

Land adjacent to No.1 Elsworthy Terrace,  
London NW3  
Appendix 10

---



**BCS Consulting**

Hamdan House, 760 High Road,

London, N12 9QH.

T: 0208-446-4650

## **BASEMENT CONSTRUCTION METHOD STATEMENT**

**PROJECT REF:** 15385  
**ADDRESS:** 1 Elsworthy Terrace,  
London,  
NW3.  
**CLIENT:** Morris Nourani  
**DATE:** 16/12/15

This document has been prepared and checked by;

**Luke Smith, BSc (Hons), MSc.**  
(BCS Project Engineer)

**Eur Ing Barry. C. Smith BSc (Eng) CEng MICE FFPWS**  
(BCS Company Director)

**TABLE OF CONTENTS**

I.	PRELIMINARIES	3
II.	SUMMARY OF PROPOSED WORKS	3
III.	FUNDAMENTAL CONSTRUCTION AREAS	3
IV.	SITE LOCATION	4
V.	SCOPE OF DOCUMENT	4
VI.	GENERAL COMMENTS	5
VII.	BASEMENT CONSTRUCTION	5
VIII.	SUGGESTED METHOD STATEMENT	6
1	BASEMENT PILING	6
2	-2 LEVEL BASEMENT CONSTRUCTION	6
3	-1 LEVEL BASEMENT CONSTRUCTION	7
4	DE-WATERING DURING CONSTRUCTION	8
IX.	REFERENCES	9
X.	APPENDICES	10

## **I. PRELIMINARIES**

**SITE:** 1 Elsworthy Terrace, London, NW3.

**CLIENT:** Morris Nourani.

**ARCHITECT:** Ko and Partners.

### **DISCLAIMER:**

*The primary details contained within this document are generated from drawings produced by Ko and Partners 433-A-001 to 433-A-017 and a Basement Impact Assessment report (BIA) produced by Geo-Environmental & The Budgen Partnership.*

*This document is intended for the exclusive usage of the client /s listed above, the report remains the property of BCS Consulting and must not be reproduced in full or in part or used by any third party without prior written consent. This method statement is not intended as an engineering design package and should not be relied on solely for any construction processes and should be read in conjunction with relevant Structural Engineering and Architectural packages.*

## **II. SUMMARY OF PROPOSED WORKS**

It is proposed to form of a new double storey basement and construct a 2-storey new build residence above, built off of the basement structure.

## **III. FUNDAMENTAL CONSTRUCTION AREAS**

- PERIMETER BASEMENT WALLS TO BE FORMED IN CONTIGUOUS PILING ENABLING THE FULL REQUIRED BASEMENT DEPTH TO BE ACHIEVED.
- A MINIMUM OF TWO ROWS OF HORIZONTAL PROPS WILL BE REQUIRED AT THE PROPOSED FLOOR LEVELS SPANNING ACROSS THE WHOLE SITE. PROPS SHOULD REMAIN IN PLACE UNTIL THE BASEMENT AND FLOOR SLABS HAVE BEEN FULLY CONSTRUCTED AND HAVE SUFFICIENTLY CURED PROVIDING PERMANENT LATERAL RESTRAINT TO THE PILED WALLS.

#### IV. SITE LOCATION

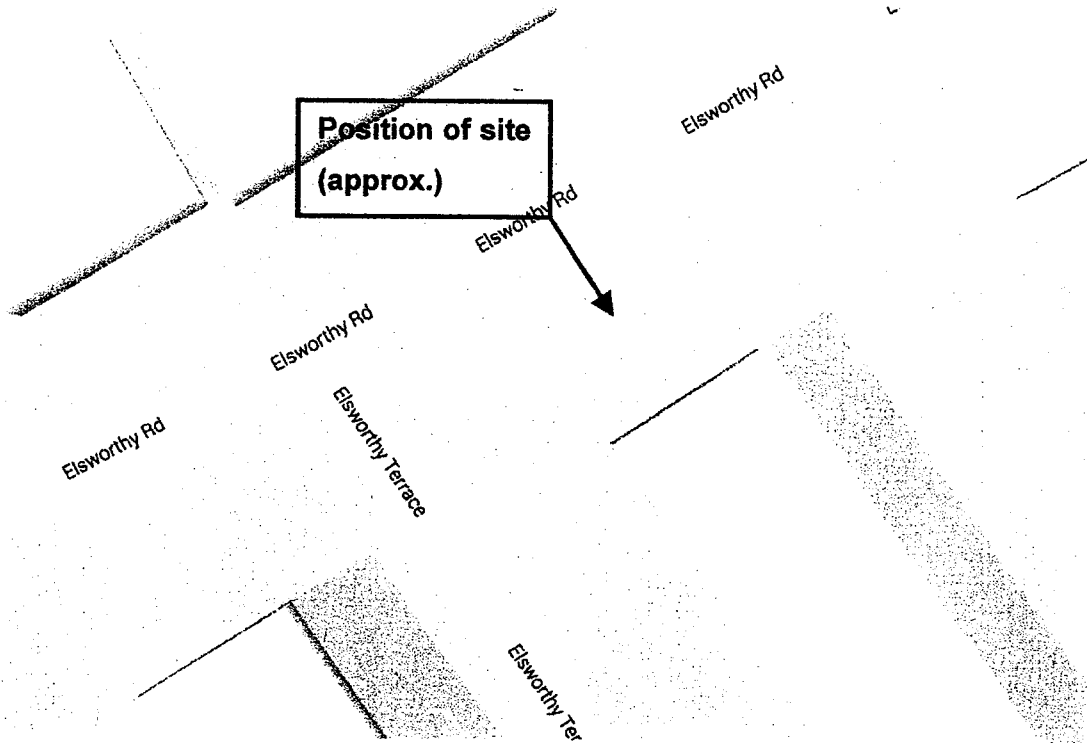


Fig.1 - Site map (Image from Google Maps, Copyright 2015).

#### V. SCOPE OF DOCUMENT

The content of this document should be read in conjunction with temporary works drawing set PR1-PR2 and the permanent works structural engineer's package along with any other relevant drawings/details.

The purpose of this package is to provide a method statement and suggested construction sequence to enable the required elements of temporary works to be installed thus allowing the construction of the permanent works to be carried out.

It should be noted that all temporary works drawings are indicative only and are not intended as detailed construction drawings therefore all specific construction details should be provided by the structural engineer or other relevant parties. Construction sequences are illustrative and should not be relied on to provide specific construction arrangements or any dimensions; these should be specified by others and confirmed on site.

## VI. GENERAL COMMENTS

- The contractor is responsible for the design and correct installation of all temporary works required to safely install the proposed basement and any other affiliated works. The contractor is to ensure that all excavations, any new structure and any neighbouring structures are adequately supported for the full duration of the works.
- For all details relating to hydrology, soil conditions and the potential effects the proposed development has on it's surrounding see Geo-Environmental/The Budgen Partnership B.I.A.

## VII. BASEMENT CONSTRUCTION

### Basement walls

It is suggested that perimeter basement walls are to be formed in contiguous piles with an inner lining wall to provide an inner water barrier. In the permanent case piled walls will support any load applied from the new superstructure over as well as resisting the retaining soil, surcharging & any water present behind them (see fig 1). All piles and piles caps to be designed by specialist contractor.

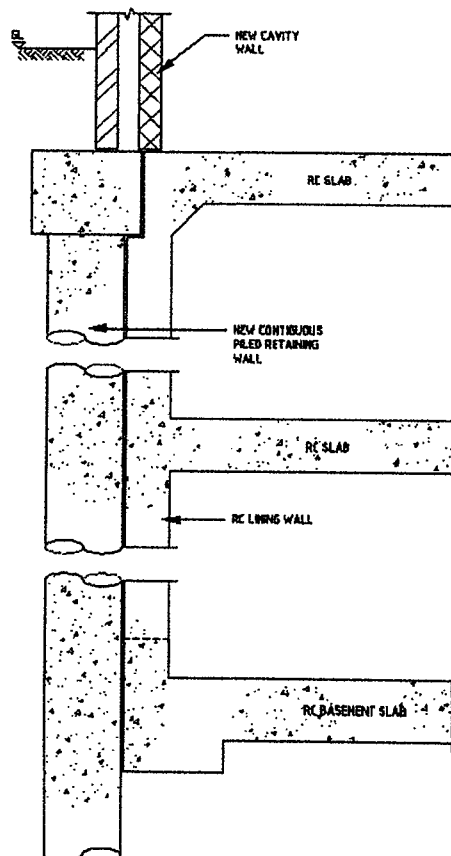


Fig .1 - Typical piled wall section.

## **VIII. SUGGESTED METHOD STATEMENT**

### **1 BASEMENT PILING**

- 1.1 Strip site, breaking out and disposing of any hard surfaces/below ground structures within the proposed construction area. (A full site survey must be carried out before any works commence to locate any existing services etc. that may be present)
- 1.2 Reduce level of site to allow installation of piling to be carried out. (During excavation ensure vertical faces are shored at all times. Where pile caps are to be at a height below ground level it may be necessary to install sacrificial trench sheeting to retain soil above capping beam.)
- 1.3 Install contiguous piles to the full perimeter of the basement (all piles to be designed by specialist contractor designed to retain lateral pressures between both temporary and permanent prop positions.
- 1.4 Trim pile heads to required cut off levels to allow installation of capping beams to be carried out.
- 1.5 Excavate perimeter of basement to pile cap formation level allowing installation of formwork to be completed.
- 1.6 Fix reinforcement in position in preparation for casting pile cap.
- 1.7 Pour pile cap to specialist contractor's specification. Use vibrating poker to ensure full compaction of concrete and removal of trapped air pockets within forms

### **2 -2 LEVEL BASEMENT CONSTRUCTION**

- 2.1 Once pile cap has sufficiently cured (min 24 hours) reduce level within basement to allow first row of horizontal propping and wallings to be positioned.
- 2.2 Before installation of propping is carried out, a partial lining wall RC ring section should be cast doveled into the piled wall with projecting vertical starter bars also fixed. The RC ring will allow the basement slabs and lining wall to be tied in and constructed at a later stage without the need for moving props.
- 2.3 Following completion of lining wall RC ring, full width high level lateral "Mabey Mass 50" or similar engineer approved props are to be installed in accordance with propping plan.
- 2.4 Progress excavation to basement level -1 to position of second row of propping (shown below -1 level slab on construction sequence – step 5). Install partial lining wall RC ring, all perimeter wallings and full width lateral props as 2.2-2.3 above.

- 2.5 Progress excavation to basement level -2 and excavate for reinforced concrete basement slab ensuring lateral propping remains in place at all times.
- 2.6 Compact base of slab excavation and place reinforcing bars to structural engineer's specification.
- 2.7 Cast basement slab and lining wall kickers to structural engineer's details using vibrating pokers to ensure full coverage of concrete and removal of trapped air pockets.
- 2.8 Once base slab has sufficiently cured (min 48 hours) -2 level lining wall construction can begin.
- 2.9 Formwork to be secured with heavy timbers and "Leada Acrow" or similar raking props supported off base slab to retain the concrete during pouring. 500mm clearance should be left between the top of the formwork and the underside of partial lining section and a 'letter box' chute should be formed to enable concrete to be poured and sufficiently vibrated.
- 2.10 Fix reinforcing in position in preparation for casting of wall section.
- 2.11 Pour concrete up to lip of 'letter box' to form lining wall to structural engineers details. Use vibrating pokers to ensure full compaction of concrete within forms. Following vibration remove 'letter box' and place a vertical shutter to the remaining section of the lining wall stem leaving 75mm clearance between lining wall section. Pour concrete into remaining section of stem ensuring good compaction within form using a needle head vibrating poker.
- 2.12 Allow 48 hours curing time after pouring, clean underside of partial lining wall section in preparation for installation of grouting.
- 2.13 Inject non-shrink high strength cementitious grout between lining wall sections to provide a robust joint between RC pin sections.

### 3 -1 LEVEL BASEMENT CONSTRUCTION

- 3.1 Once -2 level lining walls have sufficiently cured (min 48 hours) construction of -1 level floor slab can be carried out.
- 3.2 Formwork to be installed supported back on to -2 level slab below with "Leada Acrow" or similar trench props to support the weight of the concrete during pouring.
- 3.3 Place slab reinforcing bars to structural engineer's specification.
- 3.4 Cast -1 level slab to structural engineer's details using vibrating pokers to ensure full coverage of concrete and removal of trapped air pockets.
- 3.5 Once base slab has sufficiently cured (min 48 hours) -1 level lining wall construction can begin.



- 3.6 Repeat steps 2.9-2.13 to form and grout -1 level lining walls. (Formwork to be supported with raking props back on -1 level slab, all temporary support below -1 level slab to remain in place until all slabs have been cast and cured).
- 3.7 Once -1 level lining walls have sufficiently cured (min 48 hours) construction of ground floor slab can be carried out.
- 3.8 Repeat steps 3.2-3.4 to construct ground floor slab. (Formwork to be temporarily supported off -1 level slab, all temporary support below -1 level slab to remain in place until all slabs have been cast and cured).
- 3.9 Once slabs have sufficiently cured (min 14 days) temporary propping can be removed and the construction of the superstructure can continue.

#### 4 DE-WATERING DURING CONSTRUCTION

- 4.1 If during any excavation work significant ground water ingress is found, a local 1m<sup>3</sup> sump should be provided formed at a level below the base of the excavation being worked on.
- 4.2 The vertical faces of the sump chamber should be supported with a pre-made shutter positioned in the area excavated for the sump. The sump shutter should be constructed from 18mm thick plywood sheets with drilled vertical faces to provide a porous surface allowing ground water to flow through.
- 4.3 Ground water will now flow into the excavated sump to be extracted using a suitable Semi Trash dewatering pump and appropriate diameter discharge hose.
- 4.4 Discharge from the sump should be directed to the nearest manhole and a drain filter should be fitted to avoid any large debris being deposited into the sewer.
- 4.5 After completion of the excavation and preparation for the concrete pour has been carried out ensure the sump area is fully dewatered before removing pump and pouring concrete.
- 4.6 The process above should then be repeated for each excavation where ground water is found.

## **IX. REFERENCES**

### **1) Codes / Regulations**

- I) Eurocode : Basis of structural design (BS EN 1990:2002)
- II) UK National Annex for Eurocode : Basis of structural design (NS BS EN 1990:2002)
- III) Eurocode 1 : Actions on structures (BS EN 1991:2005)
- IV) UK National Annex for Eurocode 1 : Actions on structures (NA BS EN 1991:2005)
- V) Eurocode 2 : Design of concrete structures (BS EN 1992-1-1:2004)
- VI) UK National Annex for Eurocode 2 : Design of concrete structures (NA BS EN 1991-1-1:2004)
- VII) Eurocode 3 : Design of steel structures (BS EN 1993-1-1:2005)
- VIII) UK National Annex for Eurocode 3 : Design of steel structures (NA BS EN 1993-1-1:2005)
- IX) The Building Regulations 2000 : part A - Structure

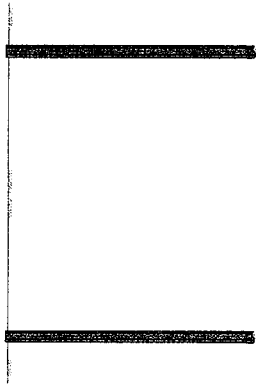
### **2) Books / Manuals**

- I) How to Design Concrete Structures using Eurocode 2 – A. J. Bond et al.
- II) Reynolds's reinforced concrete designer's handbook 11<sup>th</sup> Edition - C. E. Reynolds et al.
- III) Standard Method of Detailing Structural Concrete 3<sup>rd</sup> Edition (June 2006) – IStructE.

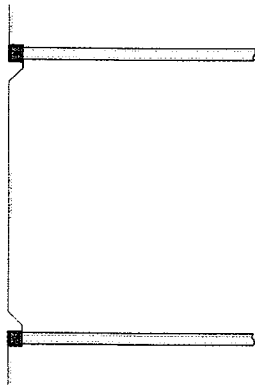
X. APPENDICES

**PILED BASEMENT CONSTRUCTION SEQUENCE (SECTION A-A)**

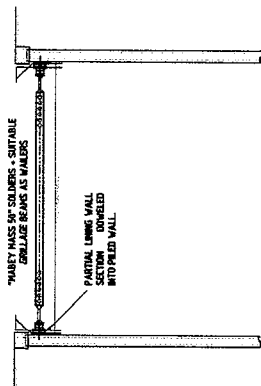
1. STRIP -1 LEVEL SITE READY FOR PILING



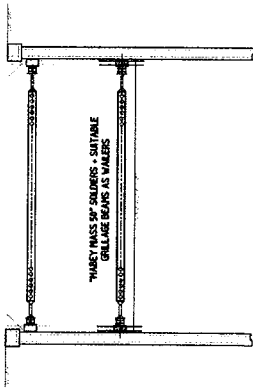
2. INSTALL CONTIGUOUS PILED WALLS TO PERIMETER OF BASEMENT. ONCE SUFFICIENTLY CURVED FROM BACK PILE HEADS TO CUT OFF LEVELS.



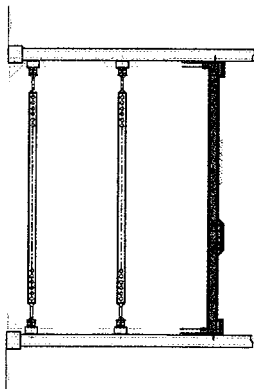
3. EXCAVATE TO ALLOW INSTALLATION OF CAPPING BEAM - CAST ALL PILE CAPS



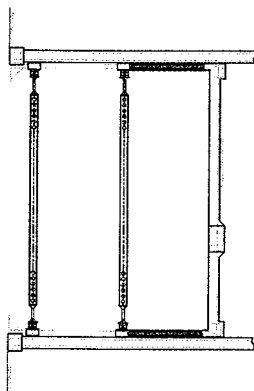
4. REDUCE LEVEL WITHIN BASEMENT TO ALLOW CASTING OF PARTIAL RC LINING WALL SECTIONS. FOLLOWING FORMATION OF WALL SECTION, INSTALL 1ST ROW OF TEMPORARY PROPPING. RC LINING WALL SECTION MUST BE USED AS A WALKER



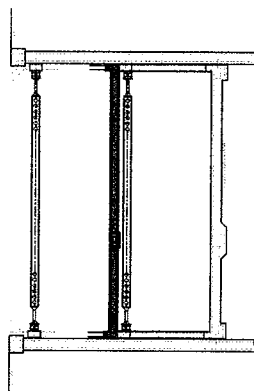
5. EXCAVATE BASEMENT TO LEVEL TO ALLOW INSTALLATION OF DOMELED RC LINING WALL SECTION 2. 2ND ROW OF TEMPORARY PROPPING AS STEP 4. (RC LINING WALL SECTION MUST NOT BE USED AS A WALKER)



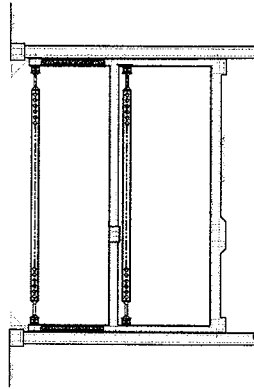
6. PROGRESS EXCAVATION TO BASEMENT FORMATION LEVEL AND CAST RC SLAB AND GROUND BEAM.



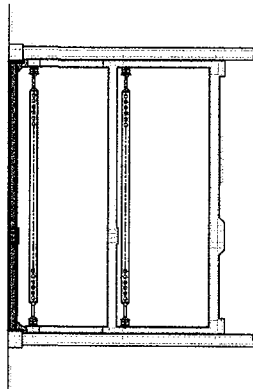
7. CAST -2 LEVEL LINING WALLS UP TO UNDERSIDES OF PARTIAL LINING SECTION OVER UNSET HIGH STRENGTH GROUT BETWEEN NEW AND PREVIOUSLY CAST PARTIAL WALL SECTION



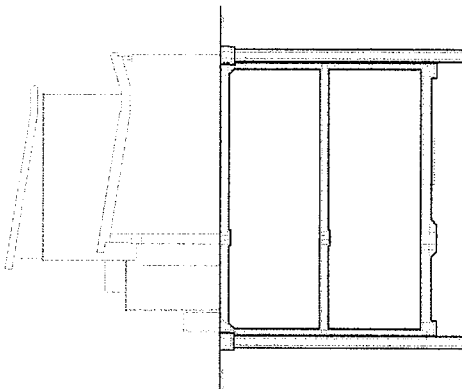
8. CAST -1 LEVEL RC FLOOR SLAB AND RC BEAMS AS REQUIRED IN DETAILED S.E. DESIGN PACKAGE



9. CAST AND GROUT -1 LEVEL LINING WALLS AS STEP 7.



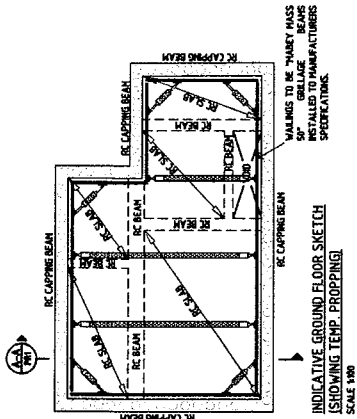
10. CAST GROUND FLOOR LEVEL SLAB & RC BEAMS AS REQUIRED IN DETAILED S.E. DESIGN PACKAGE



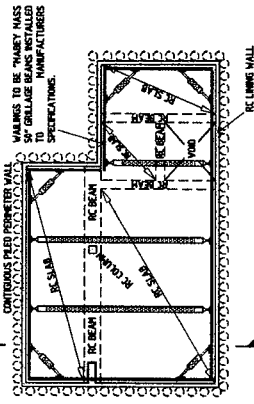
11. FOLLOWING COMPLETION AND ADEQUATE CURING OF BASEMENT STRUCTURE REMOVE TEMPORARY PROPPING AND CONTINUE WITH CONSTRUCTION OF SUPERSTRUCTURE.

**INDICATIVE GROUND -1 & -2 LEVEL PLANS**

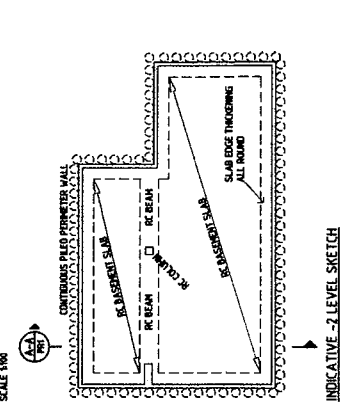
THE PLANS AND SECTIONS SHOWN ON THIS SHEET FORM PART OF A SUGGESTED CONSTRUCTION SEQUENCE PRODUCED PRIOR TO ANY STRUCTURAL CALCULATIONS BEING COMPLETED. THE SECTIONS AND PLANS ARE INTENDED TO ILLUSTRATE THE SEQUENTIAL CONSTRUCTION OF THE BASEMENT. ALL STRUCTURAL ELEMENTS SHOWN ARE PRELIMINARY AND WILL BE SUBJECTED TO DETAILED STRUCTURAL SPECIFICATIONS AT THE FULL ENGINEERING DESIGN STAGE. THIS DRAWING SHOULD UNDER NO CIRCUMSTANCES BE USED FOR ANY CONSTRUCTION PURPOSES.



INDICATIVE GROUND FLOOR SKETCH (SHOWING TEMP. PROPPING) SCALE 1/80



INDICATIVE -1 LEVEL SKETCH (SHOWING TEMP. PROPPING) SCALE 1/80



INDICATIVE -2 LEVEL SKETCH SCALE 1/80

- NOTES:**
- THIS DRAWING IS INTENDED AS AN INDICATIVE SUGGESTED CONSTRUCTION SEQUENCE ONLY. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO PROVIDE A FULL T.M. PACKAGE INCLUDING PROPPING PLAN & T.M. DESIGN CALCULATIONS. THIS DRAWING AND ANY SUPPORTING STRUCTURAL CALCULATIONS SHOULD NOT BE RELIED ON FOR THE REQUIRED T.M. PROPPING.
  - ALL CONSTRUCTION DETAILS TO BE AS RELEVANT ENGINEERS AND ARCHITECTS' DETAILS.
  - THIS DRAWING IS TO BE READ IN CONJUNCTION WITH WRITTEN METHOD STATEMENT.

**DRAFT ISS**

BCS CONSULTING  
 100 High Street, London E14 4JF  
 Tel: 020 7464 4400  
 Fax: 020 7464 4401  
 Email: info@bcsconsulting.com  
 Website: www.bcsconsulting.com

1. Verify Name, London, WIP

DATE: 15/05/15

SUGGESTED CONSTRUCTION SEQUENCE

DATE: 15/05/15

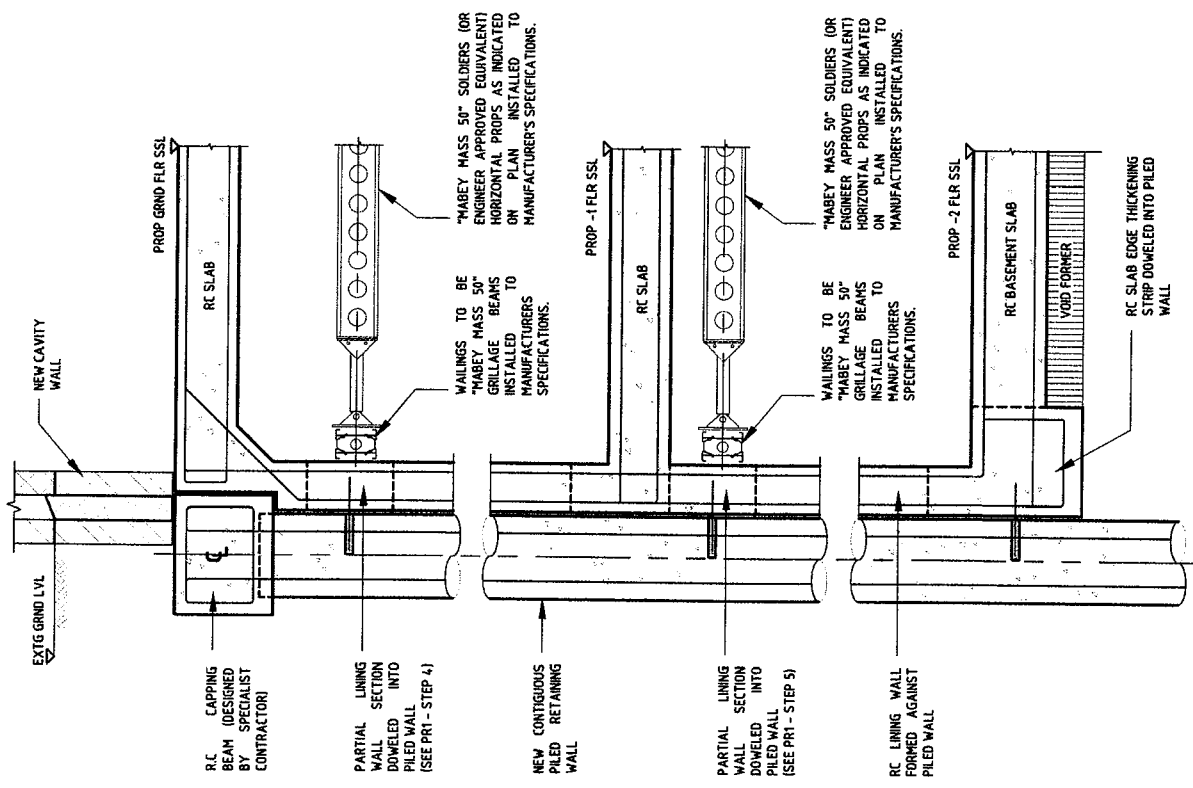
SCALE: 1/80 @ A1

DATE: DEC 2015

SCALE: 1/80 @ A1

# TYP. PROPPING SECTION

SCALE 1:20



## SECTION NOTES

1. RC CAPPING BEAM AND LINK BARS TO BE DESIGNED BY SPECIALIST CONTRACTOR AT DETAILED DESIGN STAGE.
2. PERIMETER BASEMENT RETAINING WALLS FORMED IN CONTIGUOUS CANTILEVERING PILES DESIGNED BY SPECIALIST CONTRACTOR.
3. TOP 3m OF ALL PILES TO BE SLEEVED TO REDUCE IMPACT OF HEAVE ON BASEMENT.
4. ALL GRND & BHT (-1 LVL, -2 LVL) SLAB FINISHES, INSULATION, DPM, WATERPROOFING, TANKING, DRAINAGE ETC. TO ARCHITECT'S DETAILS.

## GENERAL NOTES

ALL PROPPING AND TEMPORARY WORKS TO CONTRACTOR'S DESIGN AND METHOD STATEMENT.

IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO PROVIDE A FULL T.V. PACKAGE INCLUDING PROPPING PLAN & T.V. DESIGN CALCULATIONS FOLLOWING A FULL SOIL INVESTIGATION THIS DRAWING AND ANY SUPPORTING SKETCH CALCULATIONS SHOULD NOT BE RELIED ON FOR THE REQUIRED T.V. PROVISIONS.

ALL CONSTRUCTION DETAILS TO BE AS RELEVANT ENGINEERS AND ARCHITECTS'S DETAILS.

THIS DRAWING IS TO BE READ IN CONJUNCTION WITH WRITTEN METHOD STATEMENT.

THE SECTION SHOWN ON THIS SHEET FORMS PART OF A SUGGESTED CONSTRUCTION SEQUENCE PRODUCED PRIOR TO ANY STRUCTURAL CALCULATIONS BEING CARRIED OUT, THEREFORE ALL DETAILS SHOWN ARE PURELY INTENDED AS INDICATIVE. ALL STRUCTURAL ELEMENTS SHOWN ARE PRELIMINARY AND WILL BE SUPERSEDED WITH DETAILED STRUCTURAL SPECIFICATIONS AT THE FULL ENGINEERING DESIGN STAGE. THIS DRAWING SHOULD UNDER NO CIRCUMSTANCES BE USED FOR ANY CONSTRUCTION PURPOSES.

- ### DRAWING NOTES
1. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT THIRD PARTY ARCHITECTS & OTHER SPECIALISTS' DRAWINGS AND SPECIFICATIONS.
  2. THIS DRAWING SHOULD NOT BE SCALED IN EITHER PAPER OR DIGITAL FORMAT.
  3. ALL DIMENSIONS AND LEVELS TO BE CONFIRMED BY THE ARCHITECT.
  4. ANY DISCREPANCIES IN DRAWINGS OR DETAILS TO BE IMMEDIATELY REPORTED TO BCS CONSULTING.
  5. THIS DRAWING REMAINS THE PROPERTY OF BCS CONSULTING AND MUST NOT BE REPRODUCED WITH OUT PRIOR WRITTEN CONSENT.
  6. ALL DETAILS ARE SUBJECT TO BUILDING REGULATIONS APPROVAL.
  7. TO ENSURE THIS DRAWING HAS BEEN PRINTED CORRECTLY THE BAR BELOW SHOULD MEASURE 50mm:
- 
8. ALL WORK CARRIED OUT SHOULD ADHERE TO SPECIFIC DRAWING NOTES & GUIDANCE AND COMPLY WITH CURRENT RELEVANT HSE & CDH REGULATIONS TO ENSURE SAFE SITE PRACTICE IS MAINTAINED IN ACCORDANCE WITH DETAILS PRODUCED BY OTHERS.
  9. FOR GENERAL NOTES SEE DRAWING 15385/GRN01
  10. ALL DIMENSIONS SHOWN ARE IN mm UNLESS OTHERWISE STATED.

## DRAFT ISSUE

DATE	REV	DETAIL	BY

**BCS CONSULTING**  
 Hamdan House, 2nd Flr,  
 760 High Road, London, N12 9QH.  
 T: 020-8446 4650  
 F: office@bcscsconsulting.co.uk  
 W: www.bscsconsulting.co.uk

**PROJECT**  
 1 Elsworthy Terrace,  
 London,  
 NW3

**DRAWING TITLE**  
 TYPICAL PILED WALL 2-STOREY  
 BASEMENT SECTION

<b>SCALE</b>	1:20 @ A3	<b>DRAWN</b>	JB
<b>DATE</b>	DEC 2015	<b>CHECKED</b>	---
<b>DRAWING No.</b>	15385 / PR2	<b>REVISION</b>	-



# Ko and Partners Architects

72A Disraeli Road  
London SW15 2DX

T 020 8785 3501  
E [postbox@koandpartners.co.uk](mailto:postbox@koandpartners.co.uk)

## Land to the rear of 1 Elsworthy Terrace, London NW3 3DR

### Estimation of the construction duration

Stage	Estimated Time (weeks)	Description
1	4-6 wks	Site Clearance & Protection
2	16-18 wks	Formation of the basement; including formation of the retaining structure and excavation
3	3-4 wks	Below ground services connection; such as drainage, water and electric supply etc.
4	14 – 16 wks	Formation of the Superstructure; such as external walls, internal floors and walls, roof structure and window installation, etc
5	12-16wks	Internal installation, such as services and internal decoration, etc
6	3-4 wks	Landscaping; including Green Roof and Green Wall installation.
7	1-2 wks	Completion and Check out.