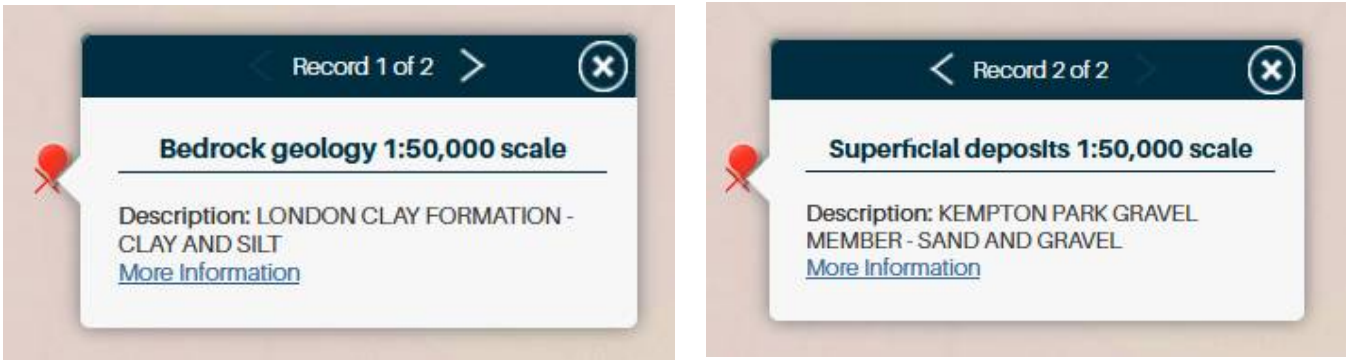
3.1 British Geological Survey information

3.1.1 The British Geological Survey confirms the bedrock geology to be made up of London Clay Formation. The BGS website confirms the superficial deposits on site to be made up of Kempton Park Gravel Member, which is comprised of Sand and Gravel.

3.1.2 The British Geological survey also holds records of historical boreholes near the site which give some insight into the ground geology.

- Borehole TQ17NE98 (Located approx. 216m West of the site) – Sand and Gravel to a depth of 7.3mbgl

Fig 2. British Geological Survey

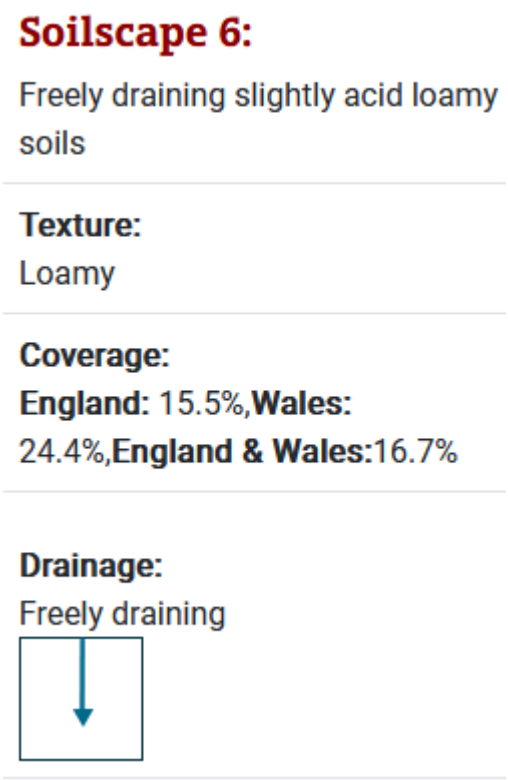


3.2 Geological Assessment

3.2.1 An infiltration test has not currently been undertaken on site, but it is to be carried out by CGS Civils ltd within the future.

3.2.2 The LandIS Soilscape application states that the geology on site is 'Freely Draining' suggesting that infiltration is a viable option for surface water disposal.

Fig 3. Soilscape Viewer



4 Existing Drainage

4.1.1 A CCTV Drainage survey was carried out on site on behalf of CGS Civils Ltd and confirmed that all surface water runoff from the existing care home discharges to ground either via soakaways, into the existing foul water network or straight to ground. It is also noted that there are a couple of surface water gullies discharge into the foul water system whilst the drainage survey confirms lateral connections of the foul water drain which indicate connections from the rainwater downpipes.

4.1.2 Due to the location of the existing soakaways, it is proposed that they are to be removed and disposed offsite.

4.1.3 The CCTV drainage survey also confirmed that the foul water from the site discharges into an existing Thames Water sewer within Ennerdale Road. The existing network can be re-used for the drainage from the proposed plots, however, remedial works on the existing pipes is required to ensure that they are suitable for re-use.

4.1.4 The CCTV Drainage survey indicates that a section of the existing foul water drainage network discharges into the existing surface water manhole located within Ennerdale Road.

5 Proposed Drainage Strategy

5.1 SuDS Hierarchy

5.1.1 All options for the destination of run-off generated on site have been assessed in line with the SuDS hierarchy as set out in Building Regulations Part H document and DEFRA's Draft National Standards for SuDS.

Table 1. SuDS Hierarchy

Discharge Destination	
Rainwater Harvesting	Rainwater harvesting is viable and should be considered at detailed design stage.
Discharge to Ground	Discharge to ground via infiltration considered viable. An assumed rate of $1x10^{-5}$m/s has been used for the proposed site. Not enough space to utilise conventional soakaways for every plot. Soakaways to be utilised as much as possible.
Discharge to Watercourse	No nearby watercourse.
Discharge to Surface Water Sewer	Existing surface water sewer within in Ennerdale Road. All runoff that is unable to be discharged into soakaways to be discharged into surface water sewer at restricted rate of 2.0l/s.
Discharge to Other Sewer	N/A due to above

5.2 Proposed Hydraulic Calculation Specifications:

Table 2. SuDS Hierarchy

Hydraulic Calculations Settings:	
Rainfall Methodology	**FEH-22**
Volumetric Run-off Coefficient Cv	**1**
CV Winter and Summer	**1**
Additional Storage (m^3 / ha)	**0.0**
Maximum Rainfall (mm/hr)	**75**
Flow Control	**1.325m Head @ 2l/s discharge**
Attenuation Tank Design	Base Coefficient (m/hr): **0.00000**
	Side Coefficient (m/hr): **0.00000**
	Factor of Safety: **2**
	Porosity: **95%**
	Time to Half Empty (mins): 200
Soakaway design (for SA1 – SA4)	Base Coefficient (m/hr): **0.03600**
	Side Coefficient (m/hr): **0.03600**
	Factor of Safety: **2**
	Porosity: **95%**
	Time to Half Empty (mins): 655 - 888

5.3 Surface Water Drainage

5.3.1 Based upon the lack of space on site to adhere to Building Regs Doc H Section 3.25a which states that a soakaway should not be built within 5m of a building, it is proposed that the surface water drainage network will be split into separate discharges.

5.3.2 It is determined that Plots 1, 2 and 7 can be discharged to ground via infiltration, however, plots 3, 4, 5 and 6 are to be discharged into the existing surface water sewer within Ennerdale Road.

5.3.3 The proposed soakaways for Plots 1, 2 and 7 have been designed to cater for the 1 in 100-year +45% storm and designed to an assumed infiltration rate of $1x10^{-5}$m/s. At the time of writing, an infiltration test has not been carried out on site, however, it is to be conducted shortly with the drainage strategy and report being updated to account for the recorded infiltration rate of soils.

5.3.4 The surface water runoff from roof areas serving Plots 3, 4, 5 and 6 is to be captured by a positive drainage network before discharging into an existing surface water sewer located within Ennerdale Road. The surface water discharge is to be restricted to 2.0l/s and the proposed network will make use of a geocellular attenuation tank in order to cater for the 1 in 100-year +45% storm.

5.3.5 The hard paved areas are to be constructed from a permeable surface to allow runoff to freely drain to ground via infiltration.

5.3.6 Existing Discharge and Hydraulic calculations have been carried out which can be found at Appendix C.

Table 3. Existing Runoff Calculations

Storm period	Existing runoff rate (l/s)	Proposed Discharge Rate (l/s)	Difference (l/s)	Betterment (%)
2	6	2	- 4	67
10	12.7	2	- 10.7	84
30	16.7	2	- 14.7	88
100	21.3	2	- 19.3	91

5.4 Water Quality

5.4.1 A key requirement of any SuDS system is that it protects the receiving water body from the risk of pollution.

5.4.2 Frequent and short duration rainfall events are those that are most loaded with potential contaminants (silts, fines, heavy metals, and various organic and inorganic contaminants) Therefore the first 5-10mm of rainfall should be adequately treated with SuDS.

5.4.3 The new SuDS Manual (Ciria C753, November 2015) introduces slightly different approach compared to the previous version for the water quality management of surface water. The Manual describes risks posed by the surface water runoff to the receiving environment as a function of:

- The pollution hazard at a particular site (i.e., the pollution source)
- The effectiveness of SuDS treatment components in reducing levels of pollutants to environmentally acceptable levels
- The sensitivity of the receiving environment

5.4.4 The recommended approaches for water quality risk management are given in the SuDS Manual Table 26.1.

Table 26.1 from SuDS manual. Approaches to Water Quality Risk Management

Table 26.1 Approaches to Water Quality Risk Management			
Design method	**Hazard Characterisation**	**Risk Reduction**	
		For Surface Water	**For Groundwater**
Simple Index Approach	Simple pollution hazard indices based on land use (Table 26.2)	Simple SuDS hazard mitigation indices (Table 26.3)	Simple SuDS hazard mitigation indices (Table 26.4)
Risk Screening	Factors characterising traffic density and extent of infiltration likely to occur (Table 26.5)	N/A	Factors characterising unsaturated soil depth and type, and predominant flow type through the soils (Table 26.5)
Detailed Risk Assessment	Site specific information used to define likely pollutants and their significance	More detailed, component specific performance information used to demonstrate that the proposed SuDS components reduce the hazard to acceptable levels	
Process-based treatment modelling	Time series rainfall used with generic pollution characteristics to determine statistical distributions of likely concentrations and loadings in the runoff	Models that represent the treatment processes in the proposed SuDS components give estimates of reductions in even mean discharge concentrations and total annual load reductions delivered by the system	

5.4.5 As per Table 26.1 Simple Index approach will be used as a design method for this site.

5.4.6 Table 26.2 will provide hazard classification of different land uses. The land uses for the surface water drainage for this site are.

- Residential Roofs
- Individual Property driveways and residential car parks

5.4.7 To deliver adequate treatment, the selected SuDS components should have a total pollution mitigation index for each contaminant type that equals or exceeds the pollution hazard index for each contaminant type. Therefore, the following must be achieved for the surface running off the site.

Total SuDS mitigation index >=pollution hazard index

5.4.8 Pollution Hazard Indices are given for different land uses in Table 26.2 of the SuDS manual.

Table 26.2 from SuDS manual. Pollution Hazard Indices for Different Land Use Classifications

Table 26.2 Pollution hazard indices for different land use classifications				
Land Use	**Pollution Hazard Level**	**Total Suspended solids (TSS)**	**Metals**	**Hydro-Carbons**
Residential roofs	Very Low	0.2	0.2	0.05
Other roofs (Typically commercial/industrial roofs)	Low	0.3	0.2 (up to 0.8 where there is potential for metals to leach from the roof)	0.05
Individual property driveways, residential car parks, low traffic roads (e.g., cul-de-sacs, homezones and general access roads) and non-residential car parking with infrequent change (e.g., schools, offices) i.e., < 300 traffic movements/day	Low	0.5	0.4	0.4
Commercial yard and delivery areas, non-residential car parking with frequent change (e.g., hospitals, retail), all roads except low traffic roads and trunk roads/motorways	Medium	0.7	0.6	0.7
Sites with heavy pollution (e.g., haulage yards, lorry parks, highly frequented lorry approaches to industrial estates, waste sites), sites where chemicals and fuels (other than domestic fuel oil) are to be delivered, handled, stored, used or manufactured; industrial sites; trunk roads and motorways	High	0.8	0.8	0.9

5.4.9 From Table 26.2 the following information is tabulated in Table 1

Table 3: **Pollution hazard index and destination of runoff for the proposed site**

Table 3: Pollution Hazard Index and Destination of runoff for the proposed Site					
Land Use	**Destination of Runoff**	**Pollution Hazard Level**	**Total Suspended Solids**	**Metals**	**Hydrocarbons**
Residential Roof	Surface/ground Water	Very Low	0.2	0.2	0.05
Individual driveways, residential car parks and low traffic roads	Ground water	Low	0.5	0.4	0.4

5.4.10 The SuDS mitigation index will be obtained from Table 26.4 (for groundwater) of the SuDS manual.

Table 26.4 from SuDS manual. Indicative SuDS Mitigation Indices for discharges to ground waters.

5.4.11 SuDS mitigation index are tabulated in Table 5 as followed.

Table 26.4 Indicative SuDS mitigation indices for discharges to groundwater			
Characteristics of the material overlying the proposed infiltration surface, through which the runoff percolates	**TSS**	**Metals**	**Hydrocarbons**
A layer of dense vegetation underlain by a soil with good containment attenuation potential of at least 300mm in depth	0.6	0.5	0.6
A soil with good contaminant attenuation potential of at least 300mm in depth	0.4	0.3	0.3
Infiltration trench (where a suitable depth of filtration material is included that provides treatment, i.e., graded gravel with sufficient smaller particles but not single size coarse aggregate such as 20mm gravel) underlain by a soil with good contaminant attenuation potential of at least 300mm in depth.	0.4	0.4	0.4
Constructed permeable pavement (where a suitable filtration later is included that provides treatment, and including a geotextile at the base separating the foundation from the subgrade) underlain by a soil with good contaminant attenuation potential of at least 300mm in depth	0.7	0.6	0.7
Bioretention underlain by a soil with good contaminant attenuation potential of at least 300mm in depth	0.8	0.8	0.8
Proprietary treatment systems	These must demonstrate that they can address each of the contaminant types to acceptable levels for inflow concentrations relevant to the contributing drainage area		

Table 4: SuDS mitigation index

Table 4 Mitigation Indices						
Runoff Source	**Destination of Runoff**	**Mitigation Index Source**	**Type of SuDS Component**	**Total Suspended Solids (TSS)**	**Metals**	**Hydrocarbons**
Individual driveways, residential car parks and low traffic roads	Ground water	Table 26.4 (for ground waters)	Permeable Paving	0.7	0.6	0.7

5.4.12 The above analysis demonstrates that the SuDS devices within the design will mitigate any pollution present within the surface water system.

5.5 Foul water drainage

5.5.1 The foul water will discharge into the local foul water sewer via a new direct connection into an existing private chamber located on site. The maximum discharge rate of the foul water from site will be 0.036 l/s. There will be sufficient capacity within the 150mm pipe to withstand the foul water discharge from the proposed site.

5.5.2 A CCTV survey was undertaken and confirmed that a connection is possible. There are remedial works required on the existing foul water drain that connects to the main sewer in order to ensure that the drain is in working condition.

6 Summary and Conclusions

6.1.1 CGS Civils has been instructed produce a Drainage statement under National Planning Policy Framework (NPPF) to support the Planning Application for the demolition of an existing care home and construction of 7 No. dwellings.

6.1.2 The Surface Water discharge from the site is to be split into two separate locations depending on the space available around the plots. Plots 1, 2 and 7 are to be discharged into ground via infiltration at an assumed rate of $1x10^{-5}$ m/s. The surface water runoff from Plots 4, 5, 6 and 7 are to be discharged into the local surface water sewer within Ennerdale Road at a restricted rate of 2.0 l/s. All SuDS features have been designed to cater for the 1 in 100-year +45% storm.

6.1.3 The Foul water will discharge into an existing foul water sewer within Ennerdale Road via a new connection into an existing private foul water chamber on site. Remedial works are required.

6.1.4 Due to the revision of the drainage network which serves the site; the surface water connection into the existing foul water sewer is to be removed which will alleviate flows from the overburdened foul sewer. The flows are then to be discharged into the larger surface water sewer at a restricted flow rate which provides a **67%** betterment within the 1 in 2-year storm.

6.1.5 Both connections to the Thames Water sewer are subject to a Section 106 application.

6.1.6 The report has demonstrated that the proposed drainage measures ensure that suitable means of surface water and foul drainage can be achieved for the proposed development.

7 Appendices

7.1 Appendix A – Site Plan

PLANNING

		Properties							
		Phase I							
		Plot 1	Plot 2	Plot 3	Plot 4	Plot 5	Plot 6	Plot 7	Total
	Basement	-	-	-	28	20	9	-	57
	Ground Floor	68	73	59	72	86	99	103	560
	First Floor	52	61	37	59	85	62	77	433
	Second Floor	35	43	34	51	42	50	-	255
	Total	155	177	130	210	233	220	180	1305
No. of bedrooms		4	5	4	4	5	5	4	31
No. of bathrooms		5	5	3	3	5	4	3	28

0 1 2 4 8m N

A _ Landscape added revisions — 14 10 2024 _ LT

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job title: 2-4 Ennerdale Road

client: Park Property Group

drawing title: Proposed Site Plan

drawing number: 2041.03.03.Pln01.002.A

rev: A

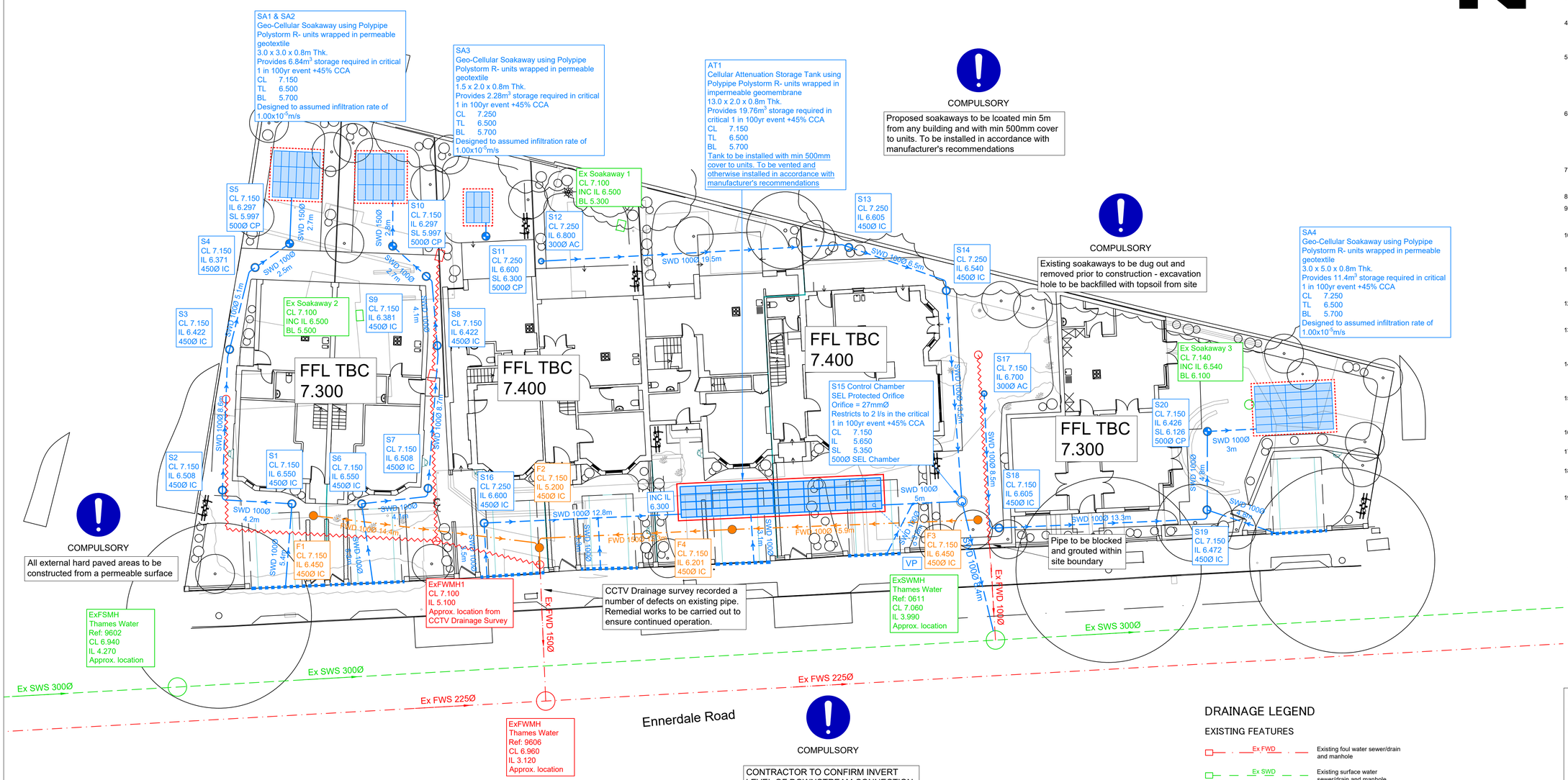
scale: 1:200@A3

date: Sep 2024

drawn by: GL

checked by: RW

7.2 Appendix B – Drainage Layout



STANDARD DRAINAGE NOTES

1. DO NOT SCALE FROM THIS DRAWING, REFER TO FIGURED DIMENSIONS ONLY. THE CONTRACTOR SHOULD CHECK ALL DIMENSIONS ON SITE.
2. ALL DIMENSIONS IN MILLIMETRES AND ALL LEVELS ARE IN METERS UNLESS NOTED OTHERWISE.
3. THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH ALL OTHER RELEVANT ARCHITECT AND ENGINEERING DETAILS, DRAWINGS AND SPECIFICATIONS.
4. ANY DISCREPANCIES SHOULD BE REPORTED TO THE ARCHITECT AND/OR ENGINEER IMMEDIATELY, SO THAT CLARIFICATION CAN BE SOUGHT PRIOR TO THE COMMENCEMENT OF WORK.
5. BEFORE COMMENCING CONSTRUCTION THE CONTRACTOR MUST CHECK THE INVERT LEVELS OF EXISTING SEWERS TO WHICH CONNECTIONS ARE MADE. IN ADDITION THE CONTRACTOR MUST LOCATE AND DETERMINE INVERT LEVELS OF THE EXISTING SPURS TO WHICH CONNECTIONS ARE PROPOSED. ANY DISCREPANCIES ARE TO BE NOTIFIED TO THE ENGINEER IMMEDIATELY, PRIOR TO CONSTRUCTION.
6. ALL DRAINAGE WORKS SHOULD COMMENCE AT THE PROPOSED DOWNSTREAM CONNECTION POINT, THE WORKS CONTINUING UPSTREAM FOLLOWING CONFIRMATION OF THE TIE-IN INVERT LEVELS TO THE ENGINEER. CONNECTIONS TO MANHOLES OR LARGER SIZED PIPES ETC. SHOULD BE SOFFIT TO SOFFIT UNLESS OTHERWISE INSTRUCTED BY THE ENGINEER, IF THIS IS NOT POSSIBLE INFORM THE ENGINEER IMMEDIATELY.
7. COVER LEVELS SHOWN ARE APPROXIMATE. COVERS AND FRAMES SHALL BE SET TO FINISHED GROUND LEVELS AND FALLS.
8. ALL UN-REFERENCED PIPES ARE TO BE 100mm DIA
9. ALL PIPES TO BE ADOPTED, OR CONNECTING TO ADOPTED SEWERS, TO BE VITRIFIED CLAY TO BS EN 295 AND BS65 (SWS ONLY), OR CONCRETE PIPES TO BE EN 1916 AND BS5911:PART 1.
10. ROAD GULLY OUTLET PIPES ARE TO BE 150mm DIA. WITH CONCRETE SURROUND AND FLEXIBLE JOINTS. ALL GULLIES SHALL BE FITTED WITH GRADE D400 GRATINGS AND FRAMES TO BS EN124, UNLESS OTHERWISE STATED.
11. ALL ADOPTABLE SEWERS SHALL BE CONSTRUCTED TO THE STANDARDS AND SPECIFICATION LAID DOWN DOWN IN 'SEWERS FOR ADOPTION' 6th EDITION, WITH A VIEW TO ADOPTION UPON COMPLETION OF WORKS.
12. ALL PRIVATE DRAINAGE TO BE IN ACCORDANCE WITH THE BUILDING REGULATIONS APPROVED DOCUMENT PART-H, AND TO THE SATISFACTION OF THE BUILDING CONTROL INSPECTOR.
13. THE CONTRACTOR IS TO KEEP A RECORD OF ANY VARIATIONS MADE ON SITE, INCLUDING THE RELOCATION OF SEWERS OR DRAINS, SO THAT AN AS CONSTRUCTED DRAWING CAN BE PREPARED UPON COMPLETION OF THE PROJECT.
14. STUB CONNECTIONS TO ADOPTABLE MANHOLES SHALL BE MADE FROM VITRIFIED CLAY AND CONSIST OF TWO ROCKER PIPES LAID AT THE SAME GRADIENT AS THE UP OR DOWNSTREAM PIPE.
15. IF ANY SUB SOIL DRAINAGE SYSTEMS ARE UNCOVERED DURING THE WORKS CONTACT THE ENGINEER FOR INSTRUCTIONS. SUB SOIL DRAINS ARE TO BE DIVERTED AROUND NEW WORKS AND CONNECTED INTO THE SURFACE WATER.
16. NO PRIVATE AREAS ARE TO DRAIN ONTO ADOPTABLE AREAS AND VICE VERSA.
17. ALL EXISTING MANHOLE COVER'S, GULLIES, ETC, ARE TO BE RAISED/LOWERED TO SUIT NEW LEVELS.
18. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO CONFIRM THE LOCATION AND DEPTH OF ALL EXISTING SERVICES AND UTILITIES THAT MAY BE PRESENT
19. UPON COMPLETION BUT PRIOR TO HANDOVER, CONTRACTOR TO CARRY OUT FULL CCTV SURVEY OF DRAINAGE SYSTEM WHICH IS TO BE REVIEWED BY ENGINEER TO ENSURE SATISFACTORY INSTALLATION
20. MANHOLE AND CHAMBER COVER GRADES:

- 'A15' IN ALL LANDSCAPED AREAS AND ON FOOTPATHS
- 'B125' IN ALL DRIVEWAYS
- 'C250' IN PRIVATE PARKING AREAS
- 'D400' IN CARRIAGEWAY/ACCESS ROAD

DESIGN SUBJECT TO THE APPROVAL OF:
PLANNING AUTHORITY
BUILDING CONTROL
WATER AUTHORITY

DESIGN SUBJECT TO THE CONFIRMATION OF:
EXTERNAL LEVELS DESIGN
LOCATION AND DEPTH OF EXISTING UTILITIES
ROOT PROTECTION AREAS
INFILTRATION TEST TO BRE365

Site Specific Notes

1. The proposed scheme consists of the demolition of the existing Victoria House Care Home and the construction of 7 No. new dwellings.
2. The British Geological Survey confirms the geology on site to be comprised of Sand, Gravel and Clay. The LandIS Soilscape Application states that the geology is 'Freely Draining' suggesting that infiltration is a viable option for surface water disposal.
3. A CCTV Drainage survey confirms that the existing care home discharges all surface water runoff to ground via infiltration through the use of soakaways, into the existing foul water network or with the RWPs discharging directly to ground. The foul water is recorded to discharge into the existing foul water sewer within Ennerdale Road. A section of the existing foul water network is believed to discharge into an existing surface water sewer.
4. The surface water runoff from proposed roof areas is to be split, with 3 out of the 7 proposed dwellings discharging all surface water runoff to ground via infiltration. The other 4 proposed dwellings are to discharge runoff from roof areas into the existing surface water sewer within Ennerdale Road. This split in discharge is due to the lack of space to utilise soakaways for all proposed plots.
5. The foul water is proposed to be discharged into the existing foul water sewer within Ennerdale Road via a new connection into an existing chamber on site. Remedial works on the existing connection are required to ensure continued operation.
6. Both connections to the Thames Water sewer are subject to approval under a Section 106 application.
7. Due to the revision of the drainage network which serves the site; the surface water connections into the existing foul water sewer is to be removed which will alleviate flows from the overburdened foul sewer. The flows are then to be discharged into the larger surface water at a restricted flow rate which provides a 67% betterment within the 1 in 2-year storm.

DRAINAGE LEGEND

EXISTING FEATURES

- Ex FWD — Existing foul water sewer/drain and manhole
- Ex SWD — Existing surface water sewer/drain and manhole
- Existing foul/surface water sewer/drain and manhole to be abandoned

PROPOSED FEATURES

- FWD — Foul Drainage
- SWD — Surface Water Drainage
- CD — ACO MonoDrain or similar approved - Channel drain
- Storm water access chamber (300Ø)
- Storm water inspection chamber (450Ø)
- Storm water catchpit chamber (450Ø)
- Storm water orifice flow control chamber (500Ø)
- 00.000 — Finished floor level
- 100Ø 4.5m 1:100 Z BED — Pipe info - diameter, length, gradient, bedding type

ABBREVIATIONS

MH	- MANHOLE
IC	- INSPECTION CHAMBER
AC	- ACCESS CHAMBER
CP	- CATCHPIT
BC	- BRAKE CHAMBER
RE	- RODDING EYE
IL	- INVERT LEVEL
SL	- SUMP LEVEL
RA	- RESTRICTED ACCESS COVER
CL	- COVER LEVEL
TL	- TOP OF CELLULAR SA
BL	- BASE OF CELLULAR SA
FL	- FORMATION LEVEL

Prefixed to drawing numbers shall signify the following:-

PL = PLANNING	**Shall not be used for contract or construction purposes**
P = PRELIMINARY	**Shall not be used for contract or construction purposes**
T = TENDER	**Shall not be used for construction purposes**
C = CONSTRUCTION	These are the only drawings that shall be used for construction purposes
R = RECORD	Record of actual completed work

REV	DATE	DESCRIPTION	BY	CHK	APP
P-	13.11.24	PRELIMINARY ISSUE	LH	CS	CS

cgs civils
Consulting Civil Engineers

CLIENT: THE PARK PROPERTY GROUP

ARCHITECT: MICHAEL JONES ARCHITECTS

JOB TITLE: VICTORIA HOUSE KEW GARDENS

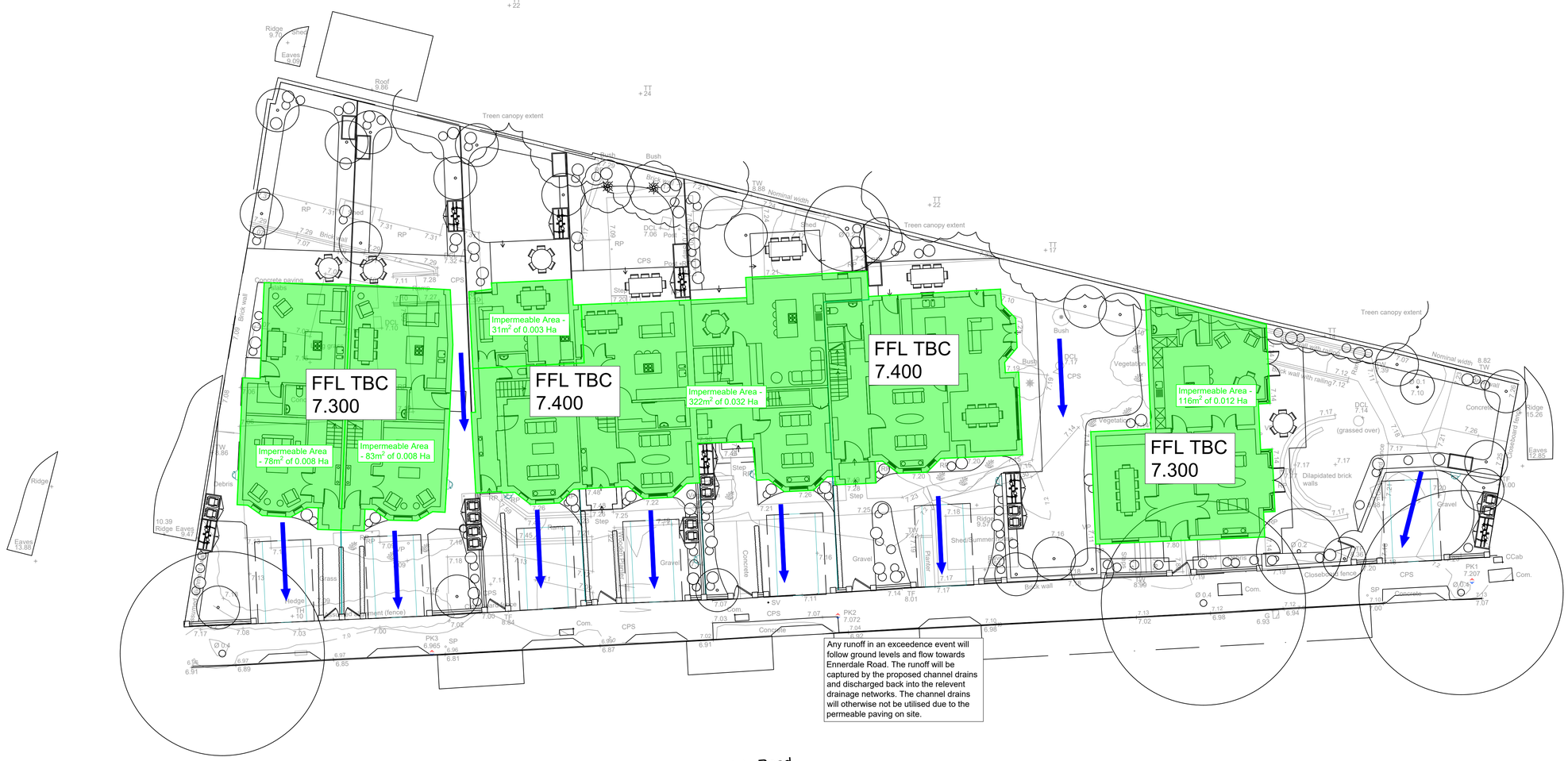
DRAWING TITLE: DRAINAGE STRATEGY

DRAWN	ENGINEER	CHECKED	APPROVED
LH	C SLADE	CS	CS

DATE: NOV 2024 — SCALE @ A1: 1:200

JOB No.	STATUS	DRAWING No.	REV.
C3247	PL	101	PL-

FOR PLANNING ONLY



Ennerdale Road

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P-	13.11.24	PRELIMINARY ISSUE	LH	CS	CS

FOR PLANNING ONLY

cgs civils
Consulting Civil Engineers

CLIENT
THE PARK PROPERTY GROUP

ARCHITECT
MICHAEL JONES ARCHITECTS

JOB TITLE
VICTORIA HOUSE
KEW GARDENS

DRAWING TITLE
IMPERMEABLE AREA
AND OVERLAND FLOW ROUTE

DRAWN	ENGINEER	CHECKED	APPROVED
LH	C SLADE	CS	CS

DATE	SCALE @ A1
NOV 2024	1:200

JOB No.	STATUS	DRAWING No.	REV.
C3247	PL	401	PL-

7.3 Appendix C – Existing runoff & Surface Water Calculations

Design Settings

Rainfall Methodology	FEH-22	Minimum Velocity (m/s)	1.00
Return Period (years)	2	Connection Type	Level Soffits
Additional Flow (%)	0	Minimum Backdrop Height (m)	0.200
CV	1.000	Preferred Cover Depth (m)	0.350
Time of Entry (mins)	5.00	Include Intermediate Ground	✓
Maximum Time of Concentration (mins)	30.00	Enforce best practice design rules	✓
Maximum Rainfall (mm/hr)	75.0		

Nodes

Name	Area (ha)	T of E (mins)	Cover Level (m)	Diameter (mm)	Easting (m)	Northing (m)	Depth (m)
S5	0.008	5.00	7.150	500	24.998	148.241	0.853
SA1			7.150	150	25.300	151.322	0.874
S10	0.008	5.00	7.150	500	31.846	148.065	0.853
SA2			7.150	150	31.857	151.040	0.903
S11	0.003	5.00	7.250	500	37.827	148.705	0.650
SA3			7.250	150	37.771	149.948	0.671
S15	0.032	5.00	7.150	500	68.725	131.524	1.500
ExSWMH			7.060	1200	69.397	122.449	1.563
S20	0.012	5.00	7.150	500	84.393	135.841	0.724
SA4			7.150	150	85.600	135.841	0.745

Links

Name	US Node	DS Node	Length (m)	ks (mm) / n	US IL (m)	DS IL (m)	Fall (m)	Slope (1:X)	Dia (mm)	T of C (mins)	Rain (mm/hr)
1.000	S5	SA1	3.096	0.600	6.297	6.276	0.021	150.0	150	5.06	53.9
2.000	S10	SA2	2.975	0.600	6.297	6.247	0.050	59.5	150	5.04	54.0
3.000	S11	SA3	1.244	0.600	6.600	6.579	0.021	59.3	150	5.02	54.1
4.000	S15	ExSWMH	9.100	0.600	5.650	5.497	0.153	59.5	150	5.12	53.7
5.000	S20	SA4	1.207	0.600	6.426	6.405	0.021	57.5	150	5.02	54.1

Name	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)	Σ Area (ha)	Σ Add Inflow (l/s)	Pro Depth (mm)	Pro Velocity (m/s)
1.000	0.818	14.5	1.6	0.703	0.724	0.008	0.0	33	0.534
2.000	1.306	23.1	1.6	0.703	0.753	0.008	0.0	27	0.750
3.000	1.309	23.1	0.6	0.500	0.521	0.003	0.0	17	0.558
4.000	1.306	23.1	6.2	1.350	1.413	0.032	0.0	53	1.110
5.000	1.329	23.5	2.3	0.574	0.595	0.012	0.0	32	0.851

Pipeline Schedule

Link	Length (m)	Slope (1:X)	Dia (mm)	Link Type	US CL (m)	US IL (m)	US Depth (m)	DS CL (m)	DS IL (m)	DS Depth (m)
1.000	3.096	150.0	150	Circular	7.150	6.297	0.703	7.150	6.276	0.724
2.000	2.975	59.5	150	Circular	7.150	6.297	0.703	7.150	6.247	0.753
3.000	1.244	59.3	150	Circular	7.250	6.600	0.500	7.250	6.579	0.521
4.000	9.100	59.5	150	Circular	7.150	5.650	1.350	7.060	5.497	1.413
5.000	1.207	57.5	150	Circular	7.150	6.426	0.574	7.150	6.405	0.595

Link	US Node	Dia (mm)	Node Type	MH Type	DS Node	Dia (mm)	Node Type	MH Type
1.000	S5	500	Manhole	Adoptable	SA1	150	Manhole	Adoptable
2.000	S10	500	Manhole	Adoptable	SA2	150	Manhole	Adoptable
3.000	S11	500	Manhole	Adoptable	SA3	150	Manhole	Adoptable
4.000	S15	500	Manhole	Adoptable	ExSWMH	1200	Manhole	Adoptable
5.000	S20	500	Manhole	Adoptable	SA4	150	Manhole	Adoptable

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)
S5	24.998	148.241	7.150	0.853	500				
						0	1.000	6.297	150
SA1	25.300	151.322	7.150	0.874	150	1	1.000	6.276	150
									
S10	31.846	148.065	7.150	0.853	500				
						0	2.000	6.297	150
SA2	31.857	151.040	7.150	0.903	150	1	2.000	6.247	150
									
S11	37.827	148.705	7.250	0.650	500				
						0	3.000	6.600	150
SA3	37.771	149.948	7.250	0.671	150	1	3.000	6.579	150
									

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)
S15	68.725	131.524	7.150	1.500	500	0	0	4.000	5.650	150
ExSWMH	69.397	122.449	7.060	1.563	1200	1	1	4.000	5.497	150
S20	84.393	135.841	7.150	0.724	500	0	0	5.000	6.426	150
SA4	85.600	135.841	7.150	0.745	150	1	1	5.000	6.405	150

Simulation Settings

Rainfall Methodology	FEH-22	Analysis Speed	Normal	Additional Storage (m³/ha)	0.0
Summer CV	1.000	Skip Steady State	x	Check Discharge Rate(s)	x
Winter CV	1.000	Drain Down Time (mins)	240	Check Discharge Volume	x

Storm Durations

15	30	60	120	180	240	360	480	600	720	960	1440

Return Period (years)	Climate Change (CC %)	Additional Area (A %)	Additional Flow (Q %)
2	0	0	0
10	0	0	0
30	0	0	0
100	45	0	0

Node S15 Online Orifice Control

Flap Valve	x	Design Depth (m)	1.325	Discharge Coefficient	0.650
Replaces Downstream Link	✓	Design Flow (l/s)	2.0		
Invert Level (m)	5.650	Diameter (m)	0.027		

Node SA1 Soakaway Storage Structure

Base Inf Coefficient (m/hr)	0.03600	Invert Level (m)	5.700	Depth (m)	0.800
Side Inf Coefficient (m/hr)	0.03600	Time to half empty (mins)	826	Inf Depth (m)	
Safety Factor	2.0	Pit Width (m)	3.000	Number Required	1
Porosity	0.95	Pit Length (m)	3.000		

Node SA2 Soakaway Storage Structure

Base Inf Coefficient (m/hr)	0.03600	Invert Level (m)	5.700	Depth (m)	0.800
Side Inf Coefficient (m/hr)	0.03600	Time to half empty (mins)	826	Inf Depth (m)	
Safety Factor	2.0	Pit Width (m)	3.000	Number Required	1
Porosity	0.95	Pit Length (m)	3.000		

Node SA3 Soakaway Storage Structure

Base Inf Coefficient (m/hr)	0.03600	Invert Level (m)	5.700	Depth (m)	0.800
Side Inf Coefficient (m/hr)	0.03600	Time to half empty (mins)	655	Inf Depth (m)	
Safety Factor	2.0	Pit Width (m)	1.500	Number Required	1
Porosity	0.95	Pit Length (m)	2.000		

Node S15 Depth/Area Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Safety Factor	2.0	Invert Level (m)	5.650
Side Inf Coefficient (m/hr)	0.00000	Porosity	0.95	Time to half empty (mins)	200

Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)
0.000	26.0	0.0	0.800	26.0	0.0	0.801	0.0	0.0

Node SA4 Soakaway Storage Structure

Base Inf Coefficient (m/hr)	0.03600	Invert Level (m)	5.700	Depth (m)	0.800
Side Inf Coefficient (m/hr)	0.03600	Time to half empty (mins)	888	Inf Depth (m)	
Safety Factor	2.0	Pit Width (m)	3.000	Number Required	1
Porosity	0.95	Pit Length (m)	5.000		

Results for 2 year Critical Storm Duration. Lowest mass balance: 99.77%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	S5	10	6.330	0.033	1.4	0.0065	0.0000	OK
240 minute winter	SA1	232	5.875	-0.401	0.3	1.4979	0.0000	OK
15 minute summer	S10	10	6.324	0.027	1.4	0.0052	0.0000	OK
240 minute winter	SA2	232	5.875	-0.372	0.3	1.4983	0.0000	OK
15 minute winter	S11	11	6.617	0.017	0.5	0.0032	0.0000	OK
480 minute winter	SA3	304	5.893	-0.686	0.1	0.5505	0.0000	OK
240 minute summer	S15	156	5.802	0.152	2.0	3.7811	0.0000	SURCHARGED
15 minute summer	ExSWMH	1	5.497	0.000	0.4	0.0000	0.0000	OK
15 minute summer	S20	10	6.461	0.035	2.1	0.0068	0.0000	OK
360 minute summer	SA4	344	5.853	-0.552	0.6	2.1741	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	S5	1.000	SA1	1.4	0.499	0.095	0.0085	
240 minute winter	SA1	Infiltration		0.1				
15 minute summer	S10	2.000	SA2	1.4	0.687	0.060	0.0060	
240 minute winter	SA2	Infiltration		0.1				
15 minute winter	S11	3.000	SA3	0.5	0.503	0.022	0.0012	
480 minute winter	SA3	Infiltration		0.0				
240 minute summer	S15	Orifice	ExSWMH	0.6				7.4
15 minute summer	S20	5.000	SA4	2.1	0.741	0.089	0.0034	
360 minute summer	SA4	Infiltration		0.1				

Results for 10 year Critical Storm Duration. Lowest mass balance: 99.77%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	S5	10	6.347	0.050	3.0	0.0098	0.0000	OK
360 minute summer	SA1	360	6.046	-0.230	0.7	2.9604	0.0000	OK
15 minute summer	S10	10	6.337	0.040	3.0	0.0078	0.0000	OK
360 minute summer	SA2	360	6.046	-0.201	0.7	2.9613	0.0000	OK
15 minute summer	S11	11	6.625	0.025	1.1	0.0049	0.0000	OK
600 minute winter	SA3	420	6.046	-0.533	0.1	0.9866	0.0000	OK
180 minute summer	S15	124	5.945	0.295	4.1	7.3436	0.0000	SURCHARGED
15 minute summer	ExSWMH	1	5.497	0.000	0.7	0.0000	0.0000	OK
15 minute summer	S20	10	6.479	0.053	4.5	0.0105	0.0000	OK
240 minute winter	SA4	236	5.985	-0.420	0.9	4.0550	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	S5	1.000	SA1	3.0	0.614	0.204	0.0149	
360 minute summer	SA1	Infiltration		0.1				
15 minute summer	S10	2.000	SA2	3.0	0.842	0.129	0.0105	
360 minute summer	SA2	Infiltration		0.1				
15 minute summer	S11	3.000	SA3	1.1	0.623	0.048	0.0022	
600 minute winter	SA3	Infiltration		0.0				
180 minute summer	S15	Orifice	ExSWMH	0.9				11.8
15 minute summer	S20	5.000	SA4	4.5	0.899	0.190	0.0060	
240 minute winter	SA4	Infiltration		0.1				

Results for 30 year Critical Storm Duration. Lowest mass balance: 99.77%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	S5	10	6.356	0.059	4.0	0.0115	0.0000	OK
600 minute summer	SA1	555	6.132	-0.144	0.5	3.6950	0.0000	OK
15 minute summer	S10	10	6.344	0.047	4.0	0.0092	0.0000	OK
600 minute summer	SA2	555	6.132	-0.115	0.5	3.6959	0.0000	OK
15 minute summer	S11	10	6.629	0.029	1.5	0.0057	0.0000	OK
180 minute winter	SA3	176	6.178	-0.401	0.3	1.3610	0.0000	OK
180 minute summer	S15	128	6.050	0.400	5.3	9.9653	0.0000	SURCHARGED
15 minute summer	ExSWMH	1	5.497	0.000	0.8	0.0000	0.0000	OK
15 minute summer	S20	10	6.489	0.063	6.0	0.0124	0.0000	OK
240 minute summer	SA4	236	6.075	-0.330	1.7	5.3491	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	S5	1.000	SA1	4.0	0.663	0.274	0.0185	
600 minute summer	SA1	Infiltration		0.1				
15 minute summer	S10	2.000	SA2	4.0	0.908	0.172	0.0130	
600 minute summer	SA2	Infiltration		0.1				
15 minute summer	S11	3.000	SA3	1.5	0.672	0.064	0.0027	
180 minute winter	SA3	Infiltration		0.0				
180 minute summer	S15	Orifice	ExSWMH	1.0				15.1
15 minute summer	S20	5.000	SA4	6.0	0.965	0.254	0.0075	
240 minute summer	SA4	Infiltration		0.1				

Results for 100 year +45% CC Critical Storm Duration. Lowest mass balance: 99.77%

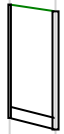
Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
360 minute summer	S5	360	6.635	0.338	1.6	0.0662	0.0000	SURCHARGED
360 minute summer	SA1	360	6.635	0.359	1.6	6.8507	0.0000	OK
360 minute summer	S10	360	6.635	0.338	1.6	0.0663	0.0000	SURCHARGED
360 minute summer	SA2	360	6.635	0.388	1.6	6.8513	0.0000	OK
480 minute winter	S11	448	6.884	0.284	0.3	0.0557	0.0000	SURCHARGED
480 minute winter	SA3	448	6.884	0.305	0.3	2.2869	0.0000	OK
240 minute summer	S15	168	6.741	1.091	8.4	19.9862	0.0000	SURCHARGED
15 minute summer	ExSWMH	1	5.497	0.000	1.1	0.0000	0.0000	OK
15 minute summer	S20	10	6.518	0.092	11.2	0.0180	0.0000	OK
360 minute winter	SA4	360	6.482	0.077	1.5	11.1442	0.0000	OK

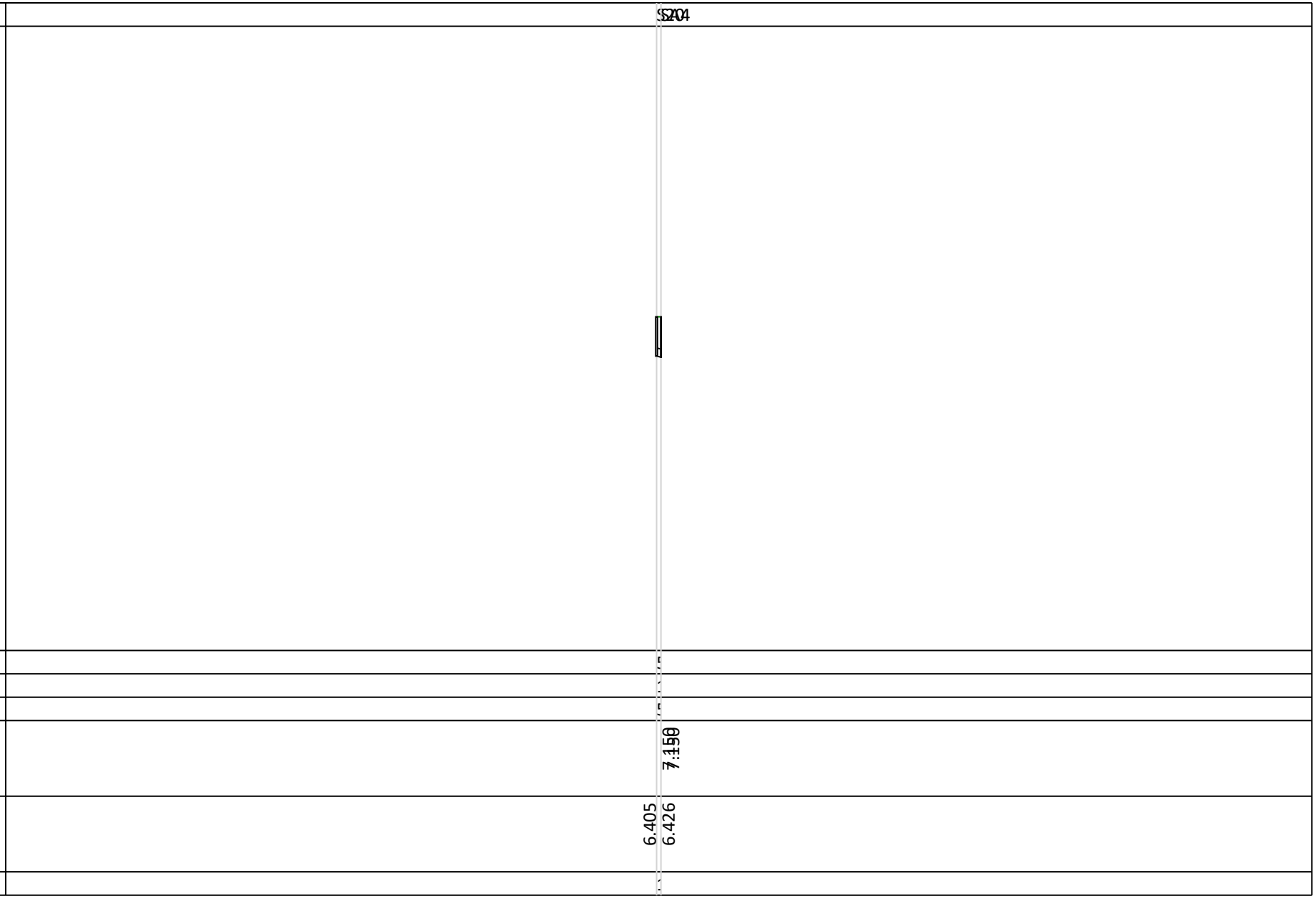
Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
360 minute summer	S5	1.000	SA1	1.6	0.520	0.110	0.0545	
360 minute summer	SA1	Infiltration		0.1				
360 minute summer	S10	2.000	SA2	1.6	0.715	0.069	0.0524	
360 minute summer	SA2	Infiltration		0.1				
480 minute winter	S11	3.000	SA3	0.3	0.436	0.013	0.0219	
480 minute winter	SA3	Infiltration		0.0				
240 minute summer	S15	Orifice	ExSWMH	1.7				28.2
15 minute summer	S20	5.000	SA4	11.1	1.128	0.475	0.0119	
360 minute winter	SA4	Infiltration		0.1				

Node Name	S1	SA1
A4 drawing Hor Scale 1500 Ver Scale 100 Datum (m) 1.000		
Link Name	1	
Section Type	1	
Slope (1:X)	1	
Cover Level (m)	7.150	7.150
Invert Level (m)	6.276	6.297
Length (m)	3	

Node Name	S1.01	S1.02
A4 drawing Hor Scale 1500 Ver Scale 100 Datum (m) 1.000		
Link Name	2	
Section Type	1	
Slope (1:X)	5	
Cover Level (m)	7.150	7.150
Invert Level (m)	6.247	6.237
Length (m)	2	

Node Name	S13
A4 drawing Hor Scale 1500 Ver Scale 100 Datum (m) 1.000	
Link Name	
Section Type	
Slope (1:X)	
Cover Level (m)	7.250
Invert Level (m)	6.579 6.600
Length (m)	

Node Name	S15 ExSWMH
A4 drawing Hor Scale 1500 Ver Scale 100 Datum (m) 1.000	
Link Name	4.00
Section Type	150
Slope (1:X)	59.5
Cover Level (m)	7.150 7.060
Invert Level (m)	5.659 5.499
Length (m)	9.10

Node Name	S201	S204
A4 drawing Hor Scale 1500 Ver Scale 100 Datum (m) 1.000		
Link Name		
Section Type		
Slope (1:X)		
Cover Level (m)	7.150	7.150
Invert Level (m)	6.405	6.426
Length (m)		

7.4 Appendix D – Borehole Logs

Revised ground location for bhs 98-105 is 184 776, between Jodrell Building & Herbarium. The United Science Building was not built.

TQ 17 NE | 98 GR. 187 776

Civil Engineering Laboratory
Building Research Establishment

Figure A
BOREHOLE No: 4
Sheet 1 of 2

Client: Property Services Agency / DCES
Investigation No: FGE / 3258
Location: KEW. ROYAL BOTANICAL GARDENS
Project: United Science Building

Bud Bldg - Herbarium

BOREHOLE LOG

Date: 6th – 8th March 1988
Ground Level: 5·0 approx. (m. AOD)
Logged By: D. G. F.
Scale: 1:50

Equipment: Light cable percussion boring rig
Diameter: 200 mm
Borehole "cased" to 7·0m below GL

S'pipe Piezo	Description of Strata	Legend	Depth (m)	O.D. Level (m)	Samples/Tests Depth (m)	Type	Test	Remarks
	SAND, Dark greyish black, silty and clayey and loamy, with flints and brick fragments, organic with frequent roots		0·6	+4·4	GL – 0·3	B		
					0·3 – 0·6	B		
	Brickbats and concrete in a brown sandy matrix - faint "drain" smell (SOAKAWAY?)		1·2	+3·8	0·6 – 1·2	B		
	GRAVEL, Dark brown, organic, sandy, with some clay, containing scattered brick fragments (MADE GROUND / TOPSOIL)		2·0	+3·0	1·2 – 1·5	B		
					1·5 – 2·0	D	S N=17	
					1·5 – 2·0	B		
	GRAVEL, Medium dense and dense, brownish yellow, clean, variably sandy, possibly a gravelly sand in places. Gravel content is fine to coarse sub-rounded flint. Becoming slightly clayey over lower metre or so (FLOOD PLAIN GRAVEL)		7·3	–2·3	2·5 – 3·0	D	S N=43	
					2·5 – 3·0	B		
					3·5 – 4·0	D	S N=30	
					3·5 – 4·0	B		
					4·5 – 5·0	D	S N=26	
					4·5 – 5·0	B		
					5·5 – 6·0	–	S N=20	Water level at GL in evening of 7·3·88. Fell to 3·1m below GL overnight
					5·5 – 6·0	B		
					6·5 – 7·0	D	S N=14	
					6·5 – 7·0	B		
					7·3	B		
	CLAY, Soft to firm, brown, fissured, silty, with pockets of orange silt and claystone fragments (WEATHERED LONDON CLAY)		7·8	–2·8	7·5 – 8·0	U	20	
					7·5 – 8·0	B		
	CLAY, Firm to stiff, fissured, brownish grey, slightly silty, with occasional fossil fragments and selenite traces (LONDON CLAY)		(10·0)		8·0 – 8·5	U	33	
					8·5	D		
					9·0 – 9·5	U	46	
					9·5	D		

TQ 17 NE/98 GR. 187 776

Civil Engineering Laboratory
Building Research Establishment

Figure A
BOREHOLE No: 4
Sheet 2 of 2

Client: Property Services Agency/DCES
Location: KEW. ROYAL BOTANICAL GARDENS
Investigation No: FGE/3258
Project: Unified Science Building

BOREHOLE LOG

Date: As sheet 1
Ground Level: (m. AOD)
Logged By:
Scale: 1:50
Equipment: As sheet 1
Diameter:

Strip/Pipe/Piezo	Description of Strata	Legend	Depth (m)	O.D. Level (m)	Samples/Tests: Depth (m)	Type	Test	Remarks
			(10.0)		10.0 - 10.5	U	46	
	CLAY - As previous sheet - Contains a few pyrite traces from about 12.5m below GL. Becoming stiff				10.5	D		
					11.5 - 12.0	U	50	
					12.0	D		
					13.0 - 13.5	U	52	
					13.5	D		
	(LONDON CLAY)							
					14.5 - 15.0	U	60	
	End of borehole		15.0	-10.0	15.0	D		

7.5 Appendix E – CCTV Drainage Survey

Eyes On Drainage Services Ltd
Bines Green, Horsham
Tel. 01403 710971
info@eyesondrainage.co.uk

Project

Project Name:	Victoria House 2 - 4 Ennerdale Rd
Project Description:	CCTV survey, trace & plpot
Project Status:	Complete
Project Date:	11/07/2024
Inspection Standard:	MSCC5 Sewers & Drainage GB (SRM5 Scoring)

EYES ON DRAINAGE

CCTV-Trace-Plot-Map-Repair

Eyes On Drainage Services Ltd
Bines Green, Horsham
Tel. 01403 710971
info@eyesondrainage.co.uk

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Eyes On Drainage Services Ltd
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Project Information

Project Name	Project Number	Project Date
Victoria House 2 - 4 Ennerdale Rd		11/07/2024

Client

Company: CGS Civils
Department: Richard Cobden House
Street: Lion Street
Town or City: Chichester
County: West Sussex
Post Code: PO19 1LW
Phone: 01243 933253

Site

Department: Victoria House
Street: 2 - 4 Ennerdale Rd
Town or City: Kew
County: London
Post Code: TW9 3PG

Contractor

Company: Eyes On Drainage Services Ltd
Contact: Jay Young
Department: Merrion House
Street: Bines Green
Town or City: Horsham
County: West Sussex
Post Code: RH13 8EH
Phone: 01403 710971
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Project Information

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Project Drawing, Page 'Victoria House Ennerdale Rd Kew Gardens TW9 3PG'

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Scoring Summary

Project Name	Project Number	Project Date
Victoria House 2 - 4 Ennerdale Rd		11/07/2024

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
22	MH1X	4	Multiple defects

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	FP1X	3	Settled deposits, hard or compacted, 10% cross-sectional area loss
4	MH5X	3	Settled deposits, fine, 5% cross-sectional area loss, finish
8	FP2X	3	Settled deposits, coarse, 10% cross-sectional area loss, finish
9	FP3X	3	Settled deposits, coarse, 10% cross-sectional area loss, finish
10	MH4X	4	Settled deposits, coarse, 35% cross-sectional area loss, finish
11	MH3X	3	Settled deposits, coarse, 10% cross-sectional area loss, finish
14	FP1X	3	Settled deposits, coarse, 20% cross-sectional area loss, finish
15	MH6X	4	Settled deposits, fine, 35% cross-sectional area loss, finish
17	RWG3X	4	Settled deposits, fine, 60% cross-sectional area loss
22	MH1X	5	Attached deposits, grease from 9 o'clock to 3 o'clock, 20% cross-sectional area loss, finish

Abandoned Surveys

Section	PLR	Description
All inspections complete, none are abandoned.		

Information

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

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Section Profile

Project Name	Project Number	Project Date
Victoria House 2 - 4 Ennerdale Rd		11/07/2024

Circular, 100 mm

Item No.	Upstream Node	Downstream Node	Date	Road	Material	Total Length	Inspected Length
1	FP1	MH5	09/07/2024	Ennerdale Road	Polyvinyl chloride	12.60 m	12.60 m
2	FP2	MH5	09/07/2024	Ennerdale Road	Polyvinyl chloride	9.20 m	9.20 m
3	FP3	MH5	09/07/2024	Ennerdale Road	Polyvinyl chloride	13.20 m	13.20 m
4	MH5	RE	09/07/2024	Ennerdale Road	Polyvinyl chloride	12.85 m	12.85 m
5	RWP14	SK3	09/07/2024	Ennerdale Road	Polyvinyl chloride	19.60 m	19.60 m
6	RWP18	SK1	09/07/2024	Ennerdale Road	Polyvinyl chloride	3.66 m	3.66 m
7	FP1	MH4	09/07/2024	Ennerdale Road	Polyvinyl chloride	12.80 m	12.80 m
8	FP2	MH4	09/07/2024	Ennerdale Road	Polyvinyl chloride	1.65 m	1.65 m
9	FP3	MH4	09/07/2024	Ennerdale Road	Polyvinyl chloride	3.90 m	3.90 m
10	MH4	MH3	09/07/2024	Ennerdale Road	Polyvinyl chloride	8.30 m	8.30 m
11	MH3	MH2	09/07/2024	Ennerdale Road	Polyvinyl chloride	8.52 m	8.52 m
12	RWP28	SK2	09/07/2024	Ennerdale Road	Polyvinyl chloride	7.33 m	7.33 m
13	GY1	MH6	09/07/2024	Ennerdale Road	Polyvinyl chloride	1.65 m	1.65 m
14	FP1	MH6	09/07/2024	Ennerdale Road	Polyvinyl chloride	3.31 m	3.31 m
15	MH6	MH2	09/07/2024	Ennerdale Road	Polyvinyl chloride	20.20 m	20.20 m
16	FP1	MH2	09/07/2024	Ennerdale Road	Polyvinyl chloride	3.20 m	3.20 m
17	RWG3	MH2	09/07/2024	Ennerdale Road	Polyvinyl chloride	8.15 m	8.15 m
18	A	MH2	09/07/2024	Ennerdale Road	Vitrified clay	3.20 m	3.20 m
19	MH2	MH1	09/07/2024	Ennerdale Road	Polyvinyl chloride	5.50 m	5.50 m
20	MH2	MH1	10/07/2024	Ennerdale Road	Polyvinyl chloride	6.15 m	6.15 m
21	SVP	MH1	10/07/2024	Ennerdale Road	Polyvinyl chloride	6.00 m	6.00 m
23	RWP	RWG2	10/07/2024	Ennerdale Road	Polyvinyl chloride	0.30 m	0.30 m
24	RWG2	MH2	10/07/2024	Ennerdale Road	Polyvinyl chloride	3.40 m	3.40 m
25	RWG3	MH2	10/07/2024	Ennerdale Road	Polyvinyl chloride	3.50 m	3.50 m

Total: 24 Inspections x Circular 100 mm, 0 mm = 178.17 m Total Length and 178.17 m Inspected Length

Circular, 150 mm

Item No.	Upstream Node	Downstream Node	Date	Road	Material	Total Length	Inspected Length
22	MH1	Sewer	10/07/2024	Ennerdale Road	Vitrified clay	9.90 m	9.90 m

Total: 1 Inspection x Circular 150 mm, 0 mm = 9.90 m Total Length and 9.90 m Inspected Length

Total: 25 Inspections = 188.07 m Total Length and 188.07 m Inspected Length

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Section Summary

Project Name	Project Number	Project Date
Victoria House 2 - 4 Ennerdale Rd		11/07/2024

Number of sections	25
Total length of sections	188.07 m
Total length of inspected sections	188.07 m
Total length of not inspected sections	0.00 m
Number of abandoned inspections	0
Number of section inspection photos	153
Number of section inspection videos	25
Number of section inspection scans	0
Number of section inclination measurements	0

PLR:	FP1X	**Upstream Node:**	FP1
Inspection Direction:	Upstream	**Downstream Node:**	MH5
Inspected Length:	12.60 m	**Dia/Height:**	100 mm
Total Length:	12.60 m	**Material:**	Polyvinyl chloride

No.	m+	Code	Observation
1	0.00	MH	Start node, manhole, reference: MH5
2	0.00	WL	Water level, 0% of the vertical dimension
3	1.25	LL	Line deviates left
4	4.71	DEC	Settled deposits, hard or compacted, 10% cross-sectional area loss
5	4.80	JN	Junction at 9 o'clock, 100mm dia
6	10.50	JN	Junction at 12 o'clock, 40mm dia
7	10.90	LU	Line deviates up
8	12.50	JN	Junction at 3 o'clock, 100mm dia
9	12.60	MHF	Finish node, manhole, reference: FP1

PLR:	FP2X	**Upstream Node:**	FP2
Inspection Direction:	Upstream	**Downstream Node:**	MH5
Inspected Length:	9.20 m	**Dia/Height:**	100 mm
Total Length:	9.20 m	**Material:**	Polyvinyl chloride

No.	m+	Code	Observation
1	0.00	MH	Start node, manhole, reference: MH5
2	0.00	WL	Water level, 0% of the vertical dimension
3	0.30	LL	Line deviates left
4	1.20	WL	Water level, 10% of the vertical dimension
5	4.14	WL	Water level, 0% of the vertical dimension
6	8.30	LU	Line deviates up
7	8.95	JN	Junction at 3 o'clock, 100mm dia

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Section Summary

Project Name	Project Number	Project Date
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No.	m+	Code	Observation
8	9.20	MHF	Finish node, manhole, reference: FP2

PLR:	FP3X	**Upstream Node:**	FP3
Inspection Direction:	Upstream	**Downstream Node:**	MH5
Inspected Length:	13.20 m	**Dia/Height:**	100 mm
Total Length:	13.20 m	**Material:**	Polyvinyl chloride

No.	m+	Code	Observation
1	0.00	MH	Start node, manhole, reference: MH5
2	0.00	WL	Water level, 0% of the vertical dimension
3	0.30	LL	Line deviates left
4	12.80	LU	Line deviates up
5	13.20	MHF	Finish node, manhole, reference: FP3

PLR:	MH5X	**Upstream Node:**	MH5
Inspection Direction:	Downstream	**Downstream Node:**	RE
Inspected Length:	12.85 m	**Dia/Height:**	100 mm
Total Length:	12.85 m	**Material:**	Polyvinyl chloride

No.	m+	Code	Observation
1	0.00	MH	Start node, manhole, reference: MH5
2	0.00	WL	Water level, 0% of the vertical dimension
3	0.10	DES	Settled deposits, fine, 5% cross-sectional area loss, start
4	1.42	DES	Settled deposits, fine, 5% cross-sectional area loss, finish
5	12.70	LD	Line deviates down
6	12.85	MHF	Finish node, manhole, reference: RE, Assumed into buried chamber, not located.

PLR:	RWP14X	**Upstream Node:**	RWP14
Inspection Direction:	Upstream	**Downstream Node:**	SK3
Inspected Length:	19.60 m	**Dia/Height:**	100 mm
Total Length:	19.60 m	**Material:**	Polyvinyl chloride

No.	m+	Code	Observation
1	0.00	SK	Start node, soakaway, reference: SK3
2	0.00	WL	Water level, 0% of the vertical dimension
3	4.10	JN	Junction at 2 o'clock, 100mm dia
4	7.80	LR	Line deviates right
5	8.60	JN	Junction at 3 o'clock, 100mm dia
6	13.80	JN	Junction at 3 o'clock, 100mm dia
7	18.90	RM	Roots, mass, 15% cross-sectional area loss
8	19.00	JN	Junction at 3 o'clock, 100mm dia
9	19.60	LU	Line deviates up

PLR:	RWP18X	**Upstream Node:**	RWP18
Inspection Direction:	Upstream	**Downstream Node:**	SK1
Inspected Length:	3.66 m	**Dia/Height:**	100 mm
Total Length:	3.66 m	**Material:**	Polyvinyl chloride

No.	m+	Code	Observation
1	0.00	SK	Start node, soakaway, reference: SK1

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Section Summary

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No.	m+	Code	Observation
2	0.00	WL	Water level, 10% of the vertical dimension
3	1.85	JN	Junction at 9 o'clock, 100mm dia
4	3.15	LU	Line deviates up
5	3.66	MHF	Finish node, manhole, reference: RWP18

PLR:	FP1X	**Upstream Node:**	FP1
Inspection Direction:	Upstream	**Downstream Node:**	MH4
Inspected Length:	12.80 m	**Dia/Height:**	100 mm
Total Length:	12.80 m	**Material:**	Polyvinyl chloride

No.	m+	Code	Observation
1	0.00	MH	Start node, manhole, reference: MH4
2	0.00	WL	Water level, 0% of the vertical dimension
3	0.10	DER	Settled deposits, coarse, 10% cross-sectional area loss, start
4	0.15	LL	Line deviates left
5	6.60	JN	Junction at 3 o'clock, 100mm dia
6	12.10	DER	Settled deposits, coarse, 10% cross-sectional area loss, finish
7	12.20	LR	Line deviates right
8	12.80	LU	Line deviates up

PLR:	FP2X	**Upstream Node:**	FP2
Inspection Direction:	Upstream	**Downstream Node:**	MH4
Inspected Length:	1.65 m	**Dia/Height:**	100 mm
Total Length:	1.65 m	**Material:**	Polyvinyl chloride

No.	m+	Code	Observation
1	0.00	MH	Start node, manhole, reference: MH4
2	0.00	WL	Water level, 0% of the vertical dimension
3	0.10	DER	Settled deposits, coarse, 10% cross-sectional area loss, start
4	1.00	LR	Line deviates right
5	1.42	DER	Settled deposits, coarse, 10% cross-sectional area loss, finish
6	1.60	LU	Line deviates up
7	1.65	MHF	Finish node, manhole, reference: Fp2

PLR:	FP3X	**Upstream Node:**	FP3
Inspection Direction:	Upstream	**Downstream Node:**	MH4
Inspected Length:	3.90 m	**Dia/Height:**	100 mm
Total Length:	3.90 m	**Material:**	Polyvinyl chloride

No.	m+	Code	Observation
1	0.00	MH	Start node, manhole, reference: MH4
2	0.00	WL	Water level, 0% of the vertical dimension
3	0.10	DER	Settled deposits, coarse, 10% cross-sectional area loss, start
4	3.19	DER	Settled deposits, coarse, 10% cross-sectional area loss, finish
5	3.30	LL	Line deviates left
6	3.60	LU	Line deviates up
7	3.90	MHF	Finish node, manhole, reference: Fp3

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Section Summary

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PLR:	MH4X	**Upstream Node:**	MH4
Inspection Direction:	Downstream	**Downstream Node:**	MH3
Inspected Length:	8.30 m	**Dia/Height:**	100 mm
Total Length:	8.30 m	**Material:**	Polyvinyl chloride

No.	m+	Code	Observation
1	0.00	MH	Start node, manhole, reference: MH4
2	0.00	WL	Water level, 0% of the vertical dimension
3	0.10	DER	Settled deposits, coarse, 10% cross-sectional area loss, start
4	6.39	WL	Water level, 10% of the vertical dimension
5	7.70	DER	Settled deposits, coarse, 10% cross-sectional area loss, finish
6	7.90	JN	Junction at 9 o'clock, 100mm dia
7	7.90	JN	Junction at 3 o'clock, 100mm dia
8	8.16	DER	Settled deposits, coarse, 35% cross-sectional area loss, start
9	8.30	DER	Settled deposits, coarse, 35% cross-sectional area loss, finish
10	8.30	MHF	Finish node, manhole, reference: MH3

PLR:	MH3X	**Upstream Node:**	MH3
Inspection Direction:	Downstream	**Downstream Node:**	MH2
Inspected Length:	8.52 m	**Dia/Height:**	100 mm
Total Length:	8.52 m	**Material:**	Polyvinyl chloride

No.	m+	Code	Observation
1	0.00	MH	Start node, manhole, reference: MH3
2	0.00	WL	Water level, 0% of the vertical dimension
3	0.10	DER	Settled deposits, coarse, 10% cross-sectional area loss, start
4	3.75	JN	Junction at 3 o'clock, 100mm dia
5	5.09	DER	Settled deposits, coarse, 10% cross-sectional area loss, finish
6	8.52	MHF	Finish node, manhole, reference: MH2

PLR:	RWP28X	**Upstream Node:**	RWP28
Inspection Direction:	Upstream	**Downstream Node:**	SK2
Inspected Length:	7.33 m	**Dia/Height:**	100 mm
Total Length:	7.33 m	**Material:**	Polyvinyl chloride

No.	m+	Code	Observation
1	0.00	SK	Start node, soakaway, reference: Soakaway2
2	0.00	WL	Water level, 0% of the vertical dimension
3	3.07	WL	Water level, 10% of the vertical dimension
4	6.80	WL	Water level, 20% of the vertical dimension
5	7.20	LU	Line deviates up
6	7.33	MHF	Finish node, manhole, reference: RWP28

PLR:	GY1X	**Upstream Node:**	GY1
Inspection Direction:	Upstream	**Downstream Node:**	MH6
Inspected Length:	1.65 m	**Dia/Height:**	100 mm
Total Length:	1.65 m	**Material:**	Polyvinyl chloride

No.	m+	Code	Observation
1	0.00	MH	Start node, manhole, reference: MH6

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Section Summary

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No.	m+	Code	Observation
2	0.00	WL	Water level, 0% of the vertical dimension
3	0.10	LR	Line deviates right
4	1.57	LL	Line deviates left
5	1.65	GYF	Finish node, gully, reference: GY1

PLR:	FP1X	**Upstream Node:**	FP1
Inspection Direction:	Upstream	**Downstream Node:**	MH6
Inspected Length:	3.31 m	**Dia/Height:**	100 mm
Total Length:	3.31 m	**Material:**	Polyvinyl chloride

No.	m+	Code	Observation
1	0.00	MH	Start node, manhole, reference: MH6
2	0.00	WL	Water level, 0% of the vertical dimension
3	0.30	OJM	Open joint, medium
4	2.48	DER	Settled deposits, coarse, 15% cross-sectional area loss, start
5	2.84	DER	Settled deposits, coarse, 20% cross-sectional area loss, change
6	3.20	DER	Settled deposits, coarse, 20% cross-sectional area loss, finish
7	3.25	LU	Line deviates up
8	3.31	MHF	Finish node, manhole, reference: FP1

PLR:	MH6X	**Upstream Node:**	MH6
Inspection Direction:	Downstream	**Downstream Node:**	MH2
Inspected Length:	20.20 m	**Dia/Height:**	100 mm
Total Length:	20.20 m	**Material:**	Polyvinyl chloride

No.	m+	Code	Observation
1	0.00	MH	Start node, manhole, reference: MH6
2	0.00	WL	Water level, 0% of the vertical dimension
3	3.87	JN	Junction at 9 o'clock, 100mm dia
4	5.20	LL	Line deviates left
5	7.15	DER	Settled deposits, coarse, 5% cross-sectional area loss
6	7.20	JN	Junction at 9 o'clock, 100mm dia
7	9.60	JN	Junction at 11 o'clock, 100mm dia
8	12.18	WL	Water level, 25% of the vertical dimension
9	12.18	DES	Settled deposits, fine, 25% cross-sectional area loss, start
10	12.54	DES	Settled deposits, fine, 35% cross-sectional area loss, change
11	12.86	JN	Junction at 9 o'clock, 100mm dia
12	13.72	DES	Settled deposits, fine, 35% cross-sectional area loss, finish
13	14.51	JN	Junction at 9 o'clock, 100mm dia
14	15.81	JN	Junction at 10 o'clock, 100mm dia
15	16.22	WL	Water level, 30% of the vertical dimension
16	16.94	CUW	Loss of vision, camera under water, start
17	19.98	CUW	Loss of vision, camera under water, finish
18	20.20	MHF	Finish node, manhole, reference: MH2

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Section Summary

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PLR:	FP1X	**Upstream Node:**	FP1
Inspection Direction:	Upstream	**Downstream Node:**	MH2
Inspected Length:	3.20 m	**Dia/Height:**	100 mm
Total Length:	3.20 m	**Material:**	Polyvinyl chloride

No.	m+	Code	Observation
1	0.00	MH	Start node, manhole, reference: MH2
2	0.00	WL	Water level, 0% of the vertical dimension
3	3.20	LU	Line deviates up

PLR:	RWG3X	**Upstream Node:**	RWG3
Inspection Direction:	Upstream	**Downstream Node:**	MH2
Inspected Length:	8.15 m	**Dia/Height:**	100 mm
Total Length:	8.15 m	**Material:**	Polyvinyl chloride

No.	m+	Code	Observation
1	0.00	MH	Start node, manhole, reference: MH2
2	0.00	WL	Water level, 0% of the vertical dimension
3	4.20	JN	Junction at 9 o'clock, 100mm dia, Serving Rwg2
4	5.32	DES	Settled deposits, fine, 10% cross-sectional area loss, start
5	6.63	DES	Settled deposits, fine, 10% cross-sectional area loss, finish
6	8.05	DES	Settled deposits, fine, 60% cross-sectional area loss
7	8.15	MHF	Finish node, manhole, reference: RWG3

PLR:	AX	**Upstream Node:**	A
Inspection Direction:	Upstream	**Downstream Node:**	MH2
Inspected Length:	3.20 m	**Dia/Height:**	100 mm
Total Length:	3.20 m	**Material:**	Vitrified clay

No.	m+	Code	Observation
1	0.00	MH	Start node, manhole, reference: MH2
2	0.00	WL	Water level, 0% of the vertical dimension
3	0.10	LL	Line deviates left
4	0.91	JN	Junction at 9 o'clock, 100mm dia
5	2.80	LU	Line deviates up
6	3.20	MHF	Finish node, manhole, reference: A

PLR:	MH2X	**Upstream Node:**	MH2
Inspection Direction:	Downstream	**Downstream Node:**	MH1
Inspected Length:	5.50 m	**Dia/Height:**	100 mm
Total Length:	5.50 m	**Material:**	Polyvinyl chloride

No.	m+	Code	Observation
1	0.00	MH	Start node, manhole, reference: MH2
2	0.00	WL	Water level, 0% of the vertical dimension
3	0.55	LL	Line deviates left
4	5.40	LD	Line deviates down
5	5.50	MHF	Finish node, manhole, reference: MH1

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PLR:	MH2X	**Upstream Node:**	MH2
Inspection Direction:	Upstream	**Downstream Node:**	MH1
Inspected Length:	6.15 m	**Dia/Height:**	100 mm
Total Length:	6.15 m	**Material:**	Polyvinyl chloride

No.	m+	Code	Observation
1	0.00	RE	Start node, rodding eye, reference: MH1
2	0.00	WL	Water level, 0% of the vertical dimension
3	0.45	LD	Line deviates down, Backdrop
4	5.75	LR	Line deviates right
5	6.15	MHF	Finish node, manhole, reference: MH2

PLR:	SVPX	**Upstream Node:**	SVP
Inspection Direction:	Upstream	**Downstream Node:**	MH1
Inspected Length:	6.00 m	**Dia/Height:**	100 mm
Total Length:	6.00 m	**Material:**	Polyvinyl chloride

No.	m+	Code	Observation
1	0.00	MH	Start node, manhole, reference: MH1, Through tumbler rodding eye
2	0.00	WL	Water level, 0% of the vertical dimension
3	0.60	JN	Junction at 3 o'clock, 100mm dia
4	5.60	LU	Line deviates up
5	6.00	MHF	Finish node, manhole, reference: SVP

PLR:	MH1X	**Upstream Node:**	MH1
Inspection Direction:	Downstream	**Downstream Node:**	Sewer
Inspected Length:	9.90 m	**Dia/Height:**	150 mm
Total Length:	9.90 m	**Material:**	Vitrified clay

No.	m+	Code	Observation
1	0.00	MH	Start node, manhole, reference: MH1, Through Interceptor rodding eye
2	0.00	WL	Water level, 0% of the vertical dimension
3	0.20	REM	General remark, trap
4	0.80	LL	Line deviates left
5	1.70	FMJ	Fractures, multiple at joint from 10 o'clock to 6 o'clock
6	2.30	FMJ	Fractures, multiple at joint from 2 o'clock to 9 o'clock
7	2.90	FMJ	Fractures, multiple at joint from 1 o'clock to 8 o'clock
8	3.60	FMJ	Fractures, multiple at joint from 12 o'clock to 12 o'clock
9	4.20	FMJ	Fractures, multiple at joint from 12 o'clock to 12 o'clock
10	4.90	FMJ	Fractures, multiple at joint from 12 o'clock to 12 o'clock
11	5.50	FCJ	Fracture, circumferential at joint from 3 o'clock to 7 o'clock
12	6.70	FMJ	Fractures, multiple at joint from 4 o'clock to 12 o'clock
13	7.30	FCJ	Fracture, circumferential at joint from 9 o'clock to 3 o'clock
14	7.90	FCJ	Fracture, circumferential at joint from 12 o'clock to 12 o'clock
15	9.00	FLJ	Fracture, longitudinal at joint at 7 o'clock
16	9.20	DEG	Attached deposits, grease from 9 o'clock to 3 o'clock, 20% cross-sectional area loss, start
17	9.70	FCJ	Fracture, circumferential at joint from 4 o'clock to 10 o'clock
18	9.70	H	Hole in drain or sewer at 4 o'clock
19	9.70	BJ	Broken pipe at joint from 4 o'clock to 8 o'clock

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Section Summary

Project Name	Project Number	Project Date
Victoria House 2 - 4 Ennerdale Rd		11/07/2024

No.	m+	Code	Observation
20	9.90	DEG	Attached deposits, grease from 9 o'clock to 3 o'clock, 20% cross-sectional area loss, finish
21	9.90	BRF	Finish node, major connection without manhole, reference: Sewer

PLR:	RWPX	**Upstream Node:**	RWP
Inspection Direction:	Upstream	**Downstream Node:**	RWG2
Inspected Length:	0.30 m	**Dia/Height:**	100 mm
Total Length:	0.30 m	**Material:**	Polyvinyl chloride

No.	m+	Code	Observation
1	0.00	GY	Start node, gully, reference: RWG2
2	0.00	WL	Water level, 0% of the vertical dimension
3	0.10	LU	Line deviates up
4	0.30	MHF	Finish node, manhole, reference: RWP

PLR:	RWG2X	**Upstream Node:**	RWG2
Inspection Direction:	Downstream	**Downstream Node:**	MH2
Inspected Length:	3.40 m	**Dia/Height:**	100 mm
Total Length:	3.40 m	**Material:**	Polyvinyl chloride

No.	m+	Code	Observation
1	0.00	MH	Start node, manhole, reference: RWG2
2	0.00	WL	Water level, 0% of the vertical dimension
3	0.10	LL	Line deviates left
4	1.60	LR	Line deviates right, Junction with RWG3
5	3.00	LR	Line deviates right
6	3.40	MHF	Finish node, manhole, reference: MH2

PLR:	RWG3X	**Upstream Node:**	RWG3
Inspection Direction:	Downstream	**Downstream Node:**	MH2
Inspected Length:	3.50 m	**Dia/Height:**	100 mm
Total Length:	3.50 m	**Material:**	Polyvinyl chloride

No.	m+	Code	Observation
1	0.00	GY	Start node, gully, reference: RWG3
2	0.00	WL	Water level, 0% of the vertical dimension
3	0.10	LR	Line deviates right
4	1.00	LL	Line deviates left
5	1.90	JN	Junction at 3 o'clock, 100mm dia
6	3.20	LR	Line deviates right
7	3.50	MHF	Finish node, manhole, reference: MH2

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Section Inspection - 09/07/2024 - FP1X

Item No.	Insp. No.	Date	Time	Client`s Job Ref	Weather	Pre Cleaned	PLR
1	1	09/07/24	10:16	Not Specified	Rain	No	FP1X

Operator	Vehicle	Camera	Preset Length	Legal Status	Alternative ID
ML	Not Specified	Not Specified	Not Specified	Private Drain	Not Specified

Town or Village:	Kew	**Inspection Direction:**	Upstream	**Upstream Node:**	FP1
Road:	Ennerdale Road	**Inspected Length:**	12.60 m	**Upstream Pipe Depth:**	
Location:	Other walkway	**Total Length:**	12.60 m	**Downstream Node:**	MH5
Surface Type:	Various	**Joint Length:**		**Downstream Pipe Depth:**	0.450 m

Use:	Foul	**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:	Routine inspection	**Lining Material:**	No Lining

Comments:
Recommendations:

Scale: 1:110

Position [m]	Code	Observation	MPEG	Photo	Grade
0.00	MH	Start node, manhole, reference: MH5	00:00:00		
0.00	WL	Water level, 0% of the vertical dimension	00:00:00	1	
1.25	LL	Line deviates left	00:00:13	2	
4.71	DEC	Settled deposits, hard or compacted, 10% cross-sectional area loss	00:00:33		3
4.80	JN	Junction at 9 o'clock, 100mm dia	00:00:30	3	
10.50	JN	Junction at 12 o'clock, 40mm dia	00:01:00	4	
10.90	LU	Line deviates up	00:01:15	5	
12.50	JN	Junction at 3 o'clock, 100mm dia	00:01:48	6	
12.60	MHF	Finish node, manhole, reference: FP1	00:01:48	7	

Construction Features					Miscellaneous Features				
Structural Defects					Service & Operational Observations				
STR No. Def	**STR Peak**	**STR Mean**	**STR Total**	**STR Grade**	**SER No. Def**	**SER Peak**	**SER Mean**	**SER Total**	**SER Grade**
0	0.0	0.0	0.0	1.0	1	2.0	0.2	2.0	3.0

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Section Pictures - 09/07/2024 - FP1X

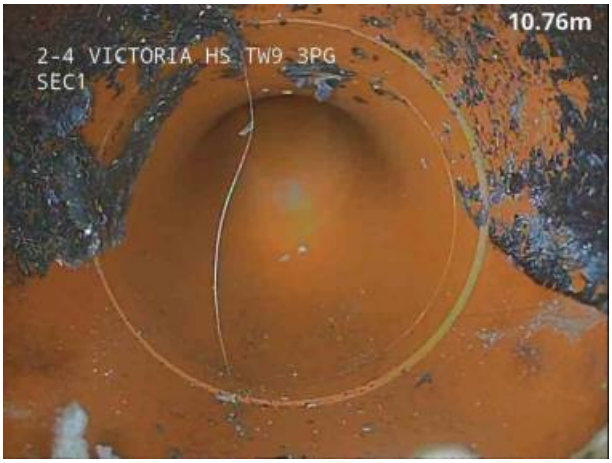
Item No.	Inspection Direction	PLR	Client`s Job Ref	Contractor`s Job Ref
1	Upstream	FP1X		

1, 00:00:00, 0.00 m
Water level, 0% of the vertical dimension

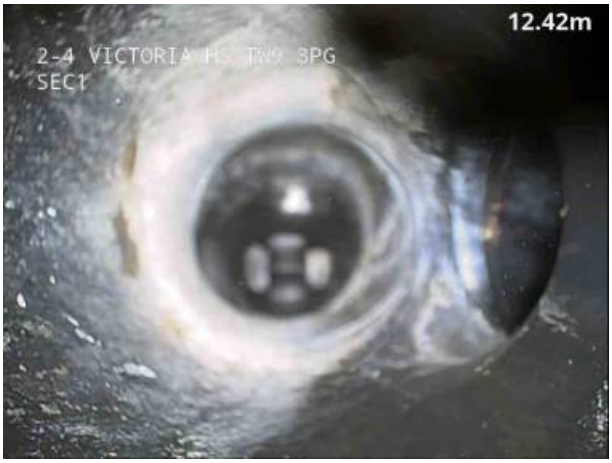
2, 00:00:13, 1.25 m
Line deviates left

3, 00:00:30, 4.80 m
Junction at 9 o'clock, 100mm dia

4, 00:01:00, 10.50 m
Junction at 12 o'clock, 40mm dia



5, 00:01:15, 10.90 m
Line deviates up



6, 00:01:48, 12.50 m
Junction at 3 o'clock, 100mm dia

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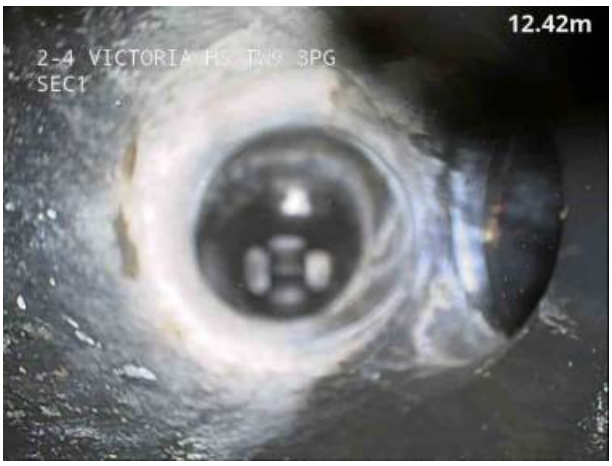
Section Pictures - 09/07/2024 - FP1X

Item No.	Inspection Direction	PLR	Client`s Job Ref	Contractor`s Job Ref
1	Upstream	FP1X		



7, 00:01:48, 12.60 m
Finish node, manhole, reference: FP1

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Section Inspection - 09/07/2024 - FP2X

Item No.	Insp. No.	Date	Time	Client`s Job Ref	Weather	Pre Cleaned	PLR
2	1	09/07/24	10:18	Not Specified	Rain	No	FP2X

Operator	Vehicle	Camera	Preset Length	Legal Status	Alternative ID
ML	Not Specified	Not Specified	Not Specified	Private Drain	Not Specified

Town or Village:	Kew	**Inspection Direction:**	Upstream	**Upstream Node:**	FP2
Road:	Ennerdale Road	**Inspected Length:**	9.20 m	**Upstream Pipe Depth:**	
Location:	Other walkway	**Total Length:**	9.20 m	**Downstream Node:**	MH5
Surface Type:	Various	**Joint Length:**		**Downstream Pipe Depth:**	0.450 m

Use:	Foul	**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:	Routine inspection	**Lining Material:**	No Lining

Comments:
Recommendations:

Scale: 1:80

Position [m]	Code	Observation	MPEG	Photo	Grade
Depth: 0.45 m **MH5**					
0.00	MH	Start node, manhole, reference: MH5	00:00:00		
0.00	WL	Water level, 0% of the vertical dimension		1	
0.30	LL	Line deviates left	00:00:00		
1.20	WL	Water level, 10% of the vertical dimension	00:00:13	2	
4.14	WL	Water level, 0% of the vertical dimension	00:00:27	3	
8.30	LU	Line deviates up	00:00:46	4	
8.95	JN	Junction at 3 o'clock, 100mm dia	00:00:58	5	
9.20	MHF	Finish node, manhole, reference: FP2	00:01:02	6	
FP2 **Depth: m**					

Construction Features					Miscellaneous Features				
Structural Defects					Service & Operational Observations				
STR No. Def	**STR Peak**	**STR Mean**	**STR Total**	**STR Grade**	**SER No. Def**	**SER Peak**	**SER Mean**	**SER Total**	**SER Grade**
0	0.0	0.0	0.0	1.0	0	0.0	0.0	0.0	1.0

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Section Pictures - 09/07/2024 - FP2X

Item No.	Inspection Direction	PLR	Client`s Job Ref	Contractor`s Job Ref
2	Upstream	FP2X		

1, 0.00 m
Water level, 0% of the vertical dimension

2, 00:00:13, 1.20 m
Water level, 10% of the vertical dimension

3, 00:00:27, 4.14 m
Water level, 0% of the vertical dimension

4, 00:00:46, 8.30 m
Line deviates up

5, 00:00:58, 8.95 m
Junction at 3 o'clock, 100mm dia

6, 00:01:02, 9.20 m
Finish node, manhole, reference: FP2

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Section Inspection - 09/07/2024 - FP3X

Item No.	Insp. No.	Date	Time	Client`s Job Ref	Weather	Pre Cleaned	PLR
3	1	09/07/24	10:21	Not Specified	Rain	No	FP3X

Operator	Vehicle	Camera	Preset Length	Legal Status	Alternative ID
ML	Not Specified	Not Specified	Not Specified	Private Drain	Not Specified

Town or Village:	Kew	**Inspection Direction:**	Upstream	**Upstream Node:**	FP3
Road:	Ennerdale Road	**Inspected Length:**	13.20 m	**Upstream Pipe Depth:**	
Location:	Other walkway	**Total Length:**	13.20 m	**Downstream Node:**	MH5
Surface Type:	Various	**Joint Length:**		**Downstream Pipe Depth:**	0.450 m

Use:	Foul	**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:	Routine inspection	**Lining Material:**	No Lining

Comments:
Recommendations:

Scale: 1:115

Position [m]	Code	Observation	MPEG	Photo	Grade
0.00	MH	Start node, manhole, reference: MH5	00:00:00		
0.00	WL	Water level, 0% of the vertical dimension	00:00:01	1	
0.30	LL	Line deviates left	00:00:07	2	
12.80	LU	Line deviates up	00:01:54	3	
13.20	MHF	Finish node, manhole, reference: FP3	00:02:03	4	

Construction Features					Miscellaneous Features				
Structural Defects					Service & Operational Observations				
STR No. Def	**STR Peak**	**STR Mean**	**STR Total**	**STR Grade**	**SER No. Def**	**SER Peak**	**SER Mean**	**SER Total**	**SER Grade**
0	0.0	0.0	0.0	1.0	0	0.0	0.0	0.0	1.0

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Section Pictures - 09/07/2024 - FP3X

Item No.	Inspection Direction	PLR	Client`s Job Ref	Contractor`s Job Ref
3	Upstream	FP3X		

1, 00:00:01, 0.00 m
Water level, 0% of the vertical dimension

2, 00:00:07, 0.30 m
Line deviates left

3, 00:01:54, 12.80 m
Line deviates up

4, 00:02:03, 13.20 m
Finish node, manhole, reference: FP3

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Section Inspection - 09/07/2024 - MH5X

Item No.	Insp. No.	Date	Time	Client`s Job Ref	Weather	Pre Cleaned	PLR
4	1	09/07/24	10:31	Not Specified	Rain	No	MH5X

Operator	Vehicle	Camera	Preset Length	Legal Status	Alternative ID
ML	Not Specified	Not Specified	Not Specified	Private Drain	Not Specified

Town or Village:	Kew	**Inspection Direction:**	Downstream	**Upstream Node:**	MH5
Road:	Ennerdale Road	**Inspected Length:**	12.85 m	**Upstream Pipe Depth:**	0.450 m
Location:	Other walkway	**Total Length:**	12.85 m	**Downstream Node:**	RE
Surface Type:	Various	**Joint Length:**		**Downstream Pipe Depth:**	

Use:	Foul	**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:	Routine inspection	**Lining Material:**	No Lining

Comments:
Recommendations:

Scale: 1:112

Position [m]		Code	Observation	MPEG	Photo	Grade
0.00		MH	Start node, manhole, reference: MH5	00:00:00	1	
0.00		WL	Water level, 0% of the vertical dimension	00:00:01	2	
0.10	S01	DES	Settled deposits, fine, 5% cross-sectional area loss, start	00:00:01	3	
1.42	F01	DES	Settled deposits, fine, 5% cross-sectional area loss, finish	00:00:13	4	3
12.70		LD	Line deviates down	00:00:59	5	
12.85		MHF	Finish node, manhole, reference: RE: Assumed into buried chamber, not located.	00:01:23	6	

Construction Features					Miscellaneous Features				
Structural Defects					Service & Operational Observations				
STR No. Def	**STR Peak**	**STR Mean**	**STR Total**	**STR Grade**	**SER No. Def**	**SER Peak**	**SER Mean**	**SER Total**	**SER Grade**
0	0.0	0.0	0.0	1.0	1	2.0	0.3	4.0	3.0

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Section Pictures - 09/07/2024 - MH5X

Item No.	Inspection Direction	PLR	Client`s Job Ref	Contractor`s Job Ref
4	Downstream	MH5X		

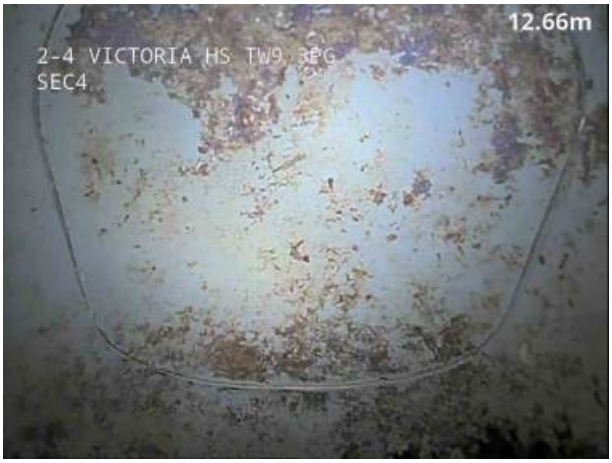
1, 00:00:00, 0.00 m
Start node, manhole, reference: MH5

2, 00:00:01, 0.00 m
Water level, 0% of the vertical dimension

3, 00:00:01, 0.10 m
Settled deposits, fine, 5% cross-sectional area loss, start

4, 00:00:13, 1.42 m
Settled deposits, fine, 5% cross-sectional area loss, finish

5, 00:00:59, 12.70 m
Line deviates down



6, 00:01:23, 12.85 m
Finish node, manhole, reference: RE, Assumed into buried chamber, not located.

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Section Inspection - 09/07/2024 - RWP14X

Item No.	Insp. No.	Date	Time	Client`s Job Ref	Weather	Pre Cleaned	PLR
5	1	09/07/24	11:09	Not Specified	Rain	No	RWP14X

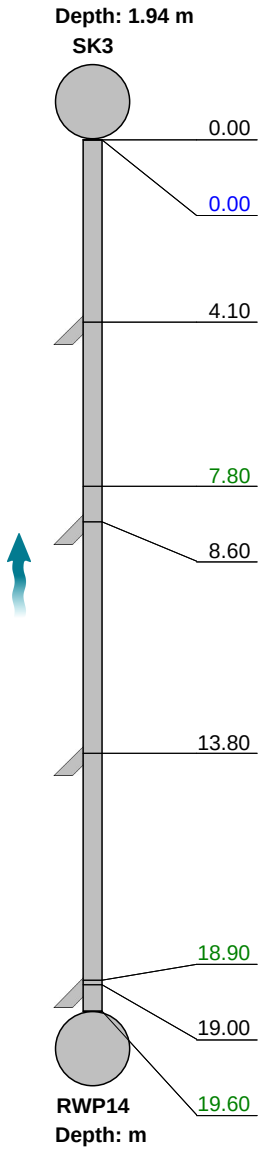
Operator	Vehicle	Camera	Preset Length	Legal Status	Alternative ID
ML	Not Specified	Not Specified	Not Specified	Private Drain	Not Specified

Town or Village:	Kew	**Inspection Direction:**	Upstream	**Upstream Node:**	RWP14
Road:	Ennerdale Road	**Inspected Length:**	19.60 m	**Upstream Pipe Depth:**	
Location:	Other walkway	**Total Length:**	19.60 m	**Downstream Node:**	SK3
Surface Type:	Various	**Joint Length:**		**Downstream Pipe Depth:**	1.940 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:	Routine inspection	**Lining Material:**	No Lining

Comments:
Recommendations:

Scale: 1:170



Position [m]	Code	Observation	MPEG	Photo	Grade
0.00	SK	Start node, soakaway, reference: SK3	00:00:00		
0.00	WL	Water level, 0% of the vertical dimension	00:00:59	1	
4.10	JN	Junction at 2 o'clock, 100mm dia	00:01:25	2	
7.80	LR	Line deviates right	00:01:45	3	
8.60	JN	Junction at 3 o'clock, 100mm dia	00:01:57	4	
13.80	JN	Junction at 3 o'clock, 100mm dia	00:02:21	5	
18.90	RM	Roots, mass, 15% cross-sectional area loss	00:02:54		
19.00	JN	Junction at 3 o'clock, 100mm dia	00:02:54	6	
19.60	LU	Line deviates up	00:03:14	7	

Construction Features					Miscellaneous Features				
Structural Defects					Service & Operational Observations				
STR No. Def	**STR Peak**	**STR Mean**	**STR Total**	**STR Grade**	**SER No. Def**	**SER Peak**	**SER Mean**	**SER Total**	**SER Grade**
0	0.0	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0

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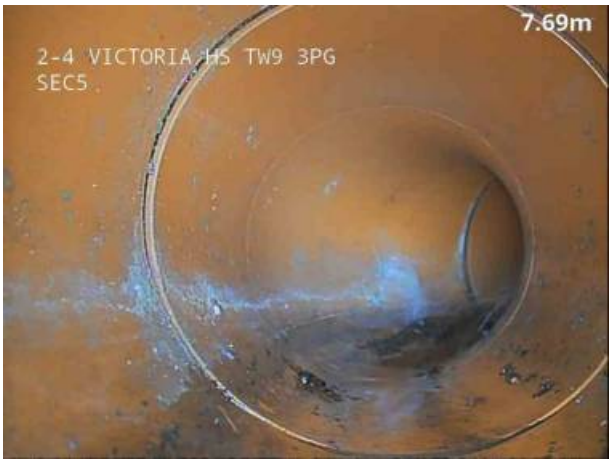
Section Pictures - 09/07/2024 - RWP14X

Item No.	Inspection Direction	PLR	Client`s Job Ref	Contractor`s Job Ref
5	Upstream	RWP14X		

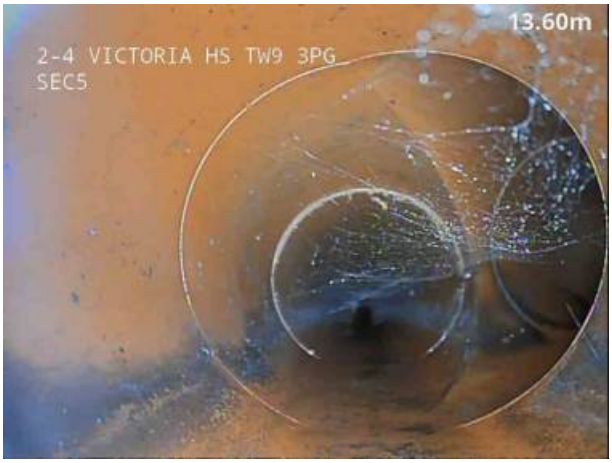
1, 00:00:59, 0.00 m
Water level, 0% of the vertical dimension

2, 00:01:25, 4.10 m
Junction at 2 o'clock, 100mm dia

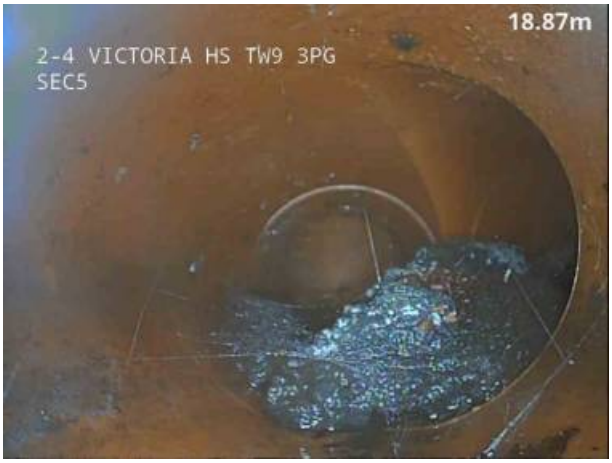


3, 00:01:45, 7.80 m
Line deviates right

4, 00:01:57, 8.60 m
Junction at 3 o'clock, 100mm dia



5, 00:02:21, 13.80 m
Junction at 3 o'clock, 100mm dia



6, 00:02:54, 19.00 m
Junction at 3 o'clock, 100mm dia

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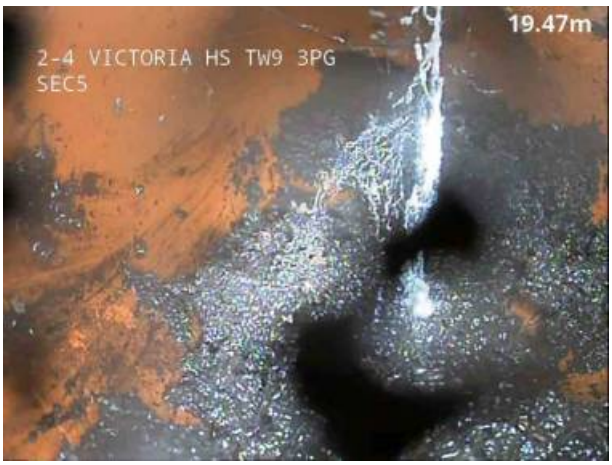
Section Pictures - 09/07/2024 - RWP14X

Item No.	Inspection Direction	PLR	Client`s Job Ref	Contractor`s Job Ref
5	Upstream	RWP14X		



7, 00:03:14, 19.60 m
Line deviates up

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Section Inspection - 09/07/2024 - RWP18X

Item No.	Insp. No.	Date	Time	Client`s Job Ref	Weather	Pre Cleaned	PLR
6	1	09/07/24	12:25	Not Specified	Rain	No	RWP18X

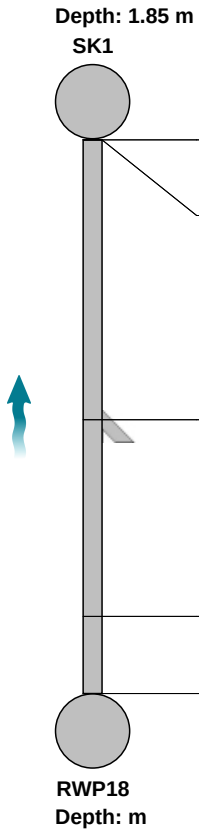
Operator	Vehicle	Camera	Preset Length	Legal Status	Alternative ID
ML	Not Specified	Not Specified	Not Specified	Private Drain	Not Specified

Town or Village:	Kew	**Inspection Direction:**	Upstream	**Upstream Node:**	RWP18
Road:	Ennerdale Road	**Inspected Length:**	3.66 m	**Upstream Pipe Depth:**	
Location:	Other walkway	**Total Length:**	3.66 m	**Downstream Node:**	SK1
Surface Type:	Various	**Joint Length:**		**Downstream Pipe Depth:**	1.850 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:	Routine inspection	**Lining Material:**	No Lining

Comments:
Recommendations:

Scale: 1:50



Position [m]	Code	Observation	MPEG	Photo	Grade
0.00	SK	Start node, soakaway, reference: SK1	00:00:00	1	
0.00	WL	Water level, 10% of the vertical dimension	00:00:02	2	
1.85	JN	Junction at 9 o'clock, 100mm dia	00:00:26	3	
3.15	LU	Line deviates up	00:00:42	4	
3.66	MHF	Finish node, manhole, reference: RWP18	00:00:58	5	

Construction Features					Miscellaneous Features				
Structural Defects					Service & Operational Observations				
STR No. Def	**STR Peak**	**STR Mean**	**STR Total**	**STR Grade**	**SER No. Def**	**SER Peak**	**SER Mean**	**SER Total**	**SER Grade**
0	0.0	0.0	0.0	1.0	0	0.0	0.0	0.0	1.0

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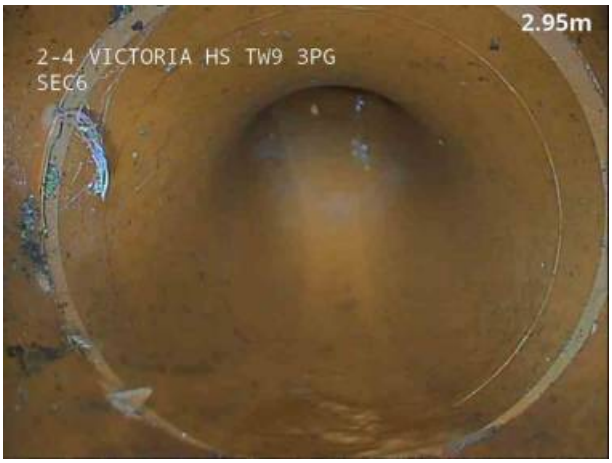
Section Pictures - 09/07/2024 - RWP18X

Item No.	Inspection Direction	PLR	Client`s Job Ref	Contractor`s Job Ref
6	Upstream	RWP18X		

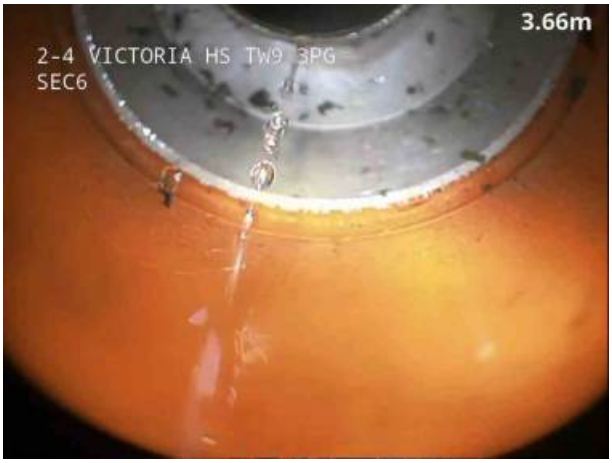
1, 00:00:00, 0.00 m
Start node, soakaway, reference: SK1

2, 00:00:02, 0.00 m
Water level, 10% of the vertical dimension

3, 00:00:26, 1.85 m
Junction at 9 o'clock, 100mm dia



4, 00:00:42, 3.15 m
Line deviates up



5, 00:00:58, 3.66 m
Finish node, manhole, reference: RWP18

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Section Inspection - 09/07/2024 - FP1X

Item No.	Insp. No.	Date	Time	Client`s Job Ref	Weather	Pre Cleaned	PLR
7	1	09/07/24	12:54	Not Specified	Rain	No	FP1X

Operator	Vehicle	Camera	Preset Length	Legal Status	Alternative ID
ML	Not Specified	Not Specified	Not Specified	Private Drain	Not Specified

Town or Village:	Kew	**Inspection Direction:**	Upstream	**Upstream Node:**	FP1
Road:	Ennerdale Road	**Inspected Length:**	12.80 m	**Upstream Pipe Depth:**	
Location:	Other walkway	**Total Length:**	12.80 m	**Downstream Node:**	MH4
Surface Type:	Various	**Joint Length:**		**Downstream Pipe Depth:**	0.700 m

Use:	Foul	**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:	Routine inspection	**Lining Material:**	No Lining

Comments:
Recommendations:

Scale: 1:111

Position [m]		Code	Observation	MPEG	Photo	Grade
0.00		MH	Start node, manhole, reference: MH4	00:00:00		
0.00		WL	Water level, 0% of the vertical dimension	00:00:01	1	
0.10	S01	DER	Settled deposits, coarse, 10% cross-sectional area loss, start	00:00:01	2	
0.15		LL	Line deviates left	00:00:14		
6.60		JN	Junction at 3 o'clock, 100mm dia	00:00:35	3	
12.10	F01	DER	Settled deposits, coarse, 10% cross-sectional area loss, finish	00:01:10	4	
12.20		LR	Line deviates right	00:00:56	5	
12.80		LU	Line deviates up	00:01:05	6	

Construction Features					Miscellaneous Features				
Structural Defects					Service & Operational Observations				
STR No. Def	**STR Peak**	**STR Mean**	**STR Total**	**STR Grade**	**SER No. Def**	**SER Peak**	**SER Mean**	**SER Total**	**SER Grade**
0	0.0	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0

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Section Pictures - 09/07/2024 - FP1X

Item No.	Inspection Direction	PLR	Client`s Job Ref	Contractor`s Job Ref
7	Upstream	FP1X		

1, 00:00:01, 0.00 m
Water level, 0% of the vertical dimension

2, 00:00:01, 0.10 m
Settled deposits, coarse, 10% cross-sectional area loss, start

3, 00:00:35, 6.60 m
Junction at 3 o'clock, 100mm dia

4, 00:01:10, 12.10 m
Settled deposits, coarse, 10% cross-sectional area loss, finish

5, 00:00:56, 12.20 m
Line deviates right

6, 00:01:05, 12.80 m
Line deviates up

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Section Inspection - 09/07/2024 - FP2X

Item No.	Insp. No.	Date	Time	Client`s Job Ref	Weather	Pre Cleaned	PLR
8	1	09/07/24	12:56	Not Specified	Rain	No	FP2X

Operator	Vehicle	Camera	Preset Length	Legal Status	Alternative ID
ML	Not Specified	Not Specified	Not Specified	Private Drain	Not Specified

Town or Village:	Kew	**Inspection Direction:**	Upstream	**Upstream Node:**	FP2
Road:	Ennerdale Road	**Inspected Length:**	1.65 m	**Upstream Pipe Depth:**	
Location:	Other walkway	**Total Length:**	1.65 m	**Downstream Node:**	MH4
Surface Type:	Various	**Joint Length:**		**Downstream Pipe Depth:**	0.700 m

Use:	Foul	**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:	Routine inspection	**Lining Material:**	No Lining

Comments:
Recommendations:

Scale: 1:50

Position [m]		Code	Observation	MPEG	Photo	Grade
0.00		MH	Start node, manhole, reference: MH4	00:00:00		
0.00		WL	Water level, 0% of the vertical dimension	00:00:00	1	
0.10	S01	DER	Settled deposits, coarse, 10% cross-sectional area loss, start	00:00:00	2	
1.00		LR	Line deviates right	00:00:50	3	
1.42	F01	DER	Settled deposits, coarse, 10% cross-sectional area loss, finish	00:00:55	4	3
1.60		LU	Line deviates up	00:00:55	5	
1.65		MHF	Finish node, manhole, reference: Fp2	00:01:00	6	

Construction Features					Miscellaneous Features				
Structural Defects					Service & Operational Observations				
STR No. Def	**STR Peak**	**STR Mean**	**STR Total**	**STR Grade**	**SER No. Def**	**SER Peak**	**SER Mean**	**SER Total**	**SER Grade**
0	0.0	0.0	0.0	1.0	1	2.0	2.4	4.0	3.0

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Section Pictures - 09/07/2024 - FP2X

Item No.	Inspection Direction	PLR	Client`s Job Ref	Contractor`s Job Ref
8	Upstream	FP2X		

1, 00:00:00, 0.00 m
Water level, 0% of the vertical dimension

2, 00:00:00, 0.10 m
Settled deposits, coarse, 10% cross-sectional area loss, start

3, 00:00:50, 1.00 m
Line deviates right

4, 00:00:55, 1.42 m
Settled deposits, coarse, 10% cross-sectional area loss, finish

5, 00:00:55, 1.60 m
Line deviates up

6, 00:01:00, 1.65 m
Finish node, manhole, reference: Fp2

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Section Inspection - 09/07/2024 - FP3X

Item No.	Insp. No.	Date	Time	Client`s Job Ref	Weather	Pre Cleaned	PLR
9	1	09/07/24	13:32	Not Specified	Rain	No	FP3X

Operator	Vehicle	Camera	Preset Length	Legal Status	Alternative ID
ML	Not Specified	Not Specified	Not Specified	Private Drain	Not Specified

Town or Village:	Kew	**Inspection Direction:**	Upstream	**Upstream Node:**	FP3
Road:	Ennerdale Road	**Inspected Length:**	3.90 m	**Upstream Pipe Depth:**	
Location:	Other walkway	**Total Length:**	3.90 m	**Downstream Node:**	MH4
Surface Type:	Various	**Joint Length:**		**Downstream Pipe Depth:**	0.700 m

Use:	Foul	**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:	Routine inspection	**Lining Material:**	No Lining

Comments:
Recommendations:

Scale: 1:50

Depth: 0.70 m

MH4

FP3

Depth: m

Position [m]		Code	Observation	MPEG	Photo	Grade
0.00		MH	Start node, manhole, reference: MH4	00:00:00		
0.00		WL	Water level, 0% of the vertical dimension	00:00:04	1	
0.10	S01	DER	Settled deposits, coarse, 10% cross-sectional area loss, start	00:00:04	2	
3.19	F01	DER	Settled deposits, coarse, 10% cross-sectional area loss, finish	00:00:34	3	3
3.30		LL	Line deviates left	00:00:27	4	
3.60		LU	Line deviates up	00:00:29	5	
3.90		MHF	Finish node, manhole, reference: Fp3	00:00:35	6	

Construction Features					Miscellaneous Features				
Structural Defects					Service & Operational Observations				
STR No. Def	**STR Peak**	**STR Mean**	**STR Total**	**STR Grade**	**SER No. Def**	**SER Peak**	**SER Mean**	**SER Total**	**SER Grade**
0	0.0	0.0	0.0	1.0	1	2.0	2.1	8.0	3.0

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Section Pictures - 09/07/2024 - FP3X

Item No.	Inspection Direction	PLR	Client`s Job Ref	Contractor`s Job Ref
9	Upstream	FP3X		

1, 00:00:04, 0.00 m
Water level, 0% of the vertical dimension

2, 00:00:04, 0.10 m
Settled deposits, coarse, 10% cross-sectional area loss, start

3, 00:00:34, 3.19 m
Settled deposits, coarse, 10% cross-sectional area loss, finish

4, 00:00:27, 3.30 m
Line deviates left

5, 00:00:29, 3.60 m
Line deviates up

6, 00:00:35, 3.90 m
Finish node, manhole, reference: Fp3

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Section Inspection - 09/07/2024 - MH4X

Item No.	Insp. No.	Date	Time	Client`s Job Ref	Weather	Pre Cleaned	PLR
10	1	09/07/24	13:34	Not Specified	Rain	No	MH4X

Operator	Vehicle	Camera	Preset Length	Legal Status	Alternative ID
ML	Not Specified	Not Specified	Not Specified	Private Drain	Not Specified

Town or Village:	Kew	**Inspection Direction:**	Downstream	**Upstream Node:**	MH4
Road:	Ennerdale Road	**Inspected Length:**	8.30 m	**Upstream Pipe Depth:**	0.700 m
Location:	Other walkway	**Total Length:**	8.30 m	**Downstream Node:**	MH3
Surface Type:	Various	**Joint Length:**		**Downstream Pipe Depth:**	

Use:	Foul	**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:	Routine inspection	**Lining Material:**	No Lining

Comments: Manhole 3 buried internally
Recommendations:

Scale: 1:72

Position [m]		Code	Observation	MPEG	Photo	Grade
0.00		MH	Start node, manhole, reference: MH4	00:00:00		
0.00		WL	Water level, 0% of the vertical dimension	00:00:01	1	
0.10	S01	DER	Settled deposits, coarse, 10% cross-sectional area loss, start	00:00:01	2	
6.39		WL	Water level, 10% of the vertical dimension	00:00:26	3	
7.70	F01	DER	Settled deposits, coarse, 10% cross-sectional area loss, finish	00:00:32	4	3
7.90		JN	Junction at 9 o'clock, 100mm dia	00:00:32	5	
7.90		JN	Junction at 3 o'clock, 100mm dia	00:00:32	6	
8.16	S02	DER	Settled deposits, coarse, 35% cross-sectional area loss, start	00:00:46	7	
8.30	F02	DER	Settled deposits, coarse, 35% cross-sectional area loss, finish	00:00:00	8	4
8.30		MHF	Finish node, manhole, reference: MH3	00:00:54	9	

Construction Features					Miscellaneous Features				
Structural Defects					Service & Operational Observations				
STR No. Def	**STR Peak**	**STR Mean**	**STR Total**	**STR Grade**	**SER No. Def**	**SER Peak**	**SER Mean**	**SER Total**	**SER Grade**
0	0.0	0.0	0.0	1.0	2	7.0	2.5	21.0	4.0

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Section Pictures - 09/07/2024 - MH4X

Item No.	Inspection Direction	PLR	Client`s Job Ref	Contractor`s Job Ref
10	Downstream	MH4X		

1, 00:00:01, 0.00 m
Water level, 0% of the vertical dimension

2, 00:00:01, 0.10 m
Settled deposits, coarse, 10% cross-sectional area loss, start

3, 00:00:26, 6.39 m
Water level, 10% of the vertical dimension

4, 00:00:32, 7.70 m
Settled deposits, coarse, 10% cross-sectional area loss, finish

5, 00:00:32, 7.90 m
Junction at 9 o'clock, 100mm dia

6, 00:00:32, 7.90 m
Junction at 3 o'clock, 100mm dia

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Section Pictures - 09/07/2024 - MH4X

Item No.	Inspection Direction	PLR	Client`s Job Ref	Contractor`s Job Ref
10	Downstream	MH4X		

7, 00:00:46, 8.16 m
Settled deposits, coarse, 35% cross-sectional area loss, start

8, 00:00:00, 8.30 m
Settled deposits, coarse, 35% cross-sectional area loss, finish

9, 00:00:54, 8.30 m
Finish node, manhole, reference: MH3

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Section Inspection - 09/07/2024 - MH3X

Item No.	Insp. No.	Date	Time	Client`s Job Ref	Weather	Pre Cleaned	PLR
11	1	09/07/24	13:39	Not Specified	Rain	No	MH3X

Operator	Vehicle	Camera	Preset Length	Legal Status	Alternative ID
ML	Not Specified	Not Specified	Not Specified	Private Drain	Not Specified

Town or Village:	Kew	**Inspection Direction:**	Downstream	**Upstream Node:**	MH3
Road:	Ennerdale Road	**Inspected Length:**	8.52 m	**Upstream Pipe Depth:**	
Location:	Other walkway	**Total Length:**	8.52 m	**Downstream Node:**	MH2
Surface Type:	Various	**Joint Length:**		**Downstream Pipe Depth:**	0.940 m

Use:	Foul	**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:	Routine inspection	**Lining Material:**	No Lining

Comments:
Recommendations:

Scale: 1:74

Position [m]		Code	Observation	MPEG	Photo	Grade
0.00		MH	Start node, manhole, reference: MH3	00:00:00		
0.00		WL	Water level, 0% of the vertical dimension	00:00:03	1	
0.10	S01	DER	Settled deposits, coarse, 10% cross-sectional area loss, start	00:00:03	2	
3.75		JN	Junction at 3 o'clock, 100mm dia	00:00:16	3	
5.09	F01	DER	Settled deposits, coarse, 10% cross-sectional area loss, finish	00:00:22	4	3
8.52		MHF	Finish node, manhole, reference: MH2	00:00:37	5	

Construction Features					Miscellaneous Features				
Structural Defects					Service & Operational Observations				
STR No. Def	**STR Peak**	**STR Mean**	**STR Total**	**STR Grade**	**SER No. Def**	**SER Peak**	**SER Mean**	**SER Total**	**SER Grade**
0	0.0	0.0	0.0	1.0	1	2.0	1.2	10.0	3.0

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Section Pictures - 09/07/2024 - MH3X

Item No.	Inspection Direction	PLR	Client`s Job Ref	Contractor`s Job Ref
11	Downstream	MH3X		

1, 00:00:03, 0.00 m
Water level, 0% of the vertical dimension

2, 00:00:03, 0.10 m
Settled deposits, coarse, 10% cross-sectional area loss, start

3, 00:00:16, 3.75 m
Junction at 3 o'clock, 100mm dia

4, 00:00:22, 5.09 m
Settled deposits, coarse, 10% cross-sectional area loss, finish

5, 00:00:37, 8.52 m
Finish node, manhole, reference: MH2

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Section Inspection - 09/07/2024 - RWP28X

Item No.	Insp. No.	Date	Time	Client`s Job Ref	Weather	Pre Cleaned	PLR
12	1	09/07/24	14:22	Not Specified	Rain	No	RWP28X

Operator	Vehicle	Camera	Preset Length	Legal Status	Alternative ID
ML	Not Specified	Not Specified	Not Specified	Private Drain	Not Specified

Town or Village:	Kew	**Inspection Direction:**	Upstream	**Upstream Node:**	RWP28
Road:	Ennerdale Road	**Inspected Length:**	7.33 m	**Upstream Pipe Depth:**	
Location:	Other walkway	**Total Length:**	7.33 m	**Downstream Node:**	SK2
Surface Type:	Various	**Joint Length:**		**Downstream Pipe Depth:**	0.600 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:	Routine inspection	**Lining Material:**	No Lining

Comments:
Recommendations:

Scale: 1:64

Position [m]	Code	Observation	MPEG	Photo	Grade
0.00	SK	Start node, soakaway, reference: Soakaway2	00:00:00		
0.00	WL	Water level, 0% of the vertical dimension	00:00:02	1	
3.07	WL	Water level, 10% of the vertical dimension	00:00:20	2	
6.80	WL	Water level, 20% of the vertical dimension	00:00:42	3	
7.20	LU	Line deviates up	00:00:44	4	
7.33	MHF	Finish node, manhole, reference: RWP28	00:01:00	5	

Construction Features					Miscellaneous Features				
Structural Defects					Service & Operational Observations				
STR No. Def	**STR Peak**	**STR Mean**	**STR Total**	**STR Grade**	**SER No. Def**	**SER Peak**	**SER Mean**	**SER Total**	**SER Grade**
0	0.0	0.0	0.0	1.0	0	0.0	0.0	0.0	1.0

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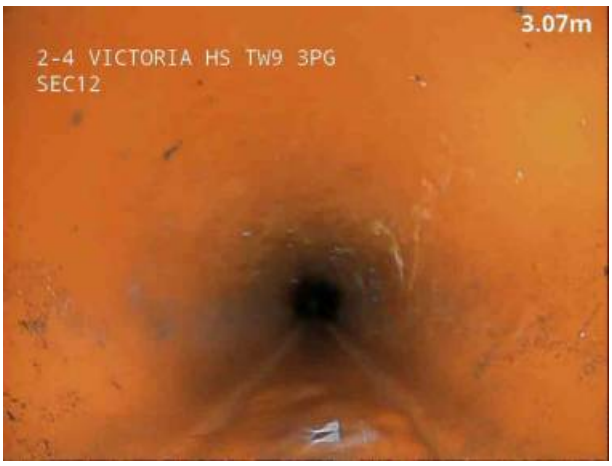
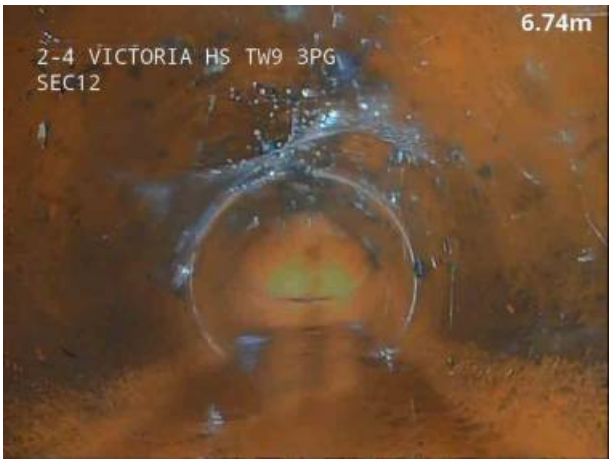
Section Pictures - 09/07/2024 - RWP28X

Item No.	Inspection Direction	PLR	Client`s Job Ref	Contractor`s Job Ref
12	Upstream	RWP28X		

1, 00:00:02, 0.00 m
Water level, 0% of the vertical dimension



2, 00:00:20, 3.07 m
Water level, 10% of the vertical dimension



3, 00:00:42, 6.80 m
Water level, 20% of the vertical dimension

4, 00:00:44, 7.20 m
Line deviates up

5, 00:01:00, 7.33 m
Finish node, manhole, reference: RWP28

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Section Inspection - 09/07/2024 - GY1X

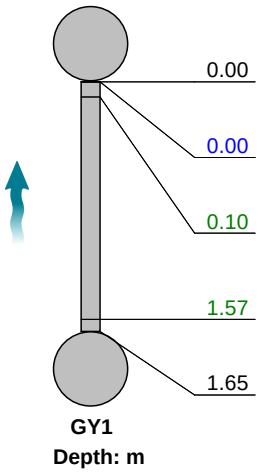
Item No.	Insp. No.	Date	Time	Client`s Job Ref	Weather	Pre Cleaned	PLR
13	1	09/07/24	14:22	Not Specified	Rain	No	GY1X

Operator	Vehicle	Camera	Preset Length	Legal Status	Alternative ID
ML	Not Specified	Not Specified	Not Specified	Private Drain	Not Specified

Town or Village:	Kew	**Inspection Direction:**	Upstream	**Upstream Node:**	GY1
Road:	Ennerdale Road	**Inspected Length:**	1.65 m	**Upstream Pipe Depth:**	
Location:	Other walkway	**Total Length:**	1.65 m	**Downstream Node:**	MH6
Surface Type:	Various	**Joint Length:**		**Downstream Pipe Depth:**	

Use:	Foul	**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:	Routine inspection	**Lining Material:**	No Lining

Comments:
Recommendations:



Scale: 1:50 Position [m]	Code	Observation	MPEG	Photo	Grade
0.00	MH	Start node, manhole, reference: MH6	00:09:41		
0.00	WL	Water level, 0% of the vertical dimension	00:09:43	1	
0.10	LR	Line deviates right	00:09:26	2	
1.57	LL	Line deviates left	00:09:52	3	
1.65	GYF	Finish node, gully, reference: GY1	00:00:00	4	

Construction Features					Miscellaneous Features				
Structural Defects					Service & Operational Observations				
STR No. Def	**STR Peak**	**STR Mean**	**STR Total**	**STR Grade**	**SER No. Def**	**SER Peak**	**SER Mean**	**SER Total**	**SER Grade**
0	0.0	0.0	0.0	1.0	0	0.0	0.0	0.0	1.0

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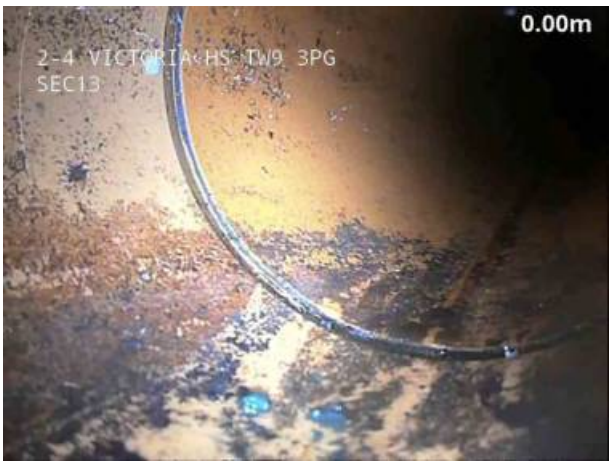
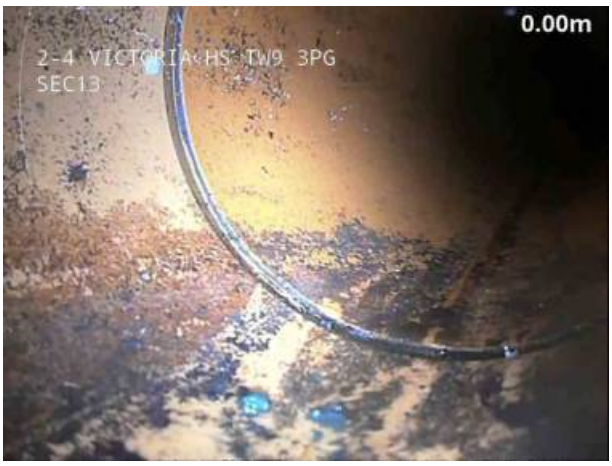
Section Pictures - 09/07/2024 - GY1X

Item No.	Inspection Direction	PLR	Client`s Job Ref	Contractor`s Job Ref
13	Upstream	GY1X		



1, 00:09:43, 0.00 m
Water level, 0% of the vertical dimension



2, 00:09:26, 0.10 m
Line deviates right

3, 00:09:52, 1.57 m
Line deviates left

4, 00:00:00, 1.65 m
Finish node, gully, reference: GY1

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Section Inspection - 09/07/2024 - FP1X

Item No.	Insp. No.	Date	Time	Client`s Job Ref	Weather	Pre Cleaned	PLR
14	1	09/07/24	14:24	Not Specified	Rain	No	FP1X

Operator	Vehicle	Camera	Preset Length	Legal Status	Alternative ID
ML	Not Specified	Not Specified	Not Specified	Private Drain	Not Specified

Town or Village:	Kew	**Inspection Direction:**	Upstream	**Upstream Node:**	FP1
Road:	Ennerdale Road	**Inspected Length:**	3.31 m	**Upstream Pipe Depth:**	
Location:	Other walkway	**Total Length:**	3.31 m	**Downstream Node:**	MH6
Surface Type:	Various	**Joint Length:**		**Downstream Pipe Depth:**	0.900 m

Use:	Foul	**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:	Routine inspection	**Lining Material:**	No Lining

Comments:
Recommendations:

Scale: 1:50

Position [m]		Code	Observation	MPEG	Photo	Grade
0.00		MH	Start node, manhole, reference: MH6	00:00:00		
0.00		WL	Water level, 0% of the vertical dimension	00:00:02	1	
0.30		OJM	Open joint, medium	00:00:04	2	1
2.48	S01	DER	Settled deposits, coarse, 15% cross-sectional area loss, start	00:00:17	3	
2.84	C01	DER	Settled deposits, coarse, 20% cross-sectional area loss, change	00:00:19	4	
3.20	F01	DER	Settled deposits, coarse, 20% cross-sectional area loss, finish	00:00:28	5	3
3.25		LU	Line deviates up	00:00:28	6	
3.31		MHF	Finish node, manhole, reference: FP1	00:00:23	7	

Construction Features					Miscellaneous Features				
Structural Defects					Service & Operational Observations				
STR No. Def	**STR Peak**	**STR Mean**	**STR Total**	**STR Grade**	**SER No. Def**	**SER Peak**	**SER Mean**	**SER Total**	**SER Grade**
1	1.0	0.3	1.0	1.0	1	2.0	0.6	2.0	3.0

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Section Pictures - 09/07/2024 - FP1X

Item No.	Inspection Direction	PLR	Client`s Job Ref	Contractor`s Job Ref
14	Upstream	FP1X		

1, 00:00:02, 0.00 m
Water level, 0% of the vertical dimension

2, 00:00:04, 0.30 m
Open joint, medium

3, 00:00:17, 2.48 m
Settled deposits, coarse, 15% cross-sectional area loss, start

4, 00:00:19, 2.84 m
Settled deposits, coarse, 20% cross-sectional area loss, change

5, 00:00:28, 3.20 m
Settled deposits, coarse, 20% cross-sectional area loss, finish

6, 00:00:28, 3.25 m
Line deviates up

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Section Pictures - 09/07/2024 - FP1X

Item No.	Inspection Direction	PLR	Client`s Job Ref	Contractor`s Job Ref
14	Upstream	FP1X		

7, 00:00:23, 3.31 m
Finish node, manhole, reference: FP1

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Section Inspection - 09/07/2024 - MH6X

Item No.	Insp. No.	Date	Time	Client`s Job Ref	Weather	Pre Cleaned	PLR
15	1	09/07/24	14:49	Not Specified	Rain	No	MH6X

Operator	Vehicle	Camera	Preset Length	Legal Status	Alternative ID
ML	Not Specified	Not Specified	Not Specified	Private Drain	Not Specified

Town or Village:	Kew	**Inspection Direction:**	Downstream	**Upstream Node:**	MH6
Road:	Ennerdale Road	**Inspected Length:**	20.20 m	**Upstream Pipe Depth:**	0.900 m
Location:	Other walkway	**Total Length:**	20.20 m	**Downstream Node:**	MH2
Surface Type:	Various	**Joint Length:**		**Downstream Pipe Depth:**	0.940 m

Use:	Foul	**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:	Routine inspection	**Lining Material:**	No Lining

Comments:
Recommendations:

Scale: 1:144

Depth: 0.90 m
MH6

Position [m]		Code	Observation	MPEG	Photo	Grade
0.00		MH	Start node, manhole, reference: MH6	00:00:00		
0.00		WL	Water level, 0% of the vertical dimension	00:00:02	1	
3.87		JN	Junction at 9 o'clock, 100mm dia	00:00:25	2	
5.20		LL	Line deviates left	00:00:34	3	
7.15		DER	Settled deposits, coarse, 5% cross-sectional area loss	00:00:49	4	3
7.20		JN	Junction at 9 o'clock, 100mm dia	00:00:49	5	
9.60		JN	Junction at 11 o'clock, 100mm dia	00:01:14	6	
12.18		WL	Water level, 25% of the vertical dimension	00:01:39	7	
12.18	S01	DES	Settled deposits, fine, 25% cross-sectional area loss, start	00:01:39		
12.54	C01	DES	Settled deposits, fine, 35% cross-sectional area loss, change	00:01:48	8	
12.86		JN	Junction at 9 o'clock, 100mm dia	00:01:50	9	
13.72	F01	DES	Settled deposits, fine, 35% cross-sectional area loss, finish	00:01:57	10	4
14.51		JN	Junction at 9 o'clock, 100mm dia	00:02:08	11	
15.81		JN	Junction at 10 o'clock, 100mm dia	00:02:20	12	
16.22		WL	Water level, 30% of the vertical dimension	00:02:29	13	

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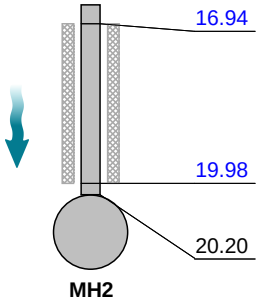
Section Inspection - 09/07/2024 - MH6X

Item No.	Insp. No.	Date	Time	Client`s Job Ref	Weather	Pre Cleaned	PLR
15	1	09/07/24	14:49	Not Specified	Rain	No	MH6X

Operator	Vehicle	Camera	Preset Length	Legal Status	Alternative ID
ML	Not Specified	Not Specified	Not Specified	Private Drain	Not Specified

Scale: 1:144



Position [m]		Code	Observation	MPEG	Photo	Grade
16.94	S02	CUW	Loss of vision, camera under water, start	00:02:32	14	
19.98	F02	CUW	Loss of vision, camera under water, finish	00:03:04	15	
20.20		MHF	Finish node, manhole, reference: MH2	00:03:01	16	

Construction Features					Miscellaneous Features				
Structural Defects					Service & Operational Observations				
STR No. Def	STR Peak	STR Mean	STR Total	STR Grade	SER No. Def	SER Peak	SER Mean	SER Total	SER Grade
0	0.0	0.0	0.0	1.0	2	5.0	0.6	12.0	4.0

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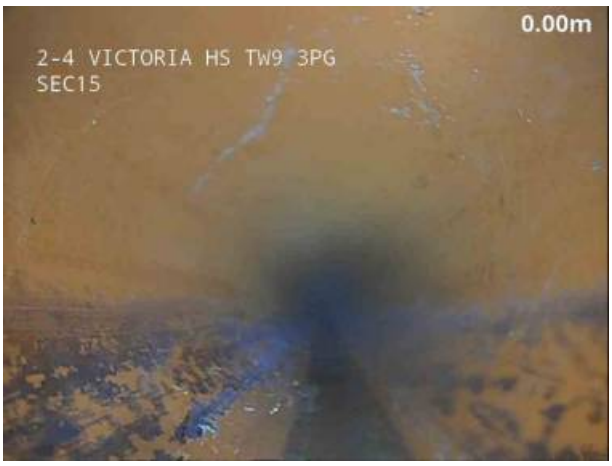
Section Pictures - 09/07/2024 - MH6X

Item No.	Inspection Direction	PLR	Client`s Job Ref	Contractor`s Job Ref
15	Downstream	MH6X		



1, 00:00:02, 0.00 m
Water level, 0% of the vertical dimension

2, 00:00:25, 3.87 m
Junction at 9 o'clock, 100mm dia

3, 00:00:34, 5.20 m
Line deviates left

4, 00:00:49, 7.15 m
Settled deposits, coarse, 5% cross-sectional area loss

5, 00:00:49, 7.20 m
Junction at 9 o'clock, 100mm dia

6, 00:01:14, 9.60 m
Junction at 11 o'clock, 100mm dia

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Section Pictures - 09/07/2024 - MH6X

Item No.	Inspection Direction	PLR	Client`s Job Ref	Contractor`s Job Ref
15	Downstream	MH6X		

7, 00:01:39, 12.18 m
Water level, 25% of the vertical dimension

8, 00:01:48, 12.54 m
Settled deposits, fine, 35% cross-sectional area loss, change

9, 00:01:50, 12.86 m
Junction at 9 o'clock, 100mm dia

10, 00:01:57, 13.72 m
Settled deposits, fine, 35% cross-sectional area loss, finish

11, 00:02:08, 14.51 m
Junction at 9 o'clock, 100mm dia

12, 00:02:20, 15.81 m
Junction at 10 o'clock, 100mm dia

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Section Pictures - 09/07/2024 - MH6X

Item No.	Inspection Direction	PLR	Client`s Job Ref	Contractor`s Job Ref
15	Downstream	MH6X		

13, 00:02:29, 16.22 m
Water level, 30% of the vertical dimension

14, 00:02:32, 16.94 m
Loss of vision, camera under water, start

15, 00:03:04, 19.98 m
Loss of vision, camera under water, finish

16, 00:03:01, 20.20 m
Finish node, manhole, reference: MH2

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Section Inspection - 09/07/2024 - FP1X

Item No.	Insp. No.	Date	Time	Client`s Job Ref	Weather	Pre Cleaned	PLR
16	1	09/07/24	14:49	Not Specified	Rain	No	FP1X

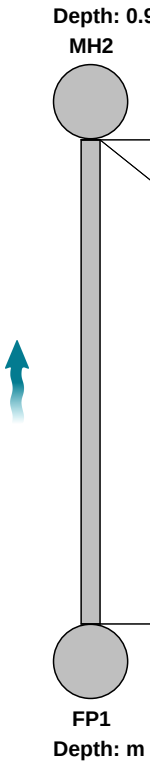
Operator	Vehicle	Camera	Preset Length	Legal Status	Alternative ID
ML	Not Specified	Not Specified	Not Specified	Private Drain	Not Specified

Town or Village:	Kew	**Inspection Direction:**	Upstream	**Upstream Node:**	FP1
Road:	Ennerdale Road	**Inspected Length:**	3.20 m	**Upstream Pipe Depth:**	
Location:	Other walkway	**Total Length:**	3.20 m	**Downstream Node:**	MH2
Surface Type:	Various	**Joint Length:**		**Downstream Pipe Depth:**	0.940 m

Use:	Foul	**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:	Routine inspection	**Lining Material:**	No Lining

Comments:
Recommendations:

Scale: 1:50



Position [m]	Code	Observation	MPEG	Photo	Grade
0.00	MH	Start node, manhole, reference: MH2	00:00:00		
0.00	WL	Water level, 0% of the vertical dimension	00:22:56	1	
3.20	LU	Line deviates up	00:23:15	2	

Construction Features					Miscellaneous Features				
Structural Defects					Service & Operational Observations				
STR No. Def	**STR Peak**	**STR Mean**	**STR Total**	**STR Grade**	**SER No. Def**	**SER Peak**	**SER Mean**	**SER Total**	**SER Grade**
0	0.0	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0

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Section Pictures - 09/07/2024 - FP1X

Item No.	Inspection Direction	PLR	Client`s Job Ref	Contractor`s Job Ref
16	Upstream	FP1X		

1, 00:22:56, 0.00 m
Water level, 0% of the vertical dimension

2, 00:23:15, 3.20 m
Line deviates up

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Section Inspection - 09/07/2024 - RWG3X

Item No.	Insp. No.	Date	Time	Client`s Job Ref	Weather	Pre Cleaned	PLR
17	1	09/07/24	14:51	Not Specified	Rain	No	RWG3X

Operator	Vehicle	Camera	Preset Length	Legal Status	Alternative ID
ML	Not Specified	Not Specified	Not Specified	Private Drain	Not Specified

Town or Village:	Kew	**Inspection Direction:**	Upstream	**Upstream Node:**	RWG3
Road:	Ennerdale Road	**Inspected Length:**	8.15 m	**Upstream Pipe Depth:**	
Location:	Other walkway	**Total Length:**	8.15 m	**Downstream Node:**	MH2
Surface Type:	Various	**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:	Routine inspection	**Lining Material:**	No Lining

Comments:
Recommendations:

Scale: 1:71	Position [m]		Code	Observation	MPEG	Photo	Grade
	0.00		MH	Start node, manhole, reference: MH2	00:00:00		
	0.00		WL	Water level, 0% of the vertical dimension	00:00:01	1	
	4.20		JN	Junction at 9 o'clock, 100mm dia: Serving Rwg2	00:00:23	2	
	5.32	S01	DES	Settled deposits, fine, 10% cross-sectional area loss, start	00:00:33	3	
	6.63	F01	DES	Settled deposits, fine, 10% cross-sectional area loss, finish	00:00:38	4	3
	8.05		DES	Settled deposits, fine, 60% cross-sectional area loss	00:00:50	5	4
	8.15		MHF	Finish node, manhole, reference: RWG3	00:00:50	6	

Construction Features					Miscellaneous Features				
Structural Defects					Service & Operational Observations				
STR No. Def	**STR Peak**	**STR Mean**	**STR Total**	**STR Grade**	**SER No. Def**	**SER Peak**	**SER Mean**	**SER Total**	**SER Grade**
0	0.0	0.0	0.0	1.0	2	8.0	1.5	12.0	4.0

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Section Pictures - 09/07/2024 - RWG3X

Item No.	Inspection Direction	PLR	Client`s Job Ref	Contractor`s Job Ref
17	Upstream	RWG3X		

1, 00:00:01, 0.00 m
Water level, 0% of the vertical dimension

2, 00:00:23, 4.20 m
Junction at 9 o'clock, 100mm dia, Serving Rwg2

3, 00:00:33, 5.32 m
Settled deposits, fine, 10% cross-sectional area loss, start

4, 00:00:38, 6.63 m
Settled deposits, fine, 10% cross-sectional area loss, finish

5, 00:00:50, 8.05 m
Settled deposits, fine, 60% cross-sectional area loss

6, 00:00:50, 8.15 m
Finish node, manhole, reference: RWG3

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Section Inspection - 09/07/2024 - AX

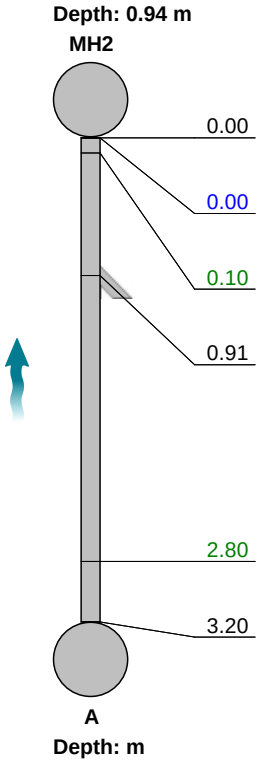
Item No.	Insp. No.	Date	Time	Client`s Job Ref	Weather	Pre Cleaned	PLR
18	1	09/07/24	14:52	Not Specified	Rain	No	AX

Operator	Vehicle	Camera	Preset Length	Legal Status	Alternative ID
ML	Not Specified	Not Specified	Not Specified	Private Drain	Not Specified

Town or Village:	Kew	**Inspection Direction:**	Upstream	**Upstream Node:**	A
Road:	Ennerdale Road	**Inspected Length:**	3.20 m	**Upstream Pipe Depth:**	
Location:	Other walkway	**Total Length:**	3.20 m	**Downstream Node:**	MH2
Surface Type:	Various	**Joint Length:**		**Downstream Pipe Depth:**	0.940 m

Use:	Foul	**Pipe Shape:**	Circular
Type of Pipe:	Gravity drain/sewer	**Dia/Height:**	100 mm
Flow Control:	No flow control	**Material:**	Vitrified clay
Year Constructed:	Not Specified	**Lining Type:**	No Lining
Inspection Purpose:	Routine inspection	**Lining Material:**	No Lining

Comments:
Recommendations:



Scale: 1:50 Position [m]	Code	Observation	MPEG	Photo	Grade
0.00	MH	Start node, manhole, reference: MH2	00:00:00		
0.00	WL	Water level, 0% of the vertical dimension	00:00:20	1	
0.10	LL	Line deviates left	00:00:11	2	
0.91	JN	Junction at 9 o'clock, 100mm dia	00:00:27	3	
2.80	LU	Line deviates up	00:00:45	4	
3.20	MHF	Finish node, manhole, reference: A	00:00:52	5	

Construction Features					Miscellaneous Features				
Structural Defects					Service & Operational Observations				
STR No. Def	**STR Peak**	**STR Mean**	**STR Total**	**STR Grade**	**SER No. Def**	**SER Peak**	**SER Mean**	**SER Total**	**SER Grade**
0	0.0	0.0	0.0	1.0	0	0.0	0.0	0.0	1.0

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Section Pictures - 09/07/2024 - AX

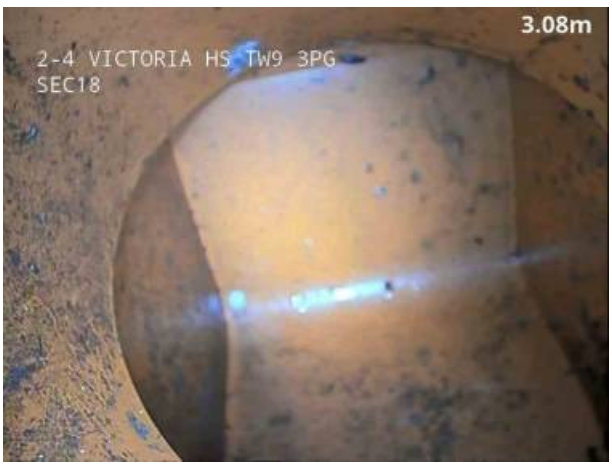
Item No.	Inspection Direction	PLR	Client`s Job Ref	Contractor`s Job Ref
18	Upstream	AX		

1, 00:00:20, 0.00 m
Water level, 0% of the vertical dimension

2, 00:00:11, 0.10 m
Line deviates left

3, 00:00:27, 0.91 m
Junction at 9 o'clock, 100mm dia

4, 00:00:45, 2.80 m
Line deviates up



5, 00:00:52, 3.20 m
Finish node, manhole, reference: A

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Section Inspection - 09/07/2024 - MH2X

Item No.	Insp. No.	Date	Time	Client`s Job Ref	Weather	Pre Cleaned	PLR
19	1	09/07/24	14:55	Not Specified	Rain	No	MH2X

Operator	Vehicle	Camera	Preset Length	Legal Status	Alternative ID
ML	Not Specified	Not Specified	Not Specified	Private Drain	Not Specified

Town or Village:	Kew	**Inspection Direction:**	Downstream	**Upstream Node:**	MH2
Road:	Ennerdale Road	**Inspected Length:**	5.50 m	**Upstream Pipe Depth:**	0.940 m
Location:	Other walkway	**Total Length:**	5.50 m	**Downstream Node:**	MH1
Surface Type:	Various	**Joint Length:**		**Downstream Pipe Depth:**	2.010 m

Use:	Foul	**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:	Routine inspection	**Lining Material:**	No Lining

Comments:
Recommendations:

Scale: 1:50

Position [m]	Code	Observation	MPEG	Photo	Grade
0.00	MH	Start node, manhole, reference: MH2	00:00:00		
0.00	WL	Water level, 0% of the vertical dimension	00:00:00	1	
0.55	LL	Line deviates left	00:00:11	2	
5.40	LD	Line deviates down	00:00:43	3	
5.50	MHF	Finish node, manhole, reference: MH1	00:00:35	4	

Construction Features					Miscellaneous Features				
Structural Defects					Service & Operational Observations				
STR No. Def	**STR Peak**	**STR Mean**	**STR Total**	**STR Grade**	**SER No. Def**	**SER Peak**	**SER Mean**	**SER Total**	**SER Grade**
0	0.0	0.0	0.0	1.0	0	0.0	0.0	0.0	1.0

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Section Pictures - 09/07/2024 - MH2X

Item No.	Inspection Direction	PLR	Client`s Job Ref	Contractor`s Job Ref
19	Downstream	MH2X		

1, 00:00:00, 0.00 m
Water level, 0% of the vertical dimension

2, 00:00:11, 0.55 m
Line deviates left

3, 00:00:43, 5.40 m
Line deviates down

4, 00:00:35, 5.50 m
Finish node, manhole, reference: MH1

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Section Inspection - 10/07/2024 - MH2X

Item No.	Insp. No.	Date	Time	Client`s Job Ref	Weather	Pre Cleaned	PLR
20	1	10/07/24	10:01	Not Specified	Rain	No	MH2X

Operator	Vehicle	Camera	Preset Length	Legal Status	Alternative ID
ML	Not Specified	Not Specified	Not Specified	Private Drain	Not Specified

Town or Village:	Kew	**Inspection Direction:**	Upstream	**Upstream Node:**	MH2
Road:	Ennerdale Road	**Inspected Length:**	6.15 m	**Upstream Pipe Depth:**	0.940 m
Location:	Other walkway	**Total Length:**	6.15 m	**Downstream Node:**	MH1
Surface Type:	Various	**Joint Length:**		**Downstream Pipe Depth:**	2.010 m

Use:	Foul	**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:	Routine inspection	**Lining Material:**	No Lining

Comments:
Recommendations:

Scale: 1:54

Position [m]	Code	Observation	MPEG	Photo	Grade
0.00	RE	Start node, rodding eye, reference: MH1	00:00:00		
0.00	WL	Water level, 0% of the vertical dimension		1	
0.45	LD	Line deviates down: Backdrop	00:00:05	2	
5.75	LR	Line deviates right	00:00:49	3	
6.15	MHF	Finish node, manhole, reference: MH2	00:01:02	4	

Construction Features					Miscellaneous Features				
Structural Defects					Service & Operational Observations				
STR No. Def	**STR Peak**	**STR Mean**	**STR Total**	**STR Grade**	**SER No. Def**	**SER Peak**	**SER Mean**	**SER Total**	**SER Grade**
0	0.0	0.0	0.0	1.0	0	0.0	0.0	0.0	1.0

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Section Pictures - 10/07/2024 - MH2X

Item No.	Inspection Direction	PLR	Client`s Job Ref	Contractor`s Job Ref
20	Upstream	MH2X		

1, 0.00 m
Water level, 0% of the vertical dimension

2, 00:00:05, 0.45 m
Line deviates down, Backdrop

3, 00:00:49, 5.75 m
Line deviates right

4, 00:01:02, 6.15 m
Finish node, manhole, reference: MH2

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Section Inspection - 10/07/2024 - SVPX

Item No.	Insp. No.	Date	Time	Client`s Job Ref	Weather	Pre Cleaned	PLR
21	1	10/07/24	10:12	Not Specified	Rain	No	SVPX

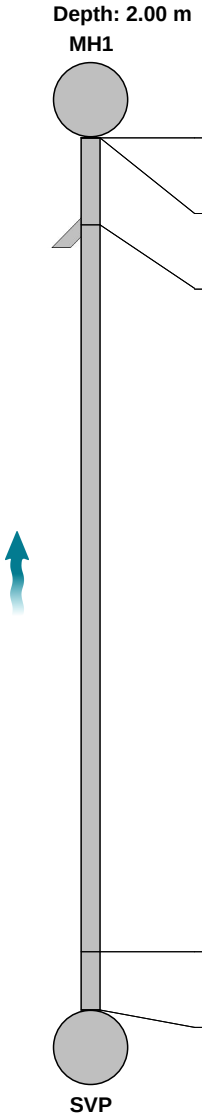
Operator	Vehicle	Camera	Preset Length	Legal Status	Alternative ID
ML	Not Specified	Not Specified	Not Specified	Private Drain	Not Specified

Town or Village:	Kew	**Inspection Direction:**	Upstream	**Upstream Node:**	SVP
Road:	Ennerdale Road	**Inspected Length:**	6.00 m	**Upstream Pipe Depth:**	
Location:	Other walkway	**Total Length:**	6.00 m	**Downstream Node:**	MH1
Surface Type:	Various	**Joint Length:**		**Downstream Pipe Depth:**	2.000 m

Use:	Foul	**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:	Routine inspection	**Lining Material:**	No Lining

Comments:
Recommendations:

Scale: 1:52



Position [m]	Code	Observation	MPEG	Photo	Grade
0.00	MH	Start node, manhole, reference: MH1: Through tumbler rodding eye	00:00:00		
0.00	WL	Water level, 0% of the vertical dimension	00:00:13	1	
0.60	JN	Junction at 3 o'clock, 100mm dia	00:00:28	2	
5.60	LU	Line deviates up	00:01:12	3	
6.00	MHF	Finish node, manhole, reference: SVP	00:01:28	4	

Construction Features					Miscellaneous Features				
Structural Defects					Service & Operational Observations				
STR No. Def	**STR Peak**	**STR Mean**	**STR Total**	**STR Grade**	**SER No. Def**	**SER Peak**	**SER Mean**	**SER Total**	**SER Grade**
0	0.0	0.0	0.0	1.0	0	0.0	0.0	0.0	1.0

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Section Pictures - 10/07/2024 - SVPX

Item No.	Inspection Direction	PLR	Client`s Job Ref	Contractor`s Job Ref
21	Upstream	SVPX		

1, 00:00:13, 0.00 m
Water level, 0% of the vertical dimension

2, 00:00:28, 0.60 m
Junction at 3 o'clock, 100mm dia

3, 00:01:12, 5.60 m
Line deviates up

4, 00:01:28, 6.00 m
Finish node, manhole, reference: SVP

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Section Inspection - 10/07/2024 - MH1X

Item No.	Insp. No.	Date	Time	Client`s Job Ref	Weather	Pre Cleaned	PLR
22	1	10/07/24	10:23	Not Specified	Rain	No	MH1X

Operator	Vehicle	Camera	Preset Length	Legal Status	Alternative ID
ML	Not Specified	Not Specified	Not Specified	Private Drain	Not Specified

Town or Village:	Kew	**Inspection Direction:**	Downstream	**Upstream Node:**	MH1
Road:	Ennerdale Road	**Inspected Length:**	9.90 m	**Upstream Pipe Depth:**	2.000 m
Location:	Other walkway	**Total Length:**	9.90 m	**Downstream Node:**	SEWER
Surface Type:	Various	**Joint Length:**		**Downstream Pipe Depth:**	

Use:	Foul	**Pipe Shape:**	Circular
Type of Pipe:	Gravity drain/sewer	**Dia/Height:**	150 mm
Flow Control:	No flow control	**Material:**	Vitrified clay
Year Constructed:	Not Specified	**Lining Type:**	No Lining
Inspection Purpose:	Routine inspection	**Lining Material:**	No Lining

Comments:
Recommendations:

Scale: 1:79

Position [m]	Code	Observation	MPEG	Photo	Grade
0.00	MH	Start node, manhole, reference: MH1: Through Interceptor rodding eye	00:00:00		
0.00	WL	Water level, 0% of the vertical dimension	00:00:02	1	
0.20	REM	General remark: trap	00:00:13		
0.80	LL	Line deviates left	00:00:16	2	
1.70	FMJ	Fractures, multiple at joint from 10 o'clock to 6 o'clock	00:00:43	3	4 / 2
2.30	FMJ	Fractures, multiple at joint from 2 o'clock to 9 o'clock	00:00:47	4	4 / 2
2.90	FMJ	Fractures, multiple at joint from 1 o'clock to 8 o'clock	00:00:55	5	4 / 2
3.60	FMJ	Fractures, multiple at joint from 12 o'clock to 12 o'clock	00:01:00	6	4 / 2
4.20	FMJ	Fractures, multiple at joint from 12 o'clock to 12 o'clock	00:01:12	7	4 / 2
4.90	FMJ	Fractures, multiple at joint from 12 o'clock to 12 o'clock	00:01:19	8	4 / 2
5.50	FCJ	Fracture, circumferential at joint from 3 o'clock to 7 o'clock	00:01:39	9	3 / 2
6.70	FMJ	Fractures, multiple at joint from 4 o'clock to 12 o'clock	00:02:04	10	4 / 2
7.30	FCJ	Fracture, circumferential at joint from 9 o'clock to 3 o'clock	00:02:14	11	3 / 2
7.90	FCJ	Fracture, circumferential at joint from 12 o'clock to 12 o'clock	00:02:21	12	3 / 2
9.00	FLJ	Fracture, longitudinal at joint at 7 o'clock	00:02:36	13	3 / 2

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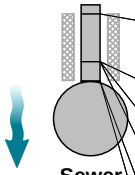
Section Inspection - 10/07/2024 - MH1X

Item No.	Insp. No.	Date	Time	Client`s Job Ref	Weather	Pre Cleaned	PLR
22	1	10/07/24	10:23	Not Specified	Rain	No	MH1X

Operator	Vehicle	Camera	Preset Length	Legal Status	Alternative ID
ML	Not Specified	Not Specified	Not Specified	Private Drain	Not Specified



Scale: 1:79	Position [m]		Code	Observation	MPEG	Photo	Grade
	9.20	S01	DEG	Attached deposits, grease from 9 o'clock to 3 o'clock, 20% cross-sectional area loss, start	00:02:43	14	
	9.70		FCJ	Fracture, circumferential at joint from 4 o'clock to 10 o'clock	00:02:46	15	3 / 2
	9.70		H	Hole in drain or sewer at 4 o'clock	00:02:48	16	4
	9.70		BJ	Broken pipe at joint from 4 o'clock to 8 o'clock	00:02:52	17	4
	9.90	F01	DEG	Attached deposits, grease from 9 o'clock to 3 o'clock, 20% cross-sectional area loss, finish	00:01:52		5
	9.90		BRF	Finish node, major connection without manhole, reference: Sewer	00:03:00	18	

Depth: m

Construction Features					Miscellaneous Features				
Structural Defects					Service & Operational Observations				
STR No. Def	STR Peak	STR Mean	STR Total	STR Grade	SER No. Def	SER Peak	SER Mean	SER Total	SER Grade
14	200.0	92.9	920.0	4.0	13	11.0	2.2	22.0	5.0

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Section Pictures - 10/07/2024 - MH1X

Item No.	Inspection Direction	PLR	Client`s Job Ref	Contractor`s Job Ref
22	Downstream	MH1X		

1, 00:00:02, 0.00 m
Water level, 0% of the vertical dimension

2, 00:00:16, 0.80 m
Line deviates left

3, 00:00:43, 1.70 m
Fractures, multiple at joint from 10 o'clock to 6 o'clock

4, 00:00:47, 2.30 m
Fractures, multiple at joint from 2 o'clock to 9 o'clock

5, 00:00:55, 2.90 m
Fractures, multiple at joint from 1 o'clock to 8 o'clock

6, 00:01:00, 3.60 m
Fractures, multiple at joint from 12 o'clock to 12 o'clock

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Section Pictures - 10/07/2024 - MH1X

Item No.	Inspection Direction	PLR	Client`s Job Ref	Contractor`s Job Ref
22	Downstream	MH1X		

7, 00:01:12, 4.20 m
Fractures, multiple at joint from 12 o'clock to 12 o'clock

8, 00:01:19, 4.90 m
Fractures, multiple at joint from 12 o'clock to 12 o'clock

9, 00:01:39, 5.50 m
Fracture, circumferential at joint from 3 o'clock to 7 o'clock

10, 00:02:04, 6.70 m
Fractures, multiple at joint from 4 o'clock to 12 o'clock

11, 00:02:14, 7.30 m
Fracture, circumferential at joint from 9 o'clock to 3 o'clock

12, 00:02:21, 7.90 m
Fracture, circumferential at joint from 12 o'clock to 12 o'clock

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Section Pictures - 10/07/2024 - MH1X

Item No.	Inspection Direction	PLR	Client`s Job Ref	Contractor`s Job Ref
22	Downstream	MH1X		

13, 00:02:36, 9.00 m
Fracture, longitudinal at joint at 7 o'clock

14, 00:02:43, 9.20 m
Attached deposits, grease from 9 o'clock to 3 o'clock, 20% cross-sectional area loss, start

15, 00:02:46, 9.70 m
Fracture, circumferential at joint from 4 o'clock to 10 o'clock

16, 00:02:48, 9.70 m
Hole in drain or sewer at 4 o'clock

17, 00:02:52, 9.70 m
Broken pipe at joint from 4 o'clock to 8 o'clock

18, 00:03:00, 9.90 m
Finish node, major connection without manhole, reference: Sewer

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Section Inspection - 10/07/2024 - RWPX

Item No.	Insp. No.	Date	Time	Client`s Job Ref	Weather	Pre Cleaned	PLR
23	1	10/07/24	12:03	Not Specified	Rain	No	RWPX

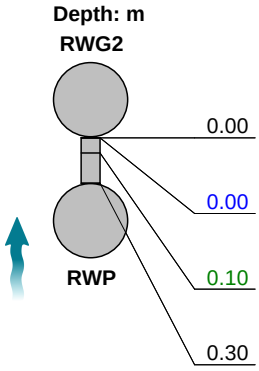
Operator	Vehicle	Camera	Preset Length	Legal Status	Alternative ID
ML	Not Specified	Not Specified	Not Specified	Private Drain	Not Specified

Town or Village:	Kew	**Inspection Direction:**	Upstream	**Upstream Node:**	RWP
Road:	Ennerdale Road	**Inspected Length:**	0.30 m	**Upstream Pipe Depth:**	
Location:	Other walkway	**Total Length:**	0.30 m	**Downstream Node:**	RWG2
Surface Type:	Various	**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:	Routine inspection	**Lining Material:**	No Lining

Comments:
Recommendations:

Scale: 1:50



Position [m]	Code	Observation	MPEG	Photo	Grade
0.00	GY	Start node, gully, reference: RWG2	00:00:00	1	
0.00	WL	Water level, 0% of the vertical dimension	00:01:05		
0.10	LU	Line deviates up	00:01:05		
0.30	MHF	Finish node, manhole, reference: RWP	00:01:05	2	

Construction Features					Miscellaneous Features				
Structural Defects					Service & Operational Observations				
STR No. Def	**STR Peak**	**STR Mean**	**STR Total**	**STR Grade**	**SER No. Def**	**SER Peak**	**SER Mean**	**SER Total**	**SER Grade**
0	0.0	0.0	0.0	1.0	0	0.0	0.0	0.0	1.0

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Section Pictures - 10/07/2024 - RWPX

Item No.	Inspection Direction	PLR	Client`s Job Ref	Contractor`s Job Ref
23	Upstream	RWPX		

1, 00:00:00, 0.00 m
Start node, gully, reference: RWG2

2, 00:01:05, 0.30 m
Finish node, manhole, reference: RWP

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Section Inspection - 10/07/2024 - RWG2X

Item No.	Insp. No.	Date	Time	Client`s Job Ref	Weather	Pre Cleaned	PLR
24	1	10/07/24	12:18	Not Specified	Rain	No	RWG2X

Operator	Vehicle	Camera	Preset Length	Legal Status	Alternative ID
ML	Not Specified	Not Specified	Not Specified	Private Drain	Not Specified

Town or Village:	Kew	**Inspection Direction:**	Downstream	**Upstream Node:**	RWG2
Road:	Ennerdale Road	**Inspected Length:**	3.40 m	**Upstream Pipe Depth:**	
Location:	Other walkway	**Total Length:**	3.40 m	**Downstream Node:**	MH2
Surface Type:	Various	**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:	Routine inspection	**Lining Material:**	No Lining

Comments:
Recommendations:

Scale: 1:50

Position [m]	Code	Observation	MPEG	Photo	Grade
0.00	MH	Start node, manhole, reference: RWG2	00:00:00		
0.00	WL	Water level, 0% of the vertical dimension	00:00:11		
0.10	LL	Line deviates left	00:00:11	1	
1.60	LR	Line deviates right: Junction with RWG3	00:00:28	2	
3.00	LR	Line deviates right	00:00:46	3	
3.40	MHF	Finish node, manhole, reference: MH2	00:00:53	4	

Construction Features					Miscellaneous Features				
Structural Defects					Service & Operational Observations				
STR No. Def	**STR Peak**	**STR Mean**	**STR Total**	**STR Grade**	**SER No. Def**	**SER Peak**	**SER Mean**	**SER Total**	**SER Grade**
0	0.0	0.0	0.0	1.0	0	0.0	0.0	0.0	1.0

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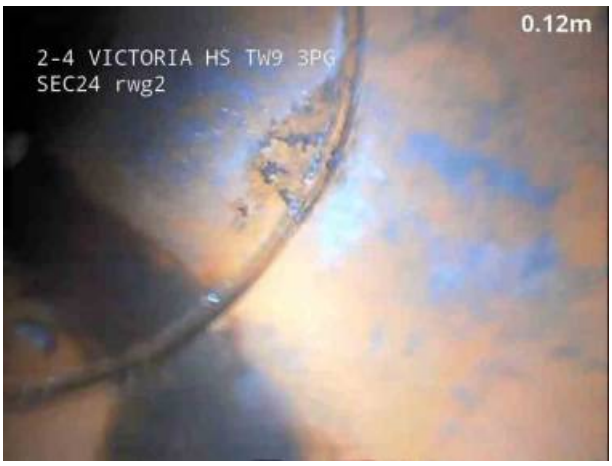
Section Pictures - 10/07/2024 - RWG2X

Item No.	Inspection Direction	PLR	Client`s Job Ref	Contractor`s Job Ref
24	Downstream	RWG2X		



1, 00:00:11, 0.10 m
Line deviates left

2, 00:00:28, 1.60 m
Line deviates right, Junction with RWG3

3, 00:00:46, 3.00 m
Line deviates right

4, 00:00:53, 3.40 m
Finish node, manhole, reference: MH2

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Section Inspection - 10/07/2024 - RWG3X

Item No.	Insp. No.	Date	Time	Client`s Job Ref	Weather	Pre Cleaned	PLR
25	1	10/07/24	13:47	Not Specified	Rain	No	RWG3X

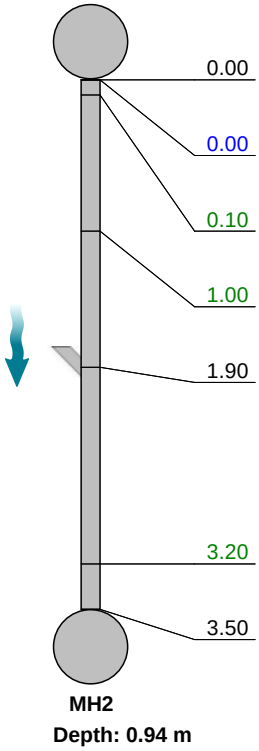
Operator	Vehicle	Camera	Preset Length	Legal Status	Alternative ID
ML	Not Specified	Not Specified	Not Specified	Private Drain	Not Specified

Town or Village:	Kew	**Inspection Direction:**	Downstream	**Upstream Node:**	RWG3
Road:	Ennerdale Road	**Inspected Length:**	3.50 m	**Upstream Pipe Depth:**	
Location:	Other walkway	**Total Length:**	3.50 m	**Downstream Node:**	MH2
Surface Type:	Various	**Joint Length:**		**Downstream Pipe Depth:**	0.940 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:	Routine inspection	**Lining Material:**	No Lining

Comments:
Recommendations:

Scale: 1:50



Position [m]	Code	Observation	MPEG	Photo	Grade
0.00	GY	Start node, gully, reference: RWG3	00:00:00		
0.00	WL	Water level, 0% of the vertical dimension	00:00:19		
0.10	LR	Line deviates right	00:00:19	1	
1.00	LL	Line deviates left	00:00:28	2	
1.90	JN	Junction at 3 o'clock, 100mm dia	00:00:37	3	
3.20	LR	Line deviates right	00:00:44	4	
3.50	MHF	Finish node, manhole, reference: MH2	00:00:51	5	

Construction Features					Miscellaneous Features				
Structural Defects					Service & Operational Observations				
STR No. Def	**STR Peak**	**STR Mean**	**STR Total**	**STR Grade**	**SER No. Def**	**SER Peak**	**SER Mean**	**SER Total**	**SER Grade**
0	0.0	0.0	0.0	1.0	0	0.0	0.0	0.0	1.0

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Section Pictures - 10/07/2024 - RWG3X

Item No.	Inspection Direction	PLR	Client`s Job Ref	Contractor`s Job Ref
25	Downstream	RWG3X		

1, 00:00:19, 0.10 m
Line deviates right

2, 00:00:28, 1.00 m
Line deviates left

3, 00:00:37, 1.90 m
Junction at 3 o'clock, 100mm dia

4, 00:00:44, 3.20 m
Line deviates right

5, 00:00:51, 3.50 m
Finish node, manhole, reference: MH2

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