

**General Underpinning Specification for the House - Concrete Underpins**

- The existing basement walls should be underpinned using concrete. The new underpins will transfer the vertical loads from the walls and horizontal loads from the earth.
- Underpinning bases will be excavated in sections not exceeding 1000 mm in width.
- The sequence of the underpinning will take place in a way that any given underpin will be completed and dry-packed for a minimum of 48 hours before the excavation of the adjacent underpin.
- If the existing foundations are found to be unstable, then sacrificial steel jacks should be installed underneath the foundation to support the bottom courses of bricks. The steel jacks are to be left in place and be incorporated into the concrete stem.
- If the ground is found to be unstable, lateral supports should be installed as required to the rear of the excavation and to the sides of the excavated working trench. Front and side faces of the excavation should be supported using trench sheeting or plywood, timber boards and acrow props. Cementitious grout will be poured behind the back shutters to fill up the voids.
- Excavation for the underpin section should be dug in a day (underpin including first part of slab) and the concrete to the base (L shaped underpin comprising underpin and slab section) should be poured by the end of the same day.
- This is to be poured within 50-70mm of the underside of the existing wall foundations.
- On the following day, the gap between the concrete and the underside of the existing foundation should be dry packed with C30/37 Concrete using 5-10mm coarse aggregate and "Combex 100" expanding admixture by Fosroc UK Ltd in accordance with their instruction (or similar approved product)
- When the dry-pack has gained sufficient strength, any protrusions of the footings into the site should be carefully trimmed back using hand tools to avoid causing damage to the foundation and the superstructure. The protrusions should be trimmed back to be flush in-line with the face of the existing wall above.
- Adjacent underpins should be connected using H12 dowel bars 600mm long, 300mm embedment each side, at 300mm vertical centers.
- Grade of concrete should be C30/37 with minimum cement content 300kg/m<sup>3</sup> and maximum free water to cement ratio of 0.60, slump to be 75mm.

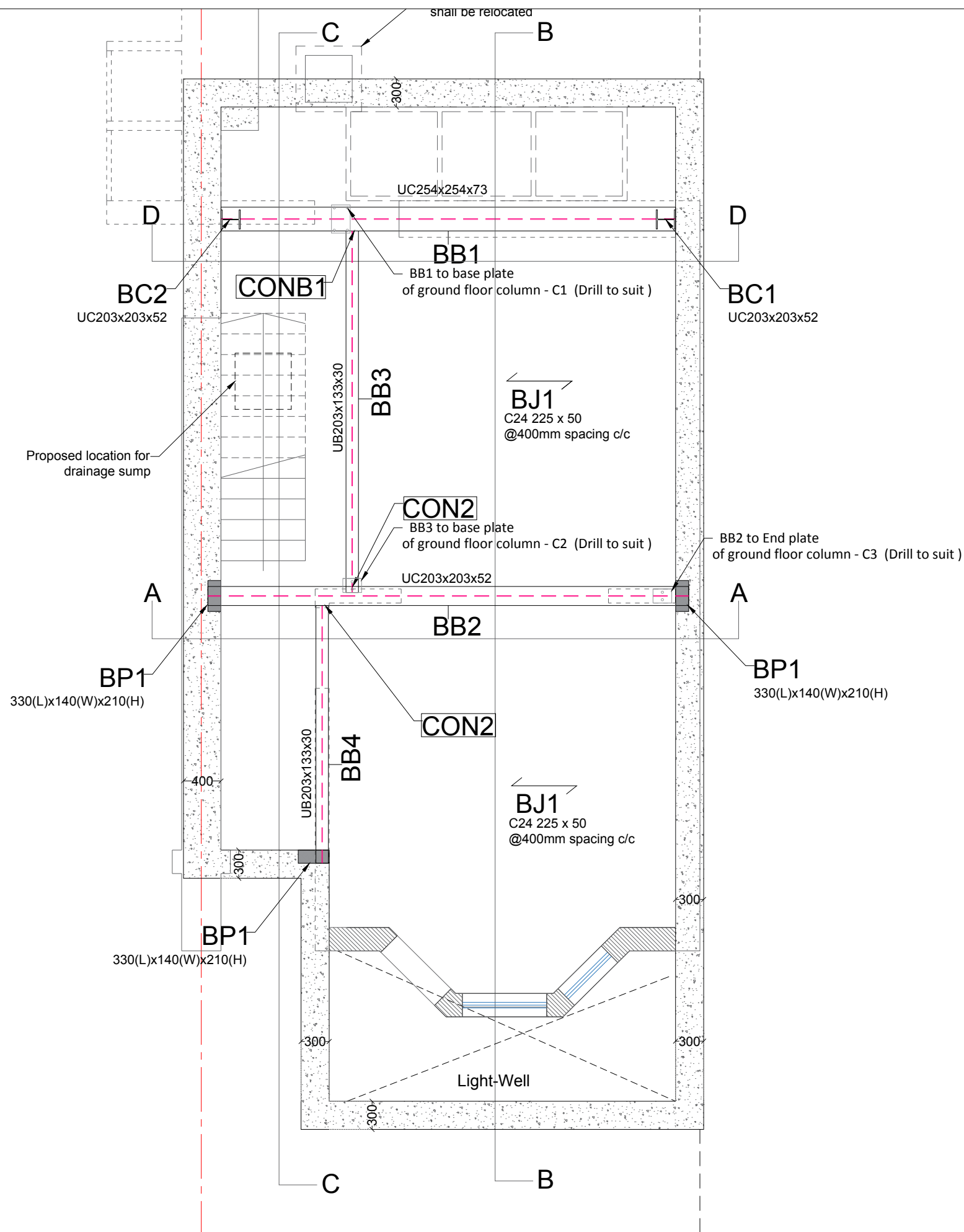
\*All concrete shall be grade C30/37 and grade of reinforcement as 500A  
\* Concrete cover 50mm

\*Grade of steel S355

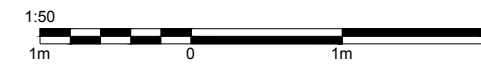
\*Design propping force = 21 kN/m

Underpinning length as 2000mm from outer edge of wall (thickness of wall =Varies 225-440mm)

\*Underpinning must not encroach into neighboring property (ie the back face of the underpinning must line with the back face of the existing party wall over.



**BASEMENT PLAN**  
Scale 1:50



Key	
	Existing Wall
	New Wall
	New Wall (RC)
	Padstone
	Steel Beam

**GENERAL NOTES:**  
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Steel Lengths to contractor to take measurements.

BEAMS SCHEDULE		
BB1	BEAM 1	UB254x254x73 - S355 - SPAN 4850 MM
BB2	BEAM 2	UC203x203x52 - S355 - SPAN 5140 MM
BB3	BEAM 3	UC203x133x30 - S355 - SPAN 3790 MM
BB4	BEAM 4	UC203x133x30 - S355 - SPAN 2750 MM

COLUMNS SCHEDULE		
BC1	COLUMN 1	UC203x203x52 2.575M HEIGHT
BC2	COLUMN 2	UC203x203x52 2.575 M HEIGHT

PADSTONES SCHEDULE	
3No BP1	PADSTONE 1 330(L)x140(W)x210(H)(CONCRETE)

JOISTS SCHEDULE	
BJ1	C24 225 x 50 @ 400mm spacing c/c

**CDM REGULATION HAZARDS RESIDUAL RISKS**

\* A competent contractor shall be appointed experienced in this type of work.

- GENERAL**
- Deep excavations are not to be left open overnight and are to be guarded whilst works are in progress by the use of temporary barriers etc.
  - Personnel are not to enter open excavations unless they have been suitably shored up with trench sheets and props, or similar.
  - Manual handling of concrete blocks & steel beams is to be kept to a minimum via the use of mechanical lifting equipment etc.
  - Wc and hand washing facilities are to be provided on site .
  - Working at heights is to be kept to a minimum and temporary crash decks, or similar, are to be employed at all times. This particularly applies during erection of the basement roof.
  - A suitably qualified contractor is to be employed who is familiar with all site hazards and the management of the same.
  - Edge protection and hand rails are to be provided to all floors above ground floor at all times.
  - Foundations to adjoining buildings are not to be undermined.
  - Existing incoming services are to be located and isolated, by a suitably qualified person, prior to any demolition works.
  - Demolition works are to be carried out in a controlled manner by a suitably qualified contractor. A contractor method statement is to be provided to the project engineers prior to commencing works.
- SITE-SPECIFIC**
- Masonry walls not having proper existing foundations shall be repaired prior to underpinning. Full size bricks shall be used to repair masonry and steel jacks shall be used as per the method statement proposed.
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  - Basement to have double waterproofing protection as per BS 8102. The design and installation of waterproofing is by specialist waterproofing contractor who can also provide warranty.
  - Basement to be fitted with sump to discharge any leakage water.
  - All drainage shall be encased in concrete below the slab and cast monolithically with the slab. Placing drainage on pea shingle below the slab allows greater penetration for water ingress.

R01	Issued For Review	WA	AJ	FM	16/03/21
Rev.	Description	Drw	Chk	Apr	Date

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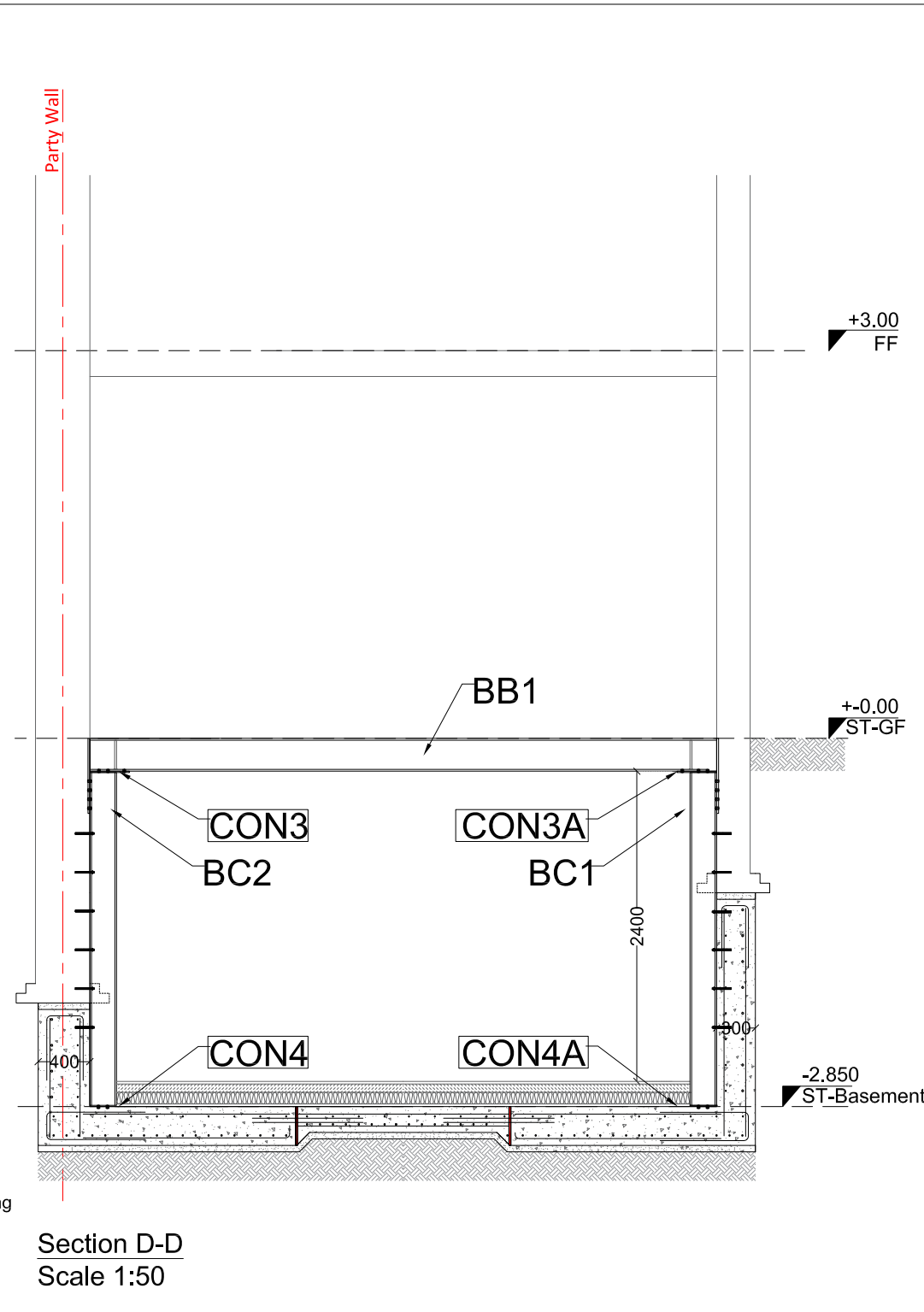
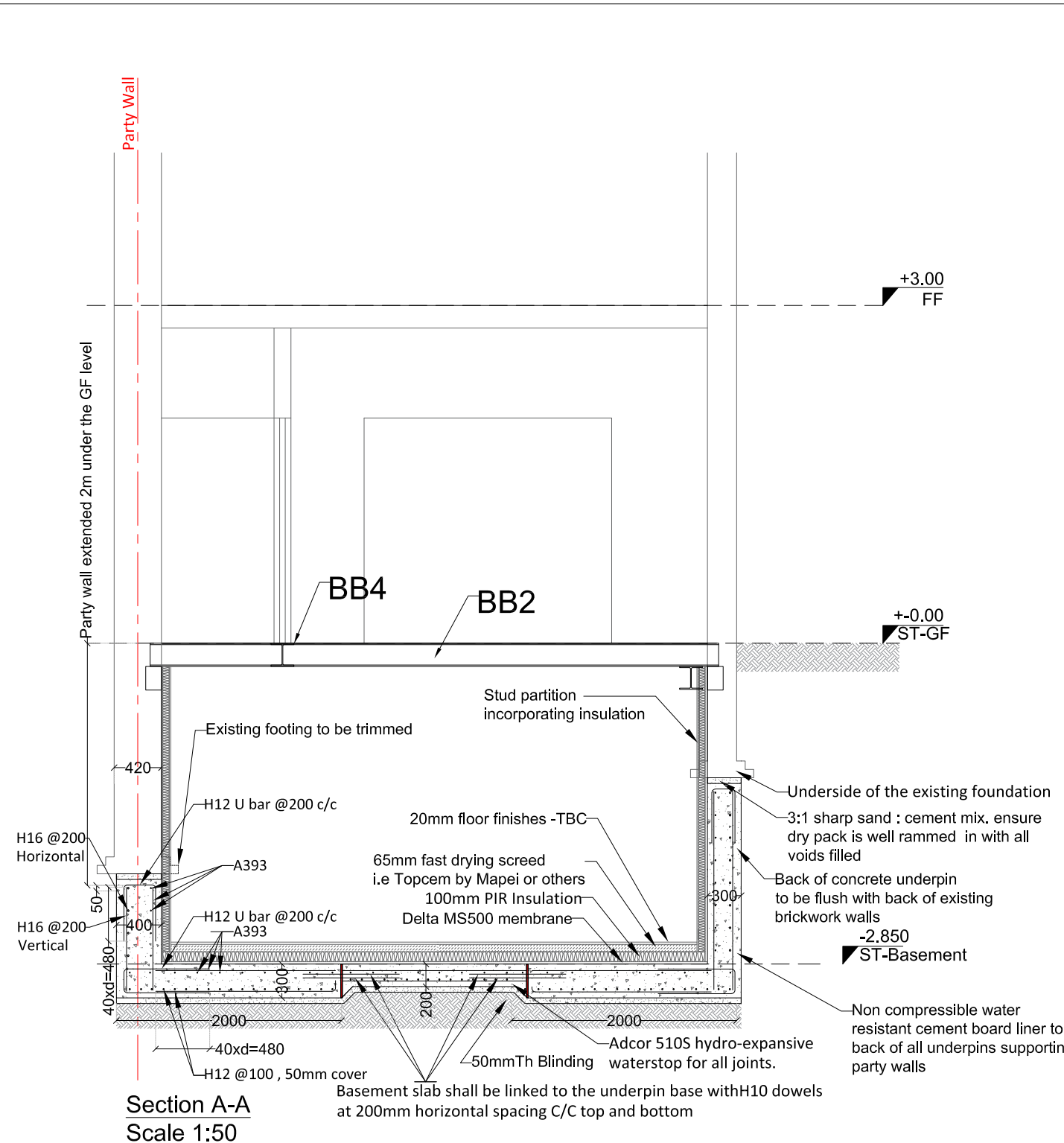
Client: Leopold Nguoto

Project: 15 Landor Road  
London, SW9 9RX

Title: Basement GA Plan

Subject: Issued For Review

Scale: As Shown	Drawing no: DWG-ST-20-052-01	Rev. R01
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For Reinforcement Details refer to Section A-A  
For Connection Details refer to DWG-ST-20-052-06

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**JOISTS SCHEDULE**

BJ1	C24 225 x 50 @ 400mm spacing c/c
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Client: Leopold Nguoto

Project: 15 Landor Road  
London, SW9 9RX

Title: Section A-A and D-D

Subject: Issued For Review

Scale: As Shown	Drawing no: DWG-ST-20-052-02	Rev. R01
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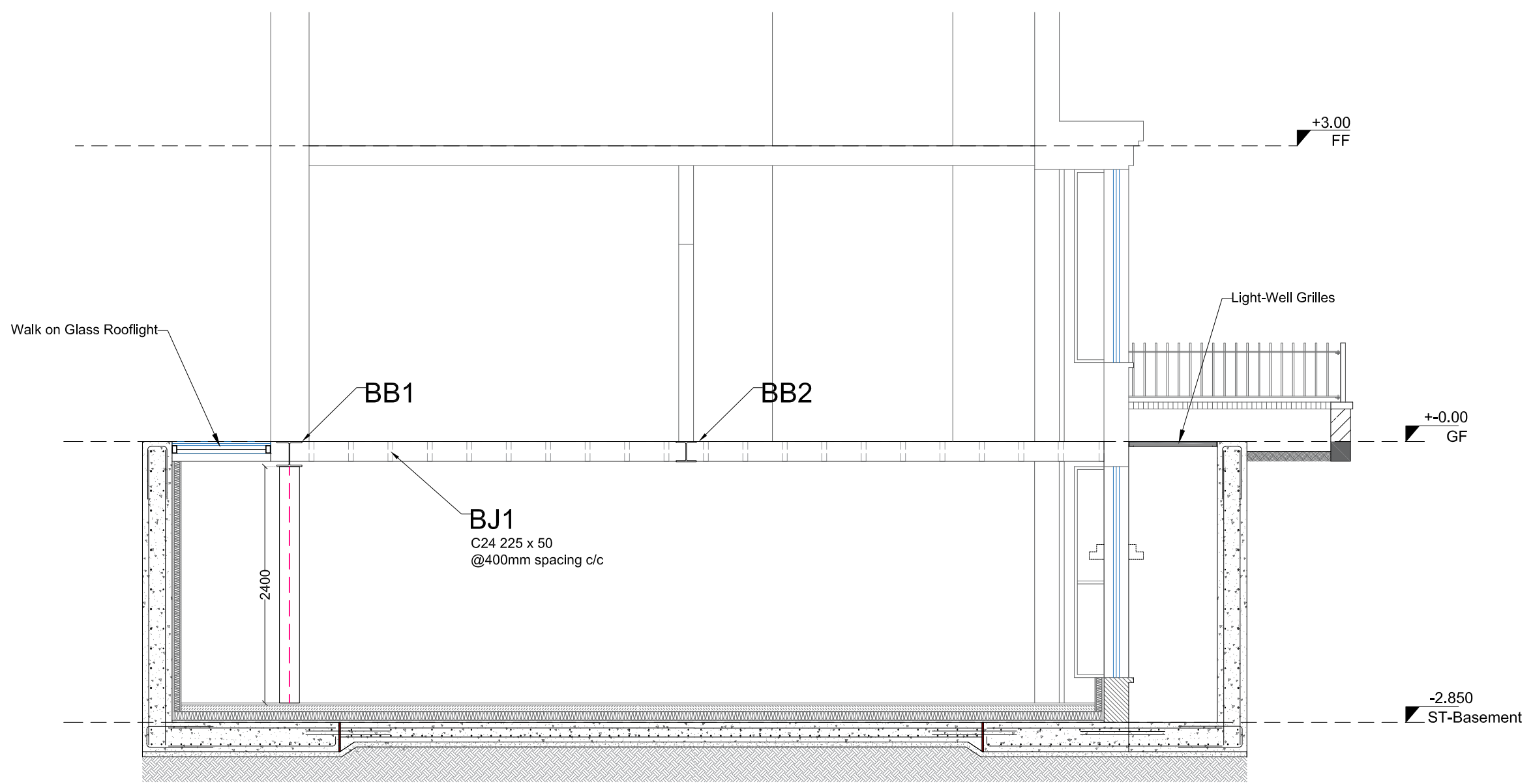
Client: Leopold Ngouoto

Project: 15 Landor Road  
 London, SW9 9RX

Title: Section B-B

Subject: Issued For Review

Scale: As Shown Drawing no: DWG-ST-20-052-03 Rev. R01

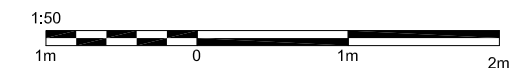


Section B-B  
 Scale 1:50

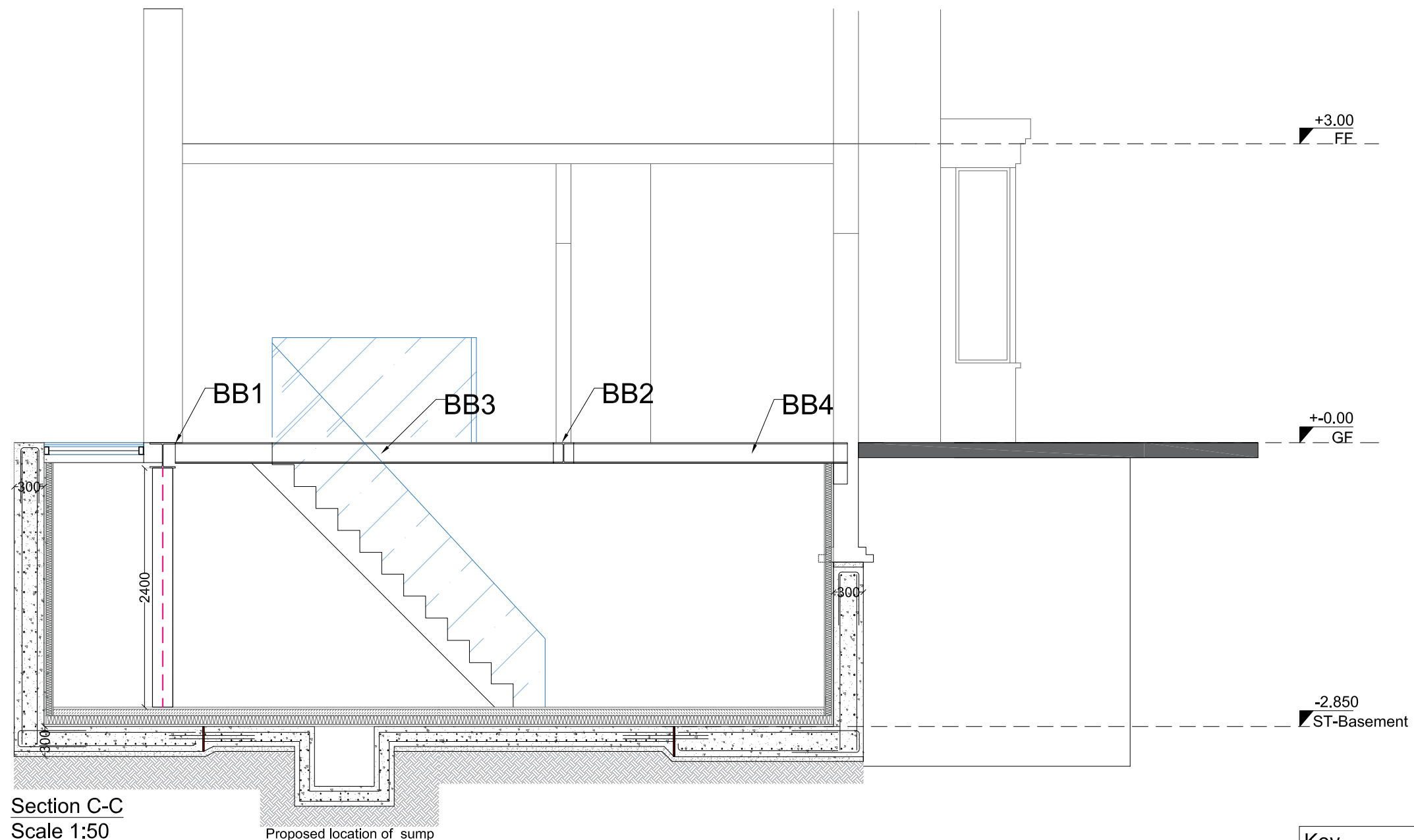
For Reinforcement Details refer to Section A-A on Drawing DWG-ST-20-052-02

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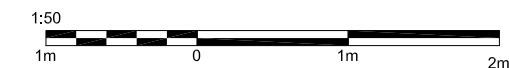


Section C-C  
Scale 1:50

Proposed location of sump

For Reinforcement Details refer to Section A-A on Drawing DWG-ST-20-052-02

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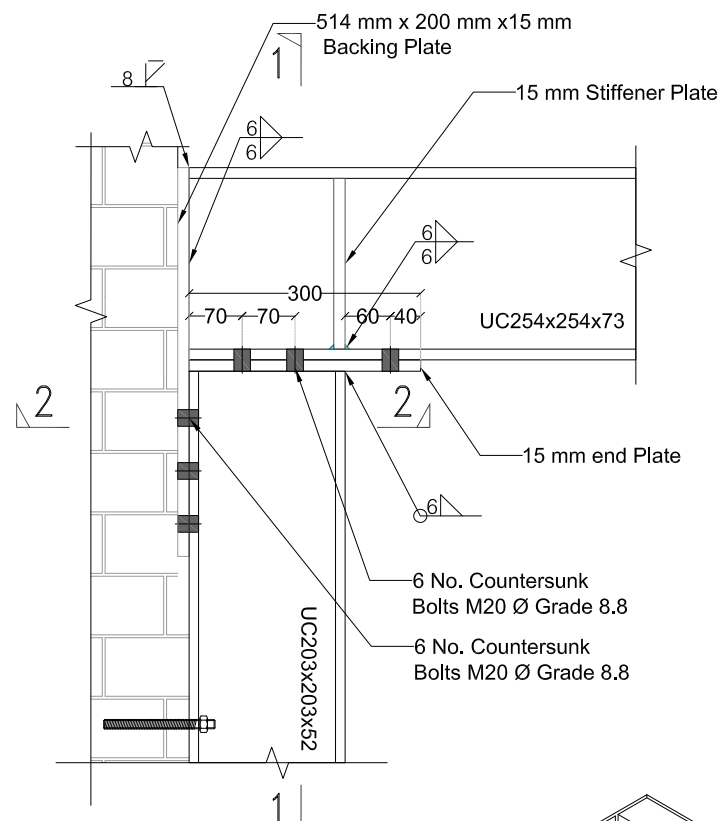
Project: 15 Landor Road  
London, SW9 9RX

Title: Section B-B

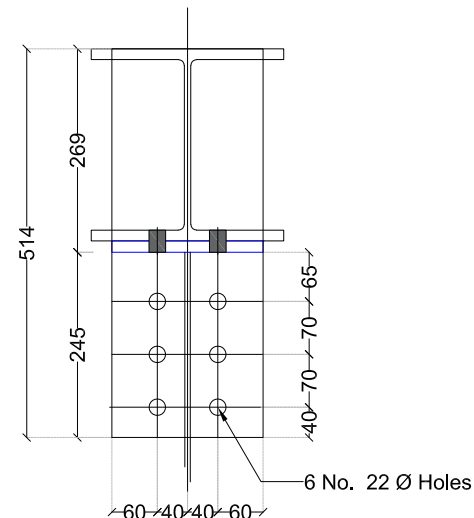
Subject: Issued For Review

Scale: As Shown	Drawing no: DWG-ST-20-052-04	Rev. R01
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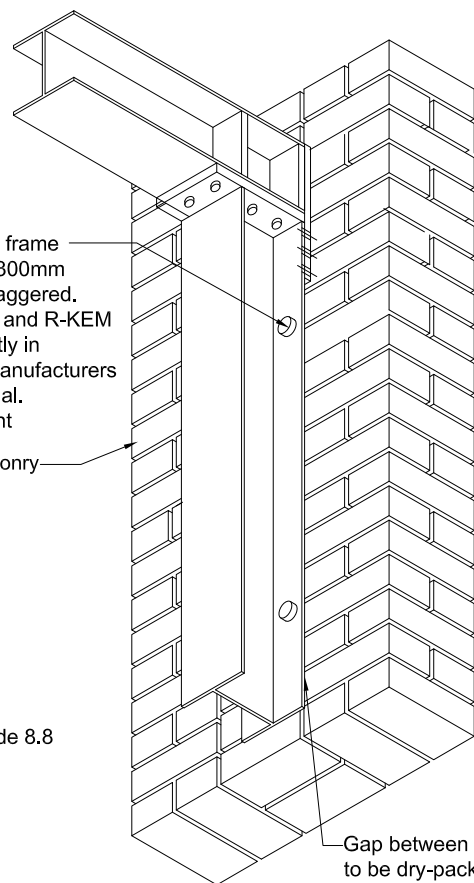




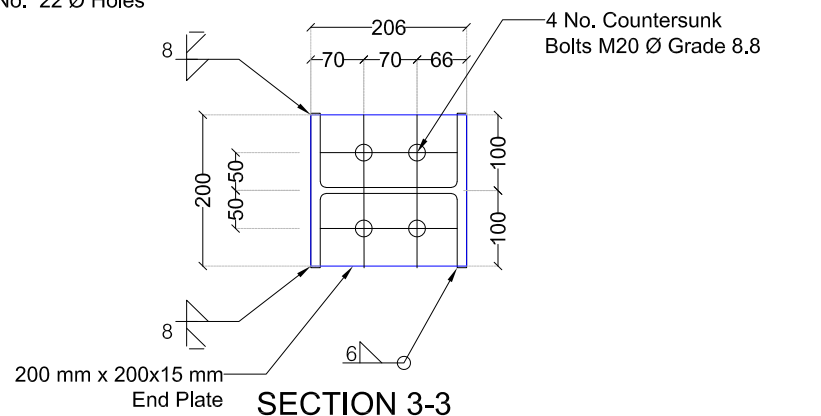
**CONNECTION 3**  
**CONNECTION 3A (SIMILAR)**



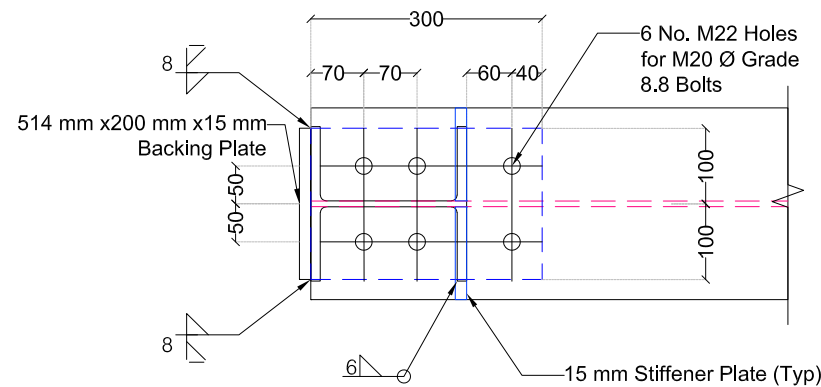
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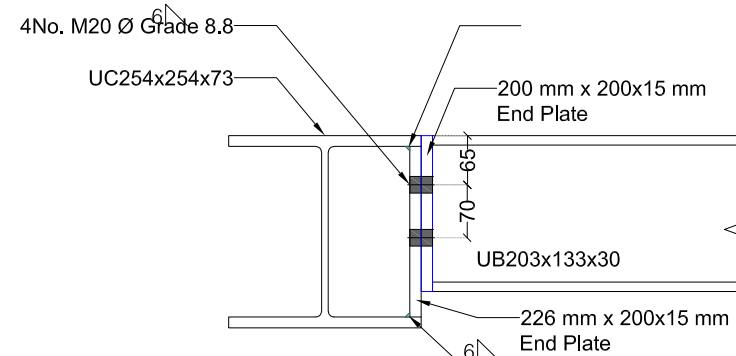
**3D VIEW- CONNECTION 3**



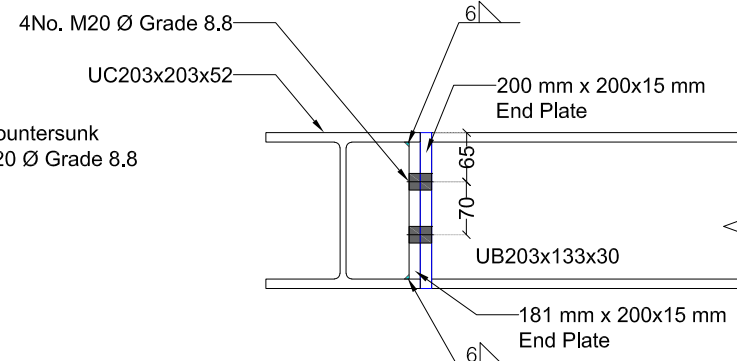
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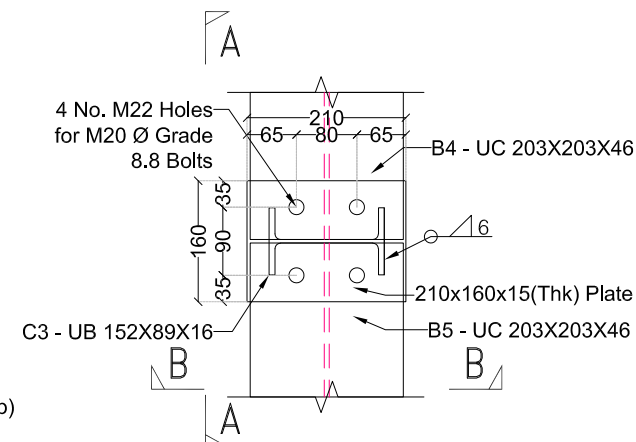
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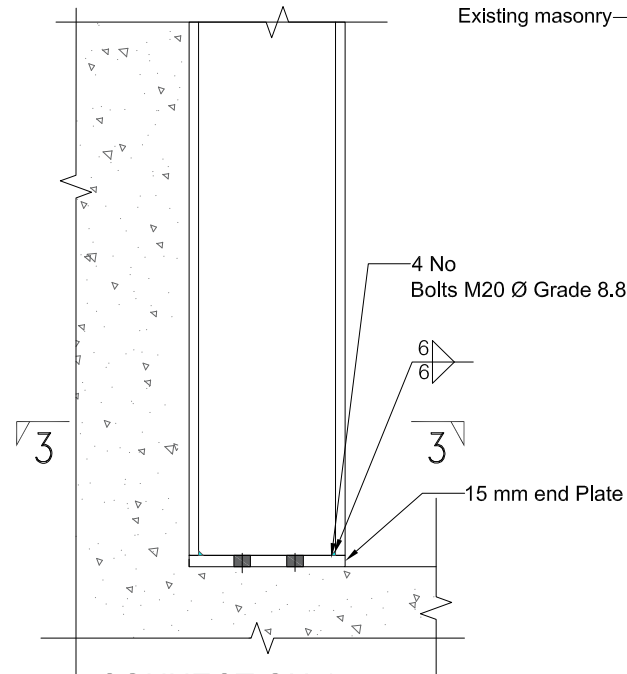
**CONNECTION 1**  
**Scale 1:10**



**CONNECTION 2**  
**Scale 1:10**



**CONNECTION 5**  
**PLAN VIEW**



**CONNECTION 4**  
**CONNECTION 4A (SIMILAR)**



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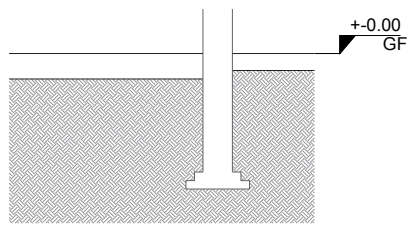
Title: Underpinning Sequence

Subject: Issued For Review

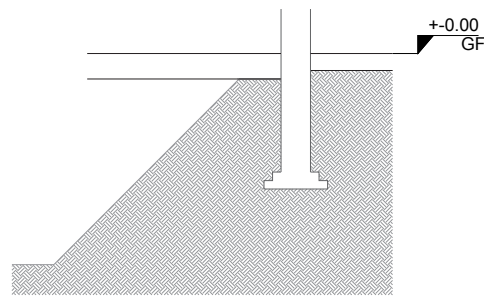
Scale:	Drawing no:	Rev.
As Shown	DWG-ST-20-052-06	R01



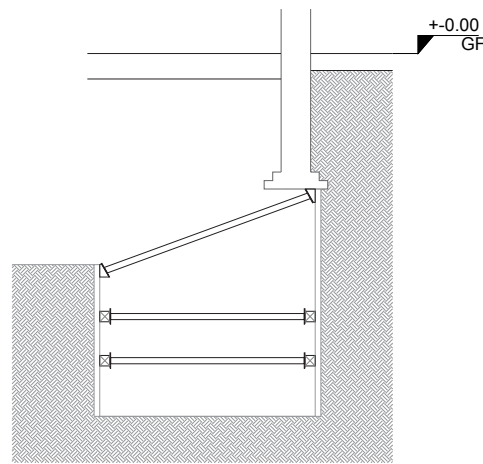




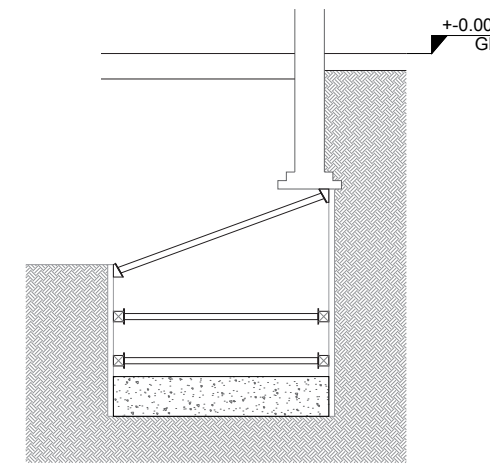
STAGE 0  
EXISTING CONDITION



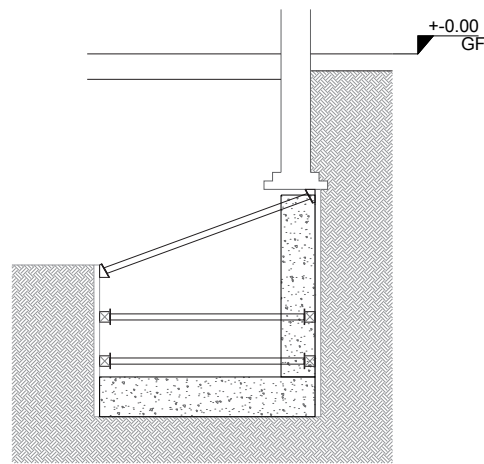
STAGE 1  
GENERAL LEVEL REDUCTION



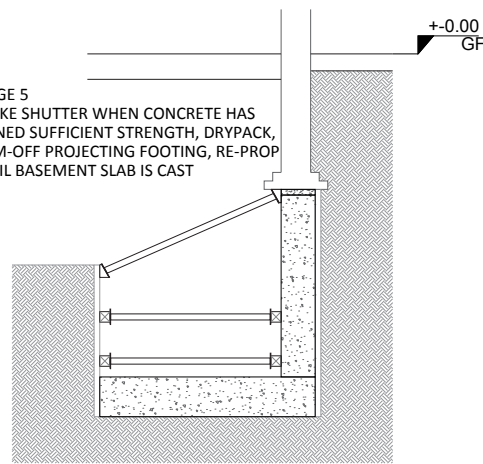
STAGE 2  
EXCAVATE TO FORM UNDERPIN



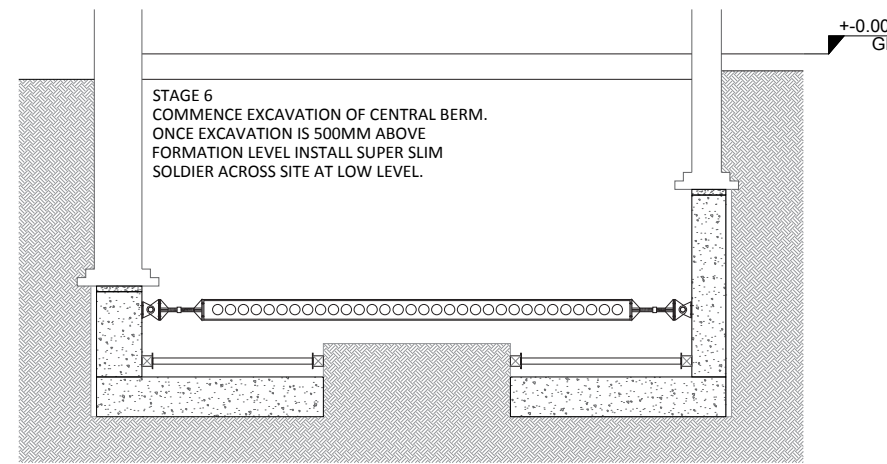
STAGE 3  
CONCRETE BASE OF UNDERPIN



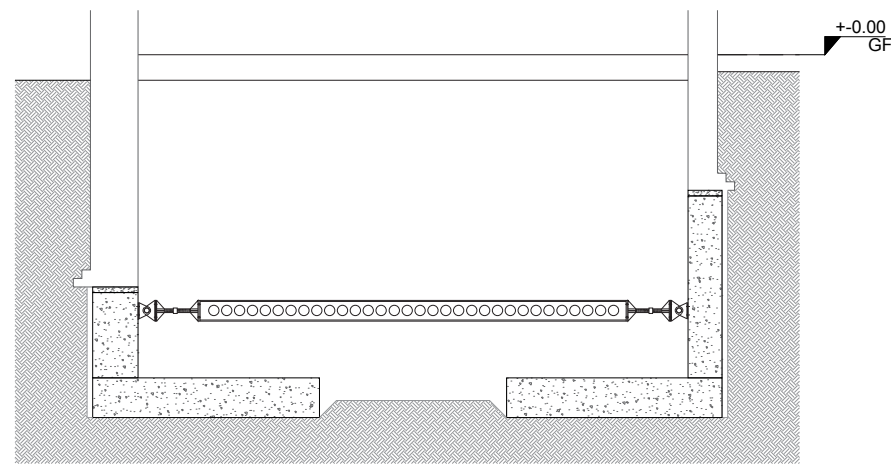
STAGE 4  
ERECT SHUTTER  
CONCRETE STEM OF UNDERPIN



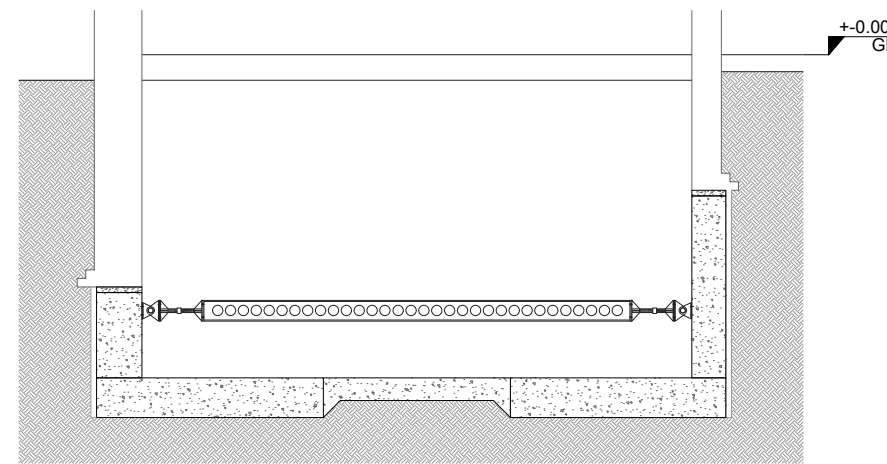
STAGE 5  
STRIKE SHUTTER WHEN CONCRETE HAS  
GAINED SUFFICIENT STRENGTH, DRYPACK,  
TRIM-OFF PROJECTING FOOTING, RE-PROP  
UNTIL BASEMENT SLAB IS CAST



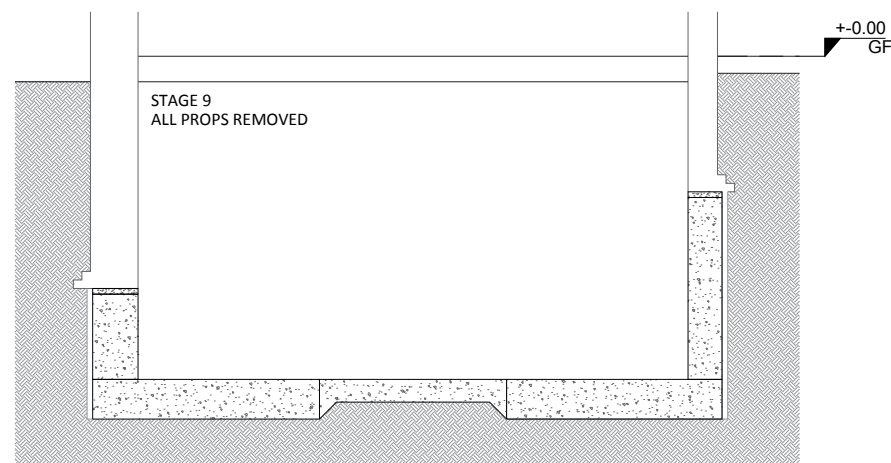
STAGE 6  
COMMENCE EXCAVATION OF CENTRAL BERM.  
ONCE EXCAVATION IS 500MM ABOVE  
FORMATION LEVEL INSTALL SUPER SLIM  
SOLDIER ACROSS SITE AT LOW LEVEL.



STAGE 7  
COMPLETE EXCAVATION TO FORMATION LEVEL



STAGE 8  
CAST BASEMENT SLAB AND LET CURE



STAGE 9  
ALL PROPS REMOVED

**GENERAL NOTES:**  
Dimensions are not to be scaled from this drawing  
All dimensions are to be checked on site prior to commencement  
of any works, and any discrepancies reported immediately to the  
engineer.  
This drawing is to be read in conjunction with all other design team  
details and specifications.  
Steel Lengths to contractor to take measurements.

**BEAMS SCHEDULE**

BB1	BEAM 1	UB254x254x73 - S355 - SPAN 4850 MM
BB2	BEAM 2	UC203x203x52 - S355 - SPAN 5140 MM
BB3	BEAM 3	UC203x133x30 - S355 - SPAN 3790 MM
BB4	BEAM 4	UC203x133x30 - S355 - SPAN 2750 MM

**COLUMNS SCHEDULE**

BC1	COLUMN 1	UC203x203x52	2.575M HEIGHT
BC2	COLUMN 2	UC203x203x52	2.575 M HEIGHT

**PADSTONES SCHEDULE**

3No BP1	PADSTONE 1	330(L)x140(W)x210(H) (CONCRETE)
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**JOISTS SCHEDULE**

BJ1	C24 225 x 50 @ 400mm spacing c/c
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**CDM REGULATION  
HAZARDS RESIDUAL RISKS**



\* A competent contractor shall be appointed experienced in this type of work.

**GENERAL**

1. Deep excavations are not to be left open overnight and are to be guarded whilst works are in progress by the use of temporary barriers etc.
2. Personnel are not to enter open excavations unless they have been suitably shored up with trench sheets and props, or similar.
3. Manual handling of concrete blocks & steel beams is to be kept to a minimum via the use of mechanical lifting equipment etc.
4. Wc and hand washing facilities are to be provided on site.
5. Working at heights is to be kept to a minimum and temporary crash decks, or similar, are to be employed at all times. This particularly applies during erection of the basement roof.
5. A suitably qualified contractor is to be employed who is familiar with all site hazards and the management of the same.
6. Edge protection and hand rails are to be provided to all floors above ground floor at all times.
7. Foundations to adjoining buildings are not to be undermined.
8. Existing incoming services are to be located and isolated, by a suitably qualified person, prior to any demolition works.
9. Demolition works are to be carried out in a controlled manner by a suitably qualified contractor. A contractor method statement is to be provided to the project engineers prior to commencing works.

**SITE-SPECIFIC**

1. Masonry walls not having proper existing foundations shall be repaired prior to underpinning. Full size bricks shall be used to repair masonry and steel jacks shall be used as per the method statement proposed.
2. The contractor is responsible for ensuring the stability of the existing structure at all times.
3. Underpins will not be stable while under construction. Contractor must provide temporary supports capable of resisting 21 kN/m temporary unfactored force. Props shall be in place until basement slab has been cast and cured.
4. The contractor is responsible for providing and designing the temporary works to ensure stability of basement during excavation.
5. The contractor is responsible for carrying out a full risk assessment and producing a contractor method statement.
6. Basement to have double waterproofing protection as per BS 8102. The design and installation of waterproofing is by specialist waterproofing contractor who can also provide warranty.
7. Basement to be fitted with sump to discharge any leakage water.
8. All drainage shall be encased in concrete below the slab and cast monolithically with the slab. Placing drainage on pea shingle below the slab allows greater penetration for water ingress.

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Rev.	Description	Drw	Chk	Apr	Date

**BETA**  
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Title: Const. Seq. for a typical underpin section

Subject: Issued For Review

Scale:	Drawing no:	Rev.
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