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Drawings, specifications and schedules are to be read in conjunction with the following where applicable: Employer's Requirements documents, Agreements to Lease, Structural Engineer's drawings and specifications, Civil Engineer's drawings and specifications, Survey Drawings, Party Wall Boundary Awards, Other specialist design consultant's requirements as appointed by the Main Contractor. Other specialist design sub-contractor's requirements as appointed by the Main Contractor.

P = Preliminary C = Contractual



NOTES

REV	NOTES	DATE	BY	AUTH
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+44 20 7630 0500

DRAWING STATUS

Draft

TITLE
03-Proposed
West Elevation

PROJECT
20-30 Greyfriars

SCALE AT A1:
1 : 100

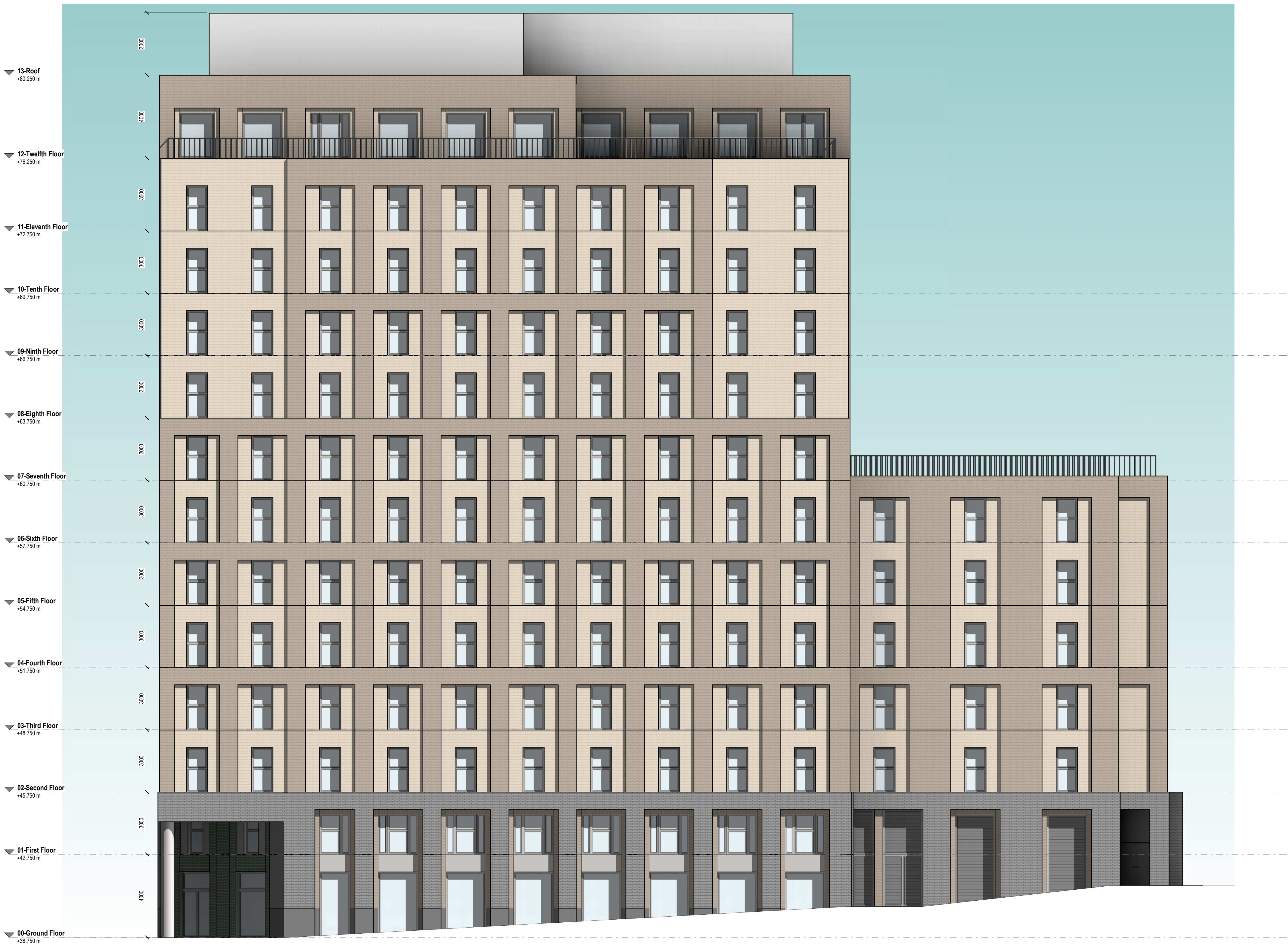
SCALE AT A3:
1 : 200

DAA JOB NO.
23022

DRAWING
GFR-DAA-ZA-ZZ-DR-A-**03204**

REV.

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W West Elevation
Scale 1:100

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P = Preliminary C = Contractual



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DRAWING STATUS

Draft

TITLE
03-Proposed
Section A-A

PROJECT
20-30 Greyfriars

SCALE AT A1:
1 : 100

SCALE AT A3:
1 : 200

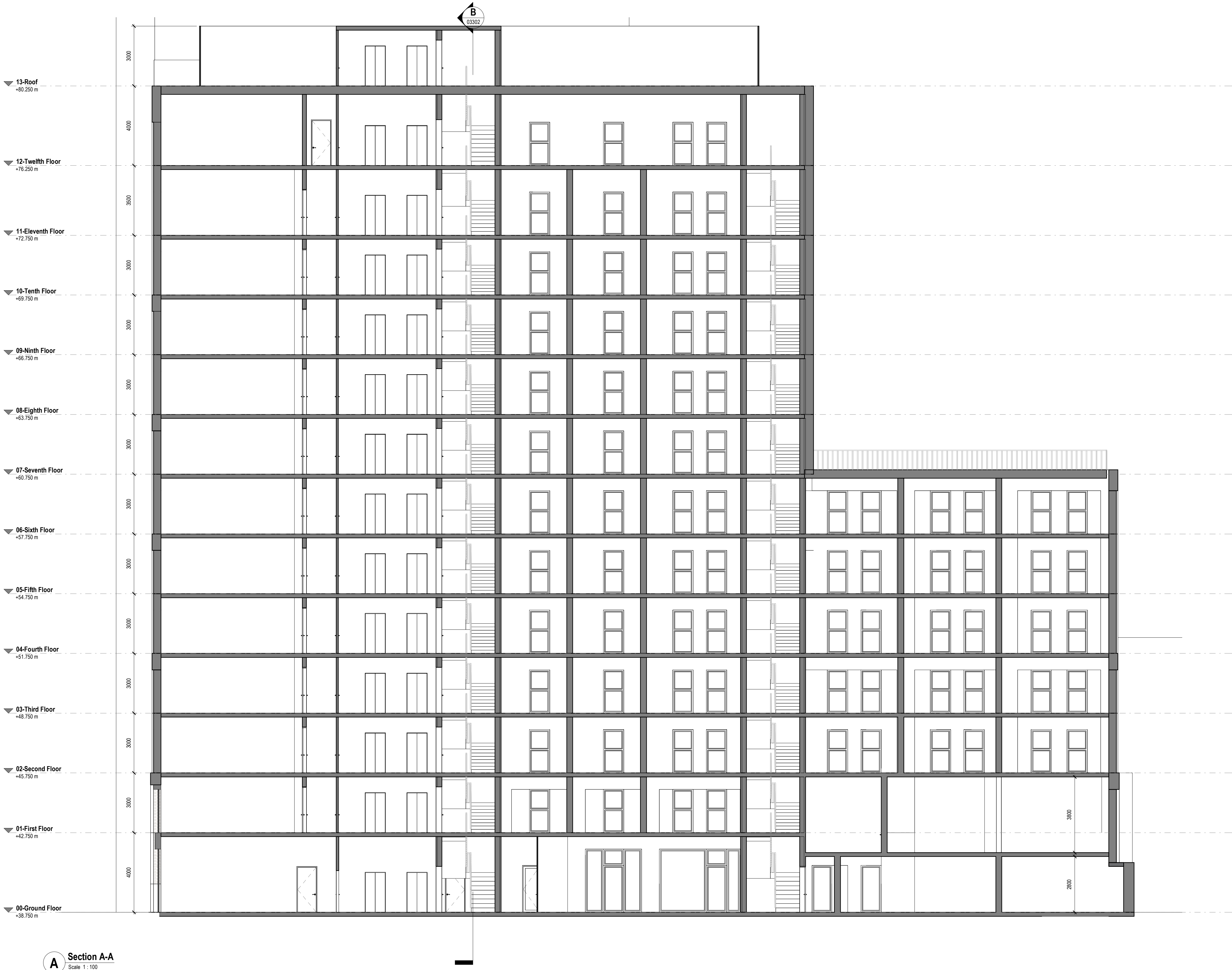
DAA JOB NO.
23022

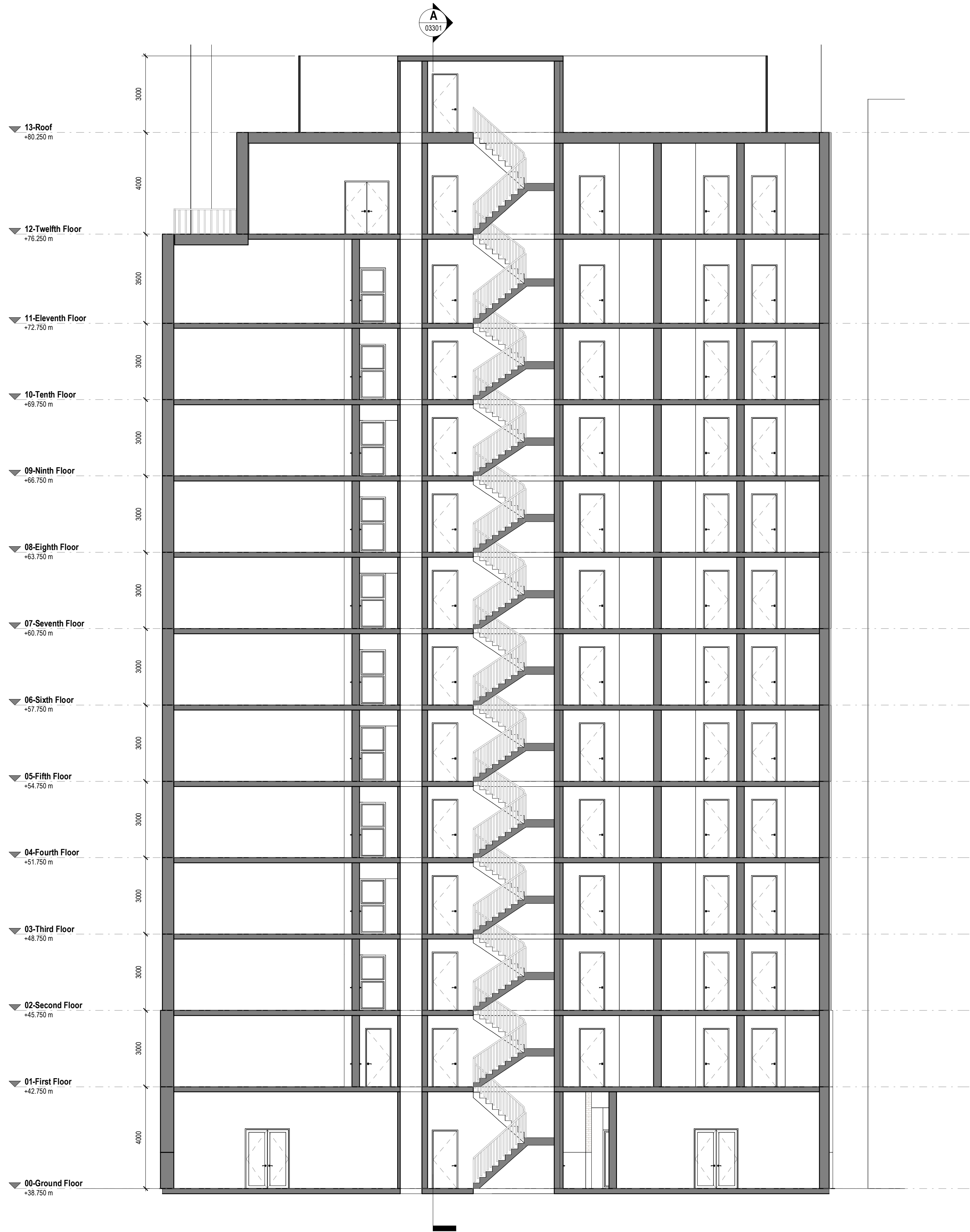
DRAWING

REV.

GFR-DAA-ZA-ZZ-DR-A-**03301**

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B Section B-B
Scale 1:100

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P = Preliminary C = Contractual



NOTES

REV	NOTES	DATE	BY	AUTH
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DRAWING STATUS

Draft

TITLE
03-Proposed
Section B-B

PROJECT
20-30 Greyfriars

SCALE AT A1:
1 : 100

SCALE AT A3:
1 : 200

DAA JOB NO.
23022

DRAWING

REV.

GFR-DAA-ZA-ZZ-DR-A-**03302**

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- Key
- Proposed large nursery stock standard trees
 - Proposed large nursery stock multi stem trees
 - Proposed large nursery stock shrubs
 - Shade tolerant lush groundcover planting
 - Shade and drought tolerant ornamental planting
 - Climbing plants to courtyard boundary supported with steel wire mesh
 - Charcoal concrete aggregate 'planks'
 - Silver grey concrete aggregate paving flags
 - Concrete aggregate paving to match Station Hill scheme
 - Permeable charcoal concrete block paving
 - Conservation kerbs to match Station Hill development
 - Flush aluminium edging
 - Moveable corten planters of various sizes
 - FSC timber seat with arm and back rest
 - Flush tree pit
 - Visitor Sheffield cycle stands
 - FSC table and benches with integrated power
 - Moveable 'cafe' furniture
 - Site boundary



NOTES

Do not scale from this drawing. All setting out, levels and dimensions to be verified on site. All dimensions are in millimetres unless otherwise stated. Drawings to be read in conjunction with specification and all other relevant drawings. This drawing is copyright protected and may not be reproduced without written authority. Any discrepancies to be reported to the landscape architect.

REV	AMENDMENT / ISSUE	DATE
HENSHALL GREEN LANDSCAPE ARCHITECTS		
www.henshallgreen.com		
Elder Developments (Greyfriars) Ltd		
CLIENT		
20-30 Greyfriars Road Reading		
PROJECT		
Ground & Level 1 Landscape General Arrangement		
DRAWING		
Planning STATUS		
October 2024 DATE	1:100 @ A1 SCALE	
126 HGL XX 00 DR L 0002 DRAWING No.	P02 REVISION	

Appendix B – Site survey information



EXISTING TOPOGRAPHICAL SURVEY

© copyright

Copyright of this drawing is retained by Arena Property Services Ltd. Any discrepancies between this drawing and any other information should be reported to Arena Property Services Ltd.

Drawing Naming Convention:

Job No\Code\Dwg type\Location\Ref

Code: 13 = Existing 14 = Proposed

Dwg Type: B = Building E = Elevation S = Section T = Topographical

Location: B = Basement C = Ceiling Plan E = External F = Front G = Ground S = Side 1 = First Re = Rear R = Roof GA = General Layout M = Mezzanine AA = Section A-A

Ref Ref to individual dwg I.D. (e.g. Revision)

Standard Abbreviations (where applicable):

Building Survey

Land Survey

AB AIR BRICK ACU AIR CONDITIONING UNIT AH ACCESS HATCH AP ACCESS PANEL AV AIR VALVE BH BRAM HT BR BOILER BSL BRAM SOFFIT LEVEL CB CUTBOARD CC CEILING CHANGE CH CLEAR INTERNAL HT C-A CILL TO APEX HT C-H CILL TO HEAD HT C-S CILL TO SPRING HT DB DOOR BASE HT DH DOOR HEAD HT DR DRAIN EFP EXTRACTOR FAN FA FIRE ALARM F-A FLOOR TO APEX HT F-C FLOOR TO CILL HT F-H FLOOR TO HEAD HT F-S FLOOR TO SPRING HT GEA GROSS EXTERNAL AREA GIA GROSS INTERNAL AREA GU GULLY HT HEATER HW HOT WATER TANK NIA NET INTERNAL AREA NTS NOT TO SCALE RAD RADIATOR RE RECESS HEAD HEIGHT RFV RAISED FLOOR VOID RL ROOF LIGHT RSH ROLLER SHUTTER RWP RAIN WATER PIPE SVP SOIL VENT PIPE V VENT WA WARDROBE

B BOLLARD BB BELLSHA BEACON BT B.T. COVER CAM CAMERA CATV CABLE TV COVER CL COVER LEVEL ELEC ELECTRIC COVER EP ELECTRIC POLE ER EARTH ROD FP FLAG POLE FW FOUL WATER GU GULLY GV GAS VALVE HYD FIRE HYDRANT IC INSPECTION COVER IL INTEREST LEVEL LP LAMP POST MH MANHOLE MKR MARKER POST P POST PM PARKING METER PI PIPE RO RODDING RYE RS ROAD SIGN RWP RAIN WATER PIPE SA SITE AREA SI SIGN SL SOFFIT LEVEL SV STOP VALVE SVP SOIL VENT PIPE SW STORM WATER TP TELEGRAPH POLE UTL UNABLE TO LOCATE UTR UNABLE TO RAISE VP VENT PIPE WM WATER METER WT WATER TAP

Symbols (where applicable):

Direction of sloping ceiling

2.65

2.65

9 10.00

FLOOR TO STRUCTURAL CEILING HT

FLOOR TO SUSPENDED CEILING HT

FLOOR LEVEL RELATIVE TO DATUM

Notes:

The Survey has been computed on an arbitrary grid.

All Levels are in metres and relate to an arbitrary site datum.

Ground floor entrance. Value 7.05m.

All direction arrows indicate DOWN unless otherwise stated.

Drainage pipe sizes (where shown) have been gauged from the surface (for safety reasons) and should be regarded as approximate only.

Visible features in the vicinity of any boundaries, as shown on this survey, may not represent the extent of legally conveyed ownership.

Whilst every effort has been made to determine wall materials, no guarantee is given. Materials should be regarded as assumed unless verified by a qualified third party.

Rev	Date	By	Description
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A R E N A

PROPERTY SERVICES LIMITED

CHARTERED SURVEYORS

LAND & MEASURED BUILDING SURVEYS

96 Farringdon Road, London EC1R 3EA

020 7837 7721 www.arena-ps.com

surveys@arena-ps.com

Client: ELDER DEVELOPMENTS LTD

Project: 20-30 GREYFRIARS ROAD
READING RG1 1NS

Drawing Title: EXISTING
TOPOGRAPHICAL SURVEY

Date:	Scale:	Surveyor:	Drawn:	Checked:
12.03.24	1:100@A1	LM	SOT	APS
Job No:	Drawing No:	Sheet No:	Rev:	
23134	23134-13-B-T	1		



CCTV Drainage Survey

Job No: 4622

Client:

**Elder Developments
(Greyfriars) Ltd**

Date: 11/10/2024

**Site Location:
20-30 Greyfriars Rd
Reading RG1 1NS**

Project

Project Name: 20-30 GREYFRIARS READING
Project Description: WinCan Import in Miraculix Standard
Project Number: 4622
Project Status: Complete
Project Date: 11/10/2024

Table of Contents

Project Name	Project Number	Project Date
20-30 GREYFRIARS READING	4622	11/10/2024

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Section Item 3: SW1 > INTERCEPTOR (SW1X)	8
Section Item 4: LINEA > SW2 (LINEAX)	11
Section Item 5: SW2 > WL (SW2X)	13

Project Information

Project Name	Project Number	Project Date
20-30 GREYFRIARS READING	4622	11/10/2024

Client

Company: Elder Developments (Greyfriars) Ltd,
Contact: Ed Marsh
Department: Founder
Street: 3rd Floor Marlborough House, 298 Regents Park Road
Town or City: Finchley
County: London
Post Code: N3 2SZ
Mobile: 07713 888 107
Email: emarsh@elderlondon.com

Site

Company: Elder Developments (Greyfriars) Ltd
Contact: Ed Marsh
Street: 20-30 Greyfriars Road
Town or City: Reading
Post Code: RG1 1NS
Mobile: 07713 888 107
Email: emarsh@elderlondon.com

Contractor

Company: EMP Drainage Ltd
Contact: Michael Wood
Department: Director
Street: Unit 4, Dales Court Business Centre, Dales Road
Town or City: Ipswich
County: Suffolk
Post Code: IP1 4JR
Phone: 01473 748704
Email: info@empdrainage.co.uk

Project Information

Project Name	Project Number	Project Date
20-30 GREYFRIARS READING	4622	11/10/2024

Project Notes

We recently attended onsite to carry out a foul and surface water CCTV drainage survey, to all accessible drainage within outlined site boundary.

Highlighted Thames water assets that could be accessed have been lifted with their depths provided.

Private foul water drainage is constructed of cast iron and is suspended on the ceiling of the basement car park, due to there location and no access CCTV could not be completed, an accurate plan has been provided and the system has been marked using blue and red spray. (Please see pictures attached)

Limited access to the surface water drainage system restricted CCTV however the sections that were successfully surveyed are heavily silted and showing evidence of corrosion.

Surface water drainage within the car park discharges to a nearby pump before being discharged offsite.

Recommendations

Remove access caps on suspended cast iron pipe work within basement car park area to carry out full CCTV Drainage survey to the foul water drainage system. Please note spare bolts, seals and the system shutting down will be required before attempting to remove access caps.

Carry out full clean to silted and corroded cast iron surface water drainage system.

Please see report and plan for manhole locations, direction of flow, pipe sizes, depths and structural condition.

Please note quotation for remedial works can be provided upon request.

Project Information

Project Name 20-30 GREYFRIARS READING	Project Number 4622	Project Date 11/10/2024
---	-------------------------------	-----------------------------------

Project Drawing, Page '20-30 GREYFRIARS READING'



Scoring Summary

Project Name
20-30 GREYFRIARS READING

Project Number
4622

Project Date
11/10/2024

Structural Defects

Section	PLR	Grade	Description
All inspected pipes are in an acceptable structural condition (< grade 3).			

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	IC1X	3	Multiple defects
2	LINE AX	5	Settled deposits, fine, 90% cross-sectional area loss
5	SW2X	4	Multiple defects

Abandoned Surveys

Section	PLR	Description
2	LINE AX	Survey abandoned
4	LINE AX	Survey abandoned
5	SW2X	Survey abandoned

Information

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

Project Pictures

Project Name	Project Number	Project Date
20-30 GREYFRIARS READING	4622	11/10/2024



SW1



SW2



INTERCEPTOR 1



INTERCEPTOR 2



INTERCEPTOR 3



INTERCEPTOR AREA

Project Pictures

Project Name	Project Number	Project Date
20-30 GREYFRIARS READING	4622	11/10/2024



MH2601A



MH2602 UTL



MH2651



MH2702



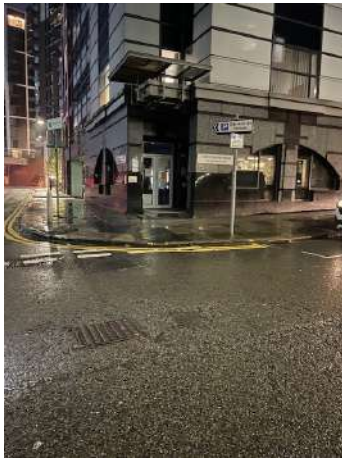
MH2601A AREA



MH2651 AREA

Project Pictures

Project Name	Project Number	Project Date
20-30 GREYFRIARS READING	4622	11/10/2024



MH2702 AREA.



PUMP



PUMP OUTLET TO MAINS IN ROAD



PUMP LINE AREA



AREA OF PUMP AND FW LINE TO MAINS



AREA OF SW AND FOUL RUNS TO LEFT OF BUILDING TO MAINS

Project Pictures

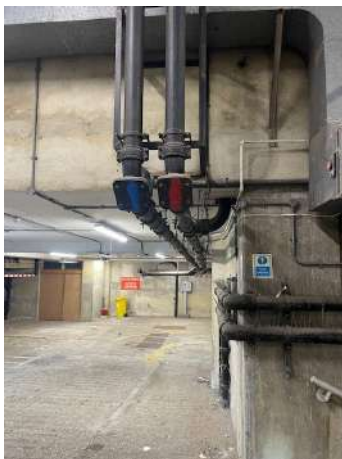
Project Name	Project Number	Project Date
20-30 GREYFRIARS READING	4622	11/10/2024



FOUL LINE OUT TO MAINS AND SW



FW AND SW RUNS ON LEFT OF BUILDING OUT TO MAINS



FW AND SW RUNS SUSPENDED IN CEILING

Section Profile

Project Name
20-30 GREYFRIARS READING

Project Number
4622

Project Date
11/10/2024

Circular, 100 mm

Item No.	Upstream Node	Downstream Node	Date	Road	Material	Total Length	Inspected Length
1	IC1	SW1	08/10/2024	GREYFRIARS	Cast iron	14.13 m	14.13 m
3	SW1	INTERCEPTOR	08/10/2024	GREYFRIARS	Cast iron	24.05 m	24.05 m

Total: 2 Inspections x Circular 100 mm = 38.18 m Total Length and 38.18 m Inspected Length

Total: 2 Inspections = 38.18 m Total Length and 38.18 m Inspected Length

Section Summary

Project Name 20-30 GREYFRIARS READING	Project Number 4622	Project Date 11/10/2024
---	-------------------------------	-----------------------------------

Number of sections	5
Total length of sections	43.08 m
Total length of inspected sections	43.08 m
Total length of not inspected sections	0.00 m
Number of abandoned inspections	3
Number of section inspection photos	39
Number of section inspection videos	5
Number of section inspection scans	0
Number of section inclination measurements	0

PLR:	IC1X	Upstream Node:	IC1
Inspection Direction:	Upstream	Downstream Node:	SW1
Inspected Length:	14.13 m	Dia/Height:	100 mm
Total Length:	14.13 m	Material:	Cast iron

No.	m+	Code	Observation
1	0.00	MH	Start node, manhole, reference: SW1
2	0.03	WL	Water level, 0% of the vertical dimension
3	0.03	LL	Line deviates left
4	0.03	DEE	Attached deposits, encrustation from 12 o'clock to 11 o'clock, 5% cross-sectional area loss, start
5	1.55	WL	Water level, 10% of the vertical dimension
6	1.55	DEC	Settled deposits, hard or compacted, 10% cross-sectional area loss
7	2.06	JN	Junction at 12 o'clock, 100mm dia
8	2.55	DES	Settled deposits, fine, 10% cross-sectional area loss, start
9	8.62	WL	Water level, 20% of the vertical dimension
10	9.99	WL	Water level, 50% of the vertical dimension
11	10.57	JN	Junction at 3 o'clock, 100mm dia
12	10.87	JN	Junction at 9 o'clock, 100mm dia
13	11.90	LR	Line deviates right
14	13.83	LU	Line deviates up
15	14.13	OCF	Finish node, other special chamber, reference: IC1

PLR:	LINE AX	Upstream Node:	LINE A
Inspection Direction:	Upstream	Downstream Node:	SW1
Inspected Length:	0.57 m	Dia/Height:	100 mm
Total Length:	0.57 m	Material:	Cast iron

No.	m+	Code	Observation
1	0.00	MH	Start node, manhole, reference: SW1

Section Summary

Project Name 20-30 GREYFRIARS READING	Project Number 4622	Project Date 11/10/2024
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No.	m+	Code	Observation
2	0.00	WL	Water level, 0% of the vertical dimension
3	0.00	DES	Settled deposits, fine, 90% cross-sectional area loss
4	0.57	SA	Survey abandoned

PLR:	SW1X	Upstream Node:	SW1
Inspection Direction:	Downstream	Downstream Node:	INTERCEPTOR
Inspected Length:	24.05 m	Dia/Height:	100 mm
Total Length:	24.05 m	Material:	Cast iron

No.	m+	Code	Observation
1	-0.02	MH	Start node, manhole, reference: SW1
2	0.00	WL	Water level, 0% of the vertical dimension
3	0.00	DEE	Attached deposits, encrustation from 12 o'clock to 11 o'clock, 5% cross-sectional area loss, start
4	17.77	JN	Junction at 9 o'clock, 100mm dia
5	18.57	JN	Junction at 9 o'clock, 100mm dia
6	23.68	JN	Junction at 12 o'clock, 100mm dia
7	23.68	JN	Junction at 6 o'clock, 100mm dia
8	24.05	OCF	Finish node, other special chamber, reference: INTERCEPTOR

PLR:	LINE AX	Upstream Node:	LINE A
Inspection Direction:	Upstream	Downstream Node:	SW2
Inspected Length:	0.00 m	Dia/Height:	100 mm
Total Length:		Material:	Cast iron

No.	m+	Code	Observation
1	0.00	MH	Start node, manhole, reference: SW2
2	0.00	WL	Water level, 5% of the vertical dimension
3	0.00	DES	Settled deposits, fine, 70% cross-sectional area loss
4	0.00	SA	Survey abandoned

PLR:	SW2X	Upstream Node:	SW2
Inspection Direction:	Downstream	Downstream Node:	WL
Inspected Length:	4.33 m	Dia/Height:	100 mm
Total Length:	4.33 m	Material:	Cast iron

No.	m+	Code	Observation
1	0.00	MH	Start node, manhole, reference: SW2
2	0.00	WL	Water level, 0% of the vertical dimension
3	0.00	DES	Settled deposits, fine, 10% cross-sectional area loss, start
4	0.83	LL	Line deviates left
5	1.74	DES	Settled deposits, fine, 30% cross-sectional area loss
6	4.33	LR	Line deviates right
7	4.33	DES	Settled deposits, fine, 60% cross-sectional area loss
8	4.33	SA	Survey abandoned

Section Inspection - 08/10/2024 - IC1X

Item No. 1	Insp. No. 1	Date: 08/10/24	Time: 9:19	Client's Job Ref Not Specified	Weather No Rain Or Snow	Pre Cleaned No	PLR IC1X
Operator A BIGGS		Vehicle AY24 XLM		Camera Push Rod	Preset Length Not Specified	Legal Status Private Drain	Alternative ID 1

Town or Village:	Reading	Inspection Direction:	Upstream	Upstream Node:	IC1
Road:	Greyfriars	Inspected Length:	14.13 m	Upstream Pipe Depth:	0.000 m
Location:	Under a building	Total Length:	14.13 m	Downstream Node:	SW1
Surface Type:	Concrete Footway	Joint Length:		Downstream Pipe Depth:	0.760 m
Use:	Surface water	Pipe Shape:	Circular		
Type of Pipe:	Gravity drain/sewer	Dia/Height:	100 mm		
Flow Control:	No flow control	Material:	Cast iron		
Year Constructed:	Not Specified	Lining Type:	No Lining		
Inspection Purpose:	Routine inspection	Lining Material:	No Lining		

Comments:

Recommendations:

Scale: 1:123	Position [m]	Code	Observation	MPEG	Photo	Grade
	0.00	MH	Start node, manhole, reference: SW1	00:00:05	SW1 UPSTREA M	
	0.03	WL	Water level, 0% of the vertical dimension	00:00:08	SW1 UPSTREA M	
	0.03	LL	Line deviates left	00:00:12	SW1 UPSTREA M	
	0.03	S01 DEE	Attached deposits, encrustation from 12 o'clock to 11 o'clock, 5% cross-sectional area loss, start	00:00:16	SW1 UPSTREA M	3
	1.55	WL	Water level, 10% of the vertical dimension	00:00:31	SW1 UPSTREA M	
	1.55	DEC	Settled deposits, hard or compacted, 10% cross-sectional area loss	00:00:34	SW1 UPSTREA M	3
	2.06	JN	Junction at 12 o'clock, 100mm dia: ACCO	00:00:44	SW1 UPSTREA M	
	2.55	S02 DES	Settled deposits, fine, 10% cross-sectional area loss, start	00:00:57	SW1 UPSTREA M	3
	8.62	WL	Water level, 20% of the vertical dimension	00:02:14	SW1 UPSTREA M	
	9.99	WL	Water level, 50% of the vertical dimension	00:02:35	SW1 UPSTREA M	
	10.57	JN	Junction at 3 o'clock, 100mm dia	00:02:54	SW1 UPSTREA M	
	10.87	JN	Junction at 9 o'clock, 100mm dia	00:03:07	SW1 UPSTREA M	
	11.90	LR	Line deviates right	00:03:26	SW1 UPSTREA M	
	13.83	LU	Line deviates up	00:03:48	SW1 UPSTREA M	
	14.13	OCF	Finish node, other special chamber, reference: IC1: ACCO OFF IC1	00:03:56	SW1 UPSTREA 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	3	2.0	0.4	6.0	3.0

Section Pictures - 08/10/2024 - IC1X

Item No.	Inspection Direction	PLR	Client's Job Ref	Contractor's Job Ref
1	Upstream	IC1X		



SW1 UPSTREAM IC1_0-00m_092330.jpg, 00:00:05, 0.00 m
Start node, manhole, reference: SW1



SW1 UPSTREAM IC1_0-03m_092342.jpg, 00:00:08, 0.03 m
Water level, 0% of the vertical dimension



SW1 UPSTREAM IC1_0-03m_092349.jpg, 00:00:12, 0.03 m
Line deviates left



SW1 UPSTREAM IC1_0-03m_092419.jpg, 00:00:16, 0.03 m
Attached deposits, encrustation from 12 o'clock to 11 o'clock, 5% cross-sectional area loss, start

Section Pictures - 08/10/2024 - IC1X

Item No.	Inspection Direction	PLR	Client's Job Ref	Contractor's Job Ref
1	Upstream	IC1X		



SW1 UPSTREAM IC1_1-55m_092444.jpg, 00:00:31, 1.55 m
Water level, 10% of the vertical dimension



SW1 UPSTREAM IC1_1-55m_092455.jpg, 00:00:34, 1.55 m
Settled deposits, hard or compacted, 10% cross-sectional area loss



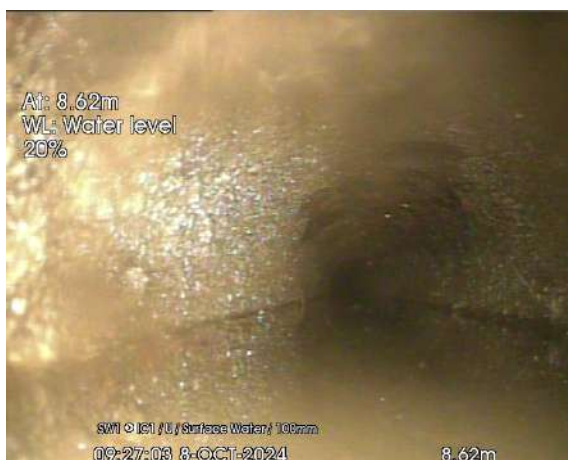
SW1 UPSTREAM IC1_2-06m_092518.jpg, 00:00:44, 2.06 m
Junction at 12 o'clock, 100mm dia, ACCO



SW1 UPSTREAM IC1_2-55m_092540.jpg, 00:00:57, 2.55 m
Settled deposits, fine, 10% cross-sectional area loss, start

Section Pictures - 08/10/2024 - IC1X

Item No.	Inspection Direction	PLR	Client's Job Ref	Contractor's Job Ref
1	Upstream	IC1X		



SW1 UPSTREAM IC1_8-62m_092703.jpg, 00:02:14, 8.62 m
Water level, 20% of the vertical dimension



SW1 UPSTREAM IC1_9-99m_092731.jpg, 00:02:35, 9.99 m
Water level, 50% of the vertical dimension



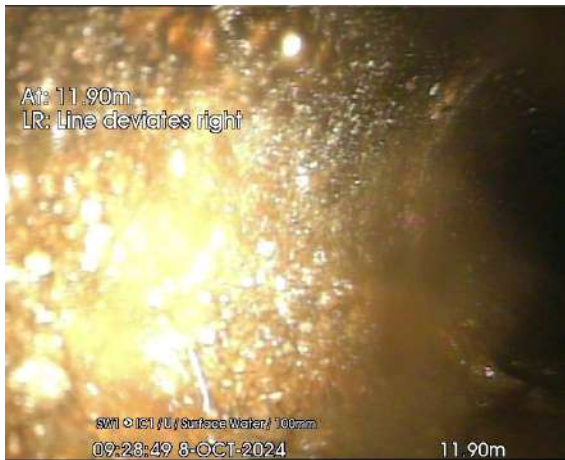
SW1 UPSTREAM IC1_10-57m_092800.jpg, 00:02:54, 10.57 m
Junction at 3 o'clock, 100mm dia



SW1 UPSTREAM IC1_10-87m_092825.jpg, 00:03:07, 10.87 m
Junction at 9 o'clock, 100mm dia

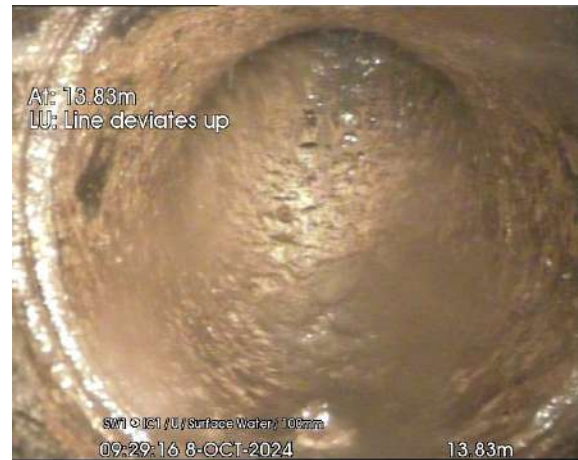
Section Pictures - 08/10/2024 - IC1X

Item No.	Inspection Direction	PLR	Client's Job Ref	Contractor's Job Ref
1	Upstream	IC1X		



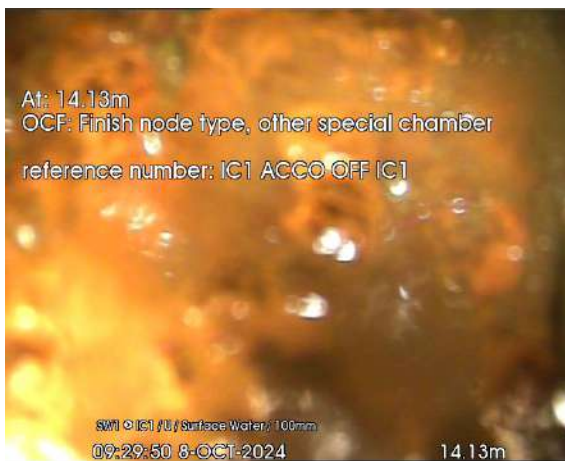
SW1 UPSTREAM IC1_11-90m_092849.jpg, 00:03:26, 11.90

m
Line deviates right



SW1 UPSTREAM IC1_13-83m_092916.jpg, 00:03:48, 13.83

m
Line deviates up



SW1 UPSTREAM IC1_14-13m_092950.jpg, 00:03:56, 14.13

m
Finish node, other special chamber, reference: IC1, ACCO
OFF IC1

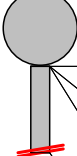
Section Inspection - 08/10/2024 - LINE AX

Item No. 2	Insp. No. 2	Date: 08/10/24	Time: 9:30	Client's Job Ref Not Specified	Weather No Rain Or Snow	Pre Cleaned No	PLR LINE AX
Operator A BIGGS		Vehicle AY24 XLM		Camera Push Rod	Preset Length Not Specified	Legal Status Private Drain	Alternative ID 1

Town or Village:	Reading	Inspection Direction:	Upstream	Upstream Node:	LINE A
Road:	Greyfriars	Inspected Length:	0.57 m	Upstream Pipe Depth:	0.000 m
Location:	Under a building	Total Length:	0.57 m	Downstream Node:	SW1
Surface Type:	Concrete Footway	Joint Length:		Downstream Pipe Depth:	0.760 m
Use:	Surface water	Pipe Shape:	Circular		
Type of Pipe:	Gravity drain/sewer	Dia/Height:	100 mm		
Flow Control:	No flow control	Material:	Cast iron		
Year Constructed:	Not Specified	Lining Type:	No Lining		
Inspection Purpose:	Routine inspection	Lining Material:	No Lining		

Comments:

Recommendations:

Scale:	1:50	Position [m]	Code	Observation	MPEG	Photo	Grade																				
Depth: 0.76 m SW1  <table><tr><td>0.00</td><td>MH</td><td>Start node, manhole, reference: SW1</td><td>00:00:05</td><td>SW1 UPSTREA M LINE</td></tr><tr><td>0.00</td><td>WL</td><td>Water level, 0% of the vertical dimension</td><td>00:00:12</td><td>SW1 UPSTREA M LINE</td></tr><tr><td>0.00</td><td>DES</td><td>Settled deposits, fine, 90% cross-sectional area loss</td><td>00:00:14</td><td>SW1 UPSTREA M LINE</td></tr><tr><td>0.57</td><td>SA</td><td>Survey abandoned: UNABLE TO PASS</td><td>00:00:28</td><td>SW1 UPSTREA M LINE</td></tr></table>								0.00	MH	Start node, manhole, reference: SW1	00:00:05	SW1 UPSTREA M LINE	0.00	WL	Water level, 0% of the vertical dimension	00:00:12	SW1 UPSTREA M LINE	0.00	DES	Settled deposits, fine, 90% cross-sectional area loss	00:00:14	SW1 UPSTREA M LINE	0.57	SA	Survey abandoned: UNABLE TO PASS	00:00:28	SW1 UPSTREA M LINE
0.00	MH	Start node, manhole, reference: SW1	00:00:05	SW1 UPSTREA M LINE																							
0.00	WL	Water level, 0% of the vertical dimension	00:00:12	SW1 UPSTREA M LINE																							
0.00	DES	Settled deposits, fine, 90% cross-sectional area loss	00:00:14	SW1 UPSTREA M LINE																							
0.57	SA	Survey abandoned: UNABLE TO PASS	00:00:28	SW1 UPSTREA M LINE																							

Construction Features

Miscellaneous Features

Structural Defects

Service & Operational Observations

STR No. Def	STR Peak	STR Mean	STR Total	STR Grade	SER No. Def	SER Peak	SER Mean	SER Total	SER Grade
0	0.0	0.0	0.0	1.0	1	10.0	17.5	10.0	5.0

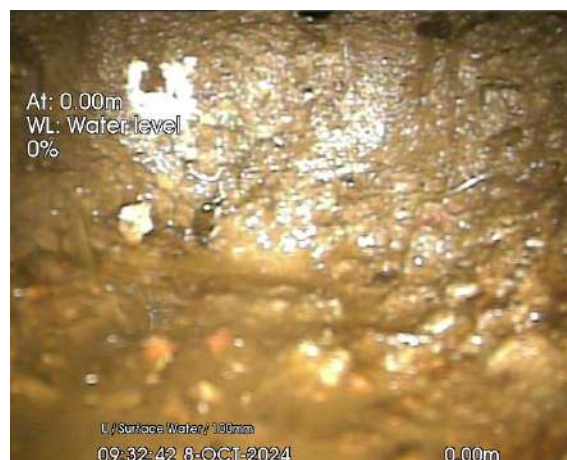
Section Pictures - 08/10/2024 - LINE AX

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



SW1 UPSTREAM LINE A_0-00m_093228.jpg, 00:00:05, 0.00 m

Start node, manhole, reference: SW1



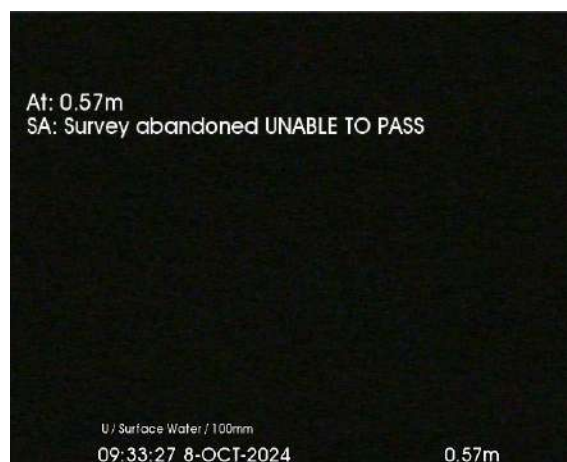
SW1 UPSTREAM LINE A_0-00m_093242.jpg, 00:00:12, 0.00 m

Water level, 0% of the vertical dimension



SW1 UPSTREAM LINE A_0-00m_093255.jpg, 00:00:14, 0.00 m

Settled deposits, fine, 90% cross-sectional area loss



SW1 UPSTREAM LINE A_0-57m_093327.jpg, 00:00:28, 0.57 m

Survey abandoned, UNABLE TO PASS

Section Inspection - 08/10/2024 - SW1X

Item No. 3	Insp. No. 3	Date: 08/10/24	Time: 9:39	Client's Job Ref Not Specified	Weather No Rain Or Snow	Pre Cleaned No	PLR SW1X
Operator A BIGGS		Vehicle AY24 XLM		Camera Push Rod	Preset Length Not Specified	Legal Status Private Drain	Alternative ID 1

Town or Village:	Reading	Inspection Direction:	Downstream	Upstream Node:	SW1
Road:	Greyfriars	Inspected Length:	24.05 m	Upstream Pipe Depth:	0.760 m
Location:	Under a building	Total Length:	24.05 m	Downstream Node:	INTERCEPTOR
Surface Type:	Concrete Footway	Joint Length:		Downstream Pipe Depth:	0.000 m
Use:	Surface water	Pipe Shape:	Circular		
Type of Pipe:	Gravity drain/sewer	Dia/Height:	100 mm		
Flow Control:	No flow control	Material:	Cast iron		
Year Constructed:	Not Specified	Lining Type:	No Lining		
Inspection Purpose:	Routine inspection	Lining Material:	No Lining		

Comments:

Recommendations:

Scale: 1:209	Position [m]	Code	Observation	MPEG	Photo	Grade
Depth: 0.76 m SW1						
-0.02	MH		Start node, manhole, reference: SW1	00:00:04	SW1 DOWNST REAM	
0.00	WL		Water level, 0% of the vertical dimension	00:00:12	SW1 DOWNST REAM	
0.00	S01	DEE	Attached deposits, encrustation from 12 o'clock to 11 o'clock, 5% cross-sectional area loss, start	00:00:19	SW1 DOWNST REAM	3
17.77	JN		Junction at 9 o'clock, 100mm dia	00:03:25	SW1 DOWNST REAM	
18.57	JN		Junction at 9 o'clock, 100mm dia	00:03:40	SW1 DOWNST REAM	
23.68	JN		Junction at 12 o'clock, 100mm dia: RODDING EYE	00:04:41	SW1 DOWNST REAM	
23.68	JN		Junction at 6 o'clock, 100mm dia: ROLL OVER TO TANK	00:04:45	SW1 DOWNST REAM	
24.05	OCF		Finish node, other special chamber, reference: INTERCEPTOR: .	00:05:01	SW1 DOWNST REAM	
INTERCEPTOF Depth: 0.00 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	1	0.0	0.1	2.0	1.0

Section Pictures - 08/10/2024 - SW1X

Item No.	Inspection Direction	PLR	Client's Job Ref	Contractor's Job Ref
3	Downstream	SW1X		



SW1 DOWNSTREAM INTERCEPTOR_-0-02m_094108.jpg,
00:00:04, -0.02 m
Start node, manhole, reference: SW1



SW1 DOWNSTREAM INTERCEPTOR_0-00m_094129.jpg,
00:00:12, 0.00 m
Water level, 0% of the vertical dimension



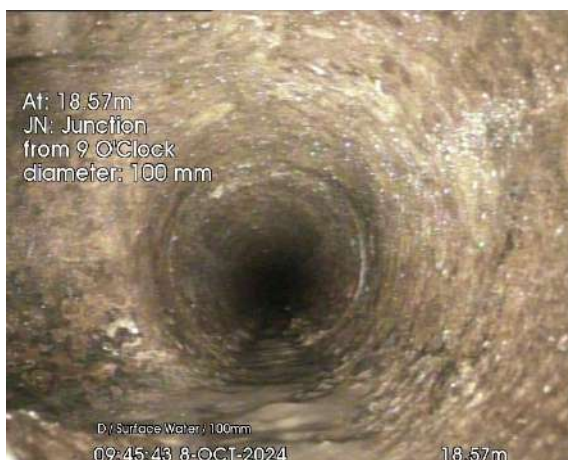
SW1 DOWNSTREAM INTERCEPTOR_0-00m_094150.jpg,
00:00:19, 0.00 m
Attached deposits, encrustation from 12 o'clock to 11 o'clock,
5% cross-sectional area loss, start



SW1 DOWNSTREAM INTERCEPTOR_17-77m_094506.jpg,
00:03:25, 17.77 m
Junction at 9 o'clock, 100mm dia

Section Pictures - 08/10/2024 - SW1X

Item No.	Inspection Direction	PLR	Client's Job Ref	Contractor's Job Ref
3	Downstream	SW1X		



SW1 DOWNSTREAM INTERCEPTOR_18-57m_094543.jpg,
00:03:40, 18.57 m
Junction at 9 o'clock, 100mm dia



SW1 DOWNSTREAM INTERCEPTOR_23-68m_094709.jpg,
00:04:41, 23.68 m
Junction at 12 o'clock, 100mm dia, RODDING EYE



SW1 DOWNSTREAM INTERCEPTOR_23-68m_094731.jpg,
00:04:45, 23.68 m
Junction at 6 o'clock, 100mm dia, ROLL OVER TO TANK



SW1 DOWNSTREAM INTERCEPTOR_24-05m_094755.jpg,
00:05:01, 24.05 m
Finish node, other special chamber, reference:
INTERCEPTOR, .

Section Inspection - 08/10/2024 - LINE AX

Item No. 4	Insp. No. 4	Date: 08/10/24	Time: 10:27	Client's Job Ref Not Specified	Weather No Rain Or Snow	Pre Cleaned No	PLR LINE AX
Operator A BIGGS		Vehicle AY24 XLM		Camera Push Rod	Preset Length Not Specified	Legal Status Private Drain	Alternative ID 1

Town or Village:	Reading	Inspection Direction:	Upstream	Upstream Node:	LINE A
Road:	Greyfriars	Inspected Length:	0.00 m	Upstream Pipe Depth:	0.000 m
Location:	Under a building	Total Length:	0.00 m	Downstream Node:	SW2
Surface Type:	Concrete Footway	Joint Length:		Downstream Pipe Depth:	1.210 m
Use:	Surface water	Pipe Shape:	Circular		
Type of Pipe:	Gravity drain/sewer	Dia/Height:	100 mm		
Flow Control:	No flow control	Material:	Cast iron		
Year Constructed:	Not Specified	Lining Type:	No Lining		
Inspection Purpose:	Routine inspection	Lining Material:	No Lining		

Comments:

Recommendations:

Scale:	1:50	Position [m]	Code	Observation	MPEG	Photo	Grade
Depth: 1.21 m SW2							
0.00		MH	Start node, manhole, reference: SW2	00:00:05	SW2 UPSTREA M LINE		
0.00		WL	Water level, 5% of the vertical dimension	00:00:23	SW2 UPSTREA M LINE		
0.00		DES	Settled deposits, fine, 70% cross-sectional area loss	00:00:25	SW2 UPSTREA M LINE		4
0.00		SA	Survey abandoned: UNABLE TO PASS	00:00:27	SW2 UPSTREA M LINE		

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	8.0	0.0	8.0	4.0

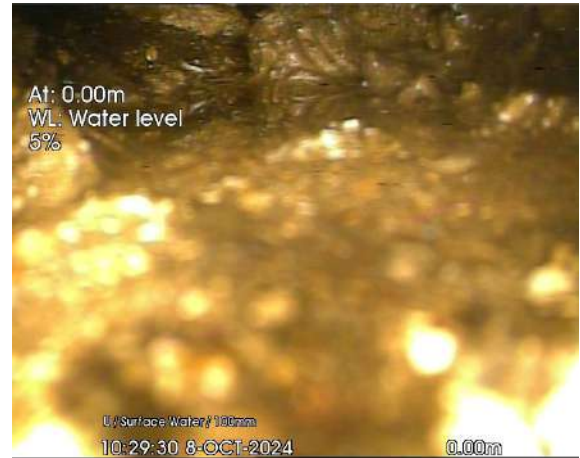
Section Pictures - 08/10/2024 - LINE AX

Item No.	Inspection Direction	PLR	Client's Job Ref	Contractor's Job Ref
4	Upstream	LINE AX		



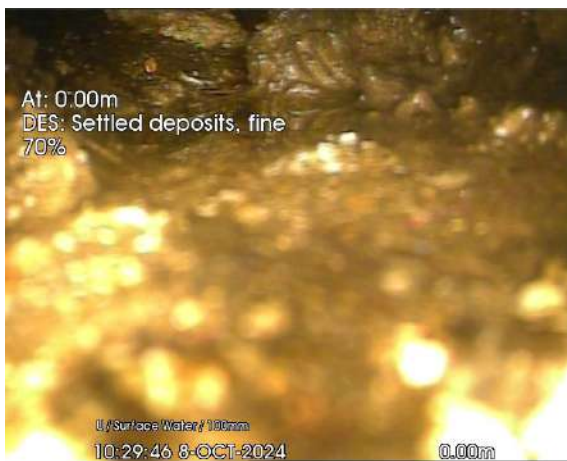
SW2 UPSTREAM LINE A_0-00m_102902.jpg, 00:00:05, 0.00m

Start node, manhole, reference: SW2



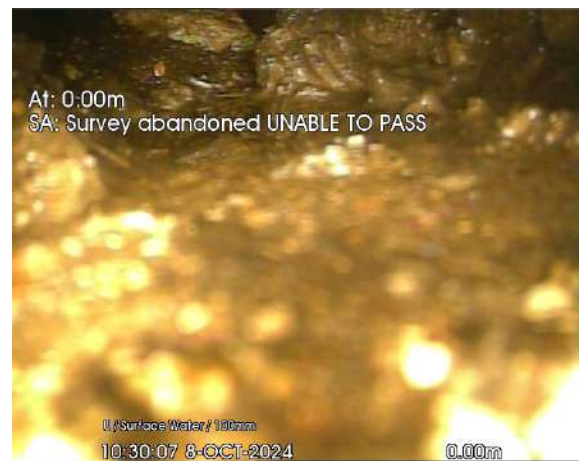
SW2 UPSTREAM LINE A_0-00m_102930.jpg, 00:00:23, 0.00m

Water level, 5% of the vertical dimension



SW2 UPSTREAM LINE A_0-00m_102946.jpg, 00:00:25, 0.00m

Settled deposits, fine, 70% cross-sectional area loss



SW2 UPSTREAM LINE A_0-00m_103007.jpg, 00:00:27, 0.00m

Survey abandoned, UNABLE TO PASS

Section Inspection - 08/10/2024 - SW2X

Item No. 5	Insp. No. 5	Date: 08/10/24	Time: 10:32	Client's Job Ref Not Specified	Weather No Rain Or Snow	Pre Cleaned No	PLR SW2X
Operator A BIGGS		Vehicle AY24 XLM		Camera Push Rod	Preset Length Not Specified	Legal Status Private Drain	Alternative ID 1

Town or Village:	Reading	Inspection Direction:	Downstream	Upstream Node:	SW2
Road:	Greyfriars	Inspected Length:	4.33 m	Upstream Pipe Depth:	1.210 m
Location:	Under a building	Total Length:	4.33 m	Downstream Node:	WL
Surface Type:	Concrete Footway	Joint Length:		Downstream Pipe Depth:	0.000 m
Use:	Surface water	Pipe Shape:	Circular		
Type of Pipe:	Gravity drain/sewer	Dia/Height:	100 mm		
Flow Control:	No flow control	Material:	Cast iron		
Year Constructed:	Not Specified	Lining Type:	No Lining		
Inspection Purpose:	Routine inspection	Lining Material:	No Lining		

Comments:

Recommendations:

Scale:	1:50	Position [m]	Code	Observation	MPEG	Photo	Grade
Depth: 1.21 m SW2 							
		0.00	MH	Start node, manhole, reference: SW2	00:00:05	SW2 DOWNST REAM	
		0.00	WL	Water level, 0% of the vertical dimension	00:00:08	SW2 DOWNST REAM	
		0.00	S01	DES Settled deposits, fine, 10% cross-sectional area loss, start	00:00:13	SW2 DOWNST REAM	3
		0.83	LL	Line deviates left	00:00:28	SW2 DOWNST REAM	
		1.74	DES	Settled deposits, fine, 30% cross-sectional area loss	00:00:44	SW2 DOWNST REAM	4
		4.33	LR	Line deviates right	00:01:26	SW2 DOWNST REAM	
		4.33	DES	Settled deposits, fine, 60% cross-sectional area loss	00:01:30	SW2 DOWNST REAM	4
		4.33	SA	Survey abandoned: UNABLE TO PASS	00:01:34	SW2 DOWNST REAM	

Construction Features

Miscellaneous Features

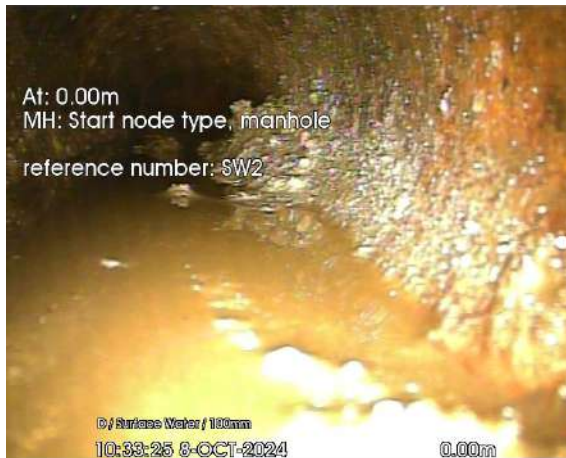
Structural Defects

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	3	8.0	3.5	15.0	4.0

Section Pictures - 08/10/2024 - SW2X

Item No.	Inspection Direction	PLR	Client's Job Ref	Contractor's Job Ref
5	Downstream	SW2X		



SW2 DOWNSTREAM INTERCEPTOR_0-00m_103325.jpg,

00:00:05, 0.00 m

Start node, manhole, reference: SW2



SW2 DOWNSTREAM INTERCEPTOR_0-00m_103338.jpg,

00:00:08, 0.00 m

Water level, 0% of the vertical dimension



SW2 DOWNSTREAM INTERCEPTOR_0-00m_103353.jpg,

00:00:13, 0.00 m

Settled deposits, fine, 10% cross-sectional area loss, start



SW2 DOWNSTREAM INTERCEPTOR_0-83m_103415.jpg,

00:00:28, 0.83 m

Line deviates left

Section Pictures - 08/10/2024 - SW2X

Item No.	Inspection Direction	PLR	Client's Job Ref	Contractor's Job Ref
5	Downstream	SW2X		



SW2 DOWNSTREAM INTERCEPTOR_1-74m_103439.jpg,
00:00:44, 1.74 m
Settled deposits, fine, 30% cross-sectional area loss



SW2 DOWNSTREAM INTERCEPTOR_4-33m_103527.jpg,
00:01:26, 4.33 m
Line deviates right



SW2 DOWNSTREAM INTERCEPTOR_4-33m_103543.jpg,
00:01:30, 4.33 m
Settled deposits, fine, 60% cross-sectional area loss



SW2 DOWNSTREAM INTERCEPTOR_4-33m_103602.jpg,
00:01:34, 4.33 m
Survey abandoned, UNABLE TO PASS

Appendix C – Thames Water asset records, sewer flooding history and Pre-Planning enquiry response



Luke Boustead

Form SD
Second Floor, New Hibernia House
Winchester Walk,
London, SE1 9AG



22 October 2024

Pre-planning enquiry: Confirmation of sufficient capacity

Site Address: 20-30 Greyfriars Road, Reading, RG1 1NS

Dear Luke,

Thank you for providing information on your development to construct 280 housing units, replacing 5000m² of commercial premises.

Foul water to discharge via gravity flow via lateral connection to the 150mm foul sewer on Garrard Street.

Surface water to discharge via pumped flow via lateral connection to the 375mm surface water sewer on Garrard Street. Surface water flow rate restricted to 2.0 l/s.

We have completed the assessment of the foul water flows and surface water run-off based on the information submitted in your application with the purpose of assessing sewerage capacity within the existing Thames Water sewer network.

Foul Water

If your proposals progress in line with the details you've provided, we're pleased to confirm that there will be sufficient sewerage capacity in the adjacent foul water sewer network to serve your development.

This confirmation is valid for 12 months or for the life of any planning approval that this information is used to support, to a maximum of three years.

You'll need to keep us informed of any changes to your design – for example, an increase in the number or density of homes. Such changes could mean there is no longer sufficient capacity.

Surface Water

In accordance with the Building Act 2000 Clause H3.3, positive connection of surface water to a public sewer will only be consented when it can be demonstrated that the hierarchy of disposal methods have been examined and proven to be impracticable. Before we can consider your

surface water needs, you'll need written approval from the lead local flood authority that you have followed the sequential approach to the disposal of surface water and considered all practical means.

The disposal hierarchy being:

- 1) rainwater use as a resource (for example rainwater harvesting, blue roofs for irrigation)
- 2) rainwater infiltration to ground at or close to source
- 3) rainwater attenuation in green infrastructure features for gradual release (for example green roofs, rain gardens)
- 4) rainwater discharge direct to a watercourse (unless not appropriate)
- 5) controlled rainwater discharge to a surface water sewer or drain
- 6) controlled rainwater discharge to a combined sewer.

Where connection to the public sewerage network is required to manage surface water flows we will accept these flows at a discharge rate in line with CIRIA's best practice guide on SuDS or that stated within the sites planning approval.

If the above surface water hierarchy has been followed and if the flows are restricted to a total of **2.0 l/s** then Thames Water would not have any objections to the proposal.

Please see our [FAQ's leaflet](#) for additional information.

This confirmation is valid for 12 months or for the life of any planning approval that this information is used to support, to a maximum of three years.

You'll need to keep us informed of any changes to your design – for example, an increase in the number or density of homes. Such changes could mean there is no longer sufficient capacity.

What happens next?

Please make sure you submit your connection application, giving us at least 21 days' notice of the date you wish to make your new connection/s.

If you have any further questions, please contact us.

Yours sincerely,

Jiahang Yu

Adoptions & Pre-Planning Engineer
Developer Services
Thames Water Utilities Limited

Form Structural Design
Form SD, New Hibernia House Form SD, New Hibernia House

LONDON
SE1 9AG

Search address supplied 30 Greyfriars Road
Greyfriars Road
Reading
Reading

Your reference Greyfriars

Our reference ALS/ALS Standard/2024_5058912

Search date 2 October 2024

Notification of Price Changes

From 1st April 2024 Thames Water Property Searches will be increasing the prices of its CON29DW Residential and Commercial searches along with the Asset Location Search. Costs will rise in line with RPI as per previous years, which is sat at 6%.

Customers will be emailed with the new prices by February 28th 2024.

Any orders received with a higher payment prior to the 1st April 2024 will be non-refundable. For further details on the price increase please visit our website at www.thameswater-propertysearches.co.uk.



Thames Water Utilities Ltd
Property Searches, PO Box 3189, Slough SL1 4WW



searches@thameswater.co.uk
www.thameswater-propertysearches.co.uk



0800 009 4540

Search address supplied: 30 Greyfriars Road, Greyfriars Road, Reading, Reading,

Dear Sir / Madam

An Asset Location Search is recommended when undertaking a site development. It is essential to obtain information on the size and location of clean water and sewerage assets to safeguard against expensive damage and allow cost-effective service design.

The following records were searched in compiling this report: - the map of public sewers & the map of waterworks. Thames Water Utilities Ltd (TWUL) holds all of these.

This search provides maps showing the position, size of Thames Water assets close to the proposed development and also manhole cover and invert levels, where available.

Please note that none of the charges made for this report relate to the provision of Ordnance Survey mapping information. The replies contained in this letter are given following inspection of the public service records available to this company. No responsibility can be accepted for any error or omission in the replies.

You should be aware that the information contained on these plans is current only on the day that the plans are issued. The plans should only be used for the duration of the work that is being carried out at the present time. Under no circumstances should this data be copied or transmitted to parties other than those for whom the current work is being carried out.

Thames Water do update these service plans on a regular basis and failure to observe the above conditions could lead to damage arising to new or diverted services at a later date.

Contact Us

If you have any further queries regarding this enquiry please feel free to contact a member of the team on 0800 009 4540, or use the address below:

Thames Water Utilities Ltd
Property Searches
PO Box 3189
Slough
SL1 4WW

Email: searches@thameswater.co.uk

Web: www.thameswater-propertysearches.co.uk

Waste Water Services

Please provide a copy extract from the public sewer map.

Enclosed is a map showing the approximate lines of our sewers. Our plans do not show sewer connections from individual properties or any sewers not owned by Thames Water unless specifically annotated otherwise. Records such as "private" pipework are in some cases available from the Building Control Department of the relevant Local Authority.

Where the Local Authority does not hold such plans it might be advisable to consult the property deeds for the site or contact neighbouring landowners.

This report relates only to sewerage apparatus of Thames Water Utilities Ltd, it does not disclose details of cables and or communications equipment that may be running through or around such apparatus.

The sewer level information contained in this response represents all of the level data available in our existing records. Should you require any further Information, please refer to the relevant section within the 'Further Contacts' page found later in this document.

For your guidance:

- The Company is not generally responsible for rivers, watercourses, ponds, culverts or highway drains. If any of these are shown on the copy extract they are shown for information only.
- Any private sewers or lateral drains which are indicated on the extract of the public sewer map as being subject to an agreement under Section 104 of the Water Industry Act 1991 are not an 'as constructed' record. It is recommended these details be checked with the developer.

Clean Water Services

Please provide a copy extract from the public water main map.

Enclosed is a map showing the approximate positions of our water mains and associated apparatus. Please note that records are not kept of the positions of individual domestic supplies.

For your information, there will be a pressure of at least 10m head at the outside stop valve. If you would like to know the static pressure, please contact our Customer Centre on 0800 316 9800. The Customer Centre can also arrange for a full flow and pressure test to be carried out for a fee.



For your guidance:

- Assets other than vested water mains may be shown on the plan, for information only.
- If an extract of the public water main record is enclosed, this will show known public water mains in the vicinity of the property. It should be possible to estimate the likely length and route of any private water supply pipe connecting the property to the public water network.

Payment for this Search

A charge will be added to your suppliers account.

Further contacts:

Waste Water queries

Should you require verification of the invert levels of public sewers, by site measurement, you will need to approach the relevant Thames Water Area Network Office for permission to lift the appropriate covers. This permission will usually involve you completing a TWOSA form. For further information please contact our Customer Centre on Tel: 0845 920 0800. Alternatively, a survey can be arranged, for a fee, through our Customer Centre on the above number.

If you have any questions regarding sewer connections, budget estimates, diversions, building over issues or any other questions regarding operational issues please direct them to our service desk. Which can be contacted by writing to:

Developer Services (Waste Water)
Thames Water
Clearwater Court
Vastern Road
Reading
RG1 8DB

Tel: 0800 009 3921
Email: developer.services@thameswater.co.uk

Clean Water queries

Should you require any advice concerning clean water operational issues or clean water connections, please contact:

Developer Services (Clean Water)
Thames Water
Clearwater Court
Vastern Road
Reading
RG1 8DB

Tel: 0800 009 3921
Email: developer.services@thameswater.co.uk

NB. Levels quoted in metres Ordnance Newlyn Datum. The value -9999.00 indicates that no survey information is available

Manhole Reference	Manhole Cover Level	Manhole Invert Level
251O	n/a	n/a
241F	n/a	n/a
241C	n/a	n/a
241B	n/a	n/a
2555	n/a	n/a
251M	n/a	n/a
25LL	n/a	n/a
2455	n/a	n/a
25LF	n/a	n/a
241A	n/a	n/a
351L	n/a	n/a
3455	n/a	n/a
351K	n/a	n/a
351J	n/a	n/a
351I	n/a	n/a
351G	n/a	n/a
351A	n/a	n/a
351B	n/a	n/a
3451	45.34	44.52
3450	45.35	44.17
4401	45	41.14
0462	n/a	n/a
0403	44.24	41.02
0402	45.02	42.4
0455	n/a	n/a
0452	39.56	38.63
0450	44.05	42.34
0551	36.74	34.98
0451	43.06	42.02
1406	43.44	40.66
1453	43.69	41.86
1404	44.11	40.93
1403	44.18	40.97
1451	44.08	42.22
1554	44.25	41.29
141A	n/a	n/a
1402	44.41	41.28
141E	n/a	n/a
141B	n/a	n/a
1456	44.43	42.66
1405	n/a	n/a
1455	44.43	42.8
141D	n/a	n/a
1454	44.45	43.04
241G	n/a	n/a
2401	44.97	n/a
2451	45.11	43.88
3402	44.86	41.11
341A	n/a	n/a
34ME	n/a	n/a
34LN	n/a	n/a
34MH	n/a	n/a
3401	45.28	41.81
441B	n/a	n/a
441C	n/a	n/a
441D	n/a	n/a
5401	44.99	41.12
2701	38.42	34.43
271B	n/a	n/a
4752	n/a	n/a
n/a	n/a	n/a
471D	n/a	n/a
471C	n/a	n/a
471B	n/a	n/a
4753	n/a	n/a
4702	n/a	n/a
n/a	n/a	n/a
4701	n/a	n/a
n/a	n/a	n/a
n/a	n/a	n/a
4704	n/a	n/a
4703	n/a	n/a
461B	n/a	n/a
471E	n/a	n/a
471F	n/a	n/a
381A	n/a	n/a
4756	n/a	n/a
4659	n/a	n/a
4705	44.01	34.08
4707	44.01	39.53
4758	n/a	n/a
4757	n/a	n/a
4751	43.65	40.84
471A	n/a	n/a
5701	44.08	39.83
n/a	n/a	n/a
n/a	n/a	n/a
n/a	n/a	n/a
n/a	n/a	n/a
0561	n/a	n/a
0651	42.03	39.38

Manhole Reference	Manhole Cover Level	Manhole Invert Level
n/a	n/a	n/a
251N	n/a	n/a
2502	44.93	41.96
451J	n/a	n/a
461J	n/a	n/a
461A	n/a	n/a
46NL	n/a	n/a
5601	44.61	40.83
5602	45.13	n/a
5501	45.39	n/a
5553	45.17	43.99
5503	45.17	41.91
5502	45.29	41.75
4553	45.02	44.06
4402	45.1	41.67
4453	45.02	43.81
4454	44.93	42.33
4457	n/a	n/a
4403	44.44	41.29
4451	45.02	43.68
4452	45.03	43.72
45NE	n/a	n/a
4460	n/a	n/a
5504	45.12	41.59
4552	45.52	44.71
4502	45.53	42.88
451B	n/a	n/a
4556	n/a	n/a
451C	n/a	n/a
4557	n/a	n/a
451G	n/a	n/a
451D	n/a	n/a
451I	n/a	n/a
451A	n/a	n/a
451E	n/a	n/a
45MJ	n/a	n/a
4501	45.54	42.35
4503	n/a	n/a
461F	n/a	n/a
461E	n/a	n/a
461L	n/a	n/a
461K	n/a	n/a
461I	n/a	n/a
4657	n/a	n/a
4656	n/a	n/a
4652	44.08	42.78
461H	n/a	n/a
461D	n/a	n/a
461C	n/a	n/a
4653	42.67	41.26
4606	41.29	39.93
3653	39.07	37.54
3601	39.03	36.67
3654	39.02	37.52
3651	39.09	37.42
3655	38.96	37.43
3602	38.96	36.25
3652	39.08	37.54
4654	39.53	n/a
4655	39.49	38.06
2702	38.93	36.87
2752	38.9	37.14
2753	38.85	37.12
371C	n/a	n/a
4706	38.12	n/a
3702	38.8	n/a
2751	38.4	36.89
271A	n/a	n/a
381B	n/a	n/a
381C	n/a	n/a
281F	n/a	n/a
2801	39.02	36.6
2851	39.01	36.39
2802	38.81	36.59
2803	38.61	36.58
281B	n/a	n/a
351C	n/a	n/a
351F	n/a	n/a
251I	n/a	n/a
4558	n/a	n/a
351D	n/a	n/a
2552	44.85	42.93
2503	45.08	41.21
2553	44.94	42.74
2554	45.13	43.01
351H	n/a	n/a
3501	45.42	41.65
3551	45.36	43.37
3552	45.43	43.4
3502	45.59	41.92
3553	45.49	43.51
4551	45.62	43.9
351E	n/a	n/a

Manhole Reference	Manhole Cover Level	Manhole Invert Level
361B	n/a	n/a
361A	n/a	n/a
n/a	n/a	n/a
261G	n/a	n/a
2601A	41.69	38.63
261H	n/a	n/a
461G	n/a	n/a
2651	41.08	39.26
261A	n/a	n/a
1401	44.42	41.32
141C	n/a	n/a
1450	44.57	n/a
2556	n/a	n/a
2452	44.92	43.6
241E	n/a	n/a
2403	44.99	41.78
251K	n/a	n/a
2557	n/a	n/a
251J	n/a	n/a
251A	n/a	n/a
251H	n/a	n/a
251G	n/a	n/a
251B	n/a	n/a
251E	n/a	n/a
25KH	n/a	n/a
25MK	n/a	n/a
2402	44.98	41.92
2458	n/a	n/a
25KK	n/a	n/a
251D	n/a	n/a
251L	n/a	n/a
251F	n/a	n/a
2450	44.99	n/a
2456	n/a	n/a
2457	n/a	n/a
1652	39.44	38.24
1551	43.35	41.1
161A	n/a	n/a
1503	44.38	41.04
151A	n/a	n/a
161I	n/a	n/a
1501	43.4	40.34
161F	n/a	n/a
161E	n/a	n/a
1607	43.34	40.4
161C	n/a	n/a
161D	n/a	n/a
1552	44.5	41.85
161G	n/a	n/a
161H	n/a	n/a
161B	n/a	n/a
261I	n/a	n/a
261B	n/a	n/a
27MH	n/a	n/a
2551	44.67	42.97
2602A	44.09	41.59
2501	44.74	41.58
261F	n/a	n/a
261D	n/a	n/a
261C	n/a	n/a
2653	40.43	39.04
n/a	n/a	n/a
2754	n/a	n/a
0760	38.44	36.9
1753	38.55	36.84
1751	n/a	n/a
1701	n/a	n/a
1754	38.43	37.53
1761	n/a	36.29
1755	38.72	37.59
281A	n/a	n/a
281D	n/a	n/a
281C	n/a	n/a
281E	n/a	n/a
181B	38.5	36.63
1863	38.36	34.4
1862	38.34	34.4
1856	38.45	36.46
1805	38.45	35.43
1858	38.38	n/a
1804	38.41	35.7
1854	38.31	36.21
1853	38.07	35.99
1802	38.03	35.55
1852	38.37	n/a
1803	37.86	35.57
1801	38.37	36.13
1851	38.4	n/a
0801	n/a	n/a
0556	n/a	n/a
071D	n/a	n/a
061B	n/a	n/a
071C	n/a	n/a

Manhole Reference	Manhole Cover Level	Manhole Invert Level
06NL	n/a	n/a
071B	n/a	n/a
061A	n/a	n/a
1555	n/a	n/a
1556	n/a	n/a
1654	43.17	39.14
1604	43.33	38.57
1603	41.07	37.47
1651	39.73	37.99
1601	39.77	36.86
1653	39.51	38.65
1662	n/a	n/a
1752	39.25	37.63
1502	44.36	40.65
1702	39.32	36.22
1553	44.31	41.19
1656	n/a	n/a
1605	42.88	38.69
1657	42.13	39.43
1606	n/a	n/a
1602	39.48	37.13
051B	44.07	40.63
0555	44.07	42.09
0558	44.6	41.79
0559	n/a	n/a
0560	41.48	40.26
0752	38.31	36.94
0802	n/a	n/a
0851	n/a	n/a
071A	n/a	n/a
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.		



Asset Location Search - Sewer Key

Public Sewer Types (Operated and maintained by Thames Water)

	Foul Sewer: A sewer designed to convey waste water from domestic and industrial sources to a treatment works.
	Surface Water Sewer: A sewer designed to convey surface water (e.g. rain water from roofs, yards and car parks) to rivers or watercourses.
	Combined Sewer: A sewer designed to convey both waste water and surface water from domestic and industrial sources to a treatment works.
	Storm Sewer
	Sludge Sewer
	Foul Trunk Sewer
	Surface Trunk Sewer
	Combined Trunk Sewer
	Foul Rising Main
	Surface Water Rising Main
	Combined Rising Main
	Vacuum
	Thames Water Proposed
	Vent Pipe
	Gallery

Other Sewer Types (Not operated and maintained by Thames Water)

	Sewer		Culverted Watercourse
	Proposed		Decommissioned Sewer
	Content of this drainage network is currently unknown		Ownership of this drainage network is currently unknown

Notes:

- 1) All levels associated with the plans are to Ordnance Datum Newlyn.
- 2) All measurements on the plan are metric.
- 3) Arrows (on gravity fed sewers) or flecks (on rising mains) indicate the direction of flow.
- 4) Most private pipes are not shown on our plans, as in the past, this information has not been recorded.

Sewer Fittings

A feature in a sewer that does not affect the flow in the pipe. Example: a vent is a fitting as the function of a vent is to release excess gas.

	Air Valve		Meter
	Dam Chase		Vent
	Fitting		

Operational Controls

A feature in a sewer that changes or diverts the flow in the sewer. Example: A hydrobrake limits the flow passing downstream.

	Ancillary		Drop Pipe
	Control Valve		Weir

End Items

End symbols appear at the start or end of a sewer pipe. Examples: an Undefined End at the start of a sewer indicates that Thames Water has no knowledge of the position of the sewer upstream of that symbol. Outfall on a surface water sewer indicates that the pipe discharges into a stream or river.

	Inlet		Outfall
	Undefined End		

Other Symbols

Symbols used on maps which do not fall under other general categories.

	Change of Characteristic Indicator		Public / Private Pumping Station
	Invert Level		Summit

Areas

Lines denoting areas of underground surveys, etc.

	Agreement
	Chamber
	Operational Site

Ducts or Crossings

	Casement	Ducts may contain high voltage cables. Please check with Thames Water.
	Conduit Bridge	
	Subway	
	Tunnel	

5) 'na' or '0' on a manhole indicates that data is unavailable.

6) The text appearing alongside a sewer line indicates the internal diameter of the pipe in millimeters. Text next to a manhole indicates the manhole reference number and should not be taken as a measurement. If you are unsure about any text or symbology, please contact Property Searches on 0800 009 4540.

Asset Location Search Water Map - ALS/ALS Standard/2024_5058912



The width of the displayed area is 500 m and the centre of the map is located at OS coordinates 471272, 173657.

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 (2020) with the Sanction of the controller of H.M. Stationery Office, License no. 100019345 Crown Copyright Reserved.



Asset Location Search - Water Key

Water Pipes (Operated & Maintained by Thames Water)

- 4"** **Distribution Main:** The most common pipe shown on water maps. With few exceptions, domestic connections are only made to distribution mains.
- 16"** **Trunk Main:** A main carrying water from a source of supply to a treatment plant or reservoir, or from one treatment plant or reservoir to another. Also a main transferring water in bulk to smaller water mains used for supplying individual customers.
- 3" SUPPLY** **Supply Main:** A supply main indicates that the water main is used as a supply for a single property or group of properties.
- 3" FIRE** **Fire Main:** Where a pipe is used as a fire supply, the word FIRE will be displayed along the pipe.
- 3" METERED** **Metered Pipe:** A metered main indicates that the pipe in question supplies water for a single property or group of properties and that quantity of water passing through the pipe is metered even though there may be no meter symbol shown.
- Transmission Tunnel:** A very large diameter water pipe. Most tunnels are buried very deep underground. These pipes are not expected to affect the structural integrity of buildings shown on the map provided.
- Proposed Main:** A main that is still in the planning stages or in the process of being laid. More details of the proposed main and its reference number are generally included near the main.

PIPE DIAMETER	DEPTH BELOW GROUND
Up to 300mm (12")	900mm (3')
300mm - 600mm (12" - 24")	1100mm (3' 8")
600mm and bigger (24" plus)	1200mm (4')

Valves

- General Purpose Valve
- Air Valve
- Pressure Control Valve
- Customer Valve

Hydrants

- Single Hydrant

Meters

- Meter

End Items

Symbol indicating what happens at the end of a water main.

- Blank Flange
- Capped End
- Emptying Pit
- Undefined End
- Manifold
- Customer Supply
- Fire Supply

Operational Sites

- Booster Station
- Other
- Other (Proposed)
- Pumping Station
- Service Reservoir
- Shaft Inspection
- Treatment Works
- Unknown
- Water Tower

Other Symbols

- Data Logger
- Casement:** Ducts may contain high voltage cables. Please check with Thames Water.

Other Water Pipes (Not Operated or Maintained by Thames Water)

- Other Water Company Main:** Occasionally other water company water pipes may overlap the border of our clean water coverage area. These mains are denoted in purple and in most cases have the owner of the pipe displayed along them.
- Private Main:** Indicates that the water main in question is not owned by Thames Water. These mains normally have text associated with them indicating the diameter and owner of the pipe.

Payment Terms and Conditions

All sales are made in accordance with Thames Water Utilities Limited (TWUL) standard terms and conditions unless previously agreed in writing.

1. All goods remain in the property of Thames Water Utilities Ltd until full payment is received.
2. Provision of service will be in accordance with all legal requirements and published TWUL policies.
3. All invoices are strictly due for payment within 14 days of the date of the invoice. Any other terms must be accepted/agreed in writing prior to provision of goods or service or will be held to be invalid.
4. Penalty interest may be invoked by TWUL in the event of unjustifiable payment delay. Interest charges will be in line with UK Statute Law 'The Late Payment of Commercial Debts (Interest) Act 1998'.
5. Interest will be charged in line with current Court Interest Charges, if legal action is taken.
6. A charge may be made at the discretion of the company for increased administration costs.

A copy of Thames Water's standard terms and conditions are available from the Commercial Billing Team (cashoperations@thameswater.co.uk).

We publish several Codes of Practice including a guaranteed standards scheme. You can obtain copies of these leaflets by calling us on 0800 980 8800.

If you are unhappy with our service, you can speak to your original goods or customer service provider. If you are still not satisfied with the outcome provided, we will refer the matter to a Senior Manager for resolution who will provide you with a response.

If you are still dissatisfied with our final response, and in certain circumstances such as you are buying a residential property or commercial property within certain parameters, The Property Ombudsman will investigate your case and give an independent view. The Ombudsman can award compensation of up to £25,000 to you if he finds that you have suffered actual financial loss and/or aggravation, distress, or inconvenience because of your search not keeping to the Code. Further information can be obtained by visiting www.tpos.co.uk or by sending an email to admin@tpos.co.uk.

If the Goods or Services covered by this invoice falls under the regulation of the 1991 Water Industry Act, and you remain dissatisfied you can refer your complaint to Consumer Council for Water on 0300 034 2222 or write to them at Consumer Council for Water, 1st Floor, Victoria Square House, Victoria Square, Birmingham, B2 4AJ.

Ways to pay your bill

Credit Card	BACS Payment	Telephone Banking
Please Call 0800 009 4540 quoting your invoice number starting CBA or ADS	Account number 90478703 Sort code 60-00-01 A remittance advice must be sent to: Thames Water Utilities Ltd., PO Box 3189, Slough SL1 4WW. or email ps.billing@thameswater.co.uk	By calling your bank and quoting: Account number 90478703 Sort code 60-00-01 and your invoice number

Thames Water Utilities Ltd Registered in England & Wales No. 2366661 Registered Office Clearwater Court, Vastern Rd, Reading, Berks, RG1 8DB.

Sewer Flooding

History Enquiry



Property
Searches

Form Structural Design

Search address supplied 20
Greyfriars Road
Reading
RG1 1DX

Your reference Greyfriars

Our reference SFH/SFH Standard/2024_5061398

Received date 8 October 2024

Search date 8 October 2024



Thames Water Utilities Ltd
Property Searches, PO Box 3189, Slough SL1 4WW



searches@thameswater.co.uk
www.thameswater-propertysearches.co.uk



0800 009 4540

Sewer Flooding

History Enquiry



Property
Searches

Search address supplied: 20,Greyfriars Road,Reading,RG1 1DX

This search is recommended to check for any sewer flooding in a specific address or area

TWUL, trading as Property Searches, are responsible in respect of the following:-

- (i) any negligent or incorrect entry in the records searched;
- (ii) any negligent or incorrect interpretation of the records searched;
- (iii) and any negligent or incorrect recording of that interpretation in the search report
- (iv) compensation payments



Thames Water Utilities Ltd
Property Searches, PO Box 3189, Slough SL1 4WW



searches@thameswater.co.uk
www.thameswater-propertysearches.co.uk



0800 009 4540

History of Sewer Flooding

Is the requested address or area at risk of flooding due to overloaded public sewers?

The flooding records held by Thames Water indicate that there have been no incidents of flooding in the requested area as a result of surcharging public sewers.

For your guidance:

- A sewer is “overloaded” when the flow from a storm is unable to pass through it due to a permanent problem (e.g. flat gradient, small diameter). Flooding as a result of temporary problems such as blockages, siltation, collapses and equipment or operational failures are excluded.
- “Internal flooding” from public sewers is defined as flooding, which enters a building or passes below a suspended floor. For reporting purposes, buildings are restricted to those normally occupied and used for residential, public, commercial, business or industrial purposes.
- “At Risk” properties are those that the water company is required to include in the Regulatory Register that is presented annually to the Director General of Water Services. These are defined as properties that have suffered, or are likely to suffer, internal flooding from public foul, combined or surface water sewers due to overloading of the sewerage system more frequently than the relevant reference period (either once or twice in ten years) as determined by the Company’s reporting procedure.
- Flooding as a result of storm events proven to be exceptional and beyond the reference period of one in ten years are not included on the At Risk Register.
- Properties may be at risk of flooding but not included on the Register where flooding incidents have not been reported to the Company.
- Public Sewers are defined as those for which the Company holds statutory responsibility under the Water Industry Act 1991.
- It should be noted that flooding can occur from private sewers and drains which are not the responsibility of the Company. This report excludes flooding from private sewers and drains and the Company makes no comment upon this matter.
- For further information please contact Thames Water on Tel: 0800 316 9800 or website www.thameswater.co.uk



Thames Water Utilities Ltd
Property Searches, PO Box 3189, Slough SL1 4WW



searches@thameswater.co.uk
www.thameswater-propertysearches.co.uk



0800 009 4540

Appendix D – Historic Site Investigation Report

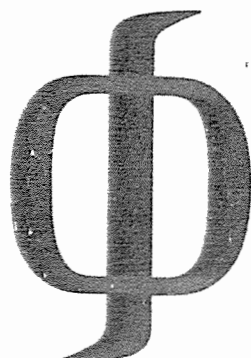
Report

SITE INVESTIGATION AT
GREYFRIARS ROAD READING BERKSHIRE

Carried out for:
Peter Brett Associates
on behalf of
McKay Securities Limited

Date November 1981

No. 7959/06



Soil Mechanics

Soil Mechanics Limited,
Foundation House,
Eastern Road,
Bracknell, Berkshire, RG12 2UZ
telephone Bracknell (0344) 24567
telex 847253
telegrams Edaphos, Bracknell, Berkshire

SITE INVESTIGATION AT
GREYFRIARS ROAD, READING

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- 3 -

REPORT NO 7959/06

SITE INVESTIGATION AT
GREYFRIARS ROAD, READING

A B S T R A C T

Two boreholes put down by cable tools to a maximum depth of 16.45 m revealed Valley Gravels overlying in situ Upper Chalk. This report presents the results of the borings and in situ penetration tests together with a limited programme of laboratory testing. For the proposed steel framed structure incorporating a basement car park piled foundations are preferred. The report discusses bored and driven piles and indicates possible working loads. Brief consideration is given to the problems which could arise with the construction of the basements.

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SITE INVESTIGATION AT
GREYFRIARS ROAD, READING

INTRODUCTION

Soil Mechanics Limited (SML) were requested by Peter Brett Associates, Consulting Engineers acting on behalf of McKay Securities Limited, to carry out a site investigation for the redevelopment of 20-38 Greyfriars Road, Reading, Berkshire. The fieldwork was to have consisted of four boreholes. However, as in the event the fieldwork period was limited to three working days between 2 and 6 September 1981, only two boreholes to a maximum depth of 16.45 m were completed in the allotted time.

This report presents the results of the fieldwork and of a limited programme of laboratory testing. At the request of the Consulting Engineers the engineering discussion included in the report is restricted to piled foundations and to problems which may be encountered in the formation of the basement to the proposed structure.

THE SITE AND GEOLOGY

The site is located in the centre of Reading, see Key Plan, Fig 7, and is bounded by existing roads on all sides, see Site Plan, Fig 6. The site is at present occupied by several terraced houses with basements which front on to Greyfriars Road and which have been converted to offices with a car park at the rear. Access to the car park, in which the investigation was carried out, is from Garrard Street. The surface of the car park is

covered by a black top or concrete and is at an elevation of about +39 m OD.

The maps of the Institute of Geological Sciences (IGS) indicate the geology to be made ground over Valley Gravels overlying Upper Chalk. An IGS hydrogeological map of the area suggests that in the vicinity of the site the thickness of the Upper Chalk is not more than about 50 m.

FIELDWORK

Two cable tool borings, numbered 1 and 4, were put down to a maximum depth of 16.45 m below existing ground level at the locations shown on the Site Plan, Fig 6. The ground levels at the borehole positions have been interpolated from the reduced levels given on a site survey supplied by the Consulting Engineers, (Drg No 55.1 dated 6 July 1981).

Detailed descriptions of the strata encountered are given on the borehole logs, Fig 1 and 2, and a simplified cross section through the boreholes is included as Fig 3. Standard penetration tests were carried out in the gravel and underlying chalk and the penetration resistances, or N-values, are included on the borehole logs. The intervals between tests were generally 1 m but were extended to 1.5 m centres where they were alternated with U100 driven samples within the chalk. A plot of the penetration resistance, N, with depth is included as Fig 4.

Due to the restricted time available for the fieldwork no standpipes were installed to measure the standing groundwater levels. The water levels observed in the borehole casing during boring operations are included on the borehole logs, Fig 1 and 2. These observations may not accurately reflect the true equilibrium standing groundwater levels.

GROUND CONDITIONS

The generalised downward sequence at the site may be summarised as follows:

	Thickness (m)	
	Borehole 1	Borehole 4
Made Ground consisting of tarmac and hardcore sub base	0.4	0.15
Sandy SILT with a little to some gravel	1.6	-
Clayey silty SAND with a little gravel	1.0	0.8
Medium dense GRAVEL with a little sand and variable amounts of cobbles	2.0	1.4
Gravel and cobble size fragments of weak to moderately weak, weathered, white to cream CHALK, improving with depth to faintly weathered and moderately strong CHALK: containing occasional flints and iron stained joints	Thickness penetrated 10.15	14.10

The silt, sand and gravel horizons overlying the chalk are considered to be a graded bedding sequence which collectively represent the Valley Gravels mapped by the IGS. The total thickness of the drift deposits encountered varied from 5 m in Borehole 1 to 2.35 m in Borehole 4.

The top of the chalk was encountered at levels of 34.25 and 37.42 m OD in Boreholes 1 and 4 respectively. The chalk was moderately weathered down to about +31 m OD with values of penetration resistance, N, varying between 4 and 16 with an average of about 12 in Borehole 1 and 10 in Borehole 4. Below this level the chalk appears to be only slightly weathered and the

penetration resistances are higher, particularly so in Borehole 4. The extremely high N-values recorded at depth in Borehole 4 are probably due to the presence of flints. As seen from the inspection of the driven U100 samples it would appear that the chalk may be generally closely fissured with iron staining occasionally noted on fracture surfaces.

Water levels recorded during the limited period of boring operations suggest that the water table is within 1 m of the existing ground level.

LABORATORY TESTING

Index tests

Natural moisture content determinations were made on two samples from the Valley Gravels and on 25 chalk samples. In addition Atterberg Limit determinations were made on the two Valley Gravel samples from Borehole 1. These results are included in Table 1.

Based on the measured moisture contents the porosities of the chalk samples have been calculated assuming a specific gravity for the chalk of 2.71 and the samples to be saturated. The calculated porosities are plotted against depth in Fig 4 and probably represent a lower bound to the true values since it was assumed that each fresh sample was fully saturated. The porosities are generally well in excess of 35% indicating that the chalk can be classified as Type A Chalk following the subdivisions proposed by Hobbs and Healey (1979).

Grading analyses

Particle size distribution tests were made on three samples of the Valley Gravels and the results are presented on Fig 5. The grading curves are generally consistent with the visual description of the samples tested.

Chemical tests

The pH and sulphate content were determined on one water sample from Borehole 4. The results are included in Table 1 and show the sample to be near neutral with a low concentration of soluble sulphates.

ENGINEERING CONSIDERATIONS

It is proposed that the existing buildings on the site will be demolished and replaced by a 6-storey steel framed building with a 3 m deep basement. It is understood that the maximum column loading to the new building will be about 180 tonnes and piled foundations are therefore considered to be appropriate.

In view of the very limited number of boreholes the preliminary assessment of pile lengths and capacities should be based on the less good ground profile, ie Borehole 1. Either bored or driven piles could be considered and the former type of piles may be required should there be any restrictions against noise or ground vibrations.

As there is likely to be a high water table bored piles will generally require temporary support during excavation in the weathered chalk. It is envisaged that bored piles would be founded in the relatively unweathered chalk and would derive the greater part of their resistance in skin friction. As a guide a 0.5 m diameter bored pile taken down to a depth of 15 m or more below existing ground level, where the N-values are 40 or more, should have a working load of 90 tonnes or so depending on the penetration achieved into the relatively unweathered chalk.

If acceptable with respect to noise the alternative of driving large displacement piles may offer economic advantages over bored piles. A wide variety of proprietary systems are available either as preformed cast in

situ piles or driven cast in place piles in which the fresh concrete is in contact with the chalk. As a preliminary guide a 0.38 m diameter pile driven to approximately 16 m below existing ground level should have a working load of the order of 45 tonnes. If the piles are driven from the present ground surface some preboring through the Valley Gravel deposits may be required.

It is recommended that discussions should be held with piling specialists regarding the installation and capacities of their products. The actual working load of the selected pile should be based on the results of a preliminary loading test on a pile constructed in the same manner as the working piles.

The floor slab to the proposed 3 m deep basement will be constructed below the water table on the medium dense gravel at the northern end (Borehole 1) and at the southern end on the top of the weathered chalk. The basement walls could be formed by a sheet piled or continuous diaphragm wall. Relatively heavy driving may be encountered in driving steel sheet piles through the gravels. If, due to restrictions on noise or other reasons, a cast in situ concrete diaphragm wall is proposed then some over-break may be expected particularly in the gravels. In either case the open basement will need to be waterproofed and some form of permanent drainage installed.

The single laboratory test for pH and sulphate content concentration on the water sample from Borehole 4 indicates that Class 1 conditions, as defined in BRE Digest 250, exist and that no special precautions are necessary against sulphate attack on any underground concrete. It is however recommended that, unless the conclusion from this isolated test is

confirmed by local knowledge and experience, further groundwater sampling and testing should be carried out.

for SOIL MECHANICS LIMITED

R. Haydon

Engineer

Cameron Craig

Director

REFERENCES

Building Research Establishment : Digest 250 (1981) Concrete in sulphate-bearing soils and groundwaters.

Hobbs N B and P R Healey (1979) : Piling in chalk. Dept of the Environment and CIRIA Piling Development Group Report PG6.

REXH/MSA/MS/7959/06
November 1981

TABLE INDEX PROPERTIES

Sheet No.....1 of...1

Borehole No.	Sample No.	Depth m	Bulk density tonne/m ³	Moisture content %	Liquid Limit %	Plastic Limit %	PI	Clay fraction %	Specific Gravity	pH	SO ₃ g/l
4	5			28.8							
	7			28.3							
	8			27.4							
	10			27.1							
	11			25.6							
	13			27.6							
	15			24.7							
	17			26.4							
	19			24.3							
	21			28.5							
	23			23.4							
	25			24.7							
	27			22.8							
	29			26.8							
	12									7.05	0.056
1	1			14.2	30	20	10				
	2			16.6	24	13	11				
	6			29.9							
	7			26.6							
	8			19.7							
	10			26.8							
	11			29.2							
	12			28.7							
	13			32.7							
	14			29.1							
	15			28.2							
	18			26.1							
	21			24.3							

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Client Peter Brett Associates

Location GREYFRIARS ROAD, READING

Loc. No.
7959/06

Table
1

Equipment & Methods Soft ground boring from GL to 15.15m	Location No. 7959/06 GREYFRIARS ROAD, READING
---	--

Carried out for Peter Brett Associates	Ground Level 39.23m OD	Coordinates	Date 6.9.81
---	---------------------------	-------------	----------------

Description	Reduced Level	Legend	Depth & Thickness	Samples/Tests			Field Records
				Depth	Sample Type	Test No.	
TARMAC AND SUBBASE	38.83		GL (0.40) 0.40				
Brown slightly clayey sandy SILT with a little to some, generally subangular to subrounded, up to coarse gravel	37.23		(1.60) 2.00	1.00–1.70	B	1	
Orange brown slightly clayey silty, fine to medium SAND with a little subangular to subrounded, up to coarse gravel	36.23		(1.00) 3.00	2.20–2.80	B	2	
Medium dense, angular to subrounded, GRAVEL and COBBLES with some sand and silt grade matrix consisting of flint and chalk	34.23		(2.00) 3.00	3.00–3.45			C N = 14
				3.00–3.90	B	3	
				4.00–4.45			C N = 16
				4.00–5.00	B	4	
Structureless CHALK consisting of angular to subrounded gravel and cobble sized moderately strong, faintly weathered chalk fragments in a matrix of calcareous sand and silt: Frequent flint cobbles	33.23		5.00 (1.00)	5.00–5.45			C N = 9
Weak to moderately weak, moderately becoming slightly weathered, white and cream CHALK: fractures extremely closely to closely spaced with up to 30mm of fragmented chalk, and calcareous silt infill: Occasional flints			6.00	6.00	W	22	
				6.00–6.45	U	6	Blow count = 17
				6.50–6.95	D	7	S N = 14
				7.50–7.95	U	8	Blow count = 24
			(5.55)	7.95	D	9	
				8.00–8.45	D	10	S N = 13
				9.00–9.45	U	11	Blow count = 47
Occasional gravel and cobble size flints surrounded by structureless chalk			(10.00)	9.50–9.95	D	12	S N = 20

SPT Where full 0.3m penetration has not been achieved the number of blows for the quoted penetration is given (not N – value).

Depths: All depths and reduced levels in metres. Thicknesses given in brackets in depth column.

Water: Water level observations during boring are given on last sheet of log.

Sample/Test Key.

D Disturbed Sample
B Bulk Sample
W Water Sample
 Piston (P) Tube (U) or core sample: Length to scale
S Standard Penetration Test
V Vane Test
C Core recovery (%)
r Rock Quality Designation (RQD – %)

Remarks C = Cone penetration test.

Logged by
CNE

Scale
1:50

Fig. 1

Equipment & Methods

As sheet 1

Location No. 7959/06

GREYFRIARS ROAD, READING

Carried out for

Peter Brett Associates

Ground Level

Coordinates

Date

As sheet 1

Description	Reduced Level	Legend	Depth & Thickness	Samples/Tests			Field Records			
				Depth	Sample			Test		
					Type	No.				
CHALK (As sheet 1)	27.68		10.00				No recovery Blow count = 80			
			(5.55)	10.50—10.95	U B	13				
				11.10—11.55	D	14		S N=17		
				11.55						
Weak to moderately weak, slightly weathered, white to cream CHALK: fractures are extremely closely to closely spaced with a trace of calcareous silt infill or occasionally up to 15mm of fragmented chalk infill					(1.45)	12.00—12.45		U D	15 16	Blow count = 38
					12.45					
					12.50—12.95	D		17	S N=23	
					12.95					
			26.23		13.00					Blow count = 70
Moderately weak to moderately strong faintly weathered white CHALK: fractures extremely closely to closely spaced, tight and clean or with a trace of calcareous silt infill; occasional flint cobbles								(2.15 pen.)	13.50—13.95	
					13.95					
					14.00—14.45	D	20	S N=42		
					14.45					
		14.70—15.15			D	21	S N=37			
		15.15								
END OF BOREHOLE				24.08						
Water Level Observations During Boring										
Date	Time	Depth of Hole m	Depth of Casing m	Depth to Water m	Remarks					
6.9.81		4.00	4.00	0.50	Water added to assist boring.					
		5.00	5.00	0.70						
		5.90	5.90	1.00						
		7.40	7.40	1.90						
		8.90	8.90	2.50						
		10.40	10.40	3.50						
		11.10	11.10	3.00						
		11.90	11.90	4.50						
		13.40	13.40	4.00						
7.9.81		15.15	14.70	2.95	Overnight water level.					

SPT

Where full 0.3m penetration has not been achieved the number of blows for the quoted penetration is given (not N-value).

Depths: All depths and reduced levels in metres. Thicknesses given in brackets in depth column.

Water: Water level observations during boring are given on last sheet of log.

Sample/Test Key.

D Disturbed Sample
 B Bulk Sample
 W Water Sample
 I Piston (P) Tube (U) or core sample: Length to scale
 S Standard Penetration Test
 V Vane Test
 C Core recovery (%)
 r Rock Quality Designation (RQD-%)

Remarks

 Logged to
CNE

 Scale
1:50

Fig. 1

Equipment & Methods Soft ground boring from GL to 16.45m		Location No. 7959/06 GREYFRIARS ROAD, READING					
Carried out for Peter Brett Associates		Ground Level 39.77m OD		Coordinates		Date 2-5.9.81	
Description	Reduced Level	Legend	Depth & Thickness	Samples/Tests			Field Records
				Depth	Sample Type	Test No.	
TARMAC AND SUBBASE	39.62		GL 0.15				
Brown clayey fine to medium SAND with a little to a trace of angular fine to medium gravel of flint and chalk	38.82		(0.80) 0.95	0.60-0.95	B	1	
Medium dense angular to subrounded, fine to medium GRAVEL with a little slightly clayey sand	37.42		(1.40) 2.35	1.00-1.45	D	2	C N = 9
Becoming less clayey with depth				1.30-1.95	B	3	
Structureless CHALK consisting of subangular to subrounded gravel and cobble size fragments of weak to moderately weak, weathered chalk in a matrix of calcareous silt and sand: Occasional flints present	30.77		(6.65) 9.00	2.00-2.45			C N = 19
				2.35-3.00	B	4	
				3.00-3.45	D	5	S N = 13
				4.00-4.45			S N = 4
				4.55-5.90	B	6	
				5.00-5.45	D	7	S N = 7
				6.00-6.45	D	8	S N = 9
				6.45-7.95	B	9	
				7.00-7.45	D	10	S N = 13
				7.95	W	12	
8.00-8.45	D	11	S N = 16				
CHALK (As sheet 2)				9.00-9.45	U	13	Blow count = 7
				9.45	D	14	
				9.50-9.95	D	15	
			(10.00)				

Blow count = 7

SPT Where full 0.3m penetration has not been achieved the number of blows for the quoted penetration is given (not N - value).

Depths: All depths and reduced levels in metres. Thicknesses given in brackets in depth column.

Water Water level observations during boring are given on last sheet of log.

Sample/Test Key.
 D Disturbed Sample
 B Bulk Sample
 W Water Sample
 I Piston (P) Tube (U) or core sample: Length to scale
 S Standard Penetration Test
 V Vane Test
 C Core recovery (%)
 r Rock Quality Designation (RQD - %)

Remarks C = Cone penetration test.

Logged b
CNE

Scale
1:50

Fig. 2

Equipment & Methods

As sheet 1

Location No. 7959/06

GREYFRIARS ROAD, READING

Carried out for

Peter Brett Associates

Ground Level

Coordinates

As sheet 1

Date

Description

 Reduced
Level

Legend

 Depth
&
Thickness

Samples/Tests

Depth

Sample

Type No.

Test

 Field
Records

Weak to moderately weak, slightly to faintly weathered, white to cream CHALK: fractures extremely closely to closely spaced, generally with a trace of calcareous silt infill, but occasionally with up to 25mm of fragmented chalk infill, rarely clean. Occasional flints

Occasional cobble size flints surrounded by structureless chalk

Fractures generally with less infill with depth,

29.62

10.00

9.50-10.50

B

16

10.50-10.95

U

17

D

18

11.00-11.45

D

19

 S
N=51

11.50-12.50

B

20

U

12.50-12.95

U

21

12.95

D

22

S

13.00-13.45

D

23

N=67

13.00-14.05

B

24

14.10-14.55

U

25

14.55

D

26

S

14.60-15.05

D

27

N=99

14.60-15.50

B

28

15.50-15.95

U

29

B

 No recovery
Blow count = 8

16.00-16.45

D

30

 S
N=77

23.32

16.45

END OF BOREHOLE

Water Level Observations During Boring

Date	Time	Depth of Hole m	Depth of Casing m	Depth to Water m	Remarks
2.9.81		2.00	2.00	0.70	End of shift.
		3.00	3.00	0.60	
		4.00	4.00	2.10	
		5.00	5.00	2.60	
		6.00	6.00	3.00	
5.9.81		7.00	7.00	4.70	Water being added to assist boring.
		8.00	8.00	5.60	
		8.90	8.90	3.00	
		10.40	10.40	3.20	
		11.90	11.90	3.50	
6.9.81		12.40	12.40	3.70	Overnight water level
		13.90	13.90	4.00	
		16.45	15.40	3.35	

Depths: All depths and reduced levels in metres. Thicknesses given in brackets in depth column.

Water: Water level observations during boring are given on last sheet of log.

Sample/Test Key.
 D Disturbed Sample
 B Bulk Sample
 W Water Sample
 P Piston (P) Tube (U) or core sample: Length to scale
 S Standard Penetration Test
 V Vane Test
 C Core recovery (%)
 r Rock Quality Designation

Remarks

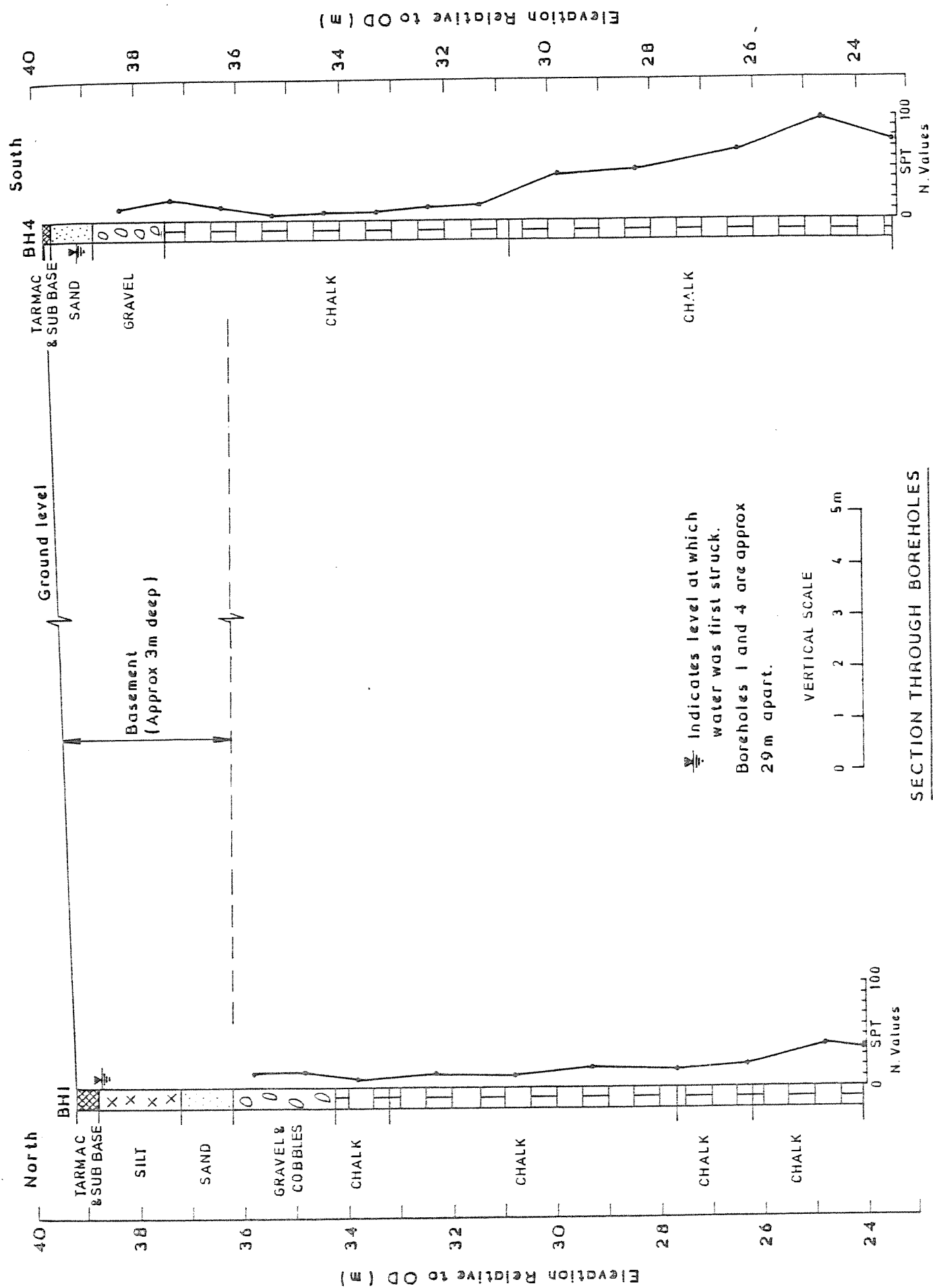
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CNE

Scale

1:50

Fig. 2

Tested	Traced
Checked	Approved



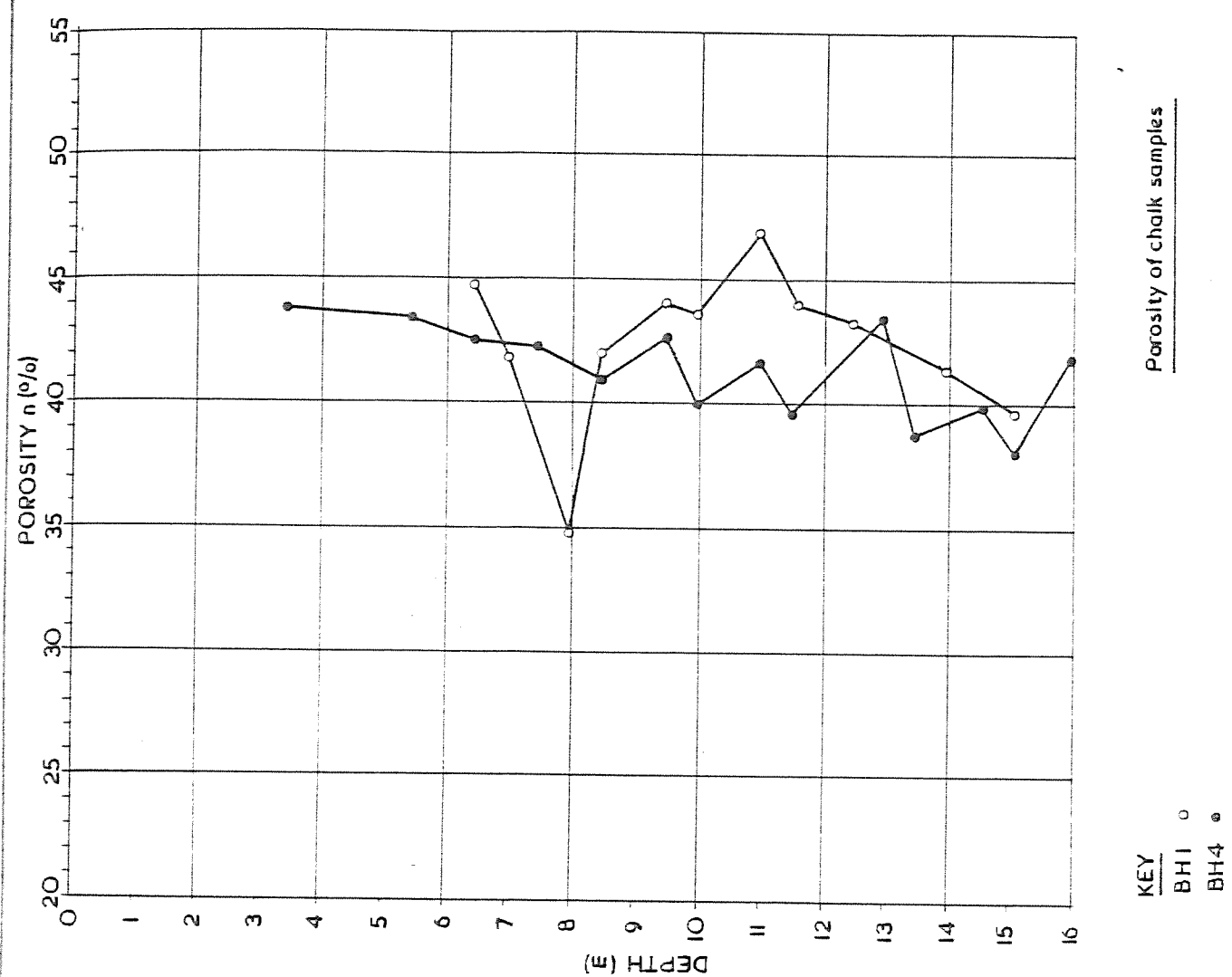
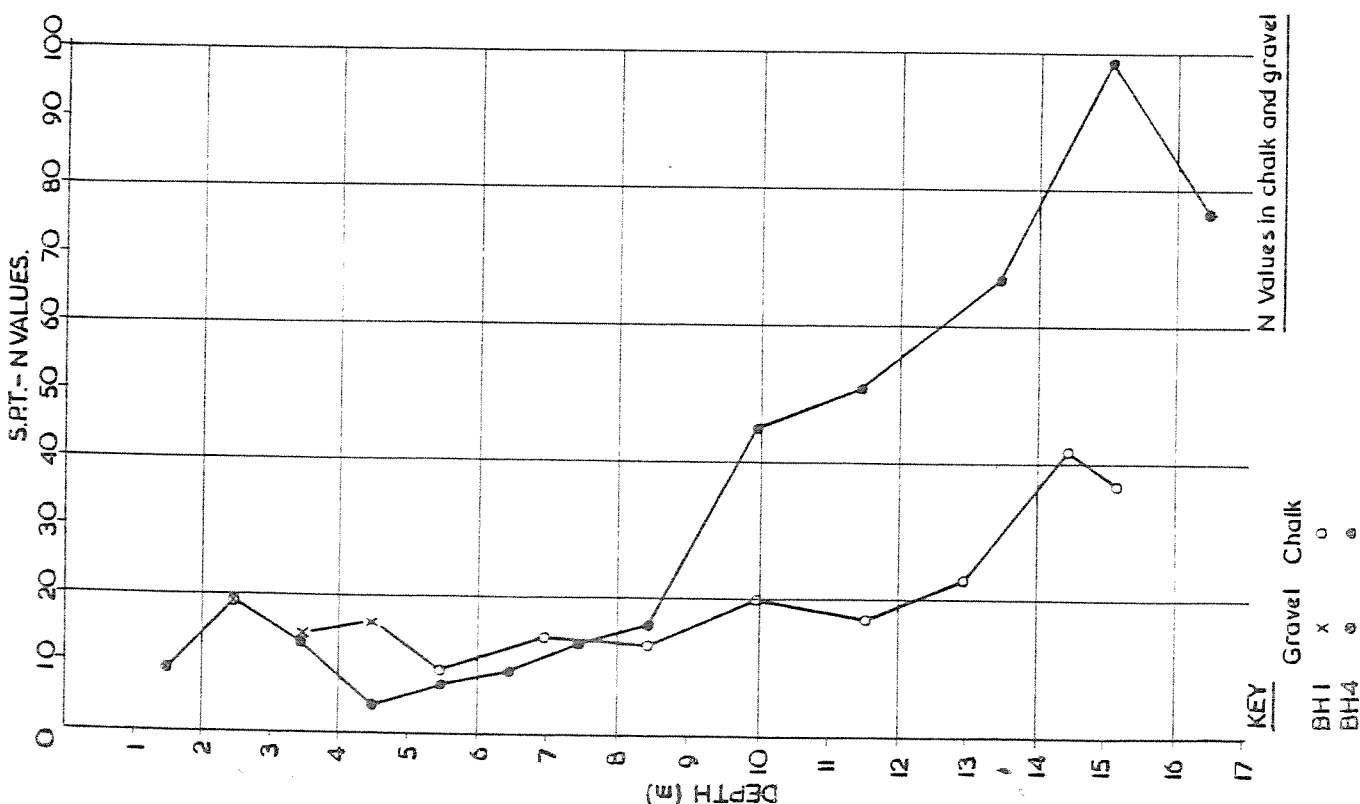
SECTION THROUGH BOREHOLES



Soil Mechanics

Client Peter Brett Associates
Location GREYFRIARS ROAD, READING

Loc No. 7959/06
Fig. 3

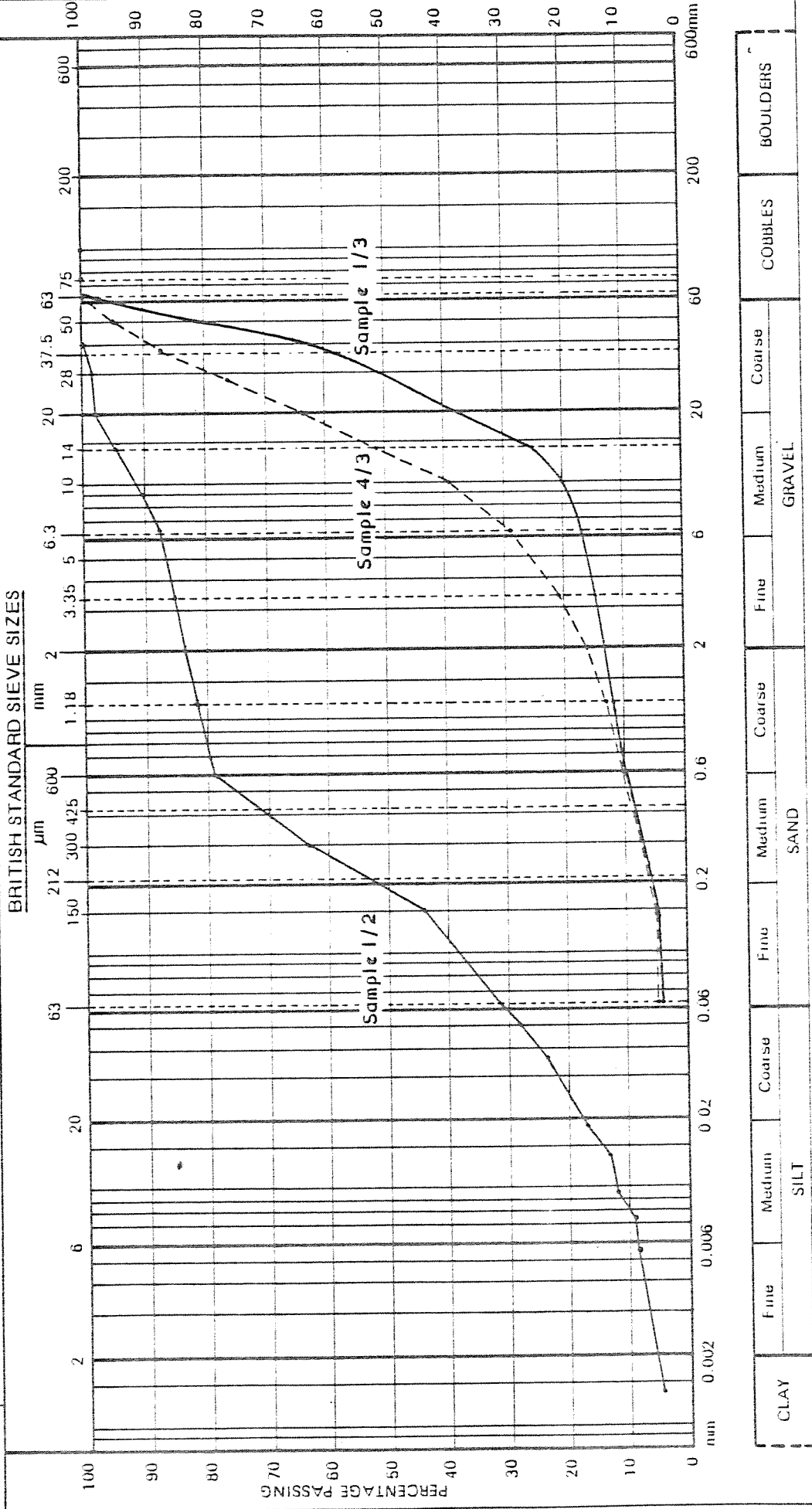


TESTED: [] CHECKED: [] TRACED: [] APPROVED: []

Tested		Traced	
Checked		Approved	

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DESCRIPTION AND PRETREATMENT				SEDIMENTATION		SIEVING		NOTES
Sample No.	Description	Pretreatment	Mass g	Specific Gravity	Mass kg	Process		
BH1/2	Orange brown silty fine to medium SAND with a little gravel.	150 ml H ₂ O ₂	60.18	2.65 *	3.114	WET	1. Tested in accordance with B.S. 1377 : 1975 Tests 7() & () 2. * indicates S.G. assumed	
BH1/3	GRAVEL with a little sand.				6.173	WET		
BH4/3	GRAVEL with a little sand.				4.936	WET		



Particle Size Distribution GRADING CURVES

Borehole Nos.
 Sample Nos. 1/2 1/3 4/3

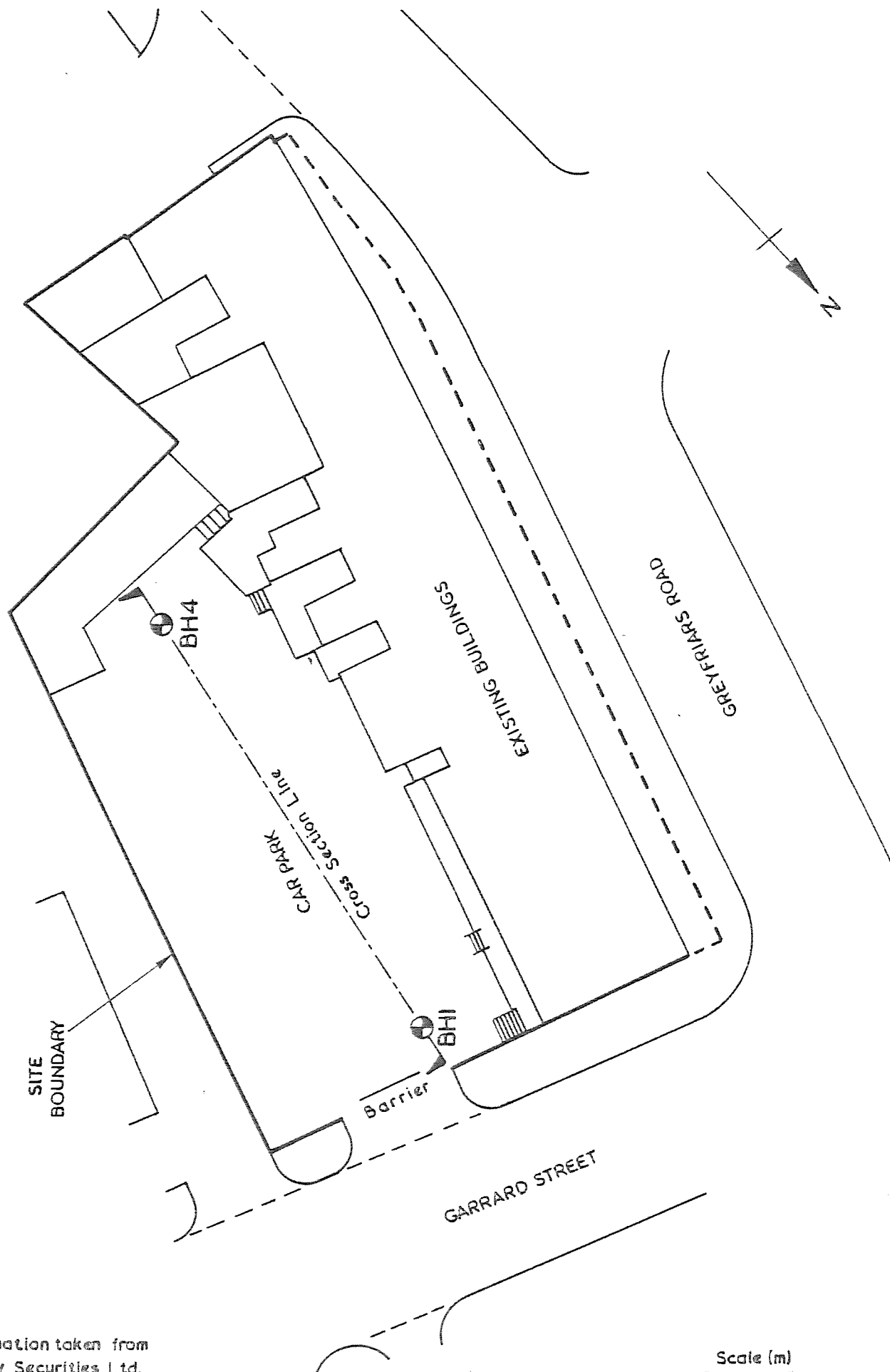


Client Peter Brett Associates
 Location GREYFRIARS ROAD, READING

Loc. No. 7959/06
 Fig. 5

Tested	Checked	Traced	Approved

NOTE
Information taken from
Mckay Securities Ltd.
site survey Drg.No. 55-1
dated 6 July 1981



SITE PLAN



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Client Peter Brett Associates
Location GREYFRIARS ROAD, READING

Loc No
7959/06

Fig.

THE
SITE



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1:50,000 map with permission of the
Controller of Her Majesty's Stationary
Office, Crown copyright reserved.

KEY PLAN
Scale 1:50,000

Traced
Approved

Tested
Checked



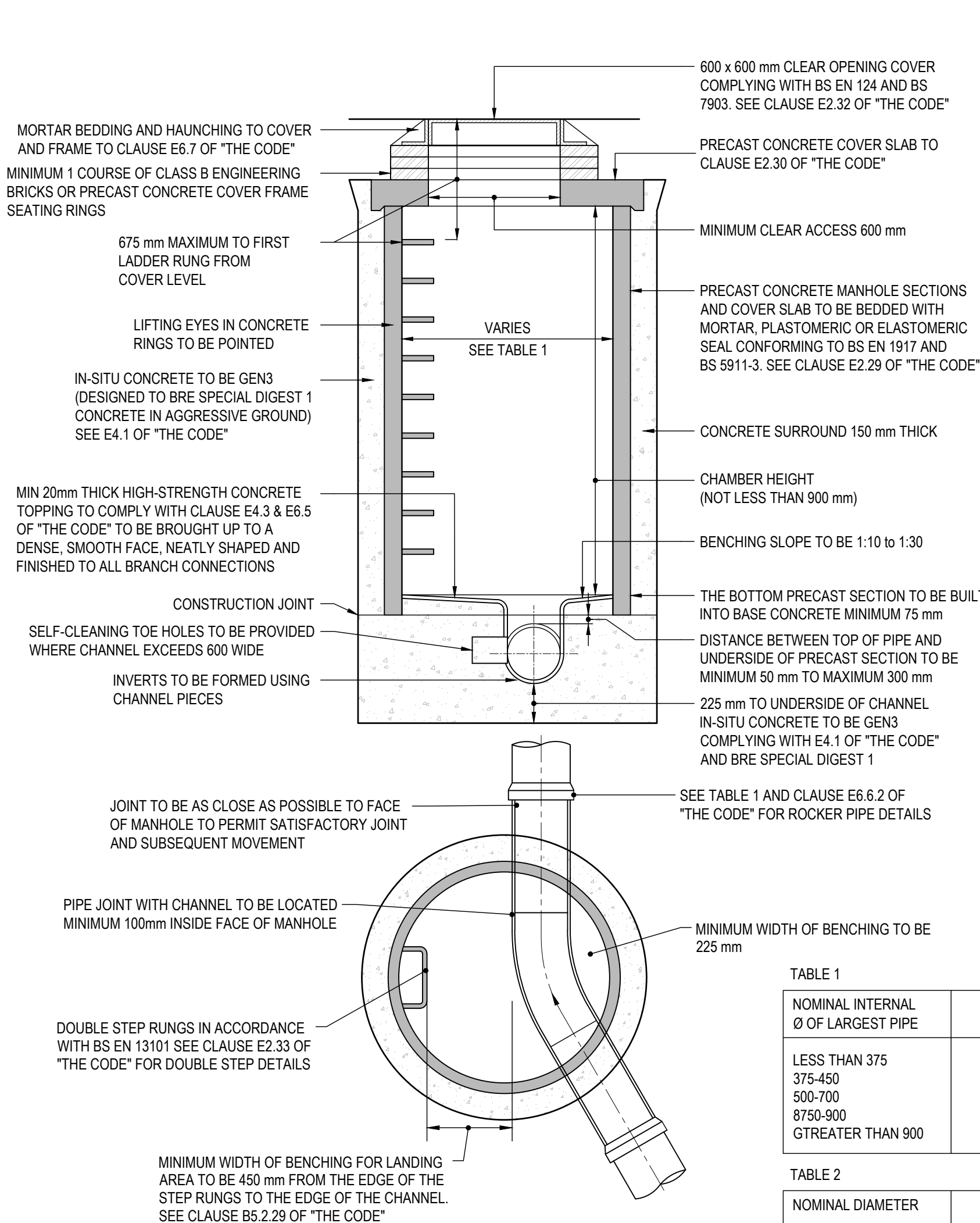
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Client Peter Brett Associates
Location GREYFRIARS ROAD, READING

Loc. No.
7959/06

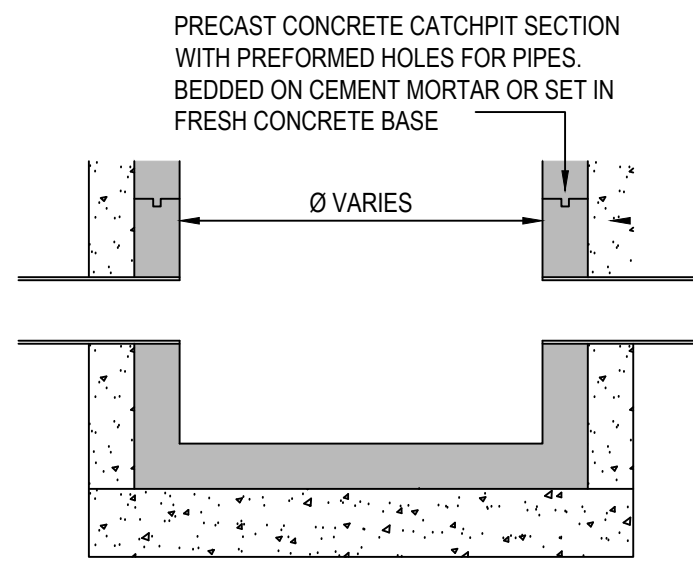
Fig.

Appendix E – Proposed drainage drawings



MANHOLE DETAIL - TYPE B

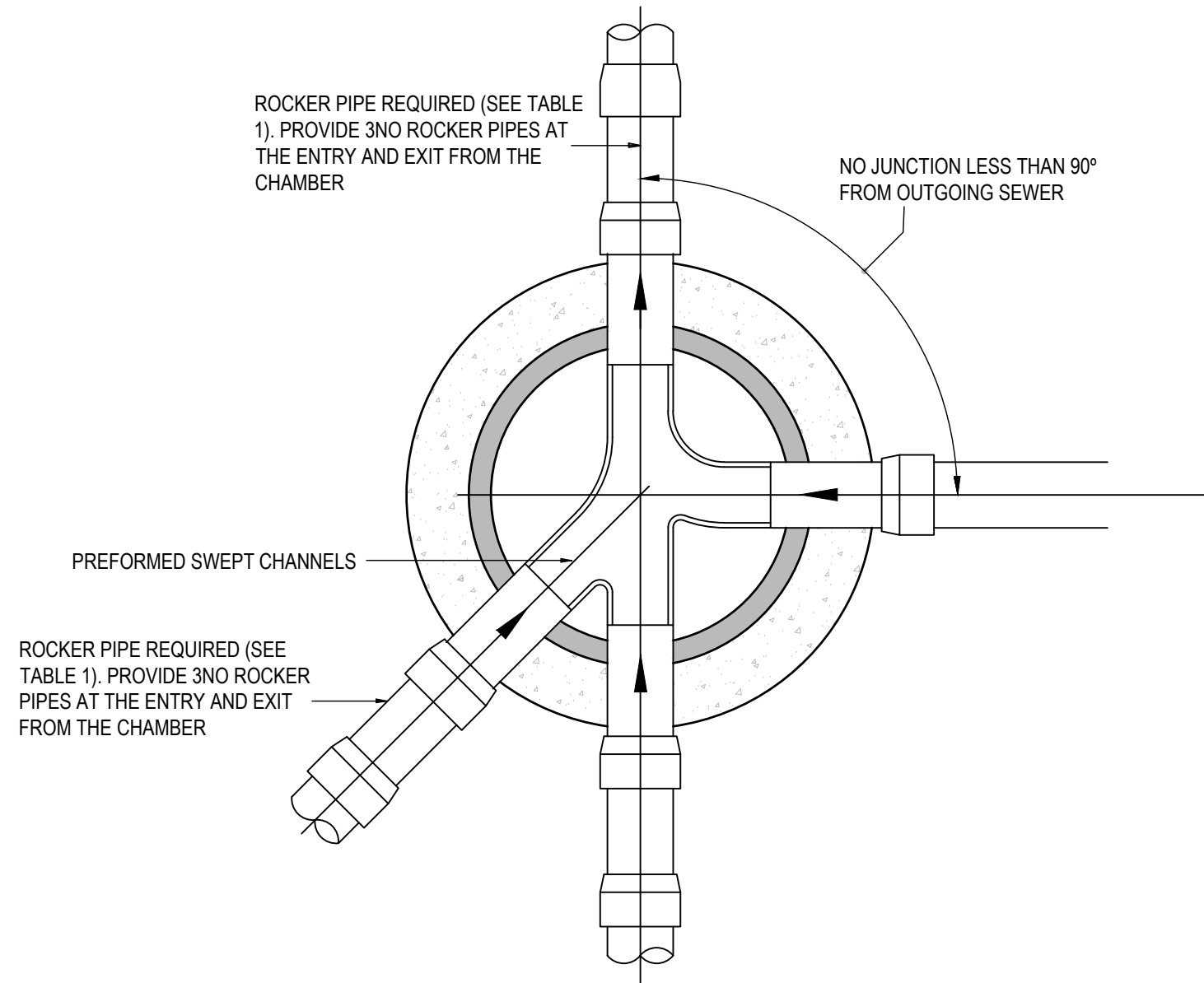
DEPTH TO SOFFIT 1.5m to 3.0m
NOT TO SCALE



TYPICAL CATCHPIT DETAIL

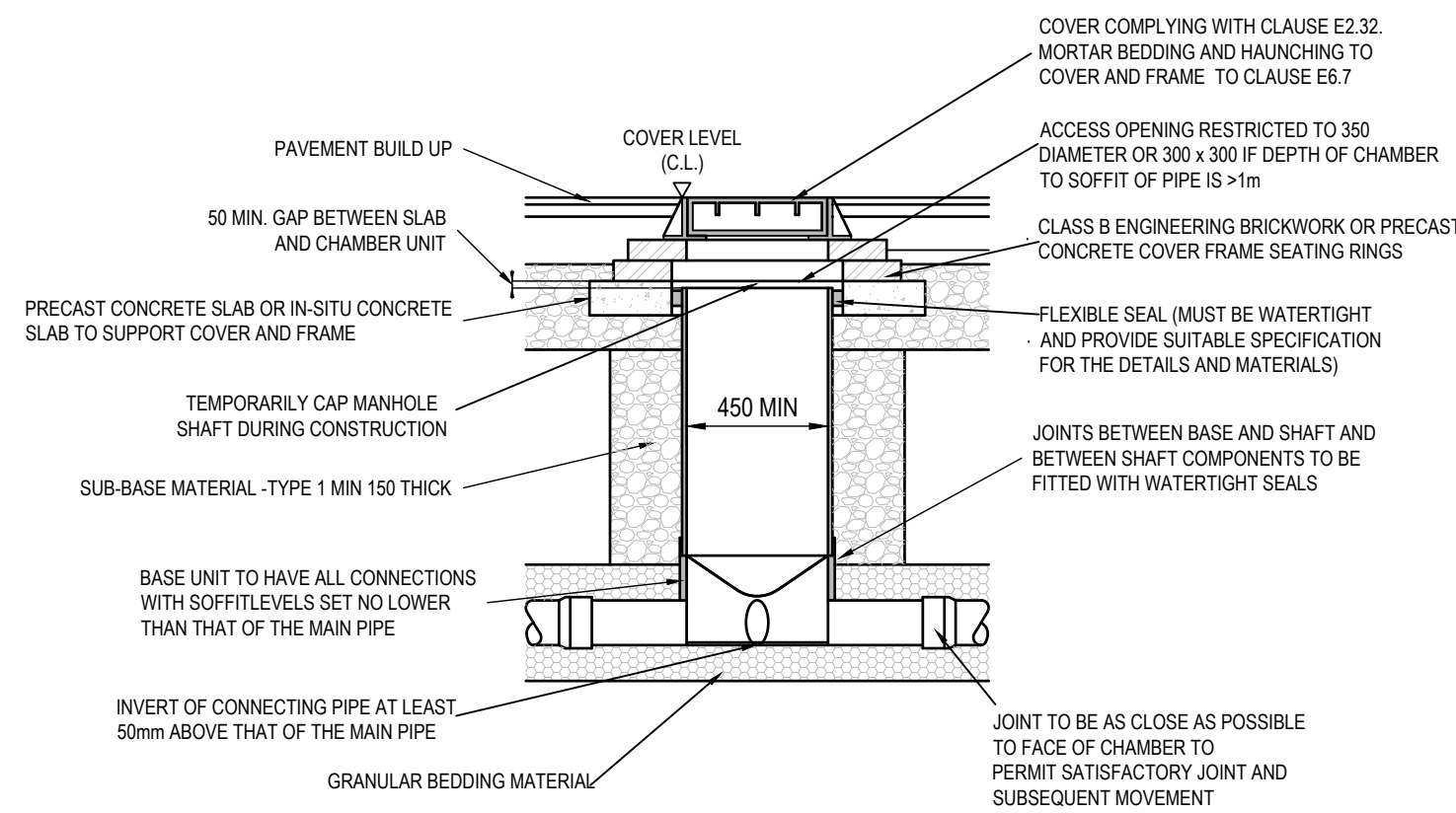
TABLE 1	
NOMINAL INTERNAL Ø OF LARGEST PIPE	MIN INTERNAL Ø OF MANHOLE
LESS THAN 375	1200
375-450	1350
500-700	1500
8750-900	1800
GTREATER THAN 900	PIPE Ø + 900

TABLE 2	
NOMINAL DIAMETER	EFFECTIVE LENGTH
150-600	600
601-750	1000
OVER 750	1250

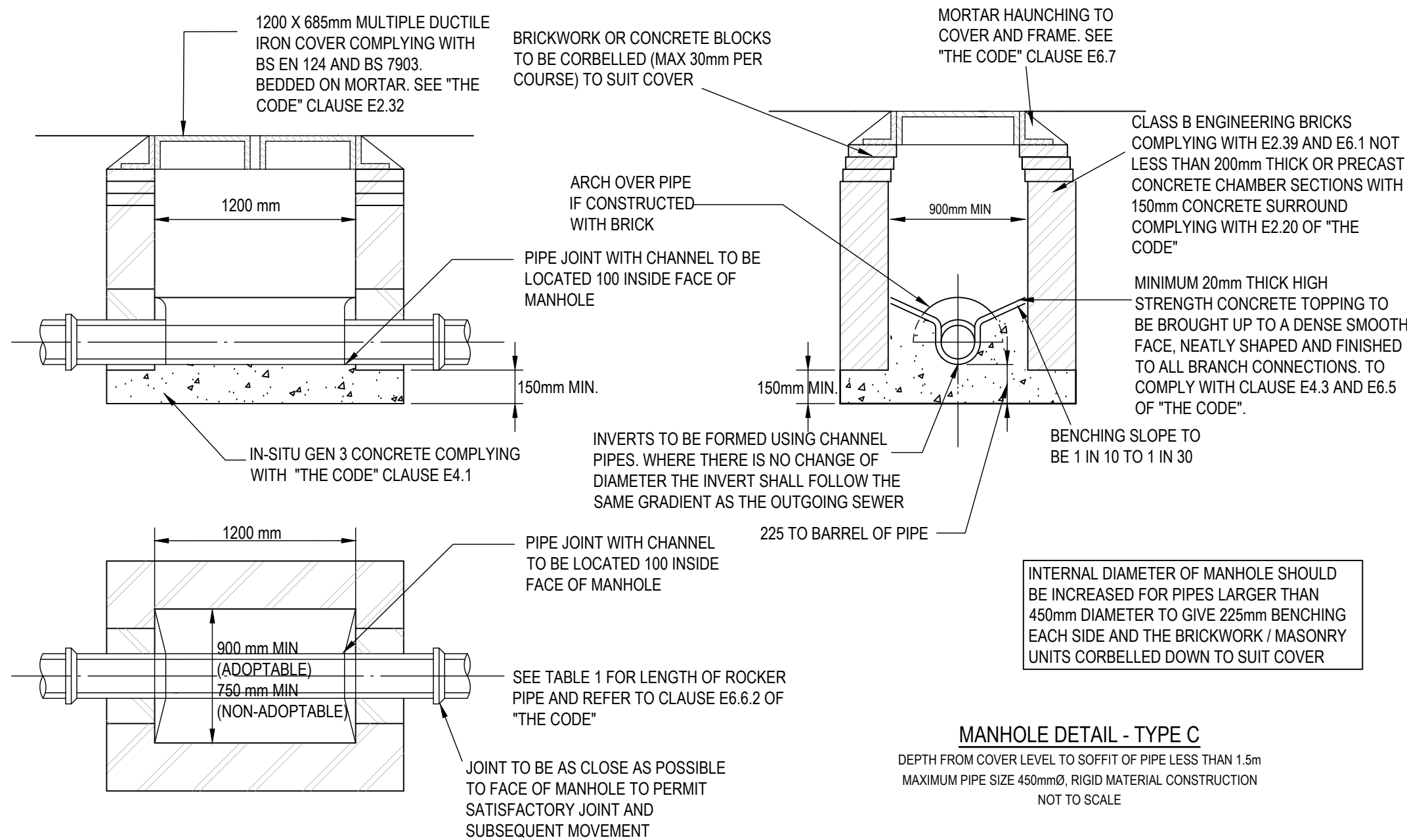


TYPICAL ARRANGEMENT OF PIPE JUNCTIONS WITHIN MANHOLES

NOT TO SCALE



TYPICAL INSPECTION CHAMBER TYPE D



MANHOLE DETAIL - TYPE C

DEPTH FROM COVER LEVEL TO SOFFIT OF PIPE LESS THAN 1.5m
MAXIMUM PIPE SIZE 450mmØ, RIGID MATERIAL CONSTRUCTION
NOT TO SCALE

NOTES:

- THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT DESIGN DRAWINGS, SPECIFICATIONS AND DOCUMENTATION
- DO NOT SCALE FROM THIS DRAWING. IF IN DOUBT PLEASE REQUEST FURTHER INFORMATION

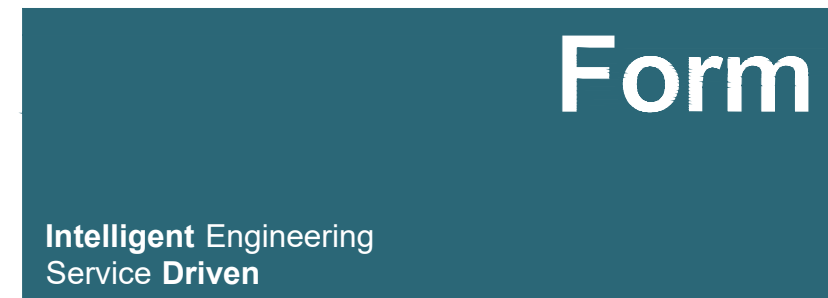
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Rev.	Date	Amendment	Tech/Eng.
BIM Status	S2		

Job Title
20-30 GREYFRIARS

Drawing Title
BELOW GROUND DRAINAGE
DRAINAGE DETAILS
SHEET 1

Job No. 233968 | Scale 1:150@ A1 | Date SEPT 24 | Drawn LB

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