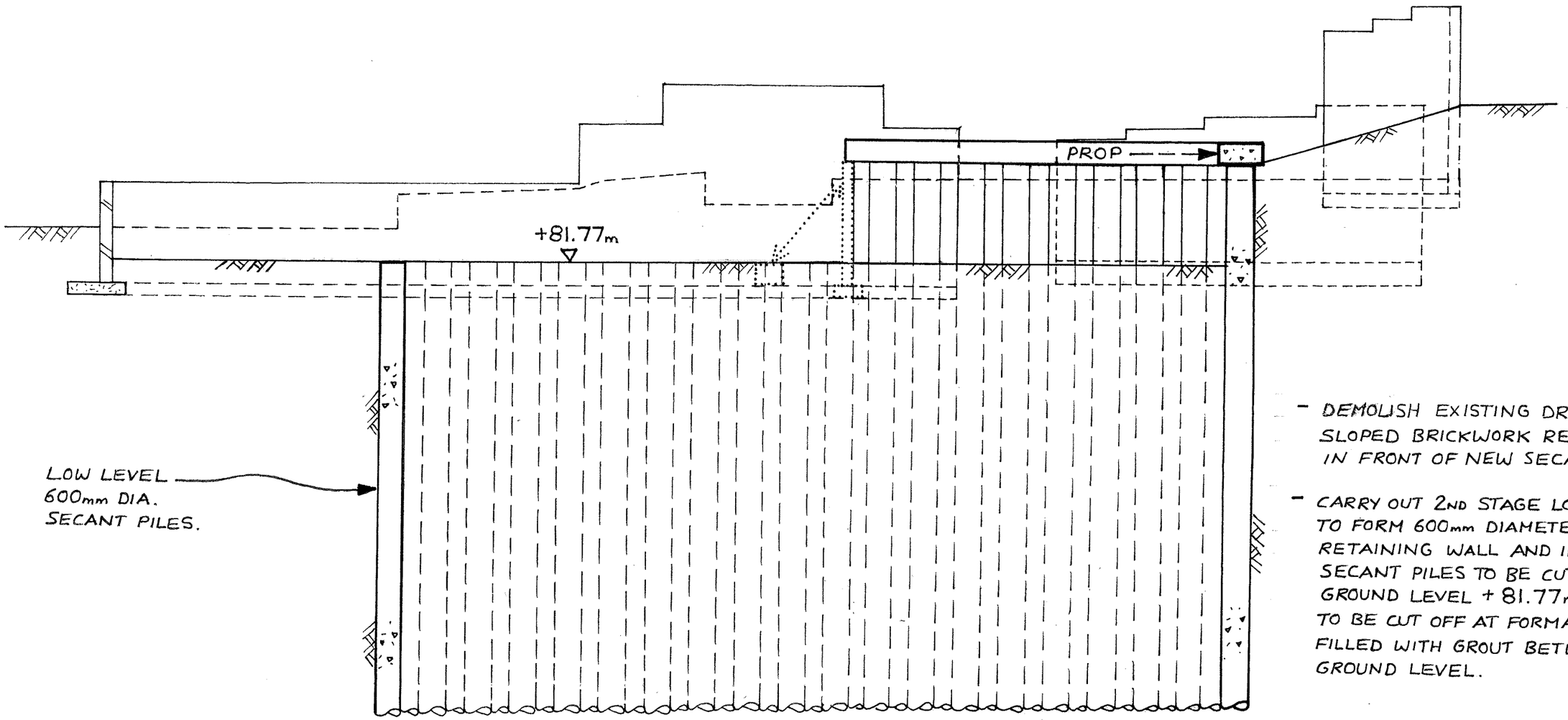

- DEMOLISH EXISTING DRIVEWAY AND SLOPED BRICKWORK RETAINING WALL IN FRONT OF NEW SECANT PILED WALL.
- CARRY OUT 2ND STAGE LOW LEVEL PILING TO FORM 600mm DIAMETER SECANT PILED RETAINING WALL AND INTERNAL PILES. SECANT PILES TO BE CUT OFF AT EXTG. GROUND LEVEL + 81.77m. INTERNAL PILES TO BE CUT OFF AT FORMATION LEVEL AND FILLED WITH GROUT BETWEEN CUT OFF AND GROUND LEVEL.

This drawing is to be read in conjunction with all relevant architects, engineers and specialists drawings and specifications.

Do not scale from this drawing.

rev	date	by	chk	description
P1	25.11.12	RB		FOR PLANNING

drawing title
LONG SECTION 2
SEQUENCING - 6 OF 16

scale(s) ~1:100 | date NOV 12 | drawn RB

drawing status
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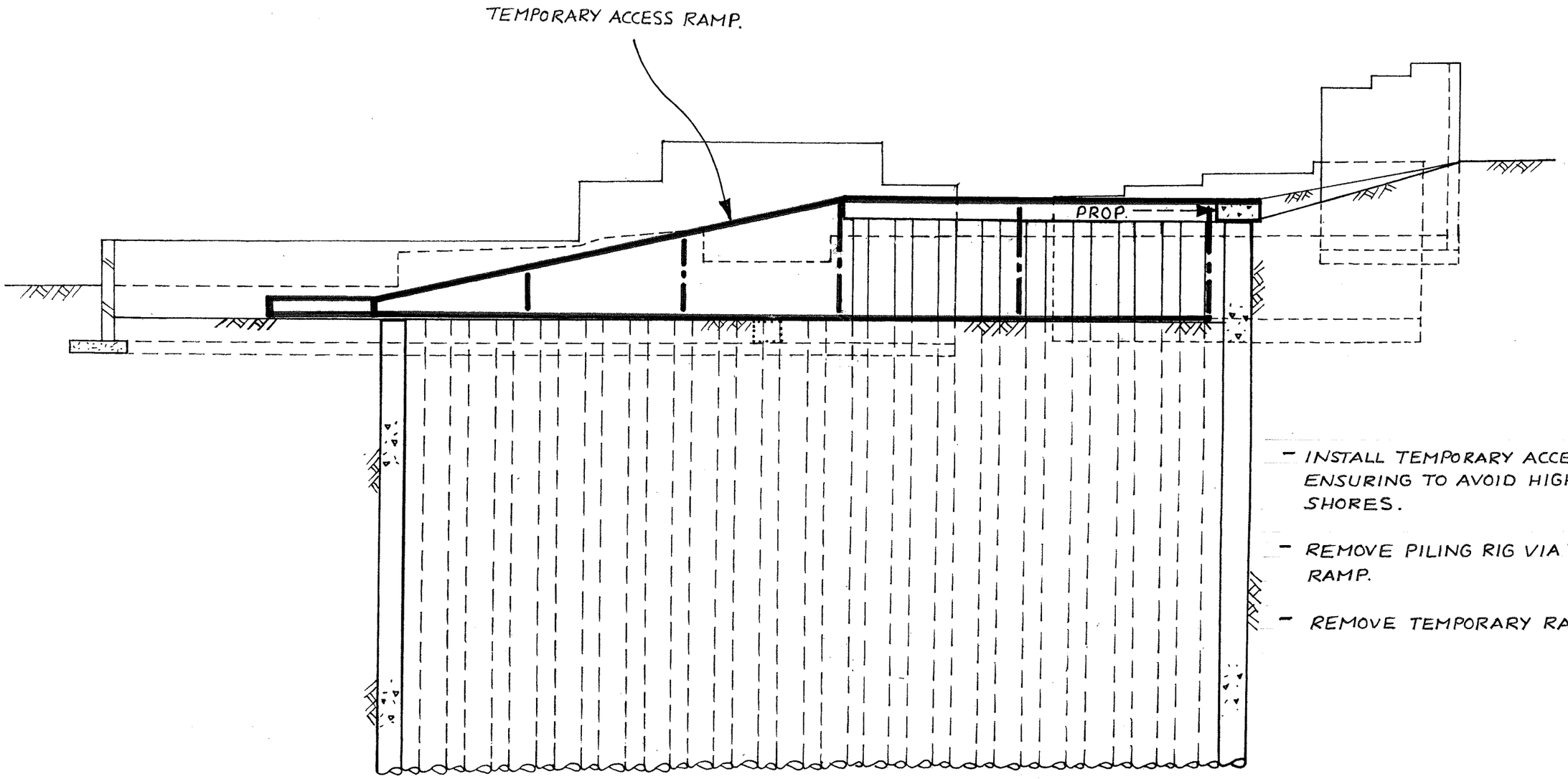
tel: (020) 8544 0033 fax: (020) 8544 0066 info@elliottwood.co.uk

job title
59 MARESFIELD GARDENS, LONDON.

job no	drawing no	revision
211590	Sk.305	P1



- INSTALL TEMPORARY ACCESS RAMP ENSURING TO AVOID HIGH LEVEL FLYING SHORES.
- REMOVE PILING RIG VIA TEMPORARY RAMP.
- REMOVE TEMPORARY RAMP.

This drawing is to be read in conjunction with all relevant architects, engineers and specialists drawings and specifications.

Do not scale from this drawing.

rev	date	by	chk	description
P1	25.11.12	RB		FOR PLANNING

drawing title
LONG SECTION 2
SEQUENCING - 7 OF 16

scale(s) ~1:100 | date NOV 12 | drawn RB

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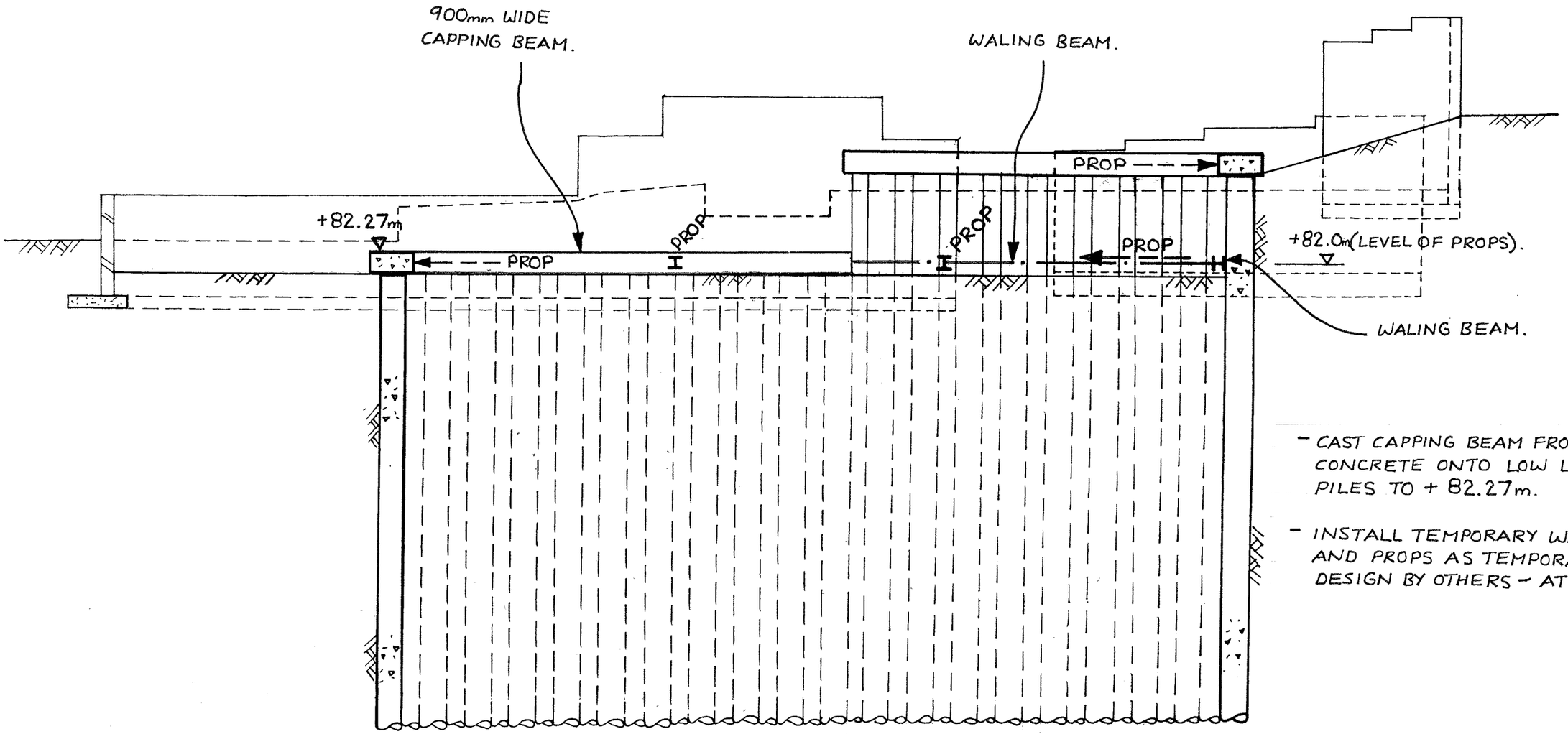
tel: (020) 8544 0033 fax: (020) 8544 0066 info@elliottwood.co.uk

job title
59 MARESFIELD GARDENS, LONDON

job no	drawing no	revision
211590	Sk.306	P1



- CAST CAPPING BEAM FROM REINFORCED CONCRETE ONTO LOW LEVEL SECANT PILES TO + 82.27m.

- INSTALL TEMPORARY WALING BEAMS AND PROPS AS TEMPORARY WORKS – DESIGN BY OTHERS – AT + 82.0m.

This drawing is to be read in conjunction with all relevant architects, engineers and specialists drawings and specifications.

Do not scale from this drawing.

rev	date	by	chk	description
P1	25.11.12	RB		FOR PLANNING

drawing title
LONG SECTION 2
SEQUENCING - 8 OF 16

scale(s) ~1:100 | date NOV 12 | drawn RB

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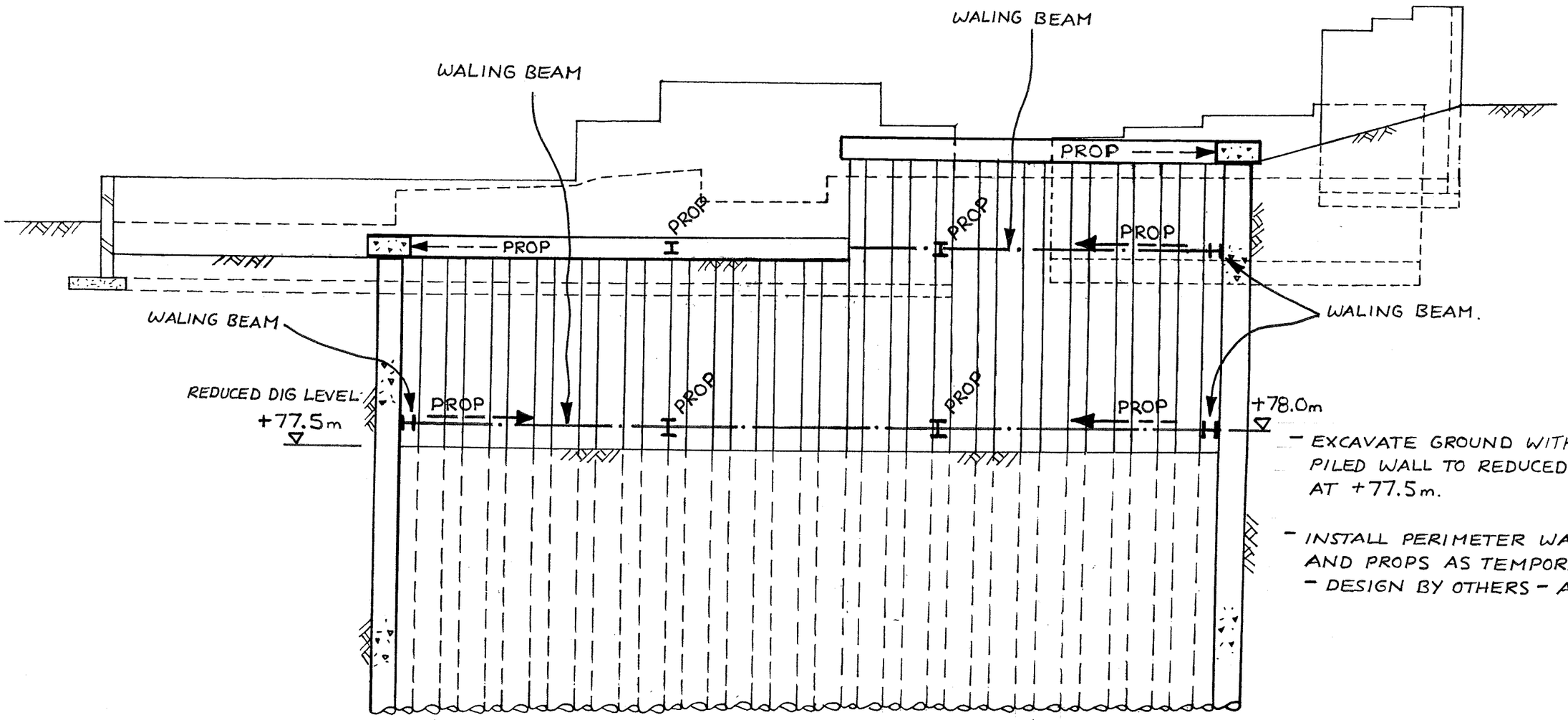
tel: (020) 8544 0033 fax: (020) 8544 0066 info@elliottwood.co.uk

job title
59 MARESFIELD GARDENS, LONDON

job no	drawing no	revision
211590	SK.307	P1



- EXCAVATE GROUND WITHIN SECANT PILED WALL TO REDUCED DIG LEVEL AT +77.5m.

- INSTALL PERIMETER WALING BEAMS AND PROPS AS TEMPORARY WORKS - DESIGN BY OTHERS - AT +78.0m

This drawing is to be read in conjunction with all relevant architects, engineers and specialists drawings and specifications.

Do not scale from this drawing.

rev	date	by	chk	description
P1	25.11.12	RB		FOR PLANNING

drawing title: LONG SECTION 2 SEQUENCING - 9 OF 16

scale(s): ~1:100 | date: NOV 12 | drawn: RB

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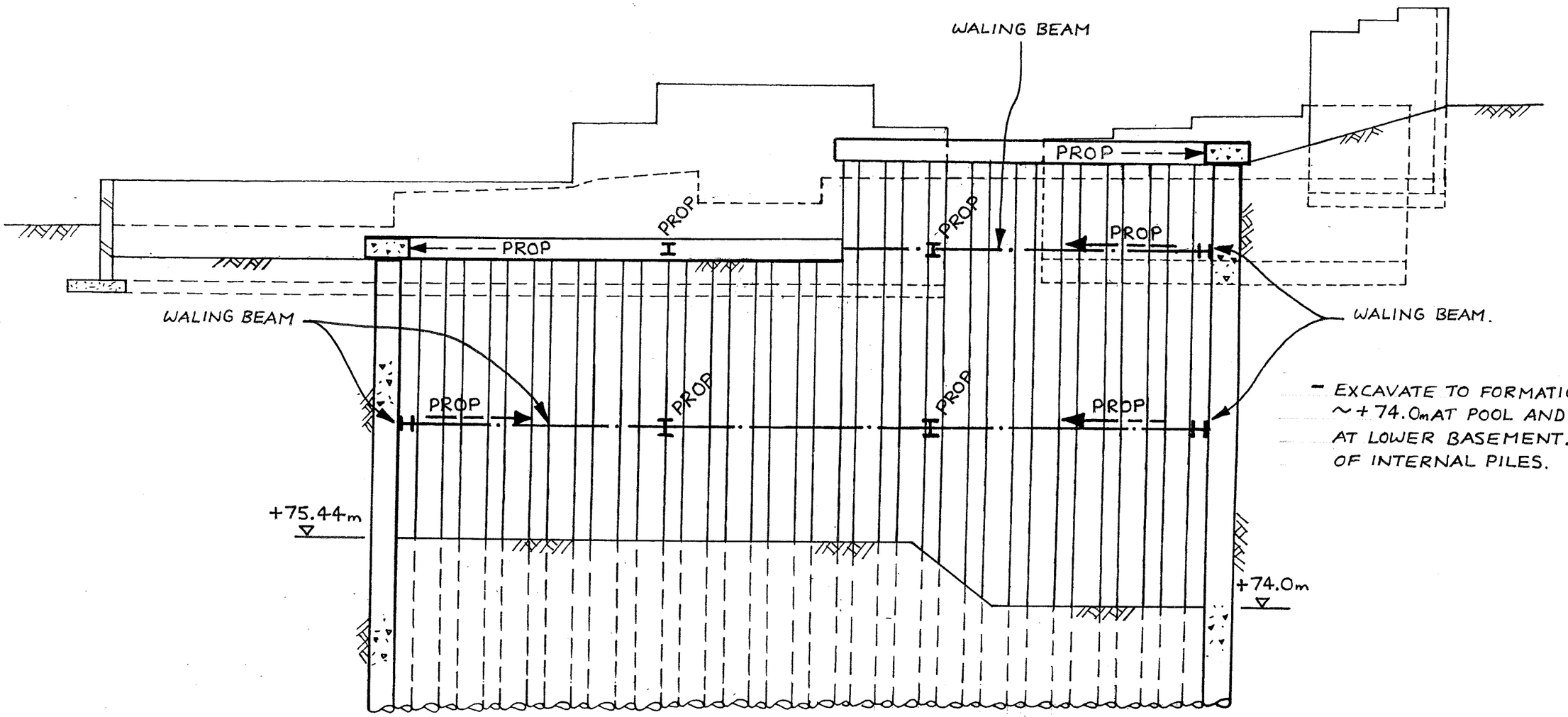
job title: 59 MARESFIELD GARDENS, LONDON

job no	drawing no	revision
211590	Sk.308	P1



- EXCAVATE TO FORMATION LEVEL ~+74.0mAT POOL AND ~+75.4m AT LOWER BASEMENT. EXPOSE TOPS OF INTERNAL PILES.

This drawing is to be read in conjunction with all relevant architects, engineers and specialists drawings and specifications.

Do not scale from this drawing.

rev	date	by	chk	description
P1	25.11.12	RB		FOR PLANNING

drawing title: LONG SECTION 2 SEQUENCING - 10 OF 16

scale(s): ~1:100 | date: NOV 12 | drawn: SP

drawing status: PRELIMINARY

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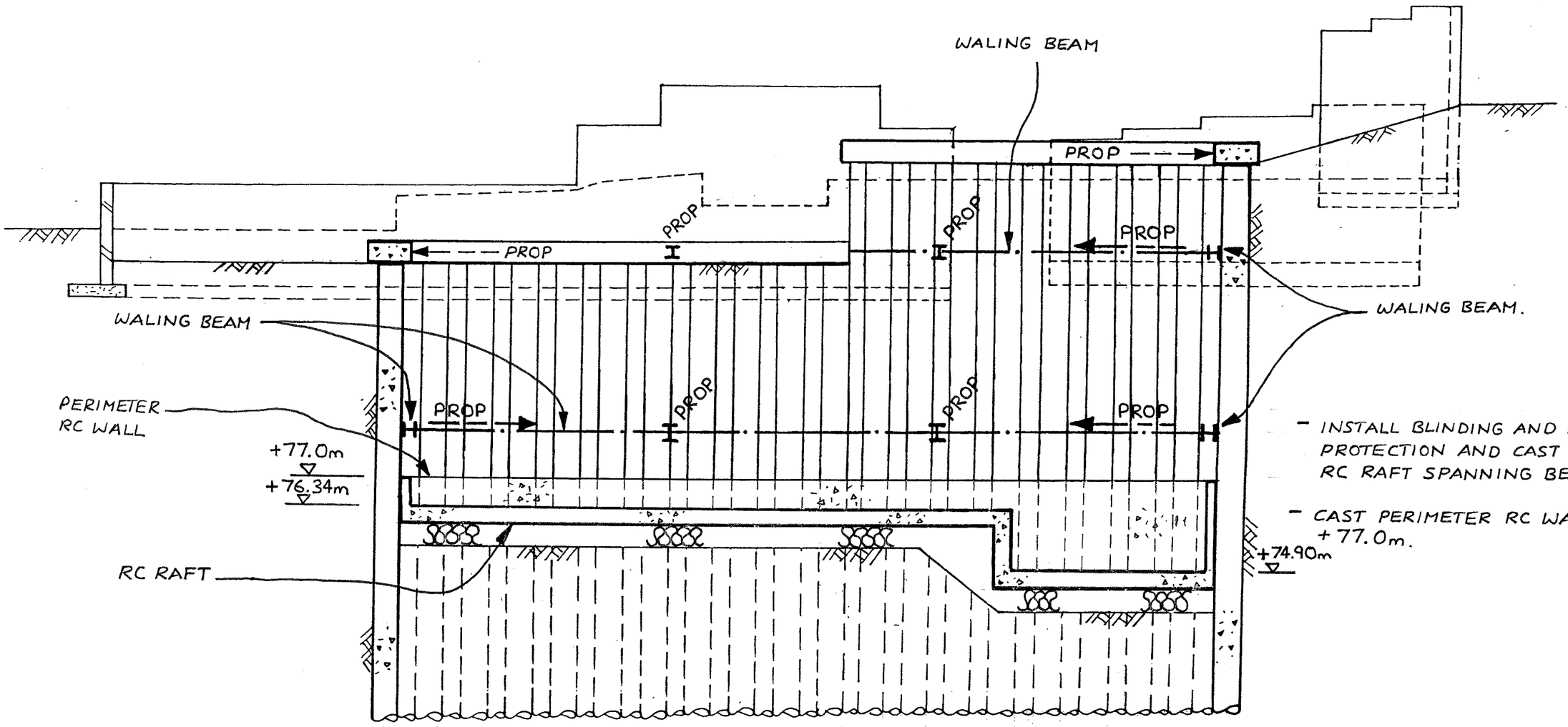
job title: 59 MARESFIELD GARDENS, LONDON

job no	drawing no	revision
211590	Sk.309	P1



This drawing is to be read in conjunction with all relevant architects, engineers and specialists drawings and specifications.

Do not scale from this drawing.

rev	date	by	chk	description
P1	25.11.12	RB		FOR PLANNING

drawing title: LONG SECTION 2 SEQUENCING - 11 OF 16

scale(s): ~1:100 | date: NOV 12 | drawn: RB

drawing status: PRELIMINARY

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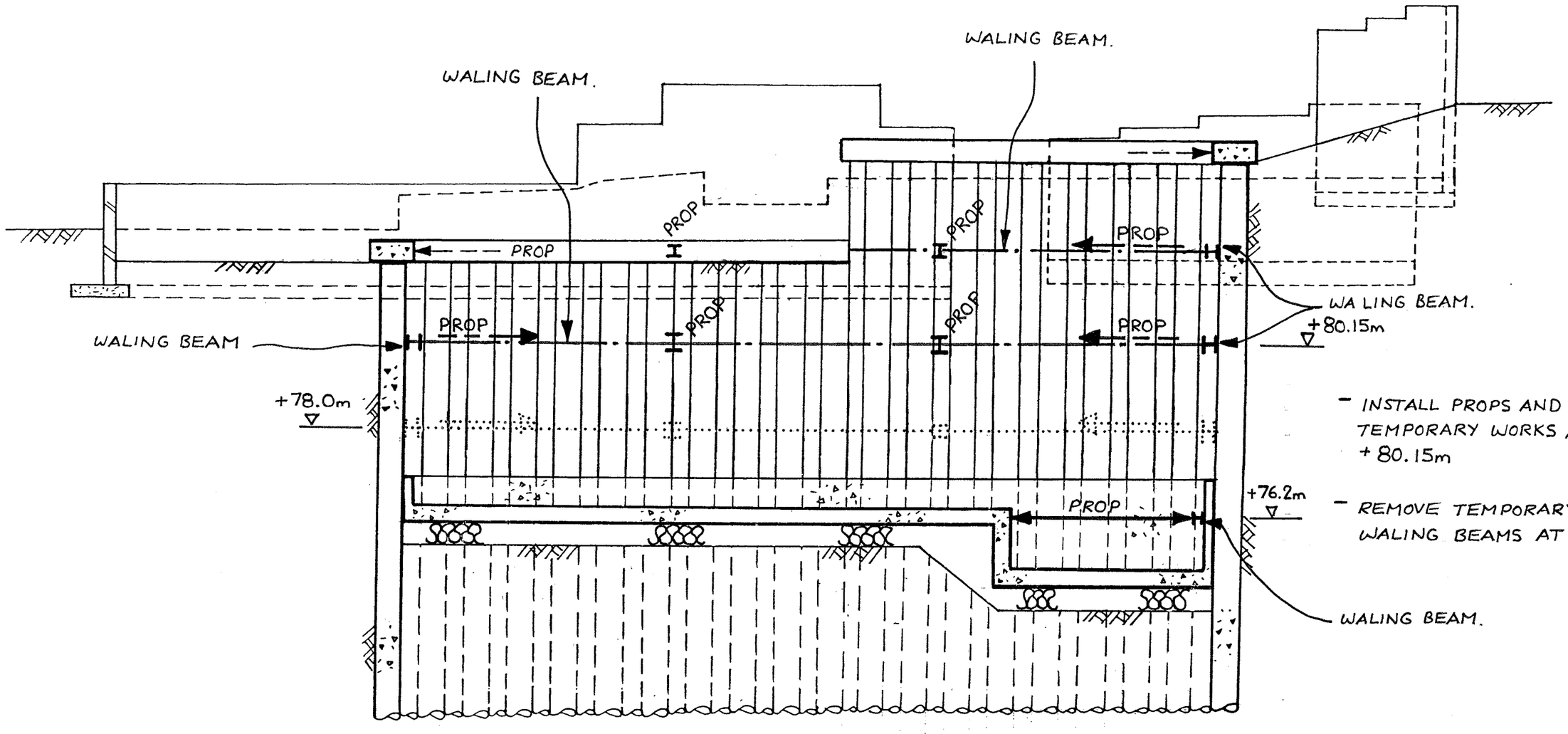
job title: 59 MARESFIELD GARDENS, LONDON

job no	drawing no	revision
211590	Sk.310	P1



- INSTALL PROPS AND WALINGS AS TEMPORARY WORKS AT +76.2m AND +80.15m
- REMOVE TEMPORARY PROPS AND WALING BEAMS AT +78.0m.

This drawing is to be read in conjunction with all relevant architects, engineers and specialists drawings and specifications.

Do not scale from this drawing.

rev	date	by	chk	description
P1	25.11.12	RB		FOR PLANNING

drawing title: LONG SECTION 2 SEQUENCING - 12 OF 16

scale(s): ~1:100 | date: NOV 12 | drawn: SP

drawing status: PRELIMINARY

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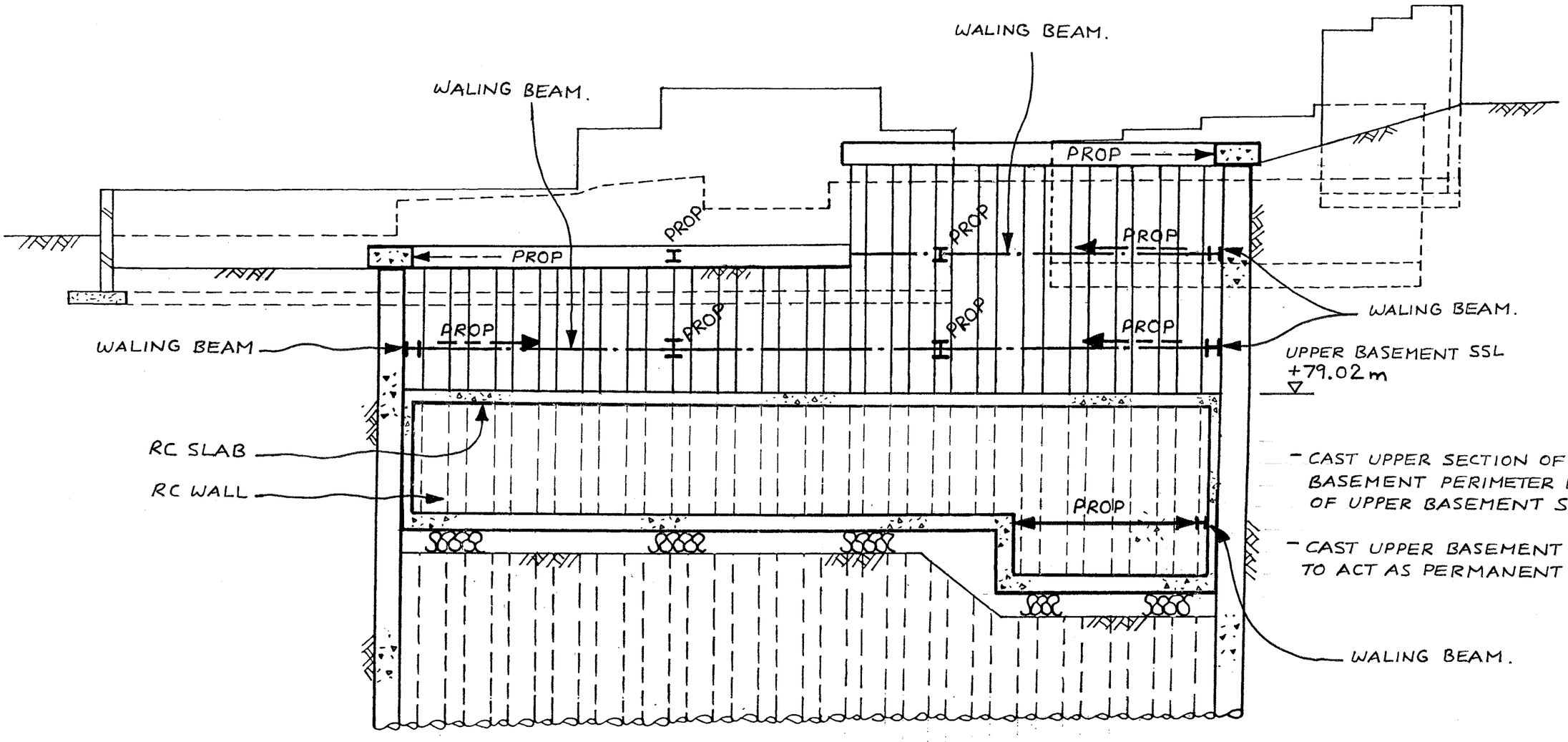
tel: (020) 8544 0033 fax: (020) 8544 0066 info@elliottwood.co.uk

job title: 59 MARESFIELD GARDENS, LONDON

job no	drawing no	revision
211590	Sk.311	P1



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rev	date	by	chk	description
P1	25.11.12	RB		FOR PLANNING

drawing title
LONG SECTION 2
SEQUENCING - 13 OF 16

scale(s)	date	drawn
~1:100	NOV 12	SP

drawing status
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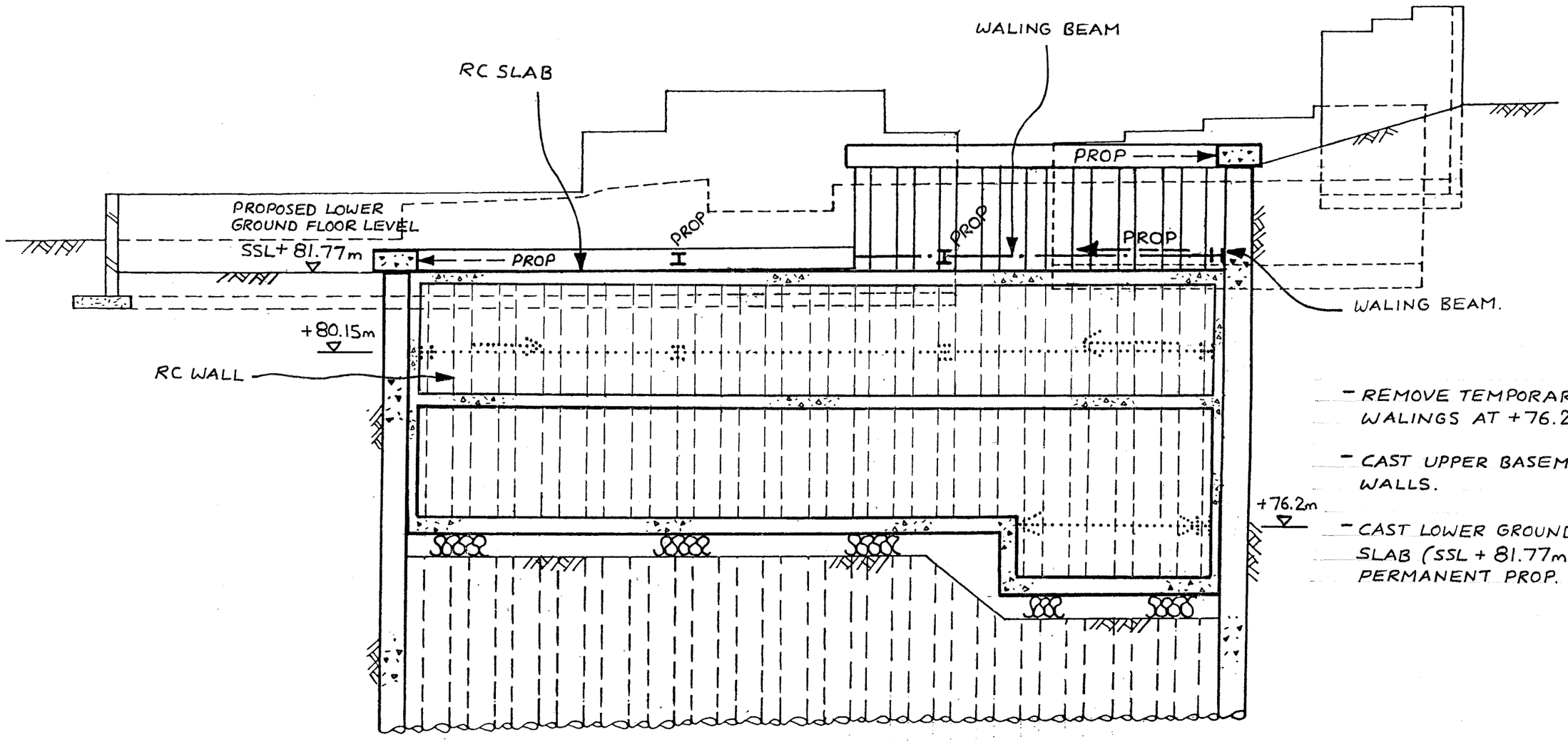
job title
59 MARESFIELD GARDENS, LONDON.

job no	drawing no	revision
211590	Sk. 312	P1



- REMOVE TEMPORARY PROPS AND WALINGS AT +76.2m AND +80.15m.
- CAST UPPER BASEMENT PERIMETER WALLS.
- CAST LOWER GROUND FLOOR LEVEL SLAB (SSL + 81.77m) TO ACT AS PERMANENT PROP.

This drawing is to be read in conjunction with all relevant architects, engineers and specialists drawings and specifications.

Do not scale from this drawing.

rev	date	by	chk	description
P1	25.11.12	RB		FOR PLANNING

drawing title
LONG SECTION 2
SEQUENCING - 14 OF 16

scale(s) ~1:100 | date NOV 12 | drawn RB

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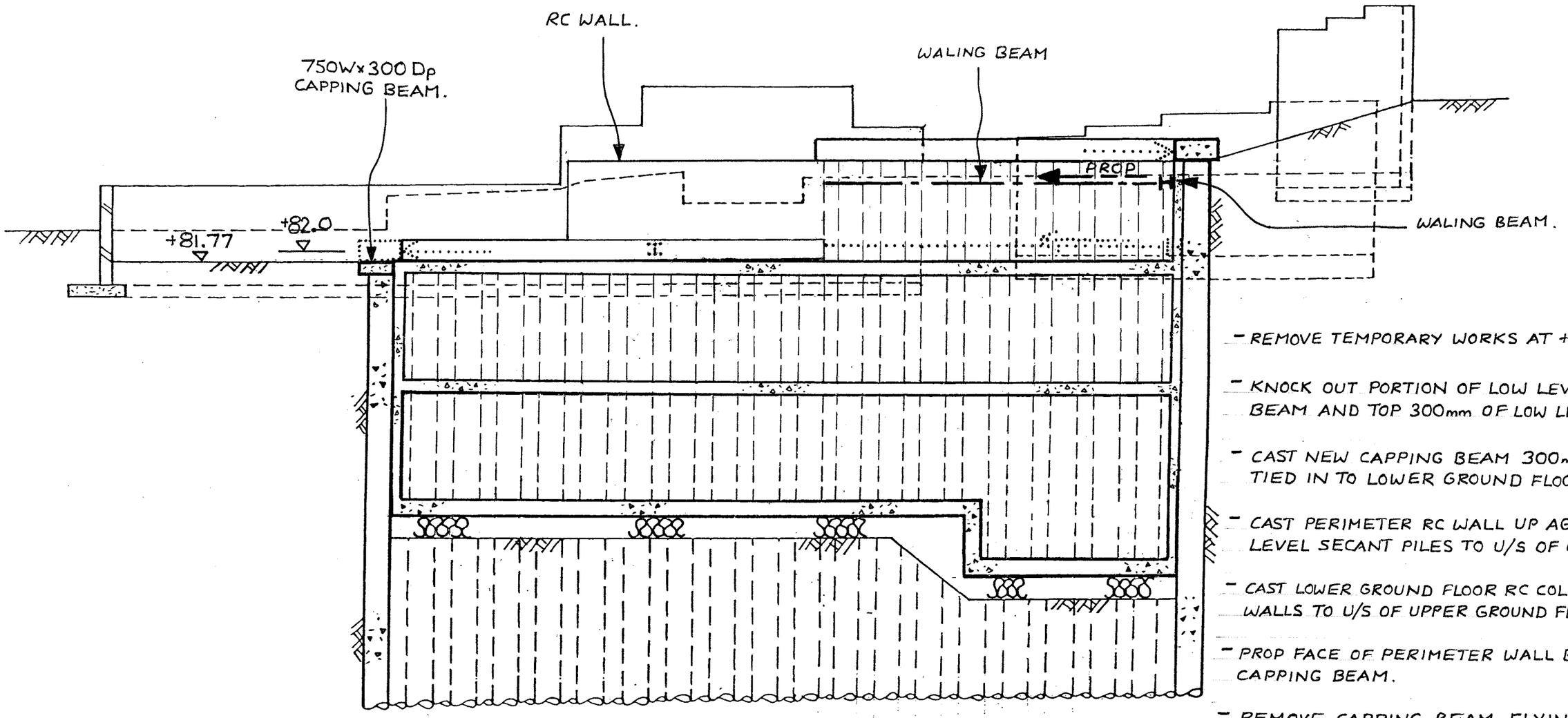
job title
59 MARESFIELD GARDENS, LONDON

job no	drawing no	revision
211590	Sk-313	P1



- REMOVE TEMPORARY WORKS AT +82.0m
- KNOCK OUT PORTION OF LOW LEVEL CAPPING BEAM AND TOP 300mm OF LOW LEVEL PILES.
- CAST NEW CAPPING BEAM 300mm DEEP TIED IN TO LOWER GROUND FLOOR SLAB
- CAST PERIMETER RC WALL UP AGAINST HIGH LEVEL SECANT PILES TO U/S OF CAPPING BEAM.
- CAST LOWER GROUND FLOOR RC COLUMNS AND WALLS TO U/S OF UPPER GROUND FLOOR SLAB LEVEL.
- PROP FACE OF PERIMETER WALL BELOW UPPER CAPPING BEAM.
- REMOVE CAPPING BEAM FLYING SHORES

rev	date	by	chk	description
P1	25.11.12	RB		FOR PLANNING

drawing title
LONG SECTION 2
SEQUENCING - 15 OF 16

scale(s) ~1:100 | date NOV 12 | drawn RB

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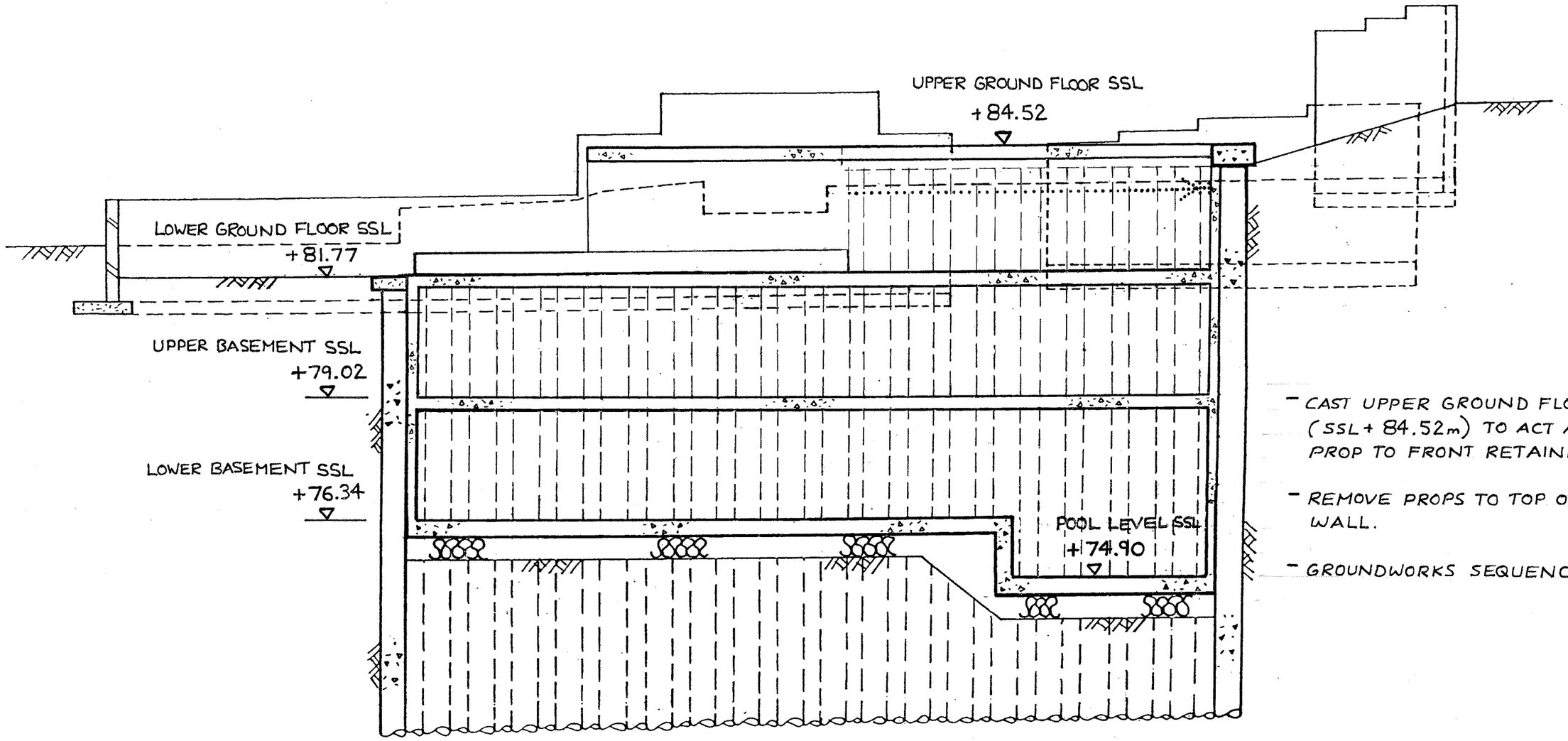
job title
59 MARESFIELD GARDENS, LONDON

job no	drawing no	revision
211590	Sk.314	P1



- CAST UPPER GROUND FLOOR SLAB (SSL + 84.52m) TO ACT AS PERMANENT PROP TO FRONT RETAINING WALL.
- REMOVE PROPS TO TOP OF PERIMETER WALL.
- GROUNDWORKS SEQUENCING COMPLETED.

This drawing is to be read in conjunction with all relevant architects, engineers and specialists drawings and specifications.

Do not scale from this drawing.

rev	date	by	chk	description
P1	25.11.12	RB		FOR PLANNING

drawing title
LONG SECTION 2
SEQUENCING - 16 OF 16

scale(s) ~1:100 | date NOV 12 | drawn RB

drawing status
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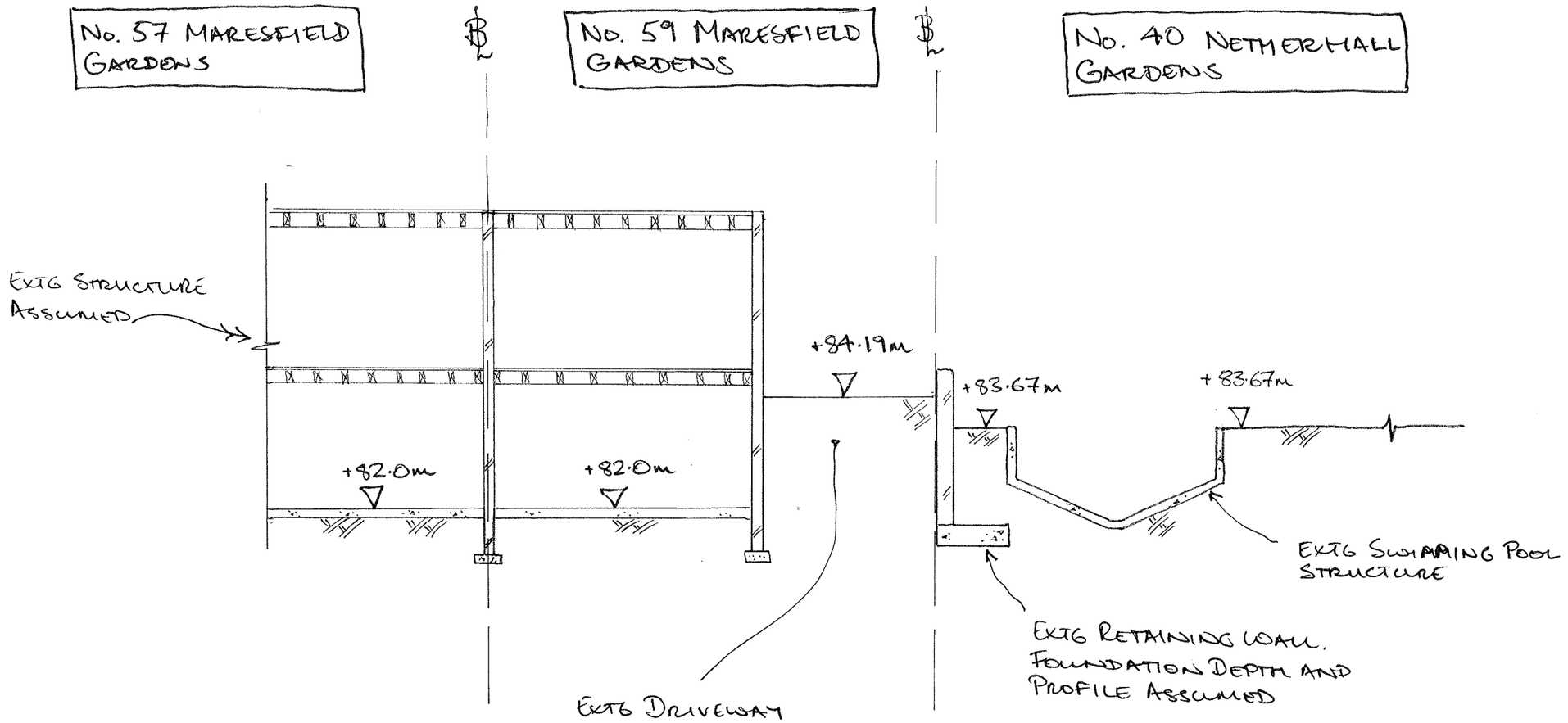
job title
59 MARESFIELD GARDENS, LONDON

job no	drawing no	revision
211590	Sk.315	P1



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rev	date	by	chk	description
P1	25.11.12	RB		FOR PLANNING

drawing title
SHORT SECTION SEQUENCING

1 OF

scale(s)	date	drawn
~1:100	NOV 12	RB

drawing status
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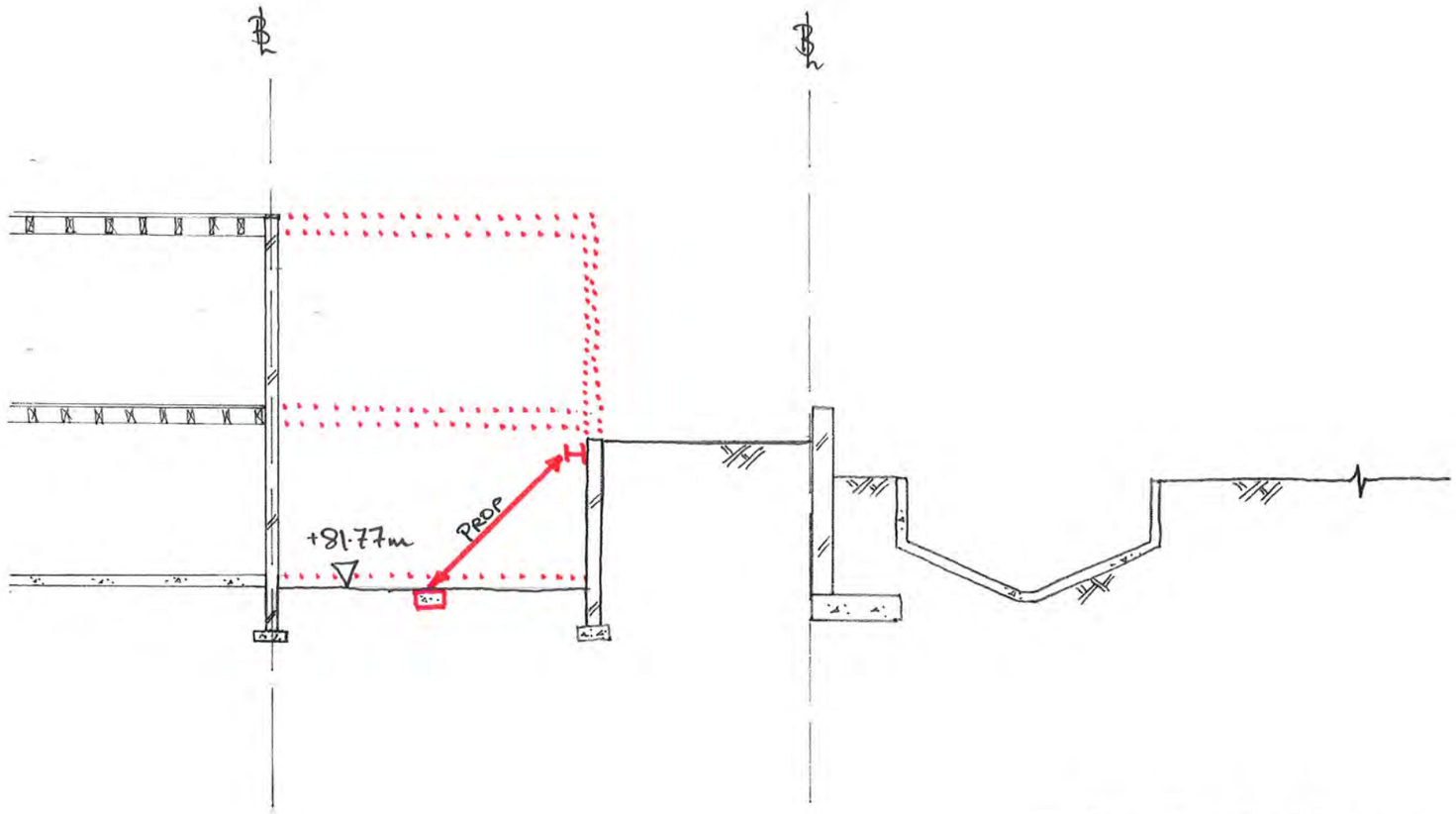
job title
59 MARESFIELD GARDENS, LONDON

job no	drawing no	revision
211590	Sk.400	P1



- PROP FACE OF BRICKWORK RETAINING WALL (RETAINING DRIVEWAY) AS REQUIRED WITH WALING BEAMS, PROPS AND THRUST BLOCKS.
- DEMOLISH EXTG STRUCTURE AT NO 59 MARESFIELD GARDENS ENSURING THAT LATERAL STABILITY OF ADJACENT STRUCTURE IS PROVIDED THROUGH TEMPORARY WORKS AS REQUIRED PENDING FURTHER INVESTIGATIONS.
- LEVEL GROUND (NOT INCLUDING DRIVEWAY) TO +81.77m

rev	date	by	chk	description
P1	25.11.12	RB		FOR PLANNING

drawing title: SHORT SECTION SEQUENCING 2 OF

scale(s): ~1:100 | date: NOV 12 | drawn: RB

drawing status: PRELIMINARY

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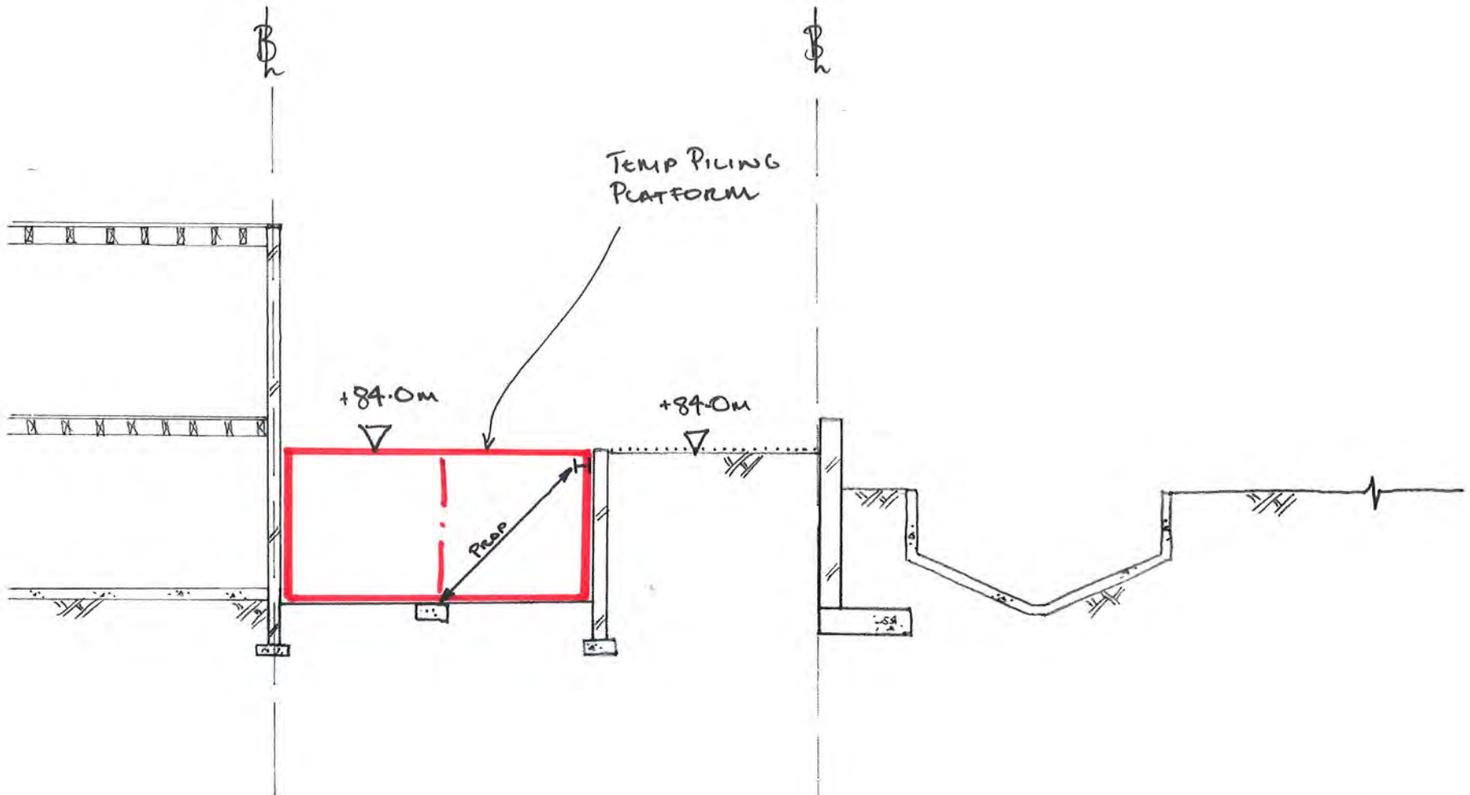
job title: 59 MARESFIELD GARDENS, LONDON

job no	drawing no	revision
211590	Sk.401	P1



- INSTALL TEMPORARY PILING PLATFORM (AND TEMPORARY ACCESS RAMP) - DESIGN BY OTHERS
- REDRESS DRIVE LEVEL TO +84.0m.

rev	date	by	chk	description
P1	25.11.12	RB		FOR PLANNING

drawing title: SHORT SECTION SEQUENCING 3 OF

scale(s): ~1:100 | date: NOV 12 | drawn: RB

drawing status: PRELIMINARY

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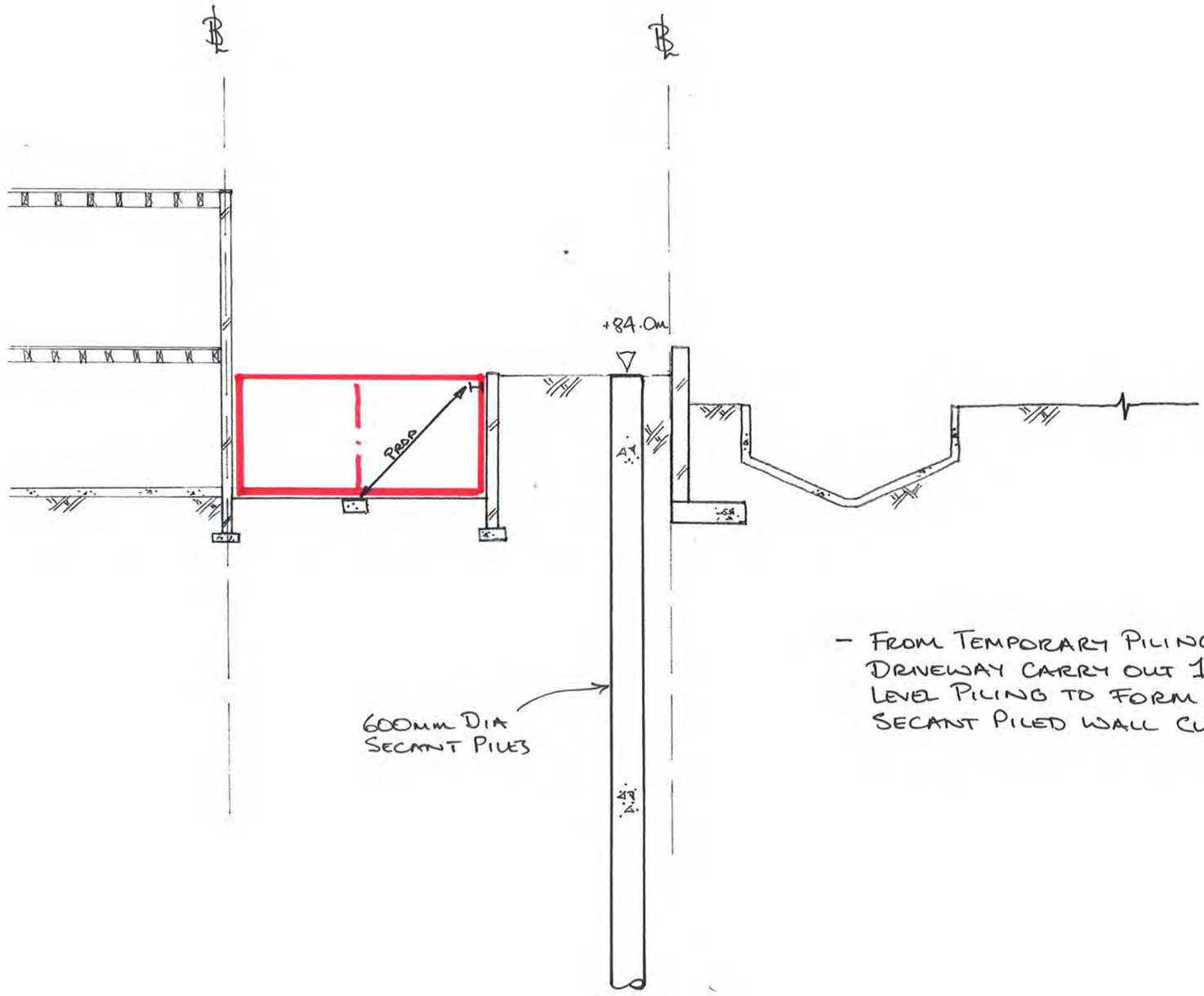
job title: 59 MARESFIELD GARDENS, LONDON

job no	drawing no	revision
211590	SK-402	P1



- FROM TEMPORARY PILING PLATFORM AND DRIVEWAY CARRY OUT 1ST STAGE HIGH LEVEL PILING TO FORM 600mm DIAMETER SECANT PILED WALL CUT OFF AT +84.0m.

This drawing is to be read in conjunction with all relevant architects, engineers and specialists drawings and specifications.

Do not scale from this drawing.

rev	date	by	chk	description
P1	25.11.12	RB		FOR PLANNING

drawing title: SHORT SECTION SEQUENCING 4 OF

scale(s): 1:100 | date: NOV 12 | drawn: RB

drawing status: PRELIMINARY

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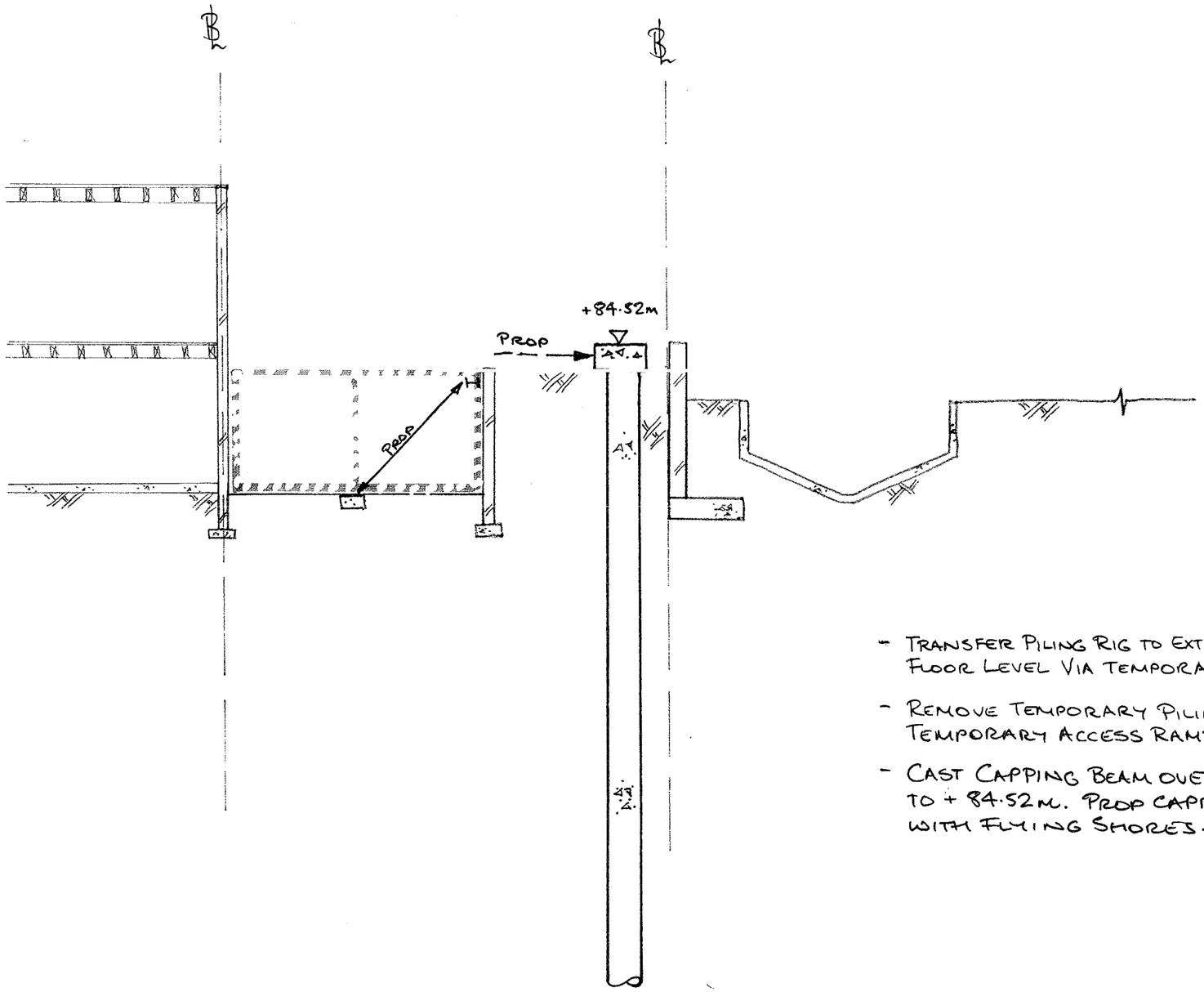
job title: 59 MARESFIELD GARDENS

job no	drawing no	revision
211590	SK.408	P1



- TRANSFER PILING RIG TO EXTG LOWER GROUND FLOOR LEVEL VIA TEMPORARY ACCESS RAMP
- REMOVE TEMPORARY PILING PLATFORM AND TEMPORARY ACCESS RAMP.
- CAST CAPPING BEAM OVER HIGH LEVEL PILES TO + 84.52 M. PROP CAPPING BEAM BEAM WITH FLYING SHORES – BY OTHERS.

rev	date	by	chk	description
P1	25.11.12	RB		FOR PLANNING

drawing title
SHORT SECTION SEQUENCING

5 OF

scale(s)	date	drawn
~1:100	Nov 12	RB

drawing status
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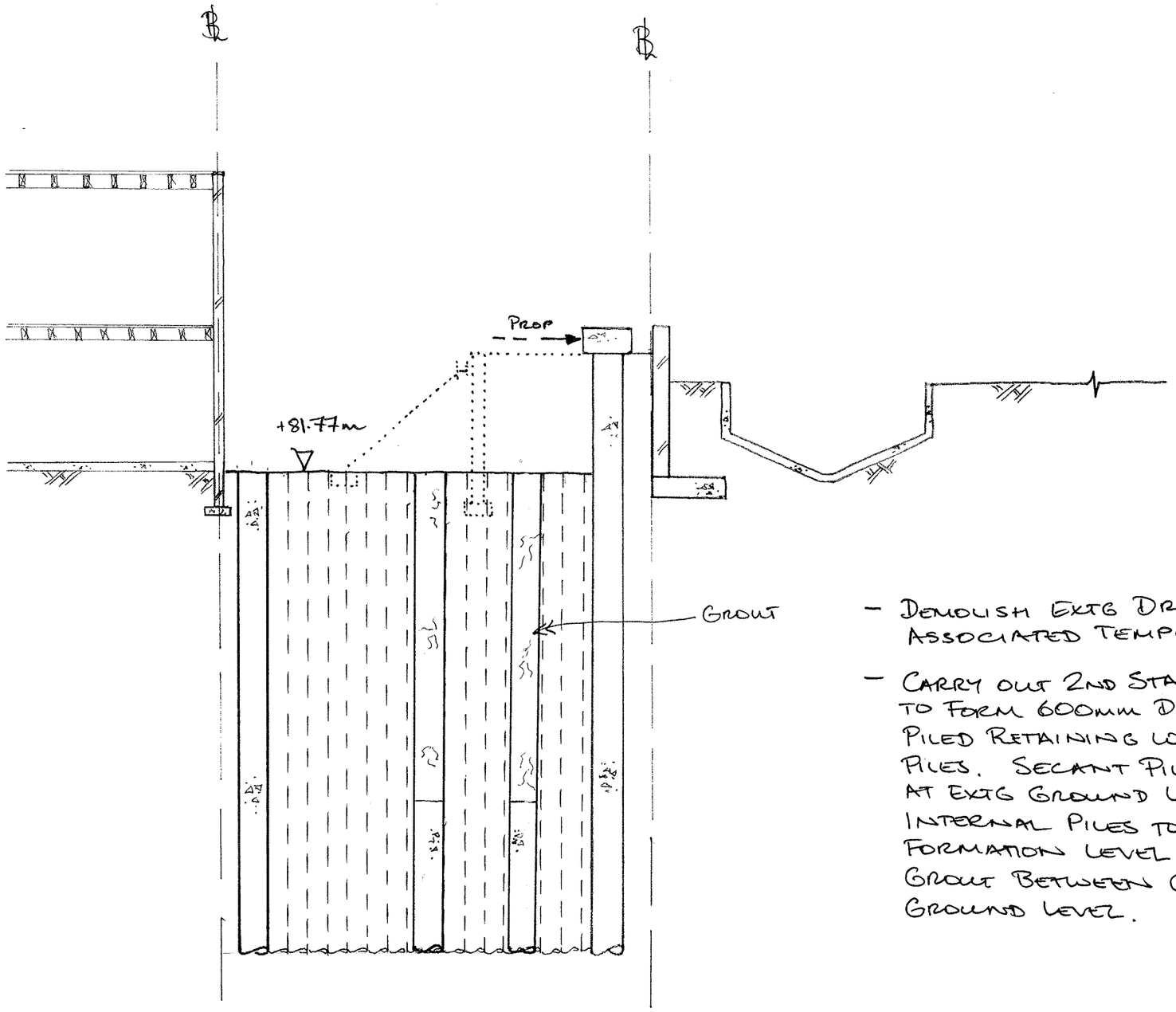
job title
59 MARKSFIELD GARDENS, LONDON

job no	drawing no	revision
211590	Sk-404	P1



- DEMOLISH EXTG DRIVEWAY AND REMOVE ASSOCIATED TEMPORARY PROPPING.
- CARRY OUT 2ND STAGE LOW LEVEL PILING TO FORM 600MM DIAMETER SECANT PILED RETAINING WALL AND INTERNAL PILES. SECANT PILES TO BE CUT OFF AT EXTG GROUND LEVEL, +81.77m. INTERNAL PILES TO BE CUT OFF AT FORMATION LEVEL AND FILLED WITH GROUT BETWEEN CUT OFF AND GROUND LEVEL.

This drawing is to be read in conjunction with all relevant architects, engineers and specialists drawings and specifications.

Do not scale from this drawing.

rev	date	by	chk	description
P1	25.11.12	RB		FOR PLANNING

drawing title: SHORT SECTION SEQUENCING 6 OF

scale(s): ~1:100 | date: NOV 12 | drawn: RB

drawing status: PRELIMINARY

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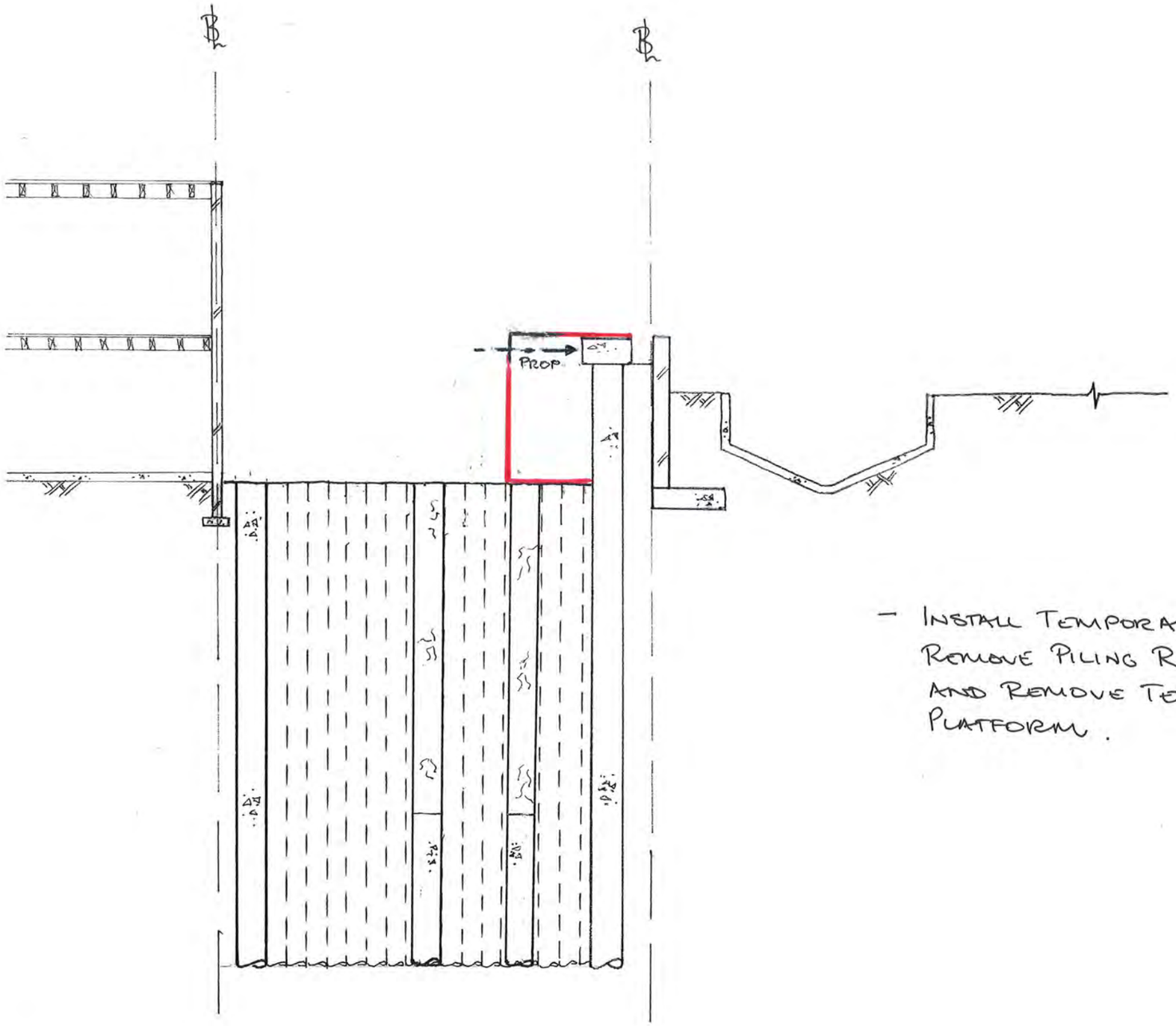
job title: 59 MARESFIELD GARDENS, LONDON

job no	drawing no	revision
211590	Sk-405	P1



- INSTALL TEMPORARY RAMP / PLATFORM, REMOVE PILING RIG VIA PLATFORM AND REMOVE TEMPORARY RAMP / PLATFORM.

This drawing is to be read in conjunction with all relevant architects, engineers and specialists drawings and specifications.

Do not scale from this drawing.

rev	date	by	chk	description
P1	25.11.12	RB		FOR PLANNING

drawing title
SHORT SECTION SEQUENCING

7 OF

scale(s) ~1:100 | date NOV 12 | drawn RB

drawing status
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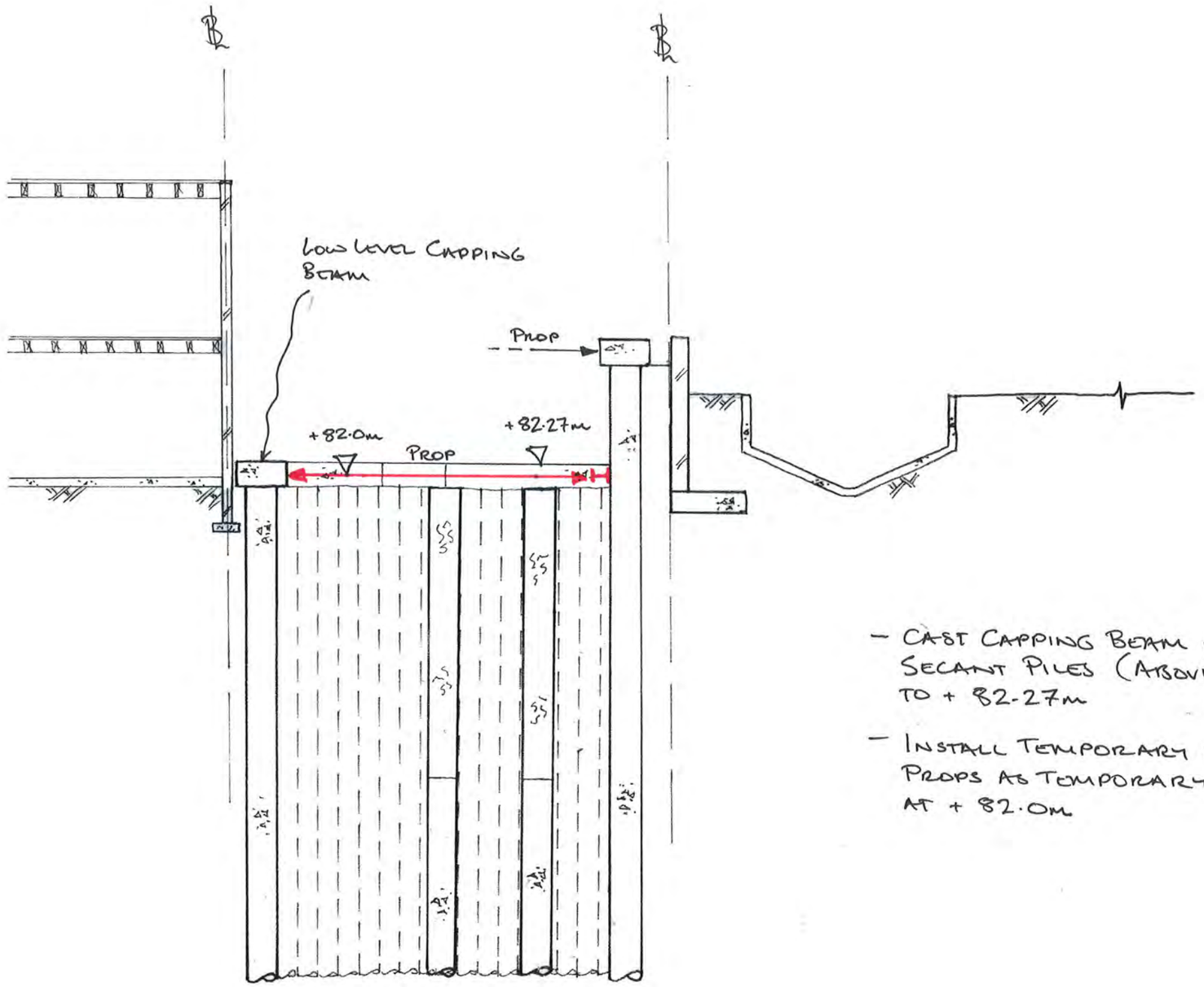
job title
59 MARESFIELD GARDENS, LONDON

job no	drawing no	revision
211590	SK-406	P1



- CAST CAPPING BEAM ON TO LOW LEVEL SECANT PILES (ABOVE EXTG GROUND LEVEL) TO + 82.27m
- INSTALL TEMPORARY WALING BEAMS AND PROPS AS TEMPORARY WORKS (BY OTHERS) AT + 82.0m

rev	date	by	chk	description
P1	25.11.12	RB		FOR PLANNING

drawing title
SHORT SECTION SEQUENCING 8 OF

scale(s) ~1:100 | date NOV 12 | drawn RB

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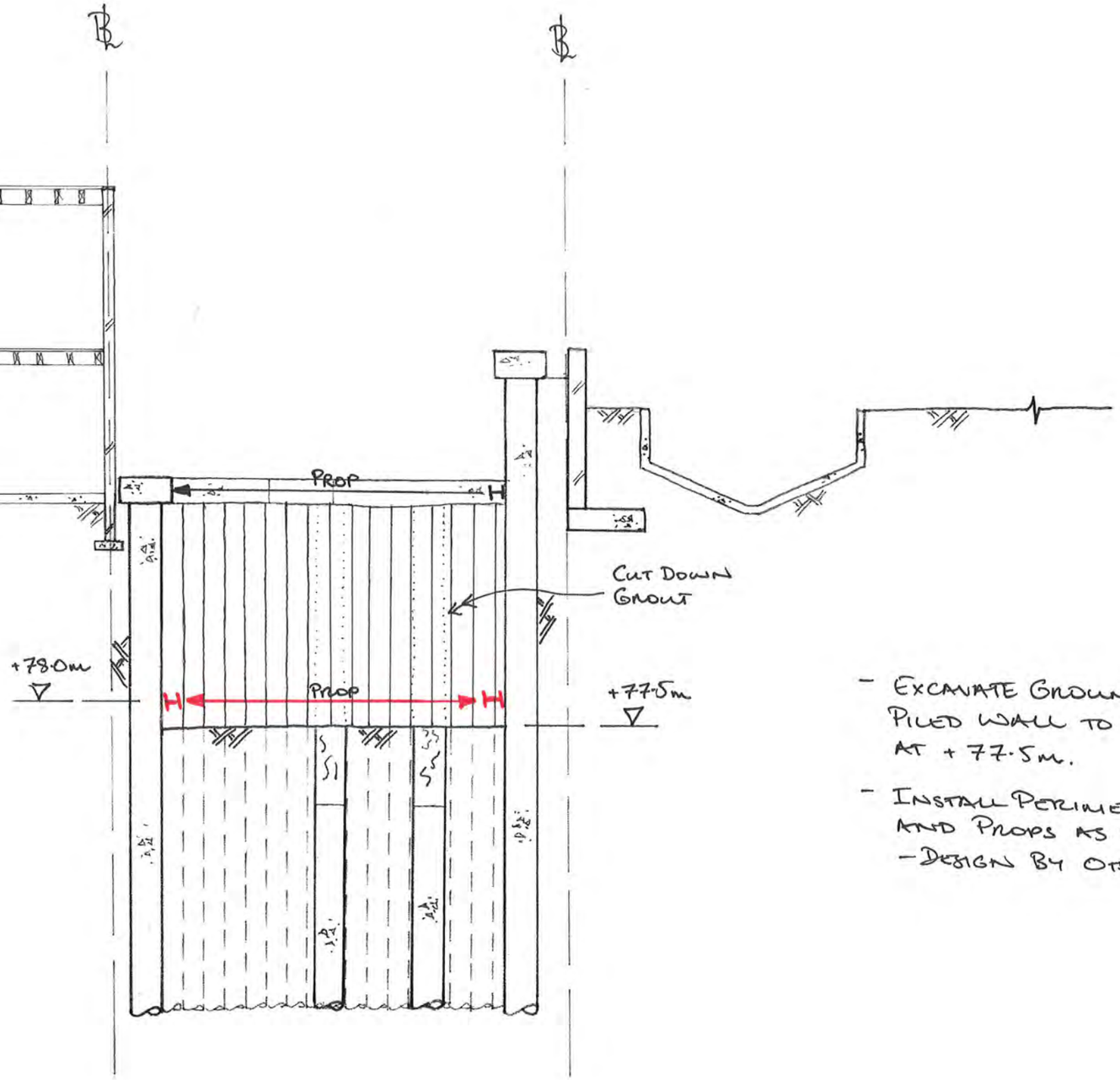
job title
59 MARESFIELD GARDENS, LONDON

job no	drawing no	revision
211590	Sk.407	P1



- EXCAVATE GROUND WITHIN SECANT PILED WALL TO REDUCED DIG LEVEL AT +77.5m.
- INSTALL PERIMETER WALING BEAMS AND PROPS AS TEMPORARY WORKS -DESIGN BY OTHERS- AT +78.0m.

rev	date	by	chk	description
P1	25.11.12	RB		FOR PLANNING

drawing title
SHORT SECTION SEQUENCING 9 OF

scale(s)	date	drawn
~1:100	25.11.12	RB

drawing status
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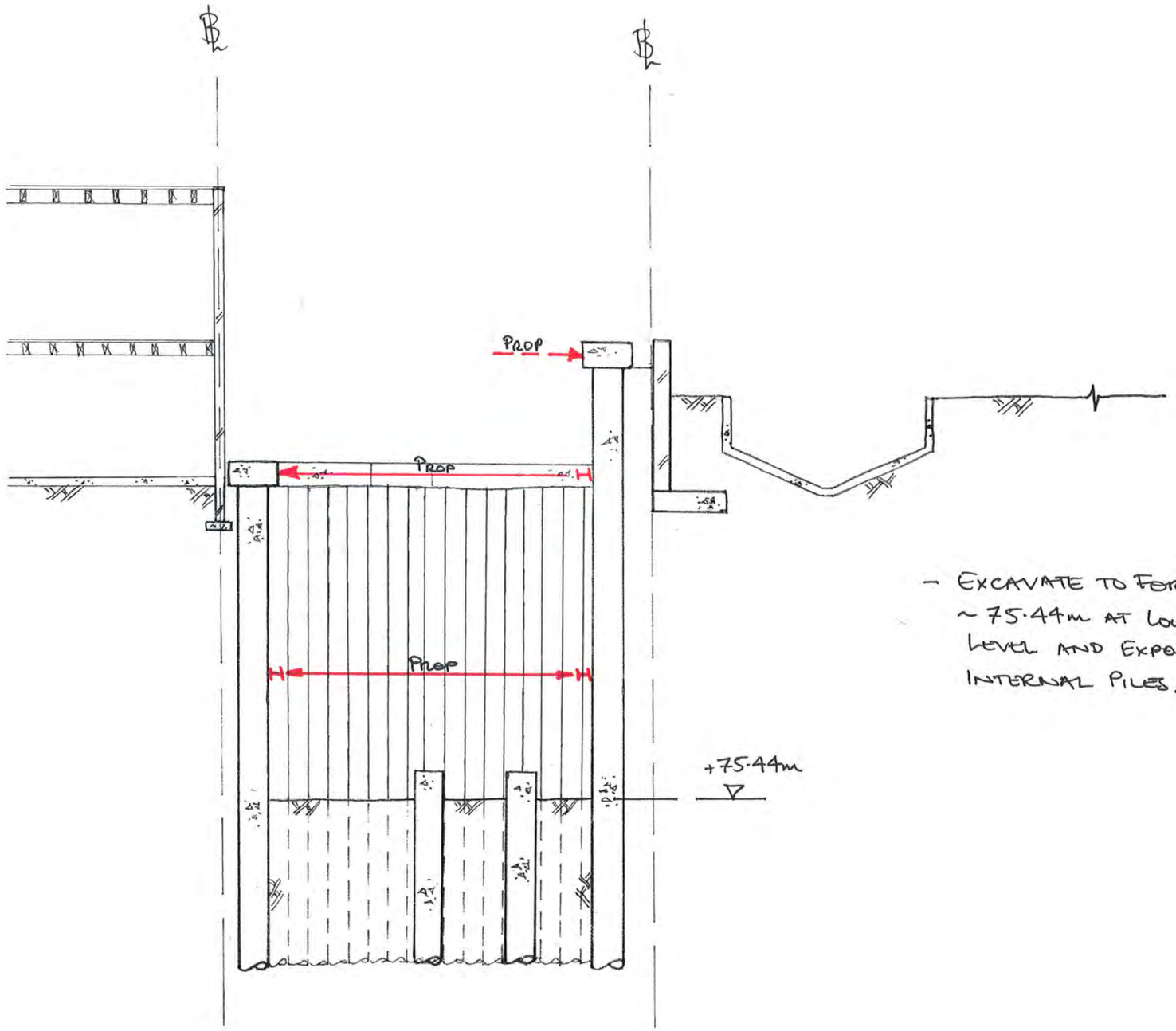
job title
59 MARESFIELD GARDENS, LONDON

job no	drawing no	revision
211590	SK-408	P1



- EXCAVATE TO FORMATION LEVEL; ~75.44m AT LOWER BASEMENT LEVEL AND EXPOSE TOPS OF INTERNAL PILES.

rev	date	by	chk	description
P1	25.11.12	RB		FOR PLANNING

drawing title
SHORT SECTION SEQUENCING

10 OF

scale(s)	date	drawn
~1:100	NOV 12	RB

drawing status
PRELIMINARY

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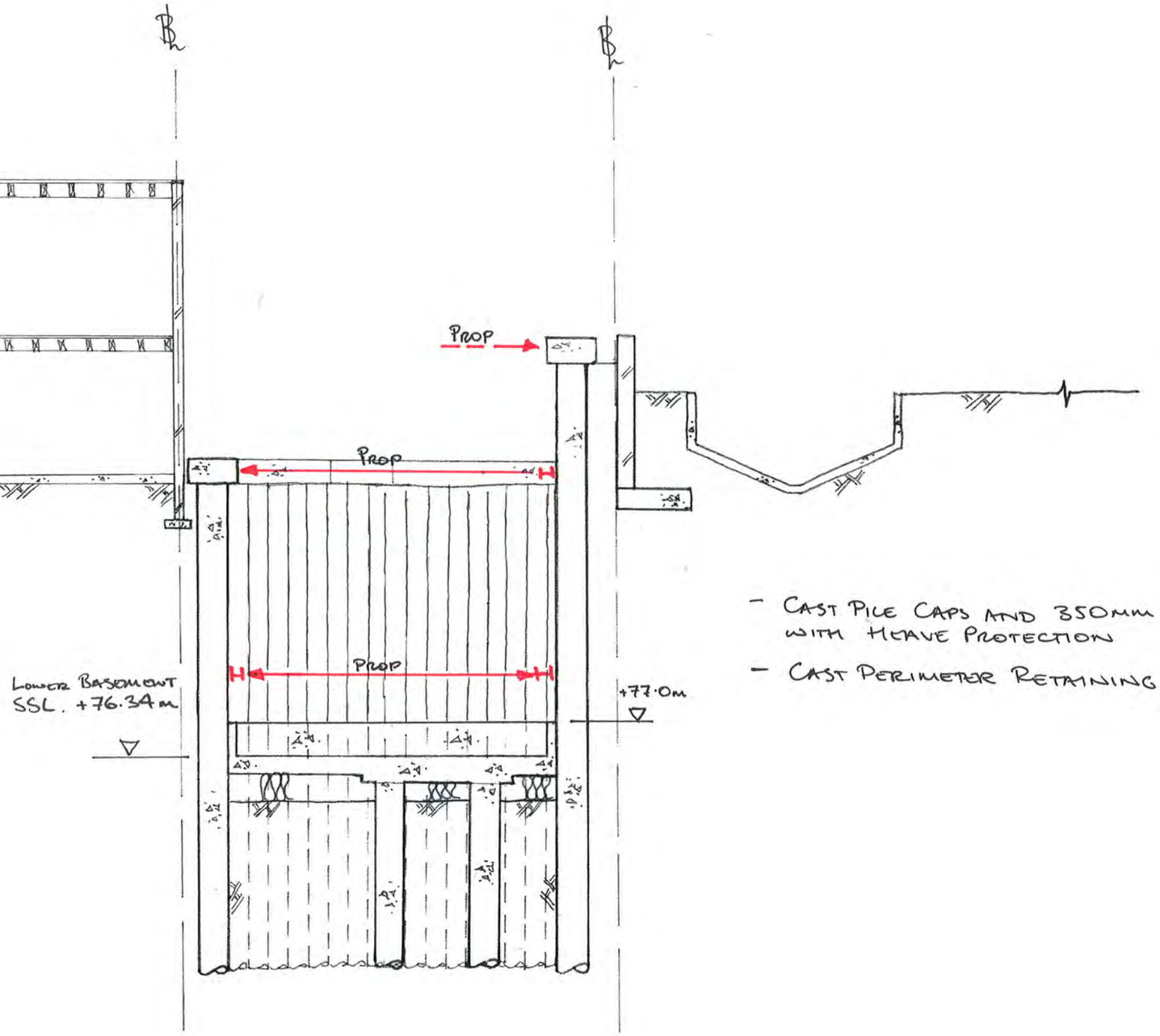
job title
59 MARESFIELD GARDENS, LONDON

job no	drawing no	revision
211590	SK.409	P1



- CAST PILE CAPS AND 350MM THK RC SLAB WITH HEAVE PROTECTION
- CAST PERIMETER RETAINING WALLS TO +77.0m

rev	date	by	chk	description
P1	25.11.12	RB		FOR PLANNING

drawing title
SHORT SECTION SEQUENCING

11 OF

scale(s)	date	drawn
~1:100	NOV 12	RB

drawing status
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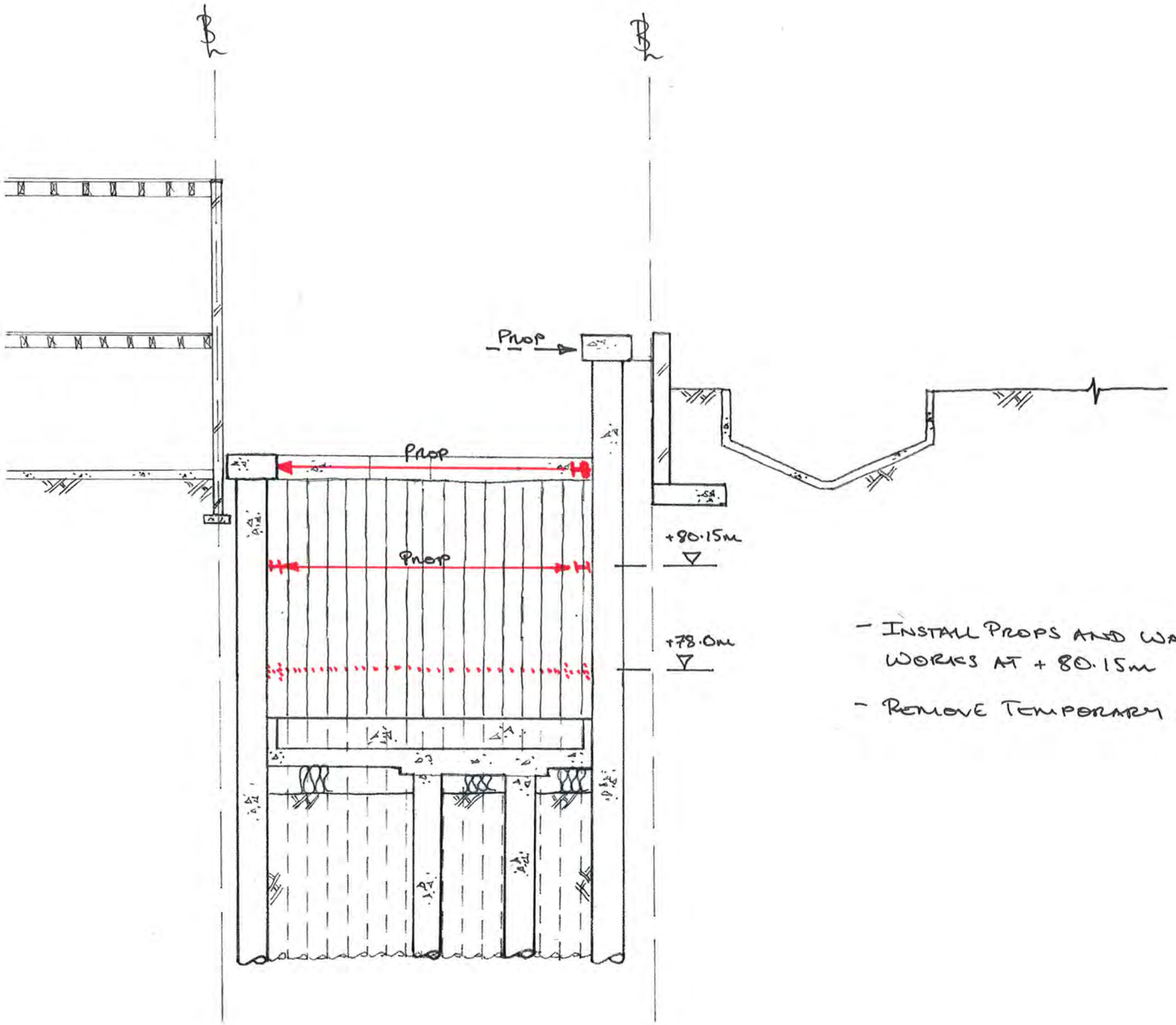
job title
59 MARESFIELD GARDENS, LONDON

job no	drawing no	revision
211590	Sk.410	P1



- INSTALL PROPS AND WALINGS AS TEMPORARY WORKS AT + 80.15m
- REMOVE TEMPORARY WORKS AT + 78.0m

rev	date	by	chk	description
P1	25.11.12	RB		FOR PLANNING

drawing title: SHORT SECTION SEQUENCING 12 OF

scale(s)	date	drawn
~ 1:100	NOV 12	RB

drawing status: PRELIMINARY

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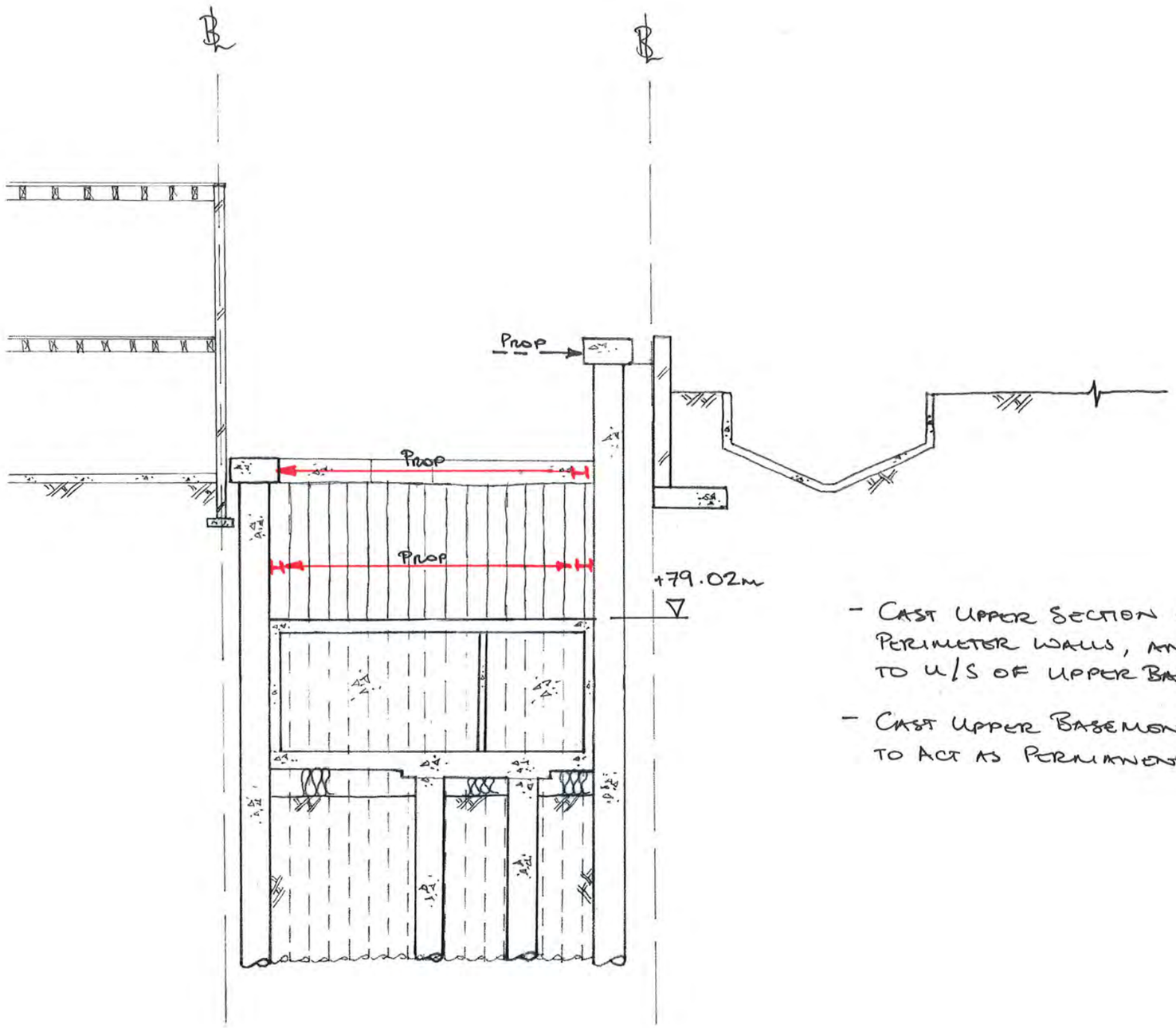
job title: 59 MARESFIELD GARDENS, LONDON

job no	drawing no	revision
211590	Sk.411	P1



- CAST UPPER SECTION OF LOWER BASEMENT PERIMETER WALLS, AND INTERNAL COLUMNS TO U/S OF UPPER BASEMENT SLAB.
- CAST UPPER BASEMENT SLAB (SSL + 79.02m) TO ACT AS PERMANENT PROP.

This drawing is to be read in conjunction with all relevant architects, engineers and specialists drawings and specifications.

Do not scale from this drawing.

rev	date	by	chk	description
P1	25.11.12	RB		FOR PLANNING

drawing title
SHORT SECTION SEQUENCING

13 OF

scale(s)	date	drawn
~1:100	NOV 12	RB

drawing status
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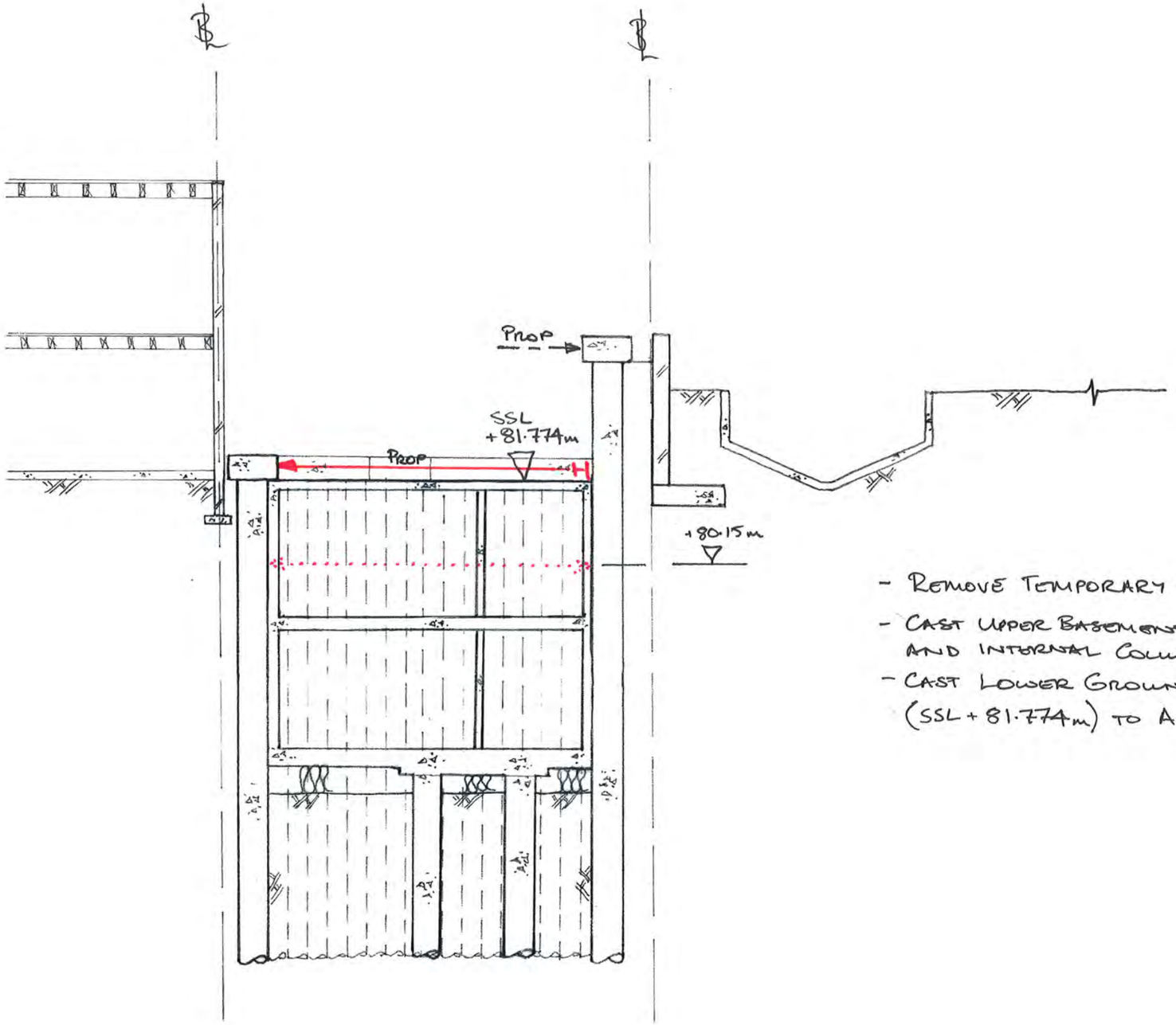
job title
59 MARESFIELD GARDENS, LONDON

job no	drawing no	revision
211890	SK.412	P1



- REMOVE TEMPORARY WORKS AT +80.15m
- CAST UPPER BASEMENT PERIMETER RC WALLS AND INTERNAL COLUMNS
- CAST LOWER GROUND FLOOR LEVEL SLAB (SSL + 81.774m) TO ACT AS PERMANENT PROP.

This drawing is to be read in conjunction with all relevant architects, engineers and specialists drawings and specifications.

Do not scale from this drawing.

rev	date	by	chk	description
P1	25.11.12	RB		FOR PLANNING

drawing title
SHORT SECTION SEQUENCING

14 OF

scale(s)	date	drawn
~1:100	NOV 12	RB

drawing status
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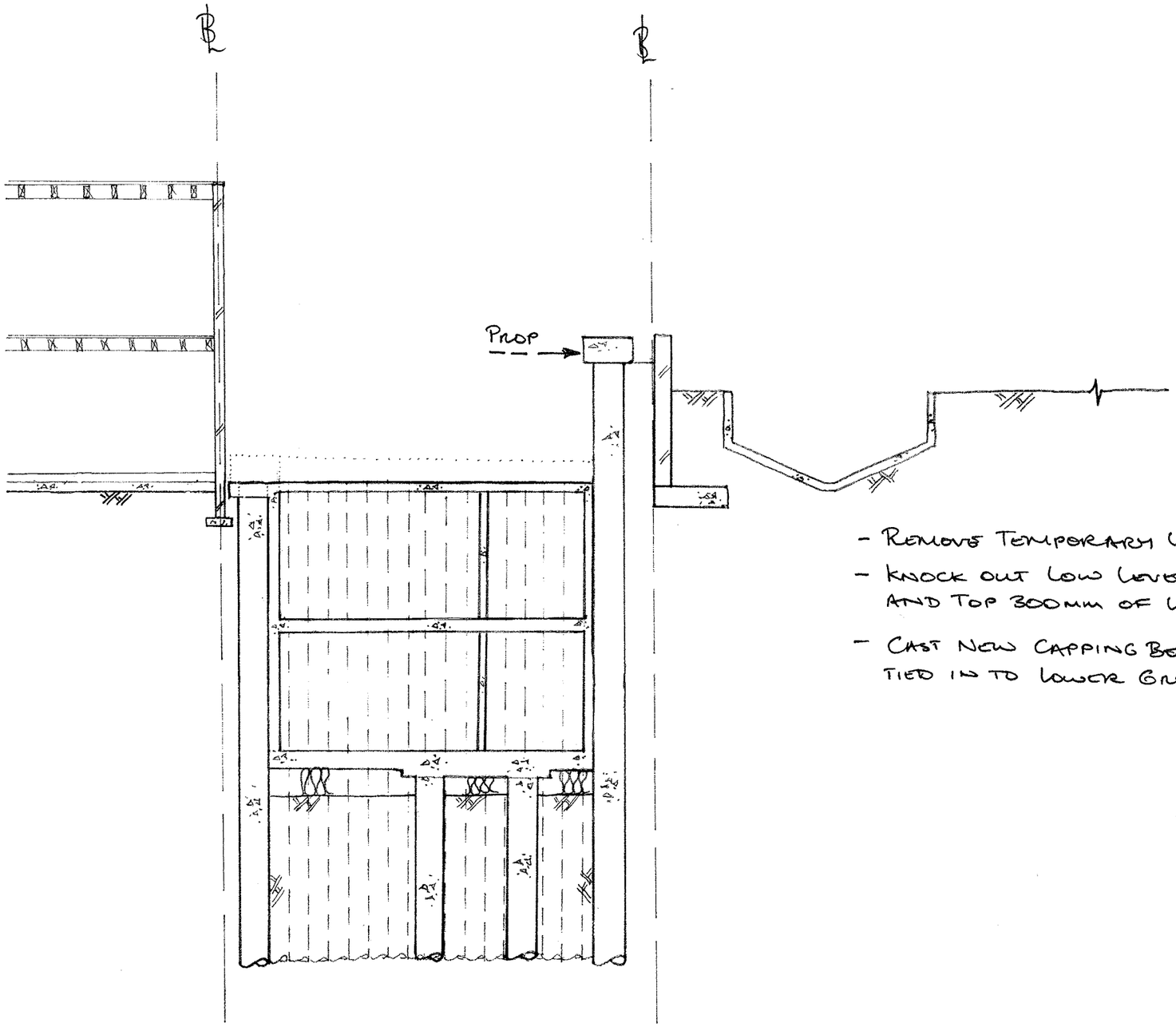
job title
59 MARKSFIELD GARDENS, LONDON

job no	drawing no	revision
211590	Sk.413	P1



- REMOVE TEMPORARY WORKS AT 82.0m
- KNOCK OUT LOW LEVEL CAPPING BEAM AND TOP 300mm OF LOW LEVEL PILES
- CAST NEW CAPPING BEAM 300mm DP TIED IN TO LOWER GROUND FLOOR SLAB.

This drawing is to be read in conjunction with all relevant architects, engineers and specialists drawings and specifications.

Do not scale from this drawing.

rev	date	by	chk	description
P1	25.11.12	BB		FOR PLANNING

drawing title
SHORT SECTION SEQUENCING

15 OF

scale(s)	date	drawn
~1:100	NOV 12	RB

drawing status
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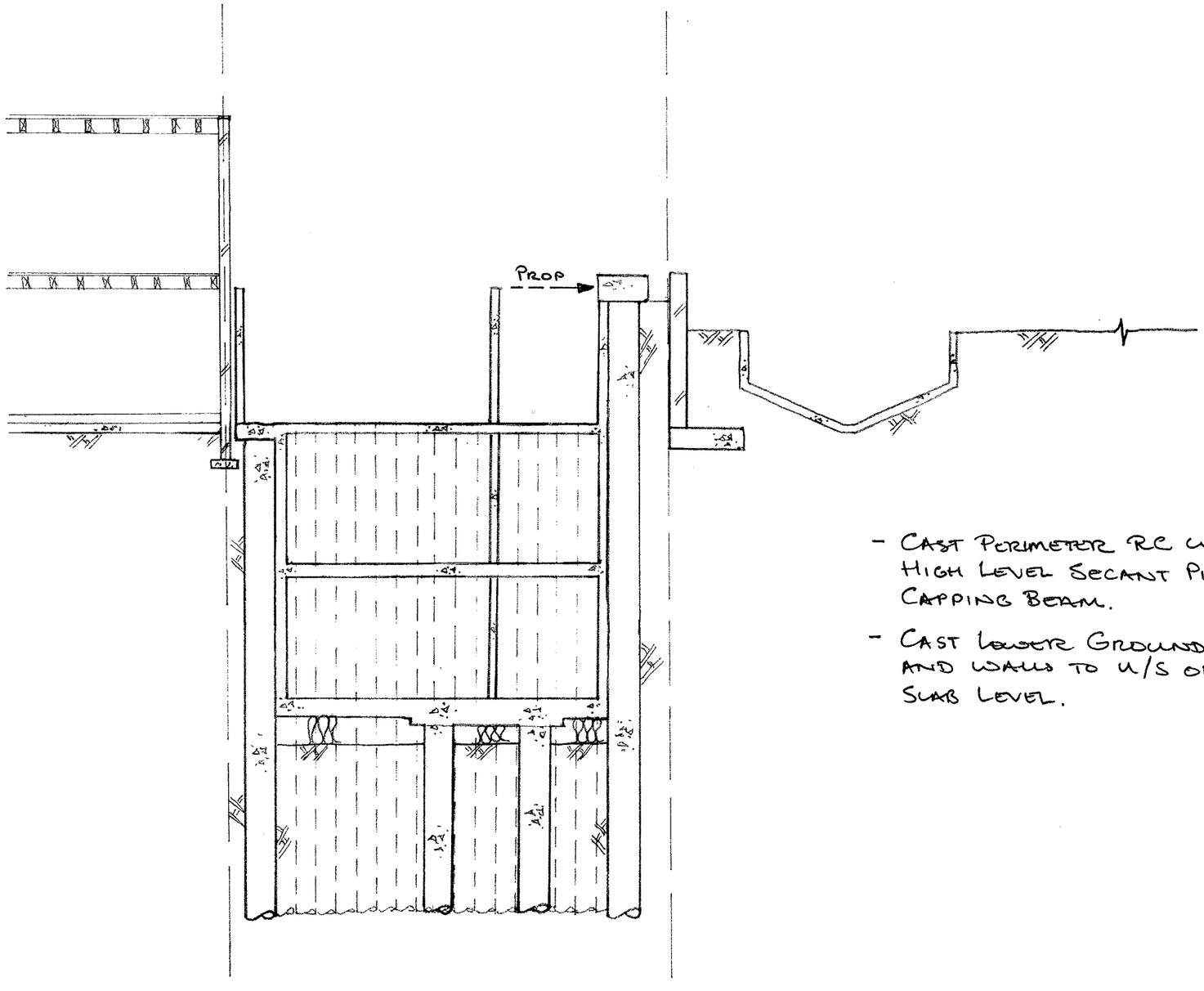
tel: (020) 8544 0033 fax: (020) 8544 0066 info@elliottwood.co.uk

job title
59 MARESFIELD GARDENS, LONDON

job no	drawing no	revision
211590	Sk.414	P1



- CAST PERIMETER RC WALL UP AGAINST HIGH LEVEL SECANT PILES TO U/S OF CAPPING BEAM.
- CAST LOWER GROUND FLOOR RC COLUMNS AND WALLS TO U/S OF UPPER GROUND FLOOR SLAB LEVEL.

rev	date	by	chk	description
P1	25.11.12	RB		FOR PLANNING

drawing title
SHORT SECTION SEQUENCING

16 OF

scale(s) ~1:100 | date NOV 12 | drawn RB

drawing status
PRELIMINARY

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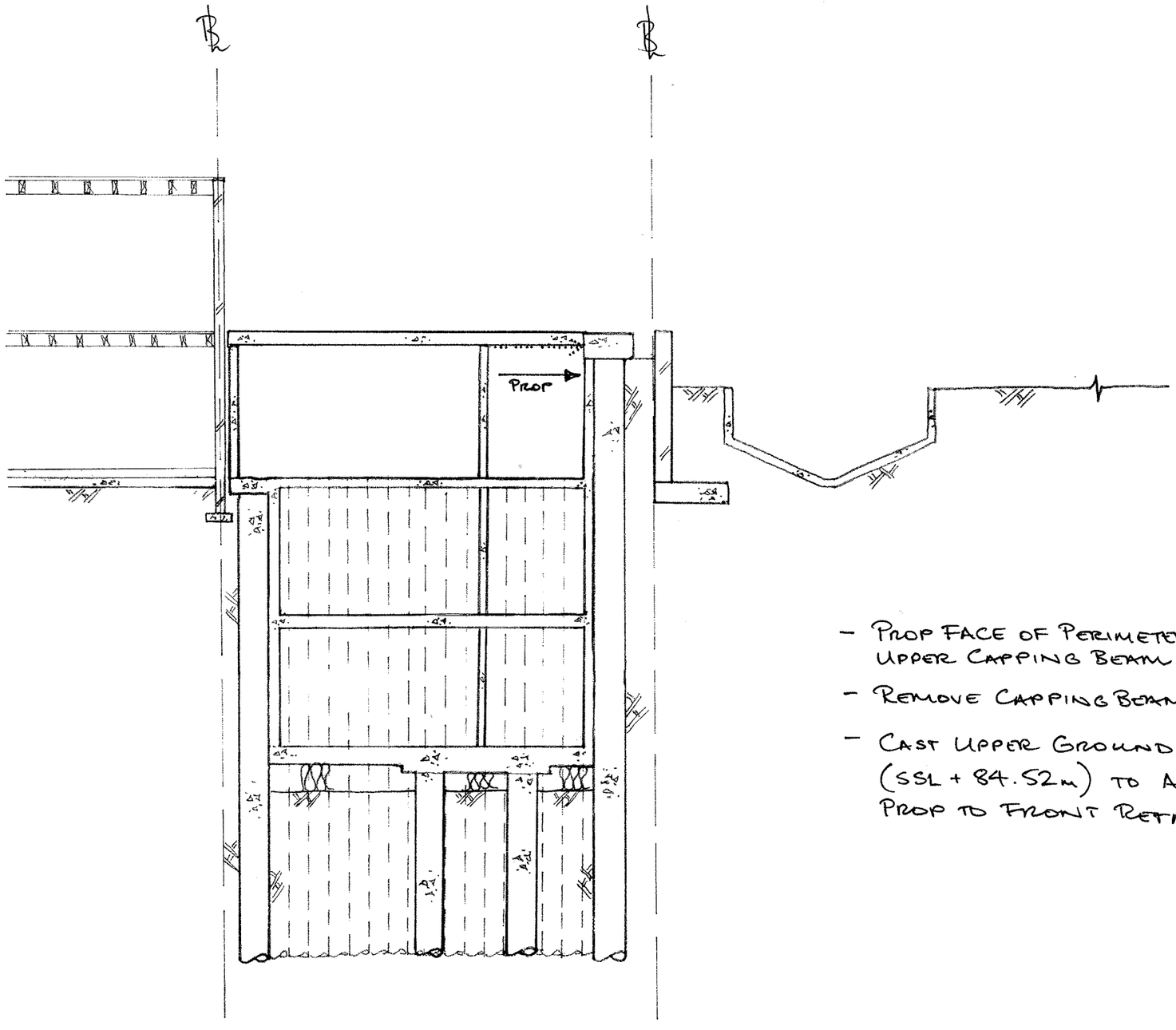
Consulting Structural and Civil Engineers. www.elliottwood.co.uk
tel: (020) 8544 0033 fax: (020) 8544 0066 info@elliottwood.co.uk

job title
59 MARESFIELD GARDENS, LONDON

job no	drawing no	revision
211590	SK.415	P1



- PROP FACE OF PERIMETER WALL BELOW UPPER CAPPING BEAM.
- REMOVE CAPPING BEAM FLYING SHORES.
- CAST UPPER GROUND FLOOR SLAB (SSL + 84.52m) TO ACT AS PERMANENT PROP TO FRONT RETAINING WALL.

This drawing is to be read in conjunction with all relevant architects, engineers and specialists drawings and specifications.

Do not scale from this drawing.

rev	date	by	chk	description
P1	25.11.12	RB		FOR PLANNING

drawing title
SHORT SECTION SEQUENCING

17 OF 18

scale(s) ~1:100 | date NOV 12 | drawn RB

drawing status
PRELIMINARY

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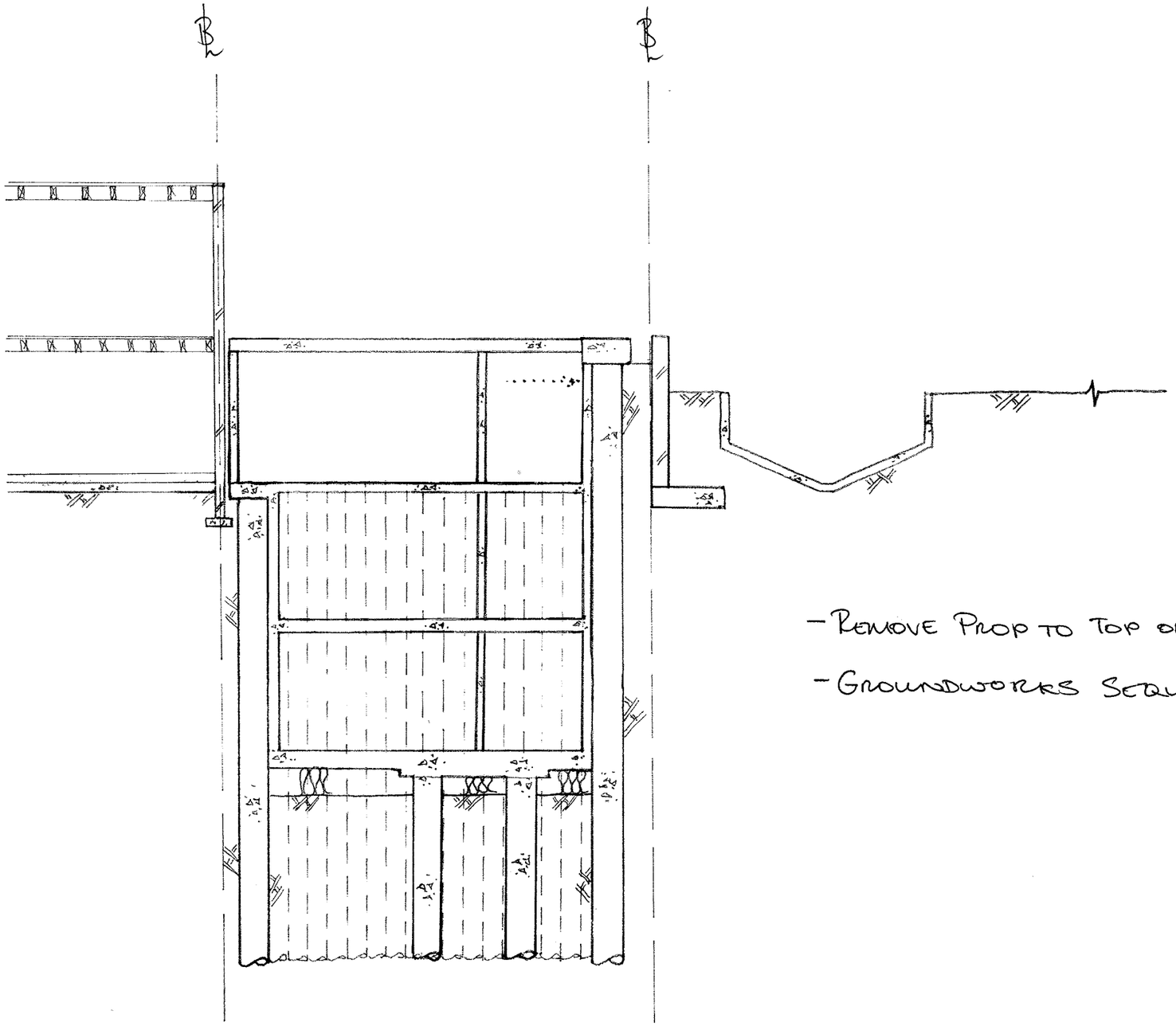
tel: (020) 8544 0033 fax: (020) 8544 0066 info@elliottwood.co.uk

job title
59 MARESFIELD GARDENS, LONDON

job no	drawing no	revision
211590	Sk-416	P1



- REMOVE PROP TO TOP OF PERIMETER WALL.
- GROUNDWORKS SEQUENCING COMPLETED.

This drawing is to be read in conjunction with all relevant architects, engineers and specialists drawings and specifications.

Do not scale from this drawing.

rev	date	by	chk	description
P1	25.11.12	RB		FOR PLANNING

drawing title
SHORT SECTION SEQUENCING
18 OF 18

scale(s) ~1:100 | date NOV 12 | drawn RB

drawing status
PRELIMINARY

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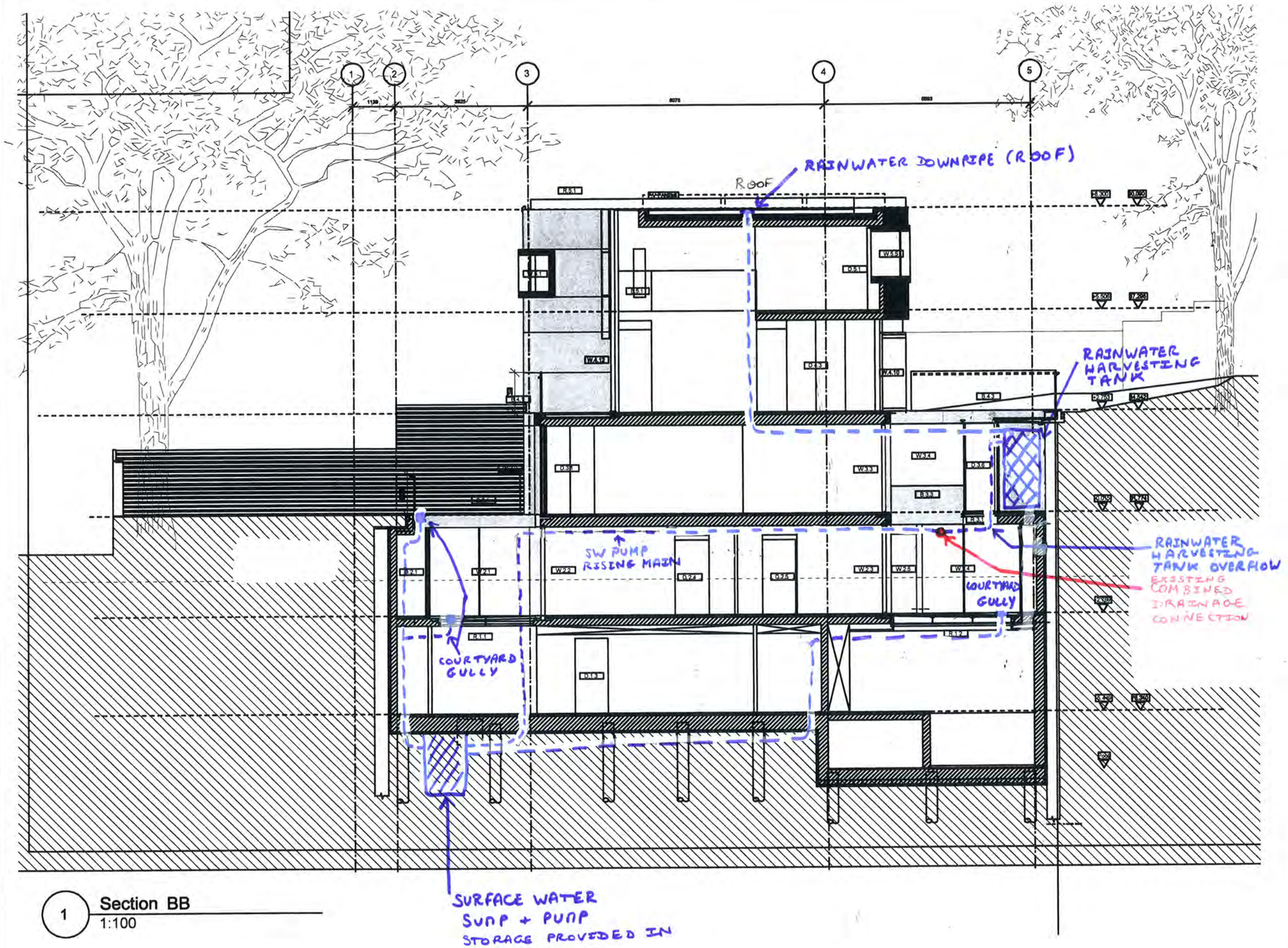
Consulting Structural and Civil Engineers. www.elliottwood.co.uk
tel: (020) 8544 0033 fax: (020) 8544 0066 info@elliottwood.co.uk

job title
59 MAPLESTEAD GARDENS, LONDON

job no	drawing no	revision
211590	Sk: 417	P1

Appendix 2.3: Surface Water Strategy Drawing



1 **Section BB**
1:100

This drawing is to be read in conjunction with all relevant architects, engineers and specialists drawings and specifications.

Do not scale from this drawing.

NOTES:

1. DETAILED DESIGN TO BE PREPARED IN LATER STAGES OF THE PROJECT.

NOT FOR CONSTRUCTION

rev	date	by	chk	description
P1	22.10.12	STA		ISSUED FOR PLANNING

elliottwood

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Consulting Structural and Civil Engineers. www.elliottwood.co.uk
tel: (020) 7499 5888 fax: (020) 7499 5444 info@elliottwood.co.uk

job title
59 MARESFIELD GARDENS
LONDON NW3

drawing title
PROPOSED SURFACE WATER STRATEGY

scale(s)	date	drawn
1:100 @ A3	Oct '12	STA

drawing status
PRELIMINARY

job no	drawing no	revision
211590	SKD101	P1

Appendix 2.4: CCTV Survey Report

PETER DEER AND ASSOCIATES
55-59 MARESFIELD GARDENS
LONDON, NW3 5TE

JANUARY 14TH 2009
SN: 33255

CCTV SURVEY REPORT

WATERFLOW Plc

Waterflow Plc
12-16 David Road, Poyle Trading Estate
Colnbrook, SL3 0DG
Tel: 01753 810 999, Fax: 01753 681 442

IMPORTANT - PLEASE READ
****

The information contained in this report indicates the condition of the pipes and sewers surveyed. This may show a variety of faults, some affecting the structure, some affecting the service and operation.

In all cases **Waterflow** *will be able to help you achieve the solution you require.*

FOR HELP AND ASSISTANCE PLEASE CALL :

CCTV DEPT. - 01753-810999

SURVEY GUIDLINES

The report that follows gives details of our findings having surveyed each individual section of drainage as directed.

Each page of the report is dedicated to one length of drainage from start of survey to the completion. At the bottom of each page is a summary which is intended as a brief guide to the fault or remedial works required. This information is given to assist the client in any decision they may have to make with regard to maintenance or repair. *NO LIABILITY* of any kind shall attach to **Waterflow** as a result of the production of this T.V. Survey Report and its contents.

NOTE

Video counter numbers are intended as a guide only. Counter calibration varies according to the type of machine used.

****

PETER DEER AND ASSOCIATES

WATERFLOW Plc

Waterflow Plc
12-16 David Road, Poyle Trading Estate
Colnbrook, Slough SL3 0DG
Tel. 01753 810 999, Fax. 01753 681 442

Project-information

Project name:	Contract number:	Contact:	Date:
33255			14/01/2009

Client	**PETER DEER AND ASSOCIATES**
Contact:	**JOHN PENGILLY**
Position:	**SOUTH POINT HOUSE**
Road	**321 CHASE ROAD**
Town	**SOUTHGATE**
County	**LONDON, N14 6JT**
Telephone:	**0203 232 0080**
Fax:	**0203 232 0090**
Mobile:	
E-Mail:	**john.p@pd-a.co.uk**

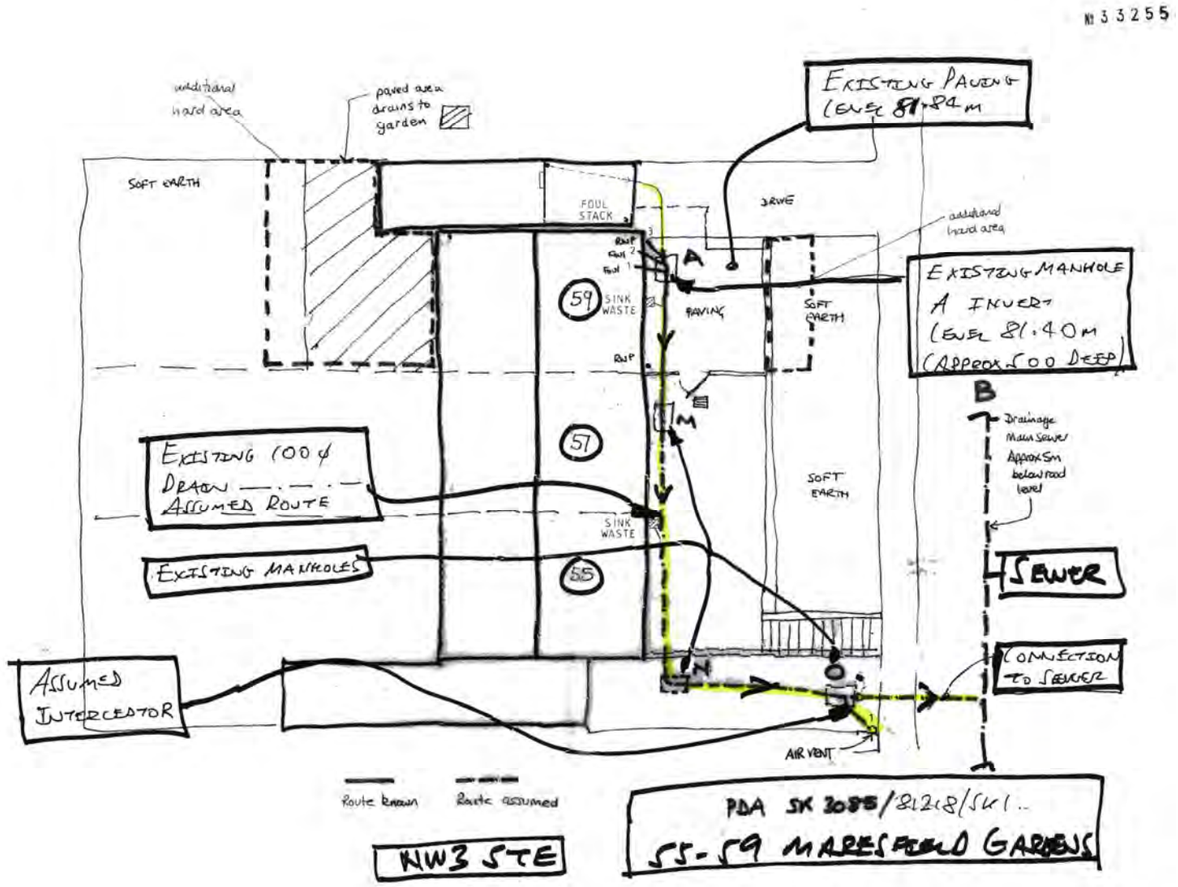
Site	**PETER DEER AND ASSOCIATES**
Contact:	**JOHN PENGILLY**
Position:	
Road	**55-59 MARESFIELD GARDENS**
Town	**LONDON**
County	**NW3 5TE**
Telephone:	
Fax:	
Mobile:	
E-Mail:	

Contractor	**Waterflow Plc**
Contact:	
Position:	
Road	
Town	**12-16 David Road, Poyle Trading Estate**
County	**Colnbrook, Slough SL3 0DG**
Telephone:	**01753 810 999**
Fax:	**01753 681 442**
Mobile:	
E-Mail:	

WATERFLOW Plc

Waterflow Plc
12-16 David Road, Poyle Trading Estate
Colnbrook, SL3 0DG
Tel: 01753 810 999, Fax: 01753 681 442

PLANS


№ 33255
additional hard area
paved area drains to garden
SOFT EARTH
FOUL STACK
EXISTING PAVING (EVEL 81.84m
DRWE
additional hard area
EXISTING MANHOLE A INVERT (EVEL 81.40m (APPROX 1.00 DEEP)
59
SINK WASTE
PAVING
SOFT EARTH
B
Drainage Main Sewer Approx 5m below road level
EXISTING 100ϕ DRAIN ASSUMED ROUTE
57
SOFT EARTH
SINK WASTE
EXISTING MANHOLES
55
SEWER
CONNECTION TO SEWER
ASSUMED INTERCEPTOR
AIR VENT
Route known
Route assumed
PDA SK 3055/2128/SK1
55-59 MARESFIELD GARDENS
NW3 STE


WATERFLOW
Waterflow Plc
12-14 Devil Road, Poyle Trading Estate
Colnbrook, SL3 0DX
REPORT

PETER DEER AND ASSOCIATES

WATERFLOW Plc

Waterflow Plc
12-16 David Road, Poyle Trading Estate
Colnbrook, Slough SL3 0DG
Tel: 01753 810 999, Fax: 01753 681 442

Inspection report

Date	Job N°	Weather	Operator	section number	F|S
14/01/2009	33255	Dry	DAVE SMOOTHY	1	MAIN RUN S
Present	Vehicle HX07 BKJ	Camera FLEXI-PROBE	Preset	Cleaned No	Grade

Road:	55-59 MARESFIELD GARDENS	Division:	-	start MH:	MH.A
Place:	LONDON, NW3 6TE	District:	-	end MH:	MAIN RUN
Location:	FRONT GARDEN	Tape No:	1	Total length:	5 m

Purpose:		Shape/Size:	Circular 100
Use:	Combined	Material:	Cast iron Pipe length:
Catchment:	-	Lining:	
		Category:	

Comment: TOTAL LENGTH ASSUMED

Location details:

1:25	position	code	observation
MH.A	0.00	ST	Start of Survey
	0.00	MH	Manhole Remark: MH.A
	0.00	WL	Water level, 0 % height/diameter
	0.46 S1	ESL	Light Scale from 12 to 12 o'clock. Start. Remark: AND CORROSION
	2.90	LL	Line of Sewer deviates left. Remark: SHARP
	2.80	SA	Survey abandoned. Remark: DUE TO A SHARP DEVIATION

Structural Defects	Constructional Features
Service Defects	Miscellaneous Features

WATERFLOW Plc

Waterflow Plc
12-16 David Road, Poyle Trading Estate
Colnbrook, SL3 0DG
Tel: 01753 810 999, Fax: 01753 681 442

SUMMARY

Unable to survey any further than 2.8m due to a sharp line deviation.
Specific defects: - Up to this point: - Cast iron pipe work lightly scaled and corroded from 0.4m, recommend specialist scale cutting equipment to restore full working diameter and a free flow condition.

Section 1 SN: 33255

PETER DEER AND ASSOCIATES

WATERFLOW Plc

Waterflow Plc
12-16 David Road, Poyle Trading Estate
Colnbrook, Slough SL3 0DG
Tel: 01753 810 999 Fax: 01753 681 442

Inspection report

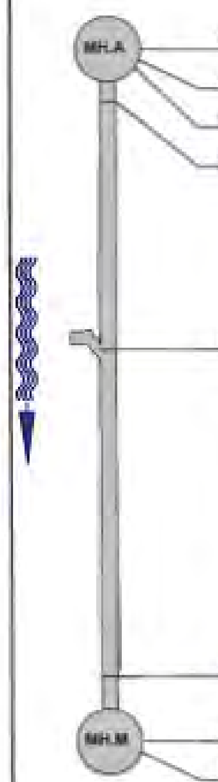
Date	Job N°	Weather	Operator	section number	PLR
28/09/2009	33266	Dry	DAVE SMOOTHY	2	MH.A X
Present	Vehicle	Camera	Preset	Cleaned	Grade
	HX07 BKJ	FLEXI-PROBE		No	

Road	MARESFIELD GARDENS	Division	-	start MH	MH.A
Place	LONDON	District	-	end MH	MH.M
Location	FRONT GARDEN	Tape No	1	Total length	5.3 m

Purpose		Shape/Size	Circular 100
Use	Combined	Material	Vitrified clay Pipe length
Catchment	-	Lining	
		Category:	

Comment

Location details



1:50	position	code	observation
	0.00	ST	Start of Survey
	0.00	MH	Manhole Remark, MH A
	0.00	WL	Water level, 05 % height/diameter
	0.40	RFJ	Fine Roots at joint
	2.30	JN	Junction at 03 o clock dia 100 mm
	4.80	DE	Debris, 10 % cross-sectional area loss
	5.30	MH	Manhole Remark, MH M
	5.30	FH	Finish Survey

0.4 m F

Structural Defects	Constructional Features
Service Defects	Miscellaneous Features

PETER DEER AND ASSOCIATES

WATERFLOW Plc

Waterflow Plc
12-16 David Road, Poyle Trading Estate
Colnbrook, Slough SL3 0DG
Tel: 01753 810 999 Fax: 01753 681 442

Inspection photos

Place	Road	Date	section number	PLR
LONDON	MARESFIELD GARDENS	28/09/2009	2	MH.A X

Photo: 10a, Tape No.: 1
0.4m, Fine Roots at joint

WATERFLOW Plc

Waterflow Plc
13-15 David Road, Poyle Trading Estate
Colnbrook, SL3 0DG
Tel: 01753 610 999, Fax: 01753 681 442

SUMMARY

Specific defects: - Fine root infiltration at 0.4m with debris deposits at 4.8m reducing the diameter of the pipe by 10%

Recommend specialist root-cutting equipment to restore full working diameter and a free flow condition.

Section 2 SN: 33255

PETER DEER AND ASSOCIATES

WATERFLOW Plc

Waterflow Plc
12-15 David Road, Poyle Trading Estate
Colnbrook, Slough SL3 0DG
Tel: 01753 610 999, Fax: 01753 681 442

Inspection report

Date:	Job N°	Weather:	Operator:	section number:	PLR:
28/09/2009	33255	Dry	DAVE SMOOTHY	3	MH.M X
Present:	Vehicle:	Camera:	Preset:	Cleaned:	Grade:
	HX07 BKJ	FLEXI-PROBE		No	

Road:	MARESFIELD GARDENS	Division:	-	start MH:	MH.M
Place:	LONDON	District:	-	end MH:	MAIN RUN
Location:	FRONT GARDEN	Tape No:	1	Total length:	10 m

Purpose:		Shape/Size:	Circular 100
Use:	Combined	Material:	Vitrified clay Pipe length:
Catchment:	-	Lining:	
		Category:	

Comment: MAIN RUN = MHN

Location details:

1.75	position	code	observation
Depth: 00.52			
MH.M	0.00	ST	Start of Survey
	0.01	MH	Manhole Remark: MH.M
	0.00	WL	Water level, 5 % height/diameter
	1.80	CC	Circumferential Crack, from 12 to 12 o'clock
	4.20	JN	Junction at 03 o'clock do 150mm
	9.90	DE	Debris, 10 % cross-sectional area loss Remark: PUSHED TO MH.N & REMOVED
	9.80	LL	Line of Sewer deviates left, Remark: SLIGHT
MAIN RUN	10.00	MH	Manhole Remark: MH.N
	10.00	FN	Finish Survey

Structural Defects	Constructional Features
Service Defects	Miscellaneous Features

WATERFLOW Plc

Waterflow Plc
12-16 David Road, Poyle Trading Estate
Colnbrook, SL3 0DG
Tel: 01753 810 999, Fax: 01753 681 442

SUMMARY

Specific defects: - Cracked pipe work at 1.6m which indicates than the drain may possibly leak

Section 3 SN: 33255

PETER DEER AND ASSOCIATES

WATERFLOW Plc

Waterflow Plc
12-16 David Road, Poyle Trading Estate
Colnbrook, Slough SL3 0DG
Tel: 01753 810 999, Fax: 01753 681 442

Inspection report

Date:	Job N°:	Weather:	Operator:	section number:	PUR
28/05/2009	33255	Dry	DAVE SMOOTHY	4	MH.N X
Present:	Vehicle:	Camera:	Preset:	Cleaned:	Grade:
	HX07 BKJ	FLEXI-PROBE		No	

Road:	MARESFIELD GARDENS	Division:	-	start MH:	MH.N
Place:	LONDON	District:	-	end MH:	MH.O
Location:	FRONT GARDEN	Tape No:	1	Total length:	6.7 m

Purpose:		Shape/Size:	Circular 150
Use:	Combined	Material:	Vitrified clay Pipe length:
Catchment:	-	Lining:	
		Category:	

Comment:

Location details:

1:50 position	code	observation
Depth: 03.06		
MH.N 0.00	ST	Start of Survey
0.00	MH	Manhole Remark: MH N
0.00	WL	Water level, 0 % height/diameter
0.60	FC	Circumferential Fracture, from 02 to 05 o'clock
0.60	FC	Circumferential Fracture, from 07 to 10 o'clock
0.60	CC	Circumferential Crack, from 04 to 06 o'clock
0.60 S1	DEG	Debris grease, from 07 to 09 o'clock, 0 % cross-sectional area loss Start
2.90	GO	General Observation, Remark: SOAP BUBBLES
3.30	WL	Water level, 15 % height/diameter
3.40	WL	Water level, 20 % height/diameter
3.90	WL	Water level, 40 % height/diameter
4.40	DEG	Debris grease, from 08 to 04 o'clock, 10 % cross-sectional area loss, Change
5.10	CU	Camera Underwater
5.10	SA	Survey abandoned, Remark: DUE TO A VERY HIGH WATER LEVEL

Structural Defects	Constructional Features
Service Defects	Miscellaneous Features

Waterflow Plc
12-16 David Road, Poyle Trading Estate
Colnbrook, SL3 0DG
Tel. 01753 810 999, Fax. 01753 681 442

SUMMARY

Unable to survey any further than 5.1m due to a very high water level.
See section 7 for re-survey after high pressure water jetting

Section 4 SN: 33255

PETER DEER AND ASSOCIATES

Waterflow Plc
12-16 David Road, Poyle Trading Estate
Colnbrook, Slough SL3 0DG
Tel. 01753 810 999, Fax. 01753 681 442

Inspection report

Date:	Job N°	Weather	Operator	section number	PLR
28/09/2009	33255	Dry	DAVE SMOOTHY	5	MH.O X
Present	Vehicle: HX07 BKJ	Camera: FLEXI-PROBE	Preset	Cleaned: No	Grade:

Road:	MARESFIELD GARDENS	Division:	-	start MH:	MH.O
Place:	LONDON	District:	-	end MH:	VIEW
Location:	FRONT GARDEN	Tape No.:	1	Total length:	0 m

Purpose:		Shape/Size:	Circular 150
Use:	Combined	Material:	Vitrified clay Pipe length:
Catchment:	-	Lining:	
		Category:	

Comment: BLOCKAGE I C TRAP
Location details:

1:25	position	code	observation
Depth: 04.20			
VIEW	0.00	ST	Start of Survey
	0.00	MH	Manhole Remark: MH.O
	0.00	WL	Water level, 100 % height/diameter
	0.00	GD	General Observation, Remark: BLOCKAGE AT I C TRAP
	0.00	FH	Finish Survey

Structural Defects	Conl/structional Features
Service Defects	Miscellaneous Features

WATERFLOW Plc

Waterflow Plc
12-16 David Road, Poyle Trading Estate
Colnbrook, SL3 0DG
Tel. 01753 810 999, Fax. 01753 681 442

SUMMARY

Note: - Overview of the chamber at MH.O before the blockage was cleared at the interceptor trap. In addition the bolts could not be replaced at MH10, as they were seized and had to be forced out.

Section 5 SN: 33255

PETER DEER AND ASSOCIATES

WATERFLOW Plc

Waterflow Plc
12-16 David Road, Poyle Trading Estate
Colnbrook, Slough SL3 0DG
Tel. 01753 810 999, Fax. 01753 681 442

Inspection report

Date: 28/09/2009	Job N°: 33255	Weather: Dry	Operator: DAVE SMOOTHY	section number: 6	PLR: MH.O X
Present:	Vehicle: HX07 BKJ	Camera: FLEXI-PROBE	Preset:	Cleaned: No	Grade:

Road:	MARESFIELD GARDENS	Division:	-	start MH	MH.O
Place:	LONDON	District:	-	end MH	MAIN SEWER
Location:	FRONT GARDEN	Tape No.:	1	Total length:	6.6 m

Purpose:		Shape/Size:	Circular 100
Use:	Combined	Material:	Vitrified clay Pipe length:
		Lining:	
Catchment:	-	Category:	

Comment:

Location details:

Depth: 04.20

1:50 position		code	observation
0.00		ST	Start of Survey
0.00		MH	Manhole Remark: MH.O
0.00		WL	Water level 0 % height/diameter
0.40	S1	DEG	Debris grease from 0? to 05 o'clock, 5 % cross-sectional area loss Start
0.60		GO	General Observation, Remark: VIEW OF I C TRAP
0.70	S2	ESL	Light Scale from 05 to 07 o'clock Start
1.00		DC	Dimension of sewer changes, new dimension dia 150 mm
1.30		CCJ	Circumferential Crack at joint, from 11 to 03 o'clock
1.30		FMJ	Multiple Fractures at joint from 10 to 02 o'clock
2.20		CC	Circumferential Crack, from 03 to 05 o'clock
6.50		GO	General Observation, Remark: SEWER FLAP
6.50	F1	DEG	Debris grease, from 07 to 05 o'clock, 5 % cross-sectional area loss Finish
6.50	F2	ESL	Light Scale from 05 to 07 o'clock Finish
6.60		GO	General Observation, Remark: MAIN SEWER REACHED
6.60		FH	Finish Survey

Structural Defects	Constructional Features
Service Defects	Miscellaneous Features

PETER DEER AND ASSOCIATES

WATERFLOW Plc

Waterflow Plc
12-16 David Road, Poyle Trading Estate
Colnbrook, Slough SL3 0DG
Tel: 01753 810 999, Fax: 01753 681 442

Inspection photos

Place:	Road	Date	section number	PLR
LONDON	MARESFIELD GARDENS	28/09/2009	6	MH.O X

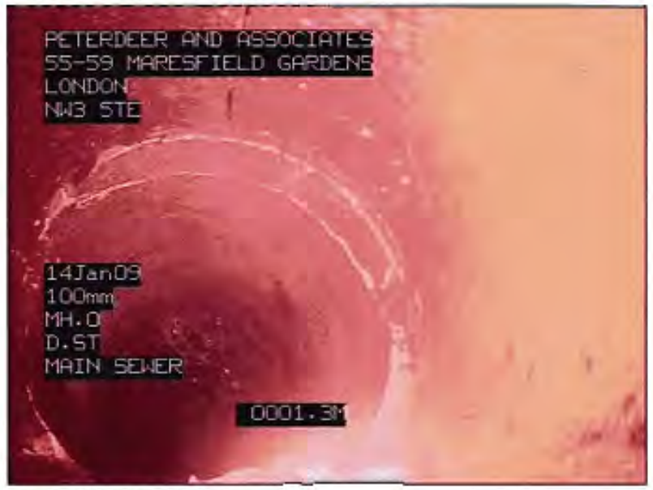


Photo: 50_9a, Tape No.: 1
1.3m, Multiple Fractures at joint from 10 to 02 o'clock

WATERFLOW Plc

Waterflow Plc
12-16 David Road, Poyle Trading Estate
Colnbrook, SL3 0DG
Tel: 01753 810 999, Fax: 01753 681 442

SUMMARY

Specific defects. - Multiple fractures at 1.3m with cracks at 1.3m and 2.2m Also light scale deposits from 0.7m to 6.5m, with debris grease deposits from 0.4m to 6.5m

Recommend repairs to structural defects as identified by CCTV Survey

Section 6 SN: 33255

PETER DEER AND ASSOCIATES

WATERFLOW Plc

Waterflow Plc
12-16 David Road, Poyle Trading Estate
Colnbrook, Slough SL3 0DG
Tel. 01753 810 999, Fax: 01753 681 442

Inspection report

Date:	Job N°:	Weather:	Operator:	section number:	PLR:
28/09/2009	33255	Dry	DAVE SMOOTHY	7	MH.N X
Present:	Vehicle: HX07 BKJ	Camera: FLEXI PROBE	Preset:	Cleaned: Yes	Grade:

Road:	MARESFIELD GARDENS	Division:	-	start MH:	MH.N
Place:	LONDON	District:	-	end MH:	MH.O
Location:	FRONT GARDEN	Tape No:	1	Total length:	6.7 m

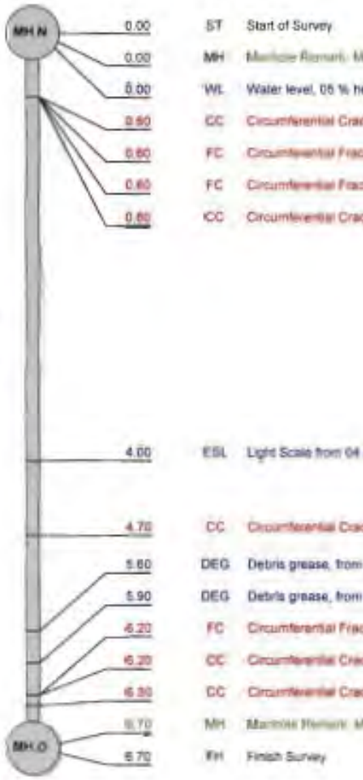
Purpose:
Use: Combined
Catchment: -

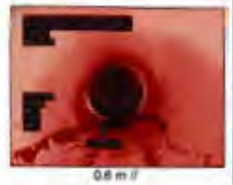
Shape/Size: Circular 150
Material: Vitrified clay Pipe length:
Lining:
Category:

Comment: CLEARED BOCKAGE AT I C TRAP
Location details:

1:50 position code observation

Depth: 03.06





Structural Defects	Constructional Features
Service Defects	Miscellaneous Features

PETER DEER AND ASSOCIATES

WATERFLOW Plc

Waterflow Plc
12-16 David Road, Poyle Trading Estate
Colnbrook, Slough SL3 0DG
Tel. 01753 810 999, Fax: 01753 681 442

Inspection photos

Place:	Road:	Date:	section number:	PLR:
LONDON	MARESFIELD GARDENS	28/09/2009	7	MH.N X

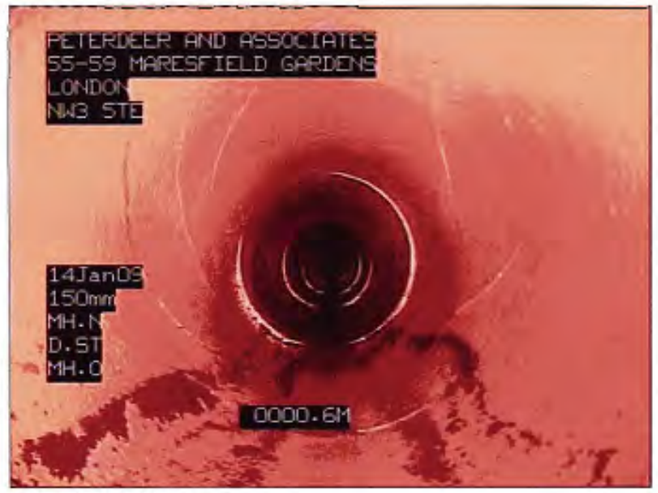


Photo: 59_5a, Tape No.: 1
0.6m, Circumferential Fracture, from 07 to 10 o'clock

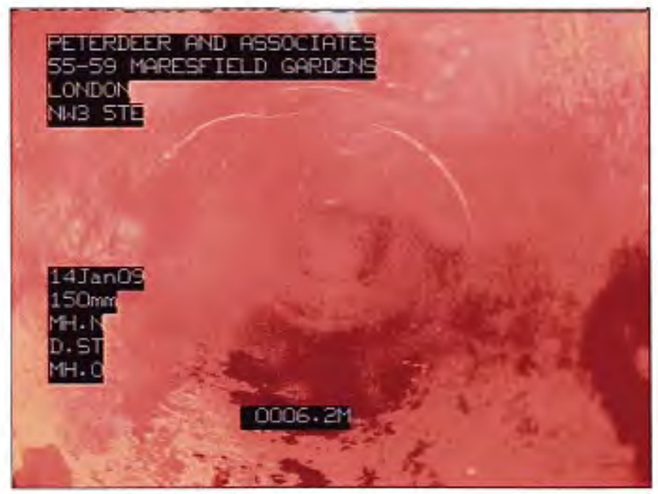


Photo: 64_12a, Tape No.: 1
6.2m, Circumferential Fracture, from 08 to 04 o'clock

WATERFLOW Plc

WaterFlow Plc
12-16 David Road, Poyle Trading Estate
Colnbrook, SL3 0DG
Tel: 01753 610 999, Fax: 01753 681 442

SUMMARY

Specific defects: - Fractured pipe work at 0.6m and 6.2m, with cracks at 0.6m, 4.7m, 6.2m and 6.3m. Also with light scale deposits at 4.0m and debris grease at 5.6m and 5.9m

Recommend repairs to structural defects as identified by CCTV Survey.

Section 7 SN: 33255

PETER DEER AND ASSOCIATES

WATERFLOW Plc

Waterflow Plc
12-16 David Road, Poyle Trading Estate
Colnbrook, Slough SL3 0DG
Tel: 01753 610 999, Fax: 01753 681 442

Inspection report

Date	Job N°:	Weather	Operator	section number:	PLR
28/09/2009	33255	Dry	DAVE SMOOTHY	8	BR.1 X
Present:	Vehicle: HX07 BKJ	Camera: FLEXI-PROBE	Preset:	Cleaned: Yes	Grade:

Road:	MARESFIELD GARDENS	Division:	-	start MH:	MH.0
Place:	LONDON	District:	-	end MH:	BR.1
Location:	FRONT GARDEN	Tape No.:	1	Total length:	0.7 m

Purpose:
Use: VENT
Catchment: -
Shape/Size: Circular 100
Material: Vitrified clay Pipe length:
Lining:
Category:

Comment: HIGH LEVEL
Location details:

1:25 position	code	observation
Depth: 04.20		
MH.0 0.00	ST	Start of Survey
0.00	MH	Manhole Remark: MH.0
0.00	WL	Water level, 0 % height/diameter
0.40	FC	Circumferential Fracture, from 07 to 04 o'clock
0.50	LL	Line of Sewer deviates left, Remark: SLIGHT
BR.1 0.70	ESM	Medium Scale from 04 to 08 o'clock, 15% cross-sectional area loss, Remark: BASE OF VENT
0.70	GO	General Observation, Remark: BASE OF VENT
0.70	FH	Finish Survey

0.4 m R

Structural Defects	Construction Features
Service Defects	Miscellaneous Features

PETER DEER AND ASSOCIATES

WATERFLOW Plc

Waterflow Plc
12-16 David Road, Poyle Trading Estate
Colnbrook, Slough SL3 0DG
Tel: 01753 810 999, Fax: 01753 681 442

Inspection photos

Place	Road	Date	section number	PLR
LONDON	MARESFIELD GARDENS	28/09/2009	8	BR.1 X

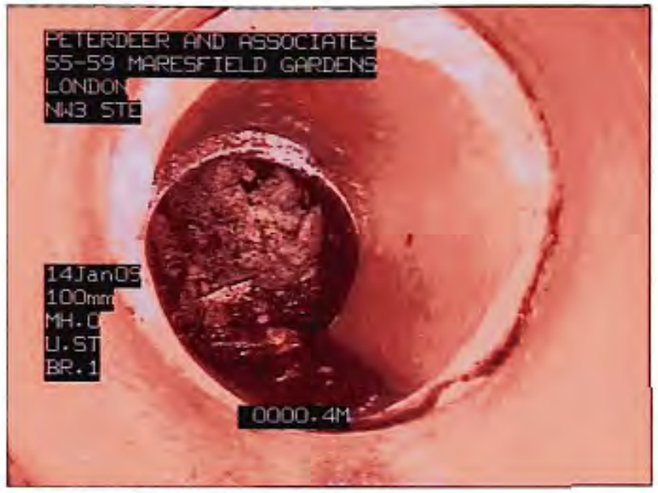


Photo: 72_4a, Tape No.: 1
0.4m, Circumferential Fracture, from 07 to 04 o'clock

WATERFLOW Plc

Waterflow Plc
12-16 David Road, Poyle Trading Estate
Colnbrook, SL3 0DG
Tel: 01753 810 999, Fax: 01753 681 442

SUMMARY

Specific defects: - Fractured pipe work at 0.4m with scale deposits at 0.7m

Recommend repairs to structural defects as identified by CCTV Survey.

Section 8 SN: 33255

Appendix 2.5: Surface Water Assessment prepared by WEL

surface water assessment

elliottwood

59 Maresfield Gardens

Camden

London

NW3 5TE

Surface Water Assessment

project no. WE11092

revision: P1

elliottwood

Document Control

issue no.	01	remarks:	Planning application for development at 59 Maresfield Gardens				
revision:	P1	prepared by:	Niall Greenan	checked by:	Guy Laister	approved by:	Guy Laister
date:	December 2011	signature:		signature:		signature:	

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Drawing 3- Proposed Basement Layout

Executive Summary

The site is located at the northern end of Maresfield Gardens on the western side of the road near the junction of Netherhall Gardens. The property is located at the northern end of a terrace of three houses. The site ground levels fall down from east to west with the rear garden a storey lower than the front entrance drive.

Proposals are for revisions to the external design with the construction of a new house comprising lower ground, upper ground and first floor level light wells to front and rear. It has been proposed that the existing combined drainage will remain however a 50% reduction of the present discharge rate will be implemented.

The latest online Environment Agency flood zone maps indicate that the site is located in Flood Zone 1 (low risk), and the site is less than 1 hectare in area. In accordance with PPS25, a flood risk assessment is not required for the site. Local policy guidance on basement developments specifies that all new basement developments located in borough-defined areas at risk of surface water flooding need to be accompanied by a flood risk assessment. The site is not located in an area defined as being at risk of surface water flooding.

All sources of flooding have been assessed and are considered to pose a negligible risk to the site. While large areas in the north of the borough were affected by surface water and sewer flooding in 1975 and 2002, the site itself was unaffected in either event. The risk of surface water and sewer flooding are therefore considered to be low in this region of Camden.

The proposed basement is at a low risk of flooding from all sources, and the proposed basement is considered acceptable in the context of flood risk. Furthermore, surface water runoff from the site will not increase following development due to additional storage, and there will be no increase in flood risk elsewhere in the borough as a result of the development.

1.0 Introduction

General Information

1.1 The site is located at the northern end of Maresfield Gardens on the western side of the road near the junction of Netherhall Gardens. The property is located at the northern end of a terrace of three houses. The site ground levels fall from east to west with the rear garden a storey lower than the front entrance drive.

1.2 The site is shown in Flood Zone 1 of the latest Environment Agency Flood Zone maps, and by definition the risk of flooding from fluvial and tidal sources is less than 0.1% in any year. The site is less than 1ha, and therefore a full flood risk assessment is not required by Planning Policy Statement 25[1].

1.3 The London Borough of Camden policy dictates that surface water and flood risk is considered in this case primarily due to basement construction. This Surface Water impact assessment has been produced to assess the risks of flooding from other potential sources such as overland flow, groundwater, artificial water bodies and underground sewers. The impact of the proposed development on surface water infrastructure is considered, to form part of the Basement Impact Assessment.

Planning Policy

1.4 As part of the Local Development Framework (LDF), Camden adopted the Core Strategy and Development Policies in November 2010. Policy CS13 relates to flood risk and states:

1.5 "Water and surface water flooding "

We will make Camden a water efficient borough and minimise the potential for surface water flooding by:

•protecting our existing drinking water and foul water infrastructure, including Barrow Hill Reservoir, Hampstead Heath Reservoir, Highgate Reservoir and Kidderpore Reservoir;

• making sure development incorporates efficient water and foul water infrastructure;

• requiring development to avoid harm to the water environment, water quality or drainage systems and prevents or mitigates local surface water and down-stream flooding, especially in areas up-hill from, and in, areas known to be at risk from surface water flooding such as South and West Hampstead, Gospel Oak and King's Cross (see Map 1)."

1.6 The Development Policies also include a policy specific to basements as follows:

DP27 – Basements and Lightwells

1.7 "...The Council will only permit basement and other underground development that does not cause harm to the built and natural environment and local amenity and does not result in flooding or ground instability...."

1.8 The London Borough of Camden has strict policies with regards to basement development within the Borough, therefore they have provided guidelines for "New basement developments and extensions to existing basement accommodation[2]". Formal planning guidance has also been released[3] setting out specific criteria for assessing the impact of basement construction. As part of the Basement Impact Assessment (BIA), it is necessary to consider "Surface flow and flooding". A screening flowchart addresses individual sources of potential flooding, and where a risk of flooding is present, a scoping and impact assessment need to be undertaken as appropriate. This report covers this component of the BIA.

1.9 In conjunction with ARUP, the London Borough of Camden produced a "geological, hydrogeological and hydrological study for guidance on subterranean development[4]".

Location

1.10 The site is situated on Maresfield Gardens in Camden, North London as shown in Figure 1.

Figure 1- Site Location

Existing Development

1.11 The total impermeable area on site is 108m² which constitutes approximately 25% of the total site area 424m². The existing dwelling is a large family house with extensive garden.

Proposed Development

1.12 Proposals are for revisions to the external design with the construction of a new house comprising lower ground, upper ground and first floor level light wells to front and rear.

1.13 It has been proposed that the existing combined drainage will remain however a 50% reduction to the existing peak surface water discharge rate will be implemented.

[1] Planning Policy Statement 25, March 2010

[2] London Borough of Camden, Shaping Camden – Guidance – New Basement Development and Extensions to Existing Basement Accommodation, February 2009

[3] London Borough of Camden – Camden Planning Guidance (CPG4) Basements and Lightwells

[4] ARUP Geological, Hydrogeological and Hydrological Study – Guidance for Subterranean Development, November 2010

2.0 Potential Flooding on Site

Historic Information

2.1 No records have been found of the site flooding in the past from any of the sources identified in PPS25.

2.2 It is noted in the North London SFRA[5] that a large area in the north of Camden was affected by surface water flooding in August 2002, which was the result of heavy rainfall inundating the public sewer system. A similar region of Camden was affected by surface water/sewer flooding in 1975. In both instances the flooding that occurred is understood to have been the result of high intensity rainfall inundating the main sewer and causing manholes and gullies to surcharge.

2.3 However, even during these high intensity events that have, on 2 occasions, affected large parts of Camden, there is no record of the site or Maresfield Gardens being affected by surface water flooding.

2.4 Map 22 of the SFRA[5], and Figure 15 of the ARUP study[4] show the roads which were recorded as flooded in 1975 and 2002. Maresfield Gardens is not highlighted on these maps.

Tidal and Fluvial Flooding

2.5 In October 2004, the Environment Agency released updated floodplain maps for the UK based on the 'JFLOW' project, a two-dimensional hydraulic modelling project.

2.6 The site is located in Flood Zone 1, approximately 5km north of the Thames at its nearest location. By the definition of Flood Zone 1, the risk of the site being affected by fluvial or tidal flooding is therefore less than 0.1% in any given year.

2.7 Although no area of the London Borough of Camden is in Flood Zone 2 or Flood Zone 3, there are several watercourses in the borough, the majority of which have been culverted and are often referred to as 'Lost Rivers'.

Flooding from Sewers

2.8 Surface water flooding is typically the result of high intensity rainfall that is unable to infiltrate into the ground or enter the drainage system, ultimately following overland flow paths. In an urban environment such as Camden, surface water runoff is disposed of almost entirely via formal drainage systems, and consequently sewer flooding and surface water flooding (overland flow) need to be considered in tandem in this instance.

2.9 It is reasonable to assume that adopted sewers have been designed to the 1 in 30 year return period (in accordance with Sewers for Adoption 6th Edition[6]), which is considerably lower than the 100 year standard considered for fluvial flooding. As such, sewer flooding is often more frequent but less severe than fluvial flooding.

2.10 Data collected from the 1975 and 2002 events were used to map areas of the borough that are more susceptible to surface water flooding. This information was subsequently used to inform Camden's supplementary guidance document on basement developments[2]. In this document, roads that were affected by either flood are known as "secondary areas", and roads affected by both floods are known as "primary areas". Any proposals for a basement development located in a primary or secondary area must include a flood risk assessment.

2.11 The site is not located in either a primary or a secondary area. The risk of sewer and surface water flooding is therefore considered to be low in this region of London Borough of Camden.

Flooding from Artificial and Lake Water Bodies

2.12 The Regent's Canal and Regent's Park Lake are the nearest artificial water bodies to the site (reference Figure 12 of the ARUP Study)[4]. However at both locations water is not retained above natural ground level and flooding as a result of infrastructure failure is therefore not possible.

2.13 Figure 14 of the ARUP study shows the Hampstead Heath Surface Water Catchments and Drainage, including the pond chains, in greater detail. The site is not located within the catchment of the pond chains on Hampstead Heath.

2.14 The risk of flooding from artificial water bodies is therefore considered extremely unlikely.

Flooding from Groundwater

2.15 Figure 4 of the ARUP study[4] shows that the sites underlying geology is London Clay however a more detailed site investigation[7] has revealed that the site is actually underlain by the Claygate Member which is classified by the Environment Agency as a secondary aquifer.

2.16 The SFRA also noted that there have been very few recorded incidents of groundwater flooding in North London, none of which were located in Camden.

2.17 Groundwater was generally encountered as seepages within the Claygate Member at depths of between 2.0 m BGL (80.0 m OD) and 6.0 m BGL (79.3 m OD), whilst a slow inflow was recorded in Borehole No 1 at a depth of 4.5 m BGL (77.2 m OD), rising to 4.3 m BGL (77.4 m OD) after a period of 20 minutes. A deeper water strike, comprising a seepage from within the London Clay, was also recorded in one of the boreholes at a depth of 18.5 m BGL (66.0 m OD), rising to 18.3 m BGL (66.2 m OD) after a period of 20 minutes. Subsequent monitoring has shown groundwater to be present at depths of 1.96 m BGL (79.74 m OD), 3.56 m BGL (80.94 m OD) and 4.40 m BGL (80.90 m OD) in Borehole No's 1, 2 and 3 respectively, indicating an approximate groundwater flow direction towards the west-southwest.

2.18 It was recommended that further monitoring is carried out to establish equilibrium levels of groundwater.

2.19 On the basis of groundwater observations to date, groundwater will be encountered within the depth of the proposed basement excavation. However these low volume pockets of water do not pose a significant risk in terms of flooding.

2.20 The risk of the site being affected by groundwater flooding is therefore considered to be low.

[5] North London Strategic Flood Risk Assessment, (August 2008)

[6] WRc7 plc. (March 2006) Sewers for Adoption – A Design and Construction Guide for Developers. 6th Edition.

[7] Ian Farmer Associates, Phase 2 Site Investigation, Contract No. 5114A, July 2008

3.0 Surface Flood and Flooding Impact Assessment

Stage 1: Screening

3.1 CPG4 includes a Surface flow and flooding screening flowchart for assessing the impact of potential sources of flooding, as well as the impact of the development on flood risk elsewhere.

3.2 The flow chart is set out with six questions, which are addressed with reference to the site and proposed development at 59 Maresfield Gardens as follows:

Question 1: Is the site within the catchment of the pond chains on Hampstead Heath?

Reference: Figure 14 of the ARUP Study

Answer: No

Question 2: As part of the proposed site drainage, will surface water flows (e.g. volume of rainfall and peak runoff) be materially changed from the existing route?

Reference: Surface water runoff mechanisms and connection type and location with receiving watercourse

Answer: Yes

Question 3: Will the proposed basement development result in a change in the proportion of hard surfaced/paved external areas?

Reference: Total area of roof and external paved area following development compared with the existing site.

Answer: Yes

Question 4: Will the proposed basement result in changes to the profile of the inflows (instantaneous and long-term) of surface water being received by adjacent properties or downstream watercourse.

Reference: Proposed landscaping and drainage system to be implemented as part of the development compared with the existing site. SUDS are required to mitigate any increase in peak flow.

Answer: Yes

Question 5: Will the proposed basement result in changes to the quality of surface water being received by adjacent properties or downstream watercourses:

Reference: Proposed landscaping and drainage system to be implemented as part of the development compared with the existing site. SUDS are required to mitigate any increase in peak flow.

Answer: No

According to CPG4, it is necessary to carry forward to the scoping stage of the Basement Impact Assessment those matters of concern where the response is 'yes'. Therefore, it is necessary to consider Question 2, 3 and 4 in more detail.

In addition:

Question 6: Is the site in an area known to be at risk from surface water flooding, such as South Hampstead,West Hampstead, Gospel Oak and King's Cross, or is it at risk from flooding, for example because the proposed basement is below the static water level of a nearby surface water feature?

Reference: Consider the risk of flooding from surface water and artificial water bodies

Answer: No – see chapter 2 for details. A Flood Risk Assessment is therefore not required.

Stage 2: Scoping

3.3 The proposed development will increase the impermeable area on site therefore the volume and peak flow rate of surface water generated from the will also increase. At present the site has approximately 106m² of hard surface discharging to the sewer. After the new house is constructed this will increase to approximately 130m². It is assumed that the rear garden and the front garden will retain soft or porous surfaces allowing rainwater to infiltrate naturally and that the ramps to the front and rear will drain away locally.[8]

Stage 3: Site Investigation and Study

3.4 Chapter 2 of this report contains information on the background of the project, the various organisations and studies which have been consulted for data, as well as the site investigations which have been undertaken. Surface water runoff is the only issue which requires further consideration past the screening stage. The scoping stage of the assessment identified the need for mitigation to minimise the impact of the development on surface water flows.

Stage 4: Impact Assessment

3.5 The Impact Assessment describes the specific impacts of the project on the environment by comparing the existing situation with the situation when the basement is in place. This will be achieved using a systematic approach to describe, quantify and accumulate the effects of the development on those attributes or features of the geological, hydrogeological and hydrological environment which have been identified from the Scoping stage as being potentially affected.

3.6 The existing site area is 424m² of which 106m² (25%) is of hard standing surfaces that discharges to the sewers. After the new house is constructed this will increase to approximately 130m² (31%).

3.7 The existing surface water runoff rate from the site is 1.6l/s and this would increase to 2.06l/s without attenuation measures. It is proposed to reduce the rainwater runoff to 0.8l/s. The preferred SUDS method to be used for this specific development at 59 Maresfield Gardens will be the introduction of an attenuation tank to reduce the peak surface water runoff by 50% of previous rates.

3.8 The final design has yet to be completed, and it is recommended that additional SUDS such as rainwater harvesting should be considered in the detailed design. In reality it is not practical to restrict runoff rates to very low values such as 0.8l/s and therefore the lowest practical rate will be used.

3.9 A topographic survey of the site reveals that ground levels are much higher on Maresfield Gardens than the ground levels around the house. In order to prevent surface water entering the site from Maresfield Gardens it is recommended that the driveway entrance level should be maintained at footpath level therefore if surface water was to reach this section of road it would be contained within the carriageway.

[8] PeterDavi Associates, Planning, Access and Design Report, August 2008

4.0 Conclusions and Recommendations

4.1 The site is located at the northern end of Maresfield Gardens on the western side of the road near the junction of Netherhall Gardens. The property is located at the northern end of a terrace of three houses. The site ground levels fall from east to west with the rear garden a storey lower than the front entrance drive.

4.2 The site is shown in Flood Zone 1 of the latest Environment Agency Flood Zone maps, and by definition the risk of flooding from fluvial and tidal sources is less than 0.1% in any year. The site is less than 1ha, and therefore a full flood risk assessment is not required by Planning Policy Statement 25.

4.3 Data collected from flooding events in 1975 and 2002 has been used by Camden to map areas of the borough that are more susceptible to surface water flooding. This information was subsequently used to inform Camden's supplementary guidance document on basement developments. In this document, roads that were affected by either flood event are known as "secondary areas", and roads affected by both floods are known as "primary areas".

4.4 The site is not located in either a 'primary' or 'secondary' area therefore a flood risk assessment does not need to be carried out.

4.5 All sources of flooding have been assessed and are considered to pose a negligible risk to the site. While large areas in the north of the borough were affected by surface water and sewer flooding in 1975 and 2002, there are no known records that the site itself was affected in either event. It is recommended that more consideration is given to the ground levels of the driveway entrance and building entrance at the detailed design stage.

4.6 It can be concluded that the proposed basement is at a low risk of flooding from all sources, and that the proposed basement is considered acceptable in the context of flood risk.

Appendix

Drawing 1- Topographic Survey

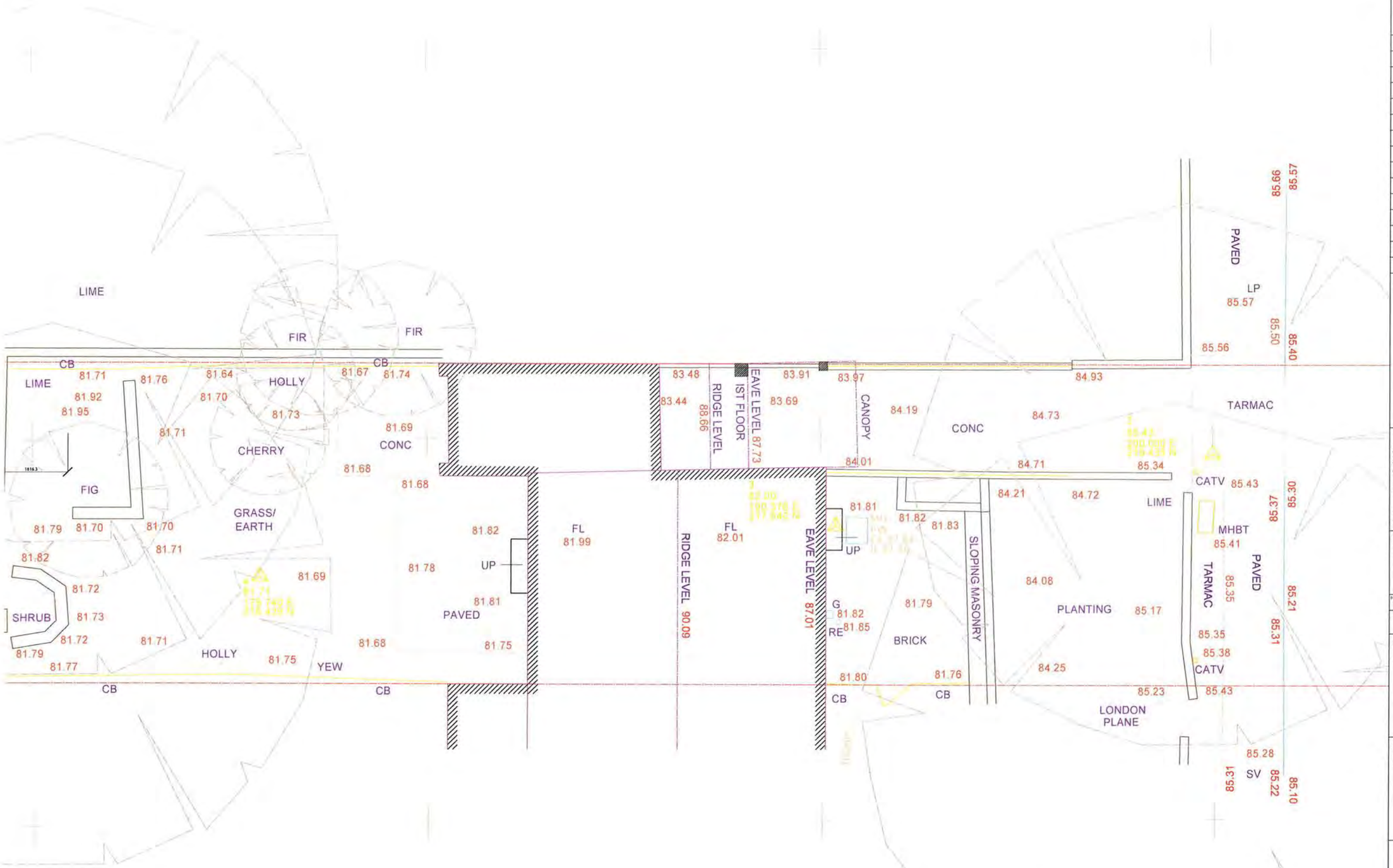
51% Studios, Drawing Number 1067/102, July 2008
The drawing shows levels on the site, including carriageway level in Maresfield Gardens, ground levels to the front, side and rear of the building, and finished floor levels of the existing dwelling.

Drawing 2- Proposed Entrance Level

51% Studios, Drawing Number 1095/200, July 2008
The drawing shows the proposed entrance level layout for 59 Maresfield Gardens.

Drawing 3- Proposed Basement Layout

51% Studios, Drawing Number 1095/200, July 2008
The drawing shows the proposed layout at basement level for 59 Maresfield Gardens.



Approved By client. Date:

authorized signature and company stamp

REV.	DATE	DESCRIPTION
A	12/08/2008	Issued for Planning

Issued for:

- ☐ PRELIMINARY
- ☐ RECORD
- ☐ INFORMATION
- ☐ COMMENTS
- ☐ APPROVAL
- ☐ SIGN AND RETURN
- ☐ ACKNOWLEDGE AND RECEIPT

do not scale drawing
all dimensions to be verified on site discrepencies in dimensions or drawing to be reported to architect
1. All work to comply with local and national building codes.

2. This drawing to be read in conjunction with all relevant schedule of works sections related to works described here.

Drawing Name

Survey

project no. 1095 | type | no. | qty

scale: 1:100 @ A3

Project Title

59 Maresfield Gardens

Developer / Client

Stefanie Drews & Colin Rowat

51% Studios Ltd.
Studio 6, Dean House,
27 Greenwood Place
London
NW5 1LB

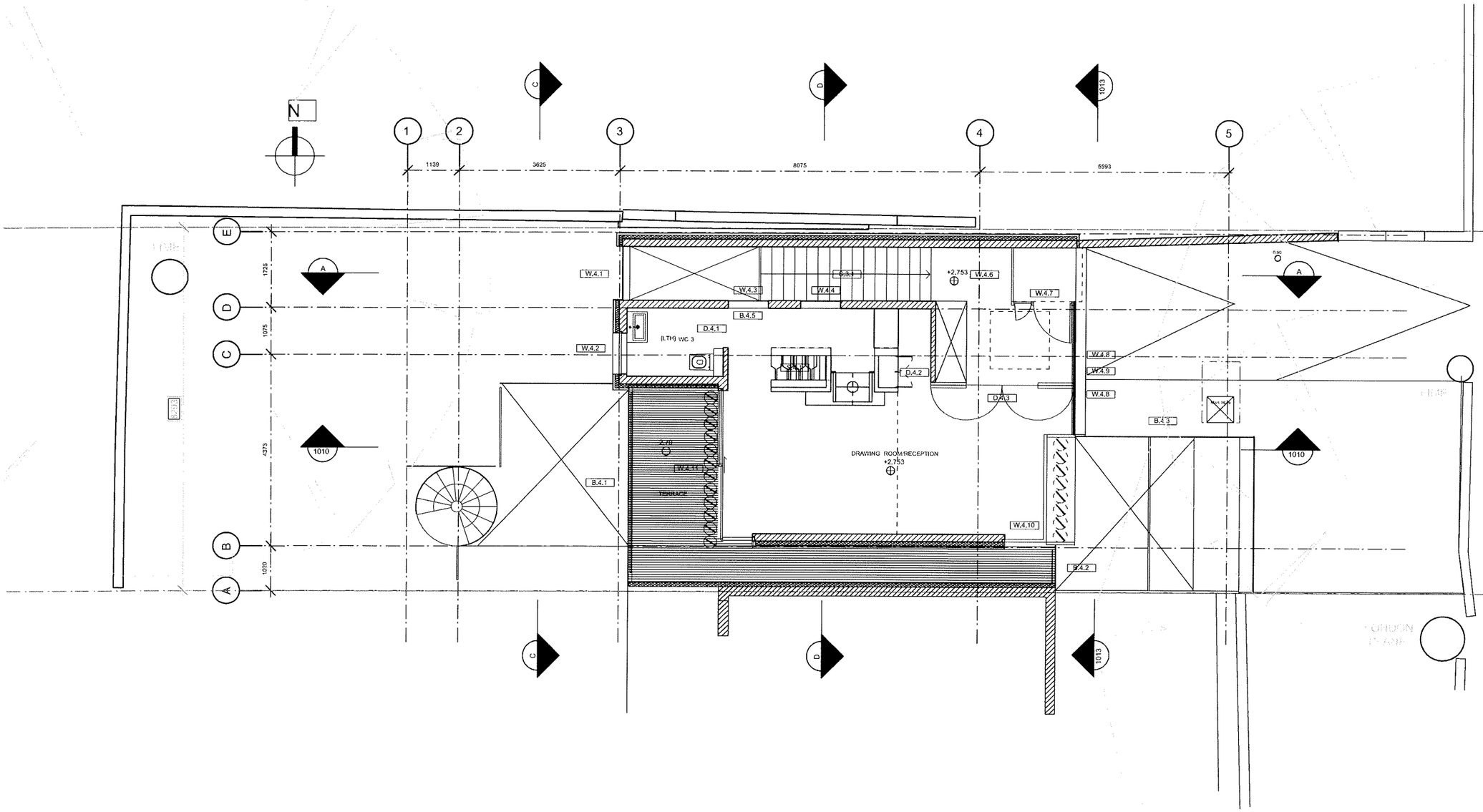
www.51pct.com
info@51pct.com

project no. 1067/102

project name
59 Maresfied Gardens

date:	designed by:
15/07/2008	51%
checked by:	**approved by:**

0 1 2m 5m



1 Entrance Plan
1:100

NOTES

No.	Date	Issue Notes
H	19/12/08	Issued to Dewmac
G	18/12/08	Issued to DewMac for comment
F	16/12/2008	GA issued for services set out
E	28/11/2008	GA Issued to Building Control for Comment [without services]
D	20/11/2008	Issued to Building Control for comment
C	11/5/08	GA issued for services set out
B	10/30/08	GA Issued for comment
A	14/10/2008	Issued for comment

51%
6 Dean House , 27 Greenwood Place , London NW5 1LB
t 44 (0) 8456 123 991 f 44 (0) 8456 123 998 www.51pct.com

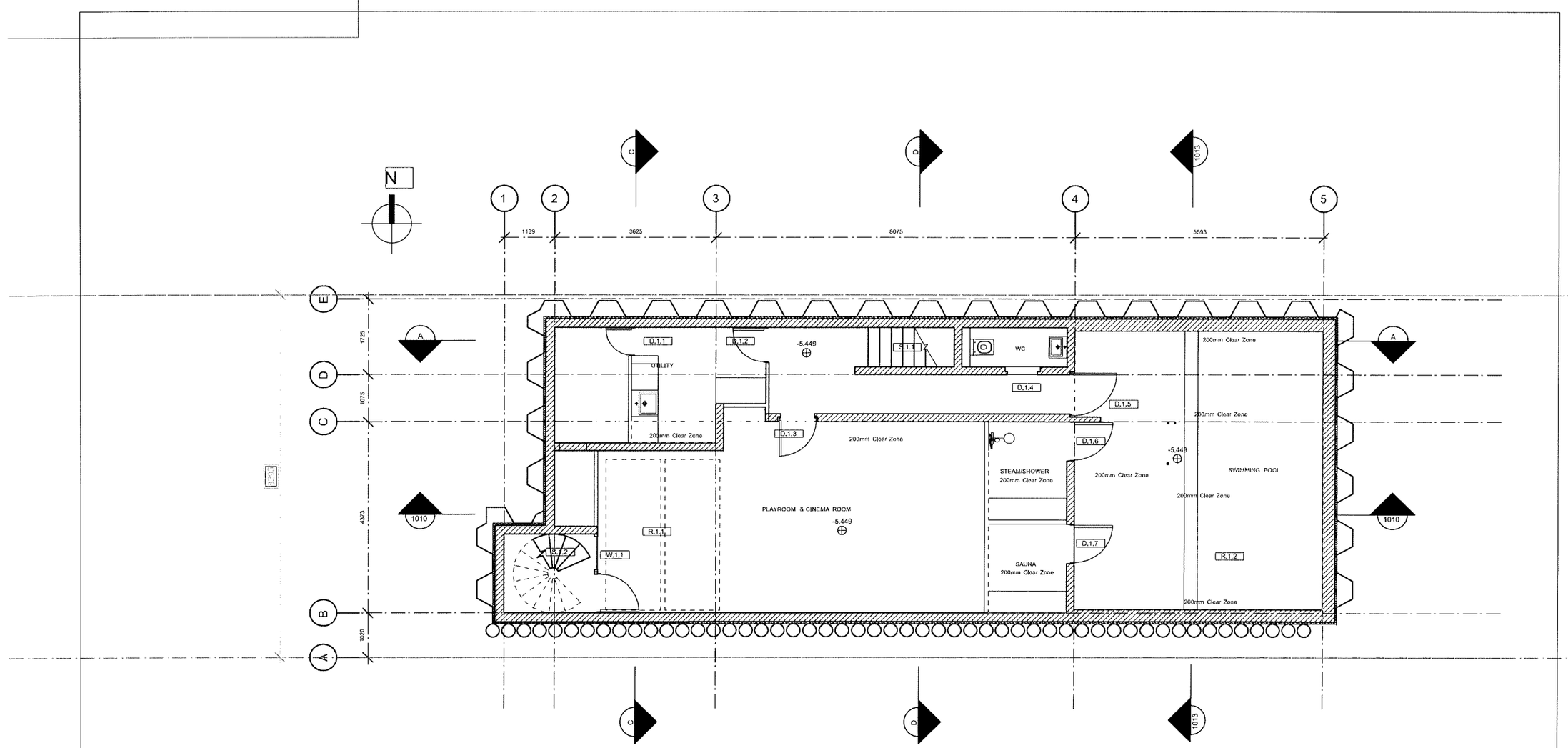
Project
59 Maresfield Gardens

Client
Stefanie Drews & Colin Rowat

Status
-

Drawing
Entrance Plan

Project Architect: 51%	Project ID: 1095
Drawn By: HM	Scale: 1:100 @ A3
Checked By: 51%	Drawing No.: 1003
Date: 14/10/2008	Issue: H
File Name: 1095_59 Maresfield Gardens	



1 Basement Plan
1.100

NOTES

No.	Date	Issue Notes
H	19/12/08	Issued to Dewmac
G	18/12/08	Issued to DewMac for comment
F	16/12/2008	GA issued for services set out
E	28/11/2008	GA Issued to Building Control for Comment [without services]
D	20/11/2008	Issued to Building Control for Comment
C	05/11/2008	GA Issued for Services Set Out
B	30/10/2008	GA Issued for Comment
A	14/10/2008	Issued for Comment

51%
6 Dean House . 27 Greenwood Place . London NW5 1LB
t 44 [0] 8456 123 991 f 44 [0] 8456 123 958 www.51stock.com

Project
59 Maresfield Gardens

Client
Stefanie Drews & Colin Rowat

Status
-

Drawing
Basement Plan

Project Architect: 51%	Project ID: 1095
Drawn By: HM	Scale: 1:100 @ A3
Checked By: 51%	Drawing No.: 1000
Date: 14/10/2008	Issue: H
File Name: 1095_59 Maresfield Gardens	

Wimbledon
241 The Broadway
London
SW19 1SD

tel. (020) 8544 0033
fax. (020) 8544 0066

Central London
4 John Prince's Street
London
W1G 0JL

tel. (020) 7499 5888
fax. (020) 7499 5444

Nottingham
Halifax House
Halifax Place
Nottingham
NG1 1QN

tel. 0870 460 0061
fax. 0870 460 0062

email: info@elliottwood.co.uk
www.elliottwood.co.uk

elliott wood partnership llp
structural and civil engineers