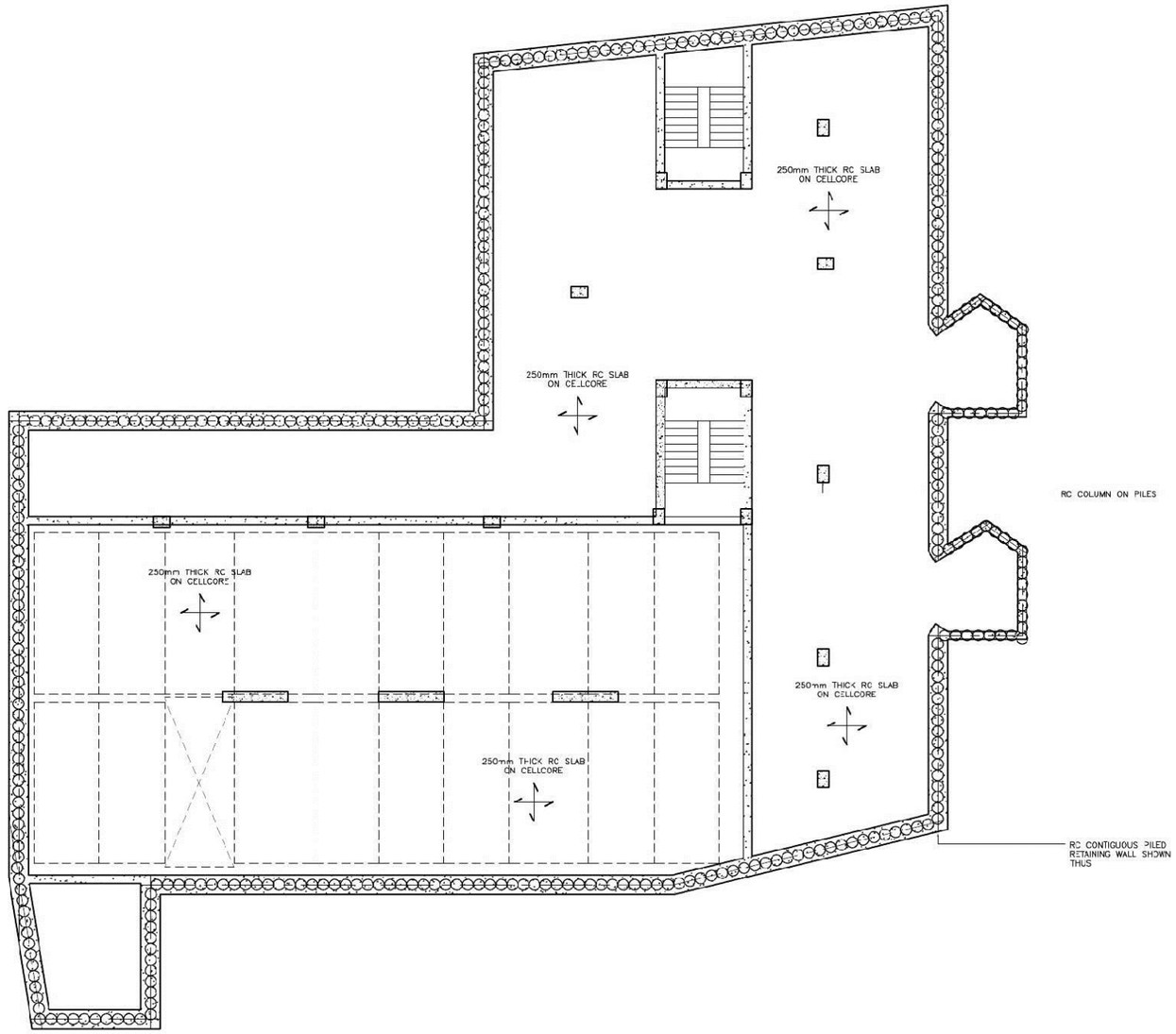
APPENDICES

APPENDIX A: Proposed Drawings and Sequence of Works



Notes

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Rev	Date	By	Amendments
P1	02.12.14	JNS	PRELIMINARY ISSUE

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79 FITZJOHNS AVENUE
HAMPSTEAD
LONDON

Drawing Title

BASEMENT FLOOR
PLAN

Job No.	Drawing No.	Revision
2014052	01	P1

Scales 1:100 AT A1 — Original Size A1

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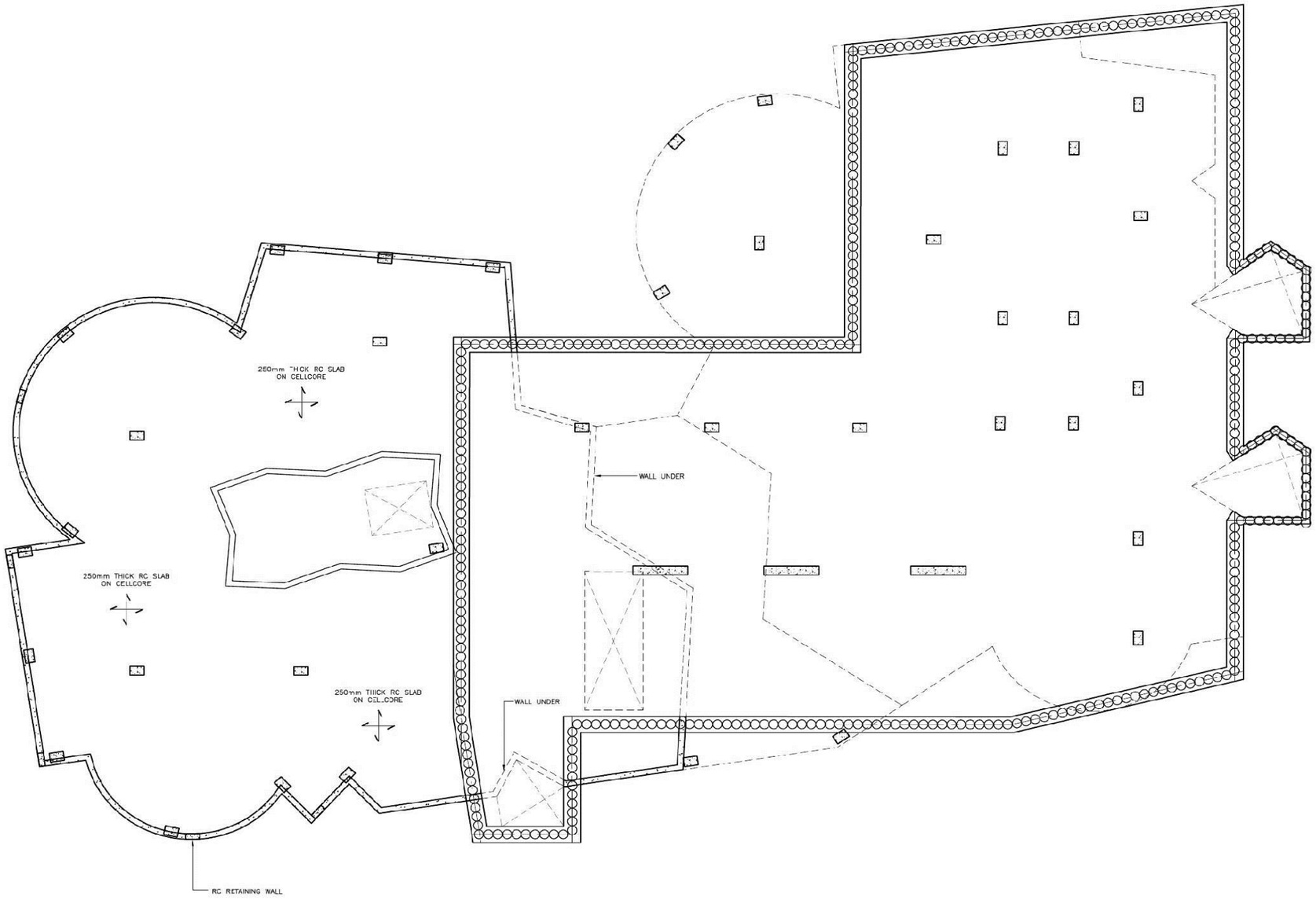

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LOWER GROUND FLOOR PLAN

Job No.	Drawing No.	Revision
2014052	02	P1

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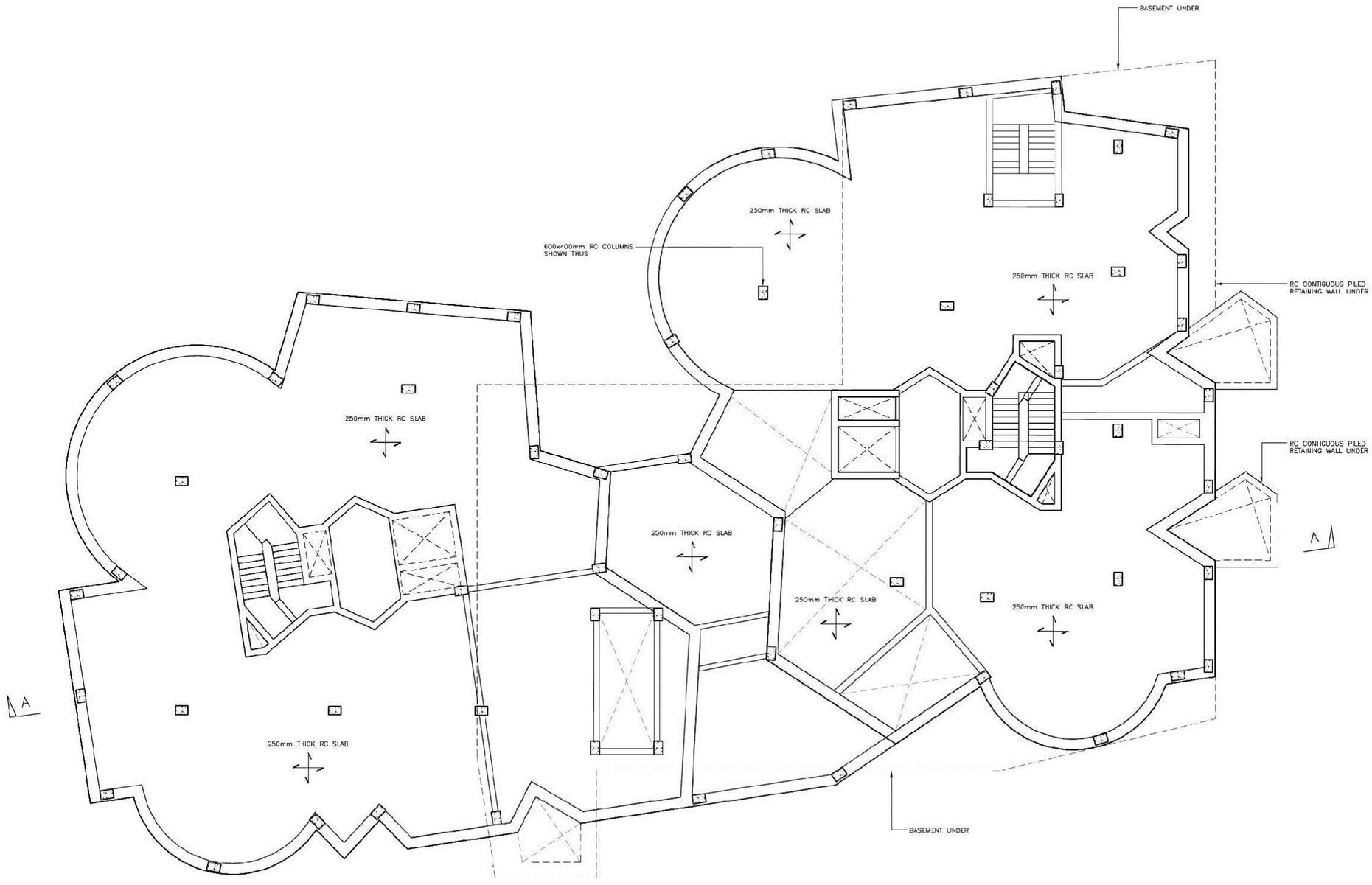
QP A1



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Drawing Title

GROUND FLOOR
PLAN

Job No.	Drawing No.	Revision
2014052	03	P1

Scales 1:100 AT A1 — Original Size A1

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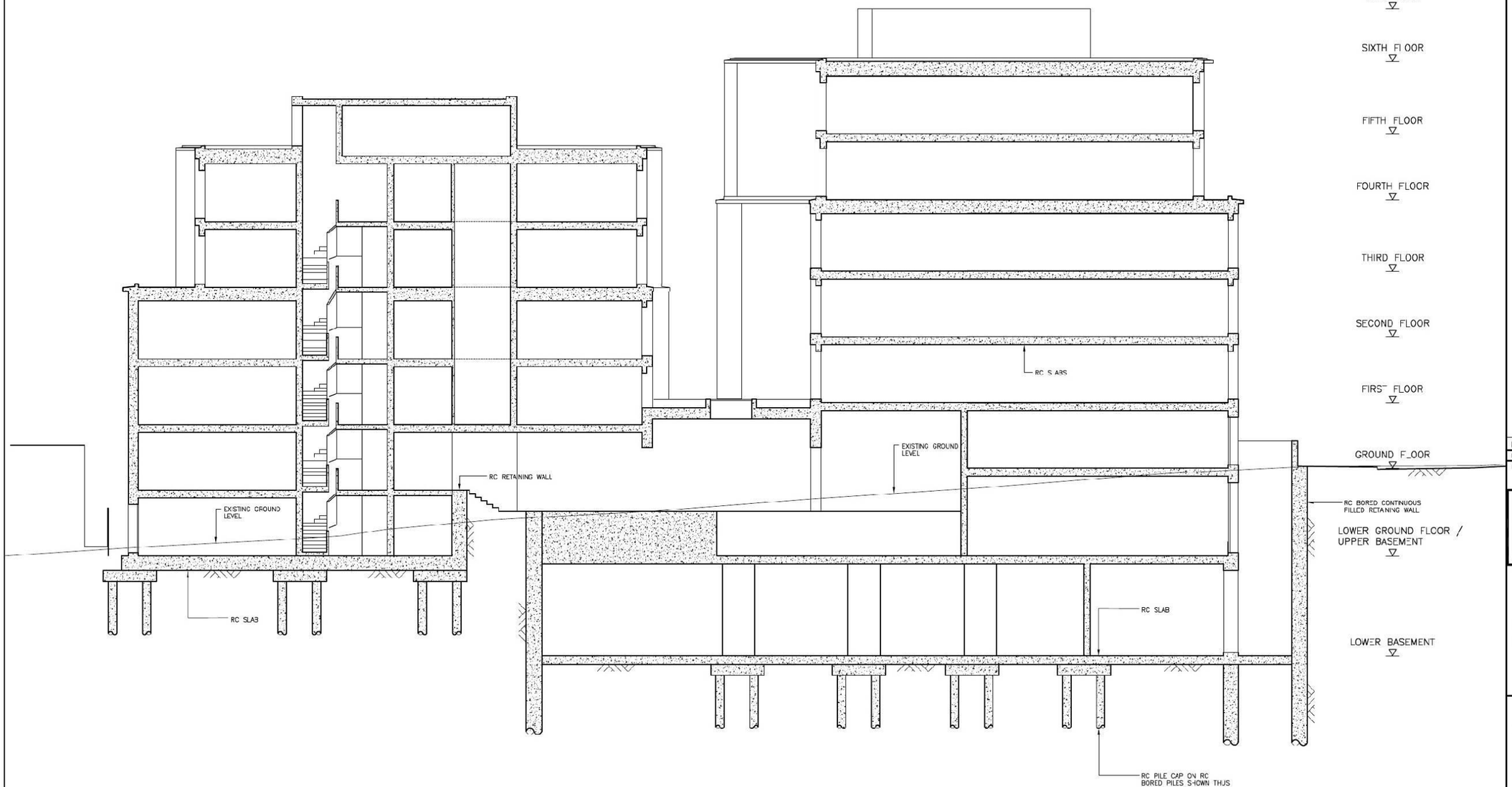
QD A1

Proposed Construction Sequence for Substructure

1. Install bored cast in situ reinforced concrete contiguous piles to full perimeter of basement. Piles will be designed to cantilever above basement level in temporary condition.
2. Install internal bored cast in situ reinforced concrete piles, casting to approximately basement level.
3. Install internal bored cast in situ reinforced concrete piles sacrificial piles for temporary works, casting to ground level.
4. Cast reinforced concrete capping beam to contiguous piles to full perimeter.
5. Install temporary props at ground level, propping the perimeter capping beam onto internal temporary works piles at ground level.
6. Excavate basement down to first basement level.
7. Install temporary props at upper basement level, propping the contiguous piled wall onto internal temporary works piles at upper level of basement.
8. Excavate down to lower basement formation level.
9. Cut down internal piles and cast reinforced concrete pile caps.
10. Install below slab services.
11. Cast lower basement reinforced concrete slab, including epoxy dowelled connection to contiguous piles.
12. Cast reinforced concrete verticals from lower basement to upper basement.
12. Cast upper basement reinforced concrete slab, including epoxy dowelled connection to contiguous piles.
13. Remove temporary works at upper basement level.
14. Cast reinforced concrete verticals from upper basement to Ground floor.
15. Cast reinforced concrete ground floor slab and beams, including connection to capping beam.
16. Remove temporary works at ground floor level.
17. Break down internal sacrficial piles to basement slab level.
18. Cast reinforced concrete liner wall to inner face of contiguous piled wall.
19. Install internal cavity drain to vertical and horizontal inner faces of basement.

Construction method and secuence to be confirmed by contractor once appointed



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SECTION A – A

Job No.	Drawing No.	Revision
2014052	20	P1

Scales 1:50 AT A1 — Original Size A1

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APPENDIX B: Structural Calculations

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Job Title	79 Fitzjohns Avenue, London NW3	Job No. 2014052	Sheet No. CL1	Revision
Section		Date Nov 14	Made By RT	Checked By

COLUMN LOADS

Preliminary assessment of typical column loads

Typical floor load

75mm screed, 0.075thk × 22kN/m³	= 1.7kN/m²
Block partitions	1kN/m²
Ceiling & services	0.3kN/m²
Boarding	0.1kN/m²
Imposed	1.5kN/m²
Slab 0.25thk × 24kN/m³	6kN/m²
	Σ 10.6kN/m²

Typical roof

Brown roof + PVs	1kN/m²
75mm screed	1.7kN/m²
Ceiling & services	0.3kN/m²
Imposed	0.3kN/m²
Slab 0.25thk × 24kN/m³	6kN/m²
	9.3kN/m²

Cladding

65% windows (0.1thk × 20kN/m³ + 0.1thk × 15kN/m²)
= 2.3kN/m²

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Job Title	79 Fitzjohns Avenue, London NW3	Job No. 2014052	Sheet No. CL2	Revision
Section		Date Nov 14	Made By RT	Checked By

a/ Typical internal column to Fitzjohn block

N1, floors

[(10.6kN/m² × 8No floors + 9.3kN/m² × 1No roof)
= 97.9kN/m² + 1.5kN/m² extra live for communal
+ 0.075thk × 24kN/m³ extra thickness transfer slab
× 12m/2 × 12m/2 = 3524kN

N2, column

0.6m × 0.25m × 24kN/m³ × 25m = 90kN

Σ 3614kN

b/ Typical Perimeter column to fitzjohn block

N1, slabs

97.9kN/m² × 6m/2 × 11m/2 = 1620kN

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		Job No.	Sheet No.	Revision
		2014052	CL3	
Job Title	79 Fitzjohns Avenue, London NW3	Date	Made By	Checked By
Section		Nov 14	RT	

N2, cladding

$2.3\,kN/m^2 \times \frac{11m}{2} \times 20m = 250kN$

N3 column, as internal 90kN

Σ 1960kN

for columns at ≈ 5.5m centres

load on capping beam

$= \frac{1960kN}{5.5m} = 356\,kN/m$

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		2014052	TW1	
Job Title	79 Fitzjohns Avenue, London NW3	Date	Made By	Checked By
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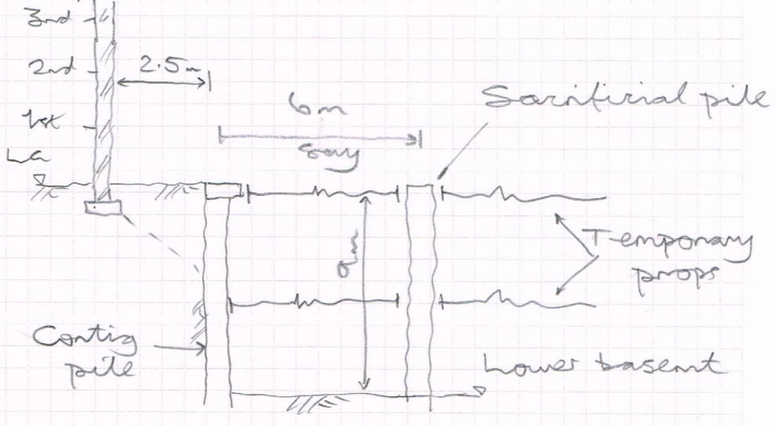
TEMPORARY WORKS

Preliminary assessment of temporary works load.

Considers contig. piles retaining wall adjacent to North of site along Fitzjohn Avenue

a/ load from adjacent property



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		Job No.	Sheet No.	Revision
		2014052	TW2	
Job Title	79 Fitzjohns Avenue, London NW3	Date	Made By	Checked By
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i/ Main house foundation load

W1, floors 1st, 2nd, 3rd, roof

$(0.6 + 1.5)\,kN/m^2 \times \frac{5m\ width}{2} \times 4NO = 15\,kN/m$ LIVE

dead live + 6 kN/m DEAD

Assume house 2nd is ground bearing

W2, flank wall, solid brick

$0.33m\ thk \times 20\,kN/m^3 \times 4m\ c/a\text{-}1st$

$+ 0.215m\ thk \times 20\,kN/m^3 \left(4m + 4m + \frac{4m}{2}\right) = 70\,kN/m$

DEAD	76 kN/m
LIVE	15 kN/m

ii/ Flank extension

W1, flank wall DEAD

$0.215m\ thk \times 20\,kN/m^3 \times 3m = 13\,6kN/m$

W2, roof DEAD + LIVE

$1.7\,kN/m^2 \times \frac{3m}{2} = 2.6\,kN/m$

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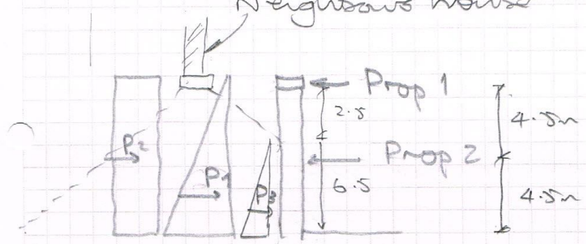
b/ Props to retaining wall



P1, ground pressure

$19\,kN/m^3 \times \frac{9m}{2} \times 0.33KA \times 9m = 254\,kN$

P2, surcharge live load in garden

$3\,kN/m^2 \times 0.33KA \times 9m = 9\,kN$

P3, surcharge from neighbour house

$6.5m \times (7.6 + 1.5 + 1.3 + 3)\,kN/m \left[\frac{1}{(2.5m+2.5m)} + \frac{1}{(2.5m+7.6)}\right]^{1/2}$

page TW2

$9m\text{-}Ka \times 0.33Ka = 35\,kN$

Consider pile as simply supported beam for loads on props.

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Section		Nov 14	RT	

Prop 1 = 254kN × 1/3 + 9kN/2 + 35kN × 1/3
P1 + triangular P2
= 101 kN/m

Prop 2 = 254kN × 2/3 + 9kN/2 + 35kN × 2/3
= 199 kN/m

For props at, say, 5m ctrs
Consider prop 2 as critical
N = 199kN/m × 5m ctrs × 1.45 ff
= 1450kN
For Leff = 6m
$M_x = M_y$ = 1450kN × 0.2m = 290kNm
cap connection
notional eccentricity

Try 406 ø CHS × 10
$\frac{F}{P_z} = \frac{1450}{4440} = 0.32$

X-Section
$\frac{1450}{4440} + \frac{290}{513} = 0.89 < 1$

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Job No.	Sheet No.	Revision
2014052	TW5	

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Buckling Leff = 6m
$\frac{1450}{4440} + 0.57 \times \frac{290}{428} = 0.74 < 1$

Adopt props 406ø × 10 CHS
at 5m ctrs at ground
and upper basement level.

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