
10 Nutley Terrace
London, NW3 5SB

Structural Engineering Report
and Subterranean
Construction Method
Statement

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Non-Technical Summary

If the above measures and sequence of works are taken into account in the eventual design and construction of the proposed works and are properly undertaken by suitability qualified contractor, these works should pose no significant threat to the structural stability of the adjoining properties or surrounding grounds.

Based on current knowledge of the building and the ground movement assessment completed by Applied Geotechnical Engineering (AGE), if the works are carried out in this manner, then the likelihood of damage to the adjacent properties should be limited to 'very slight or less' as set out in CIRIA Report 580.

The attached reports and Basement Impact Assessment (BIA) state that the proposed basement will have no significant adverse effect on the local hydrogeology. They also state that both ground water and surface water will not be affected or cause significant adverse effects to the surrounding properties.

A Construction Traffic Management Plan (CTMP) has been completed by ADL Planning in October 2015 which gives advice on the likely programme, vehicular access and site set up.

To this end, EW will have an on-going role during the works on site to monitor that the works are being carried out generally in accordance with our design and specification. This role will typically involve weekly site visits at the beginning of the project and fortnightly thereafter.

1.0 Introduction

- 1.1 Elliott Wood (EW) is a firm of consulting structural engineers approximately 120 strong operating from their head office in South West London. Residential developments of all scales have been central to the workload of the practice with many in the Greater London area. In particular EW have been producing designs for basements to both existing and new buildings. To date this numbers approximately 500 sites many of which have been in the Borough of Camden. Our general understanding of the development of London, its geology and unique features together with direct experience on many sites puts us in a strong position to advise clients on works to their buildings and in particular the design and construction of their basement.
- 1.2 EW were appointed by the building's owner to advise on the structural implications of the proposed construction of a new two storey dwelling with a single storey basement on the site of 10 Nutley Terrace. The following report has been prepared to ensure that the property and neighbouring properties are safeguarded during the works. This report follows the guidance given in the Camden Planning Guidance on Basements and Lightwells CPG4. This assessment has been prepared in accordance with the guidance given in CPG4, DP23 and DP27. A Basement Impact Assessment has been carried out by Site Analytical Services (SAS).
- 1.3 The Contractor will provide a detailed method statement including all temporary works before the works can commence on site. The Contractor is to accept full responsibility for the stability and structural integrity of the works during the Contract and provide temporary support as necessary. The Contractor shall also prevent overloading of any completed or partially completed elements.
- 1.4 This statement focuses on the proposed subterranean works as opposed to the superstructure works and should be read in conjunction with all relevant Architects and Specialists supporting documents.

2.0 Description of Existing Building and Site Conditions

- 2.1 The existing building at 10 Nutley Terrace is a detached two-storey house without a basement. The existing building appears to be of traditional construction with timber floors and roofs, and with load-bearing masonry walls.
- 2.2 The existing building and neighbouring properties are not registered on the Camden Borough Listed building register but they are situated in the Fitzjohns Netherhall conservation area.
- 2.3 A site investigation was carried out at the property by SAS. The investigation comprised of three boreholes of 20m depth with standard penetration tests at regular intervals. Disturbed and undisturbed samples were collected for laboratory testing, including soil contamination testing.
- 2.4 The site investigation indicated that the underlying ground is London Clay overlaid by up to 0.6m-1.0m of made ground. This is in line with geological records for this area. Groundwater was not encountered during the boring operations. Sample testing indicated the underlying clay to be of high swelling and shrinkage potential. Refer to SAS's report for details.
- 2.5 There are a number of mature trees both in the garden of No. 10 and in adjacent gardens, resulting in a number of root protection zones to some areas of the rear garden. No works are proposed within the tree protection zones.
- 2.6 The Belsize Network Rail Tunnel runs under the road at Nutley Terrace, at around 20m below ground level in the direction of the road. This has been taken into account in the design of the proposed basement. However final confirmation will be required from Network Rail. Refer to Appendix B for network rail asset information.
- 2.7 The adjacent property, 14 Netherhall Gardens is currently having a basement constructed using underpins for the majority of the area nearby to the proposed basement at 10 Nutley Terrace. Towards the rear of the property this changes to a pile construction. From planning information the basement level is assumed to be similar for both properties which will mean there is unlikely to be any problems with surcharge.
- 2.7 The historic river Tyburn runs approximately 200m to the east of the property beneath the eastern edge of Fitzjohns Avenue. The tributary is entirely covered and culverted. The historic river Westbourne runs approximately 200m to the west of the property. The tributary is entirely covered and culverted. The site is not located within the flood plain or within a Groundwater Source Protection Zone as defined by the Environment Agency Flood Maps.
- 2.8 Nutley Terrace is located within the Critical Drainage Area number GROUP3-005 as identified in Camden SWMP, but is not in Camden's list of streets at risk of surface water flooding.
- 2.9 The results of our desk study can be summarised as follows;
 - The building appears to be near the historic Tyburn and Westbourne rivers (reference Lost Rivers of London, Nicholas Barton – refer to Appendix C).
 - The site is located in flood zone 1 and is not within a Groundwater Source Protection Zone as shown on the latest Environment Agency Flood Maps (reference; www.environment-agency.gov.uk).
 - The site is in the vicinity of the Belsize Network Rail Tunnel (refer to Appendix B for Asset Information).
 - There is no record of historical blast bomb damage to the property (reference, The LCC London Bomb Damage Maps 1939-1945, LTS, map 37).

3.0 Proposed Alterations

- 3.1 The proposed works involve the demolition of the existing property and construction of a new two storey dwelling with a single storey basement. Refer to Appendix A for proposed structural drawings and sections.
- 3.2 The new single storey basement will extend approximately 3.9m below ground level. The perimeter walls will be formed from reinforced concrete and cast in a maximum of 1 metre sections in an underpinning sequence.
- 3.3 To minimise any impact that the proposed building may have on the Belsize Tunnel we have chosen not to use piles to form the basement. The reinforced concrete wall will be designed to support the vehicle loads and surcharge from the soil and neighbouring buildings and road.
- 3.4 Reinforced concrete slabs will be constructed at basement and ground floor level to provide a permanent prop to the underpins, resisting lateral ground loads.
- 3.5 The basement slab has been designed as a suspended RC raft supported on RC edge thickenings. The slab will be suspended over a compressible void former to deal with heave.
- 3.6 The roof structure and first floor level will be formed from a steel frame and timber infill to reduce overall load of the building. They will be supported on load bearing masonry internally and cavity walls at the perimeter.
- 3.7 The overall stability of the building will be achieved through the cellular layout of the walls and rigid diaphragm action of the floors at each level.

4.0 Proposed Below Ground Drainage

- 4.1 It is proposed that the existing connection to the combined public sewer is retained and re-used. This will be subject to location and condition, which will be confirmed by a CCTV survey prior to works. Refer to Appendix D for Thames Asset search.
- 4.2 It is proposed that all drainage from the ground floor and above is drained via gravity. The proposed basement level will be lower than the level of the existing public sewer connection as such the foul effluent generated at basement level will need to be pumped to the main private drainage system. This will prevent any flooding from the public sewer in case of backup.
- 4.3 It is proposed that SuDS are incorporated within the scheme, to reduce the surface water run-off from the site. The site investigation has confirmed that the underlying subsoils consist of impermeable clay, therefore infiltration into the ground via soakaways will not be feasible. To limit the run-off from the site to that of the existing situation, underground attenuation tanks will be incorporated into the design. The exact details of this attenuation tank, including size and flow control device will be confirmed as part of the detailed design phase, although it is likely that the tank will be constructed from cellular storage crates. We note that it has been suggested that the surface water run-off is restricted to Greenfield rates if possible – unfortunately due to the small size of the site, this will not be practical and will potentially increase the risk of the site flooding, due to a very small flow restrictor.
- 4.4 Due to the impermeable nature of the clay, groundwater is unlikely to be encountered during the excavation of the proposed basement. However, isolated pockets of perched surface water may be encountered in the less permeable material at shallower depths, especially within any made ground.
- 4.5 If groundwater is experienced during excavation, suitable control of any inflows would be achieved using sump pumping. A detailed method statement for this process will need to be prepared by the contractor for comment by all relevant parties including party wall surveyors and their engineers. Water levels in the standpipes will be periodically measured prior to start on site. Trial underpins will be dug when the contractor first starts on site to confirm the stability of the soil and to further investigate the presence of any groundwater inflows.

5.0 Party Wall Matters

- 5.1 The proposed works development falls within the scope of the Party Walls Act 1996. Procedures under the Act will be dealt with in full by the Employer's Party Wall Surveyor. The Party Wall Surveyor will prepare and serve necessary Notices under the provisions of the Act and agree Party Wall Awards in the event of disputes. The Contractor will be required to provide the Party Wall Surveyor with appropriate drawings, method statements and other relevant information covering the works that are notable under the Act. The resolution of matters under the Act and provisions of the Party Wall Awards will protect the interests of all owners.
- 5.2 The structural design for 10 Nutley Terrace will be developed so as not to preclude or inhibit similar, or indeed any, works on the adjoining properties. This will be verified by the Surveyors as part of the process under the Act.

6.0 Basement Impact Assessment Summary

- 6.1 The Land Stability, Groundwater and Surface Flow assessments have been carried out by SAS. The assessments conclude that the proposed development is unlikely to result in any specific land/slope stability issues or surface flooding issues. The assessment concluded the proposed development is unlikely to affect the groundwater regime beneath, or adjacent to the site.
- 6.3 A ground movement analysis has been carried out by Applied Geotechnical Engineering prior to the works starting on site. Based on current knowledge of the building and the ground movement assessment, if the works are carried out in this manner, then the likelihood of damage to the adjacent properties should be limited to 'very slight or less' as set out in CIRIA Report 580.

7.0 Hydrogeological Statement Summary

- 7.1 Groundwater was not encountered during the boring operations carried out by SAS in September 2015. Subsequent groundwater monitoring has shown that the boreholes were dry down to 6.0m and hence groundwater inflows are unlikely to be an issue.
- 7.2 The structural slab level of the lower basement slab is approximately 3.9m bgl. It is therefore possible that perched water may be encountered during the construction of the basement, although based on the monitoring completed this is unlikely. Localised pumping will be implemented to deal with the perched water during the construction of the basement. As the ground has a low permeability it was advised that this would be a suitable method of controlling the water. The relevant filters will be installed on the pumps to ensure that the migration of fines is limited.
- 7.3 Arup's Subterranean Development Scoping Study (para 5.1), June 2008, notes that the impact of subterranean development on groundwater flows is negligible as groundwater flows will find an alternative route if blocked by a subterranean structure.

8.0 Network Rail Asset

- 8.1 The new foundation scheme will need to be agreed with Network Rail to ensure the works have no effect on the tunnel. The building load is largely founded on underpinned foundations which will submit the tunnel to similar loadings as the existing condition.
- 8.2 The excavation of the basement will relieve some pressure from the top of the tunnel when the weight of the soil is removed. As the tunnel is at such a large depth (around 20m to crown) and the extent of the change in load at ground level is relatively minimal the effects on the tunnel are predicted to be negligible and within acceptable limits. (see drawing S.301 for reference). The retention system will ensure the stability of the nearby tunnels at all times. Correspondence with Network Rail must be undertaken prior to and during the final design of the basement to insure the safety of the underlying tunnel.

9.0 Conclusions

- 9.1 It is intended that the above measures and sequence of works are adopted for the eventual design and construction of the proposed works.
- 9.2 Detailed method statements and calculations for the enabling and temporary works will need to be prepared by the Contractor for comment by all relevant parties including party wall surveyors and their engineers. Elliott Wood Partnership will ensure that adequate supervision and monitoring is provided throughout the works particularly during the excavation and demolition stages. A specification and indication of monitoring requirements is given in section 9.0.

10.0 Monitoring during Excavation and Construction

10.0 Monitoring during Excavation and Construction

10.1 The Contractor shall provide monitoring to all structures and infrastructure adjacent to the basement excavation at the time of excavation and construction.

10.2 Monitoring shall be completed as follows:

- 1) One month prior to any works being started to provide a base reading.
- 2) At the start and end of every shift during the excavation and until the basement slab and lining wall has been cast.
- 3) On a monthly basis thereafter for a 6 month period following completion of the notifiable works.

10.3 Cumulative movement of survey points must not exceed:

a. Settlement and Lateral displacement

Code amber trigger values: +/-4mm

Code red trigger values: +/-8mm

10.4 Movement approaching critical values:

Code Amber trigger value:

All interested parties, including the Adjoining Owner's Surveyor and his Engineer should be informed and further actions immediately agreed between two of the three Surveyors and implemented by the Building Owner. Notwithstanding the Party Wall requirements, the Contractor is to appoint, and to have permanently on site, a suitably qualified Structural Engineer who will be responsible for the reviewing of the movement monitoring results at the start and end of each day and provide immediate advice, remedial works and design as necessary in the event of movement being noted. The Contractor is to ensure that he has 24 hour / 7 days a week access to emergency support provision including but not limited to additional temporary props, needles, waling beams and concrete supply at the start of the excavation and prior to any likelihood of this trigger value being reached. If this value is reached the Contractor, and his Engineer, must without delay provide all interested parties with his plan to implement any emergency remedial and supporting works deemed necessary. The Contractor must be ready to carry out these works without delay if the movement continues and approaches the trigger value below.

Code Red trigger value:

All interested parties including Adjoining Owner's Surveyor and Engineer will be informed immediately. Works will stop and be made safe using methods and equipment agreed at the above stage. The Contractor is to ensure that the movement has stopped as a result of the implemented remedial works designed and installed at this stage. The requirements of the Party Wall Act will also ensure that, two of the three Surveyors and their advising Engineers shall then enter into an addendum Award, setting out whether or not the Building Owner's works can re-commence and when, and if so agree additional precautions or modifications to the proposals prior to re-commencement.

11.0 Subterranean Construction Method Statement

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11.1 Construction generally

It is assumed that the above measures and assumed sequence of works are taken into account in the eventual design and construction of the proposed works.

Detailed method statements and calculations for the enabling and temporary works will need to be prepared by the Contractor for comment by all relevant parties including Party Wall Surveyors and their Engineers. Elliott Wood will need to ensure that adequate supervision and monitoring is provided throughout the works particularly during the excavation and demolition stages.

To this end, EW will have an on-going role during the works on site to monitor that the works are being carried out generally in accordance with our design and specification. This role will typically involve weekly site visits at the beginning of the project and fortnightly thereafter. A written site report is provided to the design team, Contractor and Party Wall Surveyor.

Access onto the site will be from Nutley Terrace and must be coordinated in a sensible manner to minimise disruption to the adjoining residents; and provide a safe working environment.

11.2 Assumed Sequence of Construction

Stage 1: Site set-up

- Erect a fully enclosed painted plywood site hoarding along the front boundary wall, this should not impede on the neighbouring properties.
- The services within the site should be identified and isolated as necessary. All below ground obstructions should also be removed to allow the works to progress.
- The principles for the removal of spoil shall be agreed. Detailed information for this can be found in the CTMP by Motion.
- Tree Protection methods to be agreed and installed to all retained trees.
- Monitoring points should be installed to all neighbouring structures and infrastructure and a base reading should be taken prior to any construction works starting on the site.

Stage 2: Internal soft strip & demolition

- Complete soft strip of internal finishes within the building.
- Carefully demolish the existing building down to ground floor level in a staged sequence (tbc by the Contractor).

Stage 3: RC Perimeter Wall formed in an underpinning sequence

- Dig trial underpins for inspection by Elliott Wood Partnership to check how well the existing soil is cemented, ground water levels and flows and in particular the grounds ability to “stand up” whilst the individual underpin is completed. Given our experience on nearby projects we would expect that localised trench sheeting and props will need to be installed within the underpin shaft.
- Construct the underpins to form the new basement perimeter wall. These underpins shall extend down to the new basement formation level. Given our experience on nearby projects we would expect that localised trench sheeting and props will need to be installed within the underpin shafts. The underpins will be constructed as reinforced concrete L-shaped pins and completed in a maximum of 1 metre sections in a sequence to be agreed by the Contractor. The reinforcement will be tied in the toe first followed by the stem. The underpins will be left to cure for 3 days prior to excavating the adjacent pin.
- Suitable temporary sumps should be excavated at all stages within the excavation to allow groundwater to be collected and pumped out if required. Filters should be installed to ensure that the migration of fines is limited.
- The temporary propping to the central bund will remain in place and removed as part of the bulk excavation. This method of construction will be used to limit any horizontal ground movement associated with the construction of the underpins and limits the risk of the underpinning works on the neighbouring buildings.

Stage 4: Bulk excavation

- Reduce level dig down to approx. 1m below ground level.
- Install steel waling beams around the perimeter of the excavation to provide a prop to the top of the underpins.
- Install horizontal props spanning across the width of the basement between the waling beams.
- Continue excavating down to formation level in stages installing further waling beams and horizontal propping as the excavation progresses. The levels at which propping is required is to be determined by the temporary works Engineer. The propping levels will take into account the permanent works design such that the RC slabs can be cast above/below the props whilst the props remain in place.

Stage 5: Cast RC base slab

- At formation level cast blinding layer and install the below ground drainage as required.
- Install compressible void former under the RC raft slab.
- Install and tie reinforcement for the basement slab dowelling into the RC perimeter thickenings as required.
- Cast RC base slab and thickenings.

- Once the base slab has cured it will provide a permanent low level prop to the basement retaining walls and hence, the lowest level of horizontal propping and waling beams can be removed.

Stage 6: Construct up to lower ground level

- Once the basement slab has cured, internal load bearing basement walls and RC columns can be constructed.
- Once the walls have cured cast the ground floor slab supported on the walls. Once the ground floor slab has cured it will provide a permanent high level prop to the basement retaining walls and hence, the remaining horizontal propping and waling beams can be removed.

Stage 7: Construct superstructure

- Once the ground floor slab has cured, the superstructure works can commence.

12.0 Noise, Vibration and Dust

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Below we have described the mitigation measures that are proposed to keep noise, dust and vibration to acceptable levels during construction.

12.1 Mitigation Measures for Demolition of Existing Building

The breaking out of existing structures shall be carried out by diamond saw cutting and hydraulic bursting where possible to minimise noise and vibration to the adjacent properties. All demolition and excavation work will be undertaken in a carefully controlled sequence, taking into account the requirement to minimise vibration and noise. The contractor will need to utilise non-percussive breaking techniques where practicable.

As the property is detached there is less of an issue with noise and vibration transference via connections to the neighbouring building. However, the contractor should ensure that where any slab is adjacent to the boundary the concrete slab should be diamond saw cut first along the boundary to isolate the slab from any adjoining structures.

Dust suppression equipment should be used during the demolition process to ensure that any airborne dust is kept to a minimum.

13.3 Mitigation Measures for Underpinning Works to the Perimeter

The underpin shafts will be excavated using hand tools where possible. At the base of the underpin shaft it may be found that compressed air tools are required due to the compaction of the ground. Care should be taken in selecting a suitable air compressor that keeps noise to a minimum. The air compressor should be located within the site and behind a hoarding to minimise noise transfer to the adjoining properties.

The spoil will be removed from the excavation using an electrically powered conveyor. The contractor will need to ensure that this is regularly serviced and inspected to ensure any noise from this is kept to a minimum. The conveyor will be located as far from the neighbouring properties as practicable. In order to minimise dust, skips and conveyors should be covered or completely enclosed to ensure that dust cannot escape.

12.4 Mitigation Measures for Bulk Excavation

Due to the size of the basement it is likely that mechanical plant will be required to complete the bulk excavation. The contractor should ensure that any mechanical plant is switched off when not in use and is subject to regular maintenance checks and servicing. An electrically powered conveyor will be used as detailed above.

12.5 Mitigation Measures for the Construction of the concrete shell

The contractor should ensure that any concrete pours are completed within the permitted hours for noise generating works. The contractor should allow for a contingency period to ensure that concrete pours can be completed within these hours regardless of unforeseen circumstances such as batching plant delays and traffic congestion.

The fabrication and cutting of steelwork for the reinforced concrete walls and underpins shall take place off site. If any rebar needs to be trimmed on site this should be completed using hydraulic or pneumatic tools instead of angle grinders.

12.6 Dust Control

In order to reduce the amount of dust generated from the site, the contractor should ensure that any cutting, grinding and sawing should be completed off site where practicable. Any equipment used on site should be fitted with dust suppression or a dust collection facility.

The contractor will be responsible for ensuring good practice with regards to dust and should adopt regular sweeping, cleaning and washing down of the hoardings and scaffolding to ensure that the site is kept within good order. The contractor selected will be a member of the Considerate Contractors Scheme. Contact details of the contractor who will be responsible for containing dust and emissions within the site will be displayed on the site boundary so that the local residents can contact the contractor to raise any concerns regarding noise and dust.

The building will be enclosed within suitable scaffold sheeting and any stockpiles of sand or dust-generating materials will be covered. Cement, fine aggregates, sand and other fine powders should be sealed after use.

APPENDICES

A Proposed Structural Layouts and Sections

41 MARESFIELD GARDENS

10 NUTLEY TERRACE

NEW REINFORCED 350mm THICK CONCRETE L' SHAPED UNDERPINS TO BE CAST IN 1m SECTIONS IN A SEQUENCE TO BE AGREED WITH CONTRACTOR. UNDERPIN TOES TO BE 600mm DEEP REINFORCED CONCRETE

CAVITY DRAIN PUMP & SUMP STATION AND FOUL PACKAGED PUMPING STATION AND SUMP TO PROTECT AGAINST SEWER FLOODING BOTH TO BE CAST IN R.C BOX, ALLOW FOR APPROX 1.5m DEEP (DESIGNED BY OTHERS)

300mm THICK REINFORCED CONCRETE SLAB SUSPENDED BETWEEN UNDERPIN TOES TO ALLOW FOR HEAVE PROTECTION

ASSUMED PARTY WALL LINE

A.A
S. 200

A
S. 200

10 NUTLEY TERRACE N ← ⊕

14 NETHERHALL GARDENS

← BASEMENT @ 14 NETHERHALL GARDENS. EXTENT BASED ON DRAWINGS OBTAINED FROM PLANNING PORTAL WEBSITE

0 1 5m

This drawing is to be read in conjunction with all relevant architects, engineers and specialists drawings and specifications.
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rev	date	by	chk	description
PZ	Nov '15	ISHC	SMA	WALL AMENDED
P1	Oct '15	ISHC	SMA	PRELIMINARY

drawing title
PROPOSED LOWER GROUND FLOOR PLAN

scale(s) date drawn
1:100 @ A3 Oct '15 JSS

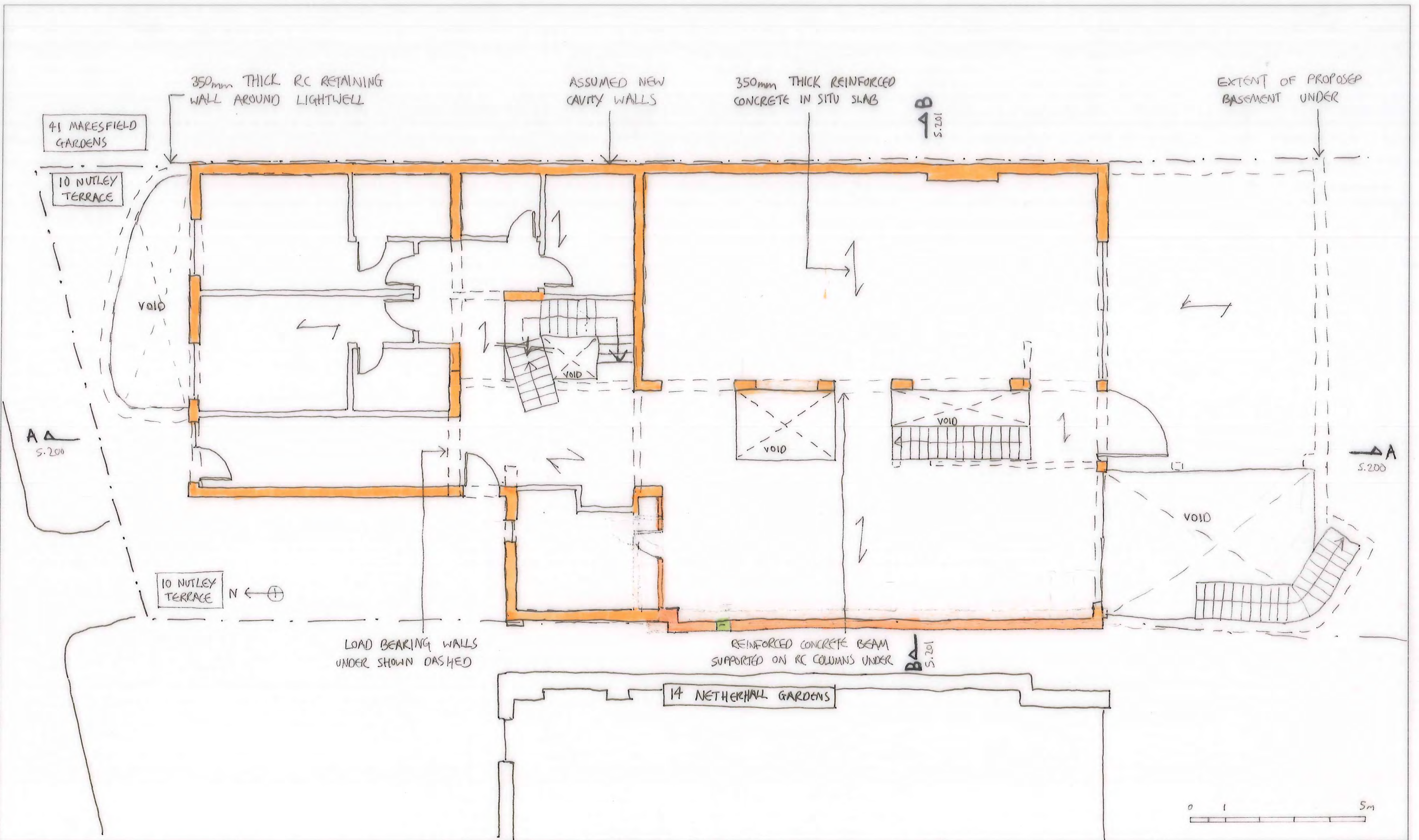
drawing status
PRELIMINARY

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job title
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job no 2150320	drawing no S.90	revision P2
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rev	date	by	chk	description
P2	Nov '15	ISL	SWA	WALLS AMENDED
P1	Sept '15	ISL	SWA	PRELIMINARY

drawing title
PROPOSED GROUND FLOOR PLAN

scale(s) date drawn
1:100 @ A3 Sept '15 JS

drawing status
PRELIMINARY

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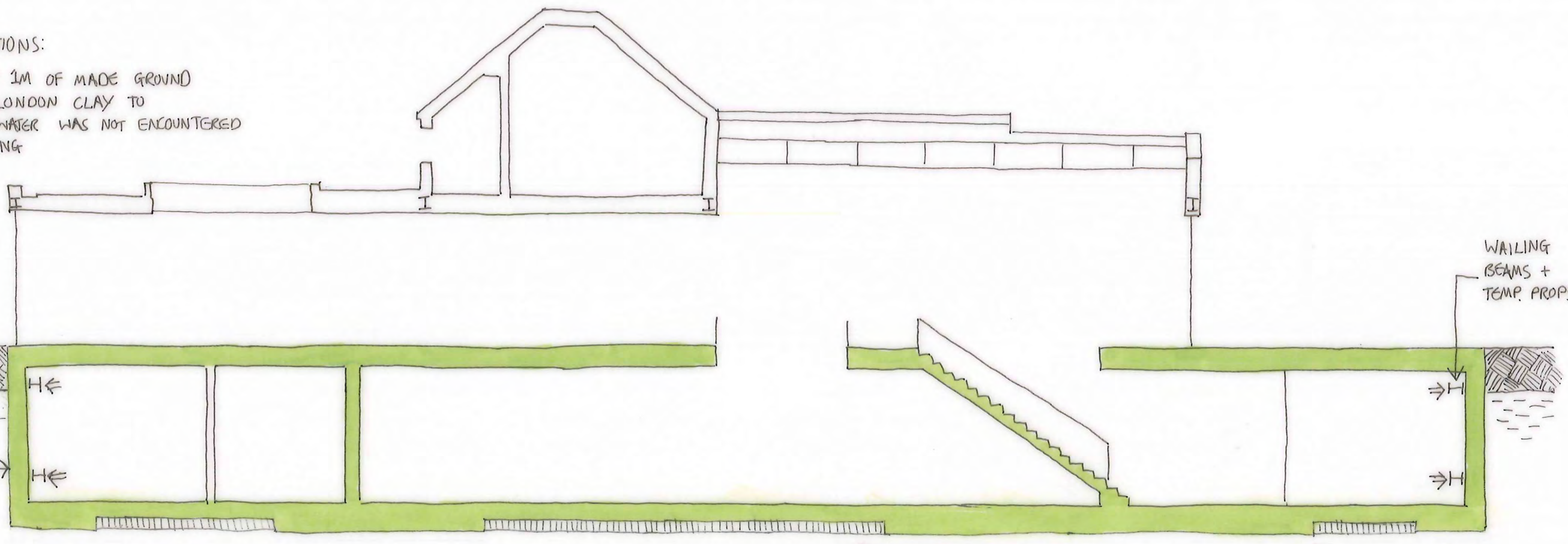
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job no 2150320	drawing no S.100	revision P2

GROUND CONDITIONS:

APPROXIMATELY 1M OF MADE GROUND
OVERLAYING LONDON CLAY TO
DEPTH. GROUNDWATER WAS NOT ENCOUNTERED
DURING DRILLING

NUTLEY TERRACE
ROAD



REINFORCED CONCRETE UNDERPINS
CAST IN 1m SECTIONS 350mm
THICK

↑
300mm THICK RC SLAB ON
CORDEK CELLCORE HEAVE
PROTECTION

↑
RC EDGE
THICKENINGS

WALLING
BEAMS +
TEMP. PROPS.

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rev	date	by	chk	description

drawing title
**PROPOSED SECTION
A-A**

scale(s) date drawn
1:00 @ A3 Oct '15 ISS

drawing status
PRELIMINARY

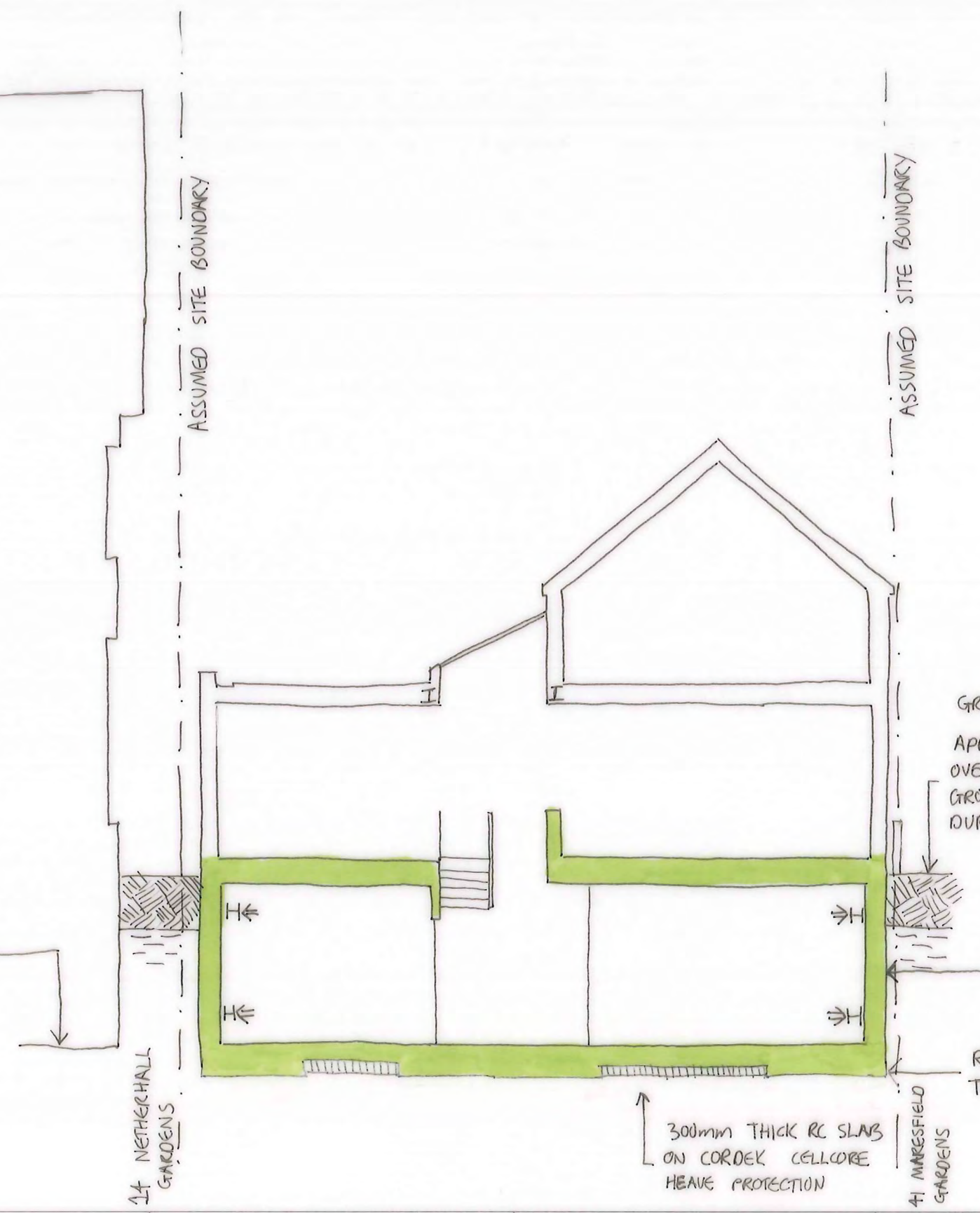
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job title
**NO. 10 NUTLEY TERRACE
LONDON NW3 5SB**

job no 21050320	drawing no S.200	revision P1
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BASEMENT CONSTRUCTION @ 14 NETHERHALL GARDENS SHOWN IN ACCORDANCE WITH PLANNING APPLICATION.



GROUND CONDITIONS:
APPROXIMATELY 1m OF MADE GROUND OVERLAYING LONDON CLAY TO DEPTH GROUNDWATER WAS NOT ENCOUNTERED DURING DRILLING

REINFORCED CONCRETE UNDERPINS CAST IN MAXIMUM 1m SECTIONS 350mm THICK.

300mm THICK RC SLAB ON CORDEX CELLCORE HEAVE PROTECTION

RC EDGE THICKENINGS

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rev	date	by	chk	description

drawing title
PROPOSED SECTION B-B

scale(s) date drawn
1:100 @ A3 Oct '15 JJS

drawing status
PRELIMINARY

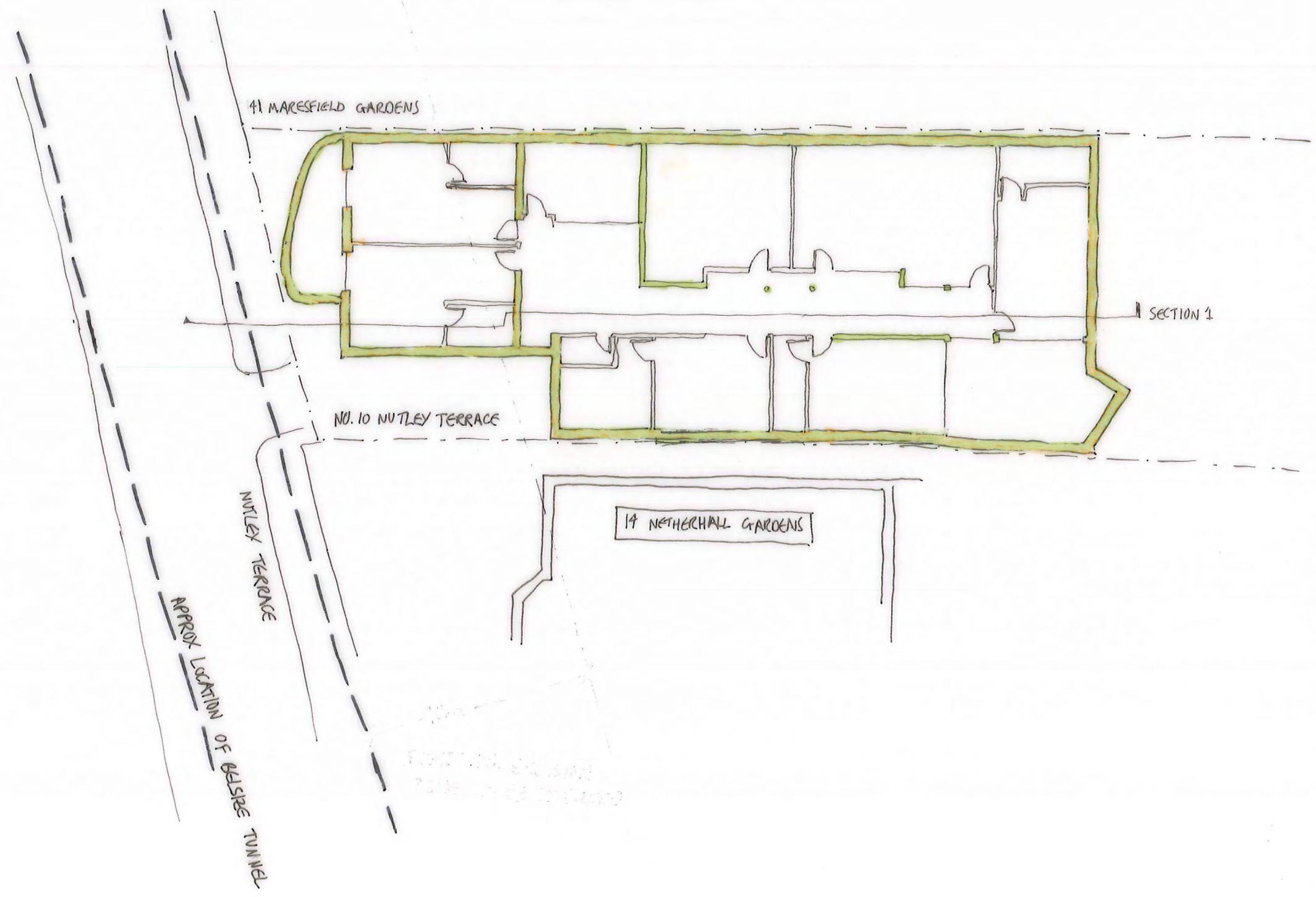
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rev	date	by	chk	description
P2	Nov'15	ISS	SSM	Walls AMENDED
P1	Sept'15	ISS	SSM	PRELIMINARY

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job title
**NO. 10 NUTLEY TERRACE
LONDON NW3 5SB**

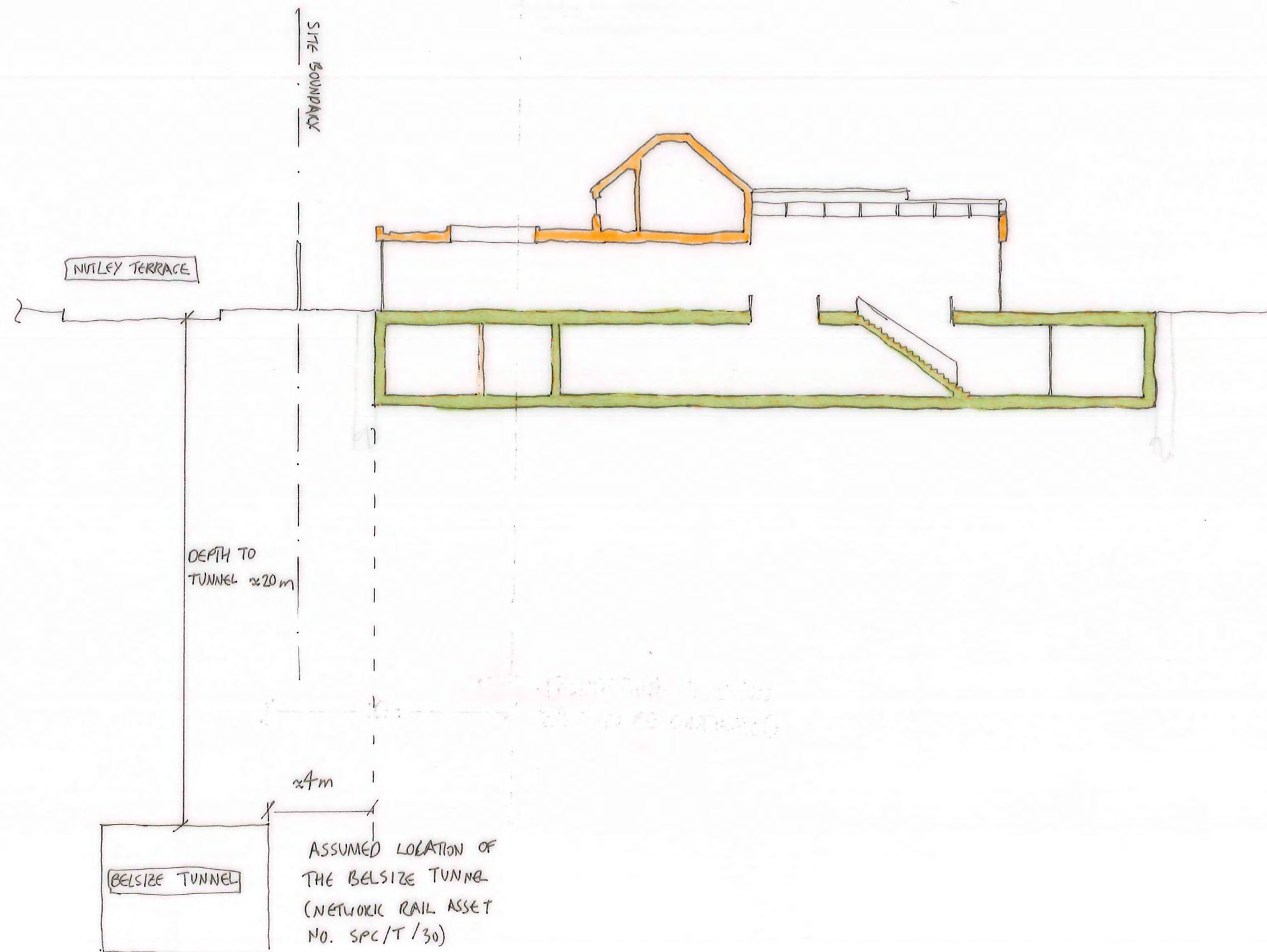
drawing title
**LOWER GROUND
FLOOR PLAN**

scale(s) date drawn
1:200 @ A3 Sept'15 ISS

drawing status
PRELIMINARY

job no	drawing no	revision
2150320	5.300	P2

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

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job title
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drawing title
**LONG SECTION INC.
BELSIZE TUNNEL
(SECTION 1)**

scale(s) date drawn
1:200 @ A3 Sept'15 IJS

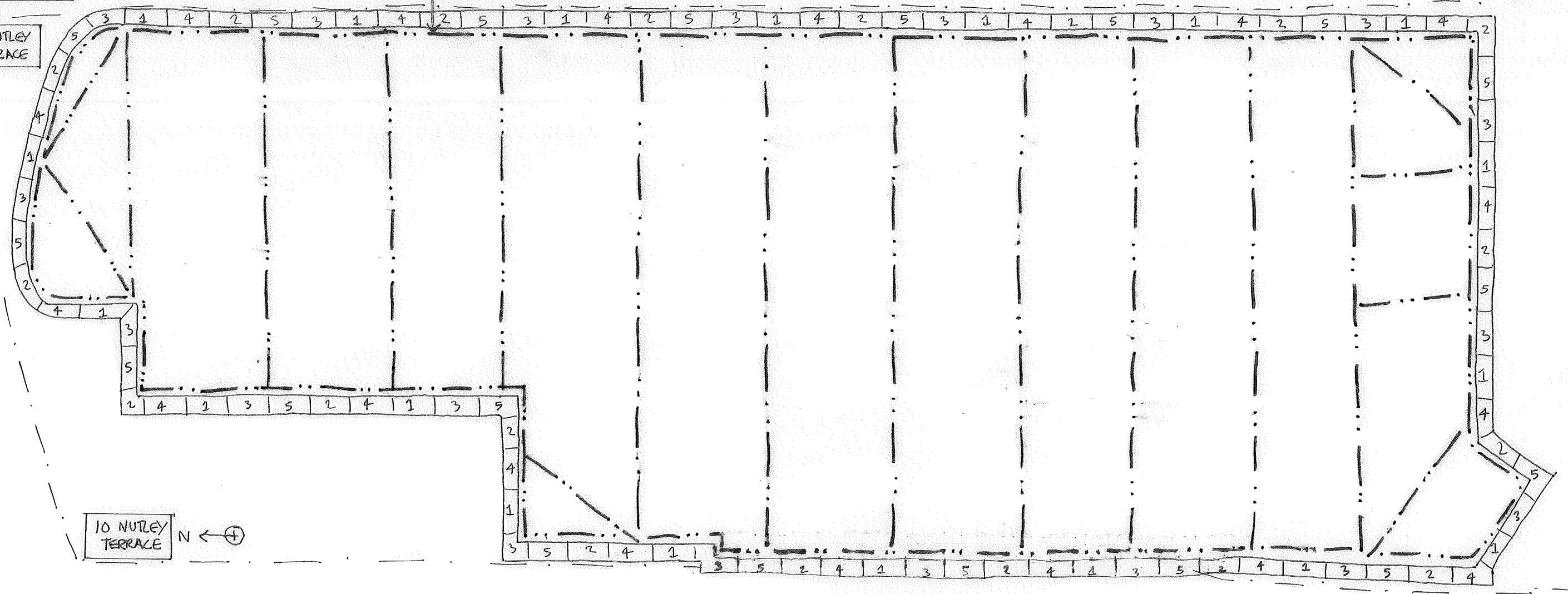
drawing status
PRELIMINARY

job no	drawing no	revision
215 0320	5.301	P1

REINFORCED CONCRETE UNDERPINS REQUIRE PROPPING DURING EXCAVATION AND UNTILL NEW SLABS ARE CURED SUFFICIENTLY. UNDERPINS TO BE PROPPED USING WALLING BEAMS & RAKING PROPS. LAYOUT IS INDICATIVE ONLY. TEMPORARY WORKS TO BE DESIGNED & DETAILED BY CONTRACTOR.

41 MARESFIELD GARDENS

10 NUTLEY TERRACE



10 NUTLEY TERRACE N ← ⊕

14 NETHERHALL GARDENS

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rev	date	by	chk	description
P2	14/01/15	ISL	SM	WALL AMENDED
P1	08/11/15	ISL	SM	PRELIMINARY

drawing title
INDICATIVE TEMPORARY PROPPING LAYOUT - BASEMENT

scale(s) date drawn
1:100 @ A3 Oct '15 ISS

drawing status
PRELIMINARY

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job title
**NO. 10 NUTLEY TERRACE
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job no	drawing no	revision
2150320	S.302	P2