
81 Avenue Road,
London, NW8 6JD

**Drainage Strategy and SuDS
Statement**

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1.0 Introduction

Elliott Wood Partnership Ltd have been appointed to provide a drainage strategy report to support a detailed planning application for the development at No. 81 Avenue Road, London.

The purpose of this report is to explain the approach taken with regards to the below ground drainage strategy, it evaluates the selection of SuDS and highlights how the drainage disposal hierarchy has been followed.

2.0 Existing Site

The existing site includes a three storey detached residential property. The total area of the existing site is approximately 1450m². Approximately 710m² of the existing site is positively drained impermeable area. The remaining site area is either soft or is not positively connected to the onsite drainage network. The site consists of a shallow slope from southwest (approx. 46.90m AoD) to north east (approx. 46.00m AoD).

A site investigation consisting of three boreholes was undertaken by SAS in July 2016. These indicate that the underlying ground is London Clay overlaid by up to 1.2m of made ground. This is in line with geological records for the area. Water was not encountered in any of the three boreholes at the time of drilling.

Standpipe monitoring has subsequently been carried out after a period of 3-4 weeks and water was still not found in either BH1 or BH2. However, water was experienced at 2.30m below ground level in BH3. Given the ground conditions, SAS suggested that the water levels observed in BH3 are likely to be due to isolated pockets of groundwater that may be perched within less permeable material found at shallower depths, especially within any Made Ground.

3.0 Proposed Development

The proposed works involve the demolition of the existing building and the construction of a new 3 storey residential building in its place, which will include a new single storey basement.

4.0 Existing Drainage

Public sewer records have been obtained from Thames Water and are included in Appendix 1. Sewer records show that the offsite sewer network is combined (sewers carry both foul and surface water flows). Records show that a 1372x914mm combined water sewer is located in Avenue Road.

A CCTV survey of the existing below ground drainage network has been undertaken on the site, which demonstrates the existing property drains via a 150mm diameter combined water outfall, into the sewer in Avenue Road. Refer to Appendix 2 for a copy of the CCTV survey plan.

The surface water runoff rate associated with the existing building and hardstanding areas has been calculated as follows, based on a positively drained area of 710m², and a rainfall intensity of 50mm/hr.

$$Q = 2.78 \times 1 \times 50\text{mm/hr} \times 0.071$$

$$\underline{Q_{\text{Total}} = 9.87 \text{ l/s}}$$

The size of the impermeable area associated with the new development is approx. 680m². This decrease in impermeable area will ensure that the peak surface water discharge from the site will be reduced post development.

5.0 Proposed Drainage Strategy

The surface water drainage system has been designed in accordance with the London Plan Policies 5.11 (Green Roofs), 5.12 (Flood Risk Management) and 5.13 (Sustainable Drainage). The following drainage hierarchy has therefore been considered:

1. Store rainwater for later use
2. Use infiltration techniques, such as porous surfaces in non-clay areas
3. Attenuate rainwater in ponds or open water features for gradual release
4. Attenuate rainwater by storing in tanks or sealed water features for gradual release
5. Discharge rainwater direct to a watercourse
6. Discharge rainwater to a surface water sewer/drain
7. Discharge rainwater to the combined sewer.

The current proposals include a green roof as indicated on the architect's drawings. This will help to improve the thermal performance of the building, reduce the urban heat island effect, reduce both the total and peak surface water discharge and enhance biodiversity in the surrounding area. A rainwater butt for irrigation is proposed on the rear elevation. This will assist with reducing the surface water run off from the site and will reduce water usage.

Drainage via infiltration has been considered for the site, however following a review of the ground conditions it is considered that soakaways are not viable for this project.

There are no nearby accessible water courses and the existing offsite Thames Water sewer network is combined use. Surface water generated by the development will therefore continue to discharge to the offsite combined water sewer, via the existing outfall pipe.

The evaluation of SuDS is demonstrated in the table found overleaf.

SuDS technique	Y/N	Comment
Green Roofs	Y	A green roof will be incorporated within the scheme. Refer to the architects drawings for location and details.
Rainwater reuse	Y	A rainwater butt for irrigation is proposed on the rear elevation of the dwelling. This will assist with reducing the surface water run off from the site and will reduce water usage
Basins and ponds	N	The site is very limited for space and is located within an urban area, as such there is no feasible location or space for a detention basin or pond.
Filter strips and swales	N	Filter strips and swales are not appropriate due to the spatial restrictions on site and unsuitable ground conditions.
Infiltration devices	N	Infiltration is not feasible for this site due to the existing ground conditions.
Permeable surfaces	N	Permeable paving is not deemed feasible for this project due to the extent of the proposed basement and the location of the tree root protection zones
Tanked systems	N	Tanked systems are not deemed feasible due to the extent of the proposed basement and the location of the tree root protection zones.

Table 1 – SuDS evaluation

It is proposed that the existing 150mm diameter connection to the public combined sewer in Avenue Road is retained. Due to the location the proposed basement, the final manhole (demarcation chamber) will need to be removed and relocated downstream.

Drainage from ground floor level and above will be designed to drain via gravity. Drainage from basement level will be pumped via a submersible packaged pumping station (with dual pumps) and will include a non-return valve and appropriate alarm/telemetry.

The existing surface water run-off rate from site has been calculated to be 9.87l/s. The impermeable area associated with the new development is approximately 680m². This decrease in impermeable area will ensure that the peak surface water run-off rate from the site will be reduced post development.

The inclusion of a green roof and rainwater butt will also help reduce the peak surface water run-off rate from site as well as providing additional benefits.

Refer to Appendix 3 for a copy of the proposed below ground drainage strategy.

6.0 Maintenance Requirements

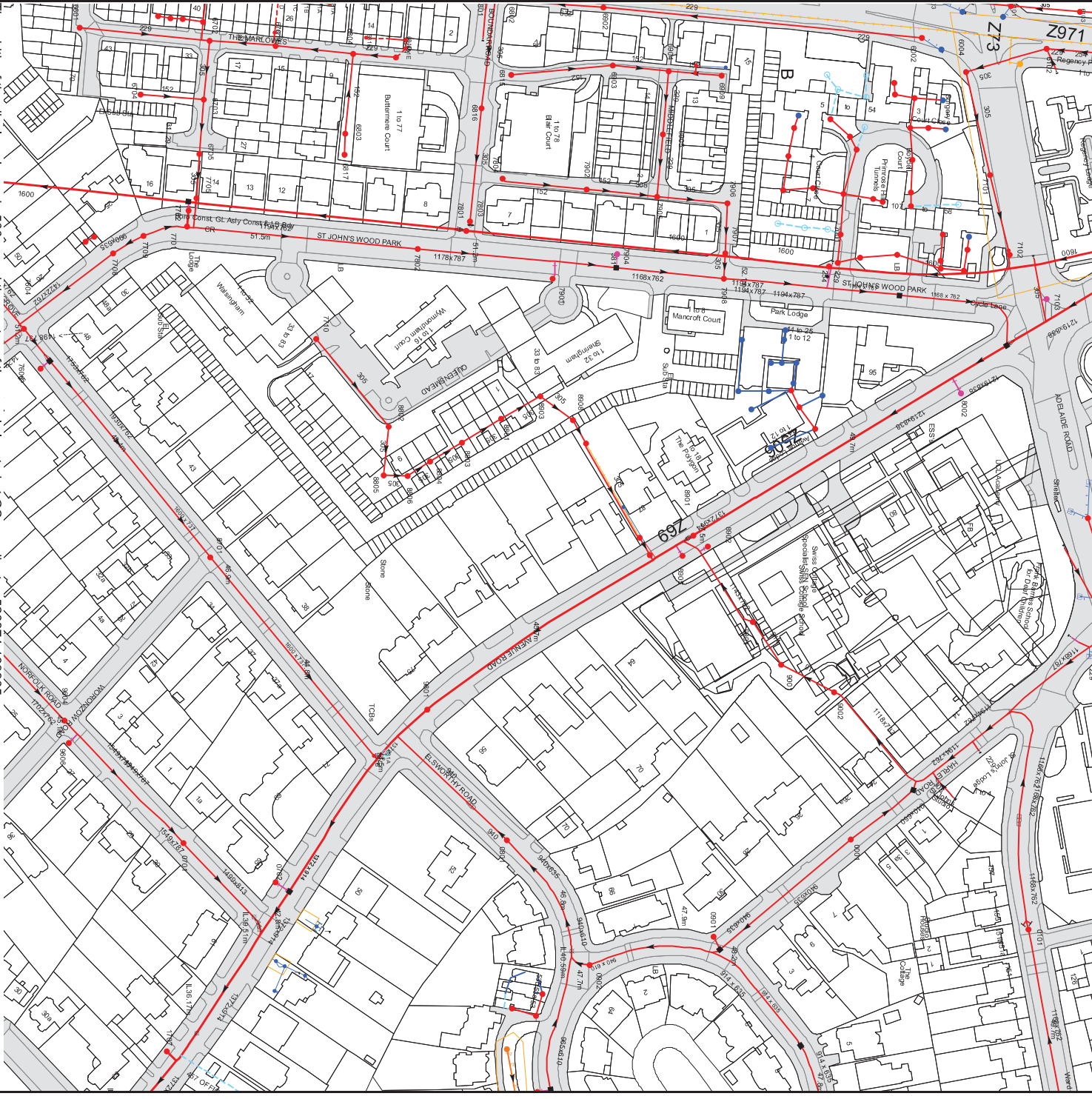
All SuDS will be maintained by the property owner for the lifetime of the development in accordance with the SuDS Manual as summarised below:

Green Roofs:

Maintenance Schedule	Required Action	Recommended Frequency
Regular Inspections	<p>Inspect all components including soil substrate, vegetation, drains, irrigation systems (if applicable), membranes and roof structure for proper operation, integrity of waterproofing and structural stability.</p> <p>Inspect soil substrate for evidence of erosion channels and identify any sediment sources</p> <p>Inspect drain inlets to ensure unrestricted runoff from the drainage layer to the conveyance or roof drain system</p> <p>Inspect underside of roof for evidence of leakage</p>	<p>Annually and after severe storms</p> <p>Annually and after severe storms</p> <p>Annually and after severe storms</p> <p>Annually and after severe storms</p>
Regular maintenance	<p>Remove debris and litter to prevent clogging of inlet drains and interference with plant growth</p> <p>During establishment (i.e. year one), replace dead plants as required.</p> <p>Post establishment, replace dead plants as required (where >5% of coverage)</p> <p>Remove fallen leaves and debris from deciduous plant foliage</p> <p>Remove nuisance and invasive vegetation including weeds</p> <p>Mow grasses, prune shrubs and manage other planting (if appropriate) as required – clippings should be removed and allowed to accumulate</p>	<p>Six monthly and annually or as required</p> <p>Monthly (but usually the responsibility of manufacturer)</p> <p>Annually (in Autumn)</p> <p>Six monthly or as required</p> <p>Six monthly or as required</p> <p>Six monthly or as required</p>
Remedial actions	<p>If erosion channels are evident, these should be stabilised with extra soil substrate similar to the original material, and sources of erosion damage should be identified and controlled.</p> <p>If drain inlet has settled, cracked or moved, investigate and repair as appropriate</p>	<p>As required</p> <p>As required</p>

Appendix 1 – Thames Water Sewer Records

Asset Location Search Sewer Map - ALS/ALS Standard/2016_3367215



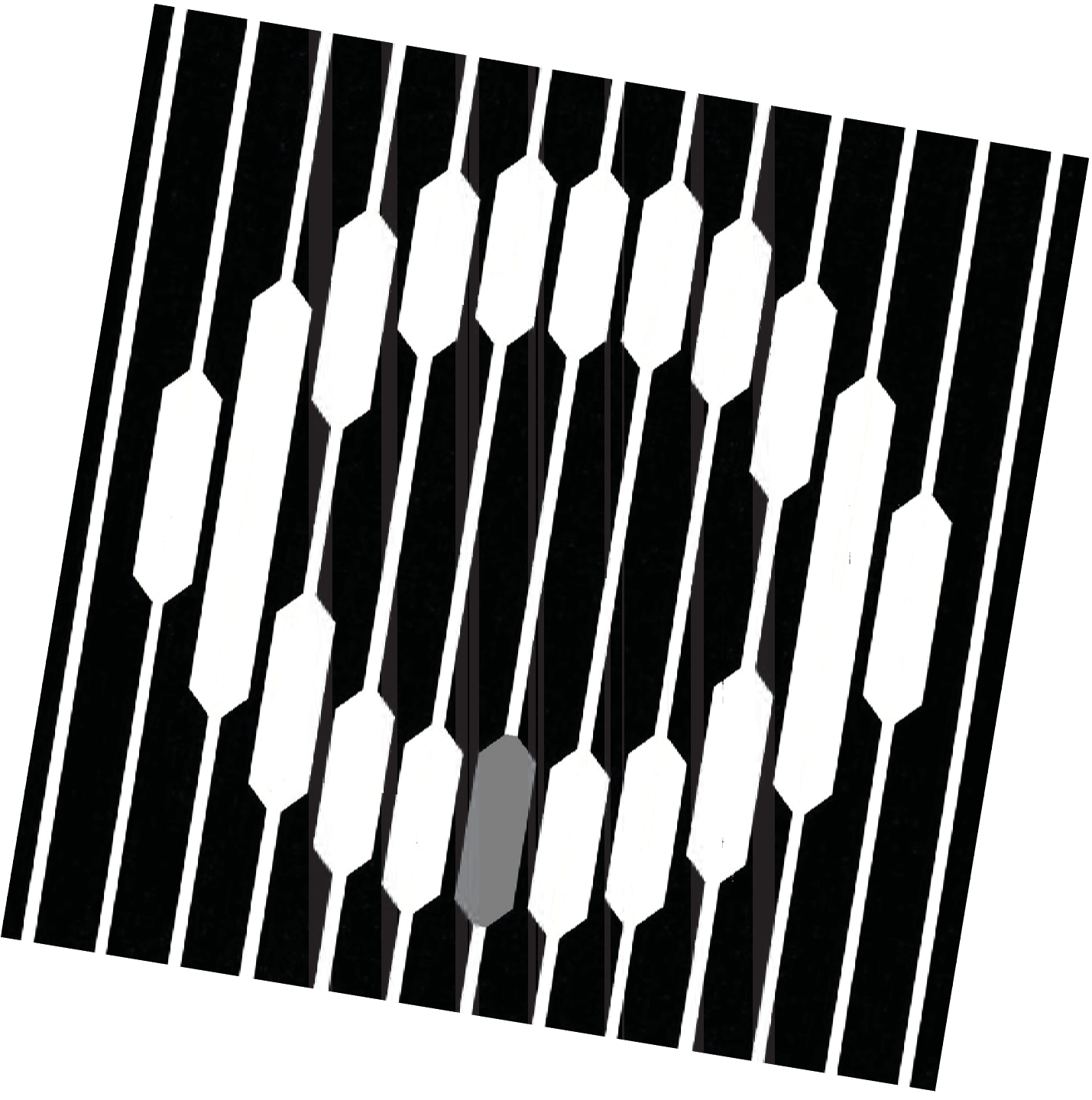
The width of the displayed area is 500 m and the centre of the map is located at OS coordinates 526874,183905

The position of the apparatus shown on this plan is given without obligation and warranty, and the accuracy cannot be guaranteed. Service pipes are not shown but their presence should be anticipated. No liability of any kind whatsoever is accepted by Thames Water for any error or omission. The actual position of mains and services must be verified and established on site before any works are undertaken.

Based on the Ordnance Survey Map with the Sanction of the controller of H.M. Stationary Office, License no. 100019345 Crown Copyright Reserved.

Appendix 2 – CCTV Survey Plan

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CV.1098 81 AVENUE ROAD LONDON NW8 6JD



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53 PREMIER AVENUE GRAYS RM16 2SJ TEL:01375 373302 MOB:07792 815977 E-MAIL: godrainage@aol.com

CCTV SURVEY HEADER SHEET

CLIENT.

ELLIOTTWOOD PARTNERSHIP LLP
CONSULTING STRUCTURAL AND CIVIL ENGINEERS
241 THE BROADWAY
LONDON
SW19 1SD

LOCATION.

81 AVENUE ROAD
LONDON
NW8 6JD

JOB NO.

CV.1098

SEWER USE.

COMBINED DRAINAGE

WEATHER.

DRY

DATE.

02/08/16

OPERATOR.

GO

CLEANED.

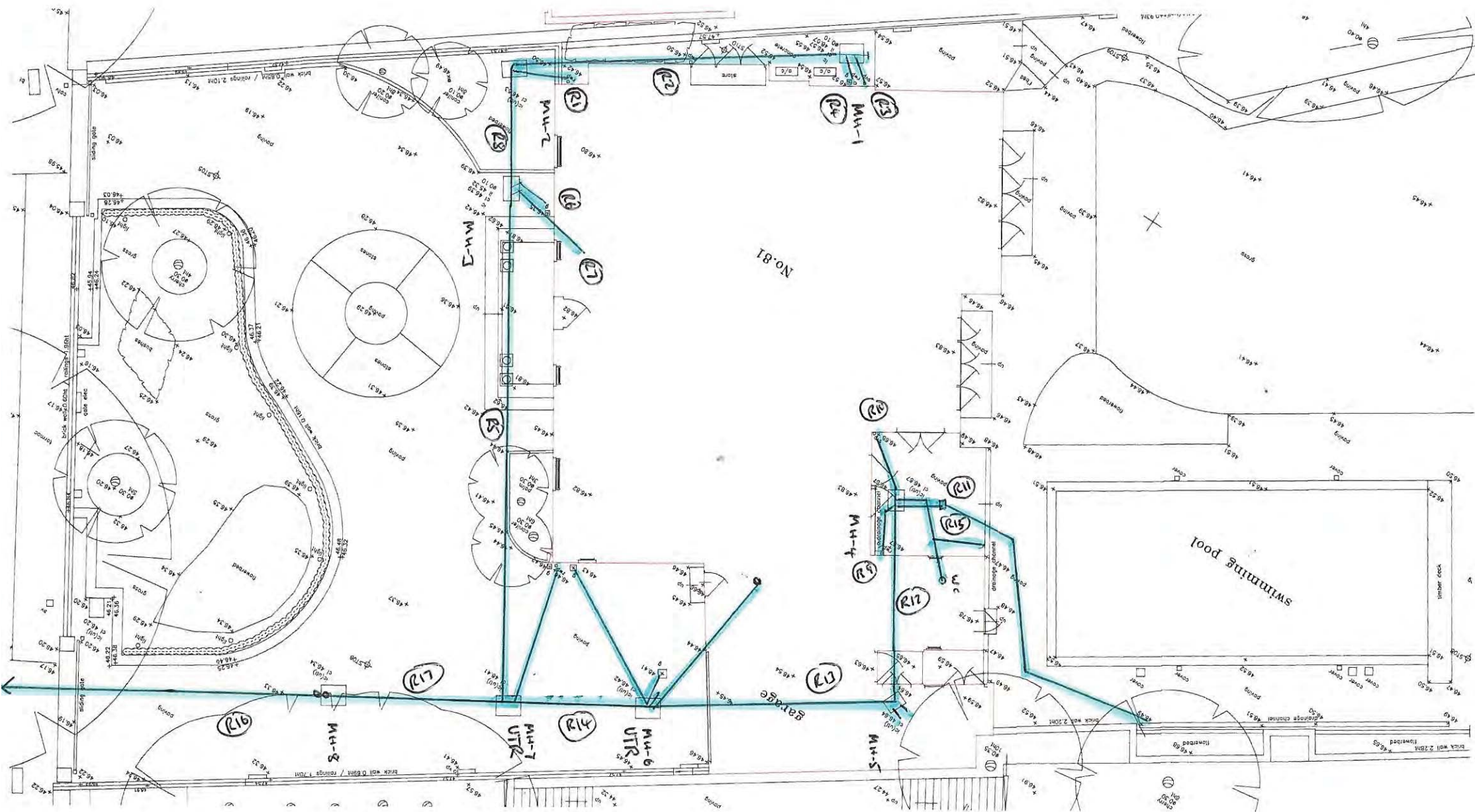
NO

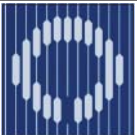
ORDER NO.

E-MAIL TIM KENNING

TOTAL LENGTH SURVEYED.

79.5 metres





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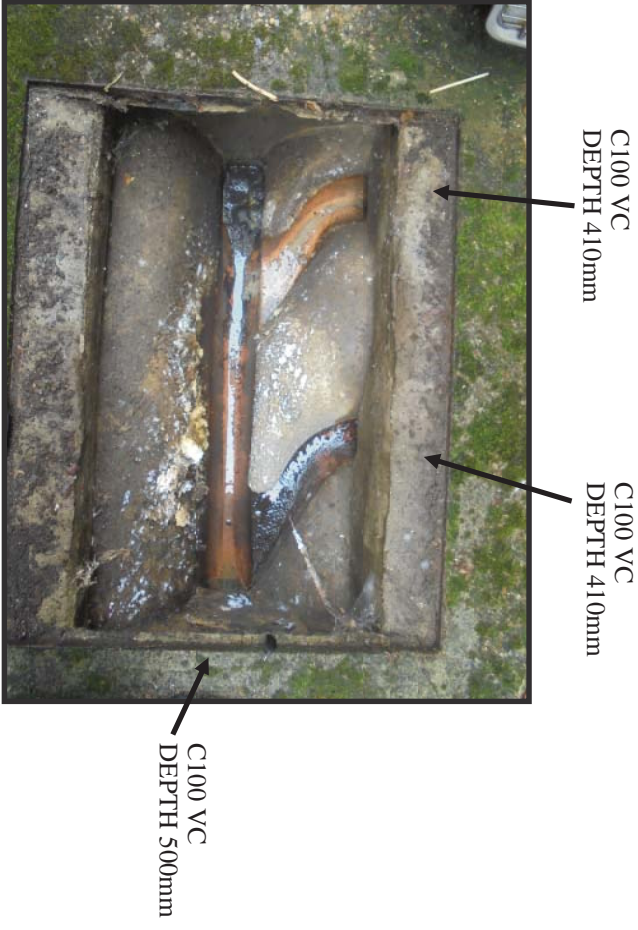
MANHOLE SURVEY

CLIENT	ELLIOTTWOOD 241 THE BROADWAY LONDON SW19 1SD	LOCATION	81 AVENUE ROAD LONDON NW8 6JD
DATE	02/08/16	JOB	CV.1098

MANHOLE NO.01

COVER 770X670mm

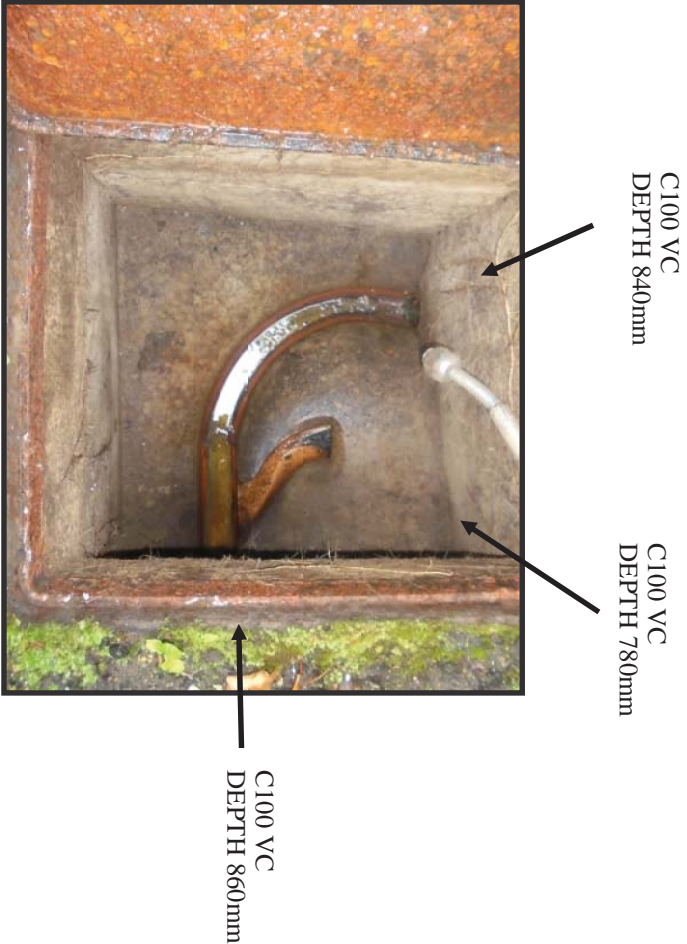
CHAMBER 900X450mm



MANHOLE NO.02

COVER 810X650mm

CHAMBER 80X750mm





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MANHOLE SURVEY

CLIENT	ELLIOTTWOOD 241 THE BROADWAY LONDON SW19 1SD	LOCATION	81 AVENUE ROAD LONDON NW8 6JD
DATE	02/08/16	JOB	CV.1098

MANHOLE NO.03

COVER 680X530mm

CHAMBER 600X450mm



C100 VC
DEPTH 1070mm

C100 VC
DEPTH 960mm

C100 VC
DEPTH 960mm

C100 VC
DEPTH mm

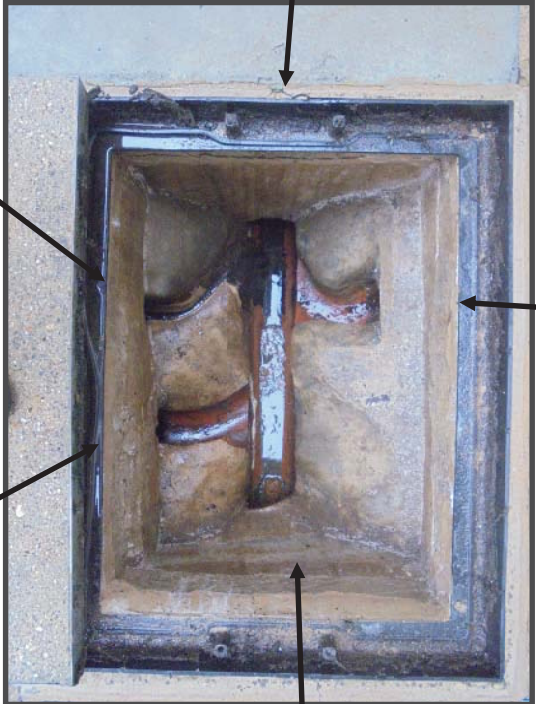
C100 CI
DEPTH 1080mm

ROOTS IN CHAMBER

MANHOLE NO.04

COVER 810X510mm

CHAMBER 750X450mm



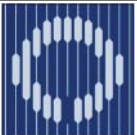
C100 VC
DEPTH 580mm

C100 VC
DEPTH 480mm

C100 VC
DEPTH 570mm

C100 VC
DEPTH 510mm

C100 VC
DEPTH 510mm



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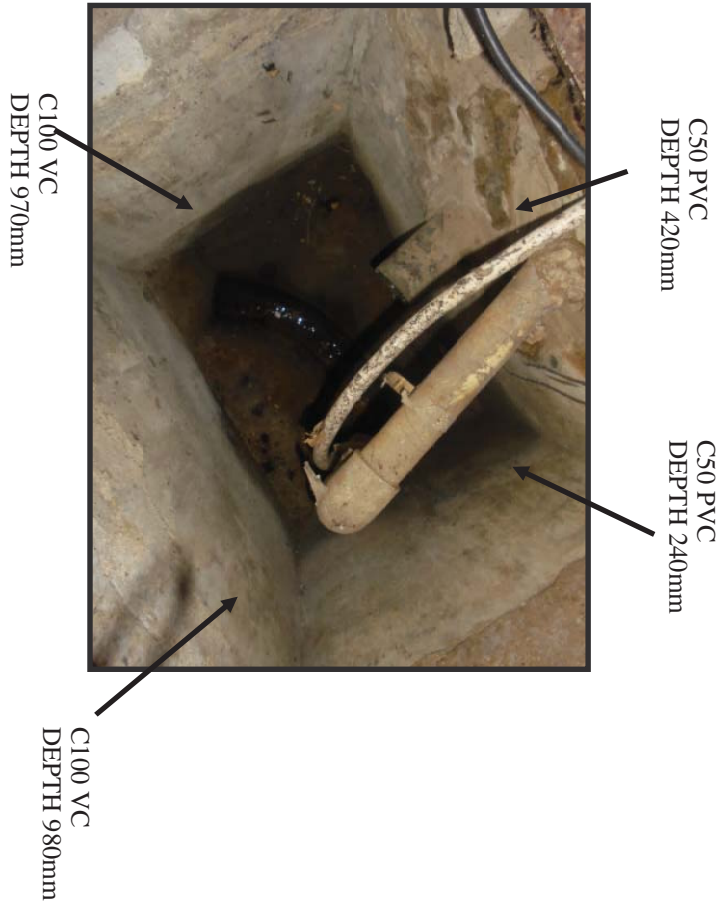


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MANHOLE SURVEY

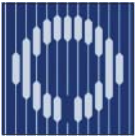
CLIENT	ELLIOTTWOOD 241 THE BROADWAY LONDON SW19 1SD	LOCATION	81 AVENUE ROAD LONDON NW8 6JD
DATE	02/08/16	JOB	CV.1098

MANHOLE NO.05
COVER 650X510mm
CHAMBER 600X450mm



MANHOLE NO.06
COVER 800X650mm
UTR





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MANHOLE SURVEY

CLIENT	ELLIOTTWOOD 241 THE BROADWAY LONDON SW19 1SD	LOCATION	81 AVENUE ROAD LONDON NW8 6JD
DATE	02/08/16	JOB	CV.1098

MANHOLE NO.07
COVER 800X650mm
UTR

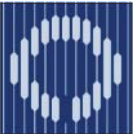


MANHOLE NO.08
COVER 800X650mm
CHAMBER 900X800mm

C150 VC
DEPTH 3160mm



C150 VC
DEPTH 3170mm



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INSPECTION REPORT

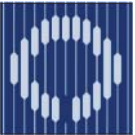
CLIENT					LOCATION						
ELLIOTTWOOD 241 THE BROADWAY LONDON SW19 1SD					81 AVENUE ROAD LONDON NW8 6JD						
JOB NO.	RUN NUMBER	DATE	SEWER USE	DEPTH	DIRECTION	PIPE SIZE	MATERIAL	WEATHER	CLEANED	OPERATOR	PAGE
CV.1098	01	02/08/16	COMBINED	780mm	UPSTREAM	100mm	V/CLAY	DRY	NO	GO	1

START						FINISH					
ST. MANHOLE No. 02						FH. GULLY					

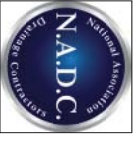
CHAINAGE	CODE	OBSERVATION
MH-02		
000.0	ST	START OF SURVEY
000.0	WL	WATER LEVEL 05%
000.3	RM	ROOTS MASS 40%
000.3	FH	FINISH OF SURVEY (UNABLE TO PASS)
GULLY		

<

END OF RUN NO.01



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INSPECTION REPORT

CLIENT						LOCATION					
ELLIOTTWOOD 241 THE BROADWAY LONDON SW19 1SD						81 AVENUE ROAD LONDON NW8 6JD					
JOB NO.	RUN NUMBER	DATE	SEWER USE	DEPTH	DIRECTION	PIPE SIZE	MATERIAL	WEATHER	CLEANED	OPERATOR	PAGE
CV.1098	02	02/08/16	COMBINED	840mm	UPSTREAM	100mm	V/CLAY	DRY	NO	GO	1

START

FINISH

ST. MANHOLE No. 02

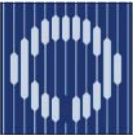
CONNECTION-1

FH. MANHOLE NO.01

CHAINAGE	CODE	OBSERVATION
000.0	ST	START OF SURVEY
000.0	WL	WATER LEVEL 05%
000.3	FC	FRACTURE, CIRCUMFERENTIAL FROM 07 TO 05 O'CLOCK
000.3	R	ROOTS FINE
000.6	FC	FRACTURE, CIRCUMFERENTIAL FROM 07 TO 05 O'CLOCK
001.5	CC	CRACK, CIRCUMFERENTIAL FROM 07 TO 01 O'CLOCK
005.3	CC	CRACK, CIRCUMFERENTIAL FROM 12 TO 05 O'CLOCK
009.6	MH	MANHOLE NO.01
009.6	FH	FINISH OF SURVEY



END OF RUN NO.02



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INSPECTION REPORT

CLIENT. ELLIOTTWOOD 241 THE BROADWAY LONDON SW19 1SD LOCATION. 81 AVENUE ROAD LONDON NW8 6JD

JOB NO.	RUN NUMBER	DATE	SEWER USE	DEPTH	DIRECTION	PIPE SIZE	MATERIAL	WEATHER	CLEANED	OPERATOR	PAGE
CV.1098	03	02/08/16	COMBINED	410mm	UPSTREAM	100mm	V/CLAY	DRY	NO	GO	1

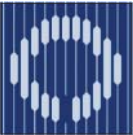
START FINISH

ST. MANHOLE No. 01 CONNECTION- 1 FH. SOIL VENT PIPE

CHAINAGE	CODE	OBSERVATION
	ST	START OF SURVEY
000.0	WL	WATER LEVEL.05%
000.3	LU	LINE OF DRAIN DEVIATES UP (SHARP)
000.3	FH	FINISH OF SURVEY (SOIL VENT PIPE)



END OF RUN NO.03



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INSPECTION REPORT

CLIENT. ELLIOTTWOOD 241 THE BROADWAY LONDON SW19 1SD LOCATION. 81 AVENUE ROAD LONDON NW8 6JD

JOB NO.	RUN NUMBER	DATE	SEWER USE	DEPTH	DIRECTION	PIPE SIZE	MATERIAL	WEATHER	CLEANED	OPERATOR	PAGE
CV.1098	04	02/08/16	COMBINED	410mm	UPSTREAM	100mm	V/CLAY	DRY	NO	GO	1

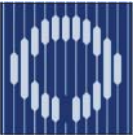
START FINISH

ST. MANHOLE No.01 CONNECTION- 2 FH. GULLY

CHAINAGE	CODE	OBSERVATION
	ST	START OF SURVEY
000.0	WL	WATER LEVEL.05%
000.3	LD	LINE OF DRAIN DEVIATES DOWN (SHARP)
000.3	FH	FINISH OF SURVEY (GULLY)



END OF RUN NO.04



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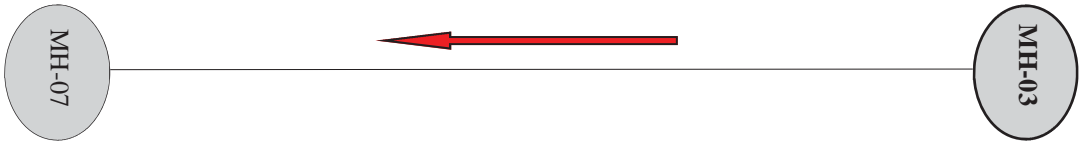
INSPECTION REPORT

CLIENT		ELLIOTTWOOD 241 THE BROADWAY LONDON SW19 1SD		LOCATION		81 AVENUE ROAD LONDON NW8 6JD					
JOB NO.	RUN NUMBER	DATE	SEWER USE	DEPTH	DIRECTION	PIPE SIZE	MATERIAL	WEATHER	CLEANED	OPERATOR	PAGE
CV.1098	05	02/08/16	COMBINED	1090mm	DOWNSTREAM	100mm	CAST IRON	DRY	NO	GO	1

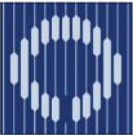
START FINISH

ST. MANHOLE No. 03 CONNECTION- X FH. MANHOLE NO.07

CHAINAGE	CODE	OBSERVATION
000.0	ST	START OF SURVEY
000.0	WL	WATER LEVEL 05%
006.5	MC	MATERIAL OF DRAIN CHANGES TO AT THIS POINT
014.5	FC	FRACTURE, CIRCUMFERENTIAL FROM 12 TO 12 O'CLOCK
015.4	R	ROOTS FINE
015.9	MH	MANHOLE NO.07
015.9	FH	FINISH OF SURVEY



END OF RUN NO.05



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INSPECTION REPORT

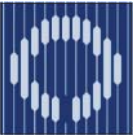
CLIENT		ELLIOTTWOOD 241 THE BROADWAY LONDON SW19 1SD		LOCATION		81 AVENUE ROAD LONDON NW8 6JD					
JOB NO.	RUN NUMBER	DATE	SEWER USE	DEPTH	DIRECTION	PIPE SIZE	MATERIAL	WEATHER	CLEANED	OPERATOR	PAGE
CV.1098	06	02/08/16	COMBINED	960mm	UPSTREAM	100mm	V/CLAY	DRY	NO	GO	1

START FINISH

ST. MANHOLE No. 03 CONNECTION- 2 FH. GULLY

CHAINAGE	CODE	OBSERVATION
MH-03	000.0	ST START OF SURVEY
	000.0	WL WATER LEVEL 05%
	000.4	LU LINE OF DRAIN DEVIATES UP (SHARP)
	000.4	FH FINISH OF SURVEY (GULLY)
A red arrow points from the MH-03 manhole to the GULLY.		
GULLY		

END OF RUN NO.06



53 PREMIER AVENUE GRAYS RM16 2SJ TEL:01375 373302 MOB:07792 815977 E-MAIL: godrainage@aol.com

INSPECTION REPORT

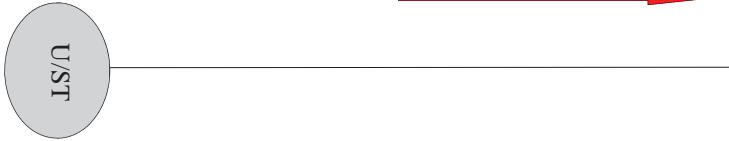
CLIENT: ELLIOTTWOOD 241 THE BROADWAY LONDON SW19 1SD LOCATION: 81 AVENUE ROAD LONDON NW8 6JD

JOB NO.	RUN NUMBER	DATE	SEWER USE	DEPTH	DIRECTION	PIPE SIZE	MATERIAL	WEATHER	CLEANED	OPERATOR	PAGE
CV.1098	03	02/08/16	COMBINED	960mm	UPSTREAM	100mm	V/CLAY	DRY	NO	GO	1

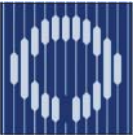
START FINISH

ST. MANHOLE No. 03 CONNECTION- 3 FH. UPSTREAM

CHAINAGE	CODE	OBSERVATION
000.0	ST	START OF SURVEY
000.0	WL	WATER LEVEL 05%
000.3	LL	LINE OF DRAIN DEVIATES LEFT (SLIGHT)
002.3	LR	LINE OF DRAIN DEVIATES RIGHT (SLIGHT)
002.3	FH	FINISH OF SURVEY (UNABLE TO PASS)



END OF RUN NO.07



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INSPECTION REPORT

CLIENT						LOCATION					
ELLIOTTWOOD 241 THE BROADWAY LONDON SW19 1SD						81 AVENUE ROAD LONDON NW8 6JD					
JOB NO.	RUN NUMBER	DATE	SEWER USE	DEPTH	DIRECTION	PIPE SIZE	MATERIAL	WEATHER	CLEANED	OPERATOR	PAGE
CV.1098	08	02/08/16	COMBINED	1080mm	UPSTREAM	100mm	V/CLAY	DRY	NO	GO	1

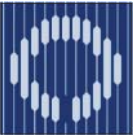
START FINISH

ST. MANHOLE No. 03 CONNECTION- 1 FH. MANHOLE NO.02

CHAINAGE	CODE	OBSERVATION
000.0	ST	START OF SURVEY
000.0	WL	WATER LEVEL. 05%
000.3	FC	FRACTURE, CIRCUMFERENTIAL FROM 07 TO 05 O'CLOCK
000.3	R	ROOTS FINE
002.4	FC	FRACTURE, CIRCUMFERENTIAL FROM 07 TO 05 O'CLOCK
002.8	RM	ROOTS MASS 20%
002.8	FC	FRACTURE, CIRCUMFERENTIAL FROM 07 TO 05 O'CLOCK
003.2	MH	MANHOLE NO.02
003.2	FH	FINISH OF SURVEY



END OF RUN NO.08



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INSPECTION REPORT

CLIENT. ELLIOTTWOOD 241 THE BROADWAY LONDON SW19 1SD LOCATION. 81 AVENUE ROAD LONDON NW8 6JD

JOB NO.	RUN NUMBER	DATE	SEWER USE	DEPTH	DIRECTION	PIPE SIZE	MATERIAL	WEATHER	CLEANED	OPERATOR	PAGE
CV.1098	09	02/08/16	COMBINED	480mm	UPSTREAM	100mm	V/CLAY	DRY	NO	GO	1

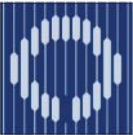
START FINISH

ST. MANHOLE No. 04 CONNECTION- 1 FH. GULLY

CHAINAGE	CODE	OBSERVATION
	ST	START OF SURVEY
000.0	WL	WATER LEVEL 05%
000.3	LL	LINE OF DRAIN DEVIATES LEFT (SLIGHT)
001.3	LD	LINE OF DRAIN DEVIATES DOWN (SHARP)
001.3	FH	FINISH OF SURVEY (GULLY)



END OF RUN NO.09



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INSPECTION REPORT

CLIENT. ELLIOTTWOOD 241 THE BROADWAY LONDON SW19 1SD LOCATION. 81 AVENUE ROAD LONDON NW8 6JD

JOB NO.	RUN NUMBER	DATE	SEWER USE	DEPTH	DIRECTION	PIPE SIZE	MATERIAL	WEATHER	CLEANED	OPERATOR	PAGE
CV.1098	10	02/08/16	COMBINED	570mm	UPSTREAM	100mm	V/CLAY	DRY	NO	GO	1

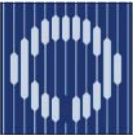
START FINISH

ST. MANHOLE No.04 CONNECTION- 2 FH. SOIL VENT PIPE

CHAINAGE	CODE	OBSERVATION
	ST	START OF SURVEY
000.0	WL	WATER LEVEL.05%
001.9	LU	LINE OF DRAIN DEVIATES UP (SHARP)
001.9	FH	FINISH OF SURVEY (SOIL VENT PIPE)



END OF RUN NO.10



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INSPECTION REPORT

CLIENT		ELLIOTTWOOD 241 THE BROADWAY LONDON SW19 1SD				LOCATION		81 AVENUE ROAD LONDON NW8 6JD			
JOB NO.	RUN NUMBER	DATE	SEWER USE	DEPTH	DIRECTION	PIPE SIZE	MATERIAL	WEATHER	CLEANED	OPERATOR	PAGE
CV.1098	11	02/08/16	COMBINED	510mm	UPSTREAM	100mm	V/CLAY	DRY	NO	GO	1

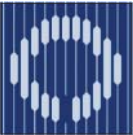
START FINISH

ST. MANHOLE No. 04 CONNECTION- 3 FH. WC

CHAINAGE	CODE	OBSERVATION
	ST	START OF SURVEY
	WL	WATER LEVEL 05%
	LU	LINE OF DRAIN DEVIATES UP (SHARP)
	LR	LINE OF DRAIN DEVIATES RIGHT (SLIGHT)
	JN	JUNCTION AT 09 O'CLOCK, DIAMETER 100mm STRIP GULLY
	LU	LINE OF DRAIN DEVIATES UP (SHARP)
	FH	FINISH OF SURVEY (WC)



END OF RUN NO.11



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INSPECTION REPORT

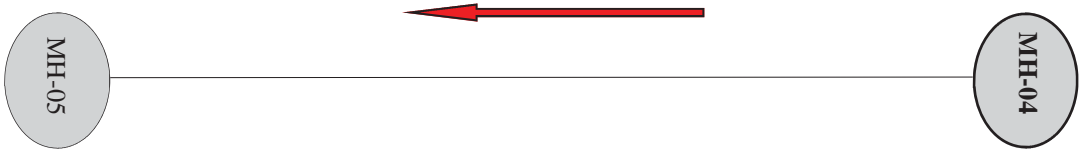
CLIENT: ELLIOTTWOOD 241 THE BROADWAY LONDON SW19 1SD LOCATION: 81 AVENUE ROAD LONDON NW8 6JD

JOB NO.	RUN NUMBER	DATE	SEWER USE	DEPTH	DIRECTION	PIPE SIZE	MATERIAL	WEATHER	CLEANED	OPERATOR	PAGE
CV.1098	12	02/08/16	COMBINED	580mm	DOWNSTREAM	100mm	V/CLAY	DRY	NO	GO	1

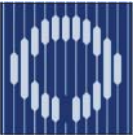
START FINISH

ST. MANHOLE No. 04 CONNECTION- X FH. MANHOLE NO.05

CHAINAGE	CODE	OBSERVATION
	ST	START OF SURVEY
000.0	WL	WATER LEVEL 05%
006.0	MH	MANHOLE NO.05
006.0	FH	FINISH OF SURVEY



END OF RUN NO.12



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INSPECTION REPORT

CLIENT		LOCATION									
ELLIOTTWOOD 241 THE BROADWAY LONDON SW19 1SD		81 AVENUE ROAD LONDON NW8 6JD									
JOB NO.	RUN NUMBER	DATE	SEWER USE	DEPTH	DIRECTION	PIPE SIZE	MATERIAL	WEATHER	CLEANED	OPERATOR	PAGE
CV.1098	13	02/08/16	COMBINED	980mm	DOWNSTREAM	100mm	V/CLAY	DRY	NO	GO	1

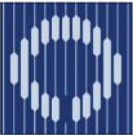
START FINISH

ST. MANHOLE No. 05 CONNECTION- X FH. MANHOLE NO.06

CHAINAGE	CODE	OBSERVATION
	ST	START OF SURVEY
000.0	WL	WATER LEVEL 05%
006.3	MH	MANHOLE NO.06
006.3	FH	FINISH OF SURVEY



END OF RUN NO.13



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INSPECTION REPORT

CLIENT. ELLIOTTWOOD 241 THE BROADWAY LONDON SW19 1SD LOCATION. 81 AVENUE ROAD LONDON NW8 6JD

JOB NO.	RUN NUMBER	DATE	SEWER USE	DEPTH	DIRECTION	PIPE SIZE	MATERIAL	WEATHER	CLEANED	OPERATOR	PAGE
CV.1098	14	02/08/16	COMBINED	N/A	DOWNSTREAM	100mm	V/CLAY	DRY	NO	GO	1

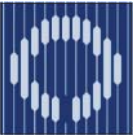
START FINISH

ST. MANHOLE No. 06 CONNECTION- X FH. MANHOLE NO.07

CHAINAGE	CODE	OBSERVATION
	ST	START OF SURVEY
000.0	WL	WATER LEVEL 05%
003.9	MH	MANHOLE NO.07
003.9	FH	FINISH OF SURVEY



END OF RUN NO.14



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INSPECTION REPORT

CLIENT. ELLIOTTWOOD 241 THE BROADWAY LONDON SW19 1SD LOCATION. 81 AVENUE ROAD LONDON NW8 6JD

JOB NO.	RUN NUMBER	DATE	SEWER USE	DEPTH	DIRECTION	PIPE SIZE	MATERIAL	WEATHER	CLEANED	OPERATOR	PAGE
CV.1098	15	02/08/16	COMBINED	480mm	UPSTREAM	100mm	V/CLAY	DRY	NO	GO	1

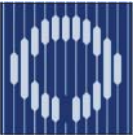
START FINISH

ST. MANHOLE No. 04 CONNECTION- 4 FH. GULLY

CHAINAGE	CODE	OBSERVATION
000.0	ST	START OF SURVEY
000.0	WL	WATER LEVEL 05%
002.3	LD	LINE OF DRAIN DEVIATES DOWN (SHARP)
002.3	FH	FINISH OF SURVEY (GULLY)



END OF RUN NO.15



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INSPECTION REPORT

CLIENT. ELLIOTTWOOD 241 THE BROADWAY LONDON SW19 1SD LOCATION. 81 AVENUE ROAD LONDON NW8 6JD

JOB NO.	RUN NUMBER	DATE	SEWER USE	DEPTH	DIRECTION	PIPE SIZE	MATERIAL	WEATHER	CLEANED	OPERATOR	PAGE
CV.1098	16	02/08/16	COMBINED	3120mm	DOWNSTREAM	100mm	V/CLAY	DRY	NO	GO	1

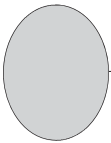
START FINISH

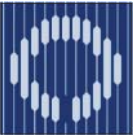
ST. MANHOLE No. 08 CONNECTION- X FH. MAIN SEWER

CHAINAGE	CODE	OBSERVATION
ACCESS 100mm RODDING EYE		
000.0	ST	START OF SURVEY
000.0	WL	WATER LEVEL 05%
000.4	JN	JUNCTION AT 06 O'CLOCK, DIAMETER 150mm TRAP
000.4	SC	DIMENSION OF DRAIN CHANGES TO 150mm
002.9	R	ROOTS FINE
002.9	R	ROOTS FINE
004.6	DEE	ATTACHED DEPOSITS, ENCRUSTATION FROM 05 TO 07 O'CLOCK 10%
007.3	R	ROOTS FINE
009.1	R	ROOTS FINE
009.6	R	ROOTS FINE
010.6	R	ROOTS FINE
011.6	R	ROOTS FINE
012.6	R	ROOTS FINE
012.5	FC	FRACTURE, CIRCUMFERENTIAL FROM 12 TO 05 O'CLOCK
012.5	FH	FINISH OF SURVEY (MAIN SEWER)

END OF RUN NO.16

MAIN SEWER





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INSPECTION REPORT

CLIENT. ELLIOTTWOOD 241 THE BROADWAY LONDON SW19 1SD LOCATION. 81 AVENUE ROAD LONDON NW8 6JD

JOB NO.	RUN NUMBER	DATE	SEWER USE	DEPTH	DIRECTION	PIPE SIZE	MATERIAL	WEATHER	CLEANED	OPERATOR	PAGE
CV.1098	17	02/08/16	COMBINED	3120mm	UPSTREAM	150mm	V/CLAY	DRY	NO	GO	1

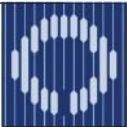
START FINISH

ST. MANHOLE No. 08 CONNECTION- 1 FH. MANHOLE NO.07

CHAINAGE	CODE	OBSERVATION
	ST	START OF SURVEY
000.0	WL	WATER LEVEL 05%
004.8	MH	MANHOLE NO.07
004.8	FH	FINISH OF SURVEY



END OF RUN NO.17



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SUMMARY AND RECOMMENDATIONS

CLIENT. ELLIOTTWOOD 241 THE BROADWAY LONDON SW19 1SD		LOCATION. 81 AVENUE ROAD LONDON NW8 6JD
DATE 02/08/16	JOB. CV.1098	
RUN NO.01 ROOTS		
RUN NO.02 FRACTURES		
RUN NO.03 NO WORK NEEDED		
RUN NO.04 NO WORK NEEDED		
RUN NO.05 ROOTS FRACTURE		
RUN NO.06 NO WORK NEEDED		
RUN NO.07 NO WORK NEEDED		
RUN NO.08 ROOTS		
RUN NO.09 NO WORK NEEDED		
RUN NO.10 NO WORK NEEDED		
RUN NO.11 NO WORK NEEDED		
RUN NO.12 NO WORK NEEDED		
RUN NO.13 NO WORK NEEDED		
RUN NO.14 NO WORK NEEDED		
RUN NO.15 NO WORK NEEDED		
RUN NO.16 FRACTURES AND ROOTS		
RUN NO.17 NO WORK NEEDED		

DRAIN & PIPEWORK CCTV SURVEYS

-

DRAINS
PIPEWORK
CULVERTS

DUCTS
CHUTES

CHIMNEY FLUES
TANKS

HIGH PRESSURE
WATER JETTING

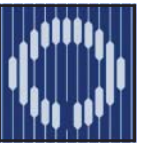
-

SEWER & DRAIN BLOCKAGES
DESCALING
SILT REMOVAL
ROOT CUTTING
GREASE REMOVAL

REMEDIAL WORKS

-

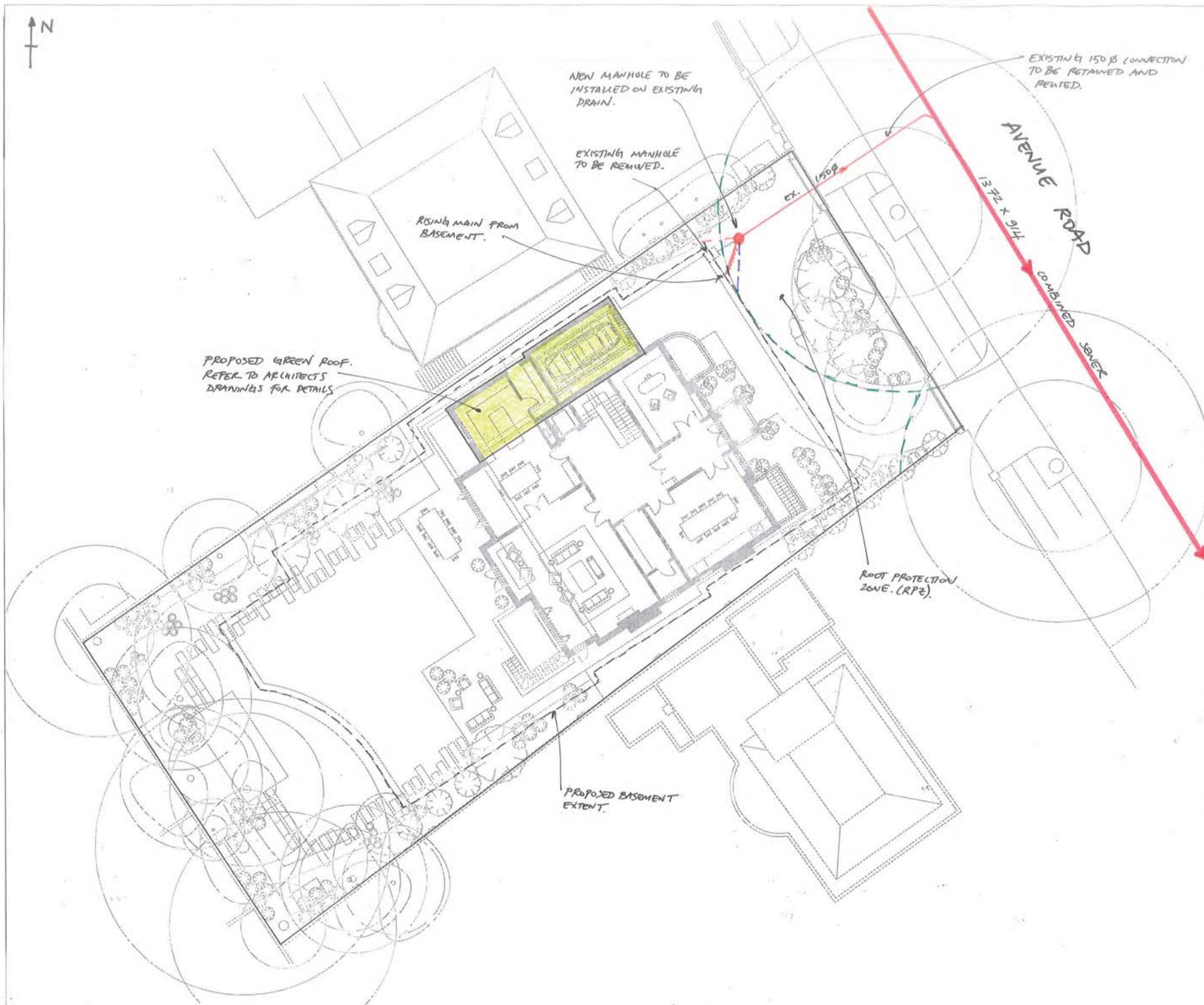
POLYESTER RESIN LINING
DRAINAGE EXCAVATIONS & REPAIRS



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Appendix 3 – Proposed Below Ground Drainage Drawings



This drawing is to be used in conjunction with all relevant architects, engineers and specialist drawings and specifications.
Do not scale from this drawing.

PI	14/16	TK	FOR INFO + COMMENT
rev	date	by	chk description

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job title
**81 AVENUE ROAD
LONDON, NW8 6JD**

drawing title
**PROPOSED BELOW
GROUND DRAINAGE
STRATEGY**

scale(s)	date	drawn
1:250 & A3	SEPT 16	TK
drawing status	PRELIMINARY	

job no	drawing no	revision
2150623	SKD/01	PI

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