**11 CANNON LANE, LONDON, NW3 1EL.**

**PROPOSED REDEVELOPMENT OF SITE.**

**TEMPORAY WORKS TO PROTECT UPSLOPE BOUNDARIES AND ALLOW REDUCTION IN SITE LEVELS.**

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**Introduction.**

A planning application has been submitted for the demolition of the present house, bulk excavation to existing lower ground floor levels and the construction of a new three storey property with a single storey basement under part of the new property footprint.

Temporary construction procedures/works will be required to provide support to, and protection from movement to the structures surrounding the site boundary whilst reduction of the site levels takes place. Such temporary structures are normally the responsibility of the appointed main contractor for the works, and this report outlines a method that could be employed. Final design, method and implementation will be the responsibility of the Client appointed Main Contractor.

**Site Investigation**

A site investigation and site study has been carried out by Messrs. Chelmer Consultancy Services, their findings and recommendations are shown in their report BIA/4938.

**Form Of Temporary Works To Protect The Site Boundaries and Design Parameters.**

Temporary works will be required to the boundaries with no 24 Well Road to the west and no 14 Cannon Place to the north. It is envisaged that the temporary works will form part of the later permanent works supporting the higher ground levels.

The design of the temporary works shall take into account the following;

1. Earth pressures from the surrounding grounds, and a groundwater level 3.0m below existing ground level.
2. Dead and imposed loads to the existing structures on and adjacent to the site boundaries with no 24 Well Road and 14 Cannon Place. The design shall also consider all loads from structures that fall within the potential zone of influence of active pressures on the temporary works.
3. An increased surcharge/lateral loads from upslope retaining walls adjacent to the boundaries with 24 Well Road and 14 Cannon Place.
4. Where the temporary works form part of the permanent works their design will also need to consider; a) swelling displacements / pressures from the underlying clays, and b) concrete protection from sulphate attack.

The following geotechnical design parameters shall be used when calculating earth pressures, these same values are listed in Chelmer BIA/4938.

| | | |
|---|---|---|
| **Made Ground** | Unit Weight | 18.0KN/$m^3$ |
| Sands and silts | Effective cohesion c' | 0 kPa |
| | Angle of internal friction | $28^0$ |

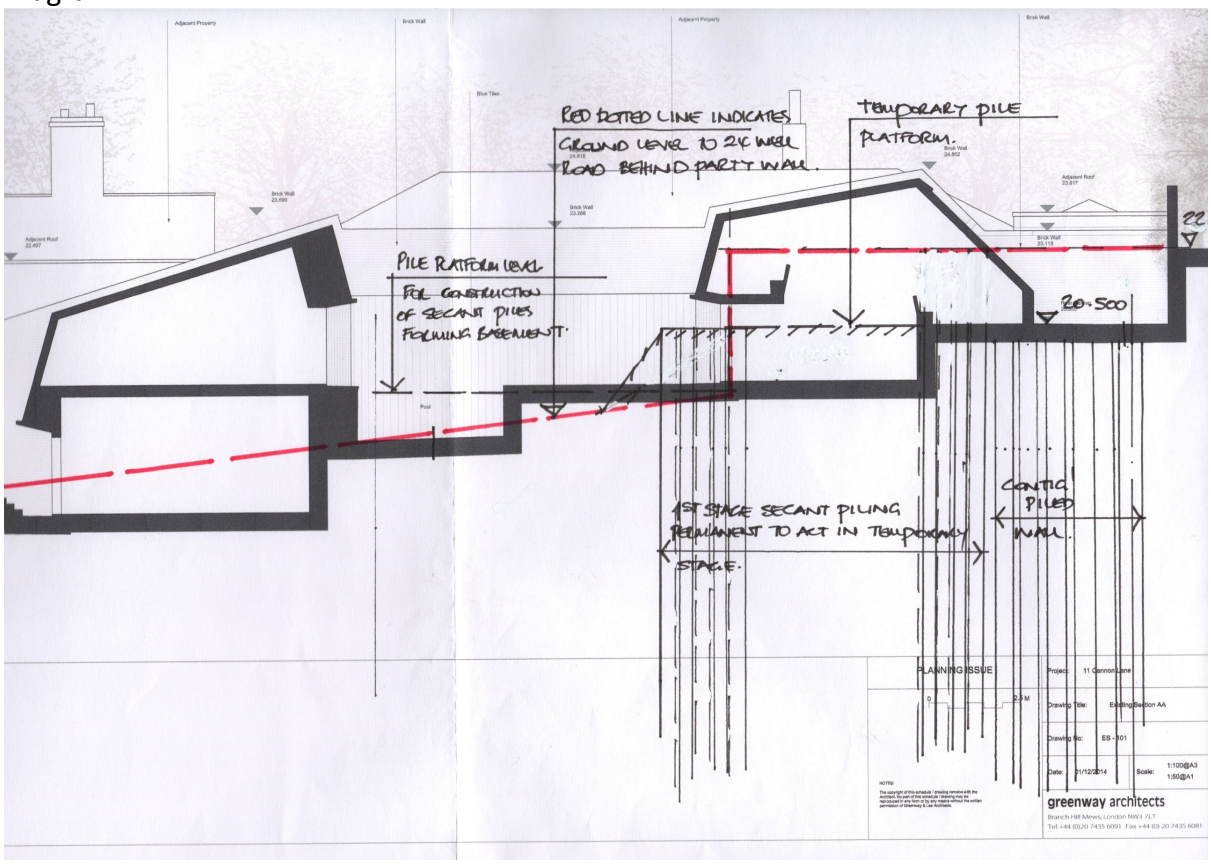
**Claygate Member**

| | | |
|---|---|---|
| Sands | Unit Weight | 18.0KN/$m^3$ |
| | Effective Cohesion, c' | 0 kPa |
| | Angle of internal friction | $32^0$ |
| Sandy Clays | Unit Weight | 20.0KN/$m^3$ |
| | Effective cohesion, c' | 0 kPa |
| | Angle of internal friction | $25^0$ |
| | Coefficient of earth pressure at rest, $k_0$ | 1.50 after higher pressure in response to installation of piles. |

The design of the temporary works shall use the above design parameters with any appropriate partial safety factors.

**Temporary Works Proposal**

Diagram 1.




Refer to Diagram 1. Above;

- The red dotted level indicates the existing retained site levels to no 24 Well Road and 14 Cannon Place.
- To allow reduction of site levels temporary works will take the form of both contiguous and secant piled walls. Secant piled walls will be used where they will form part of the permanent property works and contiguous plies where they will for part of the permanent external works.
- A site piling platform will be provided at existing higher site level at approximately 20.500. Piling shall be formed to part of the site perimeter to no 24 Well Road, 14 Cannon Place and Cannon Lane as shown on diagram 2.
- Piles shall be designed for their top portion to act as cantilevers to allow initial site reduction of levels to say 21.000 when the first temporary or permanent lateral pile propping system shall be fixed.
- Lateral soil anchors may be required in the permanent condition to support the piled walls, wayleaves will be required for these agreed with the adjoining properties.
- Piles, prop spacing and design shall limit lateral deflection at any point along the height of the piled wall to no greater than 5mm.
- As bulk excavation continues piled walls shall be monitored daily for lateral movement using precise levelling. Any results showing movement close to 5mm and increasing, excavation works will cease and propping arrangements re assessed.

Diagram 2.

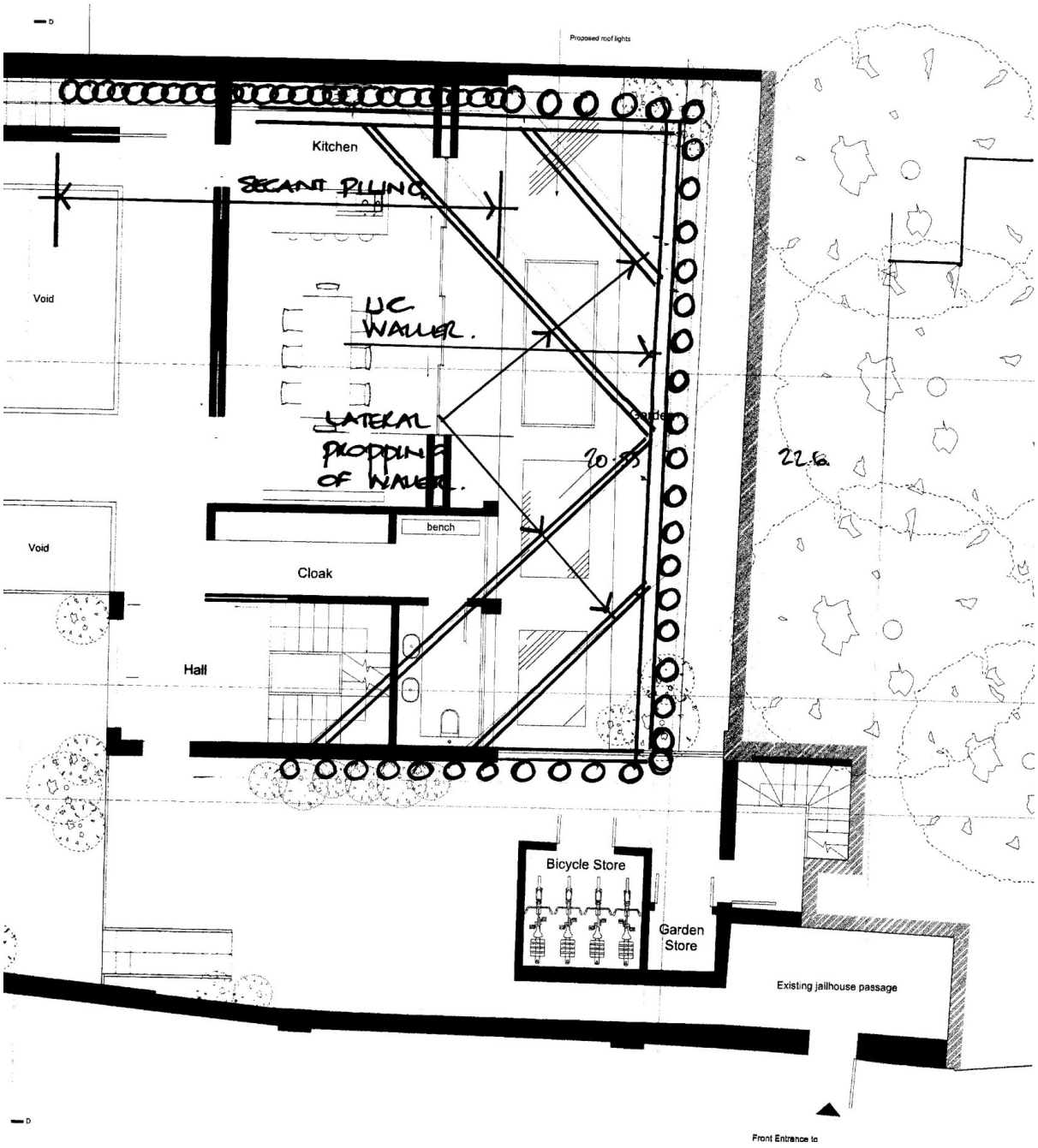
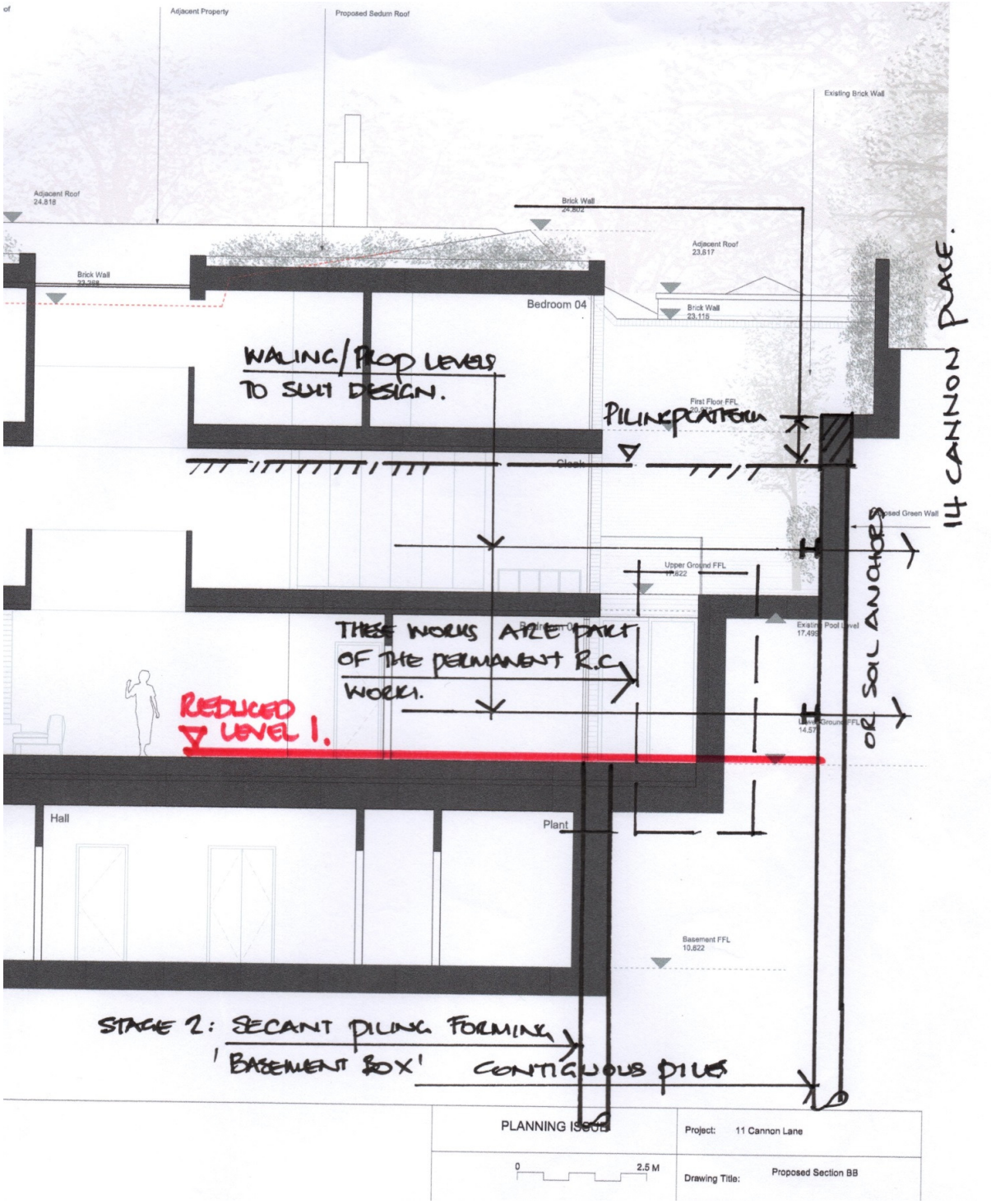



Diagram 2 shows the proposed plan extent of the piled walls for temporary works, secant piling will be required on the boundary with no 24 Well Road where these piles will form part of the permanent works of the property.

Temporary propping of the piles is shown as steel U.C. waler beams with proprietary adjustable lateral props (Mabey or similar). Walers and lateral props shall remain in place until permanent works support the piled walls.

Diagram 3,




See diagram 3;

- Piled perimeter formed as described above, waling and propping to suit design loads.
- Once reduced level 1 is formed insert stage 2. Secant piling forming basement box.
- Form permanent works removing temporary lateral propping as permanent works provide lateral support,