28 Parliament Hill, London, England, NW3 2TN

Fabiana Fedeli

GEOTECHNICAL GROUND INVESTIGATION AND GROUND MOVEMENTS REPORT

Project No. 2166-23

November, 2023

Document Control		
Revision	Issue Date	Reason for Revision
Draft		
Original	14th Nov 2023	
A	2nd January 2024	Updated with ground movements analyses
B		
C		
D		

CONTENTS

Your ref:
Our ref: SKZ_2166/23

Fabiana Fedeli
28 Parliament Hill,
London,
NW3 2TA

REPORT ON GEOTECHNICAL GROUND INVESTIGATION AT 28 PARLIAMENT HILL, LONDON, ENGLAND, NW3 2TN

1. INTRODUCTION

AVZGeoEng Limited have been commissioned by Mr Nick Norden from Neale and Norden Consultants on behalf of Fabiana Fedeli ('the Client') to carry out a Geotechnical Investigation at the above site as indicated on the scope of work and engineering drawings provided by the client and in accordance with the AVZGeoEng quotation ref: SKZ_2166/23.

The proposed amendments are for the lowering of the existing lower ground floor to form a new swimming pool, extension to the rear and amendments to the existing building as presented on the plans supplied by the engineer.

2. THE SITE

The site, which may be found by approximate National Grid reference OS Grid Ref: E: 527459, N: 185816, is situated at 28 Parliament Hill, London, England, NW3 2TN.

An extract of the Ordnance Survey map showing the location of the site is included in **Figure 1.**

The published 1:50,000 scale geological map of the area indicates that the site is underlain by the London Clay Formation – Clay, Silt and Sand, as bedrock geology. No superficial deposits are expected at the location.

It is thought that the London Clay formation was deposited during a period of sea inundation in the area up to 200m in depth. The London Clay can be up to 150m thick beneath south Essex thinning across London to about 90m near Reading. The formation consists of mainly dark blue to brown grey clay containing variable amounts of fine-grained sand and silt. London Clay generally weathers to an orange-brown colour with pockets of silty fine sand. The formation is particularly susceptible to swelling and shrinking when subjected to moisture content changes. It usually contains selenite crystals, often grouped in bands or layers, which are thought to have originated from the decomposition of shell fragments. London Clay contains clay minerals in the form of illite, kaolinite and smectite. The presence of smectite renders the London Clay particularly susceptible to heave caused by alternate wetting and drying near the surface.

The existing topography and history of development of the site suggest that in addition to these natural strata some made ground may be present on the site.

3. LIMITATIONS

Any opinions and interpretations expressed in this report are based on the ground conditions encountered during the site work and on the results of tests made in the field, together with AVZGeoEng conjectural interpretation between exploratory holes. There may, however, be other conditions prevailing at the site which have not been revealed by the investigation and which have therefore not been taken into account in this report. While the report may offer opinions on the possible configuration of strata, both between the excavations and below the maximum depth achieved by the investigation, these comments are for guidance only. It should also be noted that groundwater levels vary due to seasonal or other effects and may at times differ to those measured during the investigation. For investigations, which include environmental issues, the data obtained relate to the conditions which are relevant at the time of the investigation.

This report is not an engineering design and the figures and calculations enclosed to the report should be used by the Structural Engineer taking note that variations may apply depending on design loading, in techniques used, and in site conditions. Our recommendations are appropriate for Ground Investigation Report (GIR) as per the current standards and should therefore not supersede the Engineer's design.

This report has been prepared by AVZGeoEng limited. No individual is personally liable in connection with the preparation of this report. By receiving this report and acting on it, the client or any other person accepts that no individual is personally liable whether in contract, tort, for breach of statutory duty or otherwise.

AVZGeoEng Limited prepared this Report for our Client. Any third parties using this Report do so entirely at their own risk. AVZGeoEng makes no warranty or representation whatsoever, express or implied, with respect to the use by a third party of any information contained in this Report or its suitability for any purpose. AVZGeoEng assumes no responsibility for any costs, claims, damages or expenses (including any consequential damages) resulting from the use of this Report or any information contained in this Report by a third party.

4. GROUND INVESTIGATION

The site work was carried out on 26th October 2023, aimed to obtain geotechnical parameters in regards to the proposed development. The investigation and soil descriptions were carried out in general accordance with BS5930:2015 – Code of Practice for Site Investigations.

The ground investigation comprised the following works:

- A borehole advanced by drive-in sampler technique to a max 10.0m depth;
- A ∅35mm standpipe installed to 4.0mbgl for future groundwater monitoring if required;
- In situ testing and logging.

The borehole location was determined approximately by reference to physical features present on the site at the time of investigation and the ground level at the borehole location was not determined.

The location of the investigation borehole is presented on **Figure 2**, the borehole logs and the geotechnical testing results are presented in the **Appendix A** and **Appendix B**, respectively.

5. GEOTECHNICAL TESTING

The programme of geotechnical tests undertaken on samples obtained from the intrusive investigation is presented in **Table 1**, the main purpose of which was to classify the ground beneath the site and assist in determining its physical and mechanical properties. Where appropriate, testing was undertaken in accordance with BS 1377:1990 & EN ISO 14688-2 2004+A1:2013 Method of Tests for Soils for Civil Engineering Purposes and was carried out by the AVZGeoEng Ltd in-house laboratory.

Tests carried out in order to classify the concrete class required on site have been undertaken following the procedures within BRE SD1:2005 by a UKAS accredited laboratory (The Environmental Laboratory Ltd).

Table 1 – Summary of Geotechnical Testing Programme

Strata	Tests undertaken	No of Tests
Made Ground	pH & Water Soluble Sulphates	1
London Clay Formation	Natural Moisture Content	5
	Plasticity Index	5
	pH & Water Soluble Sulphates	3

6. GROUND CONDITIONS

The investigation borehole revealed that the site is underlain by a thin layer of Made Ground over stratum classified as London Clay Formation. This appears to generally confirm the stratigraphical succession suggested by the published geological records.

The ground conditions are summarised in **Table 2** below.

Table 2 - General succession of strata encountered

Brief Description	Depth to top of stratum m.bgl	Thickness (m)
Made Ground	G.L	0.5
London Clay Formation	0.5	Not proven

The made ground encountered during the site investigation is comprised of dark brown silty clay, silt and sand, with brick fragments.

The London Clay Formation was encountered below the Made Ground, recovered as firm, becoming stiff with depth, laminated silty clay, with frequent sandy laminas and occasional selenite crystals.

The measured and inferred soil parameters for the stratum are listed in **Table 3** below.

Table 3 – Summary of Soil Parameters for the London Clay Formation

Soil Parameters	Range	Results
Liquid Limit (%)	72 to 80	Appendix B
Plastic Limit (%)	25 to 29	Appendix B
Plastic Index (%)	47 to 51	Appendix B
Modified Plasticity Index (%)	47 to 51	Appendix B
Plasticity Term	Very high	
Volume Change Potential (NHBC)	High	
Moisture Content (%)	31.1 to 32.4	Appendix B
SPT 'N' Values	13 to 27	Appendix A, Figure 3
Undrained Shear Strength (kN/m^2) inferred by SPT (1	55 to 115	Figure 4
Undrained Shear Strength (kN/m^2) inferred by HV (2	46 to 93	Appendix A, Figure 4
Strength Term	Soft to stiff	

(1 SPT – Standard Penetration Tests
(2 HV – Hand Vane Tests (130KPa max capacity of the apparatus)

7. GROUNDWATER CONDITIONS

The borehole remained dry during the site works. A Ø35mm standpipe was installed on completion of the work to allow for future groundwater monitoring if required.

8. TRIAL PITS

A trial pit was excavated by a third parti contactor aimed to confirm the depth of the underpins carried out at the property in the past. Details about the findings are presented in the **Figure 6** of this Report.

9. ENGINEERING CONSIDERATION

9.1 Foundations

The ground conditions appear feasible for the design and construction of relatively shallow spread foundations for the proposed development. Alternatively, piled foundations could be adopted, particularly for any moderate to heavy or sensitive foundation loads.

The recommendations for the design and construction of spread and strip foundation in relation to ground conditions are set out in **Table 4.**

Table 4 – Design and construction of spread and strip foundations

Design/construction considerations	Design/construction recommendations					
Founding stratum	London Clay					
Depth	Foundations should be taken to a minimum depth of 1m below finished ground level and at least 0.1m into the founding stratum below any overlying made ground or to any greater depth required in respect of the special design considerations given below.					
Special design considerations	Due to the presence of shrinkable soils foundations should be designed taking into account all the normal precautions, including minimum depths, to minimise the risk of future foundation movements in accordance with NHBC Standards, or similar. The findings of the ground investigation indicate that foundations should be designed for shrinkable soils of high-volume change potential.					
Bearing pressures for range of strip footings and square bases founded in the London Clay	**Net allowable bearing pressure kN/m²**					
		Strip Footings			**Square bases**	
	Width	**0.5m**	**0.75m**	**1.0m**	**1m**	**1.25m**	**1.5m**
	Depth						
	1.0m	78	78	79	92	92	92
	1.5m	87	87	88	102	102	102
	2.0m	95	96	97	113	113	113
	2.5m	101	101	102	119	119	119
	3.0m	108	108	109	127	127	127
	3.3m	113	113	114	133	133	133
Basis of allowable bearing pressures	Each allowable bearing pressure includes an overall factor of safety of 3 against bearing capacity failure and with total settlements associated with the bearing pressure estimated to be less than 25mm.					
Stability of excavations	Generally, the foundation excavations should remain stable in the short term. In the event that excavations are to remain open for longer periods, consideration should be given to the use of trench support systems.					
Construction considerations	All foundation excavations should be inspected and any made ground, soft, organic or otherwise unsuitable materials removed and replaced with mass concrete. The proposed founding stratum is a relatively silt-rich soil, hence susceptible to rapid softening once exposed. Hence all foundation excavations should immediately be blinded with concrete or the full foundation constructed.					

9.2 Preliminary Retaining Wall Parameters

It is understood that the proposed redevelopment would involve excavation in the lower ground floor for around 1.5m below the existing level.

The following soil parameters detailed within **Table 5** below are recommended for preliminary design purposes and based on in situ tests carried out during the site work.

Table 5 Preliminary Parameters for retaining wall design

Soil Type	Average SPT N	Unit Weight (kN/m^3)	Short Term Characteristics		Long Term Strength Characteristics	
			Cu (kN/m^2)	Ø' (^{0})	c' (kN/m^2)	Ø' (^{0})
Made Ground	-	18	-	25	0	25
London Clay	>17	20	45@1.0m + 8z kN/m^2 where z = depth into clay*	-	3**	25**

* Undrained Shear Strength (kN/m^2) inferred by combination of SPT, Share Vane and quick Triaxial Tests.

** Drained Shear Strength (kN/m^2) based on published data (moderately conservative approach).

9.3 Piled Foundations

The recommendations for the design and construction of piled foundations in relation to the ground conditions are set out in **Table 6**.

Table 6 – Design and Construction of Piled Foundations

Design/construction considerations	Design/construction recommendations	
Pile type	The construction of bored or driven piles is considered technically feasible at this site.	
Possible constraints on choice of pile type	Given the close proximity of the site to other properties the use of driven piles may not be acceptable due to ground vibration and noise related problems.	
Temporary casing where groundwater is present	Bored piles may require temporary casing throughout their depth where presence of groundwater is possible. Use of CFA piles may overcome the issue.	
Man-made obstructions	The presence of buried sub-structures or other obstructions within made ground (expected some remains of the former structures,) may lead to some difficulty during piling, therefore it is recommended the pile contractor should take that in consideration when quoting the job. Where buried obstructions are encountered, it will be necessary to either relocate the pile(s) or make allowance for removing the obstruction.	
Hard strata	An allowance should be made for chiselling thin 'rock' bands (claystone, limestone or cemented sandstone) within the London Clay Formation.	
Soil and pile design parameters for London Clay - bored piles (cohesive soils)	Adhesion Factor (α)	0.5/0.6
	Bearing Capacity Factor (N_c)	9
	Undrained Shear Strength (c_u)	45 + 8z kN/m^2 where z = depth into clay

Design/construction considerations	Design/construction recommendations	
	Global Safety Factor	3.0/2.5
	Limiting Shaft Friction	110 kN/m^2
	Limiting Concrete Stress	7.5N/mm^2

The design procedure for piles varies considerably, depending on the proposed type of pile.

9.4 Structural Loading

The idealized loading conditions have been produced by Green Structural Engineering Limited, (attached for reference in **Appendix D**). We have reviewed the information and transferred the loads over areas associated with the likely dimensions of the proposed footings, software has further split the loading areas into a series of averaging rectangles horizontally where required to simplify the model.

The following cases have been considered:

- Heave from the excavation and subsequent reloading produced by the construction of the underpins as indicated within the Engineering Drawings attached to **Appendix D**;
- Completion of the proposed development and long-term heave/settlements.

9.5 Geotechnical parameters

For the purpose of the analyses, a rigid boundary was assumed at a depth of 30mbgl.

A linear elastic soil stiffness has been assumed for the purpose of analysis. Values have been estimated primarily from the Burland, Standing J.R., and Jardine F.M. (2001), Building response to tunneling, case studies from construction of the Jubilee Line Extension London, CIRIA Special Publication 200, and from the SPT 'N' values using the correlations presented in the CIRIA Report – 142 where appropriate.

Table 7 – Summary of Soil Parameters

Stratum	Level (m bgl)	Eu (kN/m^2)	E' (kN/m^2)	Poisson's Ratio
Made Ground	0.0÷0.5	-	8,000	0.2
London Clay	0.5÷5.0	17,800 to 93,000	10,500 to 55,600	0.3
Rigid Boundary Layer	30.0	-	-	0.3

9.6 Assessment of Heave and Settlements

The excavation for the swimming pool and subsequent building construction will be accompanied by a sequence of ground movements, including immediate elastic and longer term swelling heave on unloading and elastic and longer-term consolidation settlement on reloading. The amounts of each component of movement will depend upon a number of factors, not least the construction timetable and ultimate loadings.

9.7 Description of the analysis undertaken

The calculations were carried out using the PDISP Version 19.3.16 computer package supplied by Arup and Oasys Ltd utilising the Boussinesq's analysis method, which calculates the stresses and strains within the strata due to applied loads and then defines the displacements by integrating the vertical strains.

At this site, unloading of the granular River Terrace Deposits and the underlying London Clay will take place as a result of the excavation of the swimming pool, such that the reduction in vertical stress in the short term will cause heave to take place. Undrained soil parameters have been used to estimate the potential short-term movements, which include the “immediate” or elastic movements as a result of the excavation. The model is based on the assumption that the soils behave elastically, which provides a reasonable approximation to soil behavior at small strains. Drained parameters have been used to provide an estimate of the total movement, which includes long term swelling/settlements that will continue for a number of years.

The vertical movements due to the proposed development have been obtained at various elevations including the formation level of lower ground floor that accommodates the proposed swimming pool, at the assumed foundations level of the neighboring structures and the street level. Concise version of the software output presenting the results is enclosed in **Appendix C**.

The stiffness of the concrete raft has not been included in the model as the method of calculations used in the analyses do not allow for soil structure interaction to be taken in account.

9.8 Discussion of the results

Results of analysis estimate relatively small total vertical displacement beneath the foundations of the proposed development as presented in the table below.

- Construction of underpins - short term undrained conditions;
- Completed development - long term drained conditions.

Table 8 – Results of Analysis (see Appendix C for graphic presentation of the results)

Location			Vertical Movement (mm)	
			Undrained conditions	Drained conditions
1)	Section 1-1	Line 1	-0.03	-0.06
2)		Line 2	-0.05	-0.09
3)		Line 3	-0.2	-0.34
4)		Line 4	+0.3	+0.47
5)		Maximum	+0.85	+1.35
6)	Section 2-2	Line 1	-0.02	-0.04
7)		Line 2	-0.05	-0.07
8)		Line 3	-0.9	-1.6
9)		Line 4	+2.9	+4.4

Location			Vertical Movement (mm)	
			Undrained conditions	Drained conditions
10)		Maximum	+4.45	+7.3
11)	Section 3-3	Line 1	-0.02	-0.03
12)		Line 2	-0.04	-0.05
13)		Line 3	+0.07	+0.1
14)		Line 4	+3.4	+5.6
15)		Maximum	+4.05	+6.7
16)	Section 4-4	Line 1	+0.02	+0.03
17)		Line 2	+0.11	+0.18
18)		Line 3	-0.22	-0.37
19)		Line 4	-0.235	-0.39
20)		Line 5	-0.03	-0.04
21)		Maximum	-0.56	-0.91
22)	Section 5-5	Line 1	+0.05	+0.07
23)		Line 2	+0.19	+0.3
24)		Line 3	+0.06	+0.09
25)		Line 4	-1.45	-2.4
26)		Line 5	-0.4	-0.7
27)		Line 6	-0.02	-0.04
28)		Maximum	-1.88	-3.05
29)	Section 6-6	Line 1	+0.1	+0.17
30)		Line 2	+5	+8.2
31)		Line 3	+4.62	+7.6
32)		Line 4	+0.9	+1.5
33)		Line 5	+0.5	+0.8
34)		Line 6	+0.02	+0.05
35)		Maximum	+5.1	+8.35

In view of the predominantly cohesive nature of the soil immediately below the proposed foundation level it is anticipated that about 50% of the movements are likely to occur immediately as functional loads are applied, leaving the remaining 50% to occur as long-term heave/settlement.

9.9 Underpin/Retaining Wall Deflection

Horizontal movements can occur, due to removal of lateral support of the excavation sides. The retaining wall will act as a stiff concrete structure to limit wall deflection. It is critical that appropriate temporary works are put in place to limit lateral movements during construction.

When underpinning, it is inevitable that the ground will be un-supported or only partially supported for a short period during excavation of each pin, even when support is installed sequentially as the excavation progresses. This means that the behavior of the ground will depend on the quality of workmanship and suitability of the methods used, so rigorous calculations of predicted ground movements are not practical. However, provided that the temporary support follows best practice, then extensive past experience has shown that the bulk movements of the ground alongside underpin could be limited to less than 5mm horizontally.

A preliminary construction method will be developed by the structural engineers with aims to manage the risk of ground loss/ground collapse beneath the neighboring footings.

9.10 Damage Category Assessment

The calculated ground movements could be used to assess potential 'damage categories' that may apply to neighboring properties due to the proposed swimming pool construction. The methodology proposed by Burland and Wroth and later supplemented by the work of Boscardin and Cording can be used, as described in CIRIA Special Publication 200 and CIRIA C760.

Table 9 Classification of visible damage to walls

Category Description	Category Description	Limiting tensile strain, ε_{lim} (%)
0 (Negligible)	Negligible – hairline cracks	0.0 to 0.05
1 (Very slight)	Fine cracks that can easily be treated during normal decoration. Perhaps isolated slight fracture in building. Cracks in external brickwork visible on inspection	0.05 to 0.075
2 (Slight)	Cracks easily filled, redecoration probably required. Some repointing may be required externally (crack width <5mm).	0.075 to 0.15
3 (Moderate)	The cracks require some opening up and can be patched by a mason. Recurrent cracks can be masked by suitable linings. Repointing of external brickwork and possibly a small amount of brickwork to be replaced (crack width 5 to 15mm or a number of cracks > 3mm).	0.15 to 0.3
4 (Severe)	Extensive repair work involving breaking-out and replacing sections of walls, especially over doors and windows (crack width 15mm to 25mm but also depends on number of cracks).	>0.3
5 (Very Severe)	This requires a major repair involving partial or complete re-building (crack width usually >25mm but depends on number of cracks).	

9.11 Damage to Neighbouring Structures

The combined movements resulting from underpinning and excavation of the proposed basement should be used to carry out an assessment of the likely damage to adjacent properties. The Camden Planning Guidance notes that the proposed construction should aim to limit damage to all buildings to a maximum of Category 1 as set out in CIRIA Report 760, such that the predicted movements fall within acceptable limits. Movements may be controlled to a wider extent during construction, through control of workmanship during the sequence of wall construction. It is recommended that the foundation depths of nearby structures are confirmed during the underpinning works.

Taking into account that due to high stiffness and the 'hit and miss' construction method the underpin walls generally induce horizontal ground movements less than 5mm, provided good workmanship is applied, then the effects on the adjacent building are expected to be within Damage Category 1 (Very slight). In addition, given the low intensity of the calculated vertical movements presented in the **Table 8**, these are also not considered to create potential damage that would fall above the category negligible to very low.

The information about the details concerning the adjacent structures made available to date did not allow more rigorous assessment of the potential damage, however, the scope included in this Report is deemed sufficient for this stage of the project. It is recommended the document is revisited prior the construction phase of the project in order to take in account any changes or new information made available through the design process.

9.12 Monitoring of Ground Movements

As a precaution, the predictions of ground movement based on the analysis should be checked by monitoring of adjacent properties and structures. Condition surveys of the above existing structures would need to be carried out before and after the proposed works. The precise monitoring strategy would be developed at a later stage and would be subject to discussions and agreements with the owners of the adjacent properties and structures. Contingency measures will be implemented if movements of the adjacent structures exceed predefined trigger levels. Both contingency measures and trigger levels will need to be developed within a future monitoring specification for the works.

10. RADON

Indicative Atlas of Radon in the UK indicates that the property is not in a Radon Affected Area, as less than 1% of properties are above the Action Level and no radon protective measures are necessary. However, it should be noted that radon need to be considered in relation to any development with a basement regardless of the location.

Additional information about Radon Affected Areas could be obtained from the publication 'Radon - Guidance on protective measures for new buildings BRE211 (BRE and HPA, 2007)' and the "Indicative Atlas of Radon in England and Wels" published by the Health Protection Agency and British Geological Survey, see www.ukradon.org for more details.

11. CHEMICAL ATTACK ON BURIED CONCRETE

The results of chemical tests carried out on soil samples from the made ground and natural soil indicate 2:1 water soil extract sulphate with max content of **120** mg/l with **alkaline** pH values.

These results indicate that, in accordance with BRE Special Digest 1:2005 Concrete in aggressive ground, the Aggressive Chemical Environment for Concrete (ACEC) Classification is **AC-1** with a Design Sulphate Class for the site of **DS-1**.

This assumes nominally static groundwater conditions and that no significantly disturbed clay comes into contact with concrete foundations or structures.

If significantly disturbed clay is likely to come into contact with concrete foundations or structures it will be necessary to carry out additional tests on the soil to investigate its total potential sulphate content. This will facilitate a re-evaluation of the ACEC Classification and Design Sulphate Class for the material, to take into consideration potential oxidation of available sulphides (e.g. pyrite), as defined in Table C1 (natural ground sites) or C2 (brownfield sites) BRE Special Digest 1: 2005.

12. RECOMMENDATION IN RELATION TO FOUNDATIONS

From the results of site investigation, the following recommendations are given in respect to ground engineering and foundation design of the underlying soils:

- The site investigation consisted of drive-in sampler borehole up to 10.0mbgl aimed to confirm the ground profile below the site and recover samples for laboratory testing. The borehole remained dry during the site works and a Ø35mm standpipe was installed on completion of the borehole to allow for future groundwater monitoring if required.

- The investigation found that site is underlain by a thin layer of Made Ground over the London Clay Formation at depth. From geotechnical point of view the ground profile encountered at the site could support design and construction of conventional spread foundations for the proposed development subject to appropriate design. Alternatively piled foundations could be adopted, particularly for any moderate to heavy or sensitive foundation loads.

- It is understood that the proposal will include excavation for a swimming pool below part of the existing lower ground floor. Structural method statement was not available for review at the time of writing this report. However, from the preliminary advice provided by the structural engineer we understand that the final excavation depth is expected to be approximately 2m from the existing lower ground floor level to the underside of the swimming pool slab formation and the perimeter retaining walls would be constructed using a series of reinforced concrete underpins, carried out in a traditional 'hit and miss' sequence. In order to prevent damage to adjacent properties, the design of the retaining wall and basement excavation must address the risk of excessive deformation of the wall and bracing, both in the temporary and permanent condition, to ensure that the horizontal and vertical soil movement around and below the excavation remain within acceptable levels.

- Conventional foundations should be taken to a minimum depth of 1.0m below finished ground level and at least 0.1m into the founding stratum below any overlying made ground or to any greater depth required in respect of the special design considerations given below. Depends on the depth and shape of the proposed footings, spread foundations should be designed using a net allowable bearing pressure of between 78kN/m^2 to 133kN/m^2, as advised in the **Table 4** of this Report. This advice is preliminary as appropriate for the Ground Investigation Report (GIR), in accordance with the current standards (BS EN 1997-1: 2004+A1:2013), the design should confirm that the actual structural loads imposed on the ground would satisfy the ULS and SLS safety factors and provide satisfactory utilisation of the soil bearing capacity.

- Advise on design and construction of piled foundations is included in **Table 6** of this Report. It should be stressed that these parameters are suitable to be used for preliminary design purposes, the detailed design should be provided by the specialist piling contractor and would depend of the type of piles adopted for the project.

- Due to geological profile, ground conditions encountered below the site and the scale of the proposed development, calculated vertical ground movements predicted from settlement/heave are limited and are not expected to cause any considerable damage to the adjacent properties. Therefore, good workmanship will be critical in controlling ground movements during construction and reference should be made to the Association of Specialist Underpinning Contractors guidance in this respect.

- Special Design Consideration:

  1. Due to the presence of shrinkable soils foundations should be designed taking into account all the normal precautions, including minimum depths, to minimise the risk of future foundation movements in accordance with NHBC Standards, or similar. The findings of the ground investigation indicate that foundations should be designed for shrinkable soils of high-volume change potential.

  2. The design needs to take in account the possible differential settlements between the existing already settled structure and the proposed extension, and if required to allow for flexible joints able to accommodate the differential movements.

  3. The current groundwater information and the geology encountered at the site does not suggest presence of significant groundwater in the London Clay Formation. However, the presence of claystone bunds and sandy laminas through the formation could facilitate appearance of seepage or perched groundwater, therefore it would be prudent to design the building as a fully water-retaining structure.

- The water-soluble soil extract sulphate contents tests indicate that, in accordance with BRE Special Digest 1:2005 Concrete in aggressive ground, the Aggressive Chemical Environment for Concrete (ACEC) Classification is **AC-1** with a Design Sulphate Class for the site of **DS-1**. Further information is provided in the Section 11 of this Report.

- All foundation excavations should be taken to depth reaching the competent foundation stratum, inspected and approved by a competent person before casting the concrete. Any made ground, soft, organic or otherwise unsuitable materials removed and replaced with mass concrete.

We trust that the above meets with your requirements, however, if should wish to discuss any of the matters further, please do not hesitate to contact us.

Yours Sincerely,

For AVZGeoEng Ltd

Author:

BSc (Hons) Silvanka Kadieva-Zarkovska

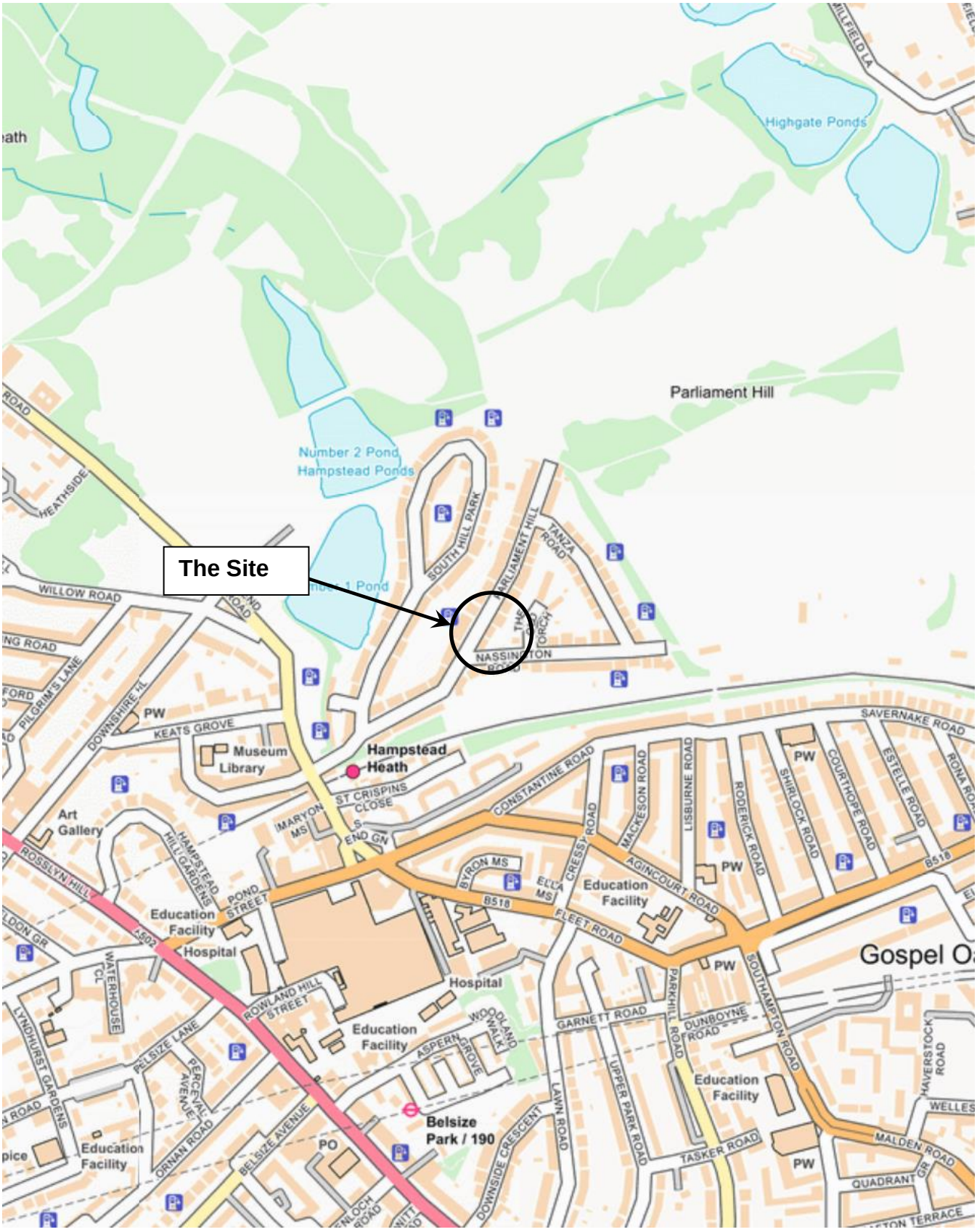
Senior Geotechnical Engineer

Approved:

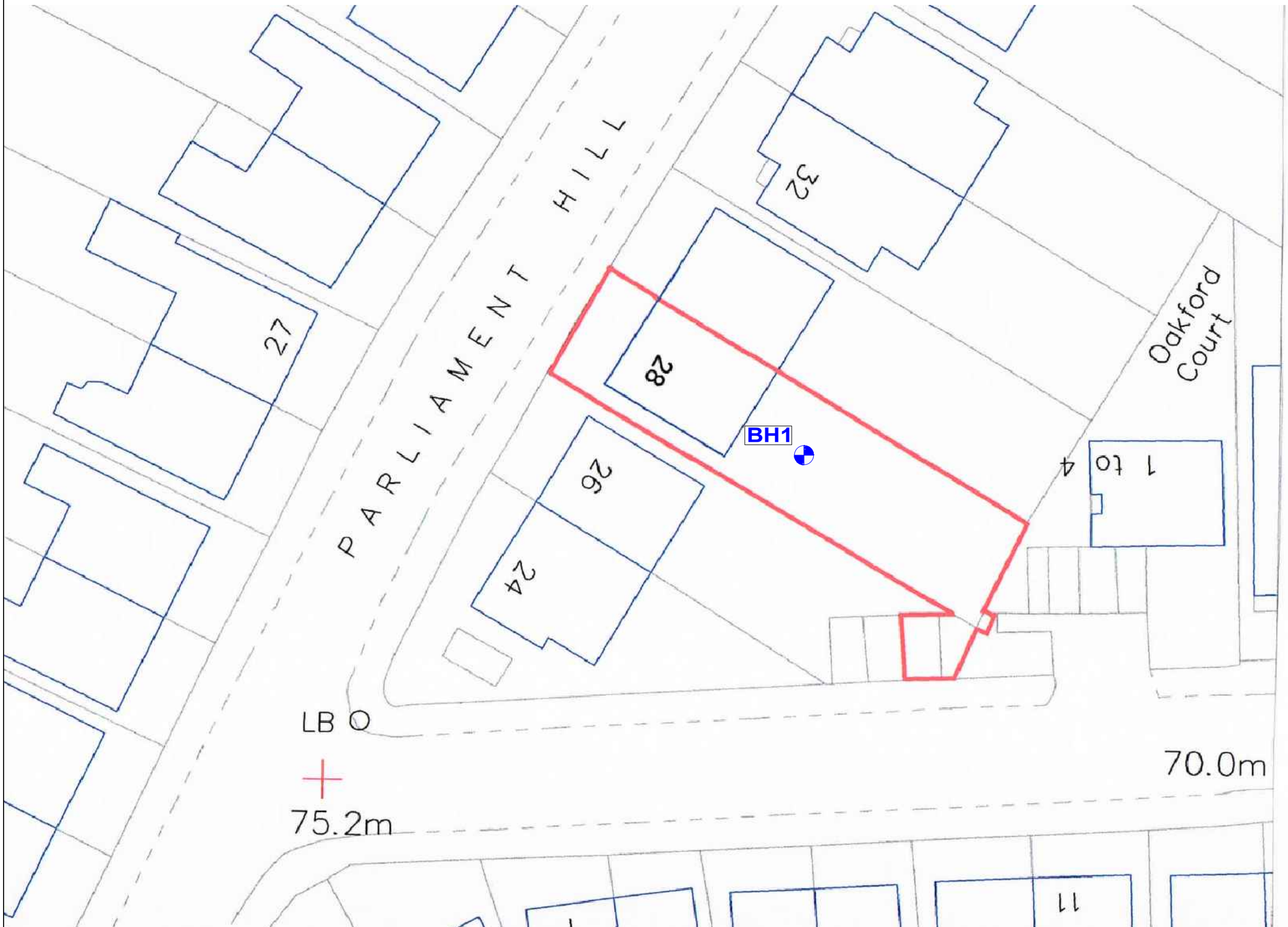
Dipl. Ing. Boban Zarkovski CEng MICE

AVZGeoEng Ltd
Registered office
70 Cophorne Road • East Grinstead • West Sussex • RH19 2NU • UK
Registered in England No. 7824020
www.avzgeoeng.co.uk

FIGURES



AVZ GeoEng Ltd	**Client: Fabiana Fedeli**	**Scale: NTS**
	Site: 28 Parliament Hill, London, England, NW3 2TN	
SITE LOCATION PLAN	**Job No: 2166/23**	**Figure No: 1**



LEGEND:

BH - Borehole

AVZ GeoEng Ltd

Birch Grove
70 Copthorne Road
Felbridge, Surrey
RH19 2NU
United Kingdom

Email: info@avzgeoeng.co.uk
Web: www.avzgeoeng.co.uk
Mob: 07885977732
Tel: 01342457117

Client

Fabiana Fedeli

Project Title

28 Parliament Hill, London, England, NW3 2TN

Drawing Title

Layout Investigation Points Plan

Drawn	Date	Checked	Date	Approved	Date
SKZ	11/03/2023	BZ	11/03/2023	BZ	11/03/2023

Scale	Orig Size	Dimensions
NTS		M

Project No.	Drawing File
2166/23	

Drawing No.	Rev.
FIGURE_2	

AVZ GeoEng Ltd	Site	SPT N Vs Depth Profile
	28 Parliament Hill, London, England, NW3 2TN	Client: Fabiana Fedeli / Job Number 2166/23

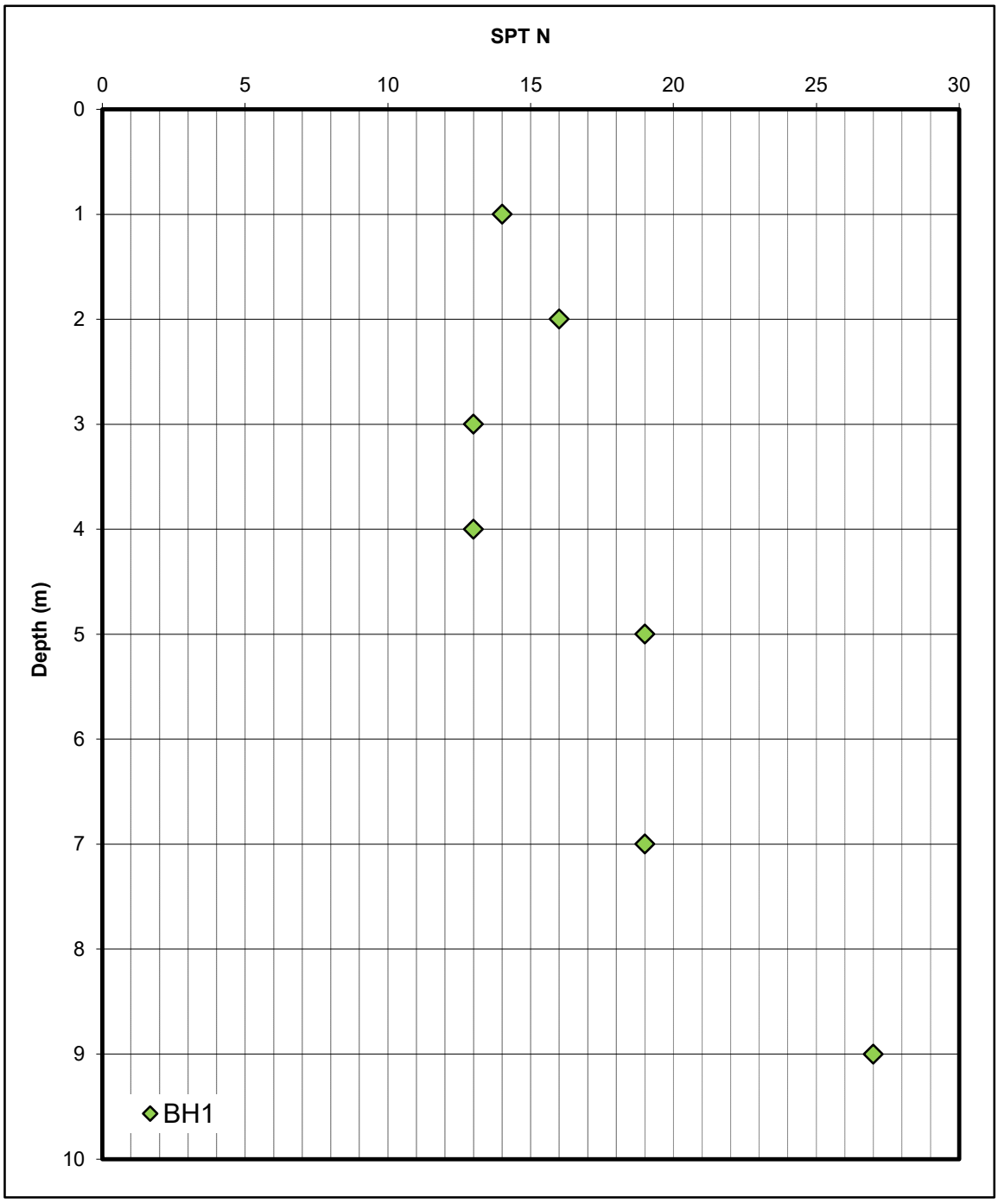


Figure 3

AVZ GeoEng Ltd	Site	c_u Vs Depth Profile
	28 Parliament Hill, London, England, NW3 2TN	**Client:** Fabiana Fedeli **Job Number** 2174/23

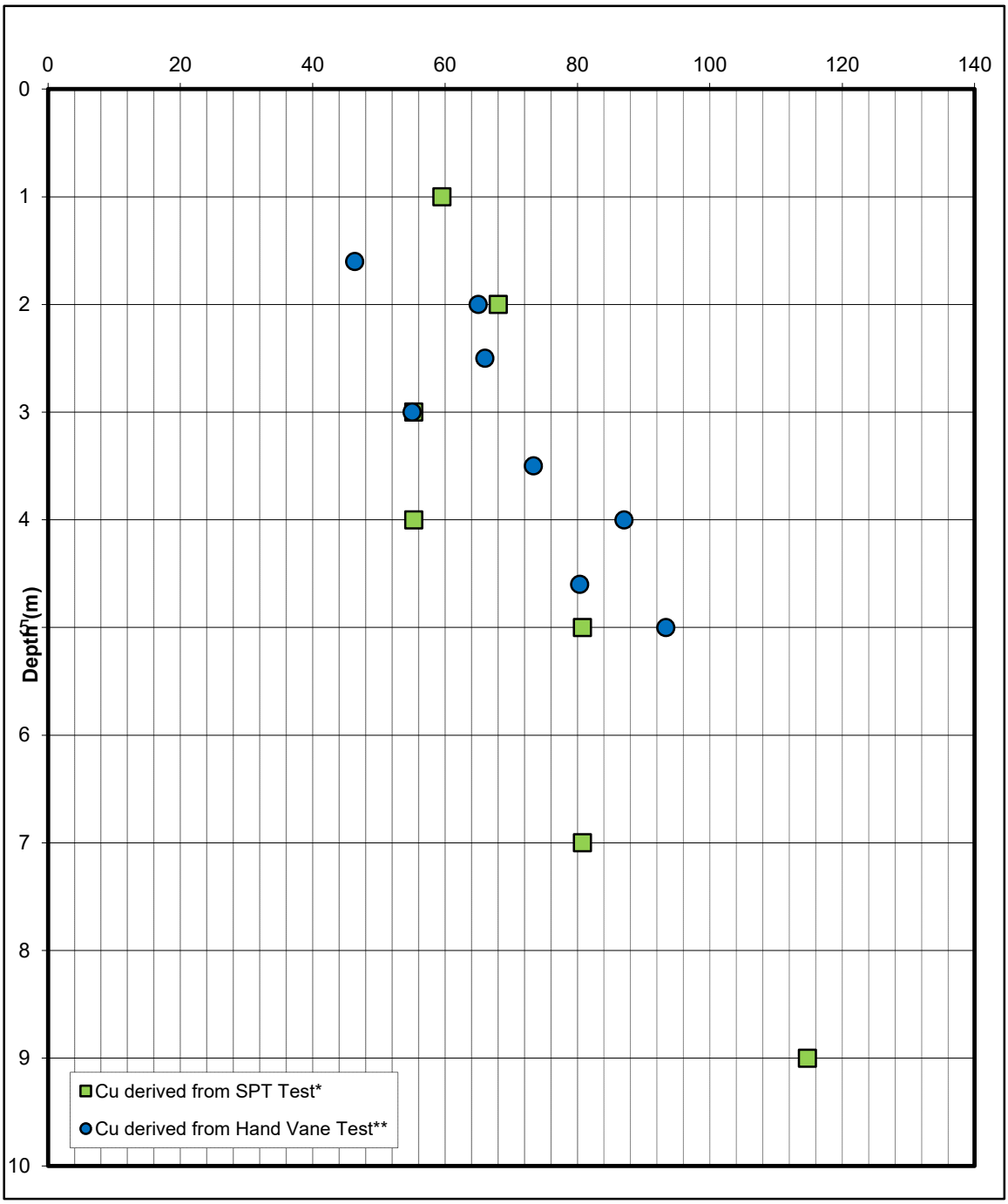


Figure 4

AVZ GeoEng Ltd	**Factual Report on Ground Investigation**	**PHOTOGRAPHIC LOG**
Client: Fabiana Fedeli	**Site:** 28 Parliament Hill, London, England, NW3 2TN	**Job No: 2166/23**

Photo No.1	**Figure 5**

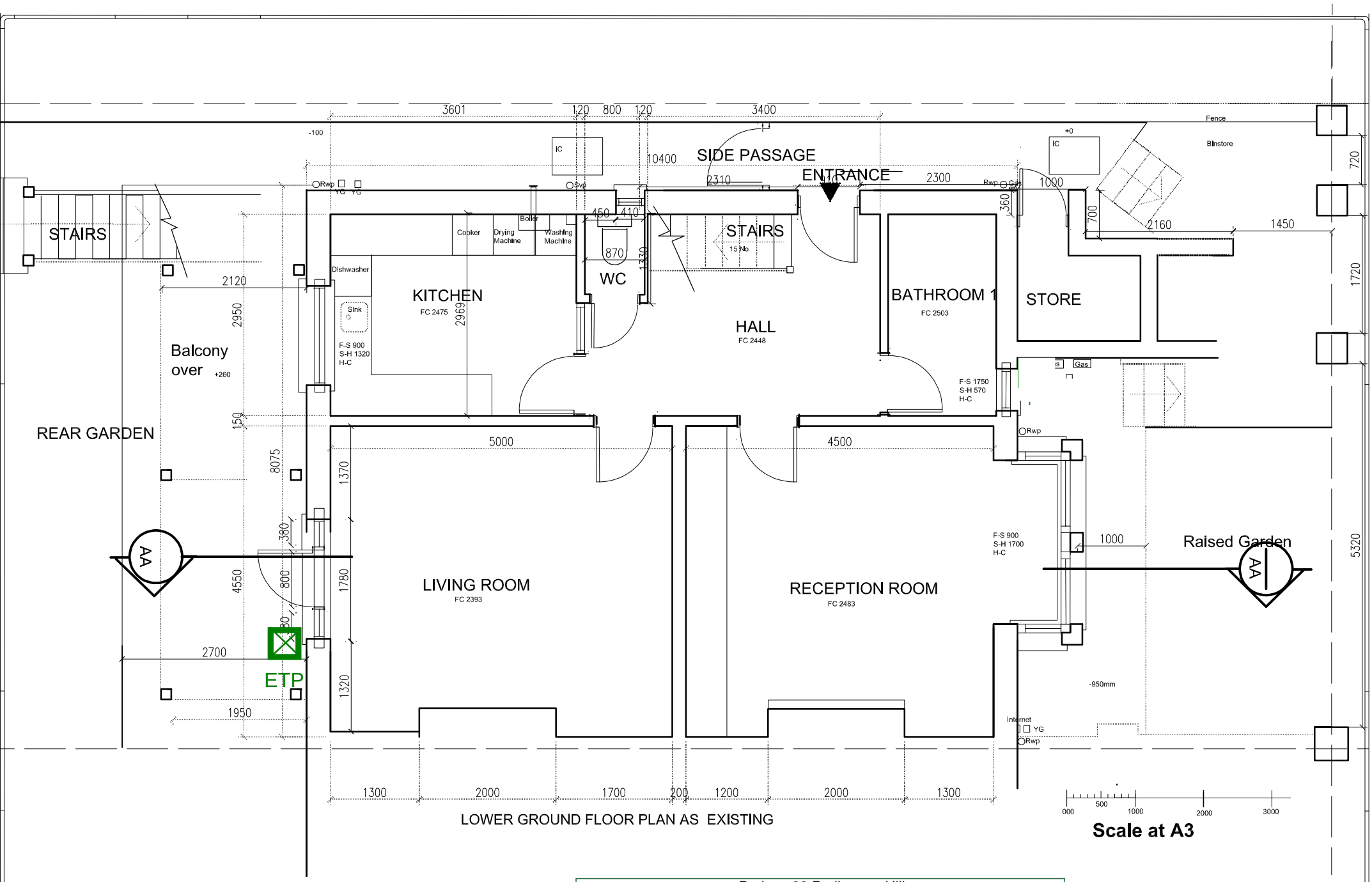
Description:

Performing Drilling at the location

Photo No.2	**Figure 5**

Description:

Core Recovered From BH1



LOWER GROUND FLOOR PLAN AS EXISTING

Scale at A3

NEALE & NORDEN CONSULTANTS
17 DARTMOUTH PARK AVENUE LONDON NW5 1JL

LOWER GROUND FLOOR PLAN AS EXISTING

28 PARLIAMENT HILL
LONDON NW3

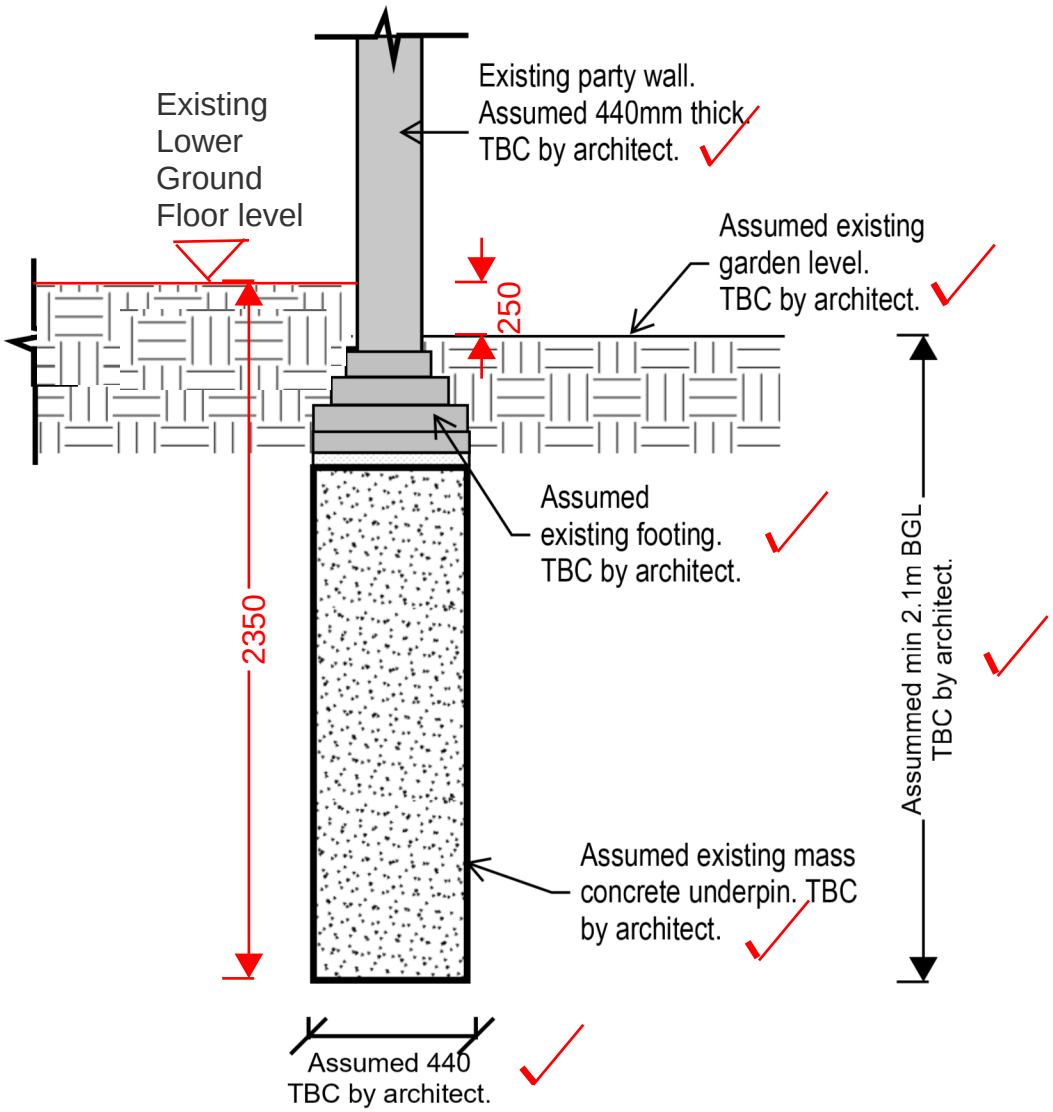
D03

Green Structural Engineering

Project: 28 Parliament Hill
Project No.: 20230153
Title: Assumed Trial Pit location - TBC by Architect
By: AS Date: 27/11/2023

Key:
ETP Trial Pit Location
by Architect

ETP1 - Assumed Trial Pit section - TBC by Architect



Notes and Assumptions:

- This sketch has been produced by GSE based on the video of the excavated Trial Pit on site. The video was sent to GSE on 24/11/2023 by Nick Norden (Neale and Norden Consultants). GSE hasn't been on site to inspect the Trial Pit.
- Neale and Norden Consultants are to confirm if the sketch matches the excavated Trial Pit on site.

APPROVED

27/11/2023

Green Structural Engineering

Project: 28 Parliament Hill | Project No.: 20230153

Title: Trial Pit sketch - TBC by Architect

By: AS | Date:27/11/2023

APPENDIX A

AVZGeoEng Ltd
70 Copthorne Road, Felbridge
RH19 2NU
Telephone: 01342457117
info@avzgeoeng.co.uk

BOREHOLE LOG

Project				BOREHOLE No
28 Parliament Hill, London, England, NW3 2TN				BH1
Job No	Date	Ground Level (m)	Co-Ordinates (Local)	
SKZ_2166/23	26-10-23 26-10-23			
Contractor				Sheet
AVZGeoEng Ltd				1 of 2

SAMPLES & TESTS			Water	Reduced Level	Legend	Depth (Thick-ness)	STRATA DESCRIPTION	Geology	Instrument/ Backfill
Depth	Type No	Test Result							
						(0.50) 0.50	MADE GROUND: Dark brown silty clay, silt and sand with brick fragments.		
1.00-1.45	SPT1						Firm, light brown to brown occasionally blue mottled, silty CLAY, with frequent sandy laminas and selenite crystals. (London Clay Formation)		
1.00		N14							
1.60	HV1	46,47,46				(2.50)			
2.00	HV2	65,65,65							
2.00-2.45	SPT2								
2.00		N16							
2.50	HV3	68,65,65				3.00			
3.00-3.45	SPT3						Firm, brown grey occasionally blue mottled, laminated silty CLAY, with frequent sandy laminas and occasional selenite crystals. (London Clay Formation)		
3.00	HV4	55,55,55							
3.00		N13							
3.50	HV5	73,75,72							
4.00-4.45	SPT4								
4.00	HV6	88,85,88				(2.50)			
4.00		N13							
4.60	HV7	80,81,80							
5.00-5.45	SPT5								
5.00	HV8	95,95,90							
5.00		N19				5.50			
							Firm to stiff, grey brown occasionally blue mottled, laminated silty CLAY, with frequent sandy laminas and occasional selenite crystals. (London Clay Formation)		
						(2.70)			
7.00-7.45	SPT6								
7.00	M9	130 +							
7.00		N19							

Boring Progress and Water Observations					
Depth	Date	Time	Casing Depth	Casing Dia. mm	Water Depth

Chiselling			Water Added	
From	To	Hours	From	To

GENERAL REMARKS

The location was CAT scanned and inspection pit excavated by hand prior the commencement of the drilling. A 35mm standpipe was installed on completion of the work to allow for future monitoring. Borehole remained dry.

All dimensions in metres Scale 1:50	Client Fabiana Fedeli	Method/ Plant Used Terrier Drive in Sampling	Logged By B Zarkovski

AVZGeoEng Ltd
70 Copthorne Road, Felbridge
RH19 2NU
Telephone: 01342457117
info@avzgeoeng.co.uk

BOREHOLE LOG

Project				BOREHOLE No
28 Parliament Hill, London, England, NW3 2TN				BH1
Job No	Date	Ground Level (m)	Co-Ordinates (Local)	
SKZ_2166/23	26-10-23 26-10-23			
Contractor				Sheet
AVZGeoEng Ltd				2 of 2

SAMPLES & TESTS			Water	Reduced Level	Legend	Depth (Thick-ness)	STRATA DESCRIPTION	Geology	Instrument/ Backfill
Depth	Type No	Test Result							
						8.20			
9.00-9.45 9.00	SPT7	N27				(1.80) 10.00	Stiff, grey, laminated silty CLAY, with sandy laminas and occasional selenite crystals. (London Clay Formation)		

Boring Progress and Water Observations					
Depth	Date	Time	Casing Depth	Casing Dia. mm	Water Depth

Chiselling			Water Added	
From	To	Hours	From	To

GENERAL REMARKS

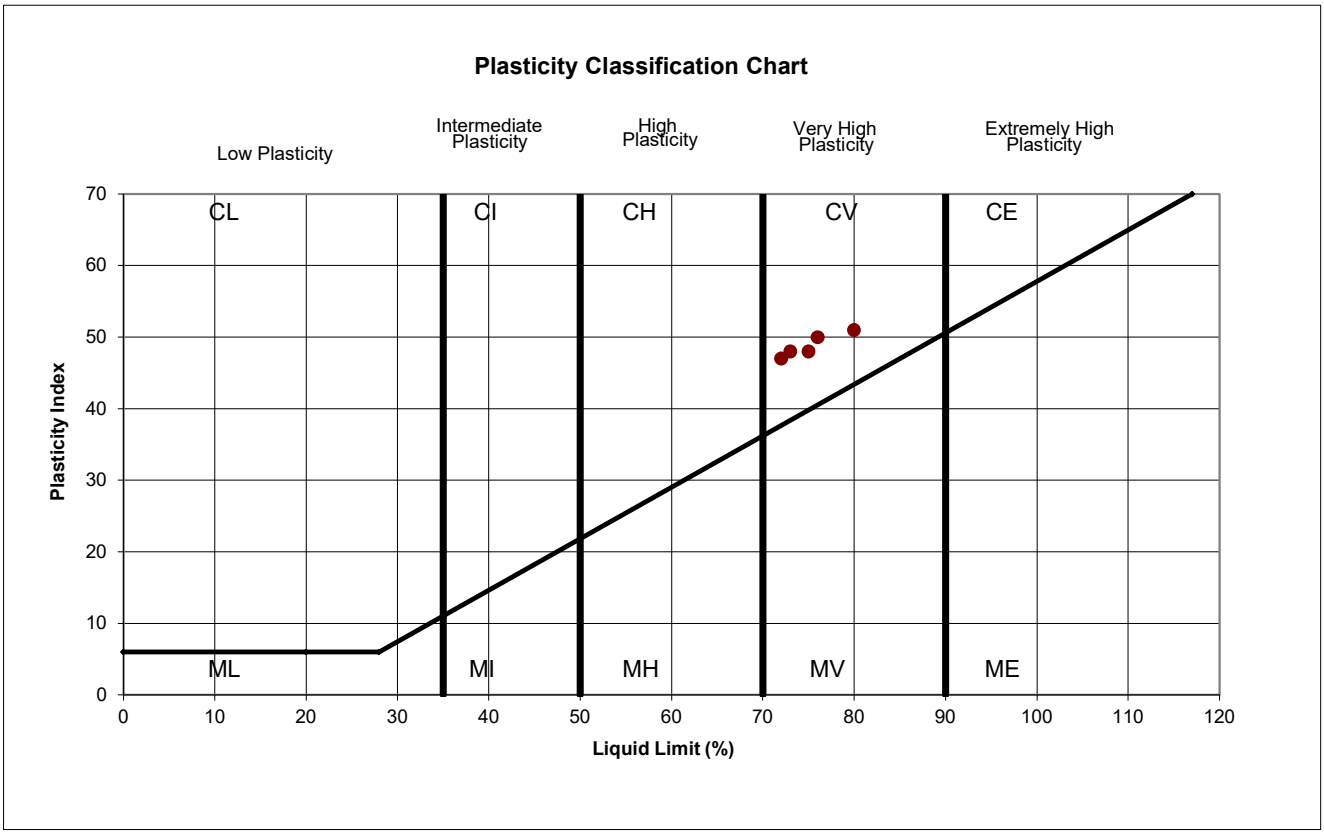
The location was CAT scanned and inspection pit excavated by hand prior the commencement of the drilling. A 35mm standpipe was installed on completion of the work to allow for future monitoring. Borehole remained dry.

All dimensions in metres Scale 1:50	Client Fabiana Fedeli	Method/ Plant Used Terrier Drive in Sampling	Logged By B Zarkovski

APPENDIX B

PLASTICITY SHART - PI Vs LL

In accordance with BS5930;2015
Testing in accordance with BS1377-2 (BS EN ISO 17892-12)



Liquid Limit - LL (%)

Sample Identification			BS Test Method #	Preparation Method +	MC (%)	LL(%)	PL (%)	PI (%)	PI' (%)	<425 (%)
Exploratory Position ID	Sample	Depth (m)								
BH1	D	0.5-1.5	3.2/4.3/5.3/5.4	4.2.3	32.4	80	29	51	51	100.0
BH1	D	1.5-3.0	3.2/4.3/5.3/5.4	4.2.3	31.1	75	27	48	48	100.0
BH1	D	3.0-5.5	3.2/4.3/5.3/5.4	4.2.3	31.7	76	26	50	50	99.5
BH1	D	5.5-8.2	3.2/4.3/5.3/5.4	4.2.3	31.4	72	25	47	47	99.3
BH1	D	8.2-10.0	3.2/4.3/5.3/5.4	4.2.3	32.1	73	25	48	48	99.7

Tested in acordance with the following clauses of BS1377-2;1990.
3.2 - Moisture Content
4.3 - Cone Panetrometar Method
4.4 - One Point Cone Penetrometer Method
4.6 - Three Point Casagrande Method
5.3 - Plastic Limit Method
5.4 - Plasticity Index

Key: * = Non standard test,
NP = Non Plastic

Tested in accordance with the following clauses of BS1377-2;1990.
4.2.3 - Natural State
4.2.4 - Wet Sieved

Client: Fabiana Fedeli

Site: 28 Parliament Hill, London, England, NW3 2TN

AVZGeoEng Ltd
Registered office
Birch Grove 70 Copthorne Road Felbridge Surrey RH19 2NU
Registered in England No. 7824020
Email: info@avzgeoeng.co.uk
Web: www.avzgeoeng.co.uk
Mob: 07885977732
Tel: 01342457117

Date: 01/11/2023
Completed by: SKZ
Project No: SKZ_ 2166/23

Unit A2
Windmill Road
Ponswood Industrial Estate
St Leonards on Sea
East Sussex
TN38 9BY
Telephone: (01424) 718618

cs@elab-uk.co.uk
info@elab-uk.co.uk

THE ENVIRONMENTAL LABORATORY LTD

Analytical Report Number:	23-50907
Issue:	1
Date of Issue:	09/11/2023
Contact:	Silvanka K. Zarkovska
Customer Details:	AVZ GeoEng Ltd Birch Grove 70 Copthorne Road Felbridge SurrevRH19 2NU
Quotation No:	Q22-03528
Order No:	SKZ_2166/23
Customer Reference:	SKZ_2166/23
Date Received:	02/11/2023
Date Approved:	09/11/2023
Details:	28 Parliament Hill, London, NW3 2TN
Approved by:	

Ben Rees, Customer Services Assistant

Sample Summary

Report No.: 23-50907, issue number 1

Elab No.	Client's Ref.	Date Sampled	Date Scheduled	Description	Deviations
344104	BH1 0.00 - 0.50	26/10/2023	02/11/2023	Silty clayey loam	
344105	BH1 0.50 - 1.50	26/10/2023	02/11/2023	Clayey loam	
344106	BH1 1.50 - 3.00	26/10/2023	02/11/2023	Clayey loam	
344107	BH1 3.00 - 5.50	26/10/2023	02/11/2023	Silty clayey loam	

Results Summary

2683

Report No.: 23-50907, issue number 1

ELAB Reference				344104	344105	344106	344107
Customer Reference							
Sample ID							
Sample Type				SOIL	SOIL	SOIL	SOIL
Sample Location				BH1	BH1	BH1	BH1
Sample Depth (m)				0.00 - 0.50	0.50 - 1.50	1.50 - 3.00	3.00 - 5.50
Sampling Date				26/10/2023	26/10/2023	26/10/2023	26/10/2023
Determinand	**Codes**	**Units**	**LOD**				
Soil sample preparation parameters							
Moisture Content	N	%	0.1	16.3	21.1	19.6	21.0
Material removed	N	%	0.1	< 0.1	< 0.1	< 0.1	< 0.1
Description of Inert material removed	N		0	None	None	None	None
Anions							
Water Soluble Sulphate	M	g/l	0.02	0.02	0.05	0.12	0.07
Miscellaneous							
pH	M	pH units	0.1	7.7	8.0	8.3	8.2

Method Summary

Report No.: 23-50907, issue number 1

Parameter	Codes	Analysis Undertaken On	Date Tested	Method Number	Technique
Soil					
pH	M	Air dried sample	03/11/2023	113	Electromeric
Water soluble anions	M	Air dried sample	03/11/2023	172	Ion Chromatography

Report Information

Report No.: 23-50907, issue number 1

Key

U	hold UKAS accreditation
M	hold MCERTS and UKAS accreditation
N	do not currently hold UKAS accreditation
^	MCERTS accreditation not applicable for sample matrix
*	UKAS accreditation not applicable for sample matrix
S	Subcontracted to approved laboratory UKAS Accredited for the test
SM	Subcontracted to approved laboratory MCERTS/UKAS Accredited for the test
NS	Subcontracted to approved laboratory. UKAS accreditation is not applicable.
I/S	Insufficient Sample
U/S	Unsuitable sample
n/t	Not tested
<	means "less than"
>	means "greater than"
LOD	LOD refers to limit of detection, except in the case of pH soils and pH waters where it means limit of discrimination.
	Soil sample results are expressed on an air dried basis (dried at < 30°C), and are uncorrected for inert material removed.
	ELAB are unable to provide an interpretation or opinion on the content of this report.
	The results relate only to the sample received.
	PCB congener results may include any coeluting PCBs
	Uncertainty of measurement for the determinands tested are available upon request
	Unless otherwise stated, sample information has been provided by the client. This may affect the validity of the results.

Deviation Codes

a	No date of sampling supplied
b	No time of sampling supplied (Waters Only)
c	Sample not received in appropriate containers
d	Sample not received in cooled condition
e	The container has been incorrectly filled
f	Sample age exceeds stability time (sampling to receipt)
g	Sample age exceeds stability time (sampling to analysis)

Where a sample has a deviation code, the applicable test result may be invalid.

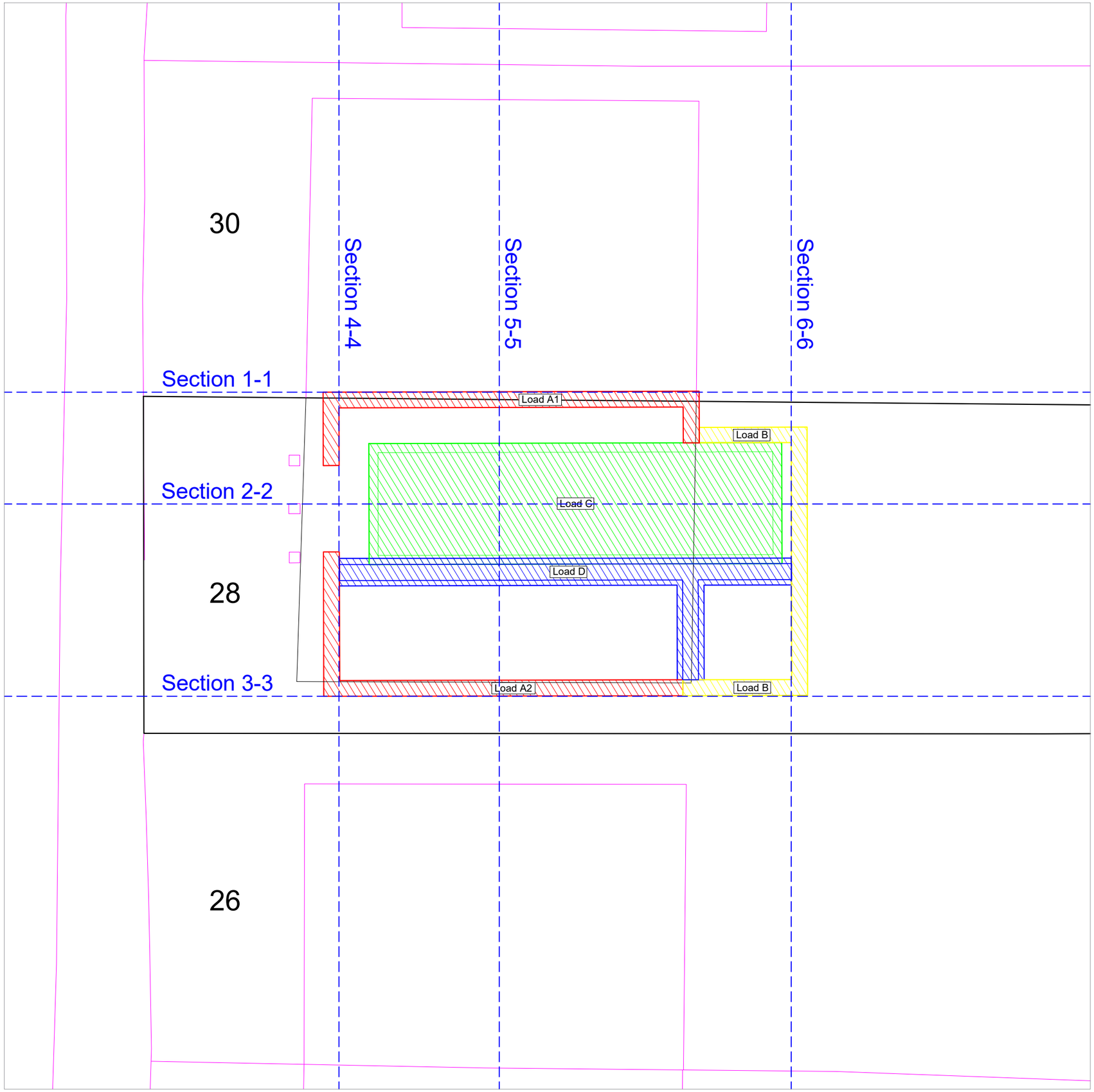
Sample Retention and Disposal

All soil samples will be retained for a period of one month
All water samples will be retained for 7 days following the date of the test report
Charges may apply to extended sample storage

TPH Classification - HWOL Acronym System

HS	Headspace analysis
EH	Extractable Hydrocarbons - i.e. everything extracted by the solvent
CU	Clean-up - e.g. by florisil, silica gel
1D	GC - Single coil gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics only
AR	Aromatics only
2D	GC-GC - Double coil gas chromatography
#1	EH_Total but with humics mathematically subtracted
#2	EH_Total but with fatty acids mathematically subtracted
_	Operator - underscore to separate acronyms (exception for +)
+	Operator to indicate cumulative e.g. EH+HS_Total or EH_CU+HS_Total
MS	Mass Spectrometry

APPENDIX C



AVZ GeoEng Ltd

70 Copthorne Road
East Grinstead
Surrey
RH19 2NU
United Kingdom

Email: info@avzgeoeng.co.uk
Web: www.avzgeoeng.co.uk
Mob: 07885977732
Tel: 01342457117

Client

Fabiana Fedeli

Project Title

28 Parliament Hill, London, England, NW3 2TN

Drawing Title

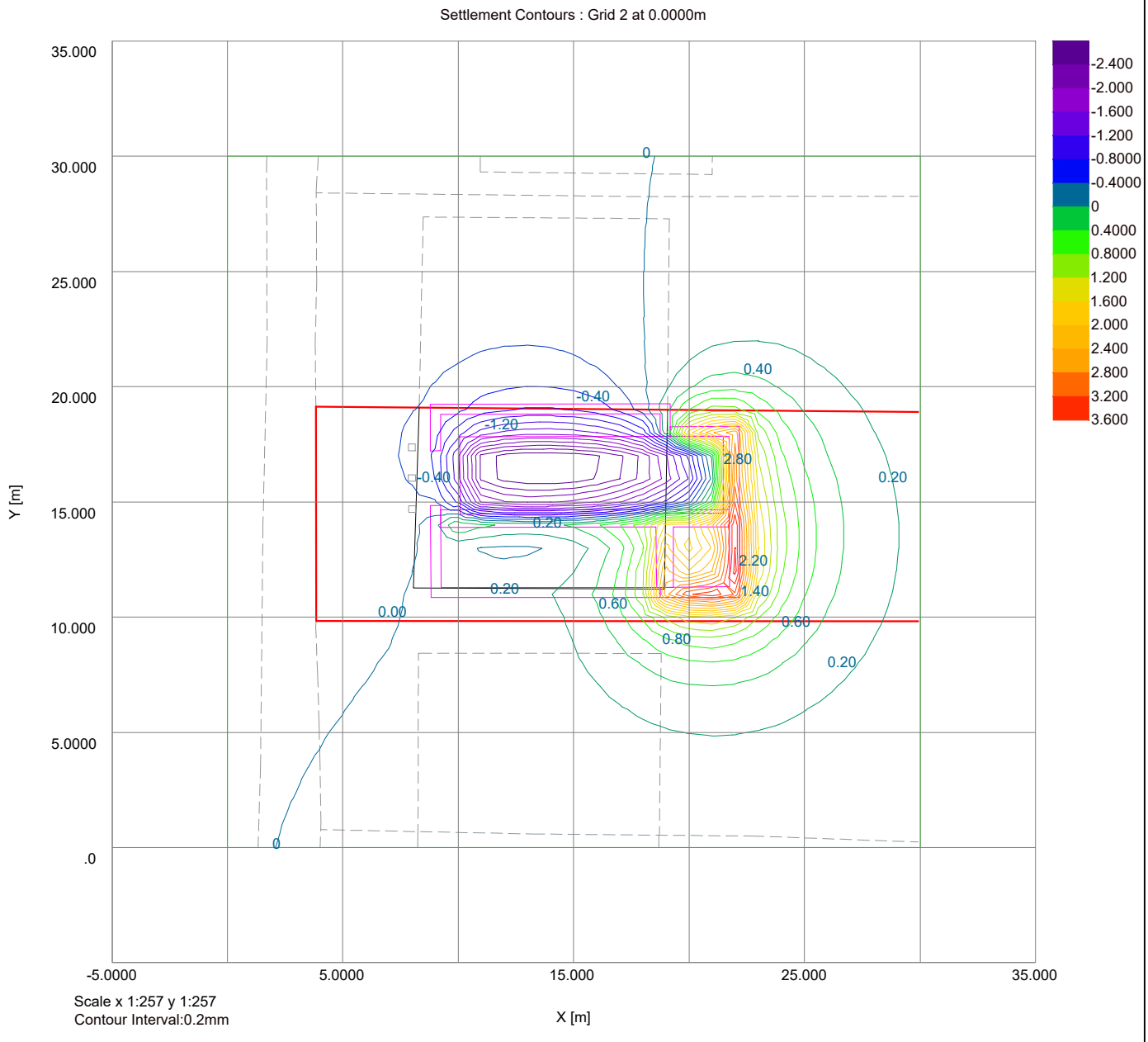
Site Layout Plan

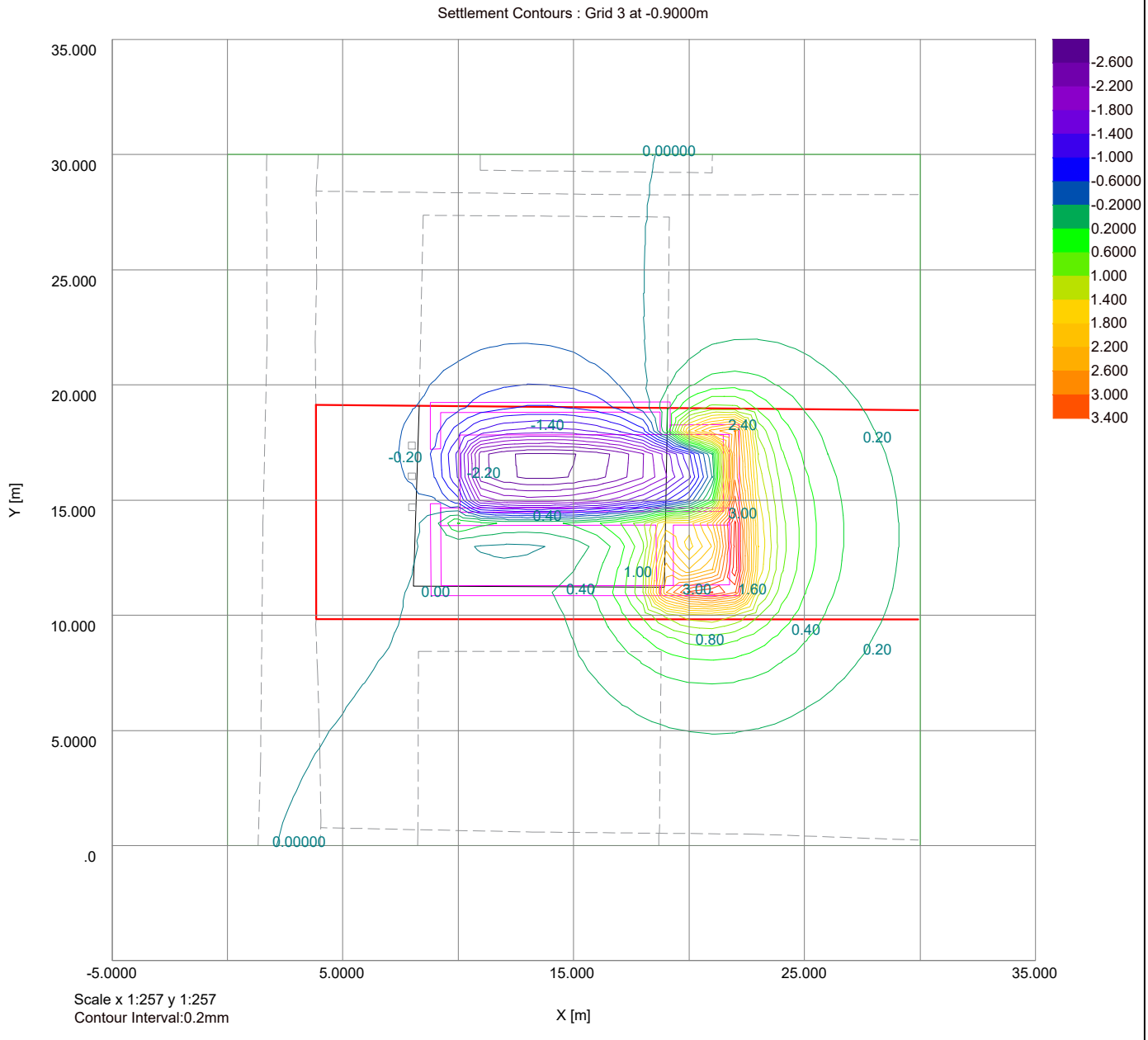
Drawn	Date	Checked	Date	Approved	Date
SKZ	22/11/2023	BZ	22/11/2023	BZ	22/11/2023

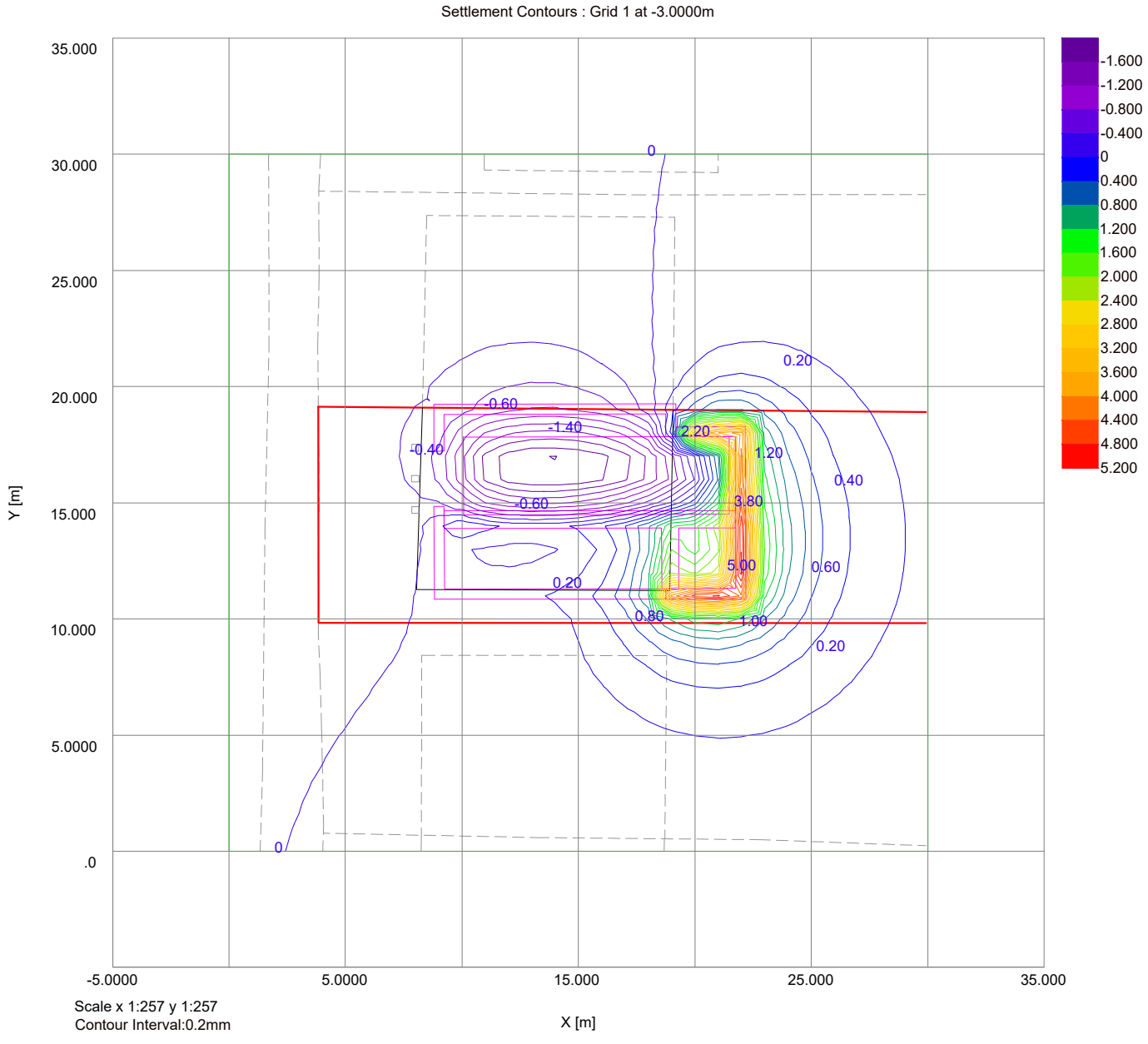
Scale	Orig Size	Dimensions
NTS		M

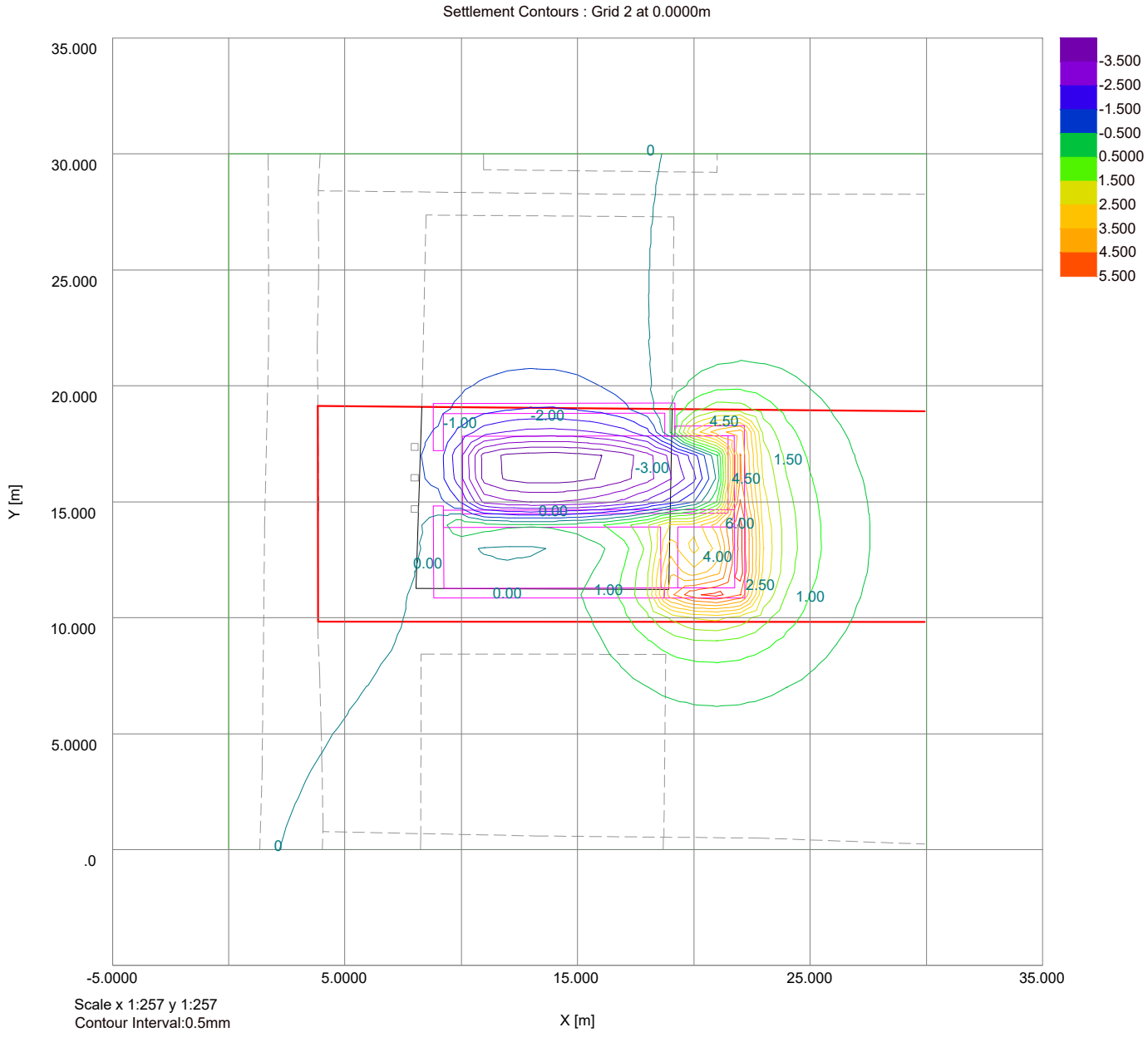
Project No.	Drawing File
SKZ_2166/23	

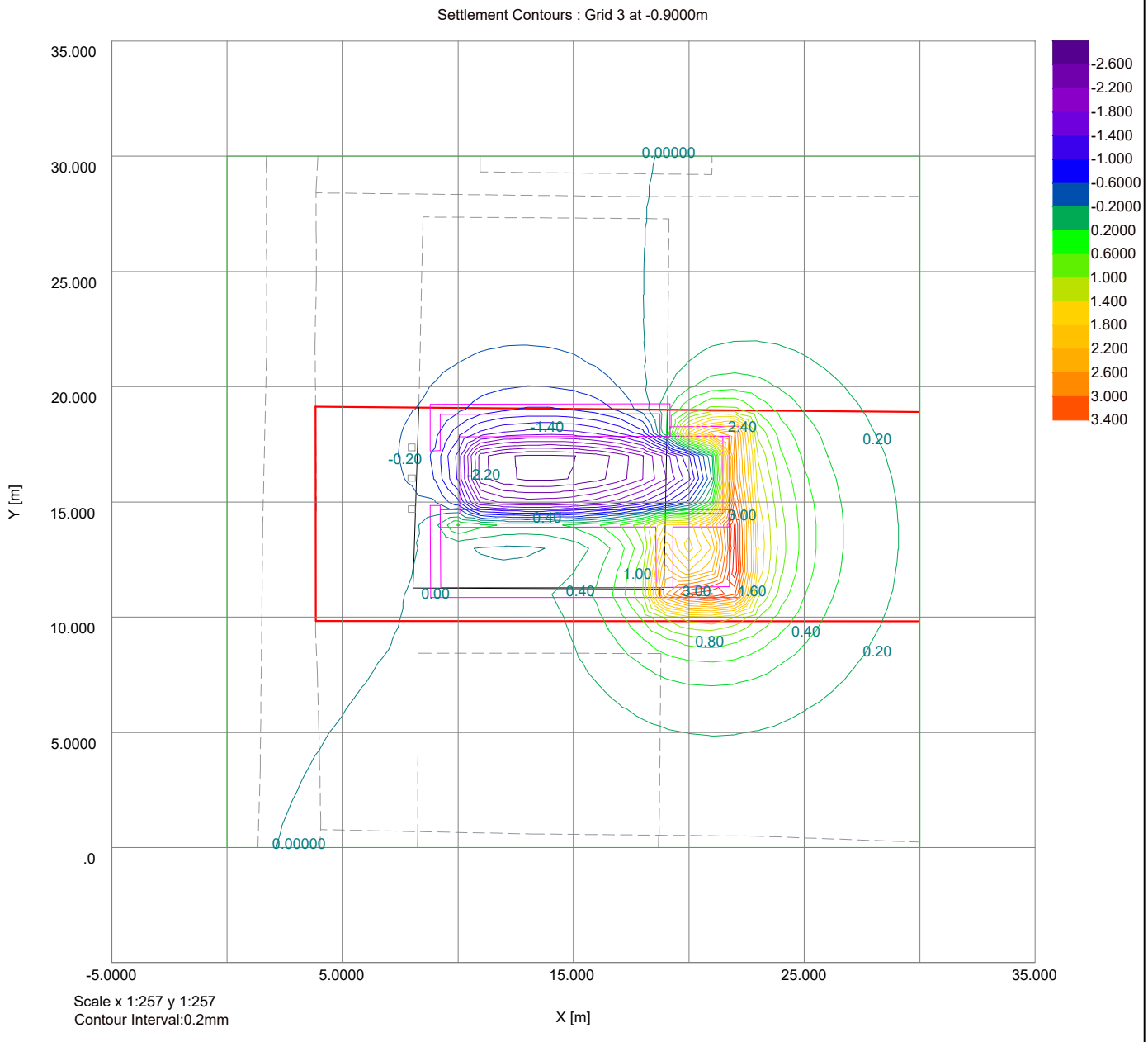
Drawing No.	Rev.
APPENDIX_C1	

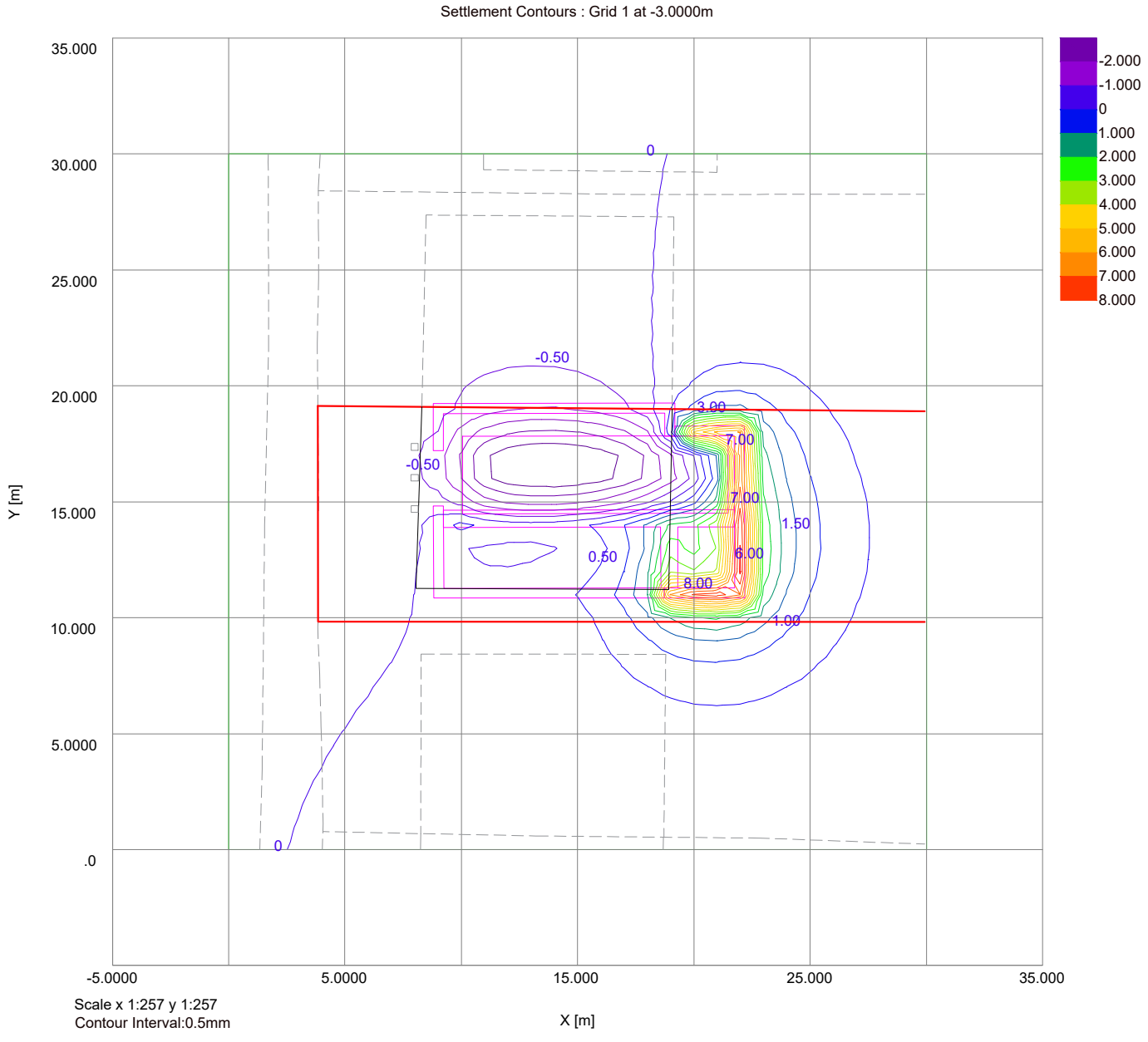

Settlement Contours : Grid 2 at 0.0000m
35.000
30.000
25.000
20.000
15.000
10.000
5.0000
.0
Y [m]
-5.0000
5.0000
15.000
25.000
35.000
X [m]
-2.400
-2.000
-1.600
-1.200
-0.8000
-0.4000
0
0.4000
0.8000
1.200
1.600
2.000
2.400
2.800
3.200
3.600
0
0.40
-0.40
-1.20
-0.40
2.80
0.20
0.20
2.20
0.20
1.40
0.00
0.60
0.60
0.80
0.20
0
Scale x 1:257 y 1:257
Contour Interval:0.2mm

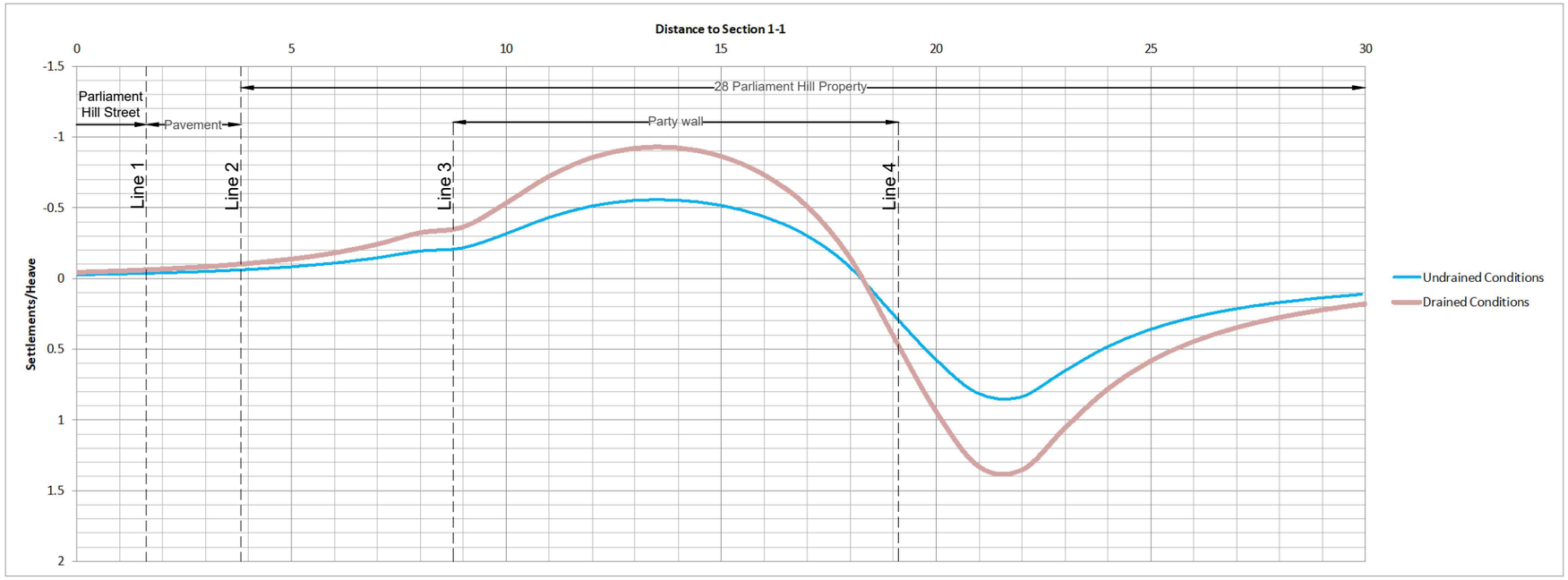

Settlement Contours : Grid 3 at -0.9000m
35.000
30.000
25.000
20.000
15.000
10.000
5.0000
.0
Y [m]
-5.0000
5.0000
15.000
25.000
35.000
X [m]
-2.600
-2.200
-1.800
-1.400
-1.000
-0.6000
-0.2000
0.2000
0.6000
1.000
1.400
1.800
2.200
2.600
3.000
3.400
0.00000
-1.40
-0.20
-2.20
0.40
2.40
0.20
3.00
1.00
0.00
0.40
3.00
1.60
0.80
0.40
0.20
0.00000
Scale x 1:257 y 1:257
Contour Interval:0.2mm

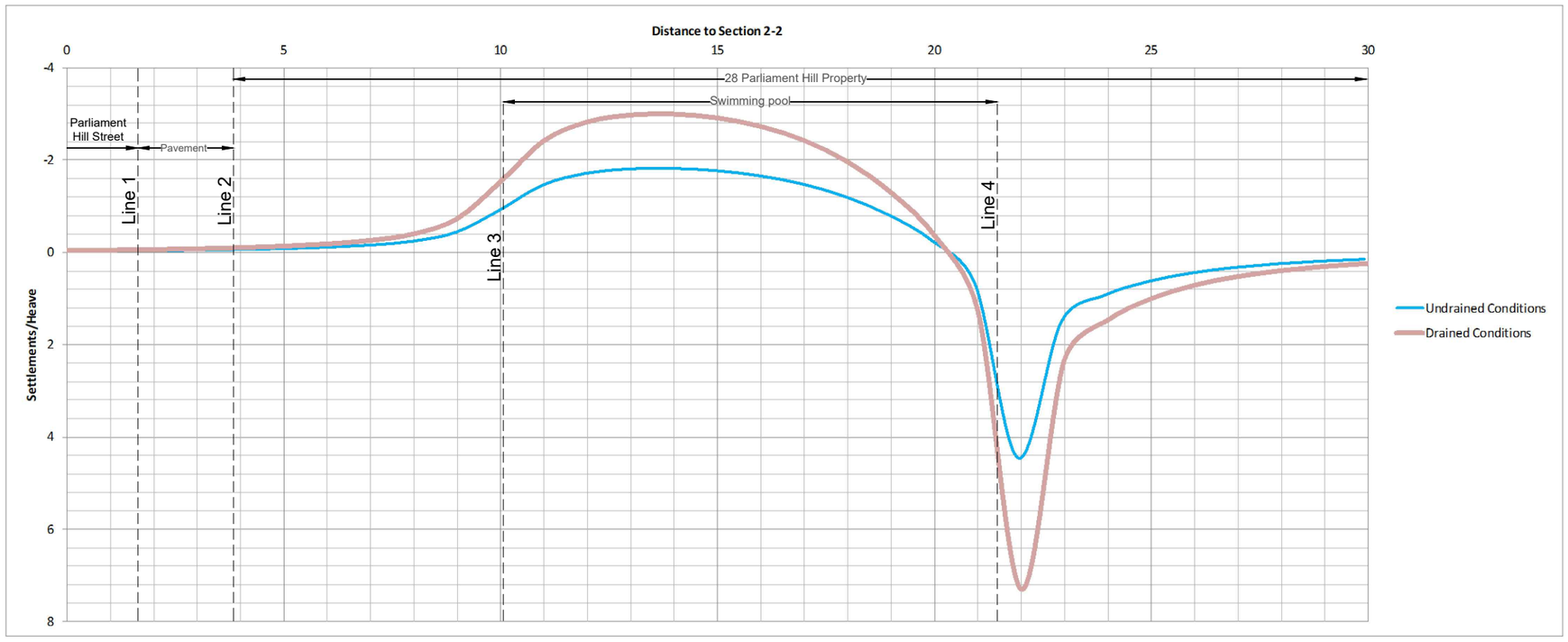

Settlement Contours : Grid 1 at -3.0000m
35.000
30.000
25.000
20.000
15.000
10.000
5.0000
.0
Y [m]
-5.0000
5.0000
15.000
25.000
35.000
X [m]
-1.600
-1.200
-0.800
-0.400
0
0.400
0.800
1.200
1.600
2.000
2.400
2.800
3.200
3.600
4.000
4.400
4.800
5.200
0
0.20
-0.60
-1.40
-0.40
2.20
1.20
0.40
0.60
3.80
5.00
0.60
0.20
0.80
1.00
0.20
0
Scale x 1:257 y 1:257
Contour Interval:0.2mm


Settlement Contours : Grid 2 at 0.0000m
35.000
30.000
25.000
20.000
15.000
10.000
5.0000
.0
Y [m]
-5.0000
5.0000
15.000
25.000
35.000
X [m]
-3.500
-2.500
-1.500
-0.500
0.5000
1.500
2.500
3.500
4.500
5.500
0
-1.00
-2.00
-3.00
0.00
4.50
1.50
6.00
4.00
2.50
1.00
Scale x 1:257 y 1:257
Contour Interval:0.5mm


Settlement Contours : Grid 3 at -0.9000m
35.000
30.000
25.000
20.000
15.000
10.000
5.0000
.0
Y [m]
-5.0000
5.0000
15.000
25.000
35.000
X [m]
-2.600
-2.200
-1.800
-1.400
-1.000
-0.6000
-0.2000
0.2000
0.6000
1.000
1.400
1.800
2.200
2.600
3.000
3.400
0.00000
-1.40
-0.20
-2.20
0.40
2.40
0.20
3.00
1.00
0.00
0.40
3.00
1.60
0.80
0.40
0.20
0.00000
Scale x 1:257 y 1:257
Contour Interval:0.2mm


Settlement Contours : Grid 1 at -3.0000m
35.000
30.000
25.000
20.000
15.000
10.000
5.0000
.0
Y [m]
-5.0000
5.0000
15.000
25.000
35.000
X [m]
-2.000
-1.000
0
1.000
2.000
3.000
4.000
5.000
6.000
7.000
8.000
0
-0.50
3.00
7.00
-0.50
7.00
1.50
0.50
6.00
8.00
1.00
0
Scale x 1:257 y 1:257
Contour Interval:0.5mm





AVZ GeoEng Ltd

70 Copthorne Road
East Grinstead
Surrey
RH19 2NU
United Kingdom

Email: info@avzgeoeng.co.uk
Web: www.avzgeoeng.co.uk
Mob: 07885977732
Tel: 01342457117

Client

Fabiana Fedeli

Project Title

28 Parliament Hill, London, England, NW3 2TN

Drawing Title

Ground Movement
Section 1-1 & Section 2-2

Drawn	Date	Checked	Date	Approved	Date
SKZ	29/12/2023	BZ	29/12/2023	BZ	29/12/2023

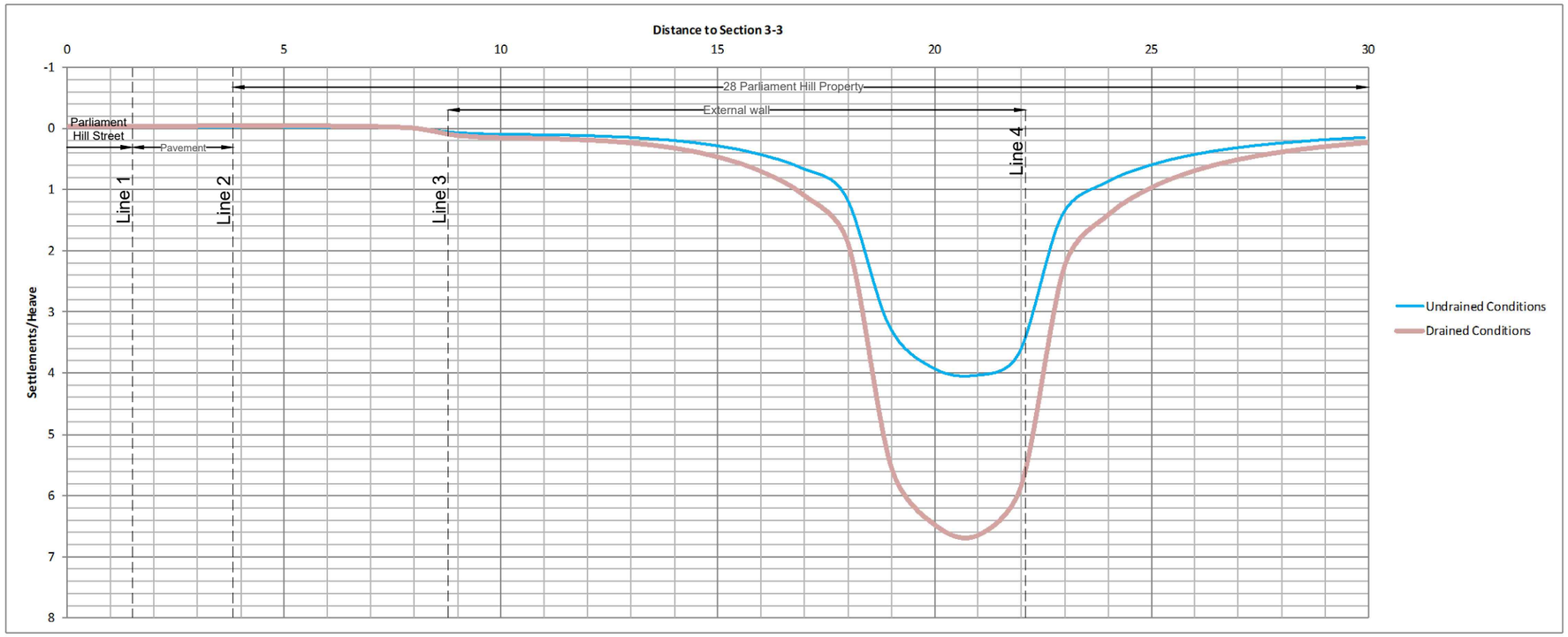
Scale	Orig Size	Dimensions
NTS		M

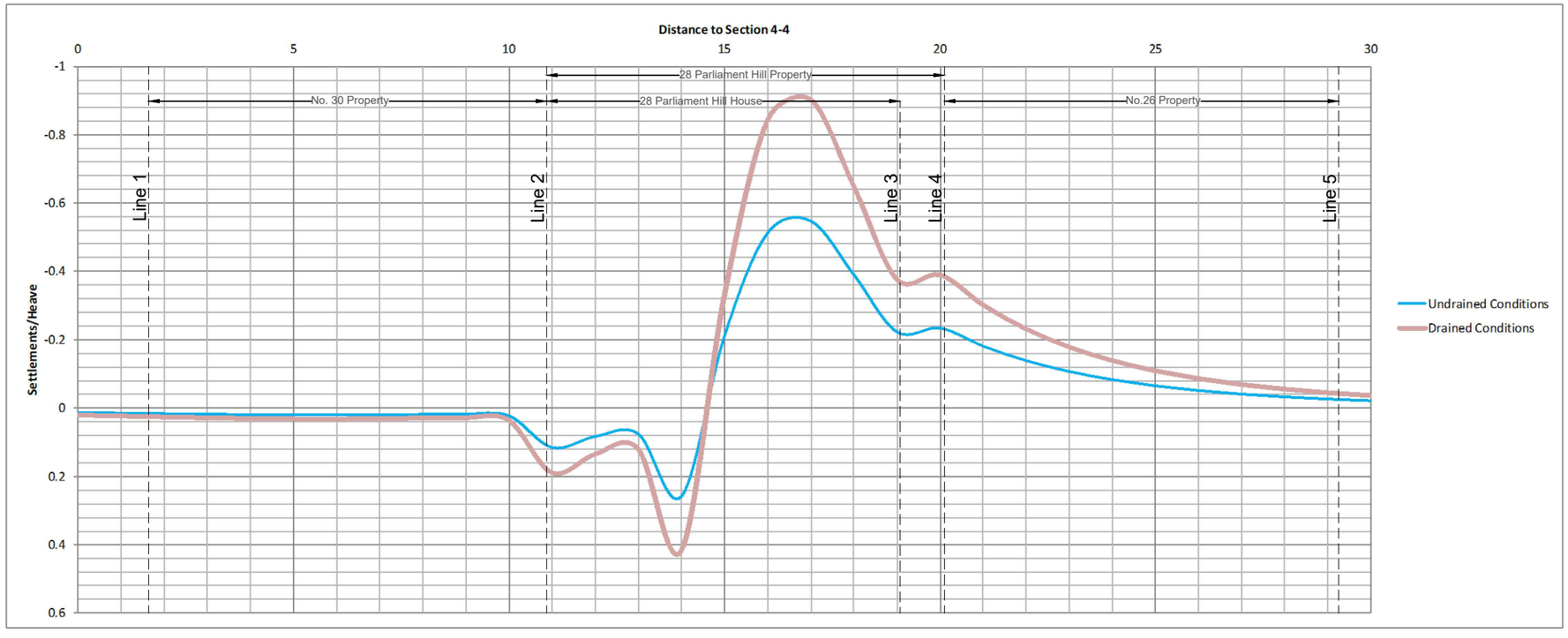
Project No. SKZ_2166/23

Drawing File

Drawing No. APPENDIX_C8

Rev.





AVZ GeoEng Ltd

70 Copthorne Road
East Grinstead
Surrey
RH19 2NU
United Kingdom

Email: info@avzgeoeng.co.uk
Web: www.avzgeoeng.co.uk
Mob: 07885977732
Tel: 01342457117

Client

Fabiana Fedeli

Project Title

28 Parliament Hill, London, England, NW3 2TN

Drawing Title

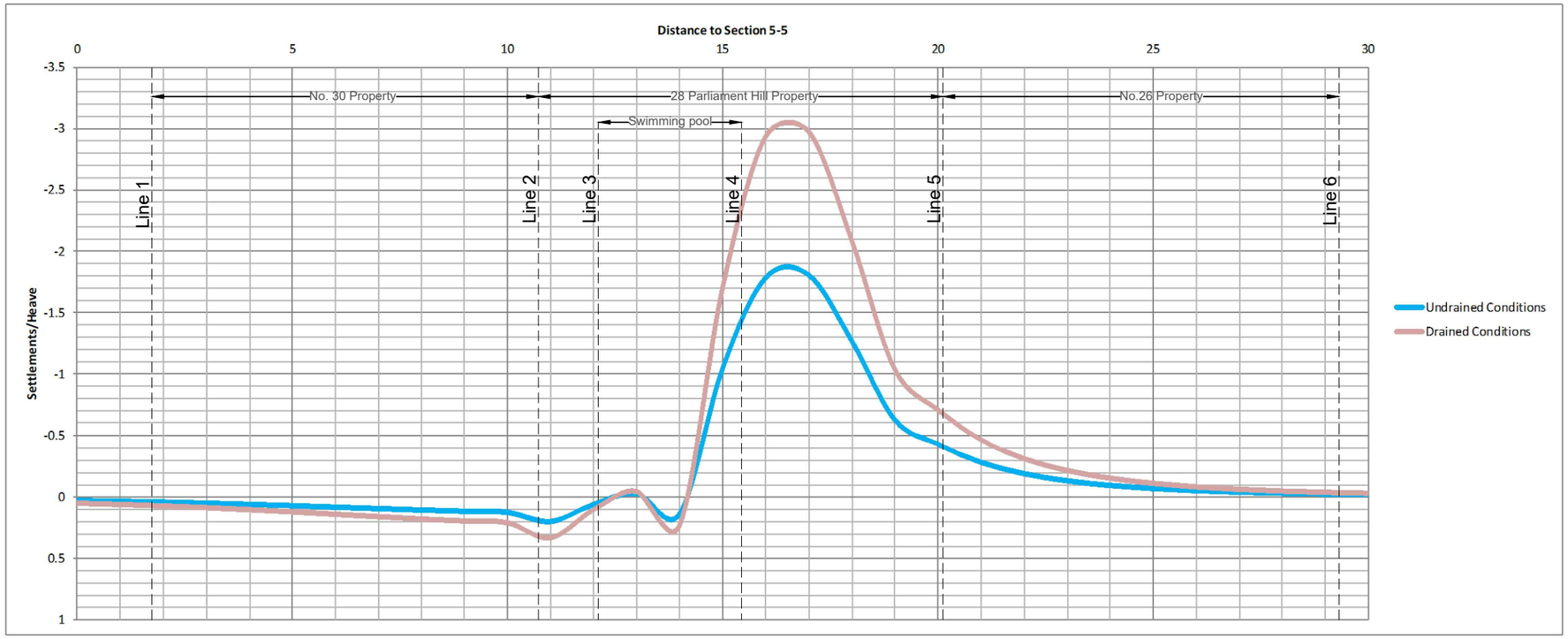
Ground Movement
Section 3-3 & Section 4-4

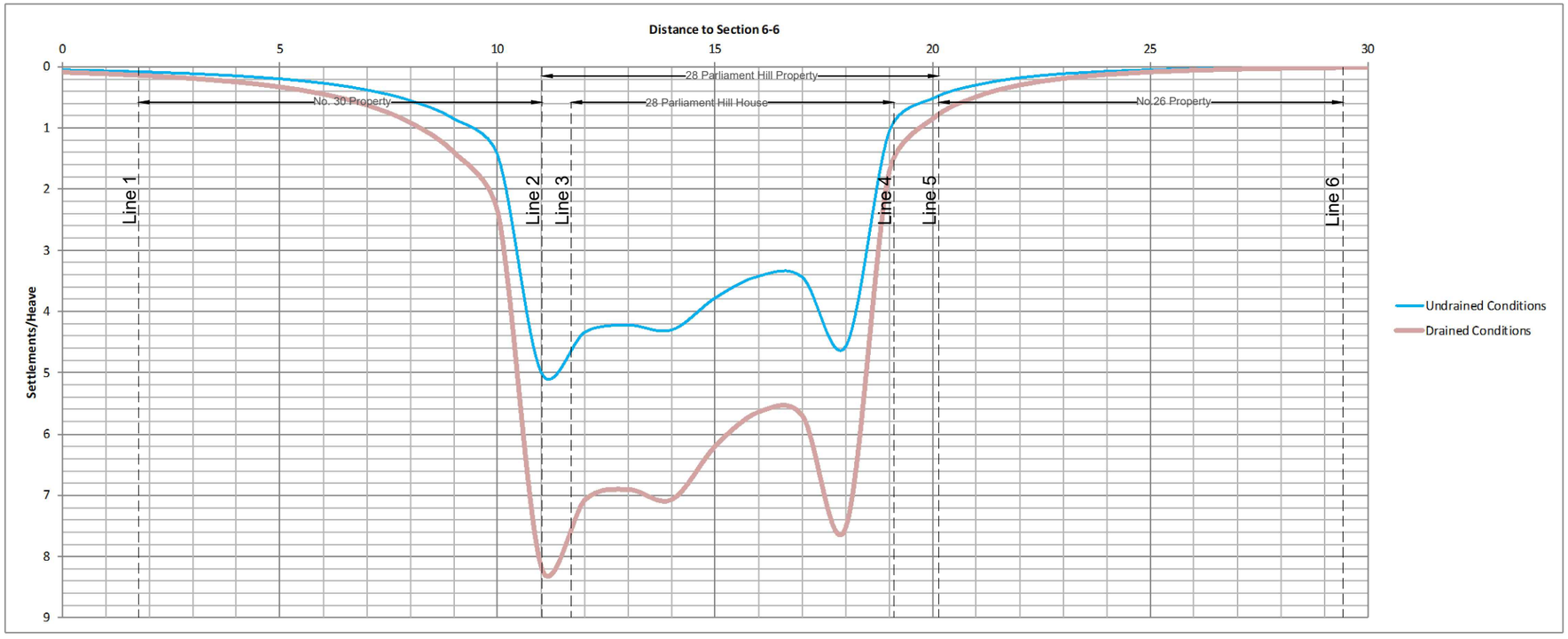
Drawn	Date	Checked	Date	Approved	Date
SKZ	29/12/2023	BZ	29/12/2023	BZ	29/12/2023

Scale	Orig Size	Dimensions
NTS		M

Project No.	Drawing File
SKZ_2166/23	

Drawing No.	Rev.
APPENDIX_C9	





AVZ GeoEng Ltd

70 Copthorne Road
East Grinstead
Surrey
RH19 2NU
United Kingdom

Email: info@avzgeoeng.co.uk
Web: www.avzgeoeng.co.uk
Mob: 07885977732
Tel: 01342457117

Client

Fabiana Fedeli

Project Title

28 Parliament Hill, London, England, NW3 2TN

Drawing Title

Ground Movement
Section 5-5 & Section 6-6

Drawn	Date	Checked	Date	Approved	Date
SKZ	29/12/2023	BZ	29/12/2023	BZ	29/12/2023

Scale	Orig Size	Dimensions
NTS		M

Project No.
SKZ_2166/23

Drawing File

Drawing No.
APPENDIX_C10

Rev.

Analysis Options

Analysis: Boussinesq
Global Poisson's ratio: 0.30
Maximum allowable ratio between values of E: 1.5
Horizontal rigid boundary level: -30.00 [m OD]
Displacements at load centroids: Yes

Soil ProfilesSoil Profile 1

Layer	Level at top [mOD]	Number of intermediate displacement levels	Youngs Modulus Top [kN/m²]	Youngs Modulus Btm [kN/m²]	Poissons ratio	Non-linear curve
1	0.0	5	8000.0	8000.0	0.20000	None
2	-0.50000	5	17800.	37000.	0.30000	None
3	-5.0000	5	37000.	93000.	0.30000	None
4	-29.000	5	93000.	200000.	0.30000	None

Load Data

Load ref.	Name	Shape	Orientation of Plane	Centre of load (Global) X [m]	Y [m]	Z (level) [m]	Load position Angle of local x from [Degrees]	Width x or Radius [m]	Length y [m]	Polygon Coordinates [m]	Rectangle tolerance [%]	Number of rectangles	Load value Normal (local z) [kN/m²]	Tangential (local x) [kN/m²]	Tangential (local y) [kN/m²]
1	Load A1	Polygonal	Horizontal	N/A	N/A	-3.00000	N/A	N/A	N/A	(19.2,17.8) (19.2,19.3) (8.8,19.2) (8.81,17.2) (9.25,17.2) (9.24,18.8) (18.8,18.8) (18.8,17.8) (19.2,17.8)	1.0000	3	5.0000	N/A	N/A
2	Load B	Polygonal	Horizontal	N/A	N/A	-3.00000	N/A	N/A	N/A	(19.2,18.3) (22.2,18.3) (22.2,10.9) (18.7,10.9) (18.7,11.3) (21.8,11.3) (21.7,17.9) (19.2,17.8) (19.2,18.3)	10.000	3	164.00	N/A	N/A
3	Load D	Polygonal	Horizontal	N/A	N/A	-3.30000	N/A	N/A	N/A	(9.25,14.7) (9.25,13.9) (18.6,13.9) (18.6,11.3) (19.3,11.3) (19.3,13.9) (21.7,13.9) (21.7,14.7) (9.25,14.7)	10.000	2	42.600	N/A	N/A
4	Load A2	Polygonal	Horizontal	N/A	N/A	-3.00000	N/A	N/A	N/A	(18.7,11.3) (9.26,11.3) (9.25,14.8) (8.82,14.8) (8.83,10.9) (18.7,10.9) (18.7,11.3)	10.000	2	5.0000	N/A	N/A
5	Load C	Polygonal	Horizontal	N/A	N/A	-2.00000	N/A	N/A	N/A	(10.1,17.8) (21.5,17.9) (21.5,14.5) (10.1,14.5) (10.1,17.8)	10.000	1	-27.500	N/A	N/A

RESULTS FOR GRIDS

Analysis: Boussinesq
Global Poisson's ratio: 0.30
Horizontal rigid boundary level: -30.00 [m OD]

The maximum displacement difference between the Boussinesq method (2.5715mm) and the Mindlin method (0.72217mm) occurs at point X = 21.00000m, Y = 18.00000m, level = 0.0mOD, and is 1.8494mm.

Name	Location X [m]	Location Y [m]	Location Z[Level] [mOD]	Displacement Z [mm]	Stresses Calc Level [mOD]	Vert Stress [kN/m²]	Sum Princ [kN/m²]	Vert Strain [-]
Load A1	13.77300	18.86288	-3.00000	-0.69907	-3.2855	-0.68718	-7.6362	47.106E-6
Load B	21.27355	14.42741	-3.00000	2.5332	-3.2855	-3.0384	18.694	-322.17E-6
Load D	16.06792	13.99958	-3.30000	0.60299	-3.6891	16.819	26.793	440.68E-6
Load A2	12.54406	11.59757	-3.00000	0.059667	-3.2855	0.045282	-1.6539	18.709E-6
Load C	15.77700	16.17130	-2.00000	-2.3743	-2.3300	-27.413	-62.241	-663.16E-6
Fondation level	0.01000	0.00000	-3.00000	-0.0014730	-3.2855	-204.08E-6	-0.042917	0.0
	0.01000	3.00000	-3.00000	-0.0028611	-3.2855	-350.98E-6	-0.059584	0.0
	0.01000	6.00000	-3.00000	-0.0056569	-3.2855	-609.46E-6	-0.082847	0.0
	0.01000	9.00000	-3.00000	-0.010392	-3.2855	-0.0010318	-0.11289	1.0963E-6
	0.01000	12.00000	-3.00000	-0.016968	-3.2855	-0.0015897	-0.14505	1.3971E-6
	0.01000	15.00000	-3.00000	-0.023567	-3.2855	-0.0020186	-0.16665	1.5967E-6
	0.01000	18.00000	-3.00000	-0.026861	-3.2855	-0.0019562	-0.16432	1.5758E-6
	0.01000	21.00000	-3.00000	-0.025317	-3.2855	-0.0014631	-0.13993	1.3509E-6
	0.01000	24.00000	-3.00000	-0.020696	-3.2855	-923.06E-6	-0.10787	1.0504E-6
	0.01000	27.00000	-3.00000	-0.015479	-3.2855	-540.02E-6	-0.079176	0.0
	0.01000	30.00000	-3.00000	-0.011033	-3.2855	-311.19E-6	-0.057254	0.0
	3.00900	0.00000	-3.00000	483.72E-6	-3.2855	-317.21E-6	-0.055526	0.0
	3.00900	3.00000	-3.00000	-746.09E-6	-3.2855	-613.73E-6	-0.082741	0.0
	3.00900	6.00000	-3.00000	-0.0043793	-3.2855	-0.0012546	-0.12644	1.2235E-6
	3.00900	9.00000	-3.00000	-0.012201	-3.2855	-0.0026474	-0.19456	1.8514E-6
	3.00900	12.00000	-3.00000	-0.026026	-3.2855	-0.0052741	-0.28711	2.6721E-6
	3.00900	15.00000	-3.00000	-0.043382	-3.2855	-0.0080505	-0.36444	3.3324E-6
	3.00900	18.00000	-3.00000	-0.051885	-3.2855	-0.0075980	-0.35459	3.2527E-6
	3.00900	21.00000	-3.00000	-0.045753	-3.2855	-0.0045889	-0.26997	2.5288E-6
	3.00900	24.00000	-3.00000	-0.033693	-3.2855	-0.0022455	-0.18186	1.7405E-6
	3.00900	27.00000	-3.00000	-0.022800	-3.2855	-0.0010676	-0.11899	1.1564E-6
	3.00900	30.00000	-3.00000	-0.014950	-3.2855	-528.63E-6	-0.078794	0.0
	6.00800	0.00000	-3.00000	0.0045735	-3.2855	-471.72E-6	-0.069660	0.0
	6.00800	3.00000	-3.00000	0.0047410	-3.2855	-0.0010332	-0.11198	1.0871E-6
	6.00800	6.00000	-3.00000	0.0016402	-3.2855	-0.0025577	-0.19129	1.8222E-6
	6.00800	9.00000	-3.00000	-0.0081083	-3.2855	-0.0073734	-0.34652	3.1809E-6
	6.00800	12.00000	-3.00000	-0.032910	-3.2855	-0.024288	-0.65933	5.6027E-6
	6.00800	15.00000	-3.00000	-0.090054	-3.2855	-0.060627	-1.0987	8.4530E-6
	6.00800	18.00000	-3.00000	-0.11968	-3.2855	-0.053019	-1.0237	8.0281E-6
	6.00800	21.00000	-3.00000	-0.088399	-3.2855	-0.018716	-0.59410	5.1874E-6
	6.00800	24.00000	-3.00000	-0.054394	-3.2855	-0.0057779	-0.31680	2.9503E-6
	6.00800	27.00000	-3.00000	-0.032077	-3.2855	-0.0020721	-0.17732	1.7022E-6
	6.00800	30.00000	-3.00000	-0.019048	-3.2855	-862.80E-6	-0.10597	1.0338E-6
	9.00700	0.00000	-3.00000	0.011876	-3.2855	-649.75E-6	-0.082739	0.0
	9.00700	3.00000	-3.00000	0.016195	-3.2855	-0.0015874	-0.14246	1.3710E-6
	9.00700	6.00000	-3.00000	0.017705	-3.2855	-0.0046994	-0.27180	2.5425E-6
	9.00700	9.00000	-3.00000	0.014648	-3.2855	-0.018305	-0.56339	4.8949E-6
	9.00700	12.00000	-3.00000	0.10399	-3.2855	3.4211	3.4926	114.59E-6
	9.00700	15.00000	-3.00000	-0.18993	-3.2855	-1.4991	-5.8740	-6.2922E-6
	9.00700	18.00000	-3.00000	-0.30645	-3.2855	2.1973	-0.48400	101.17E-6
	9.00700	21.00000	-3.00000	-0.17261	-3.2855	-0.087950	-1.3937	10.239E-6
	9.00700	24.00000	-3.00000	-0.081253	-3.2855	-0.013621	-0.53132	4.7758E-6
	9.00700	27.00000	-3.00000	-0.040639	-3.2855	-0.0036352	-0.25011	2.3697E-6
	9.00700	30.00000	-3.00000	-0.021762	-3.2855	-0.0012908	-0.13526	1.3112E-6
	12.00600	0.00000	-3.00000	0.023145	-3.2855	-805.05E-6	-0.090604	0.0
	12.00600	3.00000	-3.00000	0.036752	-3.2855	-0.0021152	-0.16271	1.5527E-6
	12.00600	6.00000	-3.00000	0.052448	-3.2855	-0.0070155	-0.33647	3.0949E-6
	12.00600	9.00000	-3.00000	0.061918	-3.2855	-0.033670	-0.82328	6.8495E-6
	12.00600	12.00000	-3.00000	0.015238	-3.2855	-0.40471	-3.3153	15.791E-6
	12.00600	15.00000	-3.00000	-0.98026	-3.2855	-18.991	-30.154	-527.26E-6
	12.00600	18.00000	-3.00000	-1.1799	-3.2855	-10.762	-20.537	-263.89E-6
	12.00600	21.00000	-3.00000	-0.27153	-3.2855	-0.21892	-2.5825	16.521E-6
	12.00600	24.00000	-3.00000	-0.097779	-3.2855	-0.023493	-0.75764	6.6317E-6
	12.00600	27.00000	-3.00000	-0.042024	-3.2855	-0.0052870	-0.31512	2.9548E-6
	12.00600	30.00000	-3.00000	-0.020685	-3.2855	-0.0016947	-0.15873	1.5308E-6
	15.00500	0.00000	-3.00000	0.037605	-3.2855	-880.75E-6	-0.089401	0.0
	15.00500	3.00000	-3.00000	0.067794	-3.2855	-0.0023772	-0.15850	1.4985E-6
	15.00500	6.00000	-3.00000	0.12045	-3.2855	-0.0081609	-0.32416	2.9203E-6
	15.00500	9.00000	-3.00000	0.19827	-3.2855	-0.040768	-0.83018	6.6083E-6

Name	Location X [m]	Location Y [m]	Location Z[Level] [mOD]	Displacement Z [mm]	Calc Level [mOD]	Stresses Vert Stress [kN/m²]	Stresses Sum Princ [kN/m²]	Vert Strain [-]
	15.00500	12.00000	-3.00000	0.17593	-3.2855	-0.47113	-3.8244	18.027E-6
	15.00500	15.00000	-3.00000	-0.96659	-3.2855	-19.477	-32.658	-523.20E-6
	15.00500	18.00000	-3.00000	-1.2241	-3.2855	-11.262	-22.735	-263.60E-6
	15.00500	21.00000	-3.00000	-0.24819	-3.2855	-0.26204	-3.0276	19.132E-6
	15.00500	24.00000	-3.00000	-0.075162	-3.2855	-0.028540	-0.85034	7.3479E-6
	15.00500	27.00000	-3.00000	-0.029208	-3.2855	-0.0061817	-0.34032	3.1704E-6
	15.00500	30.00000	-3.00000	-0.014043	-3.2855	-0.0019082	-0.16728	1.6079E-6
	18.00400	0.00000	-3.00000	0.051440	-3.2855	-845.42E-6	-0.078926	0.0
	18.00400	3.00000	-3.00000	0.10206	-3.2855	-0.0022362	-0.12614	1.1775E-6
	18.00400	6.00000	-3.00000	0.22110	-3.2855	-0.0073080	-0.18520	1.5525E-6
	18.00400	9.00000	-3.00000	0.57635	-3.2855	-0.024548	0.26807	-3.7863E-6
	18.00400	12.00000	-3.00000	1.1451	-3.2855	-0.32156	-0.015007	-13.939E-6
	18.00400	15.00000	-3.00000	-0.34339	-3.2855	-19.333	-30.979	-533.86E-6
	18.00400	18.00000	-3.00000	-0.63768	-3.2855	-11.196	-19.450	-293.93E-6
	18.00400	21.00000	-3.00000	-0.025885	-3.2855	-0.24999	-2.4658	13.979E-6
	18.00400	24.00000	-3.00000	-0.0051353	-3.2855	-0.026833	-0.74108	6.3179E-6
	18.00400	27.00000	-3.00000	-0.0030049	-3.2855	-0.0058670	-0.31037	2.8813E-6
	18.00400	30.00000	-3.00000	-0.0029276	-3.2855	-0.0018329	-0.15686	1.5059E-6
	21.00300	0.00000	-3.00000	0.058619	-3.2855	-715.49E-6	-0.064057	0.0
	21.00300	3.00000	-3.00000	0.12009	-3.2855	-0.0017747	-0.085878	0.0
	21.00300	6.00000	-3.00000	0.27979	-3.2855	-0.0050238	-0.027208	0.0
	21.00300	9.00000	-3.00000	0.90251	-3.2855	0.022073	2.2049	-21.328E-6
	21.00300	12.00000	-3.00000	2.4935	-3.2855	2.2189	27.630	-182.17E-6
	21.00300	15.00000	-3.00000	1.3785	-3.2855	-12.909	-3.8796	-526.43E-6
	21.00300	18.00000	-3.00000	3.9973	-3.2855	104.92	158.01	0.0029997
	21.00300	21.00000	-3.00000	0.27718	-3.2855	-0.15515	-0.96225	2.9317E-6
	21.00300	24.00000	-3.00000	0.070194	-3.2855	-0.018687	-0.49408	4.1773E-6
	21.00300	27.00000	-3.00000	0.023761	-3.2855	-0.0044930	-0.24107	2.2408E-6
	21.00300	30.00000	-3.00000	0.0083213	-3.2855	-0.0015037	-0.13185	1.2673E-6
	24.00200	0.00000	-3.00000	0.055818	-3.2855	-542.58E-6	-0.050564	0.0
	24.00200	3.00000	-3.00000	0.10966	-3.2855	-0.0012255	-0.061333	0.0
	24.00200	6.00000	-3.00000	0.23018	-3.2855	-0.0030604	-0.021235	0.0
	24.00200	9.00000	-3.00000	0.53735	-3.2855	-0.0056683	0.49033	-5.2066E-6
	24.00200	12.00000	-3.00000	1.0182	-3.2855	-0.0046174	2.3743	-24.211E-6
	24.00200	15.00000	-3.00000	0.99384	-3.2855	-0.22042	1.3179	-22.985E-6
	24.00200	18.00000	-3.00000	0.68056	-3.2855	-0.18322	0.56816	-13.773E-6
	24.00200	21.00000	-3.00000	0.25814	-3.2855	-0.040062	-0.37870	2.0840E-6
	24.00200	24.00000	-3.00000	0.092503	-3.2855	-0.0090274	-0.28140	2.4499E-6
	24.00200	27.00000	-3.00000	0.036966	-3.2855	-0.0027846	-0.16700	1.5667E-6
	24.00200	30.00000	-3.00000	0.015221	-3.2855	-0.0010670	-0.10180	0.0
	27.00100	0.00000	-3.00000	0.045665	-3.2855	-377.81E-6	-0.040238	0.0
	27.00100	3.00000	-3.00000	0.082623	-3.2855	-764.44E-6	-0.049334	0.0
	27.00100	6.00000	-3.00000	0.14764	-3.2855	-0.0016632	-0.048362	0.0
	27.00100	9.00000	-3.00000	0.24851	-3.2855	-0.0039023	-0.018658	0.0
	27.00100	12.00000	-3.00000	0.34215	-3.2855	-0.0097795	-0.015195	0.0
	27.00100	15.00000	-3.00000	0.34364	-3.2855	-0.018852	-0.13503	0.0
	27.00100	18.00000	-3.00000	0.25891	-3.2855	-0.017670	-0.21628	1.4128E-6
	27.00100	21.00000	-3.00000	0.14977	-3.2855	-0.0098171	-0.21061	1.7433E-6
	27.00100	24.00000	-3.00000	0.074856	-3.2855	-0.0035663	-0.16029	1.4646E-6
	27.00100	27.00000	-3.00000	0.035786	-3.2855	-0.0014892	-0.11028	1.0499E-6
	27.00100	30.00000	-3.00000	0.016622	-3.2855	-677.92E-6	-0.074726	0.0
	30.00000	0.00000	-3.00000	0.033368	-3.2855	-248.53E-6	-0.032179	0.0
	30.00000	3.00000	-3.00000	0.055536	-3.2855	-448.38E-6	-0.040071	0.0
	30.00000	6.00000	-3.00000	0.087523	-3.2855	-832.08E-6	-0.048156	0.0
	30.00000	9.00000	-3.00000	0.12534	-3.2855	-0.0015473	-0.057870	0.0
	30.00000	12.00000	-3.00000	0.15328	-3.2855	-0.0026782	-0.077308	0.0
	30.00000	15.00000	-3.00000	0.15324	-3.2855	-0.0037132	-0.10633	0.0
	30.00000	18.00000	-3.00000	0.12511	-3.2855	-0.0035982	-0.12275	1.0836E-6
	30.00000	21.00000	-3.00000	0.085388	-3.2855	-0.0024849	-0.11598	1.0639E-6
	30.00000	24.00000	-3.00000	0.051008	-3.2855	-0.0014119	-0.095423	0.0
	30.00000	27.00000	-3.00000	0.027964	-3.2855	-753.50E-6	-0.072753	0.0
	30.00000	30.00000	-3.00000	0.014360	-3.2855	-404.64E-6	-0.053785	0.0
Section 1-1	0.01000	19.24930	-3.00000	-0.026760	-3.2855	-0.0017815	-0.15611	1.5005E-6
	2.99900	19.24927	-3.00000	-0.050626	-3.2855	-0.0063925	-0.32309	2.9869E-6
	5.98800	19.24924	-3.00000	-0.10916	-3.2855	-0.036056	-0.83429	6.8563E-6
	8.97700	19.24921	-3.00000	-0.21622	-3.2855	1.5699	0.26675	66.092E-6
	11.96600	19.24918	-3.00000	-0.51142	-3.2855	0.60121	-3.8775	65.552E-6
	14.95500	19.24915	-3.00000	-0.52001	-3.2855	0.47745	-5.0476	71.962E-6
	17.94400	19.24912	-3.00000	-0.095716	-3.2855	0.58714	-3.2379	58.469E-6
	20.93300	19.24909	-3.00000	0.80474	-3.2855	-0.83775	4.2005	-79.183E-6
	23.92200	19.24906	-3.00000	0.49110	-3.2855	-0.11037	-0.011032	-4.7247E-6
	26.91100	19.24903	-3.00000	0.21662	-3.2855	-0.014682	-0.22600	1.6420E-6
	29.90000	19.24900	-3.00000	0.11115	-3.2855	-0.0033304	-0.12484	1.1164E-6
Section 2-2	0.01000	16.15760	-3.00000	-0.025395	-3.2855	-0.0020627	-0.16893	1.6178E-6
	2.99900	16.15764	-3.00000	-0.048355	-3.2855	-0.0083322	-0.37204	3.3970E-6
	5.98800	16.15768	-3.00000	-0.11061	-3.2855	-0.065367	-1.1492	8.7558E-6
	8.97700	16.15772	-3.00000	-0.43770	-3.2855	-2.5111	-8.1192	-27.930E-6
	11.96600	16.15776	-3.00000	-1.7143	-3.2855	-23.716	-36.608	-669.00E-6
	14.95500	16.15780	-3.00000	-1.7743	-3.2855	-24.427	-39.720	-668.68E-6
	17.94400	16.15784	-3.00000	-1.2079	-3.2855	-24.345	-37.886	-683.63E-6
	20.93300	16.15788	-3.00000	0.68339	-3.2855	-17.487	-10.544	-659.64E-6
	23.92200	16.15792	-3.00000	0.92809	-3.2855	-0.29324	1.1566	-24.545E-6
	26.91100	16.15796	-3.00000	0.32696	-3.2855	-0.021480	-0.17988	0.0
	29.90000	16.15800	-3.00000	0.14854	-3.2855	-0.0040214	-0.11737	1.0106E-6
Section 3-3	0.01000	10.85050	-3.00000	-0.014296	-3.2855	-0.0013703	-0.13311	1.2860E-6
	2.99900	10.85055	-3.00000	-0.019960	-3.2855	-0.0041046	-0.24936	2.3416E-6
	5.98800	10.85060	-3.00000	-0.020488	-3.2855	-0.015140	-0.51049	4.4986E-6
	8.97700	10.85065	-3.00000	0.071915	-3.2855	1.8582	2.1439	59.746E-6
	11.96600	10.85070	-3.00000	0.11842	-3.2855	2.1462	2.0137	73.679E-6
	14.95500	10.85075	-3.00000	0.28139	-3.2855	2.0576	1.7494	72.469E-6
	17.94400	10.85080	-3.00000	1.0978	-3.2855	2.3454	7.2400	29.560E-6
	20.93300	10.85085	-3.00000	4.0333	-3.2855	69.990	128.77	0.0017647
	23.92200	10.85090	-3.00000	0.89356	-3.2855	0.010960	2.0002	-19.745E-6
	26.91100	10.85095	-3.00000	0.32175	-3.2855	-0.0071288	0.0046982	0.0
	29.90000	10.85100	-3.00000	0.14859	-3.2855	-0.0022873	-0.068286	0.0
Section 4-4	9.24460	29.99000	-3.00000	-0.021892	-3.2855	-0.0013300	-0.13772	1.3343E-6
	9.24464	26.99200	-3.00000	-0.041190	-3.2855	-0.0037855	-0.25643	2.4271E-6
	9.24468	23.99400	-3.00000	-0.083425	-3.2855	-0.014465	-0.55159	4.9438E-6
	9.24472	20.99600	-3.00000	-0.18150	-3.2855	-0.098437	-1.4881	10.734E-6
	9.24476	17.99800	-3.00000	-0.39047	-3.2855	0.33736	-2.8096	43.193E-6
	9.24480	15.00000	-3.00000	-0.20955	-3.2855	-2.6422	-7.7112	-37.803E-6
	9.24484	12.00200	-3.00000	0.082750	-3.2855	2.2583	2.2675	76.027E-6
	9.24488	9.00400	-3.00000	0.017358	-3.2855	-0.019489	-0.58332	5.0445E-6
	9.24492	6.00600	-3.00000	0.019623	-3.2855	-0.0049054	-0.27856	2.6018E-6
	9.24496	3.00800	-3.00000	0.017464	-3.2855	-0.0016376	-0.14486	1.3931E-6
	9.24500	0.01000	-3.00000	0.012638	-3.2855	-665.50E-6	-0.083754	0.0
Section 5-5	13.67020	29.99000	-3.00000	-0.017743	-3.2855	-0.0018522	-0.16611	1.5985E-6
	13.67018	26.99200	-3.00000	-0.036977	-3.2855	-0.0059411	-0.33638	3.1411E-6
	13.67016	23.99400	-3.00000	-0.091669	-3.2855	-0.027222	-0.83443	7.2448E-6
	13.67014	20.99600	-3.00000	-0.28039	-3.2855	-0.25313	-2.9506	18.745E-6
	13.67012	17.99800	-3.00000	-1.2679	-3.2855	-11.201	-22.410	-264.20E-6
	13.67010	15.00000	-3.00000	-1.0425	-3.2855	-19.453	-32.331	-525.46E-6
	13.67008	12.00200	-3.00000	0.063177	-3.2855	-0.46128	-3.8120	18.334E-6
	13.67006	9.00400	-3.00000	0.11875	-3.2855	-0.039211	-0.88628	7.2438E-6
	13.67004	6.00600	-3.00000	0.085233	-3.2855	-0.0078901	-0.34410	3.1338E-6
	13.67002	3.00800	-3.00000	0.052909	-3.2855	-0.0023133	-0.16438	1.5608E-6
	13.67000	0.01000	-3.00000	0.030995	-3.2855	-862.47E-6	-0.091355	0.0
Section 6-6	21.73670	29.99000	-3.00000	0.010560	-3.2855	-0.0014044	-0.12480	1.2005E-6
	21.73673	26.99200	-3.00000	0.028617	-3.2855	-0.0040831	-0.22250	2.0710E-6
	21.73676	23.99400	-3.00000	0.081577	-3.2855	-0.016193	-0.43405	3.6795E-6
	21.73679	20.99600	-3.00000	0.30486	-3.2855	-0.11986	-0.70001	1.8266E-6
	21.73682	17.99800	-3.00000	4.5690	-3.2855	121.58	184.19	0.0034647
	21.73685	15.00000	-3.00000	3.7795	-3.2855	66.719	119.13	0.0017188
	21.73688	12.00200	-3.00000	4.3399	-3.2855	71.916	134.54	0.0017907
	21.73691	9.00400	-3.00000	0.86043	-3.2855	0.018867	1.9954	-19.350E-6
	21.73694	6.00600	-3.00000	0.27701	-3.2855	-0.0044883	-0.012182	0.0
	21.73697	3.00800	-3.00000	0.12031	-3.2855	-0.0016437	-0.078113	0.0
	21.73700	0.01000	-3.00000	0.058983	-3.2855	-676.76E-6	-0.060546	0.0
Point 1	3.86750	26.83910	-3.00000	-0.025917	-3.2855	-0.0013532	-0.13703	1.3263E-6
Point 2	8.50520	27.36130	-3.00000	-0.036586	-3.2855	-0.0029286	-0.21980	2.0943E-6

Name	Location X [m]	Location Y [m]	Location Z[Level] [mOD]	Displacement Z [mm]	Stresses Calc Level [mOD]	Stresses Vert Stress [kN/m²]	Stresses Sum Princ [kN/m²]	Stresses Vert Strain [-]
Point 3	10.98450	29.31590	-3.00000	-0.025052	-3.2855	-0.0019809	-0.17487	1.6815E-6
Point 4	19.19110	27.28420	-3.00000	0.0075368	-3.2855	-0.0048055	-0.26696	2.4889E-6
Point 5	23.79270	28.25380	-3.00000	0.025173	-3.2855	-0.0018880	-0.13834	1.3161E-6
Point 6	27.36120	27.00100	-3.00000	0.035033	-3.2855	-0.0013736	-0.10483	0.0
Point 7	3.81700	21.85200	-3.00000	-0.049872	-3.2855	-0.0052202	-0.29210	2.7249E-6
Point 8	8.41740	23.22570	-3.00000	-0.090748	-3.2855	-0.017327	-0.59900	5.2978E-6
Point 9	12.60100	22.41980	-3.00000	-0.16512	-3.2855	-0.071013	-1.4343	11.392E-6
Point 10	19.15410	23.13900	-3.00000	0.038985	-3.2855	-0.041693	-0.86494	6.9192E-6
Point 11	23.02600	22.61900	-3.00000	0.15155	-3.2855	-0.024360	-0.43501	3.3314E-6
Point 12	27.90790	22.36580	-3.00000	0.096016	-3.2855	-0.0041395	-0.15885	1.4249E-6
Point 13	0.00000	30.00000	-3.00000	-0.011022	-3.2855	-310.64E-6	-0.057192	0.0
Point 14	8.32970	19.09000	-3.00000	-0.21981	-3.2855	-0.17100	-1.7730	10.436E-6
Point 15	22.82960	18.94310	-3.00000	0.79956	-3.2855	-0.21734	2.9340	-39.192E-6
Point 16	30.00000	30.00000	-3.00000	0.014360	-3.2855	-404.64E-6	-0.053785	0.0
Point 17	1.54620	13.99630	-3.00000	-0.028503	-3.2855	-0.0036237	-0.23244	2.1917E-6
Point 18	7.87160	14.53900	-3.00000	-0.11198	-3.2855	-0.34207	-2.6321	11.627E-6
Point 19	23.41050	13.80840	-3.00000	1.3836	-3.2855	-0.081777	5.1482	-55.641E-6
Point 20	27.27010	12.88920	-3.00000	0.32625	-3.2855	-0.010877	-0.058090	0.0
Point 21	3.91580	7.57240	-3.00000	-0.0070373	-3.2855	-0.0024055	-0.18439	1.7591E-6
Point 22	8.29480	8.42960	-3.00000	0.0083181	-3.2855	-0.011624	-0.44642	4.0048E-6
Point 23	13.05110	8.39480	-3.00000	0.090244	-3.2855	-0.026280	-0.71854	6.1143E-6
Point 24	18.83820	8.41770	-3.00000	0.56940	-3.2855	-0.015008	0.37817	-4.4817E-6
Point 25	22.88300	7.66520	-3.00000	0.43688	-3.2855	-0.0055975	0.24794	-2.7524E-6
Point 26	27.70610	7.25870	-3.00000	0.16205	-3.2855	-0.0019692	-0.047395	0.0
Point 27	0.00000	0.00000	-3.00000	-0.0014771	-3.2855	-203.78E-6	-0.042879	0.0
Point 28	8.27890	0.68650	-3.00000	0.010528	-3.2855	-730.83E-6	-0.089490	0.0
Point 29	13.23720	0.58550	-3.00000	0.032010	-3.2855	-0.0010132	-0.10154	0.0
Point 30	18.76130	0.53160	-3.00000	0.060995	-3.2855	-960.20E-6	-0.081335	0.0
Point 31	22.95720	0.49070	-3.00000	0.064621	-3.2855	-688.59E-6	-0.057591	0.0
Point 32	30.00000	0.00000	-3.00000	0.033368	-3.2855	-248.53E-6	-0.032179	0.0
Grid 2	0.00000	0.00000	0.00000	-0.0012522	-0.041667	0.0	0.0	0.0
	0.00000	3.00000	0.00000	-0.0025596	-0.041667	0.0	0.0	0.0
	0.00000	6.00000	0.00000	-0.0052430	-0.041667	0.0	0.0	0.0
	0.00000	9.00000	0.00000	-0.0098323	-0.041667	0.0	0.0	0.0
	0.00000	12.00000	0.00000	-0.016248	-0.041667	0.0	0.0	0.0
	0.00000	15.00000	0.00000	-0.022732	-0.041667	0.0	0.0	0.0
	0.00000	18.00000	0.00000	-0.026028	-0.041667	0.0	0.0	0.0
	0.00000	21.00000	0.00000	-0.024601	-0.041667	0.0	0.0	0.0
	0.00000	24.00000	0.00000	-0.020142	-0.041667	0.0	0.0	0.0
	0.00000	27.00000	0.00000	-0.015070	-0.041667	0.0	0.0	0.0
	0.00000	30.00000	0.00000	-0.010736	-0.041667	0.0	0.0	0.0
	3.00000	0.00000	0.00000	769.07E-6	-0.041667	0.0	0.0	0.0
	3.00000	3.00000	0.00000	-330.33E-6	-0.041667	0.0	0.0	0.0
	3.00000	6.00000	0.00000	-0.0037561	-0.041667	0.0	0.0	0.0
	3.00000	9.00000	0.00000	-0.011256	-0.041667	0.0	0.0	0.0
	3.00000	12.00000	0.00000	-0.024640	-0.041667	0.0	0.0	0.0
	3.00000	15.00000	0.00000	-0.041603	-0.041667	0.0	0.0	0.0
	3.00000	18.00000	0.00000	-0.050119	-0.041667	0.0	0.0	0.0
	3.00000	21.00000	0.00000	-0.044392	-0.041667	0.0	0.0	0.0
	3.00000	24.00000	0.00000	-0.032771	-0.041667	0.0	0.0	0.0
	3.00000	27.00000	0.00000	-0.022193	-0.041667	0.0	0.0	0.0
	3.00000	30.00000	0.00000	-0.014546	-0.041667	0.0	0.0	0.0
	6.00000	0.00000	0.00000	0.0049348	-0.041667	0.0	0.0	0.0
	6.00000	3.00000	0.00000	0.0053056	-0.041667	0.0	0.0	0.0
	6.00000	6.00000	0.00000	0.0025807	-0.041667	0.0	0.0	0.0
	6.00000	9.00000	0.00000	-0.0064312	-0.041667	0.0	0.0	0.0
	6.00000	12.00000	0.00000	-0.029805	-0.041667	0.0	0.0	0.0
	6.00000	15.00000	0.00000	-0.084933	-0.041667	0.0	0.0	0.0
	6.00000	18.00000	0.00000	-0.11464	-0.041667	0.0	0.0	0.0
	6.00000	21.00000	0.00000	-0.085435	-0.041667	0.0	0.0	0.0
	6.00000	24.00000	0.00000	-0.052814	-0.041667	0.0	0.0	0.0
	6.00000	27.00000	0.00000	-0.031185	-0.041667	0.0	0.0	0.0
	6.00000	30.00000	0.00000	-0.018509	-0.041667	0.0	0.0	0.0
	9.00000	0.00000	0.00000	0.012317	-0.041667	0.0	0.0	0.0
	9.00000	3.00000	0.00000	0.016930	-0.041667	0.0	0.0	0.0
	9.00000	6.00000	0.00000	0.019066	-0.041667	0.0	0.0	0.0
	9.00000	9.00000	0.00000	0.017648	-0.041667	0.0	0.0	0.0
	9.00000	12.00000	0.00000	0.068874	-0.041667	0.0	0.0	0.0
	9.00000	15.00000	0.00000	-0.17820	-0.041667	0.0	0.0	0.0
	9.00000	18.00000	0.00000	-0.32738	-0.041667	0.0	0.0	0.0
	9.00000	21.00000	0.00000	-0.16556	-0.041667	0.0	0.0	0.0
	9.00000	24.00000	0.00000	-0.078642	-0.041667	0.0	0.0	0.0
	9.00000	27.00000	0.00000	-0.039394	-0.041667	0.0	0.0	0.0
	9.00000	30.00000	0.00000	-0.021077	-0.041667	0.0	0.0	0.0
	12.00000	0.00000	0.00000	0.023657	-0.041667	0.0	0.0	0.0
	12.00000	3.00000	0.00000	0.037644	-0.041667	0.0	0.0	0.0
	12.00000	6.00000	0.00000	0.054221	-0.041667	0.0	0.0	0.0
	12.00000	9.00000	0.00000	0.066379	-0.041667	0.0	0.0	0.0
	12.00000	12.00000	0.00000	0.031976	-0.041667	0.0	0.0	0.0
	12.00000	15.00000	0.00000	-1.7734	-0.041667	0.0	0.0	0.0
	12.00000	18.00000	0.00000	-1.2479	-0.041667	0.0	0.0	0.0
	12.00000	21.00000	0.00000	-0.25902	-0.041667	0.0	0.0	0.0
	12.00000	24.00000	0.00000	-0.094086	-0.041667	0.0	0.0	0.0
	12.00000	27.00000	0.00000	-0.040451	-0.041667	0.0	0.0	0.0
	12.00000	30.00000	0.00000	-0.019875	-0.041667	0.0	0.0	0.0
	15.00000	0.00000	0.00000	0.038165	-0.041667	0.0	0.0	0.0
	15.00000	3.00000	0.00000	0.068792	-0.041667	0.0	0.0	0.0
	15.00000	6.00000	0.00000	0.12249	-0.041667	0.0	0.0	0.0
	15.00000	9.00000	0.00000	0.20345	-0.041667	0.0	0.0	0.0
	15.00000	12.00000	0.00000	0.19551	-0.041667	0.0	0.0	0.0
	15.00000	15.00000	0.00000	-1.7483	-0.041667	0.0	0.0	0.0
	15.00000	18.00000	0.00000	-1.2898	-0.041667	0.0	0.0	0.0
	15.00000	21.00000	0.00000	-0.23337	-0.041667	0.0	0.0	0.0
	15.00000	24.00000	0.00000	-0.070892	-0.041667	0.0	0.0	0.0
	15.00000	27.00000	0.00000	-0.027456	-0.041667	0.0	0.0	0.0
	15.00000	30.00000	0.00000	-0.013166	-0.041667	0.0	0.0	0.0
	18.00000	0.00000	0.00000	0.052013	-0.041667	0.0	0.0	0.0
	18.00000	3.00000	0.00000	0.10309	-0.041667	0.0	0.0	0.0
	18.00000	6.00000	0.00000	0.22325	-0.041667	0.0	0.0	0.0
	18.00000	9.00000	0.00000	0.58223	-0.041667	0.0	0.0	0.0
	18.00000	12.00000	0.00000	1.1511	-0.041667	0.0	0.0	0.0
	18.00000	15.00000	0.00000	-1.1273	-0.041667	0.0	0.0	0.0
	18.00000	18.00000	0.00000	-0.70795	-0.041667	0.0	0.0	0.0
	18.00000	21.00000	0.00000	-0.011371	-0.041667	0.0	0.0	0.0
	18.00000	24.00000	0.00000	-970.74E-6	-0.041667	0.0	0.0	0.0
	18.00000	27.00000	0.00000	-0.0012844	-0.041667	0.0	0.0	0.0
	18.00000	30.00000	0.00000	-0.0020609	-0.041667	0.0	0.0	0.0
	21.00000	0.00000	0.00000	0.059162	-0.041667	0.0	0.0	0.0
	21.00000	3.00000	0.00000	0.12107	-0.041667	0.0	0.0	0.0
	21.00000	6.00000	0.00000	0.28188	-0.041667	0.0	0.0	0.0
	21.00000	9.00000	0.00000	0.91093	-0.041667	0.0	0.0	0.0
	21.00000	12.00000	0.00000	2.6026	-0.041667	0.0	0.0	0.0
	21.00000	15.00000	0.00000	0.64648	-0.041667	0.0	0.0	0.0
	21.00000	18.00000	0.00000	2.5715	-0.041667	0.0	0.0	0.0
	21.00000	21.00000	0.00000	0.28862	-0.041667	0.0	0.0	0.0
	21.00000	24.00000	0.00000	0.073596	-0.041667	0.0	0.0	0.0
	21.00000	27.00000	0.00000	0.025248	-0.041667	0.0	0.0	0.0
	21.00000	30.00000	0.00000	0.0091008	-0.041667	0.0	0.0	0.0
	24.00000	0.00000	0.00000	0.056291	-0.041667	0.0	0.0	0.0
	24.00000	3.00000	0.00000	0.11047	-0.041667	0.0	0.0	0.0
	24.00000	6.00000	0.00000	0.23177	-0.041667	0.0	0.0	0.0
	24.00000	9.00000	0.00000	0.54139	-0.041667	0.0	0.0	0.0
	24.00000	12.00000	0.00000	1.0298	-0.041667	0.0	0.0	0.0
	24.00000	15.00000	0.00000	1.0116	-0.041667	0.0	0.0	0.0
	24.00000	18.00000	0.00000	0.69563	-0.041667	0.0	0.0	0.0
	24.00000	21.00000	0.00000	0.26357	-0.041667	0.0	0.0	0.0
	24.00000	24.00000	0.00000	0.094760	-0.041667	0.0	0.0	0.0
	24.00000	27.00000	0.00000	0.038099	-0.041667	0.0	0.0	0.0
	24.00000	30.00000	0.00000	0.015863	-0.041667	0.0	0.0	0.0
	27.00000	0.00000	0.00000	0.046045	-0.041667	0.0	0.0	0.0

Name	Location X [m]	Location Y [m]	Location Z[Level] [mOD]	Displacement Z [mm]	Stresses Calc Level [mOD]	Stresses Vert Stress [kN/m²]	Stresses Sum Princ [kN/m²]	Stresses Vert Strain [-]
	27.00000	3.00000	0.00000	0.083222	-0.041667	0.0	0.0	0.0
	27.00000	6.00000	0.00000	0.14864	-0.041667	0.0	0.0	0.0
	27.00000	9.00000	0.00000	0.25025	-0.041667	0.0	0.0	0.0
	27.00000	12.00000	0.00000	0.34498	-0.041667	0.0	0.0	0.0
	27.00000	15.00000	0.00000	0.34733	-0.041667	0.0	0.0	0.0
	27.00000	18.00000	0.00000	0.26231	-0.041667	0.0	0.0	0.0
	27.00000	21.00000	0.00000	0.15201	-0.041667	0.0	0.0	0.0
	27.00000	24.00000	0.00000	0.076173	-0.041667	0.0	0.0	0.0
	27.00000	27.00000	0.00000	0.036573	-0.041667	0.0	0.0	0.0
	27.00000	30.00000	0.00000	0.017115	-0.041667	0.0	0.0	0.0
	30.00000	0.00000	0.00000	0.033658	-0.041667	0.0	0.0	0.0
	30.00000	3.00000	0.00000	0.055955	-0.041667	0.0	0.0	0.0
	30.00000	6.00000	0.00000	0.088135	-0.041667	0.0	0.0	0.0
	30.00000	9.00000	0.00000	0.12622	-0.041667	0.0	0.0	0.0
	30.00000	12.00000	0.00000	0.15446	-0.041667	0.0	0.0	0.0
	30.00000	15.00000	0.00000	0.15462	-0.041667	0.0	0.0	0.0
	30.00000	18.00000	0.00000	0.12644	-0.041667	0.0	0.0	0.0
	30.00000	21.00000	0.00000	0.086450	-0.041667	0.0	0.0	0.0
	30.00000	24.00000	0.00000	0.051768	-0.041667	0.0	0.0	0.0
	30.00000	27.00000	0.00000	0.028489	-0.041667	0.0	0.0	0.0
	30.00000	30.00000	0.00000	0.014724	-0.041667	0.0	0.0	0.0
Grid 3	0.00000	0.00000	-0.90000	-0.0012721	-1.2934	0.0	0.0	0.0
	0.00000	3.00000	-0.90000	-0.0025864	-1.2934	0.0	0.0	0.0
	0.00000	6.00000	-0.90000	-0.0052791	-1.2934	0.0	0.0	0.0
	0.00000	9.00000	-0.90000	-0.0098799	-1.2934	0.0	0.0	0.0
	0.00000	12.00000	-0.90000	-0.016307	-1.2934	0.0	0.0	0.0
	0.00000	15.00000	-0.90000	-0.022799	-1.2934	0.0	0.0	0.0
	0.00000	18.00000	-0.90000	-0.026094	-1.2934	0.0	0.0	0.0
	0.00000	21.00000	-0.90000	-0.024657	-1.2934	0.0	0.0	0.0
	0.00000	24.00000	-0.90000	-0.020186	-1.2934	0.0	0.0	0.0
	0.00000	27.00000	-0.90000	-0.015102	-1.2934	0.0	0.0	0.0
	0.00000	30.00000	-0.90000	-0.010761	-1.2934	0.0	0.0	0.0
	3.00000	0.00000	-0.90000	742.93E-6	-1.2934	0.0	0.0	0.0
	3.00000	3.00000	-0.90000	-367.94E-6	-1.2934	0.0	0.0	0.0
	3.00000	6.00000	-0.90000	-0.0038114	-1.2934	0.0	0.0	0.0
	3.00000	9.00000	-0.90000	-0.011338	-1.2934	0.0	0.0	0.0
	3.00000	12.00000	-0.90000	-0.024756	-1.2934	0.0	0.0	0.0
	3.00000	15.00000	-0.90000	-0.041745	-1.2934	0.0	0.0	0.0
	3.00000	18.00000	-0.90000	-0.050256	-1.2934	0.0	0.0	0.0
	3.00000	21.00000	-0.90000	-0.044498	-1.2934	0.0	0.0	0.0
	3.00000	24.00000	-0.90000	-0.032844	-1.2934	0.0	0.0	0.0
	3.00000	27.00000	-0.90000	-0.022242	-1.2934	0.0	0.0	0.0
	3.00000	30.00000	-0.90000	-0.014579	-1.2934	0.0	0.0	0.0
	6.00000	0.00000	-0.90000	0.0049011	-1.2934	0.0	0.0	0.0
	6.00000	3.00000	-0.90000	0.0052534	-1.2934	0.0	0.0	0.0
	6.00000	6.00000	-0.90000	0.0024952	-1.2934	0.0	0.0	0.0
	6.00000	9.00000	-0.90000	-0.0065830	-1.2934	0.0	0.0	0.0
	6.00000	12.00000	-0.90000	-0.030087	-1.2934	0.0	0.0	0.0
	6.00000	15.00000	-0.90000	-0.085362	-1.2934	0.0	0.0	0.0
	6.00000	18.00000	-0.90000	-0.11504	-1.2934	0.0	0.0	0.0
	6.00000	21.00000	-0.90000	-0.085665	-1.2934	0.0	0.0	0.0
	6.00000	24.00000	-0.90000	-0.052938	-1.2934	0.0	0.0	0.0
	6.00000	27.00000	-0.90000	-0.031258	-1.2934	0.0	0.0	0.0
	6.00000	30.00000	-0.90000	-0.018554	-1.2934	0.0	0.0	0.0
	9.00000	0.00000	-0.90000	0.012275	-1.2934	0.0	0.0	0.0
	9.00000	3.00000	-0.90000	0.016860	-1.2934	0.0	0.0	0.0
	9.00000	6.00000	-0.90000	0.018939	-1.2934	0.0	0.0	0.0
	9.00000	9.00000	-0.90000	0.017350	-1.2934	0.0	0.0	0.0
	9.00000	12.00000	-0.90000	0.070320	-1.2934	0.0	0.0	0.0
	9.00000	15.00000	-0.90000	-0.18394	-1.2934	0.0	0.0	0.0
	9.00000	18.00000	-0.90000	-0.32816	-1.2934	0.0	0.0	0.0
	9.00000	21.00000	-0.90000	-0.16613	-1.2934	0.0	0.0	0.0
	9.00000	24.00000	-0.90000	-0.078851	-1.2934	0.0	0.0	0.0
	9.00000	27.00000	-0.90000	-0.039497	-1.2934	0.0	0.0	0.0
	9.00000	30.00000	-0.90000	-0.021135	-1.2934	0.0	0.0	0.0
	12.00000	0.00000	-0.90000	0.023608	-1.2934	0.0	0.0	0.0
	12.00000	3.00000	-0.90000	0.037556	-1.2934	0.0	0.0	0.0
	12.00000	6.00000	-0.90000	0.054047	-1.2934	0.0	0.0	0.0
	12.00000	9.00000	-0.90000	0.065927	-1.2934	0.0	0.0	0.0
	12.00000	12.00000	-0.90000	0.030127	-1.2934	0.0	0.0	0.0
	12.00000	15.00000	-0.90000	-1.8491	-1.2934	0.0	0.0	0.0
	12.00000	18.00000	-0.90000	-1.2167	-1.2934	0.0	0.0	0.0
	12.00000	21.00000	-0.90000	-0.26007	-1.2934	0.0	0.0	0.0
	12.00000	24.00000	-0.90000	-0.094388	-1.2934	0.0	0.0	0.0
	12.00000	27.00000	-0.90000	-0.040584	-1.2934	0.0	0.0	0.0
	12.00000	30.00000	-0.90000	-0.019945	-1.2934	0.0	0.0	0.0
	15.00000	0.00000	-0.90000	0.038109	-1.2934	0.0	0.0	0.0
	15.00000	3.00000	-0.90000	0.068690	-1.2934	0.0	0.0	0.0
	15.00000	6.00000	-0.90000	0.12227	-1.2934	0.0	0.0	0.0
	15.00000	9.00000	-0.90000	0.20286	-1.2934	0.0	0.0	0.0
	15.00000	12.00000	-0.90000	0.19329	-1.2934	0.0	0.0	0.0
	15.00000	15.00000	-0.90000	-1.8251	-1.2934	0.0	0.0	0.0
	15.00000	18.00000	-0.90000	-1.2547	-1.2934	0.0	0.0	0.0
	15.00000	21.00000	-0.90000	-0.23466	-1.2934	0.0	0.0	0.0
	15.00000	24.00000	-0.90000	-0.071255	-1.2934	0.0	0.0	0.0
	15.00000	27.00000	-0.90000	-0.027607	-1.2934	0.0	0.0	0.0
	15.00000	30.00000	-0.90000	-0.013242	-1.2934	0.0	0.0	0.0
	18.00000	0.00000	-0.90000	0.051955	-1.2934	0.0	0.0	0.0
	18.00000	3.00000	-0.90000	0.10298	-1.2934	0.0	0.0	0.0
	18.00000	6.00000	-0.90000	0.22299	-1.2934	0.0	0.0	0.0
	18.00000	9.00000	-0.90000	0.58113	-1.2934	0.0	0.0	0.0
	18.00000	12.00000	-0.90000	1.1444	-1.2934	0.0	0.0	0.0
	18.00000	15.00000	-0.90000	-1.2044	-1.2934	0.0	0.0	0.0
	18.00000	18.00000	-0.90000	-0.66862	-1.2934	0.0	0.0	0.0
	18.00000	21.00000	-0.90000	-0.012789	-1.2934	0.0	0.0	0.0
	18.00000	24.00000	-0.90000	-0.0013462	-1.2934	0.0	0.0	0.0
	18.00000	27.00000	-0.90000	-0.0014380	-1.2934	0.0	0.0	0.0
	18.00000	30.00000	-0.90000	-0.0021382	-1.2934	0.0	0.0	0.0
	21.00000	0.00000	-0.90000	0.059107	-1.2934	0.0	0.0	0.0
	21.00000	3.00000	-0.90000	0.12096	-1.2934	0.0	0.0	0.0
	21.00000	6.00000	-0.90000	0.28162	-1.2934	0.0	0.0	0.0
	21.00000	9.00000	-0.90000	0.90908	-1.2934	0.0	0.0	0.0
	21.00000	12.00000	-0.90000	2.5944	-1.2934	0.0	0.0	0.0
	21.00000	15.00000	-0.90000	0.57948	-1.2934	0.0	0.0	0.0
	21.00000	18.00000	-0.90000	2.6980	-1.2934	0.0	0.0	0.0
	21.00000	21.00000	-0.90000	0.28727	-1.2934	0.0	0.0	0.0
	21.00000	24.00000	-0.90000	0.073272	-1.2934	0.0	0.0	0.0
	21.00000	27.00000	-0.90000	0.025112	-1.2934	0.0	0.0	0.0
	21.00000	30.00000	-0.90000	0.0090304	-1.2934	0.0	0.0	0.0
	24.00000	0.00000	-0.90000	0.056243	-1.2934	0.0	0.0	0.0
	24.00000	3.00000	-0.90000	0.11038	-1.2934	0.0	0.0	0.0
	24.00000	6.00000	-0.90000	0.23158	-1.2934	0.0	0.0	0.0
	24.00000	9.00000	-0.90000	0.54075	-1.2934	0.0	0.0	0.0
	24.00000	12.00000	-0.90000	1.0276	-1.2934	0.0	0.0	0.0
	24.00000	15.00000	-0.90000	1.0087	-1.2934	0.0	0.0	0.0
	24.00000	18.00000	-0.90000	0.69338	-1.2934	0.0	0.0	0.0
	24.00000	21.00000	-0.90000	0.26296	-1.2934	0.0	0.0	0.0
	24.00000	24.00000	-0.90000	0.094541	-1.2934	0.0	0.0	0.0
	24.00000	27.00000	-0.90000	0.037994	-1.2934	0.0	0.0	0.0
	24.00000	30.00000	-0.90000	0.015804	-1.2934	0.0	0.0	0.0
	27.00000	0.00000	-0.90000	0.046007	-1.2934	0.0	0.0	0.0
	27.00000	3.00000	-0.90000	0.083159	-1.2934	0.0	0.0	0.0
	27.00000	6.00000	-0.90000	0.14853	-1.2934	0.0	0.0	0.0
	27.00000	9.00000	-0.90000	0.25005	-1.2934	0.0	0.0	0.0
	27.00000	12.00000	-0.90000	0.34464	-1.2934	0.0	0.0	0.0
	27.00000	15.00000	-0.90000	0.34690	-1.2934	0.0	0.0	0.0
	27.00000	18.00000	-0.90000	0.26194	-1.2934	0.0	0.0	0.0
	27.00000	21.00000	-0.90000	0.15179	-1.2934	0.0	0.0	0.0
	27.00000	24.00000	-0.90000	0.076046	-1.2934	0.0	0.0	0.0
	27.00000	27.00000	-0.90000	0.036499	-1.2934	0.0	0.0	0.0

Name	Location			Displacement	Stresses			
	X [m]	Y [m]	Z[Level] [mOD]	Z [mm]	Calc Level [mOD]	Vert Stress [kN/m²]	Sum Princ [kN/m²]	Vert Strain [-]
	27.00000	30.00000	-0.90000	0.017070	-1.2934	0.0	0.0	0.0
	30.00000	0.00000	-0.90000	0.033629	-1.2934	0.0	0.0	0.0
	30.00000	3.00000	-0.90000	0.055912	-1.2934	0.0	0.0	0.0
	30.00000	6.00000	-0.90000	0.088070	-1.2934	0.0	0.0	0.0
	30.00000	9.00000	-0.90000	0.12612	-1.2934	0.0	0.0	0.0
	30.00000	12.00000	-0.90000	0.15433	-1.2934	0.0	0.0	0.0
	30.00000	15.00000	-0.90000	0.15447	-1.2934	0.0	0.0	0.0
	30.00000	18.00000	-0.90000	0.12630	-1.2934	0.0	0.0	0.0
	30.00000	21.00000	-0.90000	0.086344	-1.2934	0.0	0.0	0.0
	30.00000	24.00000	-0.90000	0.051695	-1.2934	0.0	0.0	0.0
	30.00000	27.00000	-0.90000	0.028440	-1.2934	0.0	0.0	0.0
	30.00000	30.00000	-0.90000	0.014690	-1.2934	0.0	0.0	0.0

Analysis Options

Analysis: Boussinesq
Global Poisson's ratio: 0.30
Maximum allowable ratio between values of E: 1.5
Horizontal rigid boundary level: -30.00 [m OD]
Displacements at load centroids: Yes

Soil ProfilesSoil Profile 1

Layer	Level at top [mOD]	Number of intermediate displacement levels	Youngs Modulus Top [kN/m²]	Youngs Modulus Btm [kN/m²]	Poissons ratio	Non-linear curve
1	0.0	5	8000.0	8000.0	0.20000	None
2	-0.50000	5	10500.	22500.	0.30000	None
3	-5.0000	5	22500.	55600.	0.30000	None
4	-29.000	5	55600.	200000.	0.30000	None

Load Data

Load ref.	Name	Shape	Orientation of Plane	Centre of load (Global) X [m]	Y [m]	Z (level) [m]	Load position Angle of local x from [Degrees]	Width x or Radius [m]	Length y [m]	Polygon Coordinates [m]	Rectangle tolerance [%]	Number of rectangles	Load value Normal (local z) [kN/m²]	Tangential (local x) [kN/m²]	Tangential (local y) [kN/m²]
1	Load A1	Polygonal	Horizontal	N/A	N/A	-3.00000	N/A	N/A	N/A	(19.2,17.8) (19.2,19.3) (8.8,19.2) (8.8,17.2) (9.24,17.2) (9.24,18.8) (18.8,18.8) (18.8,17.8) (19.2,17.8)	1.0000	3	5.0000	N/A	N/A
2	Load B	Polygonal	Horizontal	N/A	N/A	-3.00000	N/A	N/A	N/A	(19.2,18.3) (22.2,18.3) (22.2,10.9) (18.7,10.9) (18.7,11.3) (21.8,11.3) (21.7,17.9) (19.2,17.8) (19.2,18.3)	10.000	3	164.00	N/A	N/A
3	Load D	Polygonal	Horizontal	N/A	N/A	-3.30000	N/A	N/A	N/A	(9.25,14.7) (9.25,13.9) (18.6,13.9) (18.6,11.3) (19.3,11.3) (19.3,13.9) (21.7,13.9) (21.7,14.7) (9.25,14.7)	10.000	2	42.600	N/A	N/A
4	Load A2	Polygonal	Horizontal	N/A	N/A	-3.00000	N/A	N/A	N/A	(18.7,11.3) (9.26,11.3) (9.25,14.8) (8.81,14.8) (8.82,10.9) (18.7,10.9) (18.7,11.3)	10.000	2	5.0000	N/A	N/A
5	Load C	Polygonal	Horizontal	N/A	N/A	-2.00000	N/A	N/A	N/A	(10.1,17.8) (21.5,17.9) (21.5,14.5) (10.1,14.5) (10.1,17.8)	10.000	1	-27.500	N/A	N/A

RESULTS FOR GRIDS

Analysis: Boussinesq
Global Poisson's ratio: 0.30
Horizontal rigid boundary level: -30.00 [m OD]

The maximum displacement difference between the Boussinesq method (4.2835mm) and the Mindlin method (1.1962mm) occurs at point X = 21.00000m, Y = 18.00000m, level = 0.0mOD, and is 3.0874mm.

Name	Location X [m]	Location Y [m]	Location Z[Level] [mOD]	Displacement Z [mm]	Stresses Calc Level [mOD]	Stresses Vert Stress [kN/m²]	Stresses Sum Princ [kN/m²]	Stresses Vert Strain [-]
Load A1	13.77607	18.85692	-3.00000	-1.1647	-3.2839	-0.83323	-7.8788	71.480E-6
Load B	21.27125	14.43020	-3.00000	4.1376	-3.2839	-3.2071	18.091	-535.72E-6
Load D	16.06096	13.99358	-3.30000	0.99762	-3.6879	16.708	26.860	719.75E-6
Load A2	12.53170	11.59991	-3.00000	0.095168	-3.2839	0.021796	-1.7200	30.388E-6
Load C	15.77000	16.16500	-2.00000	-3.9217	-2.3286	-27.414	-62.281	-0.0011038
Fondation level	0.00000	0.00000	-3.00000	-0.0025416	-3.2839	-203.67E-6	-0.043022	0.0
	0.00000	3.00000	-3.00000	-0.0048602	-3.2839	-350.26E-6	-0.059712	0.0
	0.00000	6.00000	-3.00000	-0.0095025	-3.2839	-608.14E-6	-0.082993	1.3458E-6
	0.00000	9.00000	-3.00000	-0.017343	-3.2839	-0.0010293	-0.11304	1.8184E-6
	0.00000	12.00000	-3.00000	-0.028215	-3.2839	-0.0015851	-0.14518	2.3163E-6
	0.00000	15.00000	-3.00000	-0.039124	-3.2839	-0.0020115	-0.16672	2.6461E-6
	0.00000	18.00000	-3.00000	-0.044582	-3.2839	-0.0019480	-0.16433	2.6108E-6
	0.00000	21.00000	-3.00000	-0.042037	-3.2839	-0.0014564	-0.13993	2.2378E-6
	0.00000	24.00000	-3.00000	-0.034382	-3.2839	-918.72E-6	-0.10788	1.7400E-6
	0.00000	27.00000	-3.00000	-0.025719	-3.2839	-537.50E-6	-0.079192	1.2873E-6
	0.00000	30.00000	-3.00000	-0.018330	-3.2839	-309.78E-6	-0.057277	0.0
	3.00000	0.00000	-3.00000	638.25E-6	-3.2839	-316.70E-6	-0.055682	0.0
	3.00000	3.00000	-3.00000	-0.0014343	-3.2839	-612.80E-6	-0.082949	1.3447E-6
	3.00000	6.00000	-3.00000	-0.0074772	-3.2839	-0.0012527	-0.12671	2.0311E-6
	3.00000	9.00000	-3.00000	-0.020429	-3.2839	-0.0026434	-0.19489	3.0721E-6
	3.00000	12.00000	-3.00000	-0.043262	-3.2839	-0.0052638	-0.28743	4.4318E-6
	3.00000	15.00000	-3.00000	-0.071910	-3.2839	-0.0080264	-0.36460	5.5236E-6
	3.00000	18.00000	-3.00000	-0.086026	-3.2839	-0.0075662	-0.35457	5.3890E-6
	3.00000	21.00000	-3.00000	-0.075969	-3.2839	-0.0045666	-0.26991	4.1889E-6
	3.00000	24.00000	-3.00000	-0.056018	-3.2839	-0.0022343	-0.18183	2.8831E-6
	3.00000	27.00000	-3.00000	-0.037939	-3.2839	-0.0010624	-0.11900	1.9158E-6
	3.00000	30.00000	-3.00000	-0.024885	-3.2839	-526.18E-6	-0.078821	1.2819E-6
	6.00000	0.00000	-3.00000	0.0073342	-3.2839	-471.14E-6	-0.069890	1.1363E-6
	6.00000	3.00000	-3.00000	0.0075504	-3.2839	-0.0010322	-0.11232	1.8062E-6
	6.00000	6.00000	-3.00000	0.0023593	-3.2839	-0.0025562	-0.19181	3.0269E-6
	6.00000	9.00000	-3.00000	-0.013814	-3.2839	-0.0073732	-0.34738	5.2827E-6
	6.00000	12.00000	-3.00000	-0.054749	-3.2839	-0.024293	-0.66066	9.3014E-6
	6.00000	15.00000	-3.00000	-0.14863	-3.2839	-0.060529	-1.0996	14.023E-6
	6.00000	18.00000	-3.00000	-0.19798	-3.2839	-0.052790	-1.0235	13.310E-6
	6.00000	21.00000	-3.00000	-0.14674	-3.2839	-0.018614	-0.59393	8.5960E-6
	6.00000	24.00000	-3.00000	-0.090487	-3.2839	-0.0057466	-0.31671	4.8870E-6
	6.00000	27.00000	-3.00000	-0.053447	-3.2839	-0.0020616	-0.17732	2.8200E-6
	6.00000	30.00000	-3.00000	-0.031769	-3.2839	-858.72E-6	-0.10601	1.7130E-6
	9.00000	0.00000	-3.00000	0.019337	-3.2839	-649.18E-6	-0.083066	1.3440E-6
	9.00000	3.00000	-3.00000	0.026392	-3.2839	-0.0015866	-0.14300	2.2797E-6
	9.00000	6.00000	-3.00000	0.028779	-3.2839	-0.0047004	-0.27277	4.2271E-6
	9.00000	9.00000	-3.00000	0.023497	-3.2839	-0.018348	-0.56571	8.1426E-6
	9.00000	12.00000	-3.00000	0.17105	-3.2839	3.4437	3.5375	190.68E-6
	9.00000	15.00000	-3.00000	-0.30309	-3.2839	-1.5364	-5.9251	-12.272E-6
	9.00000	18.00000	-3.00000	-0.50536	-3.2839	2.2165	-0.46216	168.59E-6
	9.00000	21.00000	-3.00000	-0.28668	-3.2839	-0.087374	-1.3946	17.016E-6
	9.00000	24.00000	-3.00000	-0.13525	-3.2839	-0.013539	-0.53108	7.9116E-6
	9.00000	27.00000	-3.00000	-0.067822	-3.2839	-0.0036160	-0.25009	3.9259E-6
	9.00000	30.00000	-3.00000	-0.036389	-3.2839	-0.0012846	-0.13531	2.1728E-6
	12.00000	0.00000	-3.00000	0.037902	-3.2839	-804.52E-6	-0.091046	1.4664E-6
	12.00000	3.00000	-3.00000	0.060286	-3.2839	-0.0021148	-0.16350	2.5848E-6
	12.00000	6.00000	-3.00000	0.086075	-3.2839	-0.0070197	-0.33808	5.1525E-6
	12.00000	9.00000	-3.00000	0.10134	-3.2839	-0.033770	-0.82787	11.414E-6
	12.00000	12.00000	-3.00000	0.022632	-3.2839	-0.40925	-3.3457	26.332E-6
	12.00000	15.00000	-3.00000	-1.5906	-3.2839	-19.078	-30.279	-877.41E-6
	12.00000	18.00000	-3.00000	-1.9419	-3.2839	-10.683	-20.491	-432.10E-6
	12.00000	21.00000	-3.00000	-0.45066	-3.2839	-0.21716	-2.5819	27.481E-6
	12.00000	24.00000	-3.00000	-0.16295	-3.2839	-0.023343	-0.75719	10.987E-6
	12.00000	27.00000	-3.00000	-0.070342	-3.2839	-0.0052582	-0.31511	4.8957E-6
	12.00000	30.00000	-3.00000	-0.034743	-3.2839	-0.0016864	-0.15880	2.5372E-6
	15.00000	0.00000	-3.00000	0.061748	-3.2839	-880.26E-6	-0.089958	1.4427E-6
	15.00000	3.00000	-3.00000	0.11152	-3.2839	-0.0023771	-0.15958	2.5000E-6
	15.00000	6.00000	-3.00000	0.19833	-3.2839	-0.0081671	-0.32660	4.8771E-6
	15.00000	9.00000	-3.00000	0.32646	-3.2839	-0.040879	-0.83723	11.055E-6

Name	Location X [m]	Location Y [m]	Location Z[Level] [mOD]	Displacement Z [mm]	Stresses Calc Level [mOD]	Stresses Vert Stress [kN/m²]	Stresses Sum Princ [kN/m²]	Stresses Vert Strain [-]
	15.00000	12.00000	-3.00000	0.28986	-3.2839	-0.47546	-3.8587	30.118E-6
	15.00000	15.00000	-3.00000	-1.5820	-3.2839	-19.556	-32.778	-870.25E-6
	15.00000	18.00000	-3.00000	-2.0158	-3.2839	-11.187	-22.684	-431.98E-6
	15.00000	21.00000	-3.00000	-0.41275	-3.2839	-0.26005	-3.0276	31.831E-6
	15.00000	24.00000	-3.00000	-0.12593	-3.2839	-0.028360	-0.85005	12.178E-6
	15.00000	27.00000	-3.00000	-0.049352	-3.2839	-0.0061479	-0.34041	5.2548E-6
	15.00000	30.00000	-3.00000	-0.023874	-3.2839	-0.0018988	-0.16740	2.6658E-6
	18.00000	0.00000	-3.00000	0.084563	-3.2839	-844.97E-6	-0.079569	1.2713E-6
	18.00000	3.00000	-3.00000	0.16805	-3.2839	-0.0022365	-0.12750	1.9729E-6
	18.00000	6.00000	-3.00000	0.36437	-3.2839	-0.0073192	-0.18881	2.6309E-6
	18.00000	9.00000	-3.00000	0.94954	-3.2839	-0.024844	0.25309	-6.0417E-6
	18.00000	12.00000	-3.00000	1.8845	-3.2839	-0.32995	-0.10809	-22.135E-6
	18.00000	15.00000	-3.00000	-0.57291	-3.2839	-19.405	-31.100	-887.42E-6
	18.00000	18.00000	-3.00000	-1.0500	-3.2839	-11.130	-19.403	-482.80E-6
	18.00000	21.00000	-3.00000	-0.046643	-3.2839	-0.24825	-2.4702	23.354E-6
	18.00000	24.00000	-3.00000	-0.010532	-3.2839	-0.026667	-0.74155	10.484E-6
	18.00000	27.00000	-3.00000	-0.0061690	-3.2839	-0.0058351	-0.31066	4.7793E-6
	18.00000	30.00000	-3.00000	-0.0055665	-3.2839	-0.0018238	-0.15706	2.4979E-6
	21.00000	0.00000	-3.00000	0.096380	-3.2839	-715.03E-6	-0.064718	1.0320E-6
	21.00000	3.00000	-3.00000	0.19773	-3.2839	-0.0017750	-0.087328	1.3337E-6
	21.00000	6.00000	-3.00000	0.46087	-3.2839	-0.0050390	-0.031551	0.0
	21.00000	9.00000	-3.00000	1.4844	-3.2839	0.021225	2.1756	-34.895E-6
	21.00000	12.00000	-3.00000	4.0790	-3.2839	2.1308	27.042	-298.25E-6
	21.00000	15.00000	-3.00000	2.2310	-3.2839	-12.975	-4.2220	-870.93E-6
	21.00000	18.00000	-3.00000	6.6246	-3.2839	106.17	159.60	0.0050323
	21.00000	21.00000	-3.00000	0.45186	-3.2839	-0.15407	-0.97332	5.1196E-6
	21.00000	24.00000	-3.00000	0.11370	-3.2839	-0.018574	-0.49550	6.9505E-6
	21.00000	27.00000	-3.00000	0.038031	-3.2839	-0.0044688	-0.24156	3.7213E-6
	21.00000	30.00000	-3.00000	0.013014	-3.2839	-0.0014963	-0.13210	2.1037E-6
	24.00000	0.00000	-3.00000	0.091722	-3.2839	-542.07E-6	-0.051159	0.0
	24.00000	3.00000	-3.00000	0.18043	-3.2839	-0.0012252	-0.062575	0.0
	24.00000	6.00000	-3.00000	0.37880	-3.2839	-0.0030663	-0.024546	0.0
	24.00000	9.00000	-3.00000	0.88294	-3.2839	-0.0058016	0.47678	-8.4058E-6
	24.00000	12.00000	-3.00000	1.6676	-3.2839	-0.0059948	2.3177	-39.250E-6
	24.00000	15.00000	-3.00000	1.6219	-3.2839	-0.22101	1.2415	-36.831E-6
	24.00000	18.00000	-3.00000	1.1085	-3.2839	-0.18299	0.51072	-21.833E-6
	24.00000	21.00000	-3.00000	0.42126	-3.2839	-0.039812	-0.38740	3.5988E-6
	24.00000	24.00000	-3.00000	0.15074	-3.2839	-0.0089744	-0.28294	4.0873E-6
	24.00000	27.00000	-3.00000	0.059938	-3.2839	-0.0027698	-0.16756	2.6051E-6
	24.00000	30.00000	-3.00000	0.024458	-3.2839	-0.0010617	-0.10207	1.6324E-6
	27.00000	0.00000	-3.00000	0.074949	-3.2839	-377.28E-6	-0.040713	0.0
	27.00000	3.00000	-3.00000	0.13578	-3.2839	-763.64E-6	-0.050215	0.0
	27.00000	6.00000	-3.00000	0.24270	-3.2839	-0.0016625	-0.050184	0.0
	27.00000	9.00000	-3.00000	0.40822	-3.2839	-0.0039038	-0.022634	0.0
	27.00000	12.00000	-3.00000	0.56114	-3.2839	-0.0097719	-0.022261	0.0
	27.00000	15.00000	-3.00000	0.56250	-3.2839	-0.018783	-0.14302	1.0322E-6
	27.00000	18.00000	-3.00000	0.42323	-3.2839	-0.017574	-0.22206	2.4435E-6
	27.00000	21.00000	-3.00000	0.24467	-3.2839	-0.0087656	-0.21322	2.9348E-6
	27.00000	24.00000	-3.00000	0.12210	-3.2839	-0.0035464	-0.16132	2.4443E-6
	27.00000	27.00000	-3.00000	0.058173	-3.2839	-0.0014814	-0.11075	1.7472E-6
	27.00000	30.00000	-3.00000	0.026859	-3.2839	-674.60E-6	-0.074974	1.2067E-6
	30.00000	0.00000	-3.00000	0.054672	-3.2839	-248.05E-6	-0.032528	0.0
	30.00000	3.00000	-3.00000	0.091113	-3.2839	-447.55E-6	-0.040640	0.0
	30.00000	6.00000	-3.00000	0.14367	-3.2839	-830.51E-6	-0.049106	0.0
	30.00000	9.00000	-3.00000	0.20569	-3.2839	-0.0015439	-0.059389	0.0
	30.00000	12.00000	-3.00000	0.25133	-3.2839	-0.0026701	-0.079374	1.1355E-6
	30.00000	15.00000	-3.00000	0.25097	-3.2839	-0.0036974	-0.10850	1.5488E-6
	30.00000	18.00000	-3.00000	0.20466	-3.2839	-0.0035798	-0.12448	1.8249E-6
	30.00000	21.00000	-3.00000	0.13950	-3.2839	-0.0024714	-0.11706	1.7812E-6
	30.00000	24.00000	-3.00000	0.083177	-3.2839	-0.0014043	-0.096028	1.5063E-6
	30.00000	27.00000	-3.00000	0.045459	-3.2839	-749.64E-6	-0.073092	1.1697E-6
	30.00000	30.00000	-3.00000	0.023228	-3.2839	-402.67E-6	-0.053987	0.0
Section 1-1	0.01000	19.24930	-3.00000	-0.044507	-3.2839	-0.0017803	-0.15645	2.4909E-6
	3.00800	19.24927	-3.00000	-0.084338	-3.2839	-0.0064199	-0.32464	4.9709E-6
	6.00600	19.24924	-3.00000	-0.18221	-3.2839	-0.036520	-0.84207	11.452E-6
	9.00400	19.24921	-3.00000	-0.36540	-3.2839	1.5359	0.19619	108.18E-6
	12.00200	19.24918	-3.00000	-0.85791	-3.2839	0.42234	-4.1546	100.23E-6
	15.00000	19.24915	-3.00000	-0.86664	-3.2839	0.23399	-5.3550	106.66E-6
	17.99800	19.24912	-3.00000	-0.14908	-3.2839	0.27690	-3.5059	78.811E-6
	20.99600	19.24909	-3.00000	1.3297	-3.2839	-0.80506	4.1740	-128.33E-6
	23.99400	19.24906	-3.00000	0.78283	-3.2839	-0.10401	-0.075483	-6.2840E-6
	26.99200	19.24903	-3.00000	0.34708	-3.2839	-0.013927	-0.22697	2.7905E-6
	29.99000	19.24900	-3.00000	0.17831	-3.2839	-0.0031879	-0.12415	1.8478E-6
Section 2-2	0.01000	16.15760	-3.00000	-0.042232	-3.2839	-0.0020632	-0.16936	2.6866E-6
	3.00800	16.15764	-3.00000	-0.080485	-3.2839	-0.0083859	-0.37418	5.6580E-6
	6.00600	16.15768	-3.00000	-0.18414	-3.2839	-0.066694	-1.1637	14.649E-6
	9.00400	16.15772	-3.00000	-0.73560	-3.2839	-2.6527	-8.3770	-52.221E-6
	12.00200	16.15776	-3.00000	-2.8321	-3.2839	-23.773	-36.790	-0.0011091
	15.00000	16.15780	-3.00000	-2.9169	-3.2839	-24.438	-39.768	-0.0011075
	17.99800	16.15784	-3.00000	-1.9625	-3.2839	-24.348	-37.832	-0.0011334
	20.99600	16.15788	-3.00000	1.2614	-3.2839	-16.597	-7.9184	-0.0010719
	23.99400	16.15792	-3.00000	1.4679	-3.2839	-0.27128	0.90658	-34.870E-6
	26.99200	16.15796	-3.00000	0.52203	-3.2839	-0.020228	-0.18659	1.6569E-6
	29.99000	16.15800	-3.00000	0.23797	-3.2839	-0.0038390	-0.11762	1.6913E-6
Section 3-3	0.01000	10.85050	-3.00000	-0.023829	-3.2839	-0.0013712	-0.13351	2.1364E-6
	3.00800	10.85055	-3.00000	-0.033303	-3.2839	-0.0041273	-0.25072	3.8994E-6
	6.00600	10.85060	-3.00000	-0.034133	-3.2839	-0.015327	-0.51485	7.5101E-6
	9.00400	10.85065	-3.00000	0.12296	-3.2839	1.9634	2.2960	104.03E-6
	12.00200	10.85070	-3.00000	0.19568	-3.2839	2.1621	2.0089	123.27E-6
	15.00000	10.85075	-3.00000	0.47285	-3.2839	2.0706	1.7530	120.91E-6
	17.99800	10.85080	-3.00000	1.8746	-3.2839	2.4429	7.9367	44.366E-6
	20.99600	10.85085	-3.00000	6.6528	-3.2839	70.354	129.32	0.0029400
	23.99400	10.85090	-3.00000	1.4219	-3.2839	0.0052752	1.7730	-29.310E-6
	26.99200	10.85095	-3.00000	0.51574	-3.2839	-0.0069071	-0.0079341	0.0
	29.99000	10.85100	-3.00000	0.23862	-3.2839	-0.0022090	-0.070062	1.0130E-6
Section 4-4	9.24460	29.99000	-3.00000	-0.036619	-3.2839	-0.0013246	-0.13783	2.2122E-6
	9.24464	26.99200	-3.00000	-0.068776	-3.2839	-0.0037694	-0.25658	4.0235E-6
	9.24468	23.99400	-3.00000	-0.13897	-3.2839	-0.014401	-0.55190	8.1977E-6
	9.24472	20.99600	-3.00000	-0.30185	-3.2839	-0.098081	-1.4919	17.868E-6
	9.24476	17.99800	-3.00000	-0.64912	-3.2839	0.27218	-2.8936	68.213E-6
	9.24480	15.00000	-3.00000	-0.32856	-3.2839	-2.7113	-7.8185	-65.823E-6
	9.24484	12.00200	-3.00000	0.13524	-3.2839	2.2603	2.2785	125.87E-6
	9.24488	9.00400	-3.00000	0.028078	-3.2839	-0.019573	-0.58639	8.4001E-6
	9.24492	6.00600	-3.00000	0.032032	-3.2839	-0.0049124	-0.27976	4.3287E-6
	9.24496	3.00800	-3.00000	0.028544	-3.2839	-0.0016382	-0.14548	2.3175E-6
	9.24500	0.01000	-3.00000	0.020627	-3.2839	-665.33E-6	-0.084116	1.3604E-6
Section 5-5	13.67020	29.99000	-3.00000	-0.029925	-3.2839	-0.0018434	-0.16622	2.6501E-6
	13.67018	26.99200	-3.00000	-0.062075	-3.2839	-0.0059101	-0.33645	5.2058E-6
	13.67016	23.99400	-3.00000	-0.15298	-3.2839	-0.027056	-0.83414	12.006E-6
	13.67014	20.99600	-3.00000	-0.46551	-3.2839	-0.25121	-2.9506	31.184E-6
	13.67012	17.99800	-3.00000	-2.0874	-3.2839	-11.123	-22.361	-432.76E-6
	13.67010	15.00000	-3.00000	-1.7004	-3.2839	-19.535	-32.457	-874.13E-6
	13.67008	12.00200	-3.00000	0.10344	-3.2839	-0.46586	-3.8454	30.592E-6
	13.67006	9.00400	-3.00000	0.19562	-3.2839	-0.039330	-0.89206	12.085E-6
	13.67004	6.00600	-3.00000	0.14040	-3.2839	-0.0078974	-0.34611	5.2233E-6
	13.67002	3.00800	-3.00000	0.087045	-3.2839	-0.0023135	-0.16532	2.6008E-6
	13.67000	0.01000	-3.00000	0.050888	-3.2839	-862.09E-6	-0.091860	1.4759E-6
Section 6-6	21.73670	29.99000	-3.00000	0.016731	-3.2839	-0.0013971	-0.12504	1.9927E-6
	21.73673	26.99200	-3.00000	0.046090	-3.2839	-0.0040596	-0.22296	3.4394E-6
	21.73676	23.99400	-3.00000	0.13256	-3.2839	-0.016086	-0.43538	6.1242E-6
	21.73679	20.99600	-3.00000	0.49732	-3.2839	-0.11891	-0.71133	3.2833E-6
	21.73682	17.99800	-3.00000	7.5239	-3.2839	122.14	184.45	0.0057748
	21.73685	15.00000	-3.00000	6.1976	-3.2839	67.032	119.02	0.0028714
	21.73688	12.00200	-3.00000	7.0746	-3.2839	70.632	132.80	0.0029020
	21.73691	9.00400	-3.00000	1.4140	-3.2839	0.018044	1.9643	-31.588E-6
	21.73694	6.00600	-3.00000	0.45613	-3.2839	-0.0045003	-0.016416	0.0
	21.73697	3.00800	-3.00000	0.19806	-3.2839	-0.0016433	-0.079515	1.2124E-6
	21.73700	0.01000	-3.00000	0.096972	-3.2839	-676.13E-6	-0.061187	0.0
Point 1	3.86750	26.83910	-3.00000	-0.043187	-3.2839	-0.0013492	-0.13720	2.1998E-6
Point 2	8.50520	27.36130	-3.00000	-0.061081	-3.2839	-0.0029168	-0.21996	3.4720E-6

Name	Location X [m]	Location Y [m]	Displacement Z[Level] [mOD]	Displacement Z [mm]	Stresses Calc Level [mOD]	Stresses Vert Stress [kN/m²]	Stresses Sum Princ [kN/m²]	Stresses Vert Strain [-]
Point 3	10.98450	29.31590	-3.00000	-0.041969	-3.2839	-0.0019721	-0.17498	2.7874E-6
Point 4	19.19110	27.28420	-3.00000	0.011338	-3.2839	-0.0047783	-0.26725	4.1290E-6
Point 5	23.79270	28.25380	-3.00000	0.040673	-3.2839	-0.0018777	-0.13870	2.1867E-6
Point 6	27.36120	27.00100	-3.00000	0.056952	-3.2839	-0.0013661	-0.10527	1.6639E-6
Point 7	3.81700	21.85200	-3.00000	-0.082987	-3.2839	-0.0052122	-0.29261	4.5222E-6
Point 8	8.41740	23.22570	-3.00000	-0.15109	-3.2839	-0.017259	-0.59952	8.7880E-6
Point 9	12.60100	22.41980	-3.00000	-0.27463	-3.2839	-0.070542	-1.4338	18.893E-6
Point 10	19.15410	23.13900	-3.00000	0.062043	-3.2839	-0.041409	-0.86573	11.494E-6
Point 11	23.02600	22.61900	-3.00000	0.24710	-3.2839	-0.024187	-0.43808	5.5813E-6
Point 12	27.90790	22.36580	-3.00000	0.15677	-3.2839	-0.0041150	-0.16018	2.3840E-6
Point 13	1.63470	17.91070	-3.00000	-0.062723	-3.2839	-0.0039043	-0.24428	3.8077E-6
Point 14	8.32970	19.09000	-3.00000	-0.36545	-3.2839	-0.17341	-1.7949	17.476E-6
Point 15	22.82960	18.94310	-3.00000	1.2994	-3.2839	-0.22449	2.7746	-62.759E-6
Point 16	27.75480	18.91010	-3.00000	0.30617	-3.2839	-0.0097441	-0.19563	2.5691E-6
Point 17	1.54620	13.99630	-3.00000	-0.047397	-3.2839	-0.0036281	-0.23314	3.6412E-6
Point 18	7.87160	14.53900	-3.00000	-0.18374	-3.2839	-0.34570	-2.6495	19.285E-6
Point 19	23.41050	13.80840	-3.00000	2.2573	-3.2839	-0.089380	4.9746	-89.798E-6
Point 20	27.27010	12.88920	-3.00000	0.53465	-3.2839	-0.010851	-0.064844	0.0
Point 21	3.91580	7.57240	-3.00000	-0.011904	-3.2839	-0.0024088	-0.18504	2.9242E-6
Point 22	8.29480	8.42960	-3.00000	0.013274	-3.2839	-0.011660	-0.44844	6.6641E-6
Point 23	13.05110	8.39480	-3.00000	0.14855	-3.2839	-0.026345	-0.72273	10.192E-6
Point 24	18.83820	8.41770	-3.00000	0.93874	-3.2839	-0.015172	0.36711	-7.2491E-6
Point 25	22.88300	7.66520	-3.00000	0.71851	-3.2839	-0.0056602	0.23884	-4.4108E-6
Point 26	27.70610	7.25870	-3.00000	0.26623	-3.2839	-0.0019676	-0.049497	0.0
Point 27	4.06470	1.11500	-3.00000	0.0022723	-3.2839	-472.85E-6	-0.070707	1.1498E-6
Point 28	8.27890	0.68650	-3.00000	0.017146	-3.2839	-730.74E-6	-0.089861	1.4519E-6
Point 29	13.23720	0.58550	-3.00000	0.052563	-3.2839	-0.0010129	-0.10209	1.6362E-6
Point 30	18.76130	0.53160	-3.00000	0.10034	-3.2839	-959.59E-6	-0.082053	1.3045E-6
Point 31	22.95720	0.49070	-3.00000	0.10624	-3.2839	-687.93E-6	-0.058281	0.0
Point 33	0.00000	30.00000	-3.00000	-0.018330	-3.2839	-309.78E-6	-0.057277	0.0
Point 34	30.00000	30.00000	-3.00000	0.023228	-3.2839	-402.67E-6	-0.053987	0.0
Point 35	30.00000	0.00000	-3.00000	0.054672	-3.2839	-248.05E-6	-0.032528	0.0
Point 36	0.00000	0.00000	-3.00000	-0.0025416	-3.2839	-203.67E-6	-0.043022	0.0
Point 32	27.56660	1.70840	-3.00000	0.099057	-3.2839	-512.09E-6	-0.044541	0.0
Grid 2	0.00000	0.00000	0.00000	-0.0021690	-0.041667	0.0	0.0	0.0
	0.00000	3.00000	0.00000	-0.0043544	-0.041667	0.0	0.0	0.0
	0.00000	6.00000	0.00000	-0.0088157	-0.041667	0.0	0.0	0.0
	0.00000	9.00000	0.00000	-0.016428	-0.041667	0.0	0.0	0.0
	0.00000	12.00000	0.00000	-0.027060	-0.041667	0.0	0.0	0.0
	0.00000	15.00000	0.00000	-0.037811	-0.041667	0.0	0.0	0.0
	0.00000	18.00000	0.00000	-0.043288	-0.041667	0.0	0.0	0.0
	0.00000	21.00000	0.00000	-0.040928	-0.041667	0.0	0.0	0.0
	0.00000	24.00000	0.00000	-0.033518	-0.041667	0.0	0.0	0.0
	0.00000	27.00000	0.00000	-0.025076	-0.041667	0.0	0.0	0.0
	0.00000	30.00000	0.00000	-0.017857	-0.041667	0.0	0.0	0.0
	3.00000	0.00000	0.00000	0.0011252	-0.041667	0.0	0.0	0.0
	3.00000	3.00000	0.00000	-727.90E-6	-0.041667	0.0	0.0	0.0
	3.00000	6.00000	0.00000	-0.0064286	-0.041667	0.0	0.0	0.0
	3.00000	9.00000	0.00000	-0.018861	-0.041667	0.0	0.0	0.0
	3.00000	12.00000	0.00000	-0.041011	-0.041667	0.0	0.0	0.0
	3.00000	15.00000	0.00000	-0.069098	-0.041667	0.0	0.0	0.0
	3.00000	18.00000	0.00000	-0.083282	-0.041667	0.0	0.0	0.0
	3.00000	21.00000	0.00000	-0.073855	-0.041667	0.0	0.0	0.0
	3.00000	24.00000	0.00000	-0.054573	-0.041667	0.0	0.0	0.0
	3.00000	27.00000	0.00000	-0.036977	-0.041667	0.0	0.0	0.0
	3.00000	30.00000	0.00000	-0.024236	-0.041667	0.0	0.0	0.0
	6.00000	0.00000	0.00000	0.0079571	-0.041667	0.0	0.0	0.0
	6.00000	3.00000	0.00000	0.0085216	-0.041667	0.0	0.0	0.0
	6.00000	6.00000	0.00000	0.0039641	-0.041667	0.0	0.0	0.0
	6.00000	9.00000	0.00000	-0.010979	-0.041667	0.0	0.0	0.0
	6.00000	12.00000	0.00000	-0.049565	-0.041667	0.0	0.0	0.0
	6.00000	15.00000	0.00000	-0.14042	-0.041667	0.0	0.0	0.0
	6.00000	18.00000	0.00000	-0.19012	-0.041667	0.0	0.0	0.0
	6.00000	21.00000	0.00000	-0.14209	-0.041667	0.0	0.0	0.0
	6.00000	24.00000	0.00000	-0.087978	-0.041667	0.0	0.0	0.0
	6.00000	27.00000	0.00000	-0.052014	-0.041667	0.0	0.0	0.0
	6.00000	30.00000	0.00000	-0.030894	-0.041667	0.0	0.0	0.0
	9.00000	0.00000	0.00000	0.020103	-0.041667	0.0	0.0	0.0
	9.00000	3.00000	0.00000	0.027669	-0.041667	0.0	0.0	0.0
	9.00000	6.00000	0.00000	0.031127	-0.041667	0.0	0.0	0.0
	9.00000	9.00000	0.00000	0.028605	-0.041667	0.0	0.0	0.0
	9.00000	12.00000	0.00000	0.11419	-0.041667	0.0	0.0	0.0
	9.00000	15.00000	0.00000	-0.28432	-0.041667	0.0	0.0	0.0
	9.00000	18.00000	0.00000	-0.54164	-0.041667	0.0	0.0	0.0
	9.00000	21.00000	0.00000	-0.27543	-0.041667	0.0	0.0	0.0
	9.00000	24.00000	0.00000	-0.13103	-0.041667	0.0	0.0	0.0
	9.00000	27.00000	0.00000	-0.065787	-0.041667	0.0	0.0	0.0
	9.00000	30.00000	0.00000	-0.035261	-0.041667	0.0	0.0	0.0
	12.00000	0.00000	0.00000	0.038792	-0.041667	0.0	0.0	0.0
	12.00000	3.00000	0.00000	0.061849	-0.041667	0.0	0.0	0.0
	12.00000	6.00000	0.00000	0.089174	-0.041667	0.0	0.0	0.0
	12.00000	9.00000	0.00000	0.10898	-0.041667	0.0	0.0	0.0
	12.00000	12.00000	0.00000	0.050504	-0.041667	0.0	0.0	0.0
	12.00000	15.00000	0.00000	-2.9177	-0.041667	0.0	0.0	0.0
	12.00000	18.00000	0.00000	-2.0432	-0.041667	0.0	0.0	0.0
	12.00000	21.00000	0.00000	-0.43020	-0.041667	0.0	0.0	0.0
	12.00000	24.00000	0.00000	-0.15685	-0.041667	0.0	0.0	0.0
	12.00000	27.00000	0.00000	-0.067725	-0.041667	0.0	0.0	0.0
	12.00000	30.00000	0.00000	-0.033392	-0.041667	0.0	0.0	0.0
	15.00000	0.00000	0.00000	0.062714	-0.041667	0.0	0.0	0.0
	15.00000	3.00000	0.00000	0.11326	-0.041667	0.0	0.0	0.0
	15.00000	6.00000	0.00000	0.20194	-0.041667	0.0	0.0	0.0
	15.00000	9.00000	0.00000	0.33564	-0.041667	0.0	0.0	0.0
	15.00000	12.00000	0.00000	0.32325	-0.041667	0.0	0.0	0.0
	15.00000	15.00000	0.00000	-2.8892	-0.041667	0.0	0.0	0.0
	15.00000	18.00000	0.00000	-2.1118	-0.041667	0.0	0.0	0.0
	15.00000	21.00000	0.00000	-0.38799	-0.041667	0.0	0.0	0.0
	15.00000	24.00000	0.00000	-0.11874	-0.041667	0.0	0.0	0.0
	15.00000	27.00000	0.00000	-0.046399	-0.041667	0.0	0.0	0.0
	15.00000	30.00000	0.00000	-0.022398	-0.041667	0.0	0.0	0.0
	18.00000	0.00000	0.00000	0.085533	-0.041667	0.0	0.0	0.0
	18.00000	3.00000	0.00000	0.16982	-0.041667	0.0	0.0	0.0
	18.00000	6.00000	0.00000	0.36812	-0.041667	0.0	0.0	0.0
	18.00000	9.00000	0.00000	0.96023	-0.041667	0.0	0.0	0.0
	18.00000	12.00000	0.00000	1.8984	-0.041667	0.0	0.0	0.0
	18.00000	15.00000	0.00000	-1.8836	-0.041667	0.0	0.0	0.0
	18.00000	18.00000	0.00000	-1.1516	-0.041667	0.0	0.0	0.0
	18.00000	21.00000	0.00000	-0.022051	-0.041667	0.0	0.0	0.0
	18.00000	24.00000	0.00000	-0.0034786	-0.041667	0.0	0.0	0.0
	18.00000	27.00000	0.00000	-0.0032648	-0.041667	0.0	0.0	0.0
	18.00000	30.00000	0.00000	-0.0041089	-0.041667	0.0	0.0	0.0
	21.00000	0.00000	0.00000	0.097279	-0.041667	0.0	0.0	0.0
	21.00000	3.00000	0.00000	0.19934	-0.041667	0.0	0.0	0.0
	21.00000	6.00000	0.00000	0.46429	-0.041667	0.0	0.0	0.0
	21.00000	9.00000	0.00000	1.4977	-0.041667	0.0	0.0	0.0
	21.00000	12.00000	0.00000	4.2566	-0.041667	0.0	0.0	0.0
	21.00000	15.00000	0.00000	1.0081	-0.041667	0.0	0.0	0.0
	21.00000	18.00000	0.00000	4.2835	-0.041667	0.0	0.0	0.0
	21.00000	21.00000	0.00000	0.47081	-0.041667	0.0	0.0	0.0
	21.00000	24.00000	0.00000	0.11939	-0.041667	0.0	0.0	0.0
	21.00000	27.00000	0.00000	0.040517	-0.041667	0.0	0.0	0.0
	21.00000	30.00000	0.00000	0.014315	-0.041667	0.0	0.0	0.0
	24.00000	0.00000	0.00000	0.092491	-0.041667	0.0	0.0	0.0
	24.00000	3.00000	0.00000	0.18173	-0.041667	0.0	0.0	0.0
	24.00000	6.00000	0.00000	0.38130	-0.041667	0.0	0.0	0.0
	24.00000	9.00000	0.00000	0.88899	-0.041667	0.0	0.0	0.0
	24.00000	12.00000	0.00000	1.6847	-0.041667	0.0	0.0	0.0
	24.00000	15.00000	0.00000	1.6491	-0.041667	0.0	0.0	0.0
	24.00000	18.00000	0.00000	1.1319	-0.041667	0.0	0.0	0.0
	24.00000	21.00000	0.00000	0.42998	-0.041667	0.0	0.0	0.0

Name	Location X [m]	Location Y [m]	Location Z[Level] [mOD]	Displacement Z [mm]	Stresses Calc Level [mOD]	Stresses Vert Stress [kN/m²]	Stresses Sum Princ [kN/m²]	Stresses Vert Strain [-]
	24.00000	24.00000	0.00000	0.15444	-0.041667	0.0	0.0	0.0
	24.00000	27.00000	0.00000	0.061809	-0.041667	0.0	0.0	0.0
	24.00000	30.00000	0.00000	0.025521	-0.041667	0.0	0.0	0.0
	27.00000	0.00000	0.00000	0.075567	-0.041667	0.0	0.0	0.0
	27.00000	3.00000	0.00000	0.13675	-0.041667	0.0	0.0	0.0
	27.00000	6.00000	0.00000	0.24430	-0.041667	0.0	0.0	0.0
	27.00000	9.00000	0.00000	0.41096	-0.041667	0.0	0.0	0.0
	27.00000	12.00000	0.00000	0.56558	-0.041667	0.0	0.0	0.0
	27.00000	15.00000	0.00000	0.56835	-0.041667	0.0	0.0	0.0
	27.00000	18.00000	0.00000	0.42866	-0.041667	0.0	0.0	0.0
	27.00000	21.00000	0.00000	0.24830	-0.041667	0.0	0.0	0.0
	27.00000	24.00000	0.00000	0.12425	-0.041667	0.0	0.0	0.0
	27.00000	27.00000	0.00000	0.059464	-0.041667	0.0	0.0	0.0
	27.00000	30.00000	0.00000	0.027671	-0.041667	0.0	0.0	0.0
	30.00000	0.00000	0.00000	0.055149	-0.041667	0.0	0.0	0.0
	30.00000	3.00000	0.00000	0.091800	-0.041667	0.0	0.0	0.0
	30.00000	6.00000	0.00000	0.14467	-0.041667	0.0	0.0	0.0
	30.00000	9.00000	0.00000	0.20714	-0.041667	0.0	0.0	0.0
	30.00000	12.00000	0.00000	0.25327	-0.041667	0.0	0.0	0.0
	30.00000	15.00000	0.00000	0.25324	-0.041667	0.0	0.0	0.0
	30.00000	18.00000	0.00000	0.20684	-0.041667	0.0	0.0	0.0
	30.00000	21.00000	0.00000	0.14124	-0.041667	0.0	0.0	0.0
	30.00000	24.00000	0.00000	0.084428	-0.041667	0.0	0.0	0.0
	30.00000	27.00000	0.00000	0.046323	-0.041667	0.0	0.0	0.0
	30.00000	30.00000	0.00000	0.023826	-0.041667	0.0	0.0	0.0
Grid 3	0.00000	0.00000	-0.90000	-0.0022007	-1.2929	0.0	0.0	0.0
	0.00000	3.00000	-0.90000	-0.0043972	-1.2929	0.0	0.0	0.0
	0.00000	6.00000	-0.90000	-0.0088734	-1.2929	0.0	0.0	0.0
	0.00000	9.00000	-0.90000	-0.016505	-1.2929	0.0	0.0	0.0
	0.00000	12.00000	-0.90000	-0.027156	-1.2929	0.0	0.0	0.0
	0.00000	15.00000	-0.90000	-0.037919	-1.2929	0.0	0.0	0.0
	0.00000	18.00000	-0.90000	-0.043394	-1.2929	0.0	0.0	0.0
	0.00000	21.00000	-0.90000	-0.041018	-1.2929	0.0	0.0	0.0
	0.00000	24.00000	-0.90000	-0.033588	-1.2929	0.0	0.0	0.0
	0.00000	27.00000	-0.90000	-0.025129	-1.2929	0.0	0.0	0.0
	0.00000	30.00000	-0.90000	-0.017896	-1.2929	0.0	0.0	0.0
	3.00000	0.00000	-0.90000	0.0010836	-1.2929	0.0	0.0	0.0
	3.00000	3.00000	-0.90000	-787.86E-6	-1.2929	0.0	0.0	0.0
	3.00000	6.00000	-0.90000	-0.0065171	-1.2929	0.0	0.0	0.0
	3.00000	9.00000	-0.90000	-0.018993	-1.2929	0.0	0.0	0.0
	3.00000	12.00000	-0.90000	-0.041198	-1.2929	0.0	0.0	0.0
	3.00000	15.00000	-0.90000	-0.069328	-1.2929	0.0	0.0	0.0
	3.00000	18.00000	-0.90000	-0.083504	-1.2929	0.0	0.0	0.0
	3.00000	21.00000	-0.90000	-0.074025	-1.2929	0.0	0.0	0.0
	3.00000	24.00000	-0.90000	-0.054689	-1.2929	0.0	0.0	0.0
	3.00000	27.00000	-0.90000	-0.037055	-1.2929	0.0	0.0	0.0
	3.00000	30.00000	-0.90000	-0.024289	-1.2929	0.0	0.0	0.0
	6.00000	0.00000	-0.90000	0.0079036	-1.2929	0.0	0.0	0.0
	6.00000	3.00000	-0.90000	0.0084386	-1.2929	0.0	0.0	0.0
	6.00000	6.00000	-0.90000	0.0038275	-1.2929	0.0	0.0	0.0
	6.00000	9.00000	-0.90000	-0.011222	-1.2929	0.0	0.0	0.0
	6.00000	12.00000	-0.90000	-0.050017	-1.2929	0.0	0.0	0.0
	6.00000	15.00000	-0.90000	-0.14112	-1.2929	0.0	0.0	0.0
	6.00000	18.00000	-0.90000	-0.19076	-1.2929	0.0	0.0	0.0
	6.00000	21.00000	-0.90000	-0.14247	-1.2929	0.0	0.0	0.0
	6.00000	24.00000	-0.90000	-0.088179	-1.2929	0.0	0.0	0.0
	6.00000	27.00000	-0.90000	-0.052130	-1.2929	0.0	0.0	0.0
	6.00000	30.00000	-0.90000	-0.030966	-1.2929	0.0	0.0	0.0
	9.00000	0.00000	-0.90000	0.020036	-1.2929	0.0	0.0	0.0
	9.00000	3.00000	-0.90000	0.027559	-1.2929	0.0	0.0	0.0
	9.00000	6.00000	-0.90000	0.030924	-1.2929	0.0	0.0	0.0
	9.00000	9.00000	-0.90000	0.028134	-1.2929	0.0	0.0	0.0
	9.00000	12.00000	-0.90000	0.11596	-1.2929	0.0	0.0	0.0
	9.00000	15.00000	-0.90000	-0.29363	-1.2929	0.0	0.0	0.0
	9.00000	18.00000	-0.90000	-0.54355	-1.2929	0.0	0.0	0.0
	9.00000	21.00000	-0.90000	-0.27635	-1.2929	0.0	0.0	0.0
	9.00000	24.00000	-0.90000	-0.13136	-1.2929	0.0	0.0	0.0
	9.00000	27.00000	-0.90000	-0.065951	-1.2929	0.0	0.0	0.0
	9.00000	30.00000	-0.90000	-0.035353	-1.2929	0.0	0.0	0.0
	12.00000	0.00000	-0.90000	0.038714	-1.2929	0.0	0.0	0.0
	12.00000	3.00000	-0.90000	0.061711	-1.2929	0.0	0.0	0.0
	12.00000	6.00000	-0.90000	0.088901	-1.2929	0.0	0.0	0.0
	12.00000	9.00000	-0.90000	0.10826	-1.2929	0.0	0.0	0.0
	12.00000	12.00000	-0.90000	0.047578	-1.2929	0.0	0.0	0.0
	12.00000	15.00000	-0.90000	-3.0384	-1.2929	0.0	0.0	0.0
	12.00000	18.00000	-0.90000	-2.0027	-1.2929	0.0	0.0	0.0
	12.00000	21.00000	-0.90000	-0.43188	-1.2929	0.0	0.0	0.0
	12.00000	24.00000	-0.90000	-0.15733	-1.2929	0.0	0.0	0.0
	12.00000	27.00000	-0.90000	-0.067937	-1.2929	0.0	0.0	0.0
	12.00000	30.00000	-0.90000	-0.033502	-1.2929	0.0	0.0	0.0
	15.00000	0.00000	-0.90000	0.062627	-1.2929	0.0	0.0	0.0
	15.00000	3.00000	-0.90000	0.11310	-1.2929	0.0	0.0	0.0
	15.00000	6.00000	-0.90000	0.20160	-1.2929	0.0	0.0	0.0
	15.00000	9.00000	-0.90000	0.33472	-1.2929	0.0	0.0	0.0
	15.00000	12.00000	-0.90000	0.31974	-1.2929	0.0	0.0	0.0
	15.00000	15.00000	-0.90000	-3.0116	-1.2929	0.0	0.0	0.0
	15.00000	18.00000	-0.90000	-2.0645	-1.2929	0.0	0.0	0.0
	15.00000	21.00000	-0.90000	-0.39004	-1.2929	0.0	0.0	0.0
	15.00000	24.00000	-0.90000	-0.11932	-1.2929	0.0	0.0	0.0
	15.00000	27.00000	-0.90000	-0.046641	-1.2929	0.0	0.0	0.0
	15.00000	30.00000	-0.90000	-0.022520	-1.2929	0.0	0.0	0.0
	18.00000	0.00000	-0.90000	0.085444	-1.2929	0.0	0.0	0.0
	18.00000	3.00000	-0.90000	0.16965	-1.2929	0.0	0.0	0.0
	18.00000	6.00000	-0.90000	0.36772	-1.2929	0.0	0.0	0.0
	18.00000	9.00000	-0.90000	0.95862	-1.2929	0.0	0.0	0.0
	18.00000	12.00000	-0.90000	1.8885	-1.2929	0.0	0.0	0.0
	18.00000	15.00000	-0.90000	-2.0063	-1.2929	0.0	0.0	0.0
	18.00000	18.00000	-0.90000	-1.0968	-1.2929	0.0	0.0	0.0
	18.00000	21.00000	-0.90000	-0.024268	-1.2929	0.0	0.0	0.0
	18.00000	24.00000	-0.90000	-0.0040710	-1.2929	0.0	0.0	0.0
	18.00000	27.00000	-0.90000	-0.0035078	-1.2929	0.0	0.0	0.0
	18.00000	30.00000	-0.90000	-0.0042312	-1.2929	0.0	0.0	0.0
	21.00000	0.00000	-0.90000	0.097195	-1.2929	0.0	0.0	0.0
	21.00000	3.00000	-0.90000	0.19918	-1.2929	0.0	0.0	0.0
	21.00000	6.00000	-0.90000	0.46389	-1.2929	0.0	0.0	0.0
	21.00000	9.00000	-0.90000	1.4950	-1.2929	0.0	0.0	0.0
	21.00000	12.00000	-0.90000	4.2455	-1.2929	0.0	0.0	0.0
	21.00000	15.00000	-0.90000	0.90348	-1.2929	0.0	0.0	0.0
	21.00000	18.00000	-0.90000	4.4610	-1.2929	0.0	0.0	0.0
	21.00000	21.00000	-0.90000	0.46877	-1.2929	0.0	0.0	0.0
	21.00000	24.00000	-0.90000	0.11888	-1.2929	0.0	0.0	0.0
	21.00000	27.00000	-0.90000	0.040303	-1.2929	0.0	0.0	0.0
	21.00000	30.00000	-0.90000	0.014204	-1.2929	0.0	0.0	0.0
	24.00000	0.00000	-0.90000	0.092418	-1.2929	0.0	0.0	0.0
	24.00000	3.00000	-0.90000	0.18160	-1.2929	0.0	0.0	0.0
	24.00000	6.00000	-0.90000	0.38102	-1.2929	0.0	0.0	0.0
	24.00000	9.00000	-0.90000	0.88808	-1.2929	0.0	0.0	0.0
	24.00000	12.00000	-0.90000	1.6815	-1.2929	0.0	0.0	0.0
	24.00000	15.00000	-0.90000	1.6449	-1.2929	0.0	0.0	0.0
	24.00000	18.00000	-0.90000	1.1286	-1.2929	0.0	0.0	0.0
	24.00000	21.00000	-0.90000	0.42908	-1.2929	0.0	0.0	0.0
	24.00000	24.00000	-0.90000	0.15410	-1.2929	0.0	0.0	0.0
	24.00000	27.00000	-0.90000	0.061645	-1.2929	0.0	0.0	0.0
	24.00000	30.00000	-0.90000	0.025429	-1.2929	0.0	0.0	0.0
	27.00000	0.00000	-0.90000	0.075508	-1.2929	0.0	0.0	0.0
	27.00000	3.00000	-0.90000	0.13665	-1.2929	0.0	0.0	0.0
	27.00000	6.00000	-0.90000	0.24414	-1.2929	0.0	0.0	0.0
	27.00000	9.00000	-0.90000	0.41066	-1.2929	0.0	0.0	0.0
	27.00000	12.00000	-0.90000	0.56508	-1.2929	0.0	0.0	0.0
	27.00000	15.00000	-0.90000	0.56772	-1.2929	0.0	0.0	0.0

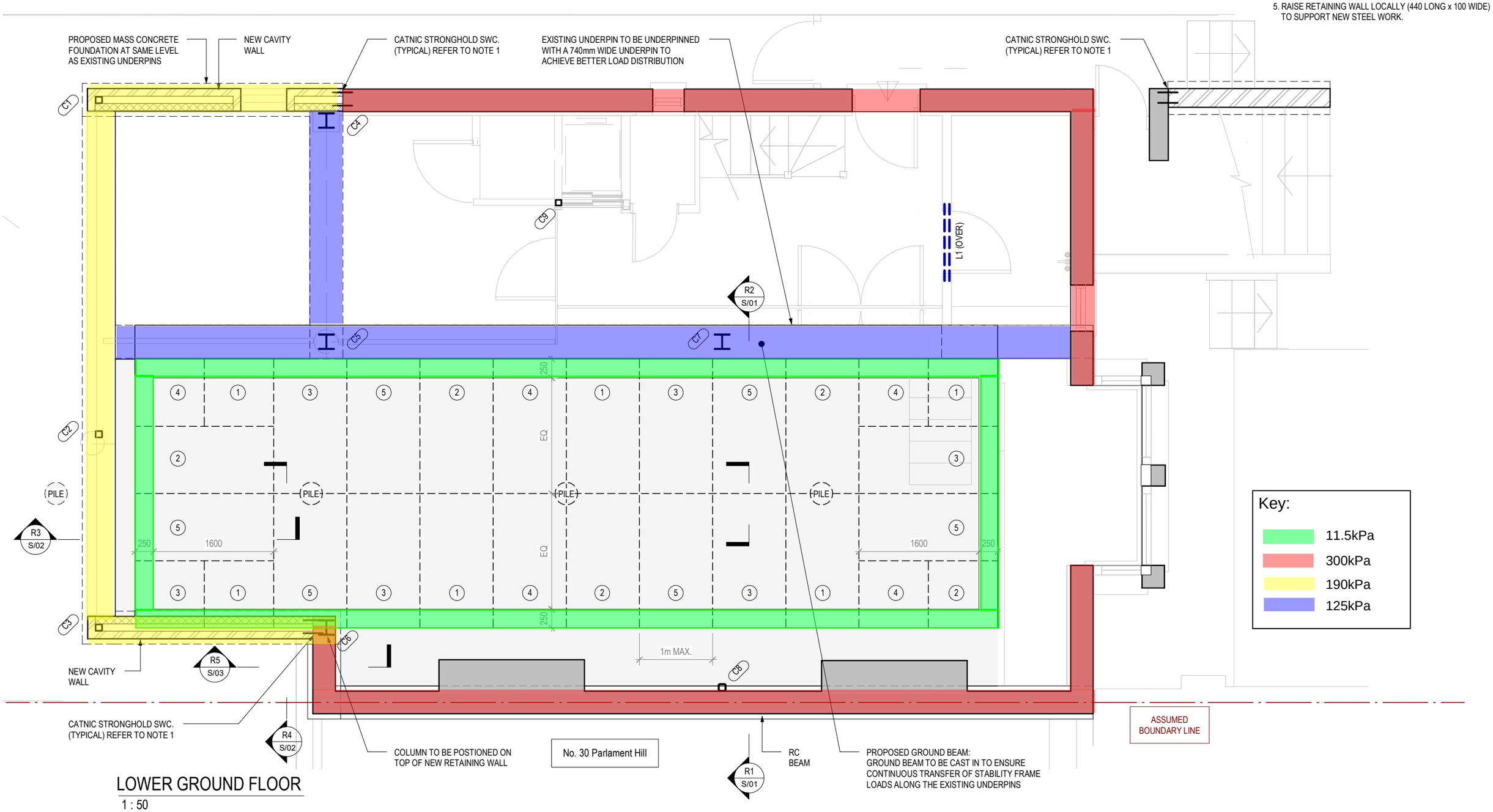
Name	Location			Displacement	Stresses			
	X [m]	Y [m]	Z[Level] [mOD]	Z [mm]	Calc Level [mOD]	Vert Stress [kN/m²]	Sum Princ [kN/m²]	Vert Strain [-]
	27.00000	18.00000	-0.90000	0.42811	-1.2929	0.0	0.0	0.0
	27.00000	21.00000	-0.90000	0.24796	-1.2929	0.0	0.0	0.0
	27.00000	24.00000	-0.90000	0.12406	-1.2929	0.0	0.0	0.0
	27.00000	27.00000	-0.90000	0.059350	-1.2929	0.0	0.0	0.0
	27.00000	30.00000	-0.90000	0.027600	-1.2929	0.0	0.0	0.0
	30.00000	0.00000	-0.90000	0.055104	-1.2929	0.0	0.0	0.0
	30.00000	3.00000	-0.90000	0.091734	-1.2929	0.0	0.0	0.0
	30.00000	6.00000	-0.90000	0.14457	-1.2929	0.0	0.0	0.0
	30.00000	9.00000	-0.90000	0.20699	-1.2929	0.0	0.0	0.0
	30.00000	12.00000	-0.90000	0.25308	-1.2929	0.0	0.0	0.0
	30.00000	15.00000	-0.90000	0.25302	-1.2929	0.0	0.0	0.0
	30.00000	18.00000	-0.90000	0.20663	-1.2929	0.0	0.0	0.0
	30.00000	21.00000	-0.90000	0.14108	-1.2929	0.0	0.0	0.0
	30.00000	24.00000	-0.90000	0.084314	-1.2929	0.0	0.0	0.0
	30.00000	27.00000	-0.90000	0.046247	-1.2929	0.0	0.0	0.0
	30.00000	30.00000	-0.90000	0.023773	-1.2929	0.0	0.0	0.0

APPENDIX D

KEY:

	EXISTING MASONRY
	NEW LOAD BEARING CONCRETE
	NEW LOAD BEARING BRICKWORK (20N/mm²)
	NEW LOAD BEARING BLOCKWORK (7N/mm²)
	NEW NON-LOAD BEARING STUD WALL
	AREA TO BE UNDERPINNED

NOTES:
1. CATNIC STRONGHOLD SWC STAINLESS STEEL WALL STARTER KITS. POSITION AT JUNCTIONS OF EXISTING MASONRY WALL AND NEW MASONRY. INSTALL IN ACCORDANCE WITH THE MANUFACTURERS SPECIFICATION. FULLY EMBED TIES IN MORTAR JOINTS.
2. BELOW GROUND WATERPROOFING AND DRAINAGE BY OTHERS.
3. UNDERPINS WILL NOT BE STABLE WHILST UNDER CONSTRUCTION. CONTRACTOR MUST PROVIDE ADEQUATE LATERAL SUPPORT TO ALL PINS UNTIL BASEMENT SLAB HAS BEEN CAST.
4. NON COMPRESSIBLE WATER RESISTANT CEMENTITIOUS BOARD LINER TO BACK OF ALL UNDERPIN SUPPORTING PARTY WALLS.
5. RAISE RETAINING WALL LOCALLY (440 LONG x 100 WIDE) TO SUPPORT NEW STEEL WORK.



LOWER GROUND FLOOR
1 : 50

20230153

REV.	DATE	REVISION NOTES	TECH.	CHECKED
P1	24.10.2023	INITIAL ISSUE	BVB	AS

28 Parlament Hill London NW3 2TN

REV.	DATE	REVISION NOTES	TECH.	CHECKED

GREEN STRUCTURAL ENGINEERING
www.gseltd.co.uk
Unit 21 Bergham Mews
Blythe Road
Hammersmith
W14 0HN
020 3405 3120

LOWER GROUND FLOOR GA

TECHNICIAN	ENGINEER	DATE	PAPER SIZE	SCALE
BVB	AS	24.10.2023	A3	As indicated

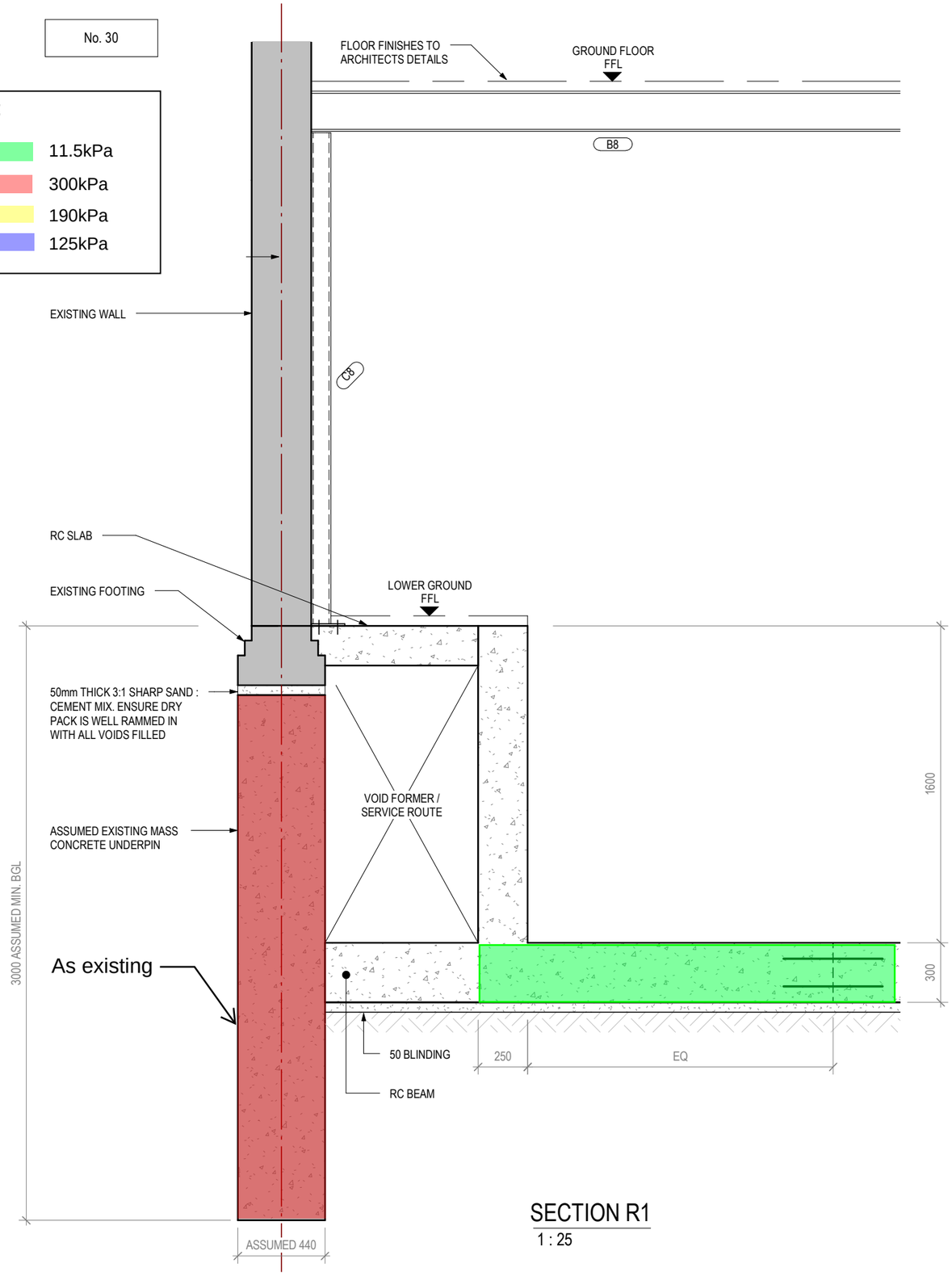
PRELIMINARY

DRAWING NO.	REV.
GA/01	P1

No. 30

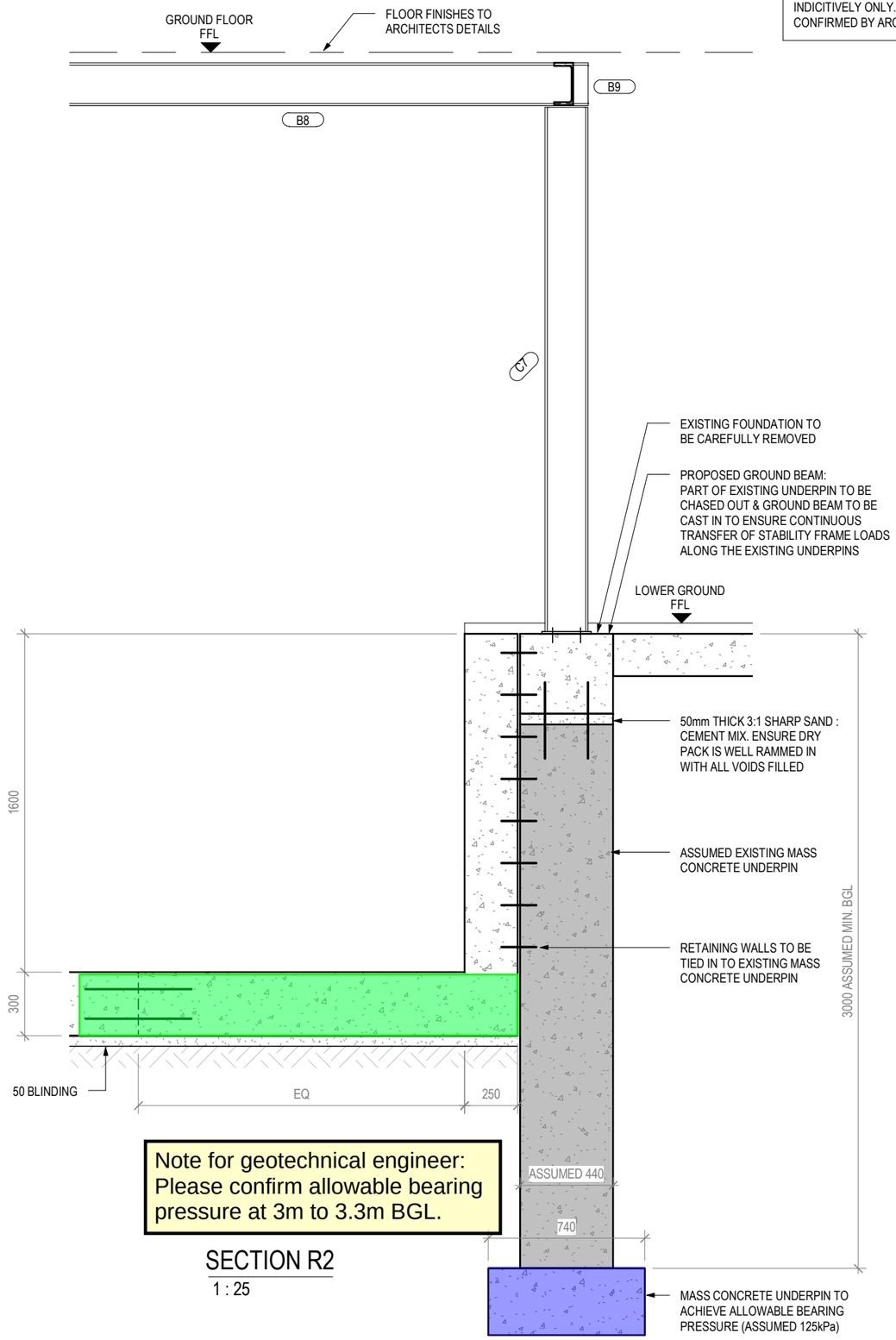
Key:

- 11.5kPa
- 300kPa
- 190kPa
- 125kPa



SECTION R1

1 : 25



Note for geotechnical engineer:
Please confirm allowable bearing pressure at 3m to 3.3m BGL.

SECTION R2

1 : 25

BOUNDARY LINES SHOWN INDICITIVELY ONLY. TO BE CONFIRMED BY ARCHITECT.

20230153

28 Parlament Hill London NW3 2TN

REV.	DATE	REVISION NOTES	TECH.	CHECKED
P1	24.10.2023	INITIAL ISSUE	BVB	AS

GREEN STRUCTURAL ENGINEERING
www.gseltd.co.uk
Unit 21 Bergham Mews
Blythe Road
Hammersmith
W14 0HN
020 3405 3120

SECTION SHEET 1

TECHNICIAN	ENGINEER	DATE	PAPER SIZE	SCALE
BVB	AS	24.10.2023	A3	1 : 25

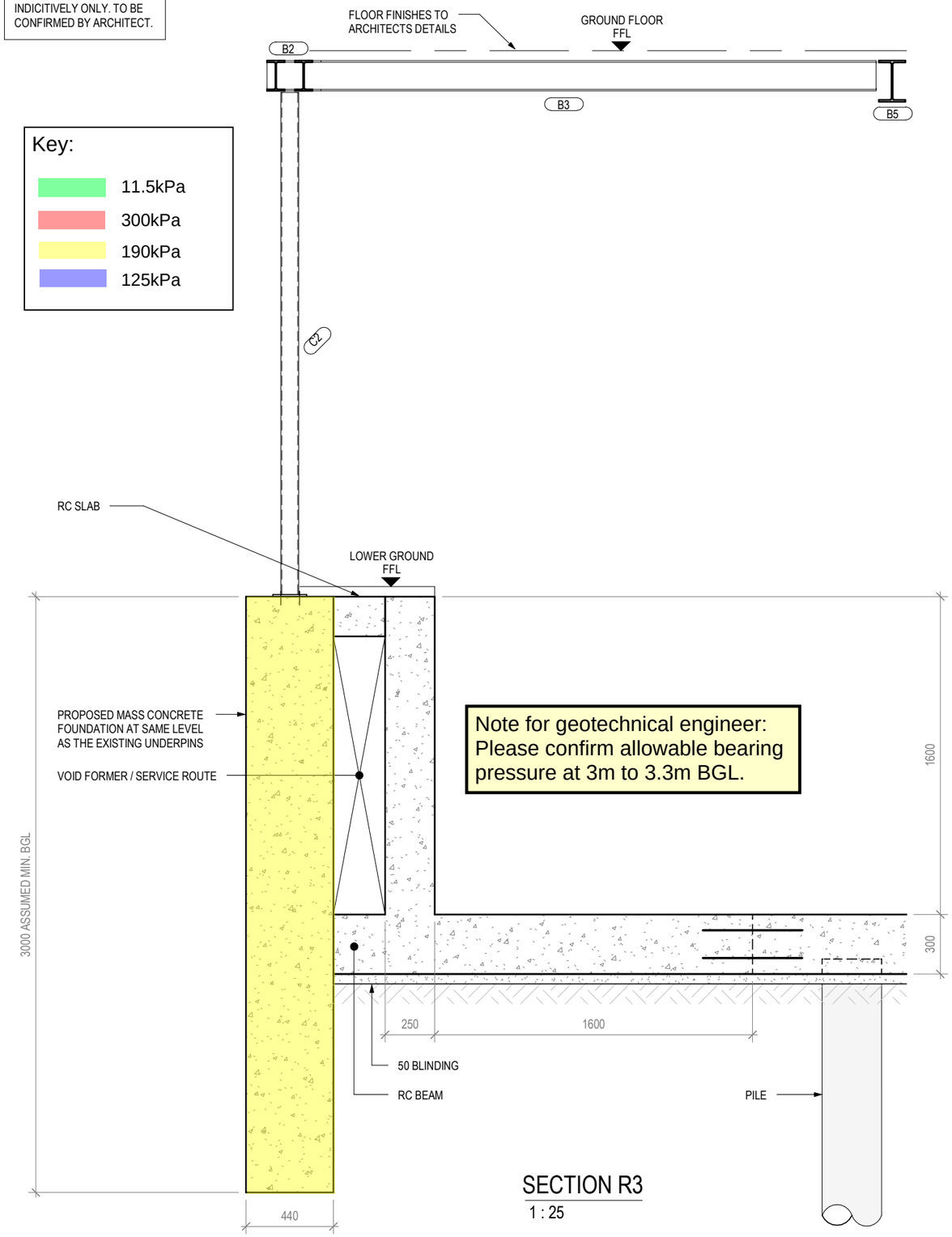
PRELIMINARY

DRAWING NO. S/01 REV. P1

BOUNDARY LINES SHOWN INDICITIVELY ONLY. TO BE CONFIRMED BY ARCHITECT.

Key:

- 11.5kPa
- 300kPa
- 190kPa
- 125kPa



SECTION R3

1 : 25

THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER GSE DRAWINGS & RELEVANT PROJECT DOCUMENTS.
DO NOT SCALE FROM THIS DRAWING. THIS DRAWING IS SUBJECT TO COPYRIGHT.
THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL SITE DIMENSIONS BEFORE COMMENCING ANY WORK.
ALL DIMENSIONS IN mm UNLESS OTHERWISE NOTED. ALL DIMENSIONS & LEVELS TO BE CONFIRMED BY ARCHITECT. SETTING OUT TO BE CONFIRMED ON SITE.

20230153

28 Parlament Hill London NW3 2TN

REV.	DATE	REVISION NOTES	TECH.	CHECKED
P1	24.10.2023	INITIAL ISSUE	BVB	AS

REV.	DATE	REVISION NOTES	TECH.	CHECKED

GREEN STRUCTURAL ENGINEERING
www.gseltd.co.uk
Unit 21 Bergham Mews
Blythe Road
Hammersmith
W14 0HN
020 3405 3120

SECTION SHEET 2

PRELIMINARY

TECHNICIAN	ENGINEER	DATE	PAPER SIZE	SCALE	DRAWING NO.	REV.
BVB	AS	24.10.2023	A3	1 : 25	S/02	P1