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Structural Design Certificate

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Alan Conisbee and Associates Limited
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Ref: 221111/DC001

Written By: P Boal

Approved By: B Heath

Date: 22 November 2023

Version: A





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Certification

Document No:	221111/DC001			
	Name	Role	Signature	Date
Prepared:	P Boal	Technical Associate		22.11.2023
Checked:	B Heath	Director		22.11.2023
Revision Record				
Rev	Date	Revision Notes	By	Check
A	22.11.2023	First Issue	PB	BH

1.0 INTRODUCTION

1.1 Conisbee were instructed by Gascoyne Estates to prepare this Structural Design Certificate in relation to Welwyn Hatfield Borough Council Planning Decision Notice 6/2021/3422/MAJ, date of approval 7 December 2022. This Design Certificate is issued as part of a planning process and it should not be used for any other purpose

1.2 This report is intended for the use of the Client, Gascoyne Estates, and no liability can be accepted for use by any third party.

1.3 Planning Conditions

1.3.1 The planning approval decision is subject to two planning conditions relating to ground conditions and method of installing the proposed foundations – conditions 5 and 8 as set out below:

1.3.2 Planning Condition 5 is worded as follows:

No development, other than demolition work, shall commence until a structural design certificate, completed and signed by a Chartered Engineer, and a scheme to deal with existing ground conditions has been submitted to and approved in writing by the Local Planning Authority. The Certificate shall certify that appropriate site investigations have been carried out at the site. The scheme shall include an investigation and assessment to identify those precautions or measures deemed to be required in the design and construction of the proposed development minimise any danger which might arise as a result of ground conditions.

The scheme as approved shall be fully incorporated in the design and construction of the proposed development.

REASON: To ascertain the stability of the site and to determine the structural suitability of the development thereon in view of prevailing ground conditions in accordance with the National Planning Policy Framework. To ensure that no development is undertaken which may be prejudiced by existing ground conditions in accordance with the National Planning Policy Framework.

1.3.3 Planning Condition 8 is worded as follows:

No development, other than demolition work, shall commence until the following has been submitted to and approved in writing by the Local Planning Authority:

a) An Intrusive Ground Investigation to identify the current state of the site and appropriate techniques to avoid displacing any shallow contamination to a greater depth;

b) A Risk Assessment identifying both the aquifer and the abstraction points as potential receptors of contamination; and

c) A Method Statement detailing the depth and type of excavations (e.g. piling) to be undertaken including mitigation measures (e.g. appropriate piling design, off site monitoring boreholes etc.) to prevent and/or minimise any potential migration of pollutants to public water supply.

Thereafter, the development shall not be carried out other than in accordance with the approved details.

REASON: To protect groundwater resources, in accordance with Policy R7 of the Welwyn and Hatfield District Plan 2005; SADM18 daft Local Plan Proposed Submission August 2016; and the of the National Planning Policy Framework.

2.0 GROUND INVESTIGATION

2.1 RSK Geosciences have provided a Phase 2 Supplementary Geotechnical Investigation report 1922048 R02 (02), dated 6 October 2023. This report included in Appendix A. The report is a supplementary update report based partly on previous ground investigation reports and supplementary intrusive investigations as below:

2.1.1 RSK Geotechnical and Geo-Environmental Report 241882-01 (01). This included a preliminary risk assessment (PRA) followed by an intrusive site investigation undertaken 2nd to 4th February 2011. This included 2No light cable percussive boreholes (15m depth), 4No drive in window sample boreholes, and 3No shallow hand dug trial pits. Soil samples were collected and sent for geotechnical and environmental testing.

2.1.2 RSK Updated Geotechnical and Geo-Environmental Report 1922048 R02 (01). This report was produced to assess land contamination sources and geotechnical constraints to the proposed development based on information and data collected during the 2011 investigation, interpreted against updated guidelines.

2.1.3 RSK were instructed to carry out supplementary investigations works including a cable percussive borehole to 30m depth. This was carried out 4th to 16th May 2023. The objective was to confirm the geological profile below the site, including proving the depth of the natural chalk strata and level of the water table in the chalk aquifer. This information is to inform the design of deep piled foundations to the development, and the selection of an appropriate method of constructing deep piled foundations.

- 2.2 RSK Phase 2 Supplementary Geotechnical Investigation report 1922048 R02 (02) recommended that continuous flight augered piled foundations are likely to provide the most appropriate foundation option for the proposed structures.
- 2.3 RSK Phase 2 Supplementary Geotechnical Investigation report 1922048 R02 (02) recommended that if piling works are to extend deeper than 16m bgl, a Piling Works Risk Assessment may be required for the development. Pile loadings calculated by Conisbee were reviewed against typical pile working loads provided in the RSK report, and it was considered likely that piling works would need to extend beyond 16m bgl to achieve the required load resistance. Accordingly, RSK were instructed to produce the Piling Works Risk Assessment, which is referred to in section 3.0 below.

3.0 PILING WORKS RISK ASSESSMENT

- 3.1 RSK Geosciences have provided a Piling Works Risk Assessment (PWRA) 1922048 R03 (01), dated November 2023. This report included in Appendix B. The report refers to the prior ground investigation reports discussed in section 2.0 above.
- 3.2 The objective of the PWRA is to identify the most suitable technique to construct foundations for the proposed development, given the geology, hydrology, contamination status and constraints of the site.
- 3.3 Piled foundations are assumed to a depth of 20m, bearing into the natural chalk bedrock, with pile toes remaining above the water table of the aquifer.
- 3.4 The PWRA assesses a number of possible pollution scenarios, their applicability, and risk level in relation to continuous flight auger (CFA) bored non-displacement piling.
- 3.5 The PWRA concludes that non-displacement CFA piling is the most suitable foundation method considering the sensitive nature of the underlying controlled waters. It is noted that workmanship and groundwater levels should be monitored during construction.

4.0 PROPOSED FOUNDATIONS

- 4.1 Proposed structural foundation drawings for the development are included in Appendix C.
- 4.2 CFA piles are proposed as the support to all proposed foundations:

- 4.2.1 Zone 1 of the development is a 3-storey mixed used building in the middle of the site which is a reinforced concrete frame with RC columns and walls supported directly onto RC pile-caps, supported onto groups of CFA piles. The GF slab and external walls are supported onto RC ground beams spanning to the pile caps. Refer to drawings 221111-CON-01-PL-DR-S-11097 Pile Layout and 221111-CON-01-FN-DR-S-11098 Foundation Layout in Appendix C.
- 4.2.2 Zone 2 of the development is a row of five 3-storey residential townhouses at the north end of the site, to be constructed in traditional loadbearing masonry with timber floors and roof. The loadbearing walls are supported directly onto RC ground beams spanning to isolated CFA piles. Towards the eastern end of the townhouses, an existing drainage culvert passes below the footprint of the building; the ground beams here have been designed to span over the culvert and its 4.7m exclusion zone. Refer to drawings 221111-CON-02-PL-DR-S-12097 Pile Layout and Foundation 221111-CON-02-FN-DR-S-12098 Layout in Appendix C.
- 4.3 The final construction issue design of the piles will be carried out by the Contractor's specialist piling subcontractor. This will include determination of the final design depth of each pile. The piling specialist will also provide full details of the proposed piling rig, piling mat levels, and a Risk Assessment and Method Statement (RAMS) for the installation of the piled foundations on site. The piling specialist's design and RAMS will be reviewed by Conisbee for adherence to the principles set out in the Piling Works Risk Assessment prior to approval for construction.

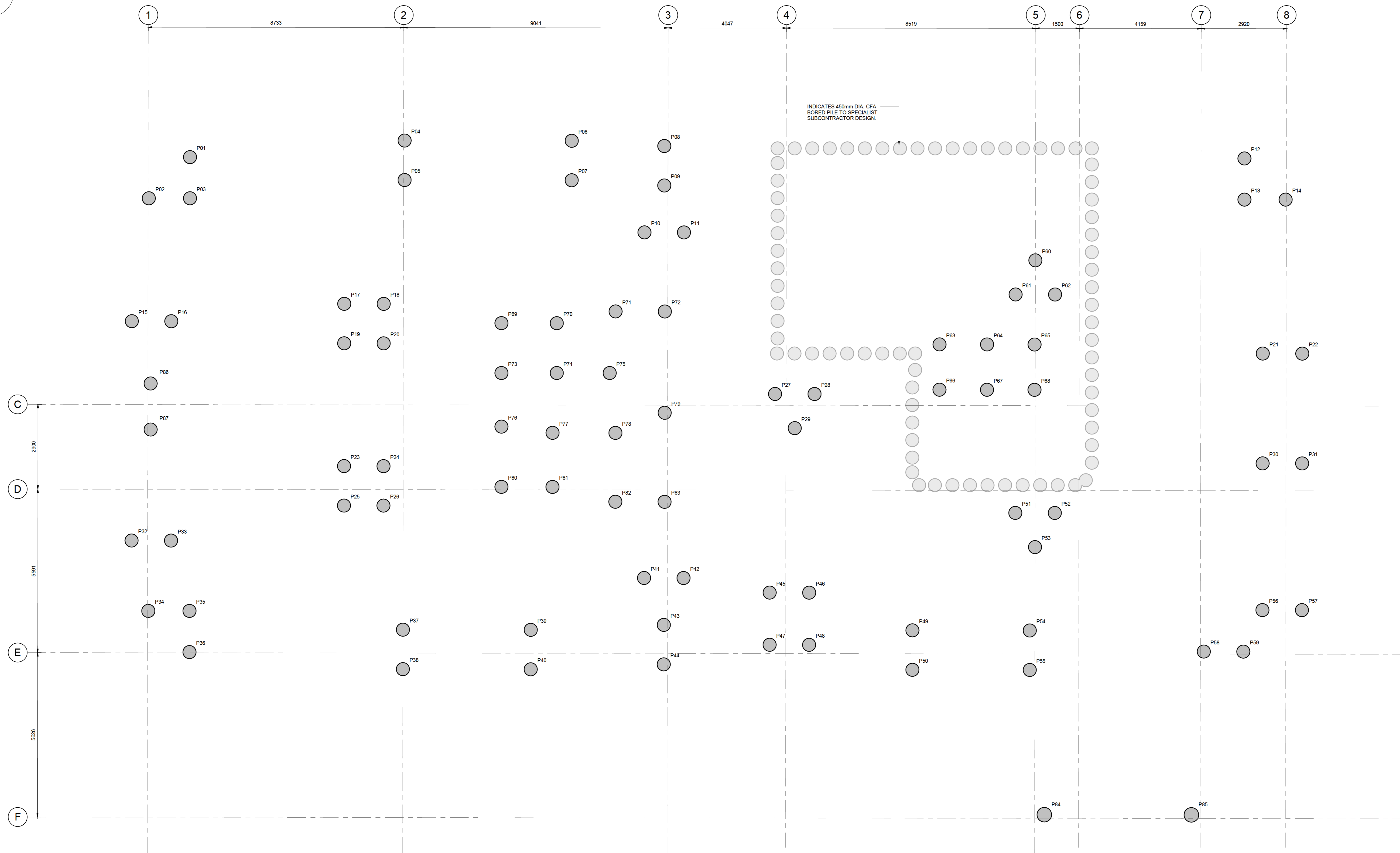
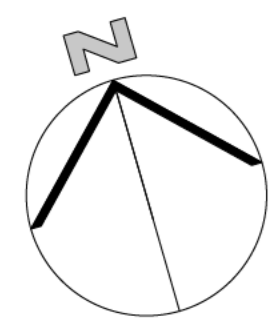
5.0 CONCLUSIONS

- 5.1 The proposed foundation solution is continuous flight auger (CFA) bored non-displacement piles. The findings of the RSK Ground Investigation and PWRA support the use of CFA piling as the most suitable technique to construct foundations for the proposed development given the geology, hydrology, contamination status and constraints of the site.

APPENDIX A – GROUND INVESTIGATION REPORT

APPENDIX B – PILING WORKS RISK ASSESSMENT

APPENDIX C – STRUCTURAL FOUNDATION DRAWINGS



GENERAL NOTES

THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECTS, ENGINEERS AND SPECIALIST DRAWINGS AND SPECIFICATIONS.
 DO NOT SCALE FROM THIS DRAWING IN EITHER PAPER OR DIGITAL FORM. USE WRITTEN DIMENSIONS ONLY.
 ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.
 ALL WATERPROOFING, DPC'S AND DPM'S TO ARCHITECTS DETAILS.
 THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THE STABILITY OF THE WORKS, ADJOINING STRUCTURES AND SERVICES AT ALL STAGES OF CONSTRUCTION.
 THE CONTRACTOR IS RESPONSIBLE FOR THE DESIGN AND INSTALLATION OF ALL TEMPORARY WORKS.
 PROPOSED DRAINAGE SHOWN INDICATIVELY - REFER TO DRAINAGE LAYOUT DRAWING.
 REFER TO DRAWING No. 22111-CON-XX-00-DR-C-2000 FOR LEVELS.

PILED FOUNDATIONS

ASSMED 450 DIA. CFA PILES UNLESS NOTED OTHERWISE.
 PILES SPACED MINIMUM 3 x PILE DIAMETER.
 150mm DISTANCE AT PILE CAP OR GROUND BEAM PERIMETER.
 ALL PILES TO HAVE MIN. 75mm EMBEDMENT IN PILE CAP / GROUND BEAMS.
 DESIGN OF PILING AND PILING MAT TO BE THE RESPONSIBILITY OF THE CONTRACTOR OR THE RESPONSIBLE SUB-CONTRACTOR.
 FOR PRELIMINARY PILE CAPACITIES REFER TO RSK SL REPORT.
 PILE LENGTH IN ABEYANCE PENDING UPDATED RSK GROUND INVESTIGATION REPORT.

PILE LAYOUT
1:50

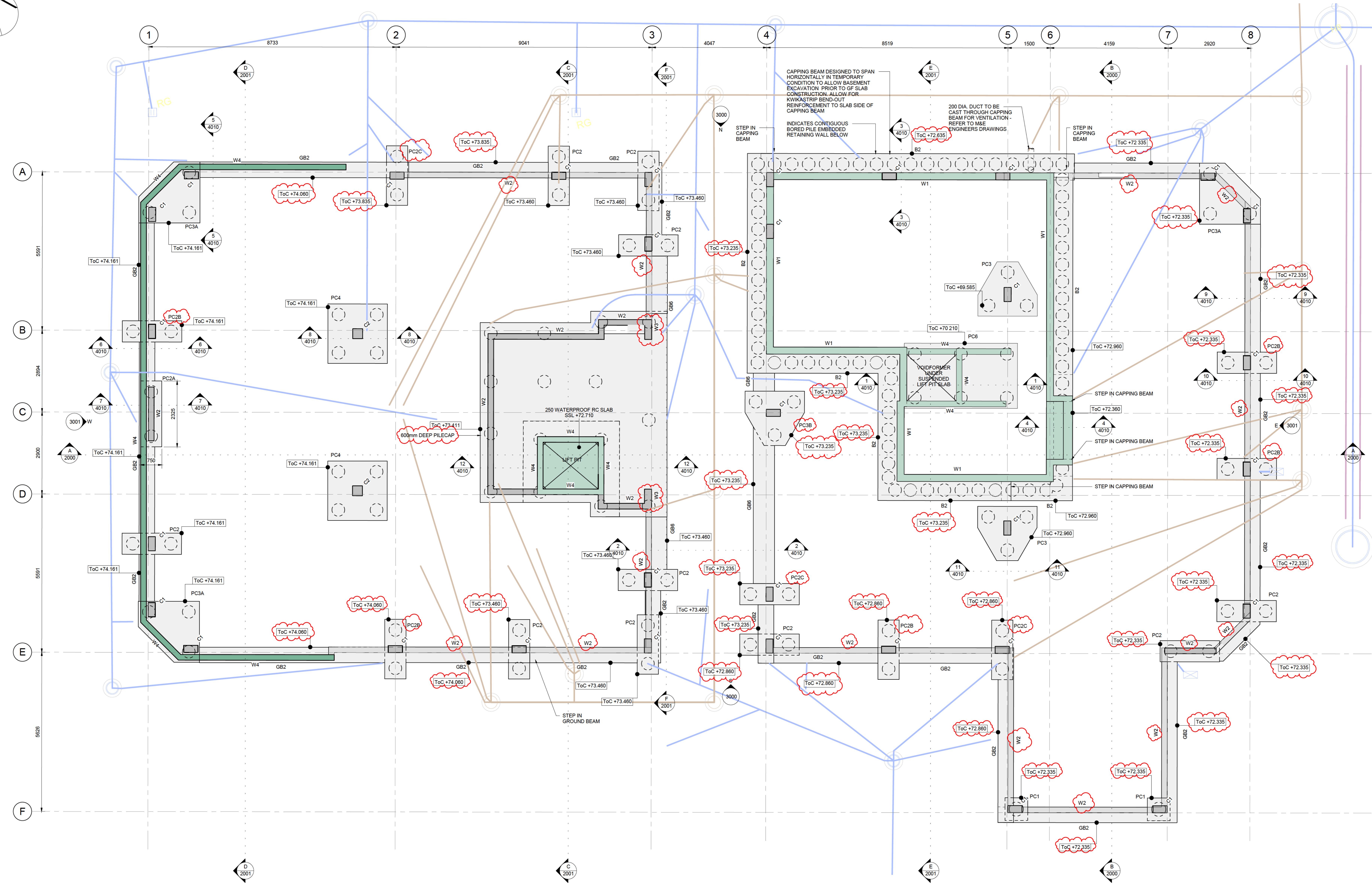
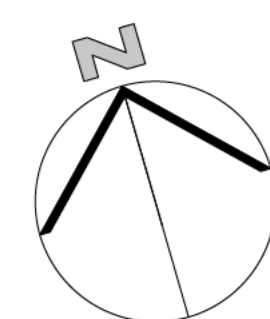
NOT FOR CONSTRUCTION

P3	02.10.23	REVISED AS CLOUDED	CDP	PB
P2	16.08.23	REVISED AS CLOUDED	CDP	PB
P1	30.06.23	STAGE 3 ISSUE	CDP	PB

Rev. Date. Description. Drawn. Check.

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Drawing Status	
S4 - SUITABLE FOR STAGE APPROVAL	
Project	Date JAN 2023
SALISBURY SQUARE HATFIELD, AL9 5AD	
Scale	1:50@A0
Drawn	CDP
Engineer	PB
Title	Project No
COMMERCIAL UNIT PILE LAYOUT	221111
Drawing No	Revision
221111-CON-01-PL-DR-S-11097	P3



GENERAL NOTES

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ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.

ALL WATERPROOFING, DPCS AND DPM'S TO ARCHITECTS DETAILS.

THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THE STABILITY OF THE WORKS, ADJOINING STRUCTURES AND SERVICES AT ALL STAGES OF CONSTRUCTION.

THE CONTRACTOR IS RESPONSIBLE FOR THE DESIGN AND INSTALLATION OF ALL TEMPORARY WORKS.

PROPOSED DRAINAGE SHOWN INDICATIVELY - REFER TO DRAINAGE LAYOUT DRAWINGS.

REFER TO DRAWING No. 22111-CON-XX-00-DR-C-2000 FOR LEVELS.

FOUNDATIONS NOTES

FOUNDATIONS ARE TO BE CAST TO THE PROFILES INDICATED ON THE DRAWINGS. THEY ARE TO BE CAST SYMMETRICALLY ABOUT PIERS, STANCHIONS OR WALLS UNLESS NOTED OTHERWISE ON THE DRAWINGS.

PROVIDE COMPRESSIBLE MATERIAL OR VOID FORMER BELOW ALL GROUND BEAMS AND AGAINST INSIDE FACE OF THE EXTERNAL GROUND BEAMS WITHIN INFLUENCE ZONE OF EXISTING OR PROPOSED TREES, i.e. 15mm THICK CELLCORE 155 Hx8 1318 TO UNDERSIDE AND 50mm THICK HEAVE-GUARD TO INSIDE FACE OR SIMILAR APPROVED ALLOW FOR 100mm THICK CELLCORE HXS GRADE 9/13 BELOW SUSPENDED GROUND FLOOR SLAB. ALL CELLCORE TO BE PLACED ON 50mm CONCRETE BLINDING. REFER TO HEAVY PROTECTION DRAWING No. 22111-CON-01-FN-DR-S-11095 FOR EXTENT OF HEAVY PROTECTION MEASURES.

PILES TO BE DESIGNED BY SPECIALIST TO BS EN 1997 + UK NATIONAL ANNEX.

PILES ARE TO BE DESIGNED BY SPECIALIST IN ACCORDANCE TO COMPLY WITH THE CURRENT EDITION OF SPECIFICATION FOR PILING AND EMBEDDED RETAINING WALLS (SPERW). PILING CONTRACTOR TO PAY SPECIAL ATTENTION TO THE RISK OF NEGATIVE SKIN FRICTION.

CONCRETE TO BE STRENGTH GRADE C32/40 FOR WALLS, COLUMNS & SLABS; C25/30 FOR PILECAPS AND GROUND BEAMS.

CONCRETE GENERALLY TO BS 8500-2, READY-MIXED CONCRETE. PRODUCTION PLANT: CURRENTLY CERTIFIED BY A BODY ACCREDITED BY UKAS TO BS EN 45011.

ENSURE EXCAVATIONS ARE CLEAR OF ALL DEBRIS AND ARE FREE OF WATER PRIOR TO PLACING OF CONCRETE.

FOUNDATIONS AND SUSPENDED BASEMENT / GROUND FLOOR SLABS TO BE CAST ONTO MIN. 50mm CONCRETE BLINDING.

CONCRETE TO NOT BE CAST AT TEMPERATURES GREATER THAN 30°C OR LESS THAN 5°C, UNLESS OTHERWISE SPECIFIED. DO NOT PLACE AGAINST FROZEN OR FROST COVERED SURFACES.

CONTRACTOR IS TO ENSURE THAT THE BUILDING CONTROL OFFICER IS NOTIFIED FOR THEIR INSPECTIONS PRIOR TO CONCRETING.

EMBEDDED RETAINING WALL NOTES

CONTIGUOUS BORED PILE RETAINING WALL TO BE DESIGNED BY SPECIALIST CONTRACTOR IN ACCORDANCE WITH STRUCTURAL SPECIFICATION SECTION D40 AND THE LATEST EDITION OF THE ICE SPERW.

RETAINING WALL IS ASSUMED TO BE PROPPED AT GF LEVEL IN THE PERMANENT CONDITION ON GRIDLINES 4, 6 AND D. RETAINING WALL IS ASSUMED TO BE FULLY CANTILEVERED FROM BASEMENT LEVEL ALONG GRIDLINE A WHERE CAPPING BEAM IS LOWERED FROM GF SLAB.

REFER TO RSK GROUND INVESTIGATION REPORT FOR SOIL PARAMETERS AND GROUND WATER LEVELS. DESIGN FOR MINIMUM IMPOSED LOAD SURCHARGE 10kN/m² OR 100kN ACCIDENTAL WHEEL LOAD IN PERMANENT CONDITION. TEMPORARY LOADS TBC BY CONTRACTOR.

LEGEND

DENOTES WATERPROOF CONCRETE. EXTENT TBC BY WATERPROOFING SPECIALIST.

PROVIDE WATER BAR IN ALL CONSTRUCTION JOINTS IN WATERPROOF CONCRETE - TO WATERPROOFING SPECIALISTS DETAILS.

RC WALL SCHEDULE	
MARK	DESCRIPTION
W1	250 WATERPROOF CONCRETE RC WALL
W2	200 RC WALL
W3	250 RC WALL
W4	200 WATERPROOF CONCRETE RC WALL

RC COLUMN SCHEDULE	
MARK	DESCRIPTION
C1	250x500 RC
C2	300x300 RC

GROUND BEAM SCHEDULE (COMMERCIAL)	
MARK	DESCRIPTION
GB2	550x450 DEEP RC GROUND BEAM
GB6	750x450 DEEP RC GROUND BEAM

PILE CAP SCHEDULE	
MARK	DESCRIPTION
PC1	750x750x800 DEEP RC PILECAP
PC2	2100x750x800 DEEP RC PILE CAP
PC2A	2325x750x800 DEEP RC PILE CAP
PC2B	2100x750x850 DEEP RC PILE CAP
PC2C	2100x750x800 DEEP RC PILE CAP
PC3	2100x1919x700 DEEP RC PILE CAP
PC3A	600 DEEP RC PILECAP
PC3B	2100x1919x850 DEEP RC PILE CAP
PC4	2100x2100x750 DEEP RC PILE CAP
PC6	3650x2650x600 DEEP RC PILECAP

RC BEAM SCHEDULE	
MARK	DESCRIPTION
B1	250x850 DEEP RC BEAM
B2	925x600 DEEP RC CAPPING BEAM
B3	250x500 DEEP RC BEAM
B4	200x500 DEEP RC BEAM
BR1	CHS114.3x6.3

NOT FOR CONSTRUCTION

Rev	Date	Description	Drawn	Check
P7	02/10/23	REVISED AS CLOURED	CDP	PB
P6	11/08/23	REVISED AS CLOURED	CDP	PB
P5	16/08/23	REVISED AS CLOURED	CDP	PB
P4	30/08/23	UPDATED TO LATEST ARCHITECTS LAYOUTS	CDP	PB
P3	24/03/23	CORRECTIONS & REVISED AS CLOURED	CDP	PB
P2	03/03/23	ISSUE 3 ISSUE	CDP	PB
P1	03/02/23	ISSUED FOR INFORMATION	CDP	PB

FOUNDATION PLAN
1:50

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Drawing Status
S4 - SUITABLE FOR STAGE APPROVAL

Project: **SALISBURY SQUARE HATFIELD, AL9 5AD**

Date: **JAN 2023**

Scale: **1:50@A0**

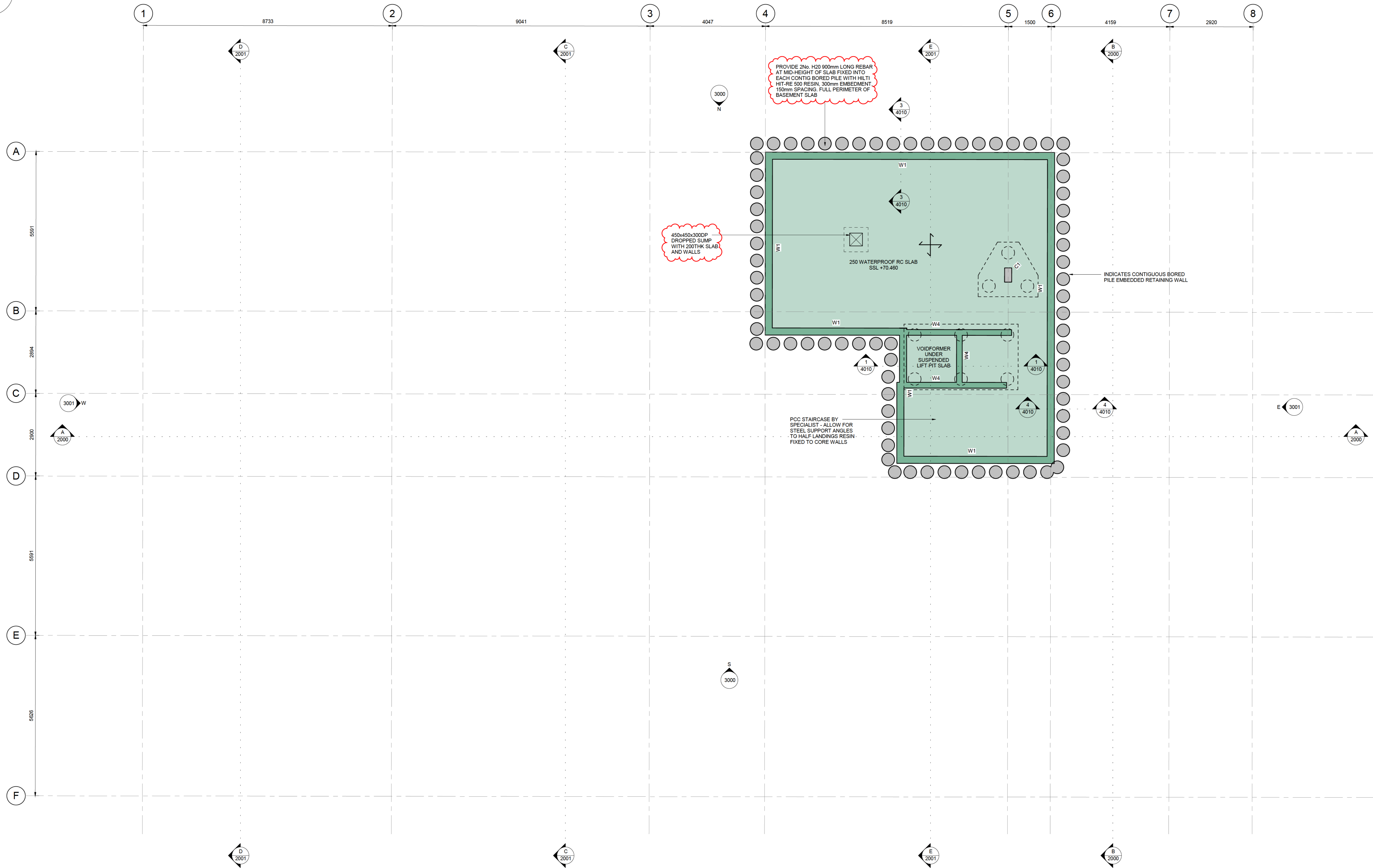
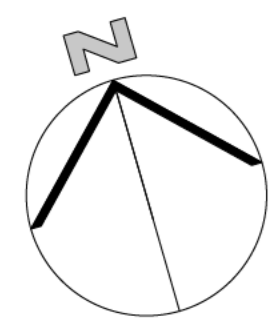
Drawn: **CDP**

Engineer: **PB**

Project No: **221111**

Drawing No: **221111-CON-01-FN-DR-S-11098**

Revision: **P7**



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 THE CONTRACTOR IS RESPONSIBLE FOR THE DESIGN AND INSTALLATION OF ALL TEMPORARY WORKS.
 REFER TO DRAWING No. 22111-CON-XX-00-DR-C-2000 FOR LEVELS.

CONCRETE NOTES

CONCRETE TO BE STRENGTH GRADE C32/40 FOR WALLS, COLUMNS & SLABS; C25/30 FOR PLACERS AND GROUND BEAMS.
 ALL RC WALLS TO BE 200mm THICK UNLESS NOTED OTHERWISE.
 ALL INTERNAL PARTITIONS, & INNER LEAF OF PERIMETER CLADDING, TO BE PROPRIETARY LIGHT GAUGE STEEL SYSTEM. DESIGN OF SYSTEM & ITS FIXINGS TO RC FRAME BY THE SYSTEM SUPPLIER.
 ALL BALUSTRADE FIXINGS TO RC FRAME BY THE SYSTEM SUPPLIER.
 ALL RC COLUMNS SET OUT TO CENTRELINE & ON GRID UNLESS NOTED/DIMENSIONED OTHERWISE.

NOTE:
 MAKE SERVICES VOIDS SHOWN INDICATIVELY - TBC BY M&E ENGINEER.

FLOOR CONSTRUCTION LEGEND	
SYMBOL	DESCRIPTION
	INDICATES 2-WAY SPANNING RC FLAT SLAB

LEGEND	
	DENOTES WATERPROOF CONCRETE. EXTENT TBC BY WATERPROOFING SPECIALIST. PROVIDE WATER BAR IN ALL CONSTRUCTION JOINTS IN WATERPROOF CONCRETE - TO WATERPROOFING SPECIALISTS DETAILS.
	INDICATES 450mm DIA. CFA BORED PILE TO SPECIALIST SUBCONTRACTOR DESIGN.

NOTE:
 PILE DEPTH TO BE LIMITED TO 15m BELOW EXISTING GROUND LEVELS IN ACCORDANCE WITH AFFINITY WATER GUIDANCE.

RC WALL SCHEDULE	
MARK	DESCRIPTION
W1	250 WATERPROOF CONCRETE RC WALL
W2	200 RC WALL
W3	250 RC WALL
W4	200 WATERPROOF CONCRETE RC WALL

RC COLUMN SCHEDULE	
MARK	DESCRIPTION
C1	250x250 RC
C2	350x350 RC

ALLOW FOR 1600P CELLCORE GRADE 9/13 BELOW BASEMENT SLAB. ON MIN. 50mm CONCRETE LINDING. REFER TO HEAVE PROTECTION DRAWING No. 22111-CON-01-FN-DR-S-11095 FOR EXTENT OF HEAVE PROTECTION MEASURES.

BASEMENT PLAN

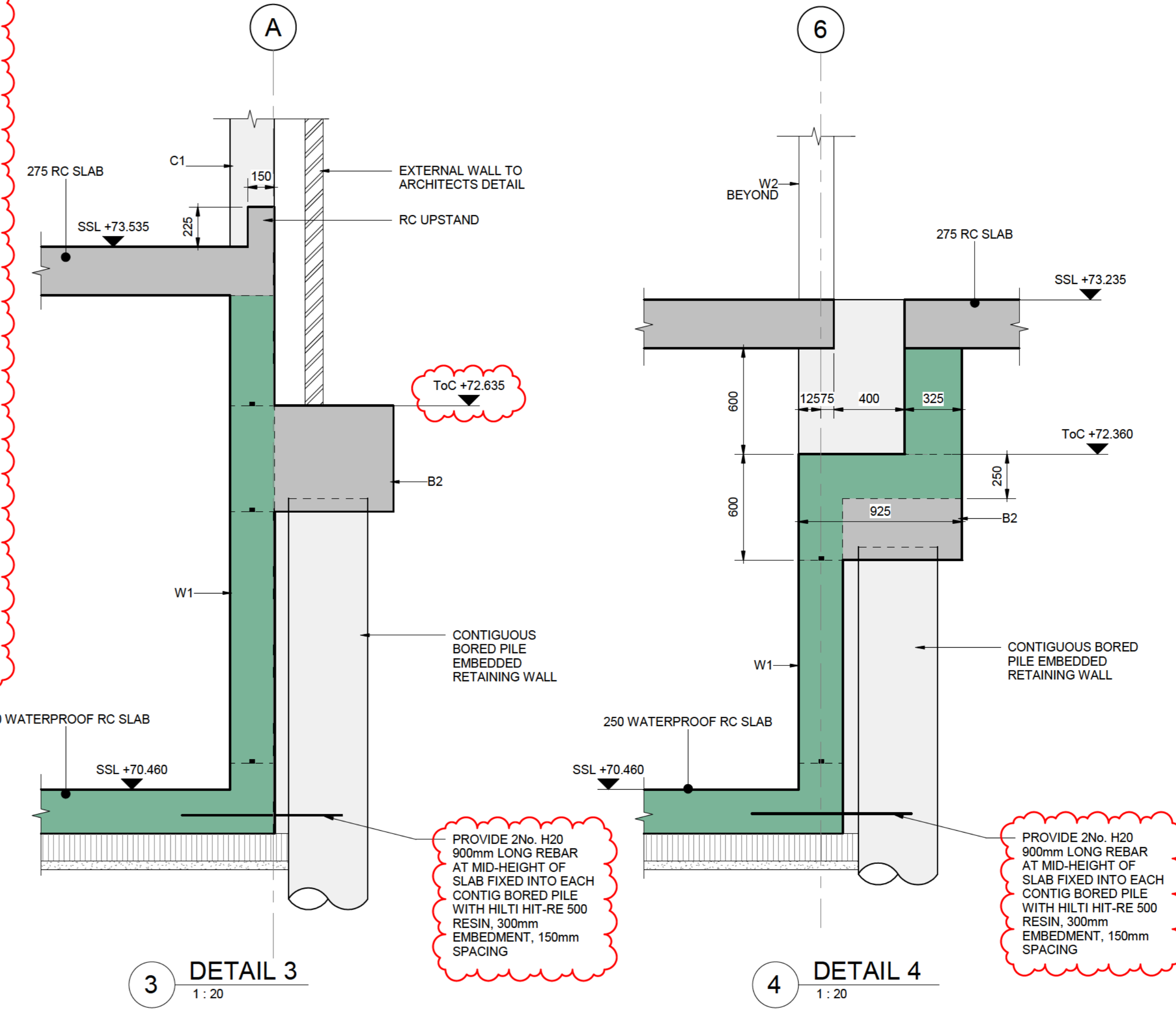
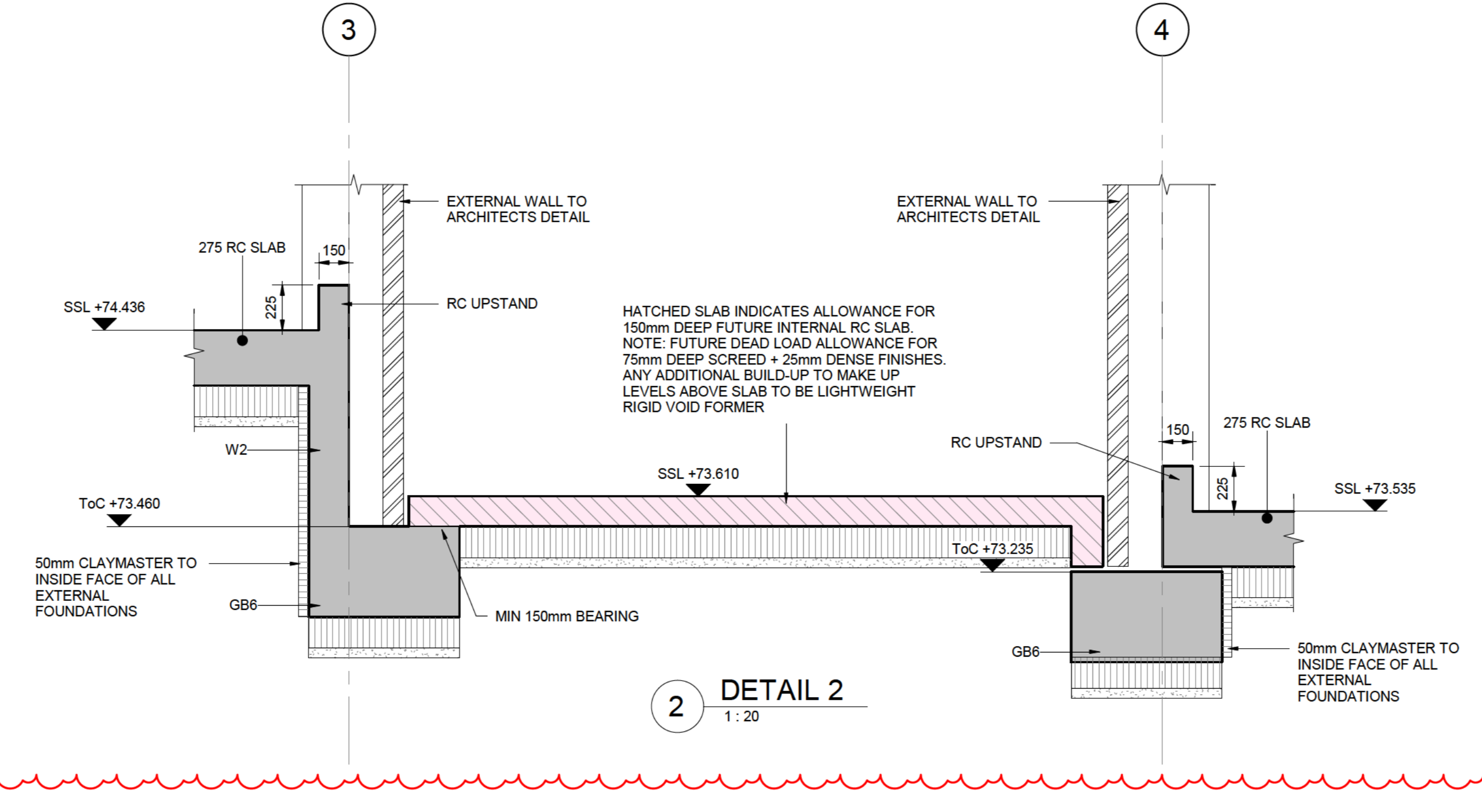
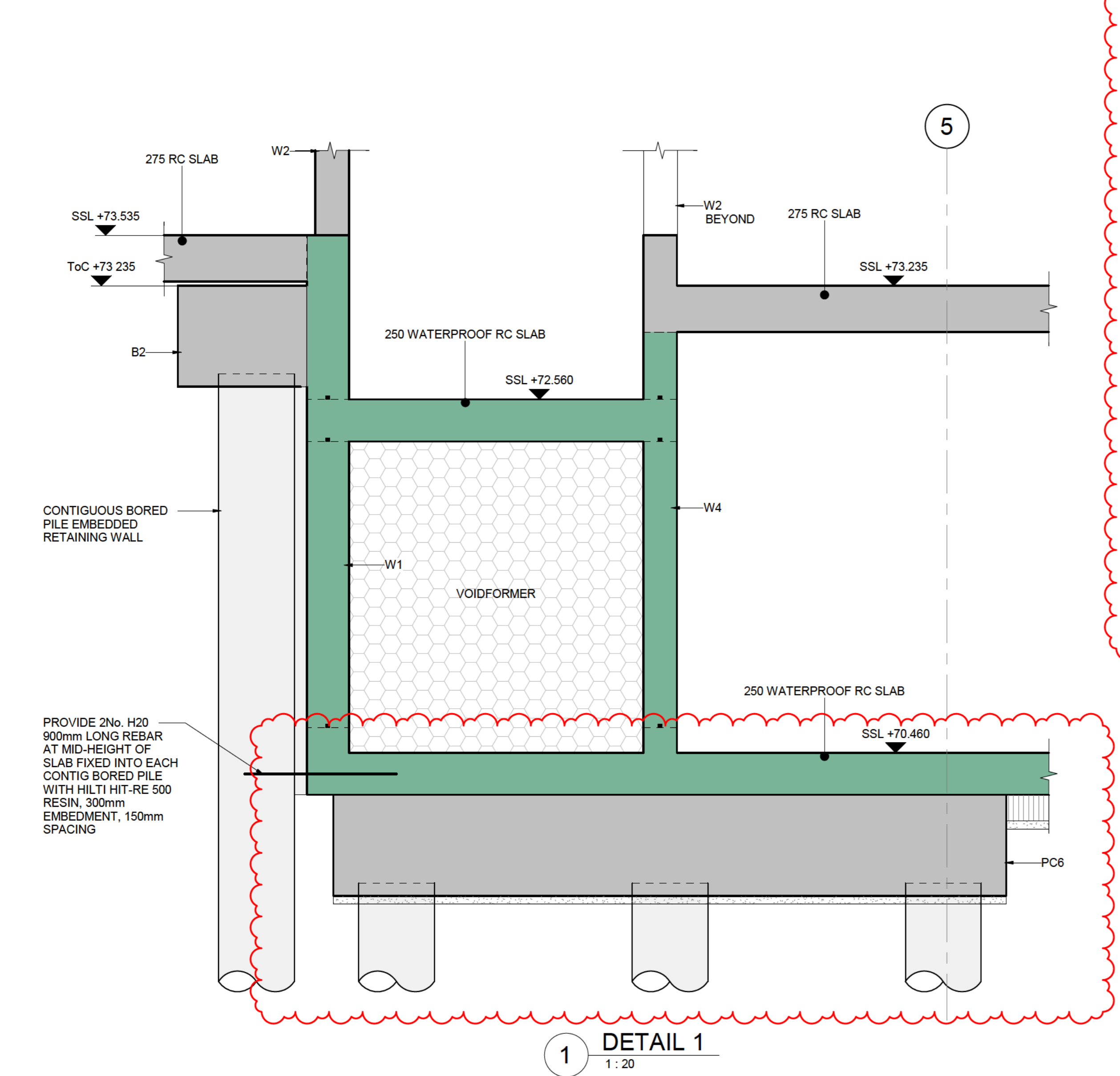
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NOT FOR CONSTRUCTION

Rev	Date	Description	Drawn	Check
P6	03/10/23	REVISED AS CLOUDED	CDP	PB
P5	11/09/23	REVISED AS CLOUDED	CDP	PB
P4	30/08/23	UPDATED TO LATEST ARCHITECTS LAYOUTS	CDP	PB
P3	24/03/23	COSES UPDATED & REVISED AS CLOUDED	CDP	PB
P2	03/03/23	ISSUE 3 ISSUE	CDP	PB
P1	23/02/23	ISSUED FOR INFORMATION	CDP	PB

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Drawing Status	
S4 - SUITABLE FOR STAGE APPROVAL	
Project	Date JAN 2023
SALISBURY SQUARE HATFIELD, AL9 5AD	Scale 1:50@A0
Drawn CDP	Engineer PB
Title	Project No
COMMERCIAL UNIT BASEMENT LAYOUT	221111
Drawing No	Revision
221111-CON-01-B1-DR-S-11099	P6



RC WALL SCHEDULE	
MARK	DESCRIPTION
W1	250 WATERPROOF CONCRETE RC WALL
W2	200 RC WALL
W3	250 RC WALL
W4	200 WATERPROOF CONCRETE RC WALL

GROUND BEAM SCHEDULE (COMMERCIAL)	
MARK	DESCRIPTION
GB2	550x450 DEEP RC GROUND BEAM
GB6	750x450 DEEP RC GROUND BEAM

PILE CAP SCHEDULE	
MARK	DESCRIPTION
PC1	750x750x600 DEEP RC PILE CAP
PC2	2100x750x600 DEEP RC PILE CAP
PC2A	2325x750x600 DEEP RC PILE CAP
PC2B	2100x750x650 DEEP RC PILE CAP
PC2C	2100x750x800 DEEP RC PILE CAP
PC3	2100x1919x700 DEEP RC PILE CAP
PC3A	600 DEEP RC PILE CAP
PC3B	2100x1919x650 DEEP RC PILE CAP
PC4	2100x2100x750 DEEP RC PILE CAP
PC6	3650x2650x600 DEEP RC PILE CAP

RC COLUMN SCHEDULE	
MARK	DESCRIPTION
C1	250x500 RC
C2	350x650 RC

RC BEAM SCHEDULE	
MARK	DESCRIPTION
B1	250x650 DEEP RC BEAM
B2	925x600 DEEP RC CAPPING BEAM
B3	250x500 DEEP RC BEAM
B4	200x500 DEEP RC BEAM
BR1	CHS114.3x6.3

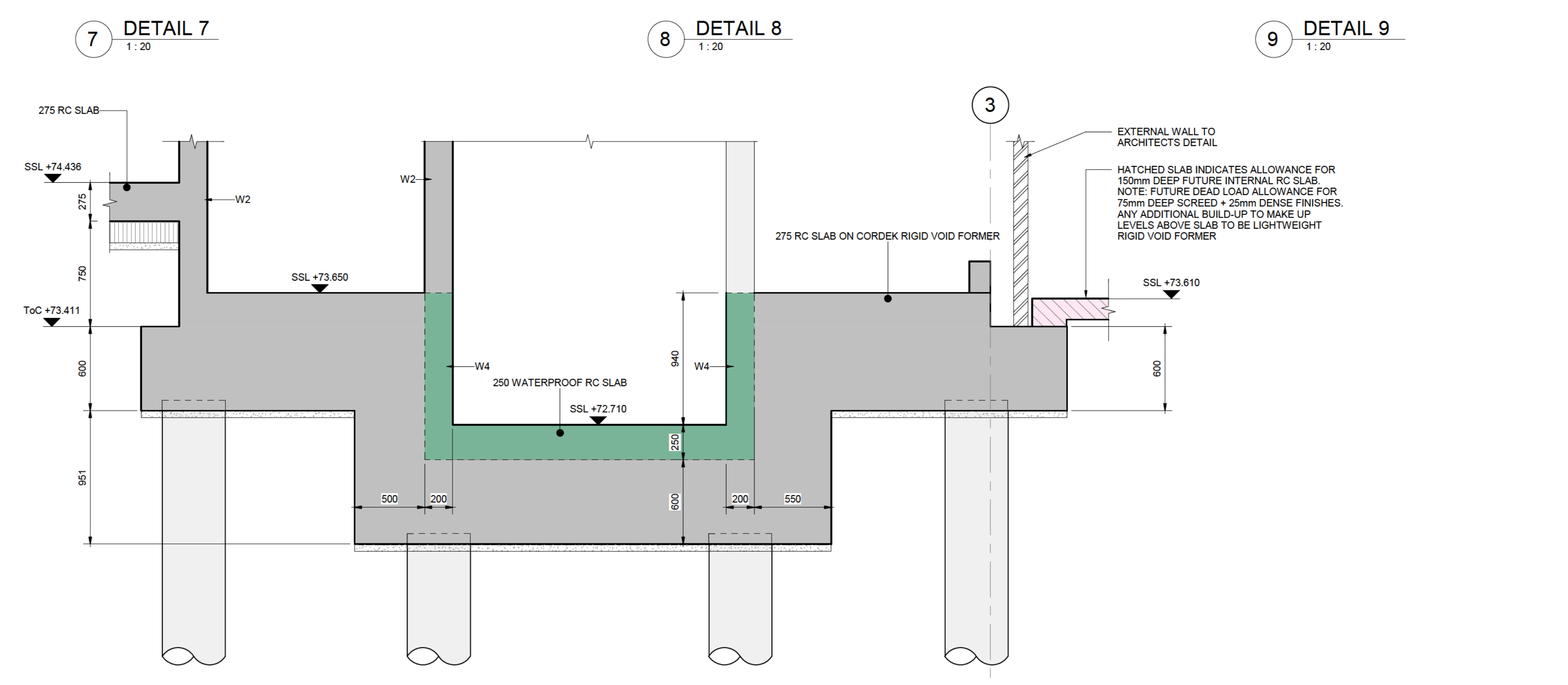
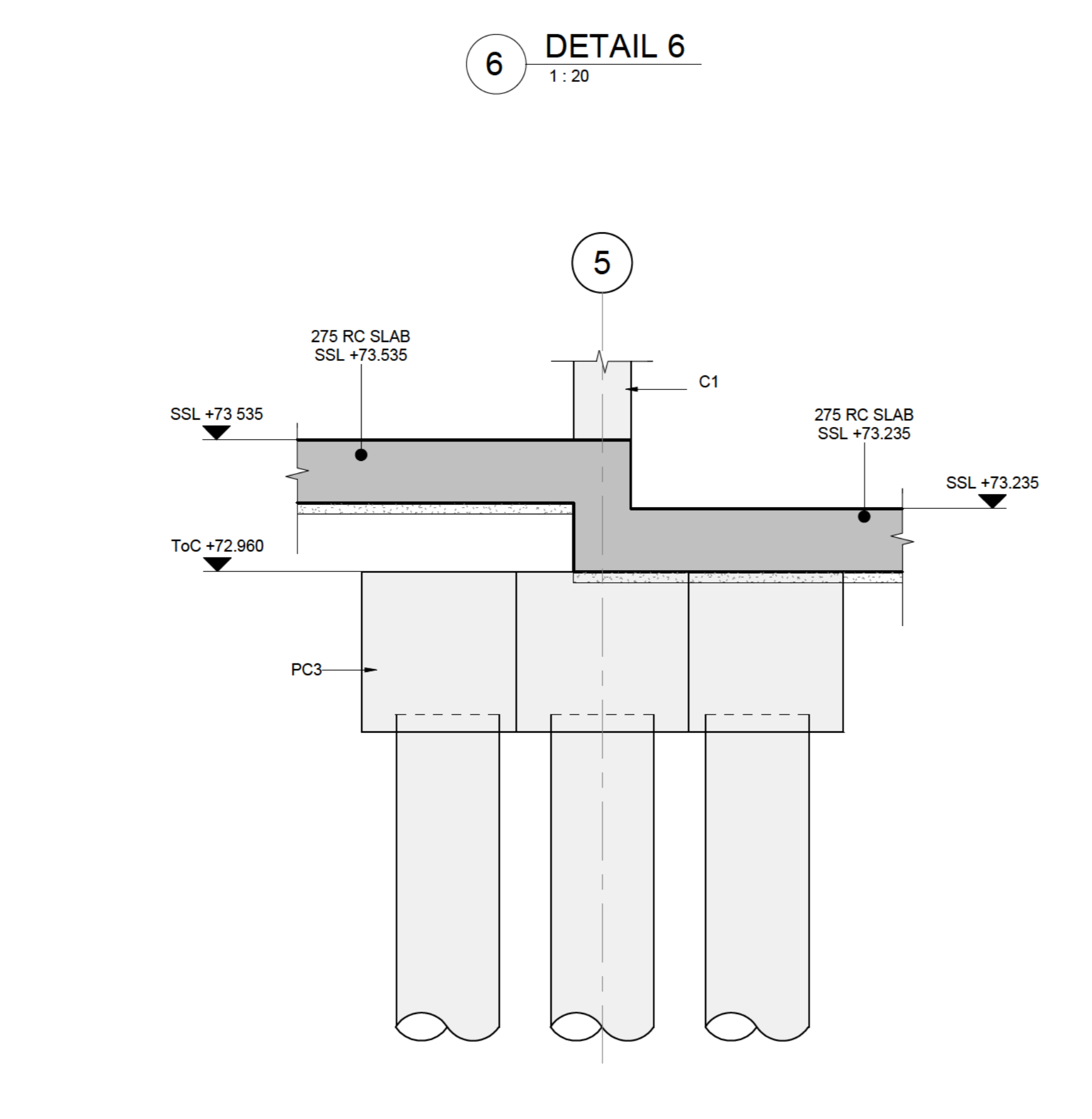
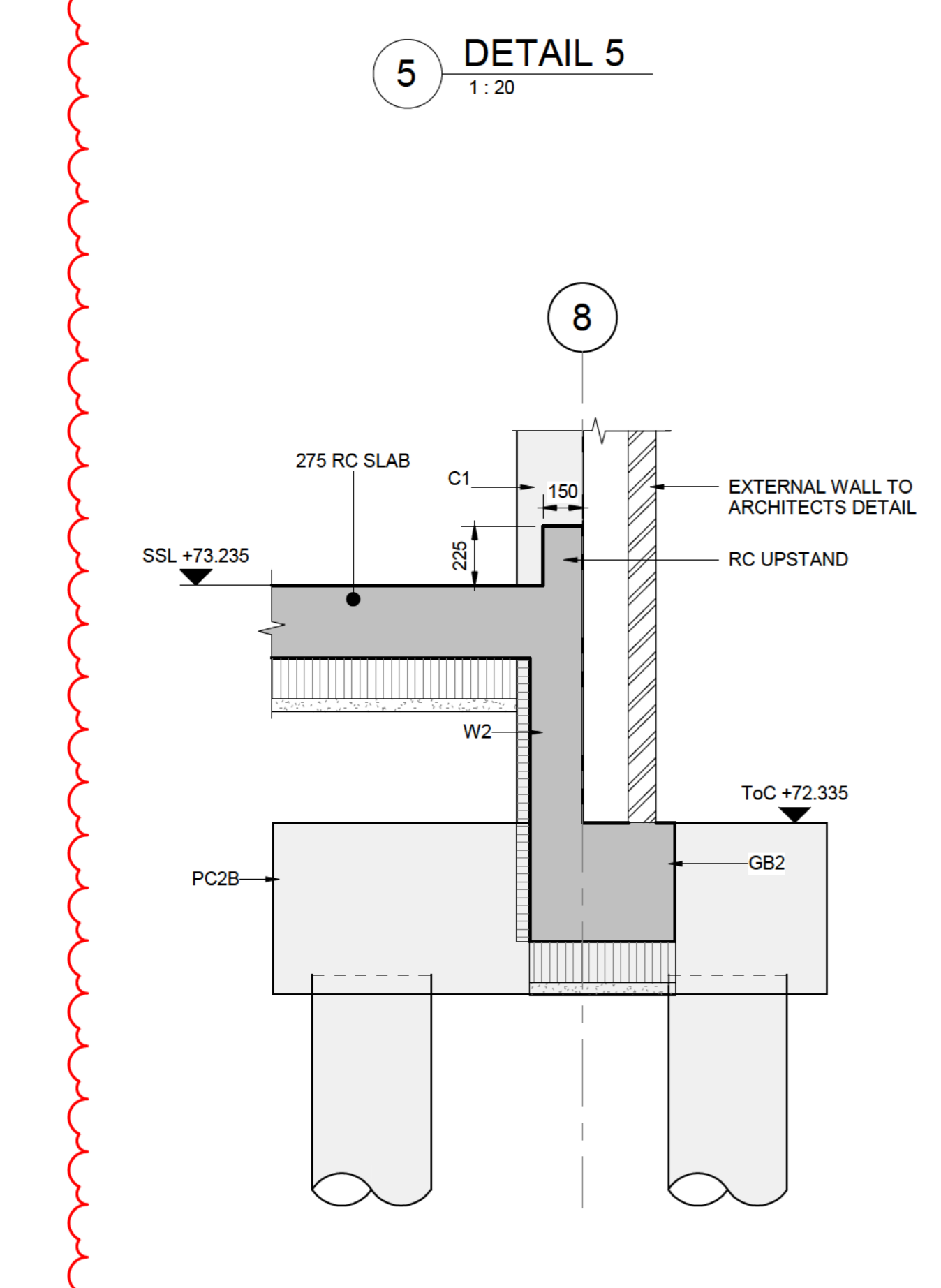
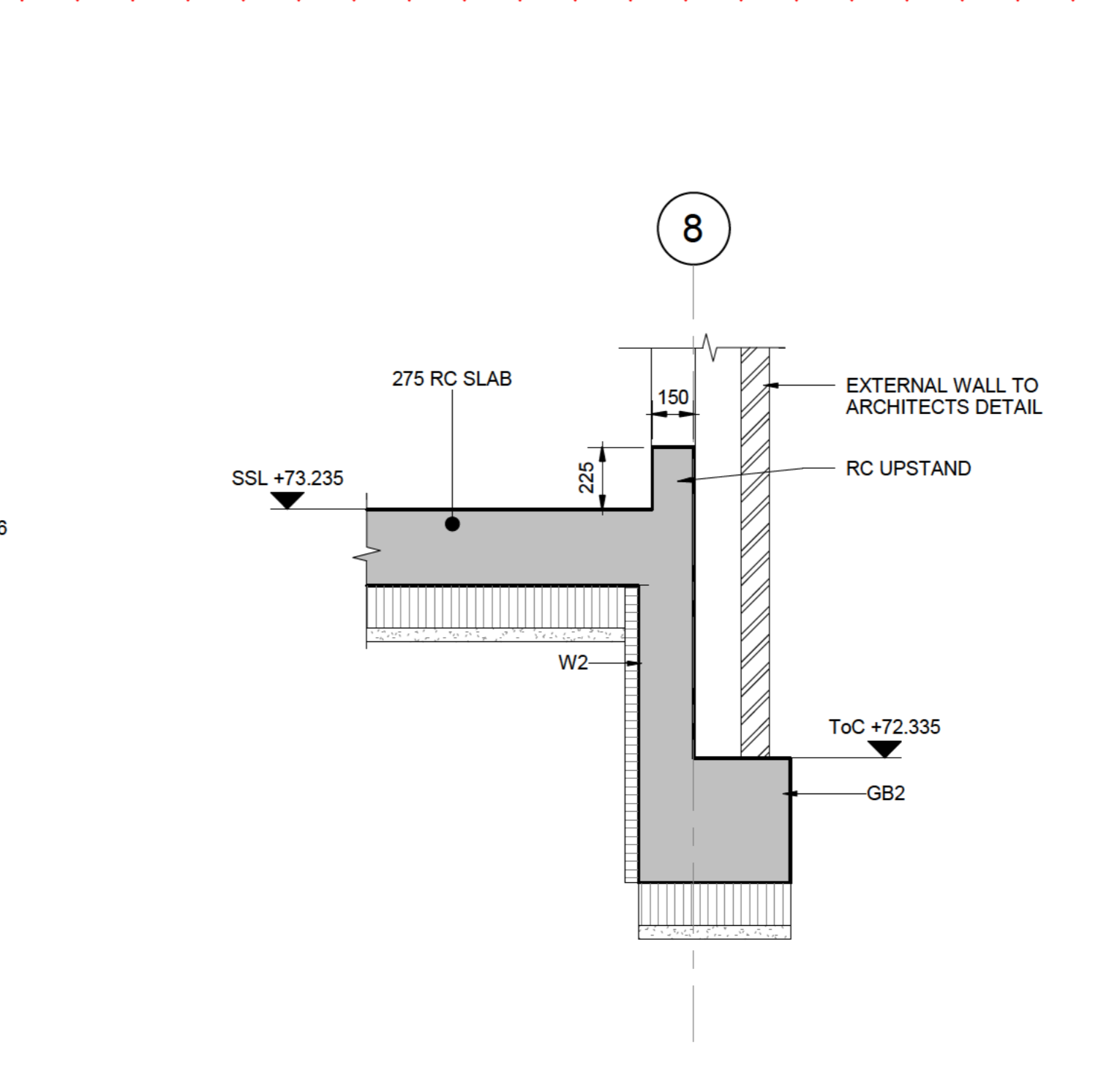
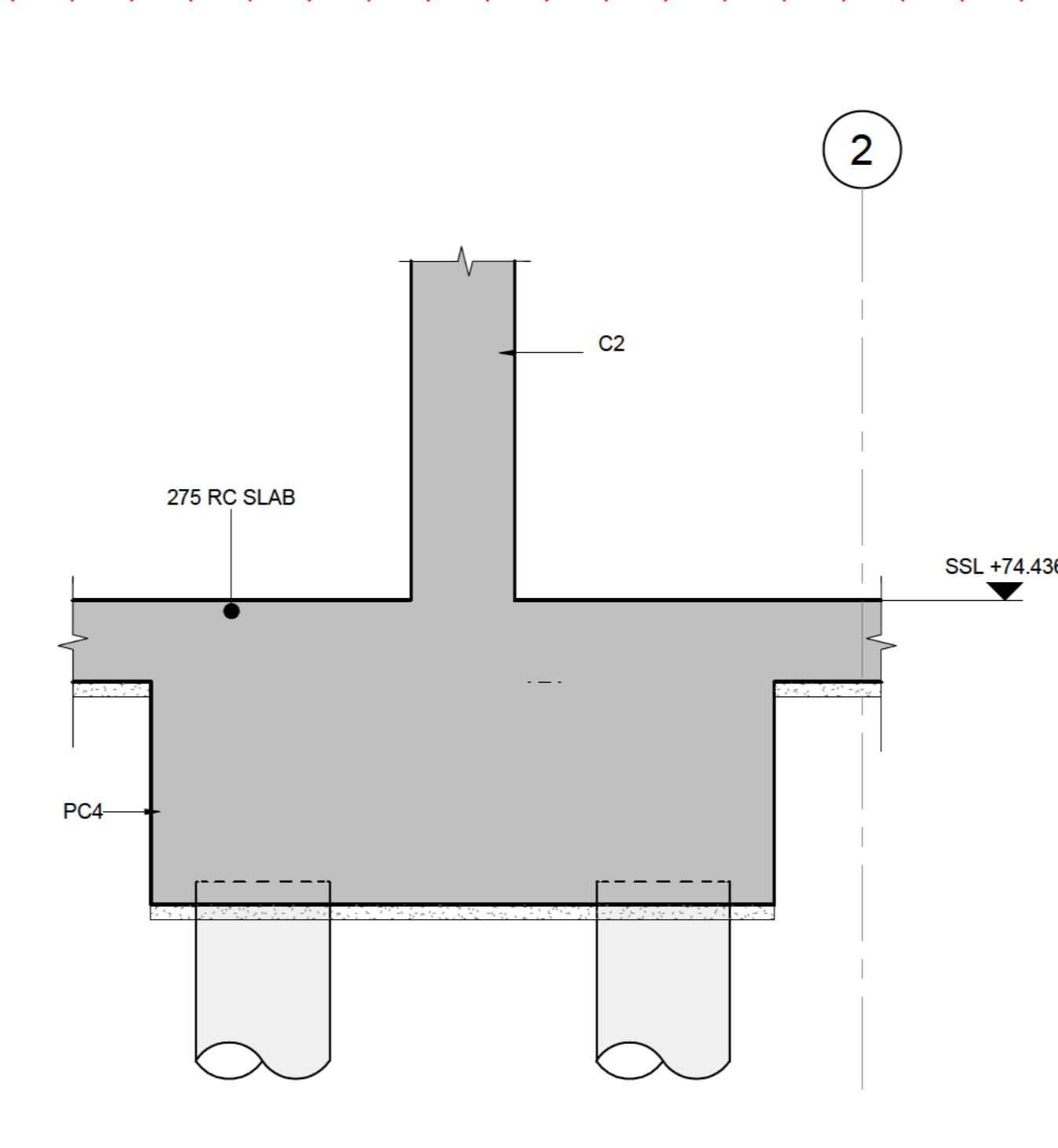
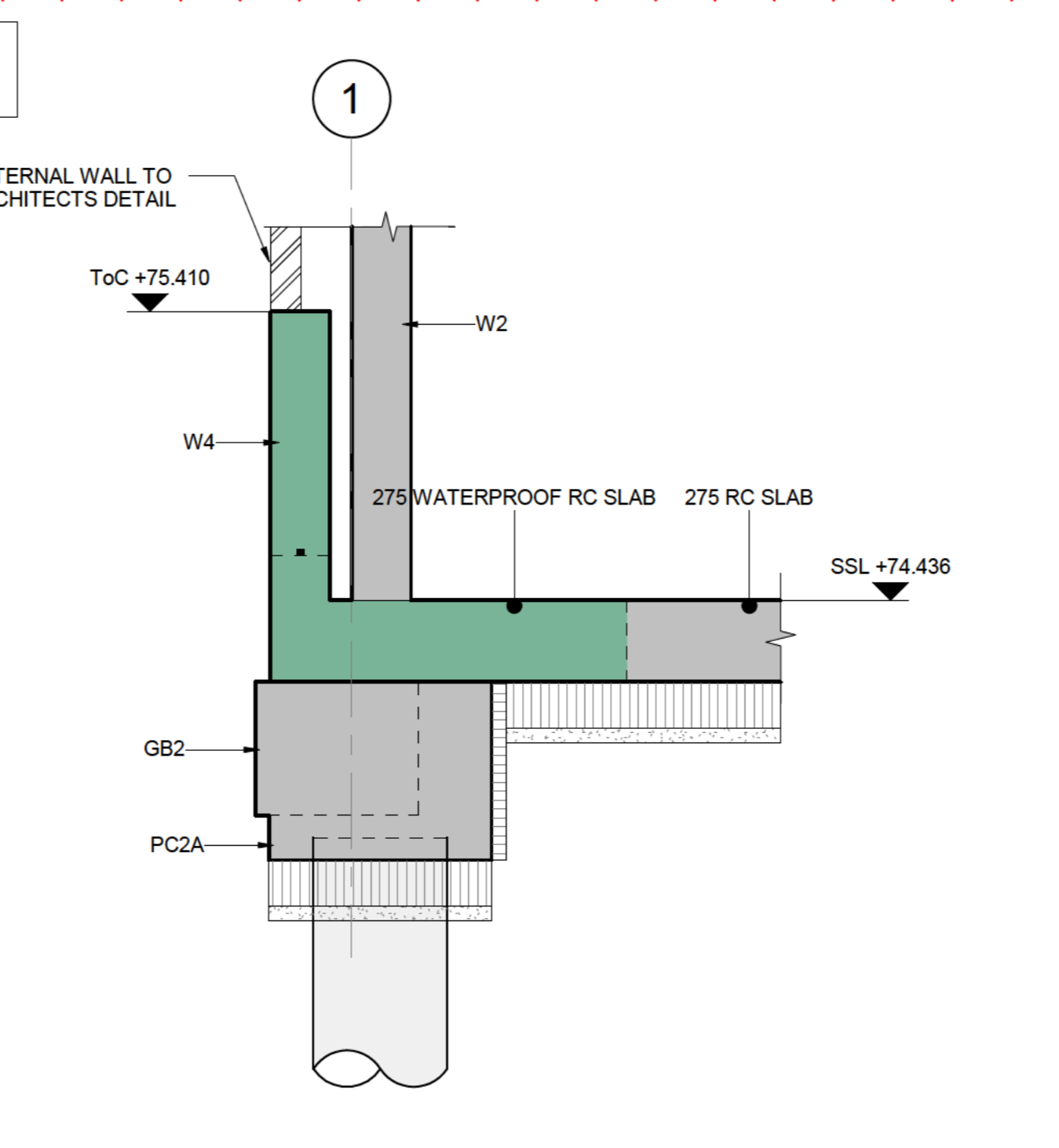
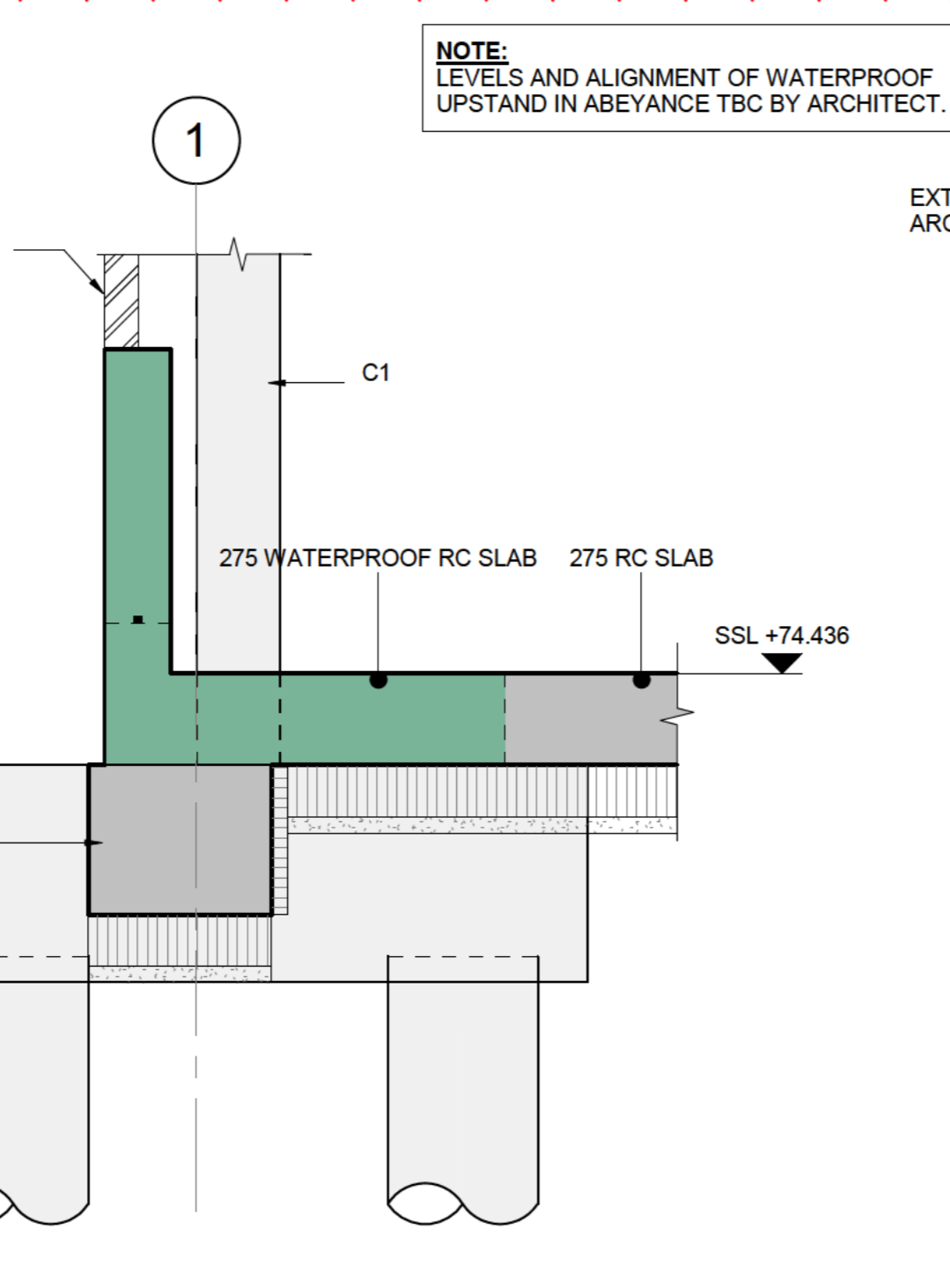
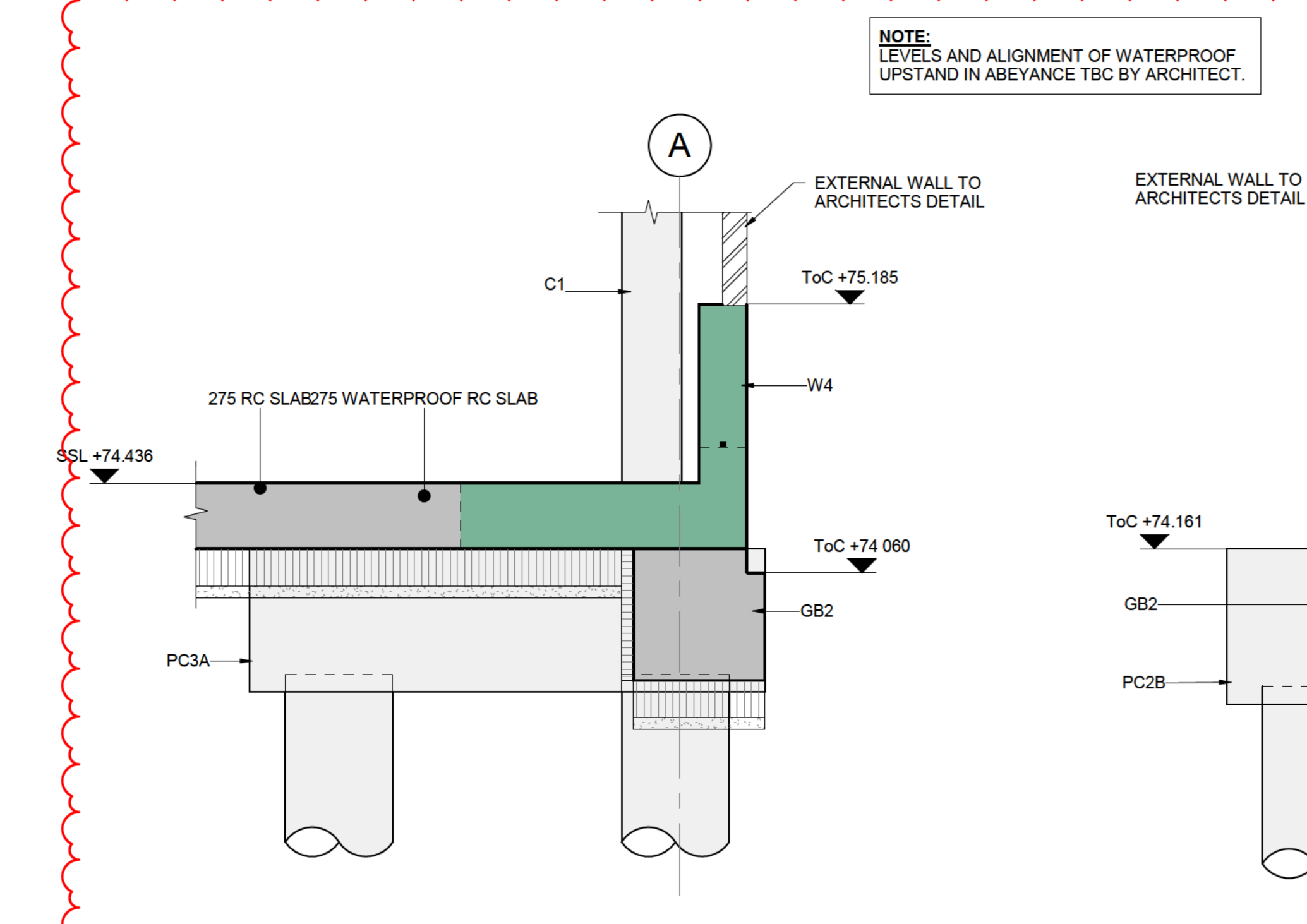
STEEL COLUMN SCHEDULE	
MARK	DESCRIPTION
SC1	UC152x152x23
SC11	RHS150x100x8

STEEL BEAM SCHEDULE	
MARK	DESCRIPTION
SB1	UB203x133x25
SB3	UB203x133x30
SB4	UC152x152x23
SB5	RHS100x50x8
SB8	RHS200x100x8
SB10	UC203x203x46
SB12	RHS100x100x8.3

LEGEND

■ DENOTES WATERPROOF CONCRETE. EXTENT TBC BY WATERPROOFING SPECIALIST.
 ■ PROVIDE WATER BAR IN ALL CONSTRUCTION JOINTS IN WATERPROOF CONCRETE - TO WATERPROOFING SPECIALISTS DETAILS.

NOTE: FOR EXTENT OF HEAVE PROTECTION REFER TO DRAWING No. 221111-CON-01-FN-DR-S-11095

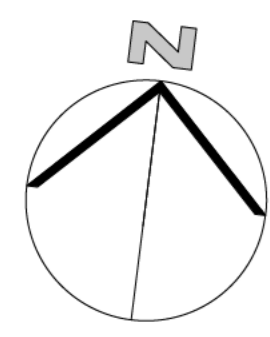


NOT FOR CONSTRUCTION

P2	02/10/23	REVISED AS CLOUDED	IGP	PB
P1	11/09/23	FINAL ISSUE	IGP	PB
Rev	Date	Description	Drawn	Check

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Drawing Status: **S4 - SUITABLE FOR STAGE APPROVAL**
 Project: **SALISBURY SQUARE HATFIELD, AL9 5AD**
 Date: **JAN 2023**
 Drawn: **CDP**
 Engineer: **PB**
 Project No: **221111**
 Drawing No: **221111-CON-XX-XX-DR-S-4010**
 Revision: **P2**



GENERAL NOTES

THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECTS, ENGINEERS AND SPECIALIST DRAWINGS AND SPECIFICATIONS.
DO NOT SCALE FROM THIS DRAWING IN EITHER PAPER OR DIGITAL FORM. USE WRITTEN DIMENSIONS ONLY.

ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.

ALL WATERPROOFING, DPC'S AND DPM'S TO ARCHITECTS DETAILS.

THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THE STABILITY OF THE WORKS, ADJOINING STRUCTURES AND SERVICES AT ALL STAGES OF CONSTRUCTION.

THE CONTRACTOR IS RESPONSIBLE FOR THE DESIGN AND INSTALLATION OF ALL TEMPORARY WORKS.
REFER TO DRAWING No. 22111-CON-XX-00-DR-C-2000 FOR LEVELS.

PILED FOUNDATIONS

ASSMED 300 DIA. CFA PILES UNLESS NOTED OTHERWISE.

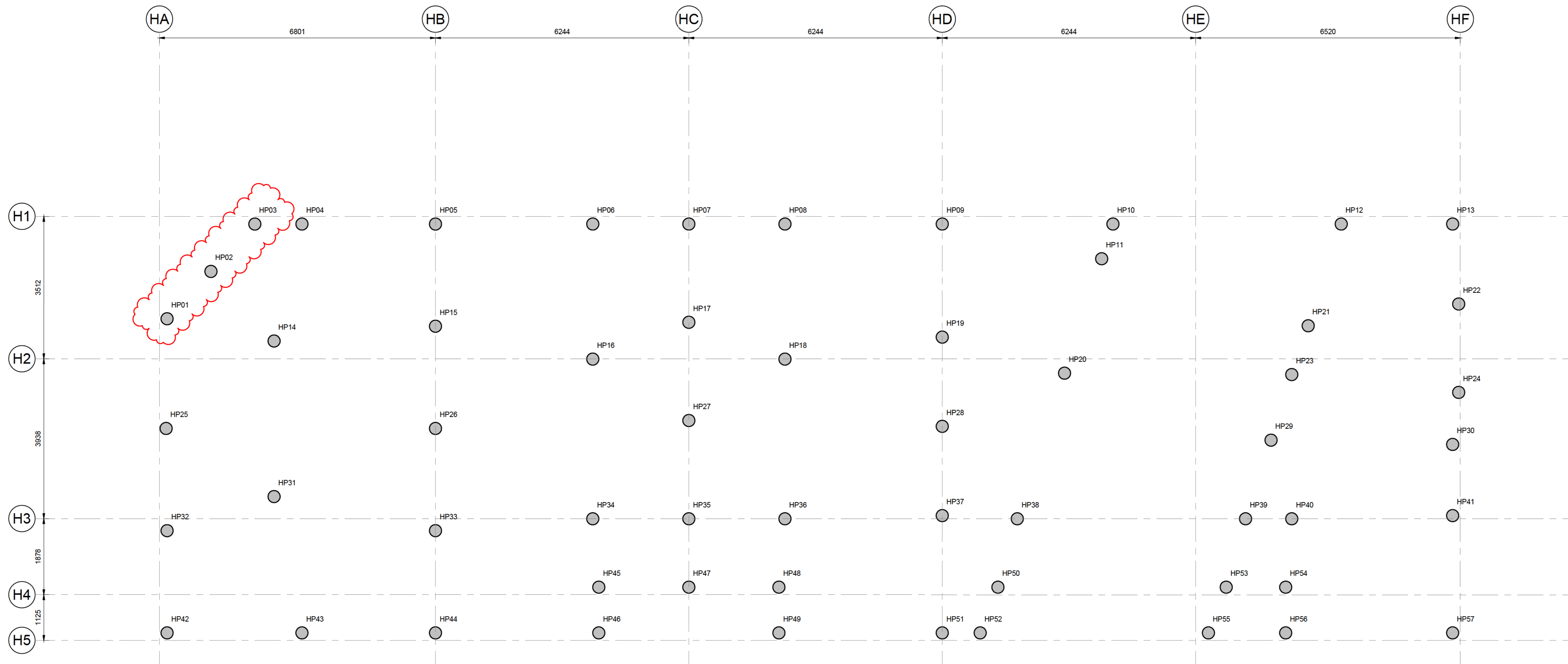
PILES SPACED MINIMUM 3 x PILE DIAMETER.

150mm DISTANCE AT PILE CAP OR GROUND BEAM PERIMETER.

ALL PILES TO HAVE MIN. 75mm EMBEDMENT IN PILE CAP / GROUND BEAMS.

DESIGN OF PILING AND PILING MAT TO BE THE RESPONSIBILITY OF THE CONTRACTOR OR THE RESPONSIBLE SUB-CONTRACTOR.

FOR PRELIMINARY PILE CAPACITIES REFER TO RSK SI REPORT.
PILE LENGTH IN ABEYANCE PENDING UPDATED RSK GROUND INVESTIGATION REPORT



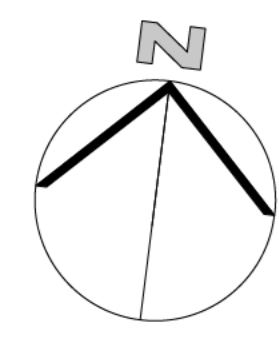
PILE LAYOUT
1:50

NOT FOR CONSTRUCTION

P2	02/10/23	REVISED AS CLOUDED	CDP	PB
P1	20/06/23	STAGE 3 ISSUE	CDP	PB
Rev	Date	Description	Drawn	Check

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Drawing Status	
S4 - SUITABLE FOR STAGE APPROVAL	
Project	Date JAN 2023
SALISBURY SQUARE HATFIELD, AL9 5AD	Scale 1:50@A0
Drawn CDP	Engineer PB
Title	Project No
HOUSES PILE LAYOUT	221111
Drawing No	Revision
221111-CON-02-PL-DR-S-12097	P2



GROUND BEAM SCHEDULE (HOUSES)	
MARK	DESCRIPTION
GB1	600x450 DEEP RC GROUND BEAM
GB3	600x750 DEEP RC GROUND BEAM
GB4	900x450 DEEP RC GROUND BEAM
GB5	450x450 DEEP RC GROUND BEAM

LEGEND	
	INDICATES 300mm DIA. CFA BORED PILE - 75mm EMBEDMENT INTO GROUND BEAMS.
	INDICATES STEP-OUT REINFORCED BLOCKWORK RETAINING WALL WITH BRICK FACING AND METAL RAILING BY SPECIALIST - REFER TO TYPICAL RETAINING WALL DETAILS ON DRG No. 221111-CON-XX-DR-S-409

GENERAL NOTES

THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECTS, ENGINEERS AND SPECIALIST DRAWINGS AND SPECIFICATIONS.

DO NOT SCALE FROM THIS DRAWING IN EITHER PAPER OR DIGITAL FORM. USE WRITTEN DIMENSIONS ONLY.

ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.

ALL WATERPROOFING, DPC'S AND DPM'S TO ARCHITECTS DETAILS.

THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THE STABILITY OF THE WORKS, ADJOINING STRUCTURES AND SERVICES AT ALL STAGES OF CONSTRUCTION.

THE CONTRACTOR IS RESPONSIBLE FOR THE DESIGN AND INSTALLATION OF ALL TEMPORARY WORKS.

REFER TO DRAWING No. 221111-CON-XX-00-DR-C-2000 FOR EXTERNAL LEVELS.

PROPOSED DRAINAGE SHOWN INDICATIVELY - REFER TO DRAINAGE LAYOUT DRAWING.

FOUNDATION NOTES

FOUNDATIONS ARE TO BE CAST TO THE PROFILES INDICATED ON THE DRAWINGS. THEY ARE TO BE CAST SYMMETRICALLY ABOUT PIERS, STANCHIONS OR WALLS, UNLESS NOTED OTHERWISE ON THE DRAWINGS.

PROVIDE COMPRESSIBLE MATERIAL OR VOID FORMER BELOW ALL GROUND BEAMS AND AGAINST INSIDE FACE OF THE EXTERNAL GROUND BEAMS WITHIN INFLUENCE ZONE OF EXISTING OR PROPOSED TREES, i.e. 150mm THICK CELLORE TO BE PLACED ON 50mm CONCRETE BLINDING.

PROTECTION DRAWING 22111-CON-02-FN-DR-S-12098 FOR EXTENT OF HEAVE PROTECTION MEASURES. ALL CELLORE TO BE PLACED ON 50mm CONCRETE BLINDING.

PILES TO BE DESIGNED BY SPECIALIST TO BS EN 1997 + UK NATIONAL ANNEX.

PILES ARE TO BE DESIGNED BY SPECIALIST IN ACCORDANCE TO COMPLY WITH THE CURRENT EDITION OF SPECIFICATION FOR PILING AND EMBEDDED RETAINING WALLS (SPERV), PILING CONTRACTOR TO PAY SPECIAL ATTENTION TO THE RISK OF NEGATIVE SKIN FRICTION.

CONCRETE TO BE STRENGTH GRADE C25/30 THROUGHOUT.

CONCRETE GENERALLY: TO BS 8500-2. READY-MIXED CONCRETE. PRODUCTION PLANT: CURRENTLY CERTIFIED BY A BODY ACCREDITED BY UKAS TO BS EN 45011.

ENSURE EXCAVATIONS ARE CLEAR OF ALL DEBRIS AND ARE FREE OF WATER PRIOR TO PLACING OF CONCRETE.

FOUNDATIONS AND SUSPENDED BASEMENT / GROUND FLOOR SLABS TO BE CAST ONTO MIN. 50mm CONCRETE BLINDING.

CONCRETE TO NOT TO BE CAST AT TEMPERATURES GREATER THAN 30°C OR LESS THAN 5°C, UNLESS OTHERWISE SPECIFIED. DO NOT PLACE AGAINST FROZEN OR FROST COVERED SURFACES.

CONTRACTOR IS TO ENSURE THAT THE BUILDING CONTROL OFFICER IS NOTIFIED FOR THEIR INSPECTIONS PRIOR TO CONCRETING.

SUBSTRUCTURE MASONRY AND PRE-CAST FLOORING

WORKMANSHIP IS TO COMPLY GENERALLY WITH BS 5628 PARTS 1 & 3. BRICKWORK TO BE BS 3921. BLOCKWORK TO BE TO BS 6073.

BRICKWORK/BLOCKWORK BELOW DPC IS TO BE MINIMUM FL DURABILITY. MORTAR TO BE M12 (i). SRPC, UNLESS NOTED OTHERWISE ON THE DRAWINGS.

DO NOT LAY MASONRY WHEN THE AMBIENT AIR TEMPERATURE IS LESS THAN 5°C.

BLOCKWORK TO BE CELCON HIGH STRENGTH MIN 7.3N/mm² OR SIMILAR APPROV.

MINIMUM SUB FLOOR VOID OF 250mm (AS RECOMMENDED BY NHBC GUIDANCE).

THE PRE-CAST MANUFACTURER SHALL BE RESPONSIBLE FOR THE DESIGN, SUPPLY AND ERECTION OF ALL PRECAST CONCRETE ELEMENTS. THE MANUFACTURER SHALL REQUEST ADDITIONAL INFORMATION AS NECESSARY FROM THE C.A. LAISING WITH THE C.A., CONTRACTOR AND OTHERS AS NECESSARY TO ENSURE CO-ORDINATION OF THE WORK WITH RELATED BUILDING ELEMENTS AND SERVICES. THE CONTRACTOR IS TO ALLOW FOR ALL DETAILS/WORKMANSHIP REQUIRED BY THE MANUFACTURERS TYPICAL DETAILS.

FABRICATION DRAWINGS TO BE PREPARED WELL IN ADVANCE TO ALLOW FOR SUBMISSION AND COMMENTS TO BE MADE BY THE DESIGN/CLIENT TEAM. NO FABRICATION WORK SHALL COMMENCE UNTIL ALL COMMENTS HAVE BEEN RECEIVED AND ANY NECESSARY AMENDMENTS INCORPORATED.

FLOOR LOADINGS:

DL - 1.8N/m² (ASSUMING INSULATION, SCREENS AND FINISHES)
 LL - 1.8N/m² + 1.0 kN/m² FOR PARTITIONS AND 2.0kN POINT LOAD

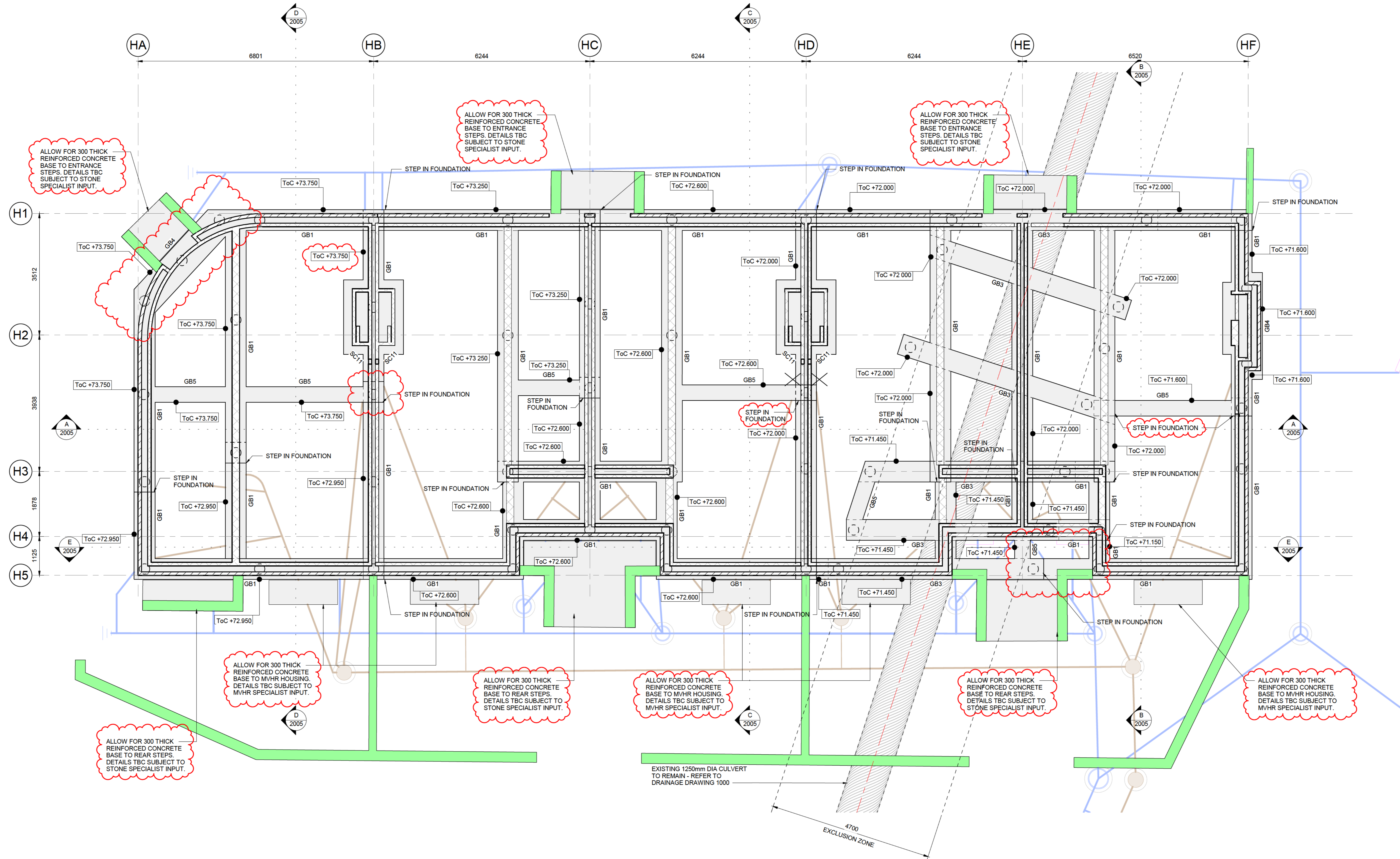
CONTROL OF BACKFILL BELOW HOUSES:

BACKFILL IS TO BE PLACED EVENLY IN LAYERS BOTH SIDES OF GROUND BEAMS AND MASONRY WALLS. AT NO POINT SHOULD BACKFILL LEVELS DIFFER BY MORE THAN 450mm ACROSS WALLS IN THE TEMPORARY OR PERMANENT CONDITION.

GEN 3 CONCRETE FILL IS TO BE PROVIDED IN ALL CAVITY WALLS UP TO PROPOSED GROUND/BACKFILL LEVEL AND CURED IN ADVANCE OF BACKFILLING ACTIVITIES - CONTRACTOR TO CONFIRM AGAINST ARCHITECTS CAVITY DETAILS.

BACKFILL GRADIENTS TO BE NO GREATER THEN 1:3.

ALL BACKFILL LEVELS TO BE AGREED WITH THE ENGINEER IN ADVANCE OF PLACING.



FOUNDATION PLAN
1:50

NOT FOR CONSTRUCTION

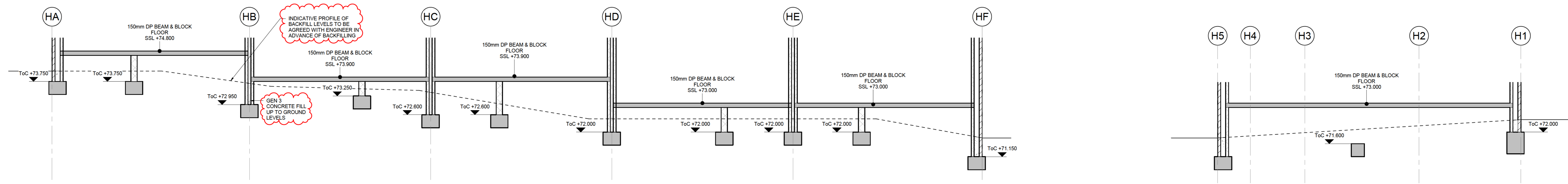
Rev	Date	Description	Drawn	Check
P1	02/03/23	REVISED AS CLOUDED	CDP	PB
P2	21/08/23	REVISED AS CLOUDED	CDP	PB
P3	30/06/23	UPDATED TO LATEST ARCHITECTS LAYOUTS	CDP	PB
P4	01/03/23	STAGE 3 ISSUE	CDP	PB

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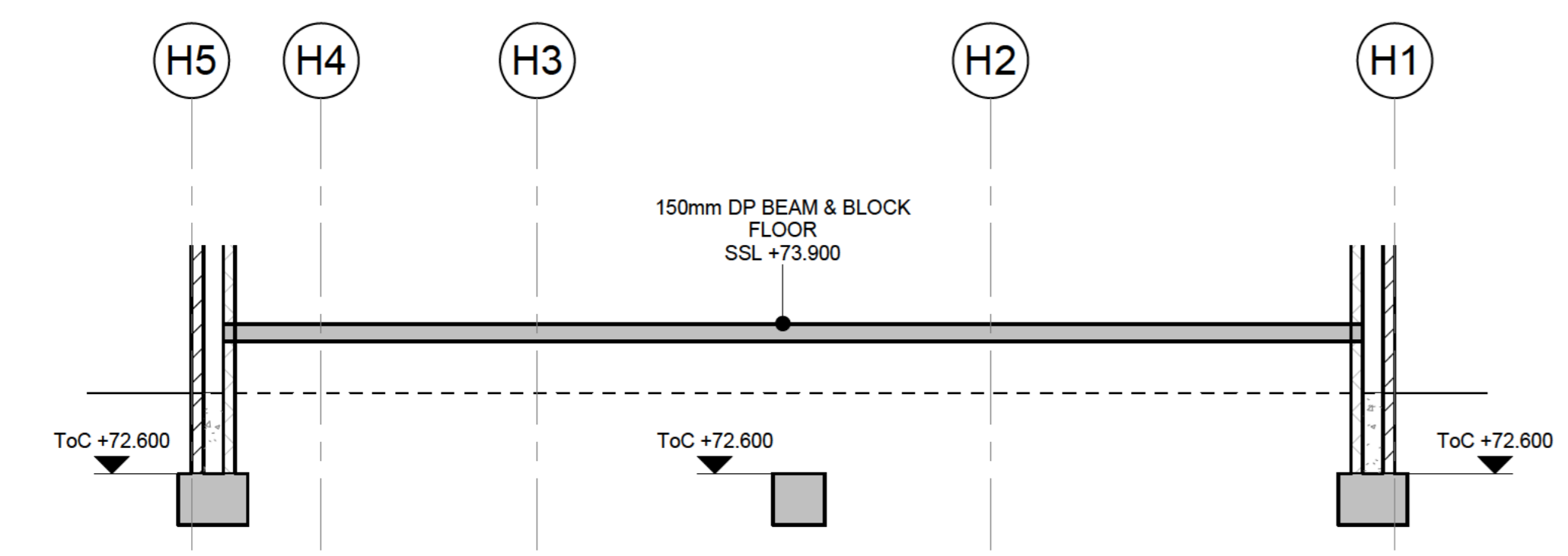
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Drawing Status	
S4 - SUITABLE FOR STAGE APPROVAL	
Project	Date JAN 2023
SALISBURY SQUARE HATFIELD, AL9 5AD	
Drawn	CDP
Engineer	PB
Title	Project No
HOUSES FOUNDATION LAYOUT	221111
Drawing No	Revision
221111-CON-02-FN-DR-S-12098	P4

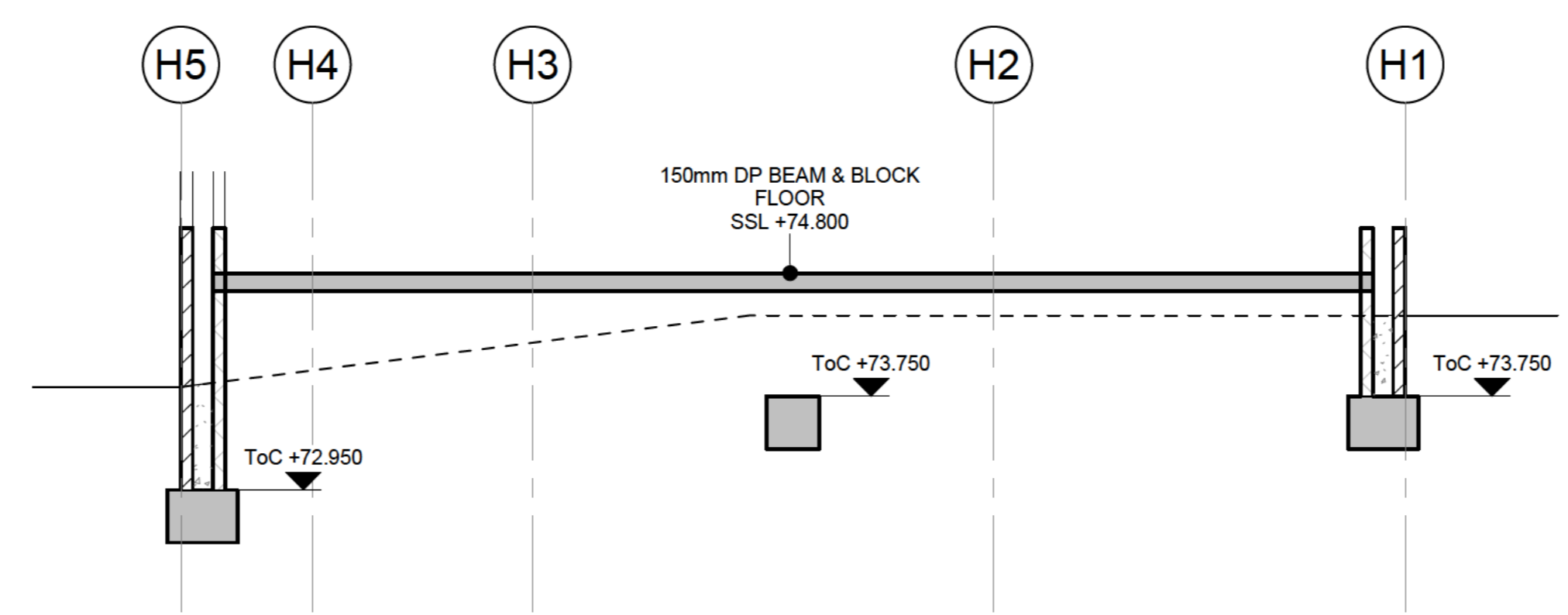


A SECTION A-A
1:50

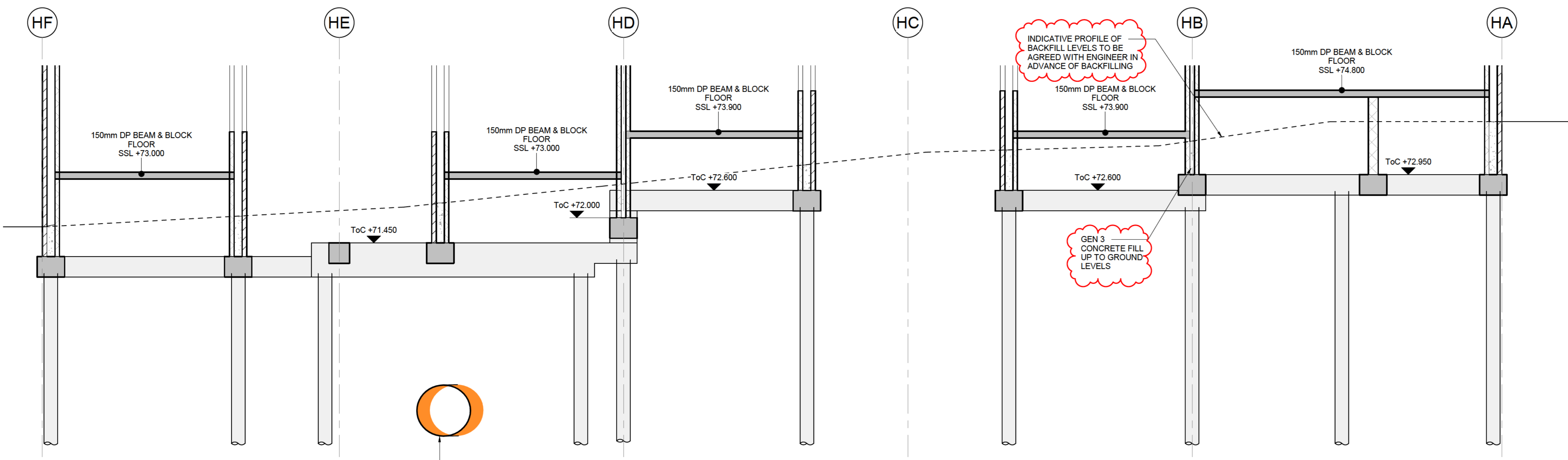
B SECTION B-B
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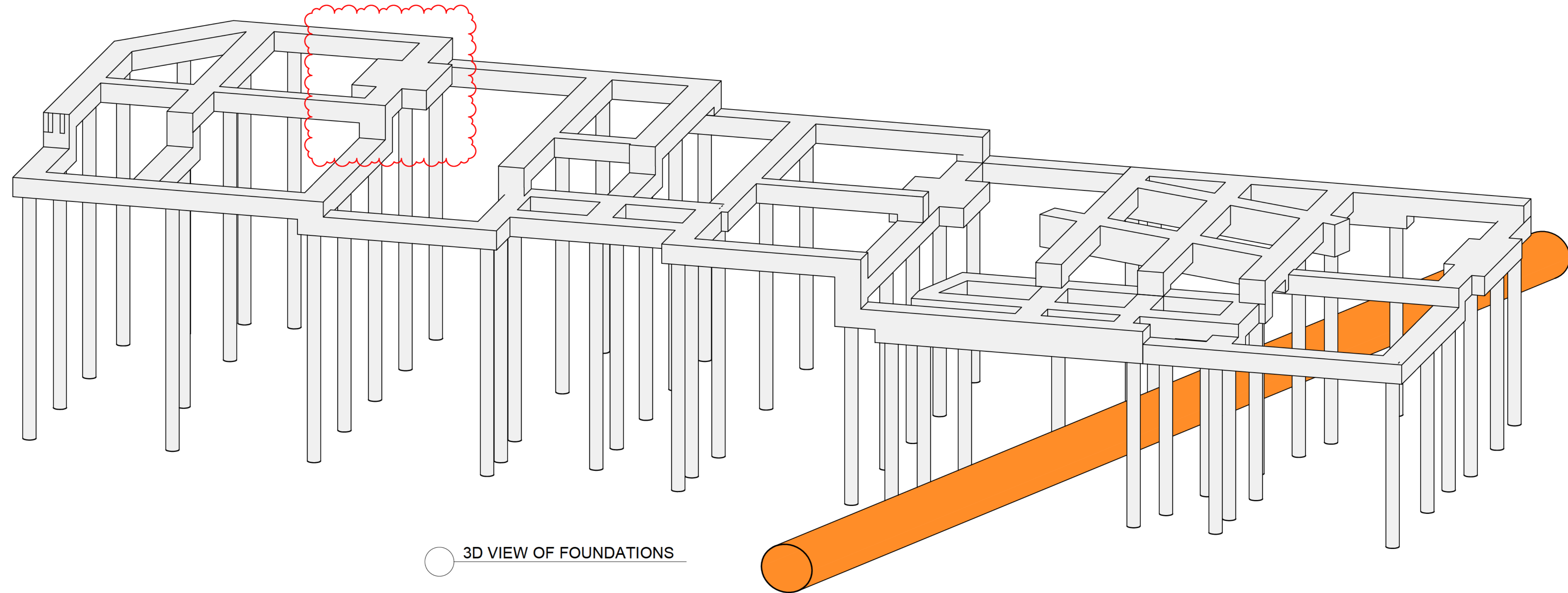
C SECTION C-C
1:50



D SECTION D-D
1:50



E SECTION E
1:50



3D VIEW OF FOUNDATIONS

NOT FOR CONSTRUCTION

P4	10/10/23	REVISED AS CLOUDED	CDP	PB
P3	21/08/23	REVISED AS CLOUDED	CDP	PB
P2	10/06/23	UPDATED TO LATES ARCHITECTS LAYOUTS	CDP	PB
P1	07/03/23	STAGE 3 ISSUE	CDP	PB

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Drawing Status
S4 - SUITABLE FOR STAGE APPROVAL

Project: SALISBURY SQUARE
HATFIELD, AL9 5AD
Date: JAN 2023
Scale: 1:50@A0

Drawn: CDP
Engineer: PB

Title: HOUSES
SUBSTRUCTURE SECTIONS
Project No: 221111

Drawing No: 221111-CON-02-XX-DR-S-2005
Revision: P4