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# Ashton Court
# 254 – 256 Camden Road
# London
# NW1 9HE

## Ground Movement Assessment

For

Origin Housing

Project Number:

12047

July 2015

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## Document History and Status

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## Document Details

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| Project Partner | E Brown, MSc, CGeol, FGS |
| Project Number | 12047 |
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## Contents

## 1.0 INTRODUCTION

1.1. Appointment and Scope

1.1.1. Campbell Reith Hill LLP (CampbellReith) has been appointed by the Robert Lombardelli Partnership, on behalf of Origin Housing (the client), to undertake a ground movement assessment to determine the impact of the construction of a basement at Ashton Court on Camden Mews in north London. This assessment comprises part of a basement impact assessment required by the London Borough of Camden Council for the proposed redevelopment of Ashton Court, 254 – 256 Camden Road, NW1 9HE (the site). The proposal comprises the demolition of two existing buildings and the construction of a new building with three above ground floors and a single storey basement on Camden Mews; and a two storey building on Camden Park Road.

1.1.2. This report only considers the magnitude and impact of vertical and horizontal ground movements on the neighbouring properties on Camden Mews, in particular 103 Camden Mews which is adjacent to the west. This report is based on a site specific investigation undertaken by Ground Engineering Limited in January 2015 and describes the ground conditions at the site and the assumptions made as to the existing and proposed structures. The approach taken to determining ground movements is described and the implications for the neighbouring properties are discussed. It is intended that this report is submitted to London Borough of Camden as part of the BIA.

1.1.3. Appendix A contains figures showing the site location together with the properties along Camden Mews within the zone of influence of the proposed development and the proposed development. A basement construction sequence report prepared by CampbellReith is included in Appendix B. A summary of the results of the analyses undertaken using the Oasys programme Pdisp Version 19.3, the associated calculations and plots of the horizontal and vertical movement associated with the construction of the retaining wall and subsequent excavation are presented in Appendix C.

## 2.0 GROUND CONDITIONS

2.1. Site Investigation

2.1.1. A site specific ground investigation was procured by the Robert Lombardelli Partnership and is reported separately. The BIA report prepared by CampbellReith (FDemb-12047-020715-BIA-F1) contains an assessment of the data obtained. The investigation comprised a single windowless sampler hole in the garden in the rear of the site undertaken to 10m bgl. The sequence of strata encountered was Made Ground (1.50m thick) underlain by London Clay to the base of the hole. Two foundation inspection pits were undertaken on the boundary with the neighbouring property on the west and these indicated the Made Ground extends to at least 1.70m bgl in places. The base of the London Clay is believed to be at c45m bgl overlying the Lambeth Group (which changes between clays and sands) and the Thanet Sand, which are anticipated to be present up to 70m bgl. The Lambeth Group and Thanet Sand are underlain by Chalk up to at least 120m bgl.

2.1.2. Groundwater was not encountered during the site works. A single monitoring visit was undertaken on 3rd February 2015 and the recorded water level was 5.23m bgl.

## 3.0 EXISTING AND PROPOSED STRUCTURES

3.1. Existing Building

3.1.1. The existing building dates from the early 1980s and is anticipated to be of traditional cavity wall construction (from drawings on a previous planning application for rebuilding the common room). This section on Camden Mews, which is to be demolished and rebuilt with a basement, currently has two above ground floors with partial undercroft parking at ground level. The ground level in the vicinity of the site along Camden Mews is approximately 45.60m AOD and it gently slopes down to 45.40m AOD in the garden in the rear of the building.

3.2. Proposed Building

3.2.1. It is proposed to demolish the existing building and construct a new building with three above ground floors and a single storey basement comprising flats. The basement is indicated to cover approximately the same area as the existing building on Camden Mews on the proposed plans.

## 4.0 ANALYSIS ASSUMPTIONS AND INPUT PARAMETERS

4.1. Ground Conditions

4.1.1. The sequence of strata is outlined above and the soils have been assumed to be incompressible below 0m AOD.

4.2. Foundation Assumptions

4.2.1. In considering ground movements associated with the proposed redevelopment, it has been assumed that demolition will result in an unloading on the founding stratum of approximately 30kN/$m^2$. The maximum excavation depth is anticipated to be c3m, and this will result in a further unloading of 60kN/$m^2$ due to the weight of soil being removed. In assessing resultant ground movements, the excavation has been modelled as a rectangle (26 x 10m) to account for the building footprint and the decking at ground level which will extend to maximum 2.50m into the garden.

4.2.2. For this initial assessment, the proposed structure is assumed to be supported on a raft and has been modelled as a rectangle (26 x 7m) to approximate the shape of the proposed basement footprint. A load take down by CampbellReith (Appendix B) indicates the bearing pressure at the underside of the basement slab (42.65m AOD) is likely to be approximately 60kN/$m^2$.

4.2.3. The foundations to the neighbouring properties have been assumed to be strip footings at a depth of 0.75m bgl (44.75m AOD). At 103 Camden Mews, these are assumed to be perpendicular to the road at intervals of 4.50m. The foundation inspection trial pits were inconclusive but suggested they might be piled. Consequently this is a conservative assumption.

4.3. Basement Construction Sequence

4.3.1. Whilst the final construction sequence is the responsibility of the Contractor, an assumed basement construction sequence is detailed in SKsk-12047-020715-CS-F1 in Appendix B. A summary is provided below.

4.3.2. Our ground movement assessment assumes that sheet piles are installed around the perimeter of the basement following demolition, followed by partial excavation to 500mm. Propping comprises perimeter head restraint beams which are bolted to the head of the sheet piles. Horizontal props, where required would also be installed across the width of the basement followed by excavation down to 50mm below the underside of the basement slab level. Propping ensures that ground movements are minimised.

4.3.3. The basement slab would then be cast on the blinding. It is assumed the basement slab, which is designed as a raft to distribute the vertical loads evenly, would be 300mm thick reinforced concrete with 450mm deep local thickenings under all concrete walls and around the perimeter.

4.3.4. The basement walls would then be constructed followed by temporary prop removal and casting of the ground floor slab. All the props would be removed. The basement tanking system would then be installed followed by the internal basement walls and then construction of the upper floors.

4.4. Pdisp Analysis

4.4.1. The purpose of the Pdisp analysis is to estimate impact of the vertical ground movements on the neighbouring properties, in particular 103 Camden Mews, to ensure that any damage resulting from the demolition and construction activities is within acceptable limits. Reference to CIRIA C580 [1] reveals that ground movements typically reduce to zero at a distance not exceeding four times the excavation depth. Pdisp relies on structural loads and soil properties being defined by reference to x, y coordinates, hence the modelling of the proposed building footprint as a rectangle and the strip footings of the neighbouring properties as grid lines. GL1 to GL6 represent the assumed locations of the strip footings of the properties within four times the depth of the excavation (c12m). The assumptions are based on observations of the form and type of nearby buildings made during a site reconnaissance visit. Vertical ground movements have been estimated at the assumed foundation locations and the programme assumes a fully flexible foundation which is likely to overestimate ground movements.

4.4.1. Modulus values have been derived empirically, with the undrained modulus (Eu) being equal 400 x undrained shear strength (Cu) in the London Clay [2]. The drained modulus (E') has been taken as 0.75 x Eu. In the Made Ground, Eu has conservatively been assumed to be 5000kN/$m^2$ which is based on our experience in similar soils and has been taken to be equal to E'. The following parameters were adopted for analysis:

**TABLE 4.1: Soil Input Parameters**

| Stratum | Bulk Unit Weight (kN/$m^3$) | Undrained Shear Strength (kN/$m^2$) | Young's Modulus (kN/$m^2$) | Poisson's ratio |
|---|---|---|---|---|
| Made Ground | 18 | N/A | Eu= E'= 5000 | $\nu$ = 0.5<br>$\nu'$ = 0.2 |
| London Clay | 20 | Cu = 70+6z[1] | Eu= 28000 + 2400z<br>E' = 21000 + 1800z | $\nu$ = 0.5<br>$\nu'$= 0.2 |

[1]Where z = depth below the top of the London Clay which was encountered at 1.50m bgl

4.4.2. Laboratory triaxial tests were undertaken as part of the ground investigation, however, these were performed on samples from a windowless sampler hole which are likely to have experienced sample disturbance, resulting in lower apparent strengths. CampbellReith's experience in working with the London Clay allowed a reasonable estimation of the undrained shear strength (Cu) to be made using both the site investigation information and data from other sites in north London. The vertical undrained modulus in the London Clay Eu=400Cu and drained modulus, E'=0.75Eu.

4.5. Ground Movements due to Excavation

4.5.1. Although the sequence of works described above allows the wall support to be assessed as high stiffness, moderate support stiffness has been assumed for the purposes of this assessment. This is a conservative assumption. Based on CIRIA C580 Table 2.4, this indicates vertical and horizontal surface movements of 0.30% of the maximum excavation depth. Curves presented in Figures 2.11a and 2.11b of CIRIA C580 allow the profile of ground movements behind the wall to be estimated.

4.6. Assessment of Strain and Building Damage

4.6.1. Initially, the ground movements on the neighbouring properties comprise heave due to the demolition of the existing building and excavation of the basement offset by settlement due to the excavation of the basement. The former are derived the Pdisp analysis and the latter from CIRIA C580. Horizontal movements will also occur which can again be assumed from CIRIA C580. The likely maximum vertical and horizontal strain can then be calculated which then enables an estimation of the building damage category.

4.6.2. As described above, the ground movements have been estimated at the assumed locations of the neighbouring property footings.

## 5.0 ASSESSMENT OF GROUND MOVEMENTS AND BUILDING DAMAGE

5.1. Ground Movements

5.1.1. Ground movements have been estimated along the length of the neighbouring property footings at a level of 44.75m AOD (0.75m below the street level in front of 103 Camden Mews as given in the topographic survey provided by the client). According to CIRIA C580, ground movements associated with the construction of the basement and retaining walls are could theoretically extend to 101 and 103 Camden Mews, 88 – 90 Camden Mews and 59 Camden Park Road.

5.1.2. An analysis of the vertical ground movements (heave/settlement) associated with the demolition of the existing building and the construction of the new building together has been undertaken using the Oasys programme Pdisp Version 19.3.

5.1.3. Immediate heave due to the demolition of the existing building and excavation of the basement is in the order of 10mm beneath the party wall foundations with 103 Camden Mews. This reduces to approximately 3mm halfway along the length of the building and 1mm on the party wall between 103 and 101 Camden Mews. The maximum likely heave beneath 84 – 90 Camden Mews is estimated to be less than 3mm, and 2mm on 59 Camden Park Road.

5.1.4. As described in Section 4.5, based on CIRIA C580 Table 2.4, vertical and horizontal surface movements of 0.30% of the maximum excavation depth have been assumed.

5.1.5. Immediate settlement (vertical surface movements) due to the excavation would be in the order of 9mm at the party wall foundations with 103 Camden Mews, 6mm halfway along the length of the building and 3mm on the party wall between 103 and 101 Camden Mews. The heave from the Pdisp analysis is offset by the settlement from the CIRIA C580 therefore the maximum likely vertical ground surface movement at the wall is estimated to be 1mm, 3mm at 4.50m away from the wall and 2mm at 9m. The maximum vertical movement, Δ, between the assumed foundation locations of 103 Camden Mews is estimated to be 4mm.

5.1.6. The horizontal movements at the top of the sheet pile wall are also likely to be in the order of 9mm, reducing to 6mm at a distance of 4.5m and 3mm at a distance of 9m. The maximum horizontal movement, $\delta h$, between the assumed foundation locations of 103 Camden Mews is estimated to be 3mm.

5.1.7. Post construction, there may be some further settlement. Vertical ground movements (total settlement from the construction minus long term heave from the demolition of the existing building and basement excavation) on 103 Camden Mews are not expected to exceed 5mm. This occurs midway along the party wall. However, as Pdisp assumes a fully flexible foundation this is likely to be an overestimate. The maximum likely long term movement beneath 84 – 90 Camden Mews and 59 Camden Park Road is less than 1mm.

5.2. Assessment of Strain and Building Damage

5.2.1. The length of the neighbouring property (103 Camden Mews) has been assumed to be 9m with an approximate height (H) of 6m. The strain has been assessed over the full length of the property (L =9m) and between the party wall and the foundation at 4.50m beyond it (L= 4.5m).

Following the procedure given in CIRIA C580 Box 2.5, L/H=0.75 (i.e. at the intermediate foundation) and at 1.5 at L=9m (i.e. at the far side of the property).

5.2.2. The maximum horizontal strain, $\varepsilon_h$ ($\delta h/L$)= 0.06% and the maximum deflection ratio $\Delta/L$ = 0.08% beneath the adjoining property (103 Camden Mews). This represents a maximum damage category of 'slight' (Burland Category 2).

## 6.0 CONCLUSIONS

6.1. The maximum horizontal movement, $\delta h$ = 3mm, and vertical movement, $\Delta$ = 4mm between the assumed foundation locations of 103 Camden Mews. Although there is predicted heave of up to 10mm (Pdisp analysis), this is offset by settlement of up to 9mm (as derived from CIRIA C580).

6.2. An assessment of the strain as a result of the demolition and basement excavation indicates that the damage to 103 Camden Mews falls within category 2, 'slight'.

6.3. Post construction, the maximum vertical movement beneath 103 Camden Mews is less than 5mm.

6.4. The movements and hence the damage on the remaining properties within the zone of influence are negligible.

## TECHNICAL REFERENCES

| Reference | Reference Title | Type |
|---|---|---|
| 1 | CIRIA C580 Embedded retaining walls - guidance for economic design. | CIRIA Publication |
| 2 | C J Padfield and M J Sharrock, Settlement of Structures on Clay Soils | CIRIA Publication |

## LIMITATIONS

1. Where any data or information supplied by the client or other external source, including that from previous studies, has been used, it has been assumed that the information is correct. No responsibility can be accepted by CampbellReith for inaccuracies within this data or information.
2. This report is limited to those aspects described in the introduction and no liability is accepted for any other aspects.
3. The generalised soil conditions described in the text are intended to convey trends in subsurface conditions. The boundaries between strata are approximate and have been developed on interpretations of the exploration locations and samples collected.
4. Water level and gas readings have been taken at times and under conditions stated on the exploration logs. It must be noted that fluctuations in the level of groundwater or gas may occur due to a variety of factors which may differ from those prevailing at the time the measurements were taken.
5. The findings and opinions expressed are relevant to those dates of the reported site work and should not be relied upon to represent conditions at substantially later dates.
6. This report is produced solely for the benefit of the client, and no liability is accepted for any reliance placed upon it by any other party unless specifically agreed in writing.

# APPENDIX A: FIGURES

Figure 1: Site Location

Figure 2a and 2b: Proposed Development


Ashton Court

Client: Origin Housing

Figure 1:
Site Location and Neighbouring Properties Within Zone of Influence of Proposed Basement

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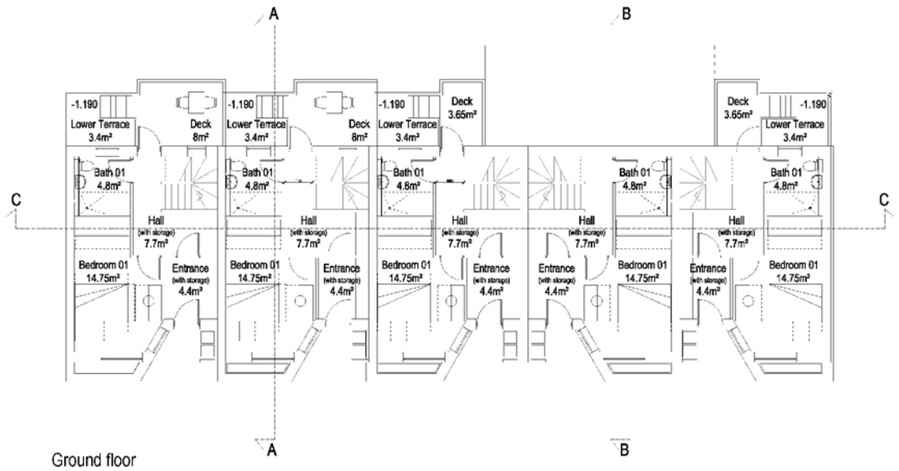
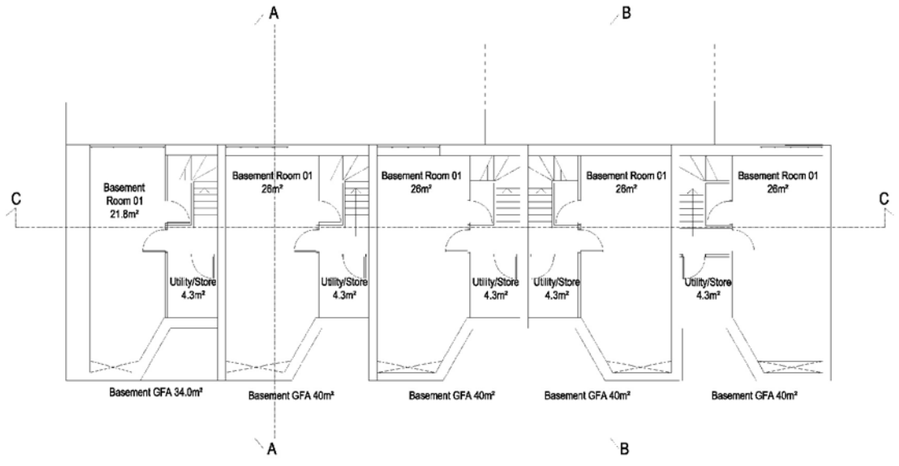
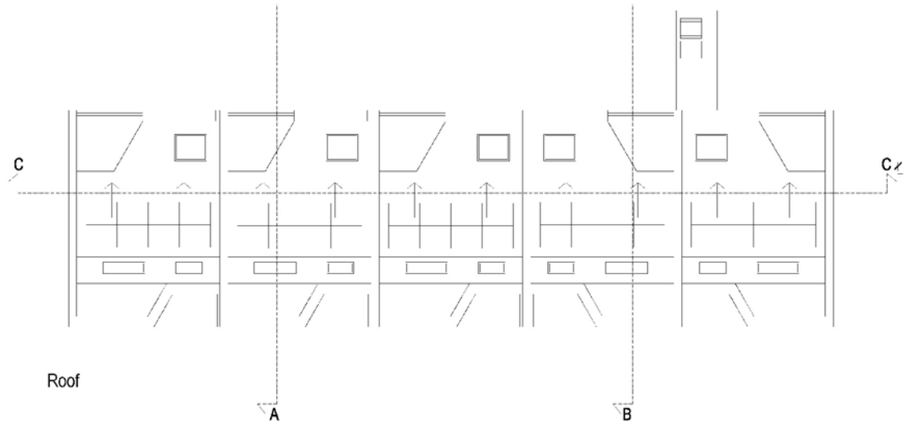


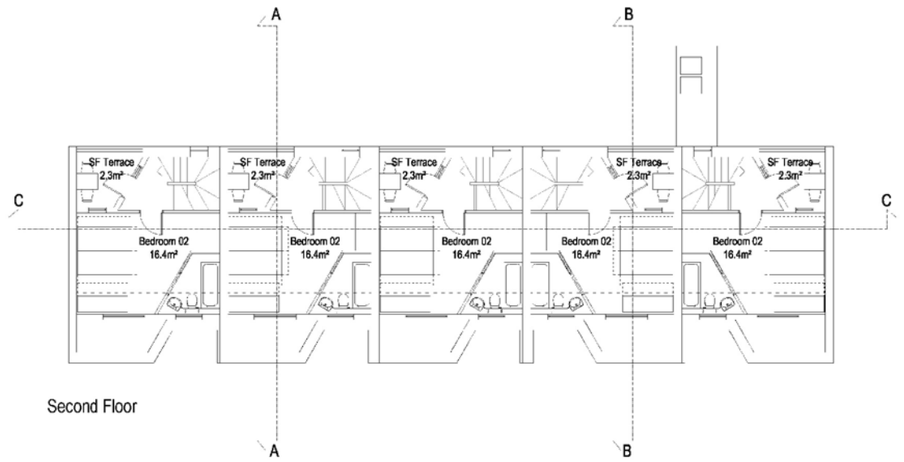

Ground floor



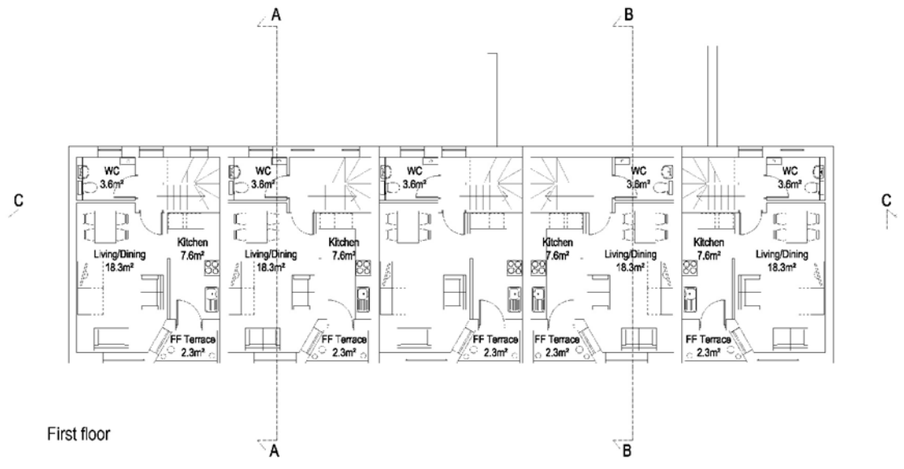

Basement floor




Roof




Second Floor




First floor

NTS

Ashton Court

Client: Origin Housing

Figure 2a:
Camden Mews Proposed Development (All Floors)

Scale: NTS

Based on Archadia Charted Architects drawing no. OH233-1-05, Rev C (Jul 2015)
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Drg No - Status/Revision: GIS006 - B
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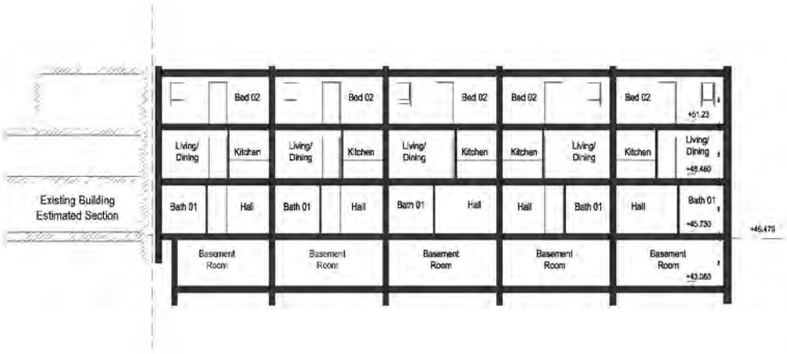
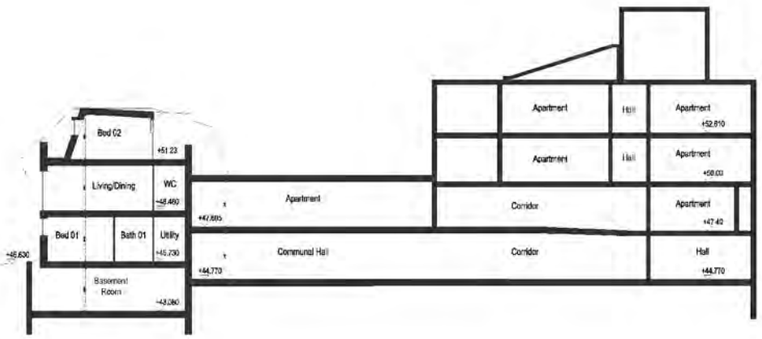
Section AA

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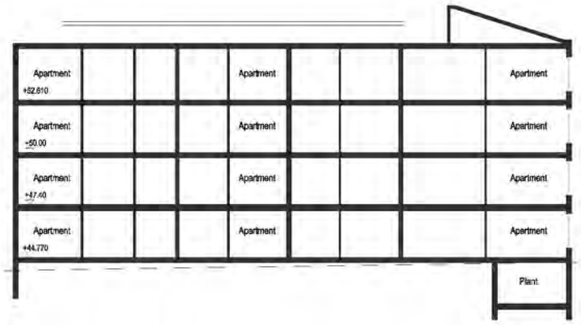


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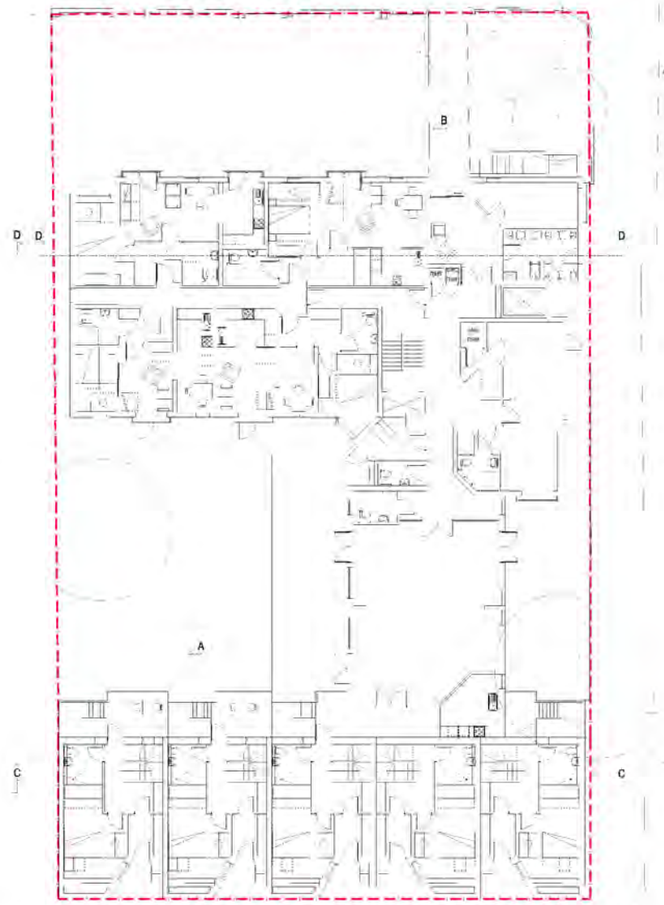


Ground Floor

Ashton Court

Client: Origin Housing

Figure 2b:
Camden Mews Proposed Development (Sections)

NTS

Scale: NTS

Based on Archadia Charted Architects drawing no. OH233-3-01, Rev A & OH233-3-02, Rev A (Jul 2015)
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# APPENDIX B: BASEMENT CONSTRUCTION SEQUENCE

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# Ashton Court
# 254 – 256 Camden Road
# NW1 9HE

## Basement Construction Sequence of Works

For

Origin Housing

Project Number:

12047

July 2015

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| D1 | June 2015 | For Information | SKsk-12047-190615-CS-D1 | S Knight | F Drammeh/E Brown | E Brown |
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| Project Partner | E Brown, BSc MSc C.Geol FGS |
| Project Number | 12047 |
| Project Name | Ashton Court |

## Contents

## 1.0 EXECUTIVE SUMMARY

1.1. The following report has been produced to show an indicative sequence of works for the construction of a new single storey basement at Ashton Court, Camden, NW1 9HE. All sketches and information provided within this report are indicative only and subject to change following further investigations and detailed design.

1.2. The final Construction Sequence and Method Statements remain the responsibility of the Contractor. All temporary works design and stability of existing structures remain the responsibility of the Contractor during construction.

## 2.0 DEMOLITION

2.1. The existing building on Camden Mews in the southern area of the site is to be demolished in order to construct a new three storey residential building with an additional single storey basement.

2.2. The link building to the east of the site on Camden Park Road is also to be demolished and will not require significant temporary works during excavation of the basement. For this reason, this report concentrates on the section through the retained neighbouring property. Two inspection pits failed to confirm the nature of the foundations to the neighbouring property. TP1 revealed what could have been a ground beam and it has been assumed that the building has piled foundations. This must be confirmed prior to the final design of the basement and foundations to Ashton Court.

## 3.0 SEQUENCE OF WORKS

3.1. Also refer to the sequence of work sketches shown following the step-by-step description below. These sketches show the section through the west of the basement, adjacent to the neighbouring property. Sections on the other sides of the basement will be similar but without the neighbouring structure and foundations.

3.2. Step 1 (Demolition): The existing buildings on site are to be demolished and existing foundations grubbed out.

3.3. Step 2 (Sheet Piling): Sheet piles are to be installed around the perimeter of the basement. Sheet piles to be designed as propped and detailed design to be carried out by the main contractor. It is anticipated that the sheet piles will extend to a depth of approximately 1.5m below the lowest level of excavation.

3.4. Step 3 (Excavation Stage 1): Approximately 500mm depth of excavation is carried out over the full plan area of the basement. This is to allow room to install the temporary horizontal propping. Sheet piles to also be designed for this load case.

3.5. Step 4 (Propping): Perimeter head restraint beams are installed and bolted to the head of the sheet piles. Horizontal props are installed where required across the width of the basement. All temporary works are the responsibility of the Main Contractor.

3.6. Step 5 (Excavation Stage 2): The basement is then excavated down to 50mm below the underside of the basement slab level, removing any soft spots. 150mm of type 1 hardcore is to be laid and compacted at the base of the excavation in any soft spots encountered.

3.7. Step 6 (Blinding): A 50mm blinding mass concrete is cast as a base on which to fix the reinforcement for the basement slab.

3.8. Step 7 (Basement Slab): The basement slab is cast on the blinding. At this stage it is assumed the basement slab will be 300mm thick RC with 450mm deep local thickenings under all concrete walls and around the perimeter. This slab is to be designed as a raft slab to distribute the vertical loads evenly across the full plan area of the basement. 100mm high wall kickers are cast in preparation of the walls at the next stage.

3.9. Step 8 (RC Basement Wall Construction): The RC walls are cast up to the underside of the temporary props. At this stage it is assumed these will be 300mm thick RC. Hydrophilic strips are to be installed at all construction joints. Any temporary props required for the walls are then installed ready for the removal of the main high level temporary props.

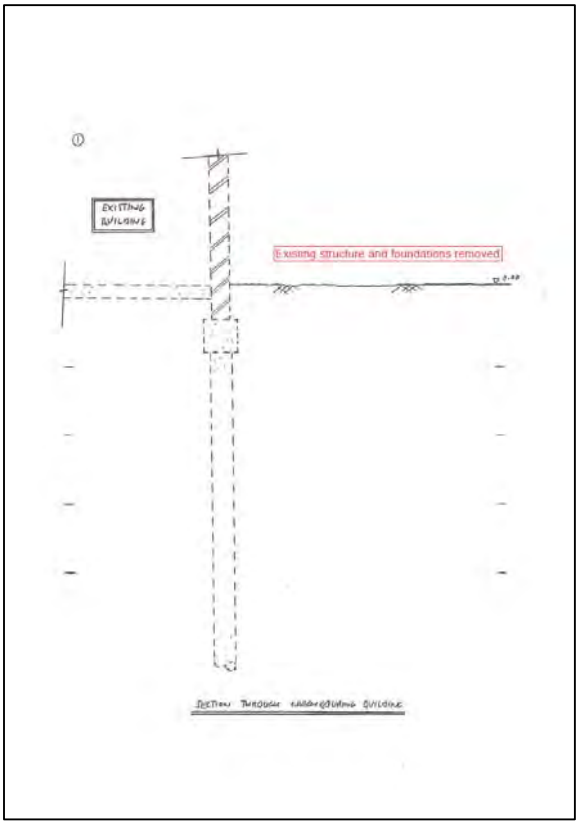
3.10. Step 9 (Temporary Prop Removal): Once the RC walls have achieved sufficient strength to resist the lateral loads, the main sheet pile head restraint beams and lateral props are removed.

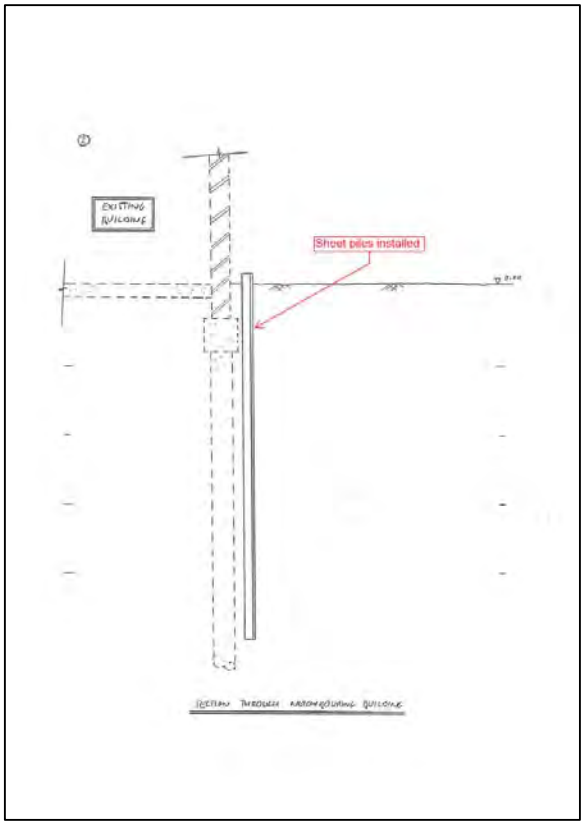
3.11. Step 10 (Ground Floor Slab): The ground floor slab is cast. This slab is two way spanning and supported on the RC walls. Hydrophilic strips are to be installed at all construction joints.

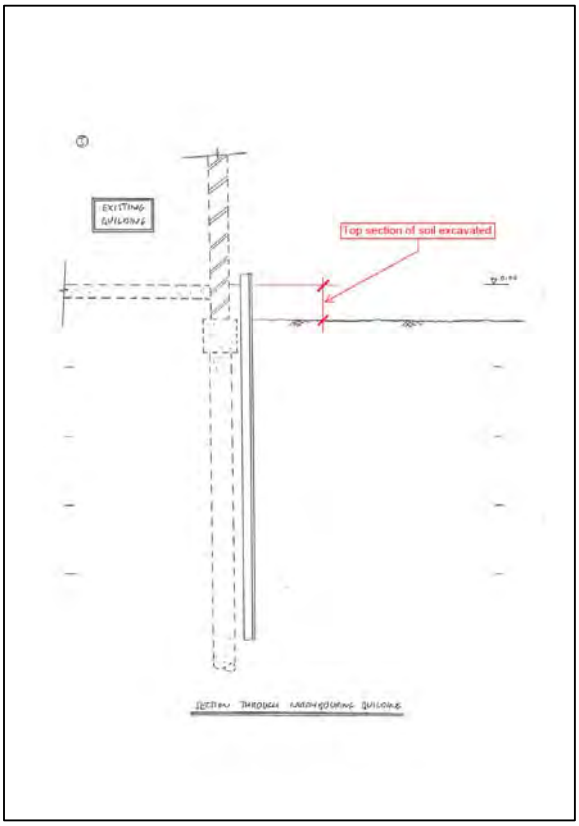
3.12. Step 11 (Removal of all Props): Any additional props are now removed.

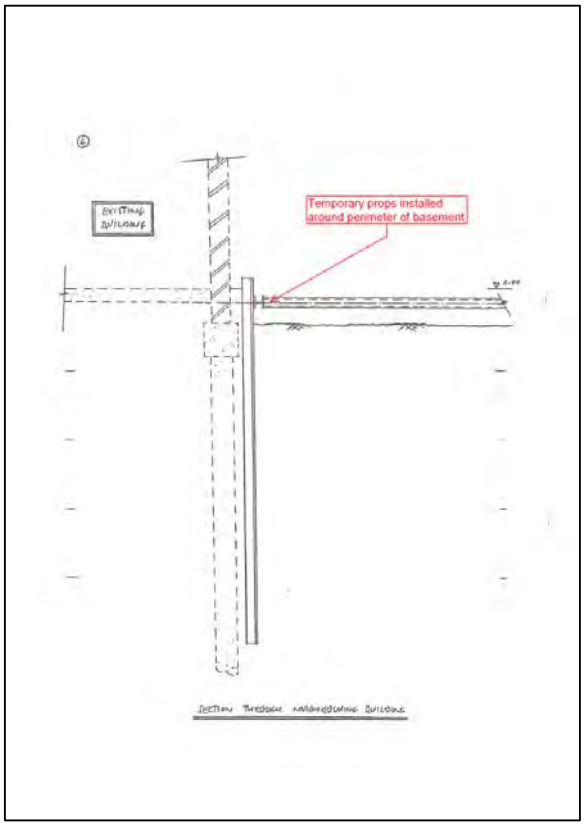
3.13. Step 12 (Following Construction Stages):

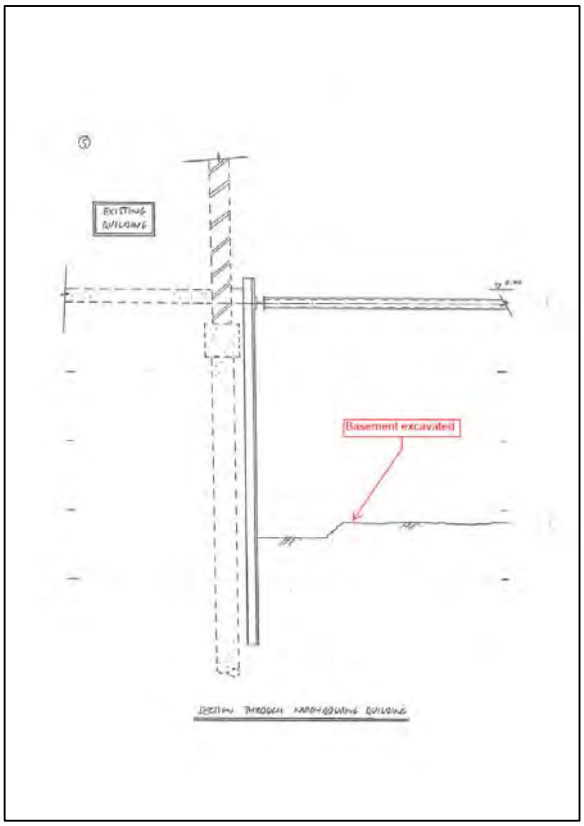
- Basement tanking system installed.
- Internal basement non-load bearing walls constructed.
- Upper floors and structure constructed.

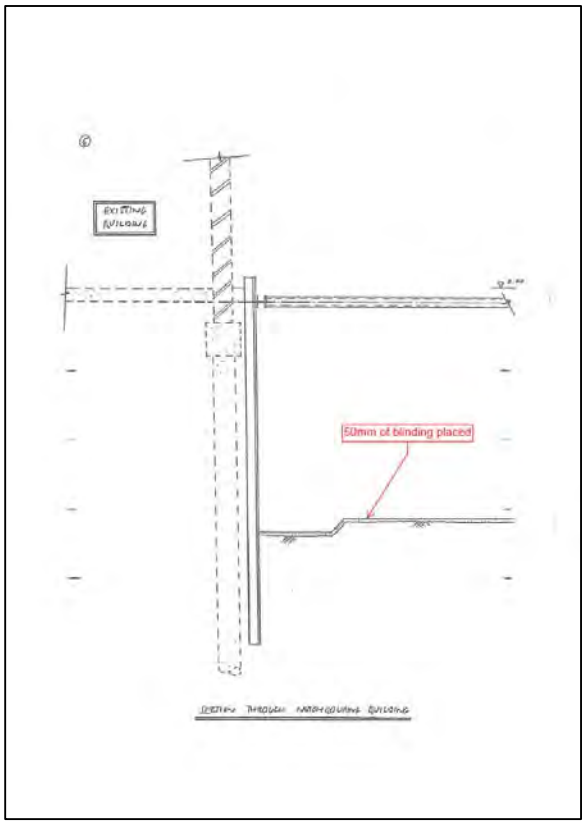

①
EXISTING BUILDING
Existing structure and foundations removed

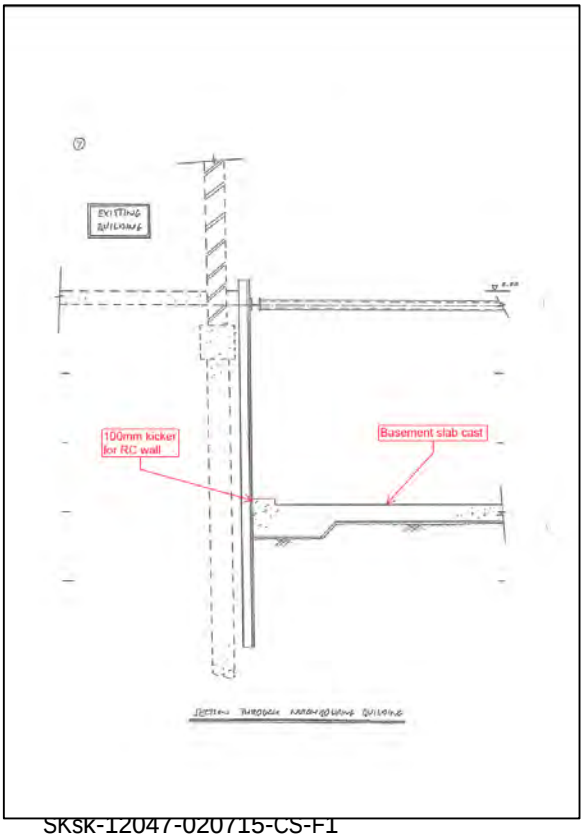

②
EXISTING BUILDING
Sheet piles installed

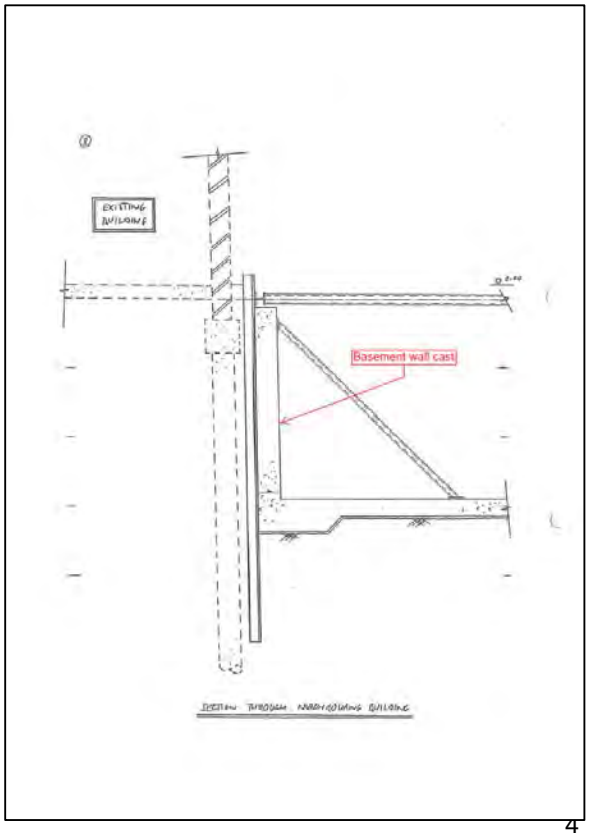

③
EXISTING BUILDING
Top section of soil excavated

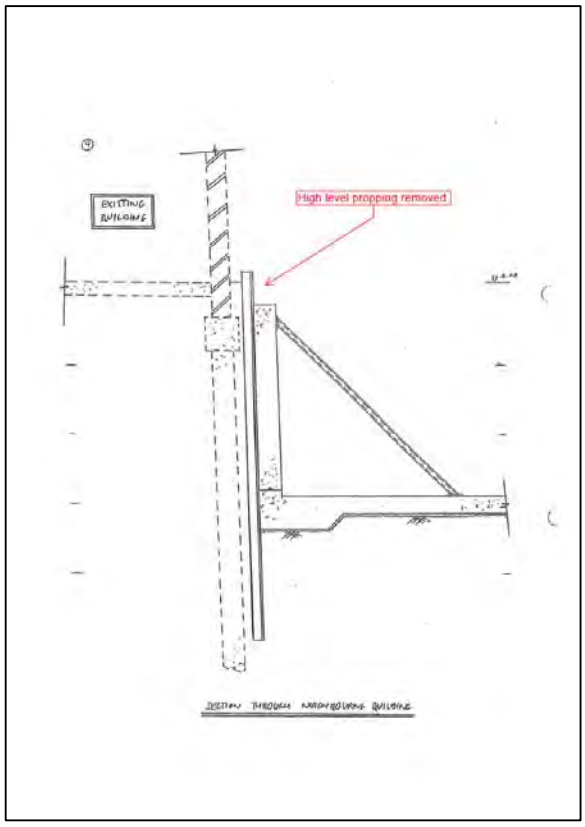

④
EXISTING BUILDING
Temporary props installed around perimeter of basement

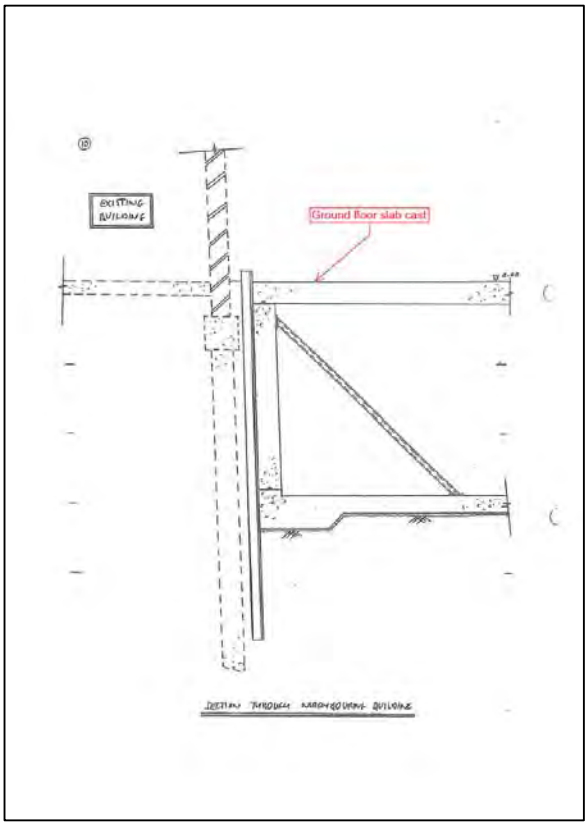

EXISTING BUILDING
Basement excavated

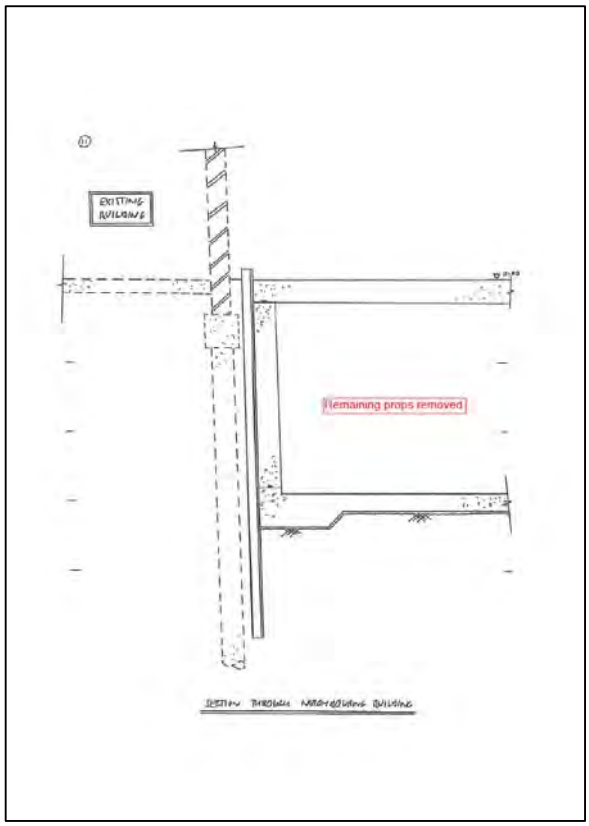

EXISTING BUILDING
50mm of blinding placed

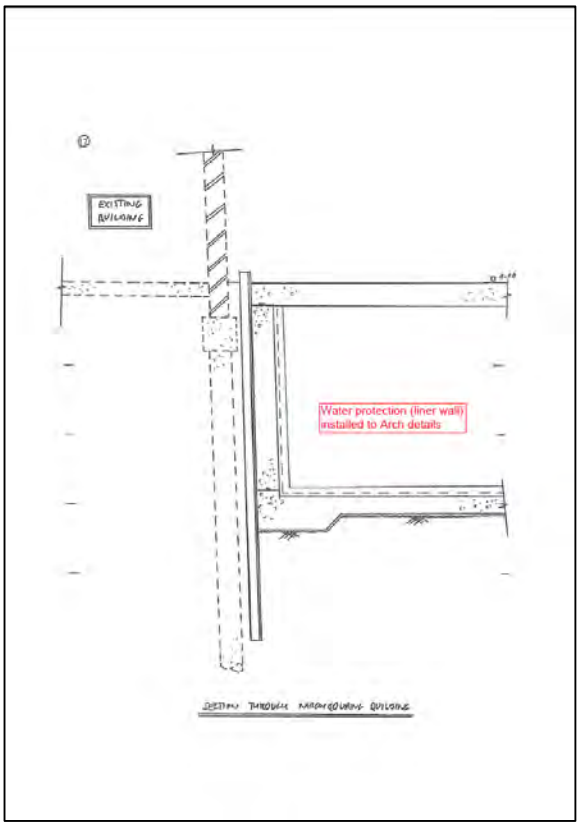

EXISTING BUILDING
100mm kicker for RC wall
Basement slab cast


EXISTING BUILDING
Basement wall cast


EXISTING BUILDING
High level propping removed


EXISTING BUILDING
Ground floor slab cast


EXISTING BUILDING
Remaining props removed


EXISTING BUILDING
Water protection (liner wall) installed to Arch details

## 4.0 WATER PROTECTION

4.1. All below ground water protection is to be to the Architects details. The basement forms part of a dwelling and so it is anticipated this will be classed as Grade 3 in accordance with BS 8102:2009. The tanking system will be an internal drained cavity to the Architects details.

## 5.0 LIMITATIONS ON MOVEMENT

5.1. In the area of the proposed basement, the site has a roadway to the south (Camden Mews) and east (Camden Park Road). A residential property is located to the immediate west (103 Camden Mews). Although the previously described sequence of works allows the propping and retaining wall to be assessed as a high stiffness system, which reduces the expected adjacent ground movements, we have assumed a medium stiffness. Additionally, although it is considered likely that 103 Camden Mews is piled, shallow foundations for the neighbouring property have been assumed for a ground movement assessment undertaken in line with guidance from CIRIA C580. These are both conservative assumption. Assuming a maximum excavation depth of c3m, horizontal and vertical deflections are assessed not to exceed approximately 9mm at the top of the sheet pile wall and 3mm at a distance of 9m behind the wall.

5.2. Any suggested surveys from CIRIA C580, such as pre-condition surveys, should be carried our prior to any construction works taking place.

5.3. The ground movement assessment (reported separately) confirms that ground movements can be limited to acceptable levels. This assessment should be updated once the foundations to 103 Camden Mews are known and the form of the retaining wall and the construction sequence are better known. We would suggest that movement to the existing surrounding ground should be limited as follows:

Roadways: Slight, in accordance with CIRIA C580 Table 2.5

5.4. Neighbouring Property: Slight, in accordance with CIRIA C580 Table 2.5. However, if 103 Camden Mews is founded on piles, then actual settlement of this structure due to the excavation of the basement is expected to be minimal.

## 6.0 BEARING PRESURES

6.1. Having carried out a scheme load take down, the bearing pressure under the raft slab at basement level will be approximately 60kN/$m^2$ (unfactored). This will be made up of 75% Dead Loads and 25% Imposed Loads. From the initial ground investigation, it is demonstrated that the founding stratum (below basement slab) has a safe net bearing capacity significantly in excess of the applied load.

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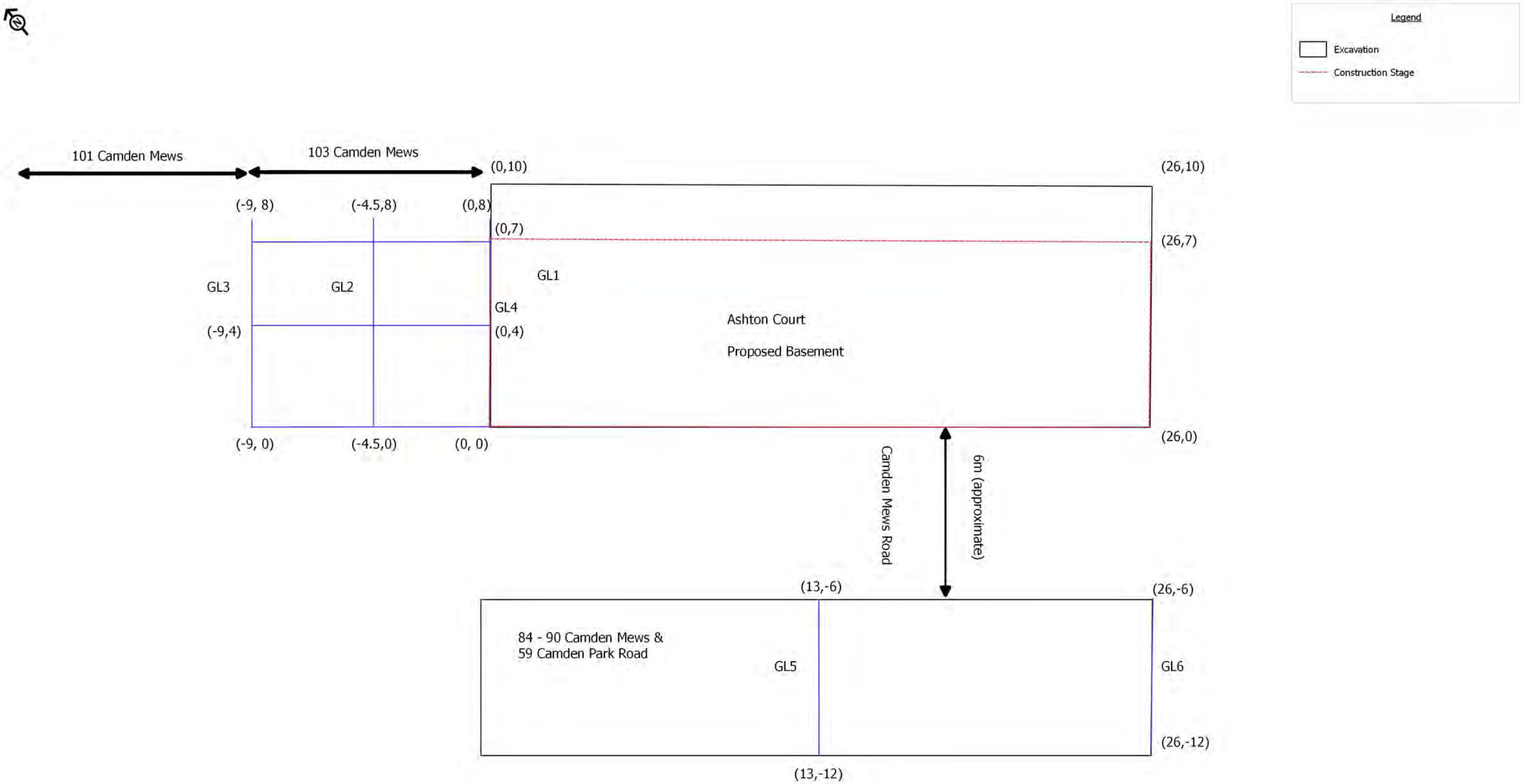
# APPENDIX C: PDISP ANALYSES

Contents




NTS

Ashton Court

Client: Origin Housing

Coordinates (X,Y) adopted in Pdisp analysis

Scale: NTS
CampbellReith OS Copyright: © Crown copyright. All rights reserved. Licence number 100020027

Job Number: 12047
Drawn by - Checked by: LB - FD
Drg No - Status/Revision: GIS009 - B
File location: N:\12000 - 12249\12047 L - Ashton Court\Project_Workspaces (pdf in Outputs)
Date (Revision History): 01/07/2015 (A, First Issue, 17/06/15, LB; B, Minor Changes, 01/07/15, LB)



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Table 1 - Ground Movement Assessment Input Data

| Area | Demolition(kN/m2) | Excavation Depth(m) | Excavation(kN/m2) | Centre x | Centre y |
|---|---|---|---|---|---|
| Ashton Court | -30 | 3 | -60 | 13 | 5 |
| Proposed Building | | | | | |
| Loaded Area | Centre x | Centre y | Dim x (m) | Dim y (m) | P (kN/m2) |
| Ashton Court | 13 | 3.5 | 26 | 7 | 60 |
| Neighbouring Properties | | | | | |
| | GL | $X_1$ | $Y_1$ | $X_2$ | $Y_2$ |
| 103 Camden Mews | GL1 | 0 | 0 | 0 | 8 |
| | GL2 | -4.5 | 0 | -4.5 | 8 |
| | GL3 | -9 | 0 | -9 | 8 |
| | GL4 | 0 | 4 | -9 | 4 |
| 84-90 Camden Mews & 59 Camden Park Road | GL5 | 13 | -6 | 13 | -12 |
| | GL6 | 26 | -6 | 26 | -12 |

| Dim x (m) | Dim y (m) |
|---|---|
| 26 | 10 |

| Depth (m AOD) |
|---|
| 42.65 |

| Depth (m AOD) |
|---|
| 44.75 |
| 44.75 |
| 44.75 |
| 44.75 |
| 44.75 |
| 44.75 |

## Notes
Eu=400Cu
Cu=70+6z

## Analysis Options
Analysis: Boussinesq
Global Poisson's ratio: 0.20
Maximum allowable ratio between values of E: 1.5
Horizontal rigid boundary level: 0.00 [m OD]
Displacements at area centroids calculated.

## Soil ProfilesSoil Profile

| Layer | Level at top | Number of intermediate displacement levels | Youngs Modulus Top | Youngs Modulus Btm | Poissons ratio | Non-linear curve |
|---|---|---|---|---|---|---|
| | [mOD] | | [kN/m²] | [kN/m²] | | |
| 1 | 45.400 | 2 | 5000.0 | 5000.0 | 0.50000 | None |
| 2 | 43.900 | 43 | 28000. | 131200. | 0.50000 | None |

## Soil Zones

| Zone | Name | X coordinates min [m] | X coordinates max [m] | Y coordinates min [m] | Y coordinates max [m] | Profile |
|---|---|---|---|---|---|---|
| 1 | SZ1 | -60.000 | 60.000 | -60.000 | 60.000 | Soil Profile |

## Non-linear Curve Coordinates - Non-linear Curve 1

| Point | Strain [%] | Factor |
|---|---|---|

## Load Data

| Load ref. | Name | Shape | Orientation of Plane | Load position: Centre of load (Global) X [m] | Y [m] | Z (level) [m] | 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 | Basement | Rectangular | Horizontal | 13.000 | 5.0000 | 42.650 | 0.0 | 26.000 | 10.000 | N/A | N/A | 1 | -90.000 | 0.0 | 0.0 |

## Displacement Data

| Ref. | Type | Name | Direction of Extrusion | Line/Line for extrusion: First point X [m] | First point Y [m] | First point Z(level) [m] | Second point X [m] | Second point Y [m] | Second point Z(level) [m] | No. of intrvls across extrusion/line | No. of intrvls along Extrusion Depth [m] | No. of intrvls along extrusion | Calculate | Show Detailed results |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Grid | BL | Global X | 0.0 | 0.0 | 42.650 | N/A | 10.000 | 42.650 | 10 | 26.000 | 26 | Yes | No |
| 2 | Line | GL1 | N/A | 0.0 | 0.0 | 44.750 | 0.0 | 8.0000 | 44.750 | 8 | N/A | N/A | Yes | No |
| 3 | Line | GL2 | N/A | -4.5000 | 0.0 | 44.750 | -4.5000 | 8.0000 | 44.750 | 8 | N/A | N/A | Yes | No |
| 4 | Line | GL3 | N/A | -9.0000 | 0.0 | 44.750 | -9.0000 | 8.0000 | 44.750 | 8 | N/A | N/A | Yes | No |
| 5 | Line | GL4 | N/A | 0.0 | 4.0000 | 44.750 | -9.0000 | 4.0000 | 44.750 | 9 | N/A | N/A | Yes | No |
| 6 | Line | GL5 | N/A | 13.000 | -6.0000 | 44.750 | 13.000 | -12.000 | 44.750 | 6 | N/A | N/A | Yes | No |
| 7 | Line | GL6 | N/A | 26.000 | -6.0000 | 44.750 | 26.000 | -12.000 | 44.750 | 6 | N/A | N/A | Yes | No |

## RESULTS FOR GRIDS

Analysis: Boussinesq
Global Poisson's ratio: 0.20
Horizontal rigid boundary level: 0.00 [m OD]

The maximum displacement difference between
Boussinesq method (-19.964mm) and Mindlin method (-15.515mm)
occurs at point X=13.000m Y=5.0000m Level 42.650mOD and is 4.4488mm

| Name | Location X [m] | Location Y [m] | Location Z[Level] [mOD] | Z [mm] | Stresses: Calc Level [mOD] | Vert Stress [kN/m²] | Sum Princ [kN/m²] | Vert Strain [-] |
|---|---|---|---|---|---|---|---|---|
| Basement | 13.00000 | 5.00000 | 42.65000 | -19.964 | 42.238 | -89.978 | -203.88 | -0.0010354 |
| BL | 0.00000 | 0.00000 | 42.65000 | -6.7342 | 42.238 | -22.499 | -52.483 | -235.36E-6 |
| | 1.00000 | 0.00000 | 42.65000 | -8.8092 | 42.238 | -44.446 | -92.967 | -632.83E-6 |
| | 2.00000 | 0.00000 | 42.65000 | -9.8331 | 42.238 | -44.920 | -99.341 | -555.19E-6 |
| | 3.00000 | 0.00000 | 42.65000 | -10.539 | 42.238 | -44.975 | -101.56 | -523.07E-6 |
| | 4.00000 | 0.00000 | 42.65000 | -11.061 | 42.238 | -44.989 | -102.64 | -506.67E-6 |
| | 5.00000 | 0.00000 | 42.65000 | -11.458 | 42.238 | -44.994 | -103.27 | -497.06E-6 |
| | 6.00000 | 0.00000 | 42.65000 | -11.766 | 42.238 | -44.996 | -103.67 | -490.94E-6 |
| | 7.00000 | 0.00000 | 42.65000 | -12.007 | 42.238 | -44.997 | -103.93 | -486.84E-6 |
| | 8.00000 | 0.00000 | 42.65000 | -12.193 | 42.238 | -44.998 | -104.11 | -484.02E-6 |
| | 9.00000 | 0.00000 | 42.65000 | -12.335 | 42.238 | -44.998 | -104.24 | -482.05E-6 |
| | 10.00000 | 0.00000 | 42.65000 | -12.440 | 42.238 | -44.998 | -104.33 | -480.69E-6 |
| | 11.00000 | 0.00000 | 42.65000 | -12.512 | 42.238 | -44.998 | -104.39 | -479.81E-6 |
| | 12.00000 | 0.00000 | 42.65000 | -12.554 | 42.238 | -44.998 | -104.42 | -479.31E-6 |
| | 13.00000 | 0.00000 | 42.65000 | -12.567 | 42.238 | -44.998 | -104.43 | -479.15E-6 |
| | 14.00000 | 0.00000 | 42.65000 | -12.554 | 42.238 | -44.998 | -104.42 | -479.31E-6 |
| | 15.00000 | 0.00000 | 42.65000 | -12.512 | 42.238 | -44.998 | -104.39 | -479.81E-6 |
| | 16.00000 | 0.00000 | 42.65000 | -12.440 | 42.238 | -44.998 | -104.33 | -480.69E-6 |
| | 17.00000 | 0.00000 | 42.65000 | -12.335 | 42.238 | -44.998 | -104.24 | -482.05E-6 |
| | 18.00000 | 0.00000 | 42.65000 | -12.193 | 42.238 | -44.998 | -104.11 | -484.02E-6 |
| | 19.00000 | 0.00000 | 42.65000 | -12.007 | 42.238 | -44.997 | -103.93 | -486.84E-6 |
| | 20.00000 | 0.00000 | 42.65000 | -11.766 | 42.238 | -44.996 | -103.67 | -490.94E-6 |
| | 21.00000 | 0.00000 | 42.65000 | -11.458 | 42.238 | -44.994 | -103.27 | -497.06E-6 |
| | 22.00000 | 0.00000 | 42.65000 | -11.061 | 42.238 | -44.989 | -102.64 | -506.67E-6 |
| | 23.00000 | 0.00000 | 42.65000 | -10.539 | 42.238 | -44.975 | -101.56 | -523.07E-6 |
| | 24.00000 | 0.00000 | 42.65000 | -9.8331 | 42.238 | -44.920 | -99.341 | -555.19E-6 |
| | 25.00000 | 0.00000 | 42.65000 | -8.8092 | 42.238 | -44.446 | -92.967 | -632.83E-6 |
| | 26.00000 | 0.00000 | 42.65000 | -6.7342 | 42.238 | -22.499 | -52.483 | -235.36E-6 |
| | 0.00000 | 1.00000 | 42.65000 | -8.7043 | 42.238 | -44.446 | -92.888 | -634.07E-6 |
| | 1.00000 | 1.00000 | 42.65000 | -11.981 | 42.238 | -87.929 | -168.60 | -0.0014921 |
| | 2.00000 | 1.00000 | 42.65000 | -13.320 | 42.238 | -88.774 | -178.65 | -0.0013743 |
| | 3.00000 | 1.00000 | 42.65000 | -14.183 | 42.238 | -88.860 | -181.72 | -0.0013302 |
| | 4.00000 | 1.00000 | 42.65000 | -14.794 | 42.238 | -88.879 | -183.12 | -0.0013092 |
| | 5.00000 | 1.00000 | 42.65000 | -15.249 | 42.238 | -88.886 | -183.89 | -0.0012975 |
| | 6.00000 | 1.00000 | 42.65000 | -15.595 | 42.238 | -88.889 | -184.36 | -0.0012902 |
| | 7.00000 | 1.00000 | 42.65000 | -15.861 | 42.238 | -88.890 | -184.66 | -0.0012855 |
| | 8.00000 | 1.00000 | 42.65000 | -16.066 | 42.238 | -88.891 | -184.87 | -0.0012823 |
| | 9.00000 | 1.00000 | 42.65000 | -16.220 | 42.238 | -88.891 | -185.01 | -0.0012801 |
| | 10.00000 | 1.00000 | 42.65000 | -16.334 | 42.238 | -88.891 | -185.11 | -0.0012786 |
| | 11.00000 | 1.00000 | 42.65000 | -16.411 | 42.238 | -88.891 | -185.17 | -0.0012776 |
| | 12.00000 | 1.00000 | 42.65000 | -16.456 | 42.238 | -88.892 | -185.20 | -0.0012771 |
| | 13.00000 | 1.00000 | 42.65000 | -16.471 | 42.238 | -88.892 | -185.22 | -0.0012769 |
| | 14.00000 | 1.00000 | 42.65000 | -16.456 | 42.238 | -88.892 | -185.20 | -0.0012771 |
| | 15.00000 | 1.00000 | 42.65000 | -16.411 | 42.238 | -88.891 | -185.17 | -0.0012776 |
| | 16.00000 | 1.00000 | 42.65000 | -16.334 | 42.238 | -88.891 | -185.11 | -0.0012786 |
| | 17.00000 | 1.00000 | 42.65000 | -16.220 | 42.238 | -88.891 | -185.01 | -0.0012801 |
| | 18.00000 | 1.00000 | 42.65000 | -16.066 | 42.238 | -88.891 | -184.87 | -0.0012823 |
| | 19.00000 | 1.00000 | 42.65000 | -15.861 | 42.238 | -88.890 | -184.66 | -0.0012855 |
| | 20.00000 | 1.00000 | 42.65000 | -15.595 | 42.238 | -88.889 | -184.36 | -0.0012902 |
| | 21.00000 | 1.00000 | 42.65000 | -15.249 | 42.238 | -88.886 | -183.89 | -0.0012975 |
| | 22.00000 | 1.00000 | 42.65000 | -14.794 | 42.238 | -88.879 | -183.12 | -0.0013092 |

| Name | Location | | | | Stresses | | | |
|---|---|---|---|---|---|---|---|---|
| | X [m] | Y [m] | Z[Level] [mOD] | Z [mm] | Calc Level [mOD] | Vert Stress [kN/m²] | Sum Princ [kN/m²] | Vert Strain [-] |
| | 23.00000 | 1.00000 | 42.65000 | -14.183 | 42.238 | -88.860 | -181.72 | -0.0013302 |
| | 24.00000 | 1.00000 | 42.65000 | -13.320 | 42.238 | -88.774 | -178.65 | -0.0013743 |
| | 25.00000 | 1.00000 | 42.65000 | -11.981 | 42.238 | -87.929 | -168.60 | -0.0014921 |
| | 26.00000 | 1.00000 | 42.65000 | -8.7043 | 42.238 | -44.446 | -92.888 | -634.07E-6 |
| | 0.00000 | 2.00000 | 42.65000 | -9.5885 | 42.238 | -44.919 | -99.143 | -558.27E-6 |
| | 1.00000 | 2.00000 | 42.65000 | -13.175 | 42.238 | -88.774 | -178.53 | -0.0013762 |
| | 2.00000 | 2.00000 | 42.65000 | -14.717 | 42.238 | -89.699 | -190.08 | -0.0012387 |
| | 3.00000 | 2.00000 | 42.65000 | -15.701 | 42.238 | -89.800 | -193.70 | -0.0011866 |
| | 4.00000 | 2.00000 | 42.65000 | -16.388 | 42.238 | -89.824 | -195.34 | -0.0011620 |
| | 5.00000 | 2.00000 | 42.65000 | -16.891 | 42.238 | -89.831 | -196.23 | -0.0011485 |
| | 6.00000 | 2.00000 | 42.65000 | -17.270 | 42.238 | -89.835 | -196.76 | -0.0011403 |
| | 7.00000 | 2.00000 | 42.65000 | -17.558 | 42.238 | -89.836 | -197.10 | -0.0011350 |
| | 8.00000 | 2.00000 | 42.65000 | -17.778 | 42.238 | -89.837 | -197.33 | -0.0011314 |
| | 9.00000 | 2.00000 | 42.65000 | -17.944 | 42.238 | -89.838 | -197.49 | -0.0011290 |
| | 10.00000 | 2.00000 | 42.65000 | -18.064 | 42.238 | -89.838 | -197.59 | -0.0011274 |
| | 11.00000 | 2.00000 | 42.65000 | -18.146 | 42.238 | -89.838 | -197.66 | -0.0011264 |
| | 12.00000 | 2.00000 | 42.65000 | -18.194 | 42.238 | -89.838 | -197.70 | -0.0011258 |
| | 13.00000 | 2.00000 | 42.65000 | -18.210 | 42.238 | -89.838 | -197.71 | -0.0011256 |
| | 14.00000 | 2.00000 | 42.65000 | -18.194 | 42.238 | -89.838 | -197.70 | -0.0011258 |
| | 15.00000 | 2.00000 | 42.65000 | -18.146 | 42.238 | -89.838 | -197.66 | -0.0011264 |
| | 16.00000 | 2.00000 | 42.65000 | -18.064 | 42.238 | -89.838 | -197.59 | -0.0011274 |
| | 17.00000 | 2.00000 | 42.65000 | -17.944 | 42.238 | -89.838 | -197.49 | -0.0011290 |
| | 18.00000 | 2.00000 | 42.65000 | -17.778 | 42.238 | -89.837 | -197.33 | -0.0011314 |
| | 19.00000 | 2.00000 | 42.65000 | -17.558 | 42.238 | -89.836 | -197.10 | -0.0011350 |
| | 20.00000 | 2.00000 | 42.65000 | -17.270 | 42.238 | -89.835 | -196.76 | -0.0011403 |
| | 21.00000 | 2.00000 | 42.65000 | -16.891 | 42.238 | -89.831 | -196.23 | -0.0011485 |
| | 22.00000 | 2.00000 | 42.65000 | -16.388 | 42.238 | -89.824 | -195.34 | -0.0011620 |
| | 23.00000 | 2.00000 | 42.65000 | -15.701 | 42.238 | -89.800 | -193.70 | -0.0011866 |
| | 24.00000 | 2.00000 | 42.65000 | -14.717 | 42.238 | -89.699 | -190.08 | -0.0012387 |
| | 25.00000 | 2.00000 | 42.65000 | -13.175 | 42.238 | -88.774 | -178.53 | -0.0013762 |
| | 26.00000 | 2.00000 | 42.65000 | -9.5885 | 42.238 | -44.919 | -99.143 | -558.27E-6 |
| | 0.00000 | 3.00000 | 42.65000 | -10.112 | 42.238 | -44.974 | -101.18 | -528.87E-6 |
| | 1.00000 | 3.00000 | 42.65000 | -13.842 | 42.238 | -88.859 | -181.40 | -0.0013352 |
| | 2.00000 | 3.00000 | 42.65000 | -15.498 | 42.238 | -89.800 | -193.50 | -0.0011897 |
| | 3.00000 | 3.00000 | 42.65000 | -16.562 | 42.238 | -89.906 | -197.42 | -0.0011333 |
| | 4.00000 | 3.00000 | 42.65000 | -17.302 | 42.238 | -89.931 | -199.21 | -0.0011064 |
| | 5.00000 | 3.00000 | 42.65000 | -17.842 | 42.238 | -89.940 | -200.18 | -0.0010916 |
| | 6.00000 | 3.00000 | 42.65000 | -18.245 | 42.238 | -89.944 | -200.76 | -0.0010827 |
| | 7.00000 | 3.00000 | 42.65000 | -18.551 | 42.238 | -89.945 | -201.13 | -0.0010770 |
| | 8.00000 | 3.00000 | 42.65000 | -18.782 | 42.238 | -89.946 | -201.37 | -0.0010732 |
| | 9.00000 | 3.00000 | 42.65000 | -18.956 | 42.238 | -89.947 | -201.54 | -0.0010706 |
| | 10.00000 | 3.00000 | 42.65000 | -19.082 | 42.238 | -89.947 | -201.65 | -0.0010689 |
| | 11.00000 | 3.00000 | 42.65000 | -19.168 | 42.238 | -89.947 | -201.72 | -0.0010678 |
| | 12.00000 | 3.00000 | 42.65000 | -19.218 | 42.238 | -89.947 | -201.76 | -0.0010672 |
| | 13.00000 | 3.00000 | 42.65000 | -19.234 | 42.238 | -89.947 | -201.77 | -0.0010670 |
| | 14.00000 | 3.00000 | 42.65000 | -19.218 | 42.238 | -89.947 | -201.76 | -0.0010672 |
| | 15.00000 | 3.00000 | 42.65000 | -19.168 | 42.238 | -89.947 | -201.72 | -0.0010678 |
| | 16.00000 | 3.00000 | 42.65000 | -19.082 | 42.238 | -89.947 | -201.65 | -0.0010689 |
| | 17.00000 | 3.00000 | 42.65000 | -18.956 | 42.238 | -89.947 | -201.54 | -0.0010706 |
| | 18.00000 | 3.00000 | 42.65000 | -18.782 | 42.238 | -89.946 | -201.37 | -0.0010732 |
| | 19.00000 | 3.00000 | 42.65000 | -18.551 | 42.238 | -89.945 | -201.13 | -0.0010770 |
| | 20.00000 | 3.00000 | 42.65000 | -18.245 | 42.238 | -89.944 | -200.76 | -0.0010827 |
| | 21.00000 | 3.00000 | 42.65000 | -17.842 | 42.238 | -89.940 | -200.18 | -0.0010916 |
| | 22.00000 | 3.00000 | 42.65000 | -17.302 | 42.238 | -89.931 | -199.21 | -0.0011064 |
| | 23.00000 | 3.00000 | 42.65000 | -16.562 | 42.238 | -89.906 | -197.42 | -0.0011333 |
| | 24.00000 | 3.00000 | 42.65000 | -15.498 | 42.238 | -89.800 | -193.50 | -0.0011897 |
| | 25.00000 | 3.00000 | 42.65000 | -13.842 | 42.238 | -88.859 | -181.40 | -0.0013352 |
| | 26.00000 | 3.00000 | 42.65000 | -10.112 | 42.238 | -44.974 | -101.18 | -528.87E-6 |
| | 0.00000 | 4.00000 | 42.65000 | -10.395 | 42.238 | -44.987 | -102.01 | -516.50E-6 |
| | 1.00000 | 4.00000 | 42.65000 | -14.194 | 42.238 | -88.877 | -182.50 | -0.0013188 |
| | 2.00000 | 4.00000 | 42.65000 | -15.908 | 42.238 | -89.821 | -194.81 | -0.0011702 |
| | 3.00000 | 4.00000 | 42.65000 | -17.016 | 42.238 | -89.930 | -198.87 | -0.0011117 |
| | 4.00000 | 4.00000 | 42.65000 | -17.788 | 42.238 | -89.956 | -200.74 | -0.0010836 |
| | 5.00000 | 4.00000 | 42.65000 | -18.350 | 42.238 | -89.965 | -201.76 | -0.0010681 |
| | 6.00000 | 4.00000 | 42.65000 | -18.769 | 42.238 | -89.969 | -202.37 | -0.0010587 |
| | 7.00000 | 4.00000 | 42.65000 | -19.085 | 42.238 | -89.971 | -202.75 | -0.0010528 |
| | 8.00000 | 4.00000 | 42.65000 | -19.324 | 42.238 | -89.972 | -203.01 | -0.0010488 |
| | 9.00000 | 4.00000 | 42.65000 | -19.502 | 42.238 | -89.972 | -203.18 | -0.0010461 |
| | 10.00000 | 4.00000 | 42.65000 | -19.632 | 42.238 | -89.972 | -203.29 | -0.0010443 |
| | 11.00000 | 4.00000 | 42.65000 | -19.720 | 42.238 | -89.973 | -203.37 | -0.0010432 |
| | 12.00000 | 4.00000 | 42.65000 | -19.771 | 42.238 | -89.973 | -203.41 | -0.0010426 |
| | 13.00000 | 4.00000 | 42.65000 | -19.788 | 42.238 | -89.973 | -203.42 | -0.0010424 |
| | 14.00000 | 4.00000 | 42.65000 | -19.771 | 42.238 | -89.973 | -203.41 | -0.0010426 |
| | 15.00000 | 4.00000 | 42.65000 | -19.720 | 42.238 | -89.973 | -203.37 | -0.0010432 |
| | 16.00000 | 4.00000 | 42.65000 | -19.632 | 42.238 | -89.972 | -203.29 | -0.0010443 |
| | 17.00000 | 4.00000 | 42.65000 | -19.502 | 42.238 | -89.972 | -203.18 | -0.0010461 |
| | 18.00000 | 4.00000 | 42.65000 | -19.324 | 42.238 | -89.972 | -203.01 | -0.0010488 |
| | 19.00000 | 4.00000 | 42.65000 | -19.085 | 42.238 | -89.971 | -202.75 | -0.0010528 |
| | 20.00000 | 4.00000 | 42.65000 | -18.769 | 42.238 | -89.969 | -202.37 | -0.0010587 |
| | 21.00000 | 4.00000 | 42.65000 | -18.350 | 42.238 | -89.965 | -201.76 | -0.0010681 |
| | 22.00000 | 4.00000 | 42.65000 | -17.788 | 42.238 | -89.956 | -200.74 | -0.0010836 |
| | 23.00000 | 4.00000 | 42.65000 | -17.016 | 42.238 | -89.930 | -198.87 | -0.0011117 |
| | 24.00000 | 4.00000 | 42.65000 | -15.908 | 42.238 | -89.821 | -194.81 | -0.0011702 |
| | 25.00000 | 4.00000 | 42.65000 | -14.194 | 42.238 | -88.877 | -182.50 | -0.0013188 |
| | 26.00000 | 4.00000 | 42.65000 | -10.395 | 42.238 | -44.987 | -102.01 | -516.50E-6 |
| | 0.00000 | 5.00000 | 42.65000 | -10.486 | 42.238 | -44.989 | -102.24 | -512.98E-6 |
| | 1.00000 | 5.00000 | 42.65000 | -14.305 | 42.238 | -88.881 | -182.80 | -0.0013142 |
| | 2.00000 | 5.00000 | 42.65000 | -16.037 | 42.238 | -89.826 | -195.17 | -0.0011648 |
| | 3.00000 | 5.00000 | 42.65000 | -17.158 | 42.238 | -89.935 | -199.27 | -0.0011057 |
| | 4.00000 | 5.00000 | 42.65000 | -17.941 | 42.238 | -89.962 | -201.16 | -0.0010772 |
| | 5.00000 | 5.00000 | 42.65000 | -18.510 | 42.238 | -89.971 | -202.20 | -0.0010614 |
| | 6.00000 | 5.00000 | 42.65000 | -18.934 | 42.238 | -89.974 | -202.81 | -0.0010520 |
| | 7.00000 | 5.00000 | 42.65000 | -19.254 | 42.238 | -89.976 | -203.21 | -0.0010459 |
| | 8.00000 | 5.00000 | 42.65000 | -19.495 | 42.238 | -89.977 | -203.46 | -0.0010419 |
| | 9.00000 | 5.00000 | 42.65000 | -19.676 | 42.238 | -89.978 | -203.64 | -0.0010392 |
| | 10.00000 | 5.00000 | 42.65000 | -19.807 | 42.238 | -89.978 | -203.75 | -0.0010374 |
| | 11.00000 | 5.00000 | 42.65000 | -19.896 | 42.238 | -89.978 | -203.83 | -0.0010362 |
| | 12.00000 | 5.00000 | 42.65000 | -19.947 | 42.238 | -89.978 | -203.87 | -0.0010356 |
| | 13.00000 | 5.00000 | 42.65000 | -19.964 | 42.238 | -89.978 | -203.88 | -0.0010354 |
| | 14.00000 | 5.00000 | 42.65000 | -19.947 | 42.238 | -89.978 | -203.87 | -0.0010356 |
| | 15.00000 | 5.00000 | 42.65000 | -19.896 | 42.238 | -89.978 | -203.83 | -0.0010362 |
| | 16.00000 | 5.00000 | 42.65000 | -19.807 | 42.238 | -89.978 | -203.75 | -0.0010374 |
| | 17.00000 | 5.00000 | 42.65000 | -19.676 | 42.238 | -89.978 | -203.64 | -0.0010392 |
| | 18.00000 | 5.00000 | 42.65000 | -19.495 | 42.238 | -89.977 | -203.46 | -0.0010419 |
| | 19.00000 | 5.00000 | 42.65000 | -19.254 | 42.238 | -89.976 | -203.21 | -0.0010459 |
| | 20.00000 | 5.00000 | 42.65000 | -18.934 | 42.238 | -89.974 | -202.81 | -0.0010520 |
| | 21.00000 | 5.00000 | 42.65000 | -18.510 | 42.238 | -89.971 | -202.20 | -0.0010614 |
| | 22.00000 | 5.00000 | 42.65000 | -17.941 | 42.238 | -89.962 | -201.16 | -0.0010772 |
| | 23.00000 | 5.00000 | 42.65000 | -17.158 | 42.238 | -89.935 | -199.27 | -0.0011057 |
| | 24.00000 | 5.00000 | 42.65000 | -16.037 | 42.238 | -89.826 | -195.17 | -0.0011648 |
| | 25.00000 | 5.00000 | 42.65000 | -14.305 | 42.238 | -88.881 | -182.80 | -0.0013142 |
| | 26.00000 | 5.00000 | 42.65000 | -10.486 | 42.238 | -44.989 | -102.24 | -512.98E-6 |
| | 0.00000 | 6.00000 | 42.65000 | -10.395 | 42.238 | -44.987 | -102.01 | -516.50E-6 |
| | 1.00000 | 6.00000 | 42.65000 | -14.194 | 42.238 | -88.877 | -182.50 | -0.0013188 |
| | 2.00000 | 6.00000 | 42.65000 | -15.908 | 42.238 | -89.821 | -194.81 | -0.0011702 |
| | 3.00000 | 6.00000 | 42.65000 | -17.016 | 42.238 | -89.930 | -198.87 | -0.0011117 |
| | 4.00000 | 6.00000 | 42.65000 | -17.788 | 42.238 | -89.956 | -200.74 | -0.0010836 |
| | 5.00000 | 6.00000 | 42.65000 | -18.350 | 42.238 | -89.965 | -201.76 | -0.0010681 |
| | 6.00000 | 6.00000 | 42.65000 | -18.769 | 42.238 | -89.969 | -202.37 | -0.0010587 |
| | 7.00000 | 6.00000 | 42.65000 | -19.085 | 42.238 | -89.971 | -202.75 | -0.0010528 |
| | 8.00000 | 6.00000 | 42.65000 | -19.324 | 42.238 | -89.972 | -203.01 | -0.0010488 |
| | 9.00000 | 6.00000 | 42.65000 | -19.502 | 42.238 | -89.972 | -203.18 | -0.0010461 |
| | 10.00000 | 6.00000 | 42.65000 | -19.632 | 42.238 | -89.972 | -203.29 | -0.0010443 |
| | 11.00000 | 6.00000 | 42.65000 | -19.720 | 42.238 | -89.973 | -203.37 | -0.0010432 |
| | 12.00000 | 6.00000 | 42.65000 | -19.771 | 42.238 | -89.973 | -203.41 | -0.0010426 |
| | 13.00000 | 6.00000 | 42.65000 | -19.788 | 42.238 | -89.973 | -203.42 | -0.0010424 |
| | 14.00000 | 6.00000 | 42.65000 | -19.771 | 42.238 | -89.973 | -203.41 | -0.0010426 |
| | 15.00000 | 6.00000 | 42.65000 | -19.720 | 42.238 | -89.973 | -203.37 | -0.0010432 |
| | 16.00000 | 6.00000 | 42.65000 | -19.632 | 42.238 | -89.972 | -203.29 | -0.0010443 |
| | 17.00000 | 6.00000 | 42.65000 | -19.502 | 42.238 | -89.972 | -203.18 | -0.0010461 |

| Name | Location X [m] | Y [m] | Z[Level] [mOD] | Z [mm] | Calc Level [mOD] | Stresses Vert Stress [kN/m²] | Sum Princ [kN/m²] | Vert Strain [-] |
|---|---|---|---|---|---|---|---|---|
| | 18.00000 | 6.00000 | 42.65000 | -19.324 | 42.238 | -89.972 | -203.01 | -0.0010488 |
| | 19.00000 | 6.00000 | 42.65000 | -19.085 | 42.238 | -89.971 | -202.75 | -0.0010528 |
| | 20.00000 | 6.00000 | 42.65000 | -18.769 | 42.238 | -89.969 | -202.37 | -0.0010587 |
| | 21.00000 | 6.00000 | 42.65000 | -18.350 | 42.238 | -89.965 | -201.76 | -0.0010681 |
| | 22.00000 | 6.00000 | 42.65000 | -17.788 | 42.238 | -89.956 | -200.74 | -0.0010836 |
| | 23.00000 | 6.00000 | 42.65000 | -17.016 | 42.238 | -89.930 | -198.87 | -0.0011117 |
| | 24.00000 | 6.00000 | 42.65000 | -15.908 | 42.238 | -89.821 | -194.81 | -0.0011702 |
| | 25.00000 | 6.00000 | 42.65000 | -14.194 | 42.238 | -88.877 | -182.50 | -0.0013188 |
| | 26.00000 | 6.00000 | 42.65000 | -10.395 | 42.238 | -44.987 | -102.01 | -516.50E-6 |
| | 0.00000 | 7.00000 | 42.65000 | -10.112 | 42.238 | -44.974 | -101.18 | -528.87E-6 |
| | 1.00000 | 7.00000 | 42.65000 | -13.842 | 42.238 | -88.859 | -181.40 | -0.0013352 |
| | 2.00000 | 7.00000 | 42.65000 | -15.498 | 42.238 | -89.800 | -193.50 | -0.0011897 |
| | 3.00000 | 7.00000 | 42.65000 | -16.562 | 42.238 | -89.906 | -197.42 | -0.0011333 |
| | 4.00000 | 7.00000 | 42.65000 | -17.302 | 42.238 | -89.931 | -199.21 | -0.0011064 |
| | 5.00000 | 7.00000 | 42.65000 | -17.842 | 42.238 | -89.940 | -200.18 | -0.0010916 |
| | 6.00000 | 7.00000 | 42.65000 | -18.245 | 42.238 | -89.944 | -200.76 | -0.0010827 |
| | 7.00000 | 7.00000 | 42.65000 | -18.551 | 42.238 | -89.945 | -201.13 | -0.0010770 |
| | 8.00000 | 7.00000 | 42.65000 | -18.782 | 42.238 | -89.946 | -201.37 | -0.0010732 |
| | 9.00000 | 7.00000 | 42.65000 | -18.956 | 42.238 | -89.947 | -201.54 | -0.0010706 |
| | 10.00000 | 7.00000 | 42.65000 | -19.082 | 42.238 | -89.947 | -201.65 | -0.0010689 |
| | 11.00000 | 7.00000 | 42.65000 | -19.168 | 42.238 | -89.947 | -201.72 | -0.0010678 |
| | 12.00000 | 7.00000 | 42.65000 | -19.218 | 42.238 | -89.947 | -201.76 | -0.0010672 |
| | 13.00000 | 7.00000 | 42.65000 | -19.234 | 42.238 | -89.947 | -201.77 | -0.0010670 |
| | 14.00000 | 7.00000 | 42.65000 | -19.218 | 42.238 | -89.947 | -201.76 | -0.0010672 |
| | 15.00000 | 7.00000 | 42.65000 | -19.168 | 42.238 | -89.947 | -201.72 | -0.0010678 |
| | 16.00000 | 7.00000 | 42.65000 | -19.082 | 42.238 | -89.947 | -201.65 | -0.0010689 |
| | 17.00000 | 7.00000 | 42.65000 | -18.956 | 42.238 | -89.947 | -201.54 | -0.0010706 |
| | 18.00000 | 7.00000 | 42.65000 | -18.782 | 42.238 | -89.946 | -201.37 | -0.0010732 |
| | 19.00000 | 7.00000 | 42.65000 | -18.551 | 42.238 | -89.945 | -201.13 | -0.0010770 |
| | 20.00000 | 7.00000 | 42.65000 | -18.245 | 42.238 | -89.944 | -200.76 | -0.0010827 |
| | 21.00000 | 7.00000 | 42.65000 | -17.842 | 42.238 | -89.940 | -200.18 | -0.0010916 |
| | 22.00000 | 7.00000 | 42.65000 | -17.302 | 42.238 | -89.931 | -199.21 | -0.0011064 |
| | 23.00000 | 7.00000 | 42.65000 | -16.562 | 42.238 | -89.906 | -197.42 | -0.0011333 |
| | 24.00000 | 7.00000 | 42.65000 | -15.498 | 42.238 | -89.800 | -193.50 | -0.0011897 |
| | 25.00000 | 7.00000 | 42.65000 | -13.842 | 42.238 | -88.859 | -181.40 | -0.0013352 |
| | 26.00000 | 7.00000 | 42.65000 | -10.112 | 42.238 | -44.974 | -101.18 | -528.87E-6 |
| | 0.00000 | 8.00000 | 42.65000 | -9.5885 | 42.238 | -44.919 | -99.143 | -558.27E-6 |
| | 1.00000 | 8.00000 | 42.65000 | -13.175 | 42.238 | -88.774 | -178.53 | -0.0013762 |
| | 2.00000 | 8.00000 | 42.65000 | -14.717 | 42.238 | -89.699 | -190.08 | -0.0012387 |
| | 3.00000 | 8.00000 | 42.65000 | -15.701 | 42.238 | -89.800 | -193.70 | -0.0011866 |
| | 4.00000 | 8.00000 | 42.65000 | -16.388 | 42.238 | -89.824 | -195.34 | -0.0011620 |
| | 5.00000 | 8.00000 | 42.65000 | -16.891 | 42.238 | -89.831 | -196.23 | -0.0011485 |
| | 6.00000 | 8.00000 | 42.65000 | -17.270 | 42.238 | -89.835 | -196.76 | -0.0011403 |
| | 7.00000 | 8.00000 | 42.65000 | -17.558 | 42.238 | -89.836 | -197.10 | -0.0011350 |
| | 8.00000 | 8.00000 | 42.65000 | -17.778 | 42.238 | -89.837 | -197.33 | -0.0011314 |
| | 9.00000 | 8.00000 | 42.65000 | -17.944 | 42.238 | -89.838 | -197.49 | -0.0011290 |
| | 10.00000 | 8.00000 | 42.65000 | -18.064 | 42.238 | -89.838 | -197.59 | -0.0011274 |
| | 11.00000 | 8.00000 | 42.65000 | -18.146 | 42.238 | -89.838 | -197.66 | -0.0011264 |
| | 12.00000 | 8.00000 | 42.65000 | -18.194 | 42.238 | -89.838 | -197.70 | -0.0011258 |
| | 13.00000 | 8.00000 | 42.65000 | -18.210 | 42.238 | -89.838 | -197.71 | -0.0011256 |
| | 14.00000 | 8.00000 | 42.65000 | -18.194 | 42.238 | -89.838 | -197.70 | -0.0011258 |
| | 15.00000 | 8.00000 | 42.65000 | -18.146 | 42.238 | -89.838 | -197.66 | -0.0011264 |
| | 16.00000 | 8.00000 | 42.65000 | -18.064 | 42.238 | -89.838 | -197.59 | -0.0011274 |
| | 17.00000 | 8.00000 | 42.65000 | -17.944 | 42.238 | -89.838 | -197.49 | -0.0011290 |
| | 18.00000 | 8.00000 | 42.65000 | -17.778 | 42.238 | -89.837 | -197.33 | -0.0011314 |
| | 19.00000 | 8.00000 | 42.65000 | -17.558 | 42.238 | -89.836 | -197.10 | -0.0011350 |
| | 20.00000 | 8.00000 | 42.65000 | -17.270 | 42.238 | -89.835 | -196.76 | -0.0011403 |
| | 21.00000 | 8.00000 | 42.65000 | -16.891 | 42.238 | -89.831 | -196.23 | -0.0011485 |
| | 22.00000 | 8.00000 | 42.65000 | -16.388 | 42.238 | -89.824 | -195.34 | -0.0011620 |
| | 23.00000 | 8.00000 | 42.65000 | -15.701 | 42.238 | -89.800 | -193.70 | -0.0011866 |
| | 24.00000 | 8.00000 | 42.65000 | -14.717 | 42.238 | -89.699 | -190.08 | -0.0012387 |
| | 25.00000 | 8.00000 | 42.65000 | -13.175 | 42.238 | -88.774 | -178.53 | -0.0013762 |
| | 26.00000 | 8.00000 | 42.65000 | -9.5885 | 42.238 | -44.919 | -99.143 | -558.27E-6 |
| | 0.00000 | 9.00000 | 42.65000 | -8.7043 | 42.238 | -44.446 | -92.888 | -634.07E-6 |
| | 1.00000 | 9.00000 | 42.65000 | -11.981 | 42.238 | -87.929 | -168.60 | -0.0014921 |
| | 2.00000 | 9.00000 | 42.65000 | -13.320 | 42.238 | -88.774 | -178.65 | -0.0013743 |
| | 3.00000 | 9.00000 | 42.65000 | -14.183 | 42.238 | -88.860 | -181.72 | -0.0013302 |
| | 4.00000 | 9.00000 | 42.65000 | -14.794 | 42.238 | -88.879 | -183.12 | -0.0013092 |
| | 5.00000 | 9.00000 | 42.65000 | -15.249 | 42.238 | -88.886 | -183.89 | -0.0012975 |
| | 6.00000 | 9.00000 | 42.65000 | -15.595 | 42.238 | -88.889 | -184.36 | -0.0012902 |
| | 7.00000 | 9.00000 | 42.65000 | -15.861 | 42.238 | -88.890 | -184.66 | -0.0012855 |
| | 8.00000 | 9.00000 | 42.65000 | -16.066 | 42.238 | -88.891 | -184.87 | -0.0012823 |
| | 9.00000 | 9.00000 | 42.65000 | -16.220 | 42.238 | -88.891 | -185.01 | -0.0012801 |
| | 10.00000 | 9.00000 | 42.65000 | -16.334 | 42.238 | -88.891 | -185.11 | -0.0012786 |
| | 11.00000 | 9.00000 | 42.65000 | -16.411 | 42.238 | -88.891 | -185.17 | -0.0012776 |
| | 12.00000 | 9.00000 | 42.65000 | -16.456 | 42.238 | -88.892 | -185.20 | -0.0012771 |
| | 13.00000 | 9.00000 | 42.65000 | -16.471 | 42.238 | -88.892 | -185.22 | -0.0012769 |
| | 14.00000 | 9.00000 | 42.65000 | -16.456 | 42.238 | -88.892 | -185.20 | -0.0012771 |
| | 15.00000 | 9.00000 | 42.65000 | -16.411 | 42.238 | -88.891 | -185.17 | -0.0012776 |
| | 16.00000 | 9.00000 | 42.65000 | -16.334 | 42.238 | -88.891 | -185.11 | -0.0012786 |
| | 17.00000 | 9.00000 | 42.65000 | -16.220 | 42.238 | -88.891 | -185.01 | -0.0012801 |
| | 18.00000 | 9.00000 | 42.65000 | -16.066 | 42.238 | -88.891 | -184.87 | -0.0012823 |
| | 19.00000 | 9.00000 | 42.65000 | -15.861 | 42.238 | -88.890 | -184.66 | -0.0012855 |
| | 20.00000 | 9.00000 | 42.65000 | -15.595 | 42.238 | -88.889 | -184.36 | -0.0012902 |
| | 21.00000 | 9.00000 | 42.65000 | -15.249 | 42.238 | -88.886 | -183.89 | -0.0012975 |
| | 22.00000 | 9.00000 | 42.65000 | -14.794 | 42.238 | -88.879 | -183.12 | -0.0013092 |
| | 23.00000 | 9.00000 | 42.65000 | -14.183 | 42.238 | -88.860 | -181.72 | -0.0013302 |
| | 24.00000 | 9.00000 | 42.65000 | -13.320 | 42.238 | -88.774 | -178.65 | -0.0013743 |
| | 25.00000 | 9.00000 | 42.65000 | -11.981 | 42.238 | -87.929 | -168.60 | -0.0014921 |
| | 26.00000 | 9.00000 | 42.65000 | -8.7043 | 42.238 | -44.446 | -92.888 | -634.07E-6 |
| | 0.00000 | 10.00000 | 42.65000 | -6.7342 | 42.238 | -22.499 | -52.483 | -235.36E-6 |
| | 1.00000 | 10.00000 | 42.65000 | -8.8092 | 42.238 | -44.446 | -92.967 | -632.83E-6 |
| | 2.00000 | 10.00000 | 42.65000 | -9.8331 | 42.238 | -44.920 | -99.341 | -555.19E-6 |
| | 3.00000 | 10.00000 | 42.65000 | -10.539 | 42.238 | -44.975 | -101.56 | -523.07E-6 |
| | 4.00000 | 10.00000 | 42.65000 | -11.061 | 42.238 | -44.989 | -102.64 | -506.67E-6 |
| | 5.00000 | 10.00000 | 42.65000 | -11.458 | 42.238 | -44.994 | -103.27 | -497.06E-6 |
| | 6.00000 | 10.00000 | 42.65000 | -11.766 | 42.238 | -44.996 | -103.67 | -490.94E-6 |
| | 7.00000 | 10.00000 | 42.65000 | -12.007 | 42.238 | -44.997 | -103.93 | -486.84E-6 |
| | 8.00000 | 10.00000 | 42.65000 | -12.193 | 42.238 | -44.998 | -104.11 | -484.02E-6 |
| | 9.00000 | 10.00000 | 42.65000 | -12.335 | 42.238 | -44.998 | -104.24 | -482.05E-6 |
| | 10.00000 | 10.00000 | 42.65000 | -12.440 | 42.238 | -44.998 | -104.33 | -480.69E-6 |
| | 11.00000 | 10.00000 | 42.65000 | -12.512 | 42.238 | -44.998 | -104.39 | -479.81E-6 |
| | 12.00000 | 10.00000 | 42.65000 | -12.554 | 42.238 | -44.998 | -104.42 | -479.31E-6 |
| | 13.00000 | 10.00000 | 42.65000 | -12.567 | 42.238 | -44.998 | -104.43 | -479.15E-6 |
| | 14.00000 | 10.00000 | 42.65000 | -12.554 | 42.238 | -44.998 | -104.42 | -479.31E-6 |
| | 15.00000 | 10.00000 | 42.65000 | -12.512 | 42.238 | -44.998 | -104.39 | -479.81E-6 |
| | 16.00000 | 10.00000 | 42.65000 | -12.440 | 42.238 | -44.998 | -104.33 | -480.69E-6 |
| | 17.00000 | 10.00000 | 42.65000 | -12.335 | 42.238 | -44.998 | -104.24 | -482.05E-6 |
| | 18.00000 | 10.00000 | 42.65000 | -12.193 | 42.238 | -44.998 | -104.11 | -484.02E-6 |
| | 19.00000 | 10.00000 | 42.65000 | -12.007 | 42.238 | -44.997 | -103.93 | -486.84E-6 |
| | 20.00000 | 10.00000 | 42.65000 | -11.766 | 42.238 | -44.996 | -103.67 | -490.94E-6 |
| | 21.00000 | 10.00000 | 42.65000 | -11.458 | 42.238 | -44.994 | -103.27 | -497.06E-6 |
| | 22.00000 | 10.00000 | 42.65000 | -11.061 | 42.238 | -44.989 | -102.64 | -506.67E-6 |
| | 23.00000 | 10.00000 | 42.65000 | -10.539 | 42.238 | -44.975 | -101.56 | -523.07E-6 |
| | 24.00000 | 10.00000 | 42.65000 | -9.8331 | 42.238 | -44.920 | -99.341 | -555.19E-6 |
| | 25.00000 | 10.00000 | 42.65000 | -8.8092 | 42.238 | -44.446 | -92.967 | -632.83E-6 |
| | 26.00000 | 10.00000 | 42.65000 | -6.7342 | 42.238 | -22.499 | -52.483 | -235.36E-6 |
| GL1 | 0.00000 | 0.00000 | 44.75000 | -6.6955 | 44.537 | 0.0 | 0.0 | 0.0 |
| | 0.00000 | 1.00000 | 44.75000 | -8.6128 | 44.537 | 0.0 | 0.0 | 0.0 |
| | 0.00000 | 2.00000 | 44.75000 | -9.5059 | 44.537 | 0.0 | 0.0 | 0.0 |
| | 0.00000 | 3.00000 | 44.75000 | -10.031 | 44.537 | 0.0 | 0.0 | 0.0 |
| | 0.00000 | 4.00000 | 44.75000 | -10.315 | 44.537 | 0.0 | 0.0 | 0.0 |
| | 0.00000 | 5.00000 | 44.75000 | -10.406 | 44.537 | 0.0 | 0.0 | 0.0 |
| | 0.00000 | 6.00000 | 44.75000 | -10.315 | 44.537 | 0.0 | 0.0 | 0.0 |
| | 0.00000 | 7.00000 | 44.75000 | -10.031 | 44.537 | 0.0 | 0.0 | 0.0 |
| | 0.00000 | 8.00000 | 44.75000 | -9.5059 | 44.537 | 0.0 | 0.0 | 0.0 |
| GL2 | -4.50000 | 0.00000 | 44.75000 | -2.1586 | 44.537 | 0.0 | 0.0 | 0.0 |
| | -4.50000 | 1.00000 | 44.75000 | -2.3326 | 44.537 | 0.0 | 0.0 | 0.0 |
| | -4.50000 | 2.00000 | 44.75000 | -2.4799 | 44.537 | 0.0 | 0.0 | 0.0 |
| | -4.50000 | 3.00000 | 44.75000 | -2.5912 | 44.537 | 0.0 | 0.0 | 0.0 |

| Name | Location X [m] | Y [m] | Z[Level] [mOD] | Z [mm] | Stresses Calc Level [mOD] | Vert Stress [kN/m²] | Sum Princ [kN/m²] | Vert Strain [-] |
|---|---|---|---|---|---|---|---|---|
| | -4.50000 | 4.00000 | 44.75000 | -2.6602 | 44.537 | 0.0 | 0.0 | 0.0 |
| | -4.50000 | 5.00000 | 44.75000 | -2.6835 | 44.537 | 0.0 | 0.0 | 0.0 |
| | -4.50000 | 6.00000 | 44.75000 | -2.6602 | 44.537 | 0.0 | 0.0 | 0.0 |
| | -4.50000 | 7.00000 | 44.75000 | -2.5912 | 44.537 | 0.0 | 0.0 | 0.0 |
| | -4.50000 | 8.00000 | 44.75000 | -2.4799 | 44.537 | 0.0 | 0.0 | 0.0 |
| GL3 | -9.00000 | 0.00000 | 44.75000 | -0.96001 | 44.537 | 0.0 | 0.0 | 0.0 |
| | -9.00000 | 1.00000 | 44.75000 | -1.0091 | 44.537 | 0.0 | 0.0 | 0.0 |
| | -9.00000 | 2.00000 | 44.75000 | -1.0497 | 44.537 | 0.0 | 0.0 | 0.0 |
| | -9.00000 | 3.00000 | 44.75000 | -1.0800 | 44.537 | 0.0 | 0.0 | 0.0 |
| | -9.00000 | 4.00000 | 44.75000 | -1.0988 | 44.537 | 0.0 | 0.0 | 0.0 |
| | -9.00000 | 5.00000 | 44.75000 | -1.1052 | 44.537 | 0.0 | 0.0 | 0.0 |
| | -9.00000 | 6.00000 | 44.75000 | -1.0988 | 44.537 | 0.0 | 0.0 | 0.0 |
| | -9.00000 | 7.00000 | 44.75000 | -1.0800 | 44.537 | 0.0 | 0.0 | 0.0 |
| | -9.00000 | 8.00000 | 44.75000 | -1.0497 | 44.537 | 0.0 | 0.0 | 0.0 |
| GL4 | 0.00000 | 4.00000 | 44.75000 | -10.315 | 44.537 | 0.0 | 0.0 | 0.0 |
| | -1.00000 | 4.00000 | 44.75000 | -6.6205 | 44.537 | 0.0 | 0.0 | 0.0 |
| | -2.00000 | 4.00000 | 44.75000 | -4.8830 | 44.537 | 0.0 | 0.0 | 0.0 |
| | -3.00000 | 4.00000 | 44.75000 | -3.7610 | 44.537 | 0.0 | 0.0 | 0.0 |
| | -4.00000 | 4.00000 | 44.75000 | -2.9720 | 44.537 | 0.0 | 0.0 | 0.0 |
| | -5.00000 | 4.00000 | 44.75000 | -2.3898 | 44.537 | 0.0 | 0.0 | 0.0 |
| | -6.00000 | 4.00000 | 44.75000 | -1.9458 | 44.537 | 0.0 | 0.0 | 0.0 |
| | -7.00000 | 4.00000 | 44.75000 | -1.5988 | 44.537 | 0.0 | 0.0 | 0.0 |
| | -8.00000 | 4.00000 | 44.75000 | -1.3224 | 44.537 | 0.0 | 0.0 | 0.0 |
| | -9.00000 | 4.00000 | 44.75000 | -1.0988 | 44.537 | 0.0 | 0.0 | 0.0 |
| GL5 | 13.00000 | -6.00000 | 44.75000 | -3.0813 | 44.537 | 0.0 | 0.0 | 0.0 |
| | 13.00000 | -7.00000 | 44.75000 | -2.5959 | 44.537 | 0.0 | 0.0 | 0.0 |
| | 13.00000 | -8.00000 | 44.75000 | -2.1968 | 44.537 | 0.0 | 0.0 | 0.0 |
| | 13.00000 | -9.00000 | 44.75000 | -1.8652 | 44.537 | 0.0 | 0.0 | 0.0 |
| | 13.00000 | -10.00000 | 44.75000 | -1.5872 | 44.537 | 0.0 | 0.0 | 0.0 |
| | 13.00000 | -11.00000 | 44.75000 | -1.3525 | 44.537 | 0.0 | 0.0 | 0.0 |
| | 13.00000 | -12.00000 | 44.75000 | -1.1532 | 44.537 | 0.0 | 0.0 | 0.0 |
| GL6 | 26.00000 | -6.00000 | 44.75000 | -1.8423 | 44.537 | 0.0 | 0.0 | 0.0 |
| | 26.00000 | -7.00000 | 44.75000 | -1.5732 | 44.537 | 0.0 | 0.0 | 0.0 |
| | 26.00000 | -8.00000 | 44.75000 | -1.3479 | 44.537 | 0.0 | 0.0 | 0.0 |
| | 26.00000 | -9.00000 | 44.75000 | -1.1572 | 44.537 | 0.0 | 0.0 | 0.0 |
| | 26.00000 | -10.00000 | 44.75000 | -0.99448 | 44.537 | 0.0 | 0.0 | 0.0 |
| | 26.00000 | -11.00000 | 44.75000 | -0.85467 | 44.537 | 0.0 | 0.0 | 0.0 |
| | 26.00000 | -12.00000 | 44.75000 | -0.73392 | 44.537 | 0.0 | 0.0 | 0.0 |

## Notes

E'= 0.75Eu
Eu = 400Cu
Cu= 70+6z

## Analysis Options

Analysis: Boussinesq
Global Poisson's ratio: 0.20
Maximum allowable ratio between values of E: 1.5
Horizontal rigid boundary level: 0.00 [m OD]
Displacements at area centroids calculated.

## Soil ProfilesSoil Profile

| Layer | Level at top | Number of intermediate displacement levels | Youngs Modulus Top | Youngs Modulus Btm | Poissons ratio | Non-linear curve |
|---|---|---|---|---|---|---|
| | [mOD] | | [kN/m²] | [kN/m²] | | |
| 1 | 45.400 | 2 | 5000.0 | 5000.0 | 0.20000 | None |
| 2 | 43.900 | 43 | 21000. | 98400. | 0.20000 | None |

## Soil Zones

| Zone | Name | X coordinates min [m] | X coordinates max [m] | Y coordinates min [m] | Y coordinates max [m] | Profile |
|---|---|---|---|---|---|---|
| 1 | SZ1 | -60.000 | 60.000 | -60.000 | 60.000 | Soil Profile |

## Non-linear Curve Coordinates - Non-linear Curve 1

| Point | Strain [%] | Factor |
|---|---|---|

## 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 | Rectangle tolerance | Number of rectangles | Load value Normal (local z) [kN/m²] | Tangential (local x) [kN/m²] | (local y) [kN/m²] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Basement | Rectangular | Horizontal | 13.000 | 5.0000 | 42.650 | 0.0 | 26.000 | 10.000 | N/A | N/A | 1 | -90.000 | 0.0 | 0.0 |

## Displacement Data

| Ref. | Type | Name | Direction of Extrusion | Line/Line for extrusion First point X [m] | Y [m] | Z(level) [m] | Second point X [m] | Y [m] | Z(level) [m] | No. of intrvls across extrusion/line | Extrusion Depth [m] | No. of intrvls along extrusion | Calculate | Show Detailed results |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Grid | BL | Global X | 0.0 | 0.0 | 42.650 | N/A | 10.000 | 42.650 | 10 | 26.000 | 26 | Yes | No |
| 2 | Line | GL1 | N/A | 0.0 | 0.0 | 44.750 | 0.0 | 8.0000 | 44.750 | 8 | N/A | N/A | Yes | No |
| 3 | Line | GL2 | N/A | -4.5000 | 0.0 | 44.750 | -4.5000 | 8.0000 | 44.750 | 8 | N/A | N/A | Yes | No |
| 4 | Line | GL3 | N/A | -9.0000 | 0.0 | 44.750 | -9.0000 | 8.0000 | 44.750 | 8 | N/A | N/A | Yes | No |
| 5 | Line | GL4 | N/A | 0.0 | 4.0000 | 44.750 | -9.0000 | 4.0000 | 44.750 | 9 | N/A | N/A | Yes | No |
| 6 | Line | GL5 | N/A | 13.000 | -6.0000 | 44.750 | 13.000 | -12.000 | 44.750 | 6 | N/A | N/A | Yes | No |
| 7 | Line | GL6 | N/A | 26.000 | -6.0000 | 44.750 | 26.000 | -12.000 | 44.750 | 6 | N/A | N/A | Yes | No |

## RESULTS FOR GRIDS

Analysis: Boussinesq
Global Poisson's ratio: 0.20
Horizontal rigid boundary level: 0.00 [m OD]

The maximum displacement difference between
Boussinesq method (-16.071mm) and Mindlin method (-14.538mm)
occurs at point X=0.0m Y=4.0000m Level 44.750mOD and is 1.5325mm

| Name | Location X [m] | Y [m] | Z[Level] [mOD] | Z [mm] | Calc Level [mOD] | Stresses Vert Stress [kN/m²] | Sum Princ [kN/m²] | Vert Strain [-] |
|---|---|---|---|---|---|---|---|---|
| Basement | 13.00000 | 5.00000 | 42.65000 | -30.753 | 42.238 | -89.978 | -203.88 | -0.0028089 |
| BL | 0.00000 | 0.00000 | 42.65000 | -10.874 | 42.238 | -22.499 | -52.483 | -689.82E-6 |
| | 1.00000 | 0.00000 | 42.65000 | -13.926 | 42.238 | -44.446 | -92.967 | -0.0014522 |
| | 2.00000 | 0.00000 | 42.65000 | -15.487 | 42.238 | -44.920 | -99.341 | -0.0014227 |
| | 3.00000 | 0.00000 | 42.65000 | -16.575 | 42.238 | -44.975 | -101.56 | -0.0014070 |
| | 4.00000 | 0.00000 | 42.65000 | -17.386 | 42.238 | -44.989 | -102.64 | -0.0013986 |
| | 5.00000 | 0.00000 | 42.65000 | -18.010 | 42.238 | -44.994 | -103.27 | -0.0013936 |
| | 6.00000 | 0.00000 | 42.65000 | -18.497 | 42.238 | -44.996 | -103.67 | -0.0013904 |
| | 7.00000 | 0.00000 | 42.65000 | -18.878 | 42.238 | -44.997 | -103.93 | -0.0013882 |
| | 8.00000 | 0.00000 | 42.65000 | -19.176 | 42.238 | -44.998 | -104.11 | -0.0013867 |
| | 9.00000 | 0.00000 | 42.65000 | -19.404 | 42.238 | -44.998 | -104.24 | -0.0013857 |
| | 10.00000 | 0.00000 | 42.65000 | -19.573 | 42.238 | -44.998 | -104.33 | -0.0013849 |
| | 11.00000 | 0.00000 | 42.65000 | -19.689 | 42.238 | -44.998 | -104.39 | -0.0013845 |
| | 12.00000 | 0.00000 | 42.65000 | -19.757 | 42.238 | -44.998 | -104.42 | -0.0013842 |
| | 13.00000 | 0.00000 | 42.65000 | -19.779 | 42.238 | -44.998 | -104.43 | -0.0013841 |
| | 14.00000 | 0.00000 | 42.65000 | -19.757 | 42.238 | -44.998 | -104.42 | -0.0013842 |
| | 15.00000 | 0.00000 | 42.65000 | -19.689 | 42.238 | -44.998 | -104.39 | -0.0013845 |
| | 16.00000 | 0.00000 | 42.65000 | -19.573 | 42.238 | -44.998 | -104.33 | -0.0013849 |
| | 17.00000 | 0.00000 | 42.65000 | -19.404 | 42.238 | -44.998 | -104.24 | -0.0013857 |
| | 18.00000 | 0.00000 | 42.65000 | -19.176 | 42.238 | -44.998 | -104.11 | -0.0013867 |
| | 19.00000 | 0.00000 | 42.65000 | -18.878 | 42.238 | -44.997 | -103.93 | -0.0013882 |
| | 20.00000 | 0.00000 | 42.65000 | -18.497 | 42.238 | -44.996 | -103.67 | -0.0013904 |
| | 21.00000 | 0.00000 | 42.65000 | -18.010 | 42.238 | -44.994 | -103.27 | -0.0013936 |
| | 22.00000 | 0.00000 | 42.65000 | -17.386 | 42.238 | -44.989 | -102.64 | -0.0013986 |
| | 23.00000 | 0.00000 | 42.65000 | -16.575 | 42.238 | -44.975 | -101.56 | -0.0014070 |
| | 24.00000 | 0.00000 | 42.65000 | -15.487 | 42.238 | -44.920 | -99.341 | -0.0014227 |
| | 25.00000 | 0.00000 | 42.65000 | -13.926 | 42.238 | -44.446 | -92.967 | -0.0014522 |
| | 26.00000 | 0.00000 | 42.65000 | -10.874 | 42.238 | -22.499 | -52.483 | -689.82E-6 |
| | 0.00000 | 1.00000 | 42.65000 | -13.753 | 42.238 | -44.446 | -92.888 | -0.0014529 |
| | 1.00000 | 1.00000 | 42.65000 | -18.519 | 42.238 | -87.929 | -168.60 | -0.0030011 |
| | 2.00000 | 1.00000 | 42.65000 | -20.552 | 42.238 | -88.774 | -178.65 | -0.0029594 |
| | 3.00000 | 1.00000 | 42.65000 | -21.874 | 42.238 | -88.860 | -181.72 | -0.0029381 |
| | 4.00000 | 1.00000 | 42.65000 | -22.821 | 42.238 | -88.879 | -183.12 | -0.0029274 |
| | 5.00000 | 1.00000 | 42.65000 | -23.532 | 42.238 | -88.886 | -183.89 | -0.0029213 |
| | 6.00000 | 1.00000 | 42.65000 | -24.077 | 42.238 | -88.889 | -184.36 | -0.0029175 |
| | 7.00000 | 1.00000 | 42.65000 | -24.499 | 42.238 | -88.890 | -184.66 | -0.0029150 |
| | 8.00000 | 1.00000 | 42.65000 | -24.824 | 42.238 | -88.891 | -184.87 | -0.0029133 |
| | 9.00000 | 1.00000 | 42.65000 | -25.072 | 42.238 | -88.891 | -185.01 | -0.0029121 |
| | 10.00000 | 1.00000 | 42.65000 | -25.254 | 42.238 | -88.891 | -185.11 | -0.0029113 |
| | 11.00000 | 1.00000 | 42.65000 | -25.379 | 42.238 | -88.891 | -185.17 | -0.0029108 |
| | 12.00000 | 1.00000 | 42.65000 | -25.452 | 42.238 | -88.892 | -185.20 | -0.0029105 |
| | 13.00000 | 1.00000 | 42.65000 | -25.476 | 42.238 | -88.892 | -185.22 | -0.0029104 |
| | 14.00000 | 1.00000 | 42.65000 | -25.452 | 42.238 | -88.892 | -185.20 | -0.0029105 |
| | 15.00000 | 1.00000 | 42.65000 | -25.379 | 42.238 | -88.891 | -185.17 | -0.0029108 |
| | 16.00000 | 1.00000 | 42.65000 | -25.254 | 42.238 | -88.891 | -185.11 | -0.0029113 |
| | 17.00000 | 1.00000 | 42.65000 | -25.072 | 42.238 | -88.891 | -185.01 | -0.0029121 |
| | 18.00000 | 1.00000 | 42.65000 | -24.824 | 42.238 | -88.891 | -184.87 | -0.0029133 |
| | 19.00000 | 1.00000 | 42.65000 | -24.499 | 42.238 | -88.890 | -184.66 | -0.0029150 |
| | 20.00000 | 1.00000 | 42.65000 | -24.077 | 42.238 | -88.889 | -184.36 | -0.0029175 |
| | 21.00000 | 1.00000 | 42.65000 | -23.532 | 42.238 | -88.886 | -183.89 | -0.0029213 |

| Name | Location | | | | Stresses | | | |
|---|---|---|---|---|---|---|---|---|
| | X [m] | Y [m] | Z[Level] [mOD] | Z [mm] | Calc Level [mOD] | Vert Stress [kN/m²] | Sum Princ [kN/m²] | Vert Strain [-] |
| | 22.00000 | 1.00000 | 42.65000 | -22.821 | 42.238 | -88.879 | -183.12 | -0.0029274 |
| | 23.00000 | 1.00000 | 42.65000 | -21.874 | 42.238 | -88.860 | -181.72 | -0.0029381 |
| | 24.00000 | 1.00000 | 42.65000 | -20.552 | 42.238 | -88.774 | -178.65 | -0.0029594 |
| | 25.00000 | 1.00000 | 42.65000 | -18.519 | 42.238 | -87.929 | -168.60 | -0.0030011 |
| | 26.00000 | 1.00000 | 42.65000 | -13.753 | 42.238 | -44.446 | -92.888 | -0.0014529 |
| | 0.00000 | 2.00000 | 42.65000 | -15.087 | 42.238 | -44.919 | -99.143 | -0.0014243 |
| | 1.00000 | 2.00000 | 42.65000 | -20.317 | 42.238 | -88.774 | -178.53 | -0.0029605 |
| | 2.00000 | 2.00000 | 42.65000 | -22.651 | 42.238 | -89.699 | -190.08 | -0.0029103 |
| | 3.00000 | 2.00000 | 42.65000 | -24.155 | 42.238 | -89.800 | -193.70 | -0.0028851 |
| | 4.00000 | 2.00000 | 42.65000 | -25.217 | 42.238 | -89.824 | -195.34 | -0.0028726 |
| | 5.00000 | 2.00000 | 42.65000 | -26.001 | 42.238 | -89.831 | -196.23 | -0.0028655 |
| | 6.00000 | 2.00000 | 42.65000 | -26.596 | 42.238 | -89.835 | -196.76 | -0.0028612 |
| | 7.00000 | 2.00000 | 42.65000 | -27.052 | 42.238 | -89.836 | -197.10 | -0.0028585 |
| | 8.00000 | 2.00000 | 42.65000 | -27.402 | 42.238 | -89.837 | -197.33 | -0.0028566 |
| | 9.00000 | 2.00000 | 42.65000 | -27.666 | 42.238 | -89.838 | -197.49 | -0.0028553 |
| | 10.00000 | 2.00000 | 42.65000 | -27.860 | 42.238 | -89.838 | -197.59 | -0.0028545 |
| | 11.00000 | 2.00000 | 42.65000 | -27.992 | 42.238 | -89.838 | -197.66 | -0.0028539 |
| | 12.00000 | 2.00000 | 42.65000 | -28.069 | 42.238 | -89.838 | -197.70 | -0.0028536 |
| | 13.00000 | 2.00000 | 42.65000 | -28.094 | 42.238 | -89.838 | -197.71 | -0.0028535 |
| | 14.00000 | 2.00000 | 42.65000 | -28.069 | 42.238 | -89.838 | -197.70 | -0.0028536 |
| | 15.00000 | 2.00000 | 42.65000 | -27.992 | 42.238 | -89.838 | -197.66 | -0.0028539 |
| | 16.00000 | 2.00000 | 42.65000 | -27.860 | 42.238 | -89.838 | -197.59 | -0.0028545 |
| | 17.00000 | 2.00000 | 42.65000 | -27.666 | 42.238 | -89.838 | -197.49 | -0.0028553 |
| | 18.00000 | 2.00000 | 42.65000 | -27.402 | 42.238 | -89.837 | -197.33 | -0.0028566 |
| | 19.00000 | 2.00000 | 42.65000 | -27.052 | 42.238 | -89.836 | -197.10 | -0.0028585 |
| | 20.00000 | 2.00000 | 42.65000 | -26.596 | 42.238 | -89.835 | -196.76 | -0.0028612 |
| | 21.00000 | 2.00000 | 42.65000 | -26.001 | 42.238 | -89.831 | -196.23 | -0.0028655 |
| | 22.00000 | 2.00000 | 42.65000 | -25.217 | 42.238 | -89.824 | -195.34 | -0.0028726 |
| | 23.00000 | 2.00000 | 42.65000 | -24.155 | 42.238 | -89.800 | -193.70 | -0.0028851 |
| | 24.00000 | 2.00000 | 42.65000 | -22.651 | 42.238 | -89.699 | -190.08 | -0.0029103 |
| | 25.00000 | 2.00000 | 42.65000 | -20.317 | 42.238 | -88.774 | -178.53 | -0.0029605 |
| | 26.00000 | 2.00000 | 42.65000 | -15.087 | 42.238 | -44.919 | -99.143 | -0.0014243 |
| | 0.00000 | 3.00000 | 42.65000 | -15.881 | 42.238 | -44.974 | -101.18 | -0.0014100 |
| | 1.00000 | 3.00000 | 42.65000 | -21.325 | 42.238 | -88.859 | -181.40 | -0.0029407 |
| | 2.00000 | 3.00000 | 42.65000 | -23.830 | 42.238 | -89.800 | -193.50 | -0.0028867 |
| | 3.00000 | 3.00000 | 42.65000 | -25.455 | 42.238 | -89.906 | -197.42 | -0.0028593 |
| | 4.00000 | 3.00000 | 42.65000 | -26.598 | 42.238 | -89.931 | -199.21 | -0.0028456 |
| | 5.00000 | 3.00000 | 42.65000 | -27.438 | 42.238 | -89.940 | -200.18 | -0.0028379 |
| | 6.00000 | 3.00000 | 42.65000 | -28.070 | 42.238 | -89.944 | -200.76 | -0.0028333 |
| | 7.00000 | 3.00000 | 42.65000 | -28.553 | 42.238 | -89.945 | -201.13 | -0.0028303 |
| | 8.00000 | 3.00000 | 42.65000 | -28.920 | 42.238 | -89.946 | -201.37 | -0.0028283 |
| | 9.00000 | 3.00000 | 42.65000 | -29.198 | 42.238 | -89.947 | -201.54 | -0.0028269 |
| | 10.00000 | 3.00000 | 42.65000 | -29.400 | 42.238 | -89.947 | -201.65 | -0.0028260 |
| | 11.00000 | 3.00000 | 42.65000 | -29.538 | 42.238 | -89.947 | -201.72 | -0.0028254 |
| | 12.00000 | 3.00000 | 42.65000 | -29.618 | 42.238 | -89.947 | -201.76 | -0.0028251 |
| | 13.00000 | 3.00000 | 42.65000 | -29.644 | 42.238 | -89.947 | -201.77 | -0.0028250 |
| | 14.00000 | 3.00000 | 42.65000 | -29.618 | 42.238 | -89.947 | -201.76 | -0.0028251 |
| | 15.00000 | 3.00000 | 42.65000 | -29.538 | 42.238 | -89.947 | -201.72 | -0.0028254 |
| | 16.00000 | 3.00000 | 42.65000 | -29.400 | 42.238 | -89.947 | -201.65 | -0.0028260 |
| | 17.00000 | 3.00000 | 42.65000 | -29.198 | 42.238 | -89.947 | -201.54 | -0.0028269 |
| | 18.00000 | 3.00000 | 42.65000 | -28.920 | 42.238 | -89.946 | -201.37 | -0.0028283 |
| | 19.00000 | 3.00000 | 42.65000 | -28.553 | 42.238 | -89.945 | -201.13 | -0.0028303 |
| | 20.00000 | 3.00000 | 42.65000 | -28.070 | 42.238 | -89.944 | -200.76 | -0.0028333 |
| | 21.00000 | 3.00000 | 42.65000 | -27.438 | 42.238 | -89.940 | -200.18 | -0.0028379 |
| | 22.00000 | 3.00000 | 42.65000 | -26.598 | 42.238 | -89.931 | -199.21 | -0.0028456 |
| | 23.00000 | 3.00000 | 42.65000 | -25.455 | 42.238 | -89.906 | -197.42 | -0.0028593 |
| | 24.00000 | 3.00000 | 42.65000 | -23.830 | 42.238 | -89.800 | -193.50 | -0.0028867 |
| | 25.00000 | 3.00000 | 42.65000 | -21.325 | 42.238 | -88.859 | -181.40 | -0.0029407 |
| | 26.00000 | 3.00000 | 42.65000 | -15.881 | 42.238 | -44.974 | -101.18 | -0.0014100 |
| | 0.00000 | 4.00000 | 42.65000 | -16.312 | 42.238 | -44.987 | -102.01 | -0.0014037 |
| | 1.00000 | 4.00000 | 42.65000 | -21.859 | 42.238 | -88.877 | -182.50 | -0.0029324 |
| | 2.00000 | 4.00000 | 42.65000 | -24.452 | 42.238 | -89.821 | -194.81 | -0.0028769 |
| | 3.00000 | 4.00000 | 42.65000 | -26.143 | 42.238 | -89.930 | -198.87 | -0.0028484 |
| | 4.00000 | 4.00000 | 42.65000 | -27.334 | 42.238 | -89.956 | -200.74 | -0.0028341 |
| | 5.00000 | 4.00000 | 42.65000 | -28.208 | 42.238 | -89.965 | -201.76 | -0.0028260 |
| | 6.00000 | 4.00000 | 42.65000 | -28.864 | 42.238 | -89.969 | -202.37 | -0.0028211 |
| | 7.00000 | 4.00000 | 42.65000 | -29.362 | 42.238 | -89.971 | -202.75 | -0.0028180 |
| | 8.00000 | 4.00000 | 42.65000 | -29.742 | 42.238 | -89.972 | -203.01 | -0.0028159 |
| | 9.00000 | 4.00000 | 42.65000 | -30.027 | 42.238 | -89.972 | -203.18 | -0.0028145 |
| | 10.00000 | 4.00000 | 42.65000 | -30.234 | 42.238 | -89.972 | -203.29 | -0.0028135 |
| | 11.00000 | 4.00000 | 42.65000 | -30.376 | 42.238 | -89.973 | -203.37 | -0.0028129 |
| | 12.00000 | 4.00000 | 42.65000 | -30.458 | 42.238 | -89.973 | -203.41 | -0.0028126 |
| | 13.00000 | 4.00000 | 42.65000 | -30.485 | 42.238 | -89.973 | -203.42 | -0.0028125 |
| | 14.00000 | 4.00000 | 42.65000 | -30.458 | 42.238 | -89.973 | -203.41 | -0.0028126 |
| | 15.00000 | 4.00000 | 42.65000 | -30.376 | 42.238 | -89.973 | -203.37 | -0.0028129 |
| | 16.00000 | 4.00000 | 42.65000 | -30.234 | 42.238 | -89.972 | -203.29 | -0.0028135 |
| | 17.00000 | 4.00000 | 42.65000 | -30.027 | 42.238 | -89.972 | -203.18 | -0.0028145 |
| | 18.00000 | 4.00000 | 42.65000 | -29.742 | 42.238 | -89.972 | -203.01 | -0.0028159 |
| | 19.00000 | 4.00000 | 42.65000 | -29.362 | 42.238 | -89.971 | -202.75 | -0.0028180 |
| | 20.00000 | 4.00000 | 42.65000 | -28.864 | 42.238 | -89.969 | -202.37 | -0.0028211 |
| | 21.00000 | 4.00000 | 42.65000 | -28.208 | 42.238 | -89.965 | -201.76 | -0.0028260 |
| | 22.00000 | 4.00000 | 42.65000 | -27.334 | 42.238 | -89.956 | -200.74 | -0.0028341 |
| | 23.00000 | 4.00000 | 42.65000 | -26.143 | 42.238 | -89.930 | -198.87 | -0.0028484 |
| | 24.00000 | 4.00000 | 42.65000 | -24.452 | 42.238 | -89.821 | -194.81 | -0.0028769 |
| | 25.00000 | 4.00000 | 42.65000 | -21.859 | 42.238 | -88.877 | -182.50 | -0.0029324 |
| | 26.00000 | 4.00000 | 42.65000 | -16.312 | 42.238 | -44.987 | -102.01 | -0.0014037 |
| | 0.00000 | 5.00000 | 42.65000 | -16.450 | 42.238 | -44.989 | -102.24 | -0.0014019 |
| | 1.00000 | 5.00000 | 42.65000 | -22.028 | 42.238 | -88.881 | -182.80 | -0.0029301 |
| | 2.00000 | 5.00000 | 42.65000 | -24.647 | 42.238 | -89.826 | -195.17 | -0.0028741 |
| | 3.00000 | 5.00000 | 42.65000 | -26.360 | 42.238 | -89.935 | -199.27 | -0.0028453 |
| | 4.00000 | 5.00000 | 42.65000 | -27.567 | 42.238 | -89.962 | -201.16 | -0.0028308 |
| | 5.00000 | 5.00000 | 42.65000 | -28.452 | 42.238 | -89.971 | -202.20 | -0.0028226 |
| | 6.00000 | 5.00000 | 42.65000 | -29.116 | 42.238 | -89.974 | -202.81 | -0.0028176 |
| | 7.00000 | 5.00000 | 42.65000 | -29.620 | 42.238 | -89.976 | -203.21 | -0.0028145 |
| | 8.00000 | 5.00000 | 42.65000 | -30.003 | 42.238 | -89.977 | -203.46 | -0.0028123 |
| | 9.00000 | 5.00000 | 42.65000 | -30.291 | 42.238 | -89.978 | -203.64 | -0.0028109 |
| | 10.00000 | 5.00000 | 42.65000 | -30.500 | 42.238 | -89.978 | -203.75 | -0.0028100 |
| | 11.00000 | 5.00000 | 42.65000 | -30.643 | 42.238 | -89.978 | -203.83 | -0.0028093 |
| | 12.00000 | 5.00000 | 42.65000 | -30.726 | 42.238 | -89.978 | -203.87 | -0.0028090 |
| | 13.00000 | 5.00000 | 42.65000 | -30.753 | 42.238 | -89.978 | -203.88 | -0.0028089 |
| | 14.00000 | 5.00000 | 42.65000 | -30.726 | 42.238 | -89.978 | -203.87 | -0.0028090 |
| | 15.00000 | 5.00000 | 42.65000 | -30.643 | 42.238 | -89.978 | -203.83 | -0.0028093 |
| | 16.00000 | 5.00000 | 42.65000 | -30.500 | 42.238 | -89.978 | -203.75 | -0.0028100 |
| | 17.00000 | 5.00000 | 42.65000 | -30.291 | 42.238 | -89.978 | -203.64 | -0.0028109 |
| | 18.00000 | 5.00000 | 42.65000 | -30.003 | 42.238 | -89.977 | -203.46 | -0.0028123 |
| | 19.00000 | 5.00000 | 42.65000 | -29.620 | 42.238 | -89.976 | -203.21 | -0.0028145 |
| | 20.00000 | 5.00000 | 42.65000 | -29.116 | 42.238 | -89.974 | -202.81 | -0.0028176 |
| | 21.00000 | 5.00000 | 42.65000 | -28.452 | 42.238 | -89.971 | -202.20 | -0.0028226 |
| | 22.00000 | 5.00000 | 42.65000 | -27.567 | 42.238 | -89.962 | -201.16 | -0.0028308 |
| | 23.00000 | 5.00000 | 42.65000 | -26.360 | 42.238 | -89.935 | -199.27 | -0.0028453 |
| | 24.00000 | 5.00000 | 42.65000 | -24.647 | 42.238 | -89.826 | -195.17 | -0.0028741 |
| | 25.00000 | 5.00000 | 42.65000 | -22.028 | 42.238 | -88.881 | -182.80 | -0.0029301 |
| | 26.00000 | 5.00000 | 42.65000 | -16.450 | 42.238 | -44.989 | -102.24 | -0.0014019 |
| | 0.00000 | 6.00000 | 42.65000 | -16.312 | 42.238 | -44.987 | -102.01 | -0.0014037 |
| | 1.00000 | 6.00000 | 42.65000 | -21.859 | 42.238 | -88.877 | -182.50 | -0.0029324 |
| | 2.00000 | 6.00000 | 42.65000 | -24.452 | 42.238 | -89.821 | -194.81 | -0.0028769 |
| | 3.00000 | 6.00000 | 42.65000 | -26.143 | 42.238 | -89.930 | -198.87 | -0.0028484 |
| | 4.00000 | 6.00000 | 42.65000 | -27.334 | 42.238 | -89.956 | -200.74 | -0.0028341 |
| | 5.00000 | 6.00000 | 42.65000 | -28.208 | 42.238 | -89.965 | -201.76 | -0.0028260 |
| | 6.00000 | 6.00000 | 42.65000 | -28.864 | 42.238 | -89.969 | -202.37 | -0.0028211 |
| | 7.00000 | 6.00000 | 42.65000 | -29.362 | 42.238 | -89.971 | -202.75 | -0.0028180 |
| | 8.00000 | 6.00000 | 42.65000 | -29.742 | 42.238 | -89.972 | -203.01 | -0.0028159 |
| | 9.00000 | 6.00000 | 42.65000 | -30.027 | 42.238 | -89.972 | -203.18 | -0.0028145 |
| | 10.00000 | 6.00000 | 42.65000 | -30.234 | 42.238 | -89.972 | -203.29 | -0.0028135 |
| | 11.00000 | 6.00000 | 42.65000 | -30.376 | 42.238 | -89.973 | -203.37 | -0.0028129 |
| | 12.00000 | 6.00000 | 42.65000 | -30.458 | 42.238 | -89.973 | -203.41 | -0.0028126 |
| | 13.00000 | 6.00000 | 42.65000 | -30.485 | 42.238 | -89.973 | -203.42 | -0.0028125 |
| | 14.00000 | 6.00000 | 42.65000 | -30.458 | 42.238 | -89.973 | -203.41 | -0.0028126 |
| | 15.00000 | 6.00000 | 42.65000 | -30.376 | 42.238 | -89.973 | -203.37 | -0.0028129 |
| | 16.00000 | 6.00000 | 42.65000 | -30.234 | 42.238 | -89.972 | -203.29 | -0.0028135 |

| Name | Location X [m] | Location Y [m] | Z[Level] [mOD] | Z [mm] | Calc Level [mOD] | Stresses Vert Stress [kN/m²] | Stresses Sum Princ [kN/m²] | Stresses Vert Strain [-] |
|---|---|---|---|---|---|---|---|---|
| | 17.00000 | 6.00000 | 42.65000 | -30.027 | 42.238 | -89.972 | -203.18 | -0.0028145 |
| | 18.00000 | 6.00000 | 42.65000 | -29.742 | 42.238 | -89.972 | -203.01 | -0.0028159 |
| | 19.00000 | 6.00000 | 42.65000 | -29.362 | 42.238 | -89.971 | -202.75 | -0.0028180 |
| | 20.00000 | 6.00000 | 42.65000 | -28.864 | 42.238 | -89.969 | -202.37 | -0.0028211 |
| | 21.00000 | 6.00000 | 42.65000 | -28.208 | 42.238 | -89.965 | -201.76 | -0.0028260 |
| | 22.00000 | 6.00000 | 42.65000 | -27.334 | 42.238 | -89.956 | -200.74 | -0.0028341 |
| | 23.00000 | 6.00000 | 42.65000 | -26.143 | 42.238 | -89.930 | -198.87 | -0.0028484 |
| | 24.00000 | 6.00000 | 42.65000 | -24.452 | 42.238 | -89.821 | -194.81 | -0.0028769 |
| | 25.00000 | 6.00000 | 42.65000 | -21.859 | 42.238 | -88.877 | -182.50 | -0.0029324 |
| | 26.00000 | 6.00000 | 42.65000 | -16.312 | 42.238 | -44.987 | -102.01 | -0.0014037 |
| | 0.00000 | 7.00000 | 42.65000 | -15.881 | 42.238 | -44.974 | -101.18 | -0.0014100 |
| | 1.00000 | 7.00000 | 42.65000 | -21.325 | 42.238 | -88.859 | -181.40 | -0.0029407 |
| | 2.00000 | 7.00000 | 42.65000 | -23.830 | 42.238 | -89.800 | -193.50 | -0.0028867 |
| | 3.00000 | 7.00000 | 42.65000 | -25.455 | 42.238 | -89.906 | -197.42 | -0.0028593 |
| | 4.00000 | 7.00000 | 42.65000 | -26.598 | 42.238 | -89.931 | -199.21 | -0.0028456 |
| | 5.00000 | 7.00000 | 42.65000 | -27.438 | 42.238 | -89.940 | -200.18 | -0.0028379 |
| | 6.00000 | 7.00000 | 42.65000 | -28.070 | 42.238 | -89.944 | -200.76 | -0.0028333 |
| | 7.00000 | 7.00000 | 42.65000 | -28.553 | 42.238 | -89.945 | -201.13 | -0.0028303 |
| | 8.00000 | 7.00000 | 42.65000 | -28.920 | 42.238 | -89.946 | -201.37 | -0.0028283 |
| | 9.00000 | 7.00000 | 42.65000 | -29.198 | 42.238 | -89.947 | -201.54 | -0.0028269 |
| | 10.00000 | 7.00000 | 42.65000 | -29.400 | 42.238 | -89.947 | -201.65 | -0.0028260 |
| | 11.00000 | 7.00000 | 42.65000 | -29.538 | 42.238 | -89.947 | -201.72 | -0.0028254 |
| | 12.00000 | 7.00000 | 42.65000 | -29.618 | 42.238 | -89.947 | -201.76 | -0.0028251 |
| | 13.00000 | 7.00000 | 42.65000 | -29.644 | 42.238 | -89.947 | -201.77 | -0.0028250 |
| | 14.00000 | 7.00000 | 42.65000 | -29.618 | 42.238 | -89.947 | -201.76 | -0.0028251 |
| | 15.00000 | 7.00000 | 42.65000 | -29.538 | 42.238 | -89.947 | -201.72 | -0.0028254 |
| | 16.00000 | 7.00000 | 42.65000 | -29.400 | 42.238 | -89.947 | -201.65 | -0.0028260 |
| | 17.00000 | 7.00000 | 42.65000 | -29.198 | 42.238 | -89.947 | -201.54 | -0.0028269 |
| | 18.00000 | 7.00000 | 42.65000 | -28.920 | 42.238 | -89.946 | -201.37 | -0.0028283 |
| | 19.00000 | 7.00000 | 42.65000 | -28.553 | 42.238 | -89.945 | -201.13 | -0.0028303 |
| | 20.00000 | 7.00000 | 42.65000 | -28.070 | 42.238 | -89.944 | -200.76 | -0.0028333 |
| | 21.00000 | 7.00000 | 42.65000 | -27.438 | 42.238 | -89.940 | -200.18 | -0.0028379 |
| | 22.00000 | 7.00000 | 42.65000 | -26.598 | 42.238 | -89.931 | -199.21 | -0.0028456 |
| | 23.00000 | 7.00000 | 42.65000 | -25.455 | 42.238 | -89.906 | -197.42 | -0.0028593 |
| | 24.00000 | 7.00000 | 42.65000 | -23.830 | 42.238 | -89.800 | -193.50 | -0.0028867 |
| | 25.00000 | 7.00000 | 42.65000 | -21.325 | 42.238 | -88.859 | -181.40 | -0.0029407 |
| | 26.00000 | 7.00000 | 42.65000 | -15.881 | 42.238 | -44.974 | -101.18 | -0.0014100 |
| | 0.00000 | 8.00000 | 42.65000 | -15.087 | 42.238 | -44.919 | -99.143 | -0.0014243 |
| | 1.00000 | 8.00000 | 42.65000 | -20.317 | 42.238 | -88.774 | -178.53 | -0.0029605 |
| | 2.00000 | 8.00000 | 42.65000 | -22.651 | 42.238 | -89.699 | -190.08 | -0.0029103 |
| | 3.00000 | 8.00000 | 42.65000 | -24.155 | 42.238 | -89.800 | -193.70 | -0.0028851 |
| | 4.00000 | 8.00000 | 42.65000 | -25.217 | 42.238 | -89.824 | -195.34 | -0.0028726 |
| | 5.00000 | 8.00000 | 42.65000 | -26.001 | 42.238 | -89.831 | -196.23 | -0.0028655 |
| | 6.00000 | 8.00000 | 42.65000 | -26.596 | 42.238 | -89.835 | -196.76 | -0.0028612 |
| | 7.00000 | 8.00000 | 42.65000 | -27.052 | 42.238 | -89.836 | -197.10 | -0.0028585 |
| | 8.00000 | 8.00000 | 42.65000 | -27.402 | 42.238 | -89.837 | -197.33 | -0.0028566 |
| | 9.00000 | 8.00000 | 42.65000 | -27.666 | 42.238 | -89.838 | -197.49 | -0.0028553 |
| | 10.00000 | 8.00000 | 42.65000 | -27.860 | 42.238 | -89.838 | -197.59 | -0.0028545 |
| | 11.00000 | 8.00000 | 42.65000 | -27.992 | 42.238 | -89.838 | -197.66 | -0.0028539 |
| | 12.00000 | 8.00000 | 42.65000 | -28.069 | 42.238 | -89.838 | -197.70 | -0.0028536 |
| | 13.00000 | 8.00000 | 42.65000 | -28.094 | 42.238 | -89.838 | -197.71 | -0.0028535 |
| | 14.00000 | 8.00000 | 42.65000 | -28.069 | 42.238 | -89.838 | -197.70 | -0.0028536 |
| | 15.00000 | 8.00000 | 42.65000 | -27.992 | 42.238 | -89.838 | -197.66 | -0.0028539 |
| | 16.00000 | 8.00000 | 42.65000 | -27.860 | 42.238 | -89.838 | -197.59 | -0.0028545 |
| | 17.00000 | 8.00000 | 42.65000 | -27.666 | 42.238 | -89.838 | -197.49 | -0.0028553 |
| | 18.00000 | 8.00000 | 42.65000 | -27.402 | 42.238 | -89.837 | -197.33 | -0.0028566 |
| | 19.00000 | 8.00000 | 42.65000 | -27.052 | 42.238 | -89.836 | -197.10 | -0.0028585 |
| | 20.00000 | 8.00000 | 42.65000 | -26.596 | 42.238 | -89.835 | -196.76 | -0.0028612 |
| | 21.00000 | 8.00000 | 42.65000 | -26.001 | 42.238 | -89.831 | -196.23 | -0.0028655 |
| | 22.00000 | 8.00000 | 42.65000 | -25.217 | 42.238 | -89.824 | -195.34 | -0.0028726 |
| | 23.00000 | 8.00000 | 42.65000 | -24.155 | 42.238 | -89.800 | -193.70 | -0.0028851 |
| | 24.00000 | 8.00000 | 42.65000 | -22.651 | 42.238 | -89.699 | -190.08 | -0.0029103 |
| | 25.00000 | 8.00000 | 42.65000 | -20.317 | 42.238 | -88.774 | -178.53 | -0.0029605 |
| | 26.00000 | 8.00000 | 42.65000 | -15.087 | 42.238 | -44.919 | -99.143 | -0.0014243 |
| | 0.00000 | 9.00000 | 42.65000 | -13.753 | 42.238 | -44.446 | -92.888 | -0.0014529 |
| | 1.00000 | 9.00000 | 42.65000 | -18.519 | 42.238 | -87.929 | -168.60 | -0.0030011 |
| | 2.00000 | 9.00000 | 42.65000 | -20.552 | 42.238 | -88.774 | -178.65 | -0.0029594 |
| | 3.00000 | 9.00000 | 42.65000 | -21.874 | 42.238 | -88.860 | -181.72 | -0.0029381 |
| | 4.00000 | 9.00000 | 42.65000 | -22.821 | 42.238 | -88.879 | -183.12 | -0.0029274 |
| | 5.00000 | 9.00000 | 42.65000 | -23.532 | 42.238 | -88.886 | -183.89 | -0.0029213 |
| | 6.00000 | 9.00000 | 42.65000 | -24.077 | 42.238 | -88.889 | -184.36 | -0.0029175 |
| | 7.00000 | 9.00000 | 42.65000 | -24.499 | 42.238 | -88.890 | -184.66 | -0.0029150 |
| | 8.00000 | 9.00000 | 42.65000 | -24.824 | 42.238 | -88.891 | -184.87 | -0.0029133 |
| | 9.00000 | 9.00000 | 42.65000 | -25.072 | 42.238 | -88.891 | -185.01 | -0.0029121 |
| | 10.00000 | 9.00000 | 42.65000 | -25.254 | 42.238 | -88.891 | -185.11 | -0.0029113 |
| | 11.00000 | 9.00000 | 42.65000 | -25.379 | 42.238 | -88.891 | -185.17 | -0.0029108 |
| | 12.00000 | 9.00000 | 42.65000 | -25.452 | 42.238 | -88.892 | -185.20 | -0.0029105 |
| | 13.00000 | 9.00000 | 42.65000 | -25.476 | 42.238 | -88.892 | -185.22 | -0.0029104 |
| | 14.00000 | 9.00000 | 42.65000 | -25.452 | 42.238 | -88.892 | -185.20 | -0.0029105 |
| | 15.00000 | 9.00000 | 42.65000 | -25.379 | 42.238 | -88.891 | -185.17 | -0.0029108 |
| | 16.00000 | 9.00000 | 42.65000 | -25.254 | 42.238 | -88.891 | -185.11 | -0.0029113 |
| | 17.00000 | 9.00000 | 42.65000 | -25.072 | 42.238 | -88.891 | -185.01 | -0.0029121 |
| | 18.00000 | 9.00000 | 42.65000 | -24.824 | 42.238 | -88.891 | -184.87 | -0.0029133 |
| | 19.00000 | 9.00000 | 42.65000 | -24.499 | 42.238 | -88.890 | -184.66 | -0.0029150 |
| | 20.00000 | 9.00000 | 42.65000 | -24.077 | 42.238 | -88.889 | -184.36 | -0.0029175 |
| | 21.00000 | 9.00000 | 42.65000 | -23.532 | 42.238 | -88.886 | -183.89 | -0.0029213 |
| | 22.00000 | 9.00000 | 42.65000 | -22.821 | 42.238 | -88.879 | -183.12 | -0.0029274 |
| | 23.00000 | 9.00000 | 42.65000 | -21.874 | 42.238 | -88.860 | -181.72 | -0.0029381 |
| | 24.00000 | 9.00000 | 42.65000 | -20.552 | 42.238 | -88.774 | -178.65 | -0.0029594 |
| | 25.00000 | 9.00000 | 42.65000 | -18.519 | 42.238 | -87.929 | -168.60 | -0.0030011 |
| | 26.00000 | 9.00000 | 42.65000 | -13.753 | 42.238 | -44.446 | -92.888 | -0.0014529 |
| | 0.00000 | 10.00000 | 42.65000 | -10.874 | 42.238 | -22.499 | -52.483 | -689.82E-6 |
| | 1.00000 | 10.00000 | 42.65000 | -13.926 | 42.238 | -44.446 | -92.967 | -0.0014522 |
| | 2.00000 | 10.00000 | 42.65000 | -15.487 | 42.238 | -44.920 | -99.341 | -0.0014227 |
| | 3.00000 | 10.00000 | 42.65000 | -16.575 | 42.238 | -44.975 | -101.56 | -0.0014070 |
| | 4.00000 | 10.00000 | 42.65000 | -17.386 | 42.238 | -44.989 | -102.64 | -0.0013986 |
| | 5.00000 | 10.00000 | 42.65000 | -18.010 | 42.238 | -44.994 | -103.27 | -0.0013936 |
| | 6.00000 | 10.00000 | 42.65000 | -18.497 | 42.238 | -44.996 | -103.67 | -0.0013904 |
| | 7.00000 | 10.00000 | 42.65000 | -18.878 | 42.238 | -44.997 | -103.93 | -0.0013882 |
| | 8.00000 | 10.00000 | 42.65000 | -19.176 | 42.238 | -44.998 | -104.11 | -0.0013867 |
| | 9.00000 | 10.00000 | 42.65000 | -19.404 | 42.238 | -44.998 | -104.24 | -0.0013857 |
| | 10.00000 | 10.00000 | 42.65000 | -19.573 | 42.238 | -44.998 | -104.33 | -0.0013849 |
| | 11.00000 | 10.00000 | 42.65000 | -19.689 | 42.238 | -44.998 | -104.39 | -0.0013845 |
| | 12.00000 | 10.00000 | 42.65000 | -19.757 | 42.238 | -44.998 | -104.42 | -0.0013842 |
| | 13.00000 | 10.00000 | 42.65000 | -19.779 | 42.238 | -44.998 | -104.43 | -0.0013841 |
| | 14.00000 | 10.00000 | 42.65000 | -19.757 | 42.238 | -44.998 | -104.42 | -0.0013842 |
| | 15.00000 | 10.00000 | 42.65000 | -19.689 | 42.238 | -44.998 | -104.39 | -0.0013845 |
| | 16.00000 | 10.00000 | 42.65000 | -19.573 | 42.238 | -44.998 | -104.33 | -0.0013849 |
| | 17.00000 | 10.00000 | 42.65000 | -19.404 | 42.238 | -44.998 | -104.24 | -0.0013857 |
| | 18.00000 | 10.00000 | 42.65000 | -19.176 | 42.238 | -44.998 | -104.11 | -0.0013867 |
| | 19.00000 | 10.00000 | 42.65000 | -18.878 | 42.238 | -44.997 | -103.93 | -0.0013882 |
| | 20.00000 | 10.00000 | 42.65000 | -18.497 | 42.238 | -44.996 | -103.67 | -0.0013904 |
| | 21.00000 | 10.00000 | 42.65000 | -18.010 | 42.238 | -44.994 | -103.27 | -0.0013936 |
| | 22.00000 | 10.00000 | 42.65000 | -17.386 | 42.238 | -44.989 | -102.64 | -0.0013986 |
| | 23.00000 | 10.00000 | 42.65000 | -16.575 | 42.238 | -44.975 | -101.56 | -0.0014070 |
| | 24.00000 | 10.00000 | 42.65000 | -15.487 | 42.238 | -44.920 | -99.341 | -0.0014227 |
| | 25.00000 | 10.00000 | 42.65000 | -13.926 | 42.238 | -44.446 | -92.967 | -0.0014522 |
| | 26.00000 | 10.00000 | 42.65000 | -10.874 | 42.238 | -22.499 | -52.483 | -689.82E-6 |
| GL1 | 0.00000 | 0.00000 | 44.75000 | -10.754 | 44.537 | 0.0 | 0.0 | 0.0 |
| | 0.00000 | 1.00000 | 44.75000 | -13.504 | 44.537 | 0.0 | 0.0 | 0.0 |
| | 0.00000 | 2.00000 | 44.75000 | -14.844 | 44.537 | 0.0 | 0.0 | 0.0 |
| | 0.00000 | 3.00000 | 44.75000 | -15.639 | 44.537 | 0.0 | 0.0 | 0.0 |
| | 0.00000 | 4.00000 | 44.75000 | -16.071 | 44.537 | 0.0 | 0.0 | 0.0 |
| | 0.00000 | 5.00000 | 44.75000 | -16.209 | 44.537 | 0.0 | 0.0 | 0.0 |
| | 0.00000 | 6.00000 | 44.75000 | -16.071 | 44.537 | 0.0 | 0.0 | 0.0 |
| | 0.00000 | 7.00000 | 44.75000 | -15.639 | 44.537 | 0.0 | 0.0 | 0.0 |
| | 0.00000 | 8.00000 | 44.75000 | -14.844 | 44.537 | 0.0 | 0.0 | 0.0 |
| GL2 | -4.50000 | 0.00000 | 44.75000 | -3.9564 | 44.537 | 0.0 | 0.0 | 0.0 |
| | -4.50000 | 1.00000 | 44.75000 | -4.2297 | 44.537 | 0.0 | 0.0 | 0.0 |
| | -4.50000 | 2.00000 | 44.75000 | -4.4607 | 44.537 | 0.0 | 0.0 | 0.0 |

**Ashton Court**

Demolition & Basement excavation

Total heave

| Name | Location X [m] | Location Y [m] | Z[Level] [mOD] | Z [mm] | Stresses Calc Level [mOD] | Vert Stress [kN/m²] | Sum Princ [kN/m²] | Vert Strain [-] |
|---|---|---|---|---|---|---|---|---|
| | -4.50000 | 3.00000 | 44.75000 | -4.6350 | 44.537 | 0.0 | 0.0 | 0.0 |
| | -4.50000 | 4.00000 | 44.75000 | -4.7430 | 44.537 | 0.0 | 0.0 | 0.0 |
| | -4.50000 | 5.00000 | 44.75000 | -4.7796 | 44.537 | 0.0 | 0.0 | 0.0 |
| | -4.50000 | 6.00000 | 44.75000 | -4.7430 | 44.537 | 0.0 | 0.0 | 0.0 |
| | -4.50000 | 7.00000 | 44.75000 | -4.6350 | 44.537 | 0.0 | 0.0 | 0.0 |
| | -4.50000 | 8.00000 | 44.75000 | -4.4607 | 44.537 | 0.0 | 0.0 | 0.0 |
| GL3 | -9.00000 | 0.00000 | 44.75000 | -2.0191 | 44.537 | 0.0 | 0.0 | 0.0 |
| | -9.00000 | 1.00000 | 44.75000 | -2.0999 | 44.537 | 0.0 | 0.0 | 0.0 |
| | -9.00000 | 2.00000 | 44.75000 | -2.1666 | 44.537 | 0.0 | 0.0 | 0.0 |
| | -9.00000 | 3.00000 | 44.75000 | -2.2163 | 44.537 | 0.0 | 0.0 | 0.0 |
| | -9.00000 | 4.00000 | 44.75000 | -2.2470 | 44.537 | 0.0 | 0.0 | 0.0 |
| | -9.00000 | 5.00000 | 44.75000 | -2.2573 | 44.537 | 0.0 | 0.0 | 0.0 |
| | -9.00000 | 6.00000 | 44.75000 | -2.2470 | 44.537 | 0.0 | 0.0 | 0.0 |
| | -9.00000 | 7.00000 | 44.75000 | -2.2163 | 44.537 | 0.0 | 0.0 | 0.0 |
| | -9.00000 | 8.00000 | 44.75000 | -2.1666 | 44.537 | 0.0 | 0.0 | 0.0 |
| GL4 | 0.00000 | 4.00000 | 44.75000 | -16.071 | 44.537 | 0.0 | 0.0 | 0.0 |
| | -1.00000 | 4.00000 | 44.75000 | -10.778 | 44.537 | 0.0 | 0.0 | 0.0 |
| | -2.00000 | 4.00000 | 44.75000 | -8.1621 | 44.537 | 0.0 | 0.0 | 0.0 |
| | -3.00000 | 4.00000 | 44.75000 | -6.4491 | 44.537 | 0.0 | 0.0 | 0.0 |
| | -4.00000 | 4.00000 | 44.75000 | -5.2294 | 44.537 | 0.0 | 0.0 | 0.0 |
| | -5.00000 | 4.00000 | 44.75000 | -4.3188 | 44.537 | 0.0 | 0.0 | 0.0 |
| | -6.00000 | 4.00000 | 44.75000 | -3.6163 | 44.537 | 0.0 | 0.0 | 0.0 |
| | -7.00000 | 4.00000 | 44.75000 | -3.0609 | 44.537 | 0.0 | 0.0 | 0.0 |
| | -8.00000 | 4.00000 | 44.75000 | -2.6133 | 44.537 | 0.0 | 0.0 | 0.0 |
| | -9.00000 | 4.00000 | 44.75000 | -2.2470 | 44.537 | 0.0 | 0.0 | 0.0 |
| GL5 | 13.00000 | -6.00000 | 44.75000 | -5.5134 | 44.537 | 0.0 | 0.0 | 0.0 |
| | 13.00000 | -7.00000 | 44.75000 | -4.7437 | 44.537 | 0.0 | 0.0 | 0.0 |
| | 13.00000 | -8.00000 | 44.75000 | -4.1052 | 44.537 | 0.0 | 0.0 | 0.0 |
| | 13.00000 | -9.00000 | 44.75000 | -3.5697 | 44.537 | 0.0 | 0.0 | 0.0 |
| | 13.00000 | -10.00000 | 44.75000 | -3.1166 | 44.537 | 0.0 | 0.0 | 0.0 |
| | 13.00000 | -11.00000 | 44.75000 | -2.7303 | 44.537 | 0.0 | 0.0 | 0.0 |
| | 13.00000 | -12.00000 | 44.75000 | -2.3991 | 44.537 | 0.0 | 0.0 | 0.0 |
| GL6 | 26.00000 | -6.00000 | 44.75000 | -3.4849 | 44.537 | 0.0 | 0.0 | 0.0 |
| | 26.00000 | -7.00000 | 44.75000 | -3.0537 | 44.537 | 0.0 | 0.0 | 0.0 |
| | 26.00000 | -8.00000 | 44.75000 | -2.6889 | 44.537 | 0.0 | 0.0 | 0.0 |
| | 26.00000 | -9.00000 | 44.75000 | -2.3769 | 44.537 | 0.0 | 0.0 | 0.0 |
| | 26.00000 | -10.00000 | 44.75000 | -2.1077 | 44.537 | 0.0 | 0.0 | 0.0 |
| | 26.00000 | -11.00000 | 44.75000 | -1.8738 | 44.537 | 0.0 | 0.0 | 0.0 |
| | 26.00000 | -12.00000 | 44.75000 | -1.6694 | 44.537 | 0.0 | 0.0 | 0.0 |

### Notes
Eu=400Cu
Cu=70+6z

### Analysis Options
Analysis: Boussinesq
Global Poisson's ratio: 0.20
Maximum allowable ratio between values of E: 1.5
Horizontal rigid boundary level: 0.00 [m OD]
Displacements at area centroids calculated.

### Soil ProfilesSoil Profile

| Layer | Level at top | Number of intermediate displacement levels | Youngs Modulus Top | Youngs Modulus Btm | Poissons ratio | Non-linear curve |
|---|---|---|---|---|---|---|
| | [mOD] | | [kN/m²] | [kN/m²] | | |
| 1 | 45.400 | 2 | 5000.0 | 5000.0 | 0.50000 | None |
| 2 | 43.900 | 43 | 28000. | 131200. | 0.50000 | None |

### Soil Zones

| Zone | Name | X coordinates min [m] | X coordinates max [m] | Y coordinates min [m] | Y coordinates max [m] | Profile |
|---|---|---|---|---|---|---|
| 1 | SZ1 | -60.000 | 60.000 | -60.000 | 60.000 | Soil Profile |

### Non-linear Curve Coordinates - Non-linear Curve 1

| Point | Strain [%] | Factor |
|---|---|---|

### Load Data

| Load ref. | Name | Shape | Orientation of Plane | Load position: Centre of load (Global) X [m] | Y [m] | Z (level) [m] | 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 | Basement | Rectangular | Horizontal | 13.000 | 3.5000 | 42.650 | 0.0 | 26.000 | 7.0000 | N/A | N/A | 1 | 60.000 | 0.0 | 0.0 |

### Displacement Data

| Ref. | Type | Name | Direction of Extrusion | Line/Line for extrusion: First point X [m] | First point Y [m] | First point Z(level) [m] | Second point X [m] | Second point Y [m] | Second point Z(level) [m] | No. of intrvls across extrusion/line | No. of intrvls along Extrusion Depth [m] | No. of intrvls along extrusion | Calculate | Show Detailed results |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Grid | BL | Global X | 0.0 | 0.0 | 42.650 | N/A | 7.0000 | 42.650 | 7 | 26.000 | 26 | Yes | No |
| 2 | Line | GL1 | N/A | 0.0 | 0.0 | 44.750 | 0.0 | 8.0000 | 44.750 | 8 | N/A | N/A | Yes | No |
| 3 | Line | GL2 | N/A | -4.5000 | 0.0 | 44.750 | -4.5000 | 8.0000 | 44.750 | 8 | N/A | N/A | Yes | No |
| 4 | Line | GL3 | N/A | -9.0000 | 0.0 | 44.750 | -9.0000 | 8.0000 | 44.750 | 8 | N/A | N/A | Yes | No |
| 5 | Line | GL4 | N/A | 0.0 | 4.0000 | 44.750 | -9.0000 | 4.0000 | 44.750 | 9 | N/A | N/A | Yes | No |
| 6 | Line | GL5 | N/A | 13.000 | -6.0000 | 44.750 | 13.000 | -12.000 | 44.750 | 6 | N/A | N/A | Yes | No |
| 7 | Line | GL6 | N/A | 26.000 | -6.0000 | 44.750 | 26.000 | -12.000 | 44.750 | 6 | N/A | N/A | Yes | No |

### RESULTS FOR GRIDS

Analysis: Boussinesq
Global Poisson's ratio: 0.20
Horizontal rigid boundary level: 0.00 [m OD]

The maximum displacement difference between
Boussinesq method (11.382mm) and Mindlin method (8.9146mm)
occurs at point X=13.000m Y=3.5000m Level 42.650mOD and is 2.4673mm

| Name | Location X [m] | Y [m] | Z[Level] [mOD] | Z [mm] | Stresses: Calc Level [mOD] | Vert Stress [kN/m²] | Sum Princ [kN/m²] | Vert Strain [-] |
|---|---|---|---|---|---|---|---|---|
| Basement | 13.00000 | 3.50000 | 42.65000 | 11.382 | 42.238 | 59.959 | 132.87 | 736.81E-6 |
| BL | 0.00000 | 0.00000 | 42.65000 | 3.9964 | 42.238 | 14.999 | 34.604 | 162.89E-6 |
| | 1.00000 | 0.00000 | 42.65000 | 5.3307 | 42.238 | 29.630 | 61.547 | 428.60E-6 |
| | 2.00000 | 0.00000 | 42.65000 | 5.9662 | 42.238 | 29.945 | 65.751 | 377.54E-6 |
| | 3.00000 | 0.00000 | 42.65000 | 6.3928 | 42.238 | 29.982 | 67.187 | 356.76E-6 |
| | 4.00000 | 0.00000 | 42.65000 | 6.7000 | 42.238 | 29.991 | 67.876 | 346.39E-6 |
| | 5.00000 | 0.00000 | 42.65000 | 6.9290 | 42.238 | 29.994 | 68.264 | 340.46E-6 |
| | 6.00000 | 0.00000 | 42.65000 | 7.1032 | 42.238 | 29.996 | 68.503 | 336.77E-6 |
| | 7.00000 | 0.00000 | 42.65000 | 7.2367 | 42.238 | 29.996 | 68.659 | 334.36E-6 |
| | 8.00000 | 0.00000 | 42.65000 | 7.3388 | 42.238 | 29.997 | 68.764 | 332.73E-6 |
| | 9.00000 | 0.00000 | 42.65000 | 7.4159 | 42.238 | 29.997 | 68.835 | 331.62E-6 |
| | 10.00000 | 0.00000 | 42.65000 | 7.4722 | 42.238 | 29.997 | 68.884 | 330.86E-6 |
| | 11.00000 | 0.00000 | 42.65000 | 7.5106 | 42.238 | 29.997 | 68.915 | 330.37E-6 |
| | 12.00000 | 0.00000 | 42.65000 | 7.5329 | 42.238 | 29.997 | 68.933 | 330.10E-6 |
| | 13.00000 | 0.00000 | 42.65000 | 7.5402 | 42.238 | 29.997 | 68.939 | 330.01E-6 |
| | 14.00000 | 0.00000 | 42.65000 | 7.5329 | 42.238 | 29.997 | 68.933 | 330.10E-6 |
| | 15.00000 | 0.00000 | 42.65000 | 7.5106 | 42.238 | 29.997 | 68.915 | 330.37E-6 |
| | 16.00000 | 0.00000 | 42.65000 | 7.4722 | 42.238 | 29.997 | 68.884 | 330.86E-6 |
| | 17.00000 | 0.00000 | 42.65000 | 7.4159 | 42.238 | 29.997 | 68.835 | 331.62E-6 |
| | 18.00000 | 0.00000 | 42.65000 | 7.3388 | 42.238 | 29.997 | 68.764 | 332.73E-6 |
| | 19.00000 | 0.00000 | 42.65000 | 7.2367 | 42.238 | 29.996 | 68.659 | 334.36E-6 |
| | 20.00000 | 0.00000 | 42.65000 | 7.1032 | 42.238 | 29.996 | 68.503 | 336.77E-6 |
| | 21.00000 | 0.00000 | 42.65000 | 6.9290 | 42.238 | 29.994 | 68.264 | 340.46E-6 |
| | 22.00000 | 0.00000 | 42.65000 | 6.7000 | 42.238 | 29.991 | 67.876 | 346.39E-6 |
| | 23.00000 | 0.00000 | 42.65000 | 6.3928 | 42.238 | 29.982 | 67.187 | 356.76E-6 |
| | 24.00000 | 0.00000 | 42.65000 | 5.9662 | 42.238 | 29.945 | 65.751 | 377.54E-6 |
| | 25.00000 | 0.00000 | 42.65000 | 5.3307 | 42.238 | 29.630 | 61.547 | 428.60E-6 |
| | 26.00000 | 0.00000 | 42.65000 | 3.9964 | 42.238 | 14.999 | 34.604 | 162.89E-6 |
| | 0.00000 | 1.00000 | 42.65000 | 5.2209 | 42.238 | 29.629 | 61.422 | 430.53E-6 |
| | 1.00000 | 1.00000 | 42.65000 | 7.3426 | 42.238 | 58.618 | 111.83 | 0.0010036 |
| | 2.00000 | 1.00000 | 42.65000 | 8.1757 | 42.238 | 59.181 | 118.46 | 926.11E-6 |
| | 3.00000 | 1.00000 | 42.65000 | 8.6951 | 42.238 | 59.238 | 120.45 | 897.65E-6 |
| | 4.00000 | 1.00000 | 42.65000 | 9.0529 | 42.238 | 59.251 | 121.33 | 884.44E-6 |
| | 5.00000 | 1.00000 | 42.65000 | 9.3121 | 42.238 | 59.255 | 121.80 | 877.26E-6 |
| | 6.00000 | 1.00000 | 42.65000 | 9.5052 | 42.238 | 59.256 | 122.08 | 872.95E-6 |
| | 7.00000 | 1.00000 | 42.65000 | 9.6510 | 42.238 | 59.257 | 122.26 | 870.20E-6 |
| | 8.00000 | 1.00000 | 42.65000 | 9.7613 | 42.238 | 59.258 | 122.37 | 868.38E-6 |
| | 9.00000 | 1.00000 | 42.65000 | 9.8440 | 42.238 | 59.258 | 122.45 | 867.15E-6 |
| | 10.00000 | 1.00000 | 42.65000 | 9.9039 | 42.238 | 59.258 | 122.51 | 866.33E-6 |
| | 11.00000 | 1.00000 | 42.65000 | 9.9447 | 42.238 | 59.258 | 122.54 | 865.80E-6 |
| | 12.00000 | 1.00000 | 42.65000 | 9.9683 | 42.238 | 59.258 | 122.56 | 865.50E-6 |
| | 13.00000 | 1.00000 | 42.65000 | 9.9761 | 42.238 | 59.258 | 122.57 | 865.41E-6 |
| | 14.00000 | 1.00000 | 42.65000 | 9.9683 | 42.238 | 59.258 | 122.56 | 865.50E-6 |
| | 15.00000 | 1.00000 | 42.65000 | 9.9447 | 42.238 | 59.258 | 122.54 | 865.80E-6 |
| | 16.00000 | 1.00000 | 42.65000 | 9.9039 | 42.238 | 59.258 | 122.51 | 866.33E-6 |
| | 17.00000 | 1.00000 | 42.65000 | 9.8440 | 42.238 | 59.258 | 122.45 | 867.15E-6 |
| | 18.00000 | 1.00000 | 42.65000 | 9.7613 | 42.238 | 59.258 | 122.37 | 868.38E-6 |
| | 19.00000 | 1.00000 | 42.65000 | 9.6510 | 42.238 | 59.257 | 122.26 | 870.20E-6 |
| | 20.00000 | 1.00000 | 42.65000 | 9.5052 | 42.238 | 59.256 | 122.08 | 872.95E-6 |
| | 21.00000 | 1.00000 | 42.65000 | 9.3121 | 42.238 | 59.255 | 121.80 | 877.26E-6 |
| | 22.00000 | 1.00000 | 42.65000 | 9.0529 | 42.238 | 59.251 | 121.33 | 884.44E-6 |

| Name | Location X [m] | Y [m] | Z[Level] [mOD] | Z [mm] | Stresses Calc Level [mOD] | Vert Stress [kN/m²] | Sum Princ [kN/m²] | Vert Strain [-] |
|---|---|---|---|---|---|---|---|---|
| | 23.00000 | 1.00000 | 42.65000 | 8.6951 | 42.238 | 59.238 | 120.45 | 897.65E-6 |
| | 24.00000 | 1.00000 | 42.65000 | 8.1757 | 42.238 | 59.181 | 118.46 | 926.11E-6 |
| | 25.00000 | 1.00000 | 42.65000 | 7.3426 | 42.238 | 58.618 | 111.83 | 0.0010036 |
| | 26.00000 | 1.00000 | 42.65000 | 5.2209 | 42.238 | 29.629 | 61.422 | 430.53E-6 |
| | 0.00000 | 2.00000 | 42.65000 | 5.6995 | 42.238 | 29.943 | 65.410 | 382.80E-6 |
| | 1.00000 | 2.00000 | 42.65000 | 8.0091 | 42.238 | 59.179 | 118.22 | 929.81E-6 |
| | 2.00000 | 2.00000 | 42.65000 | 8.9594 | 42.238 | 59.796 | 125.82 | 839.68E-6 |
| | 3.00000 | 2.00000 | 42.65000 | 9.5443 | 42.238 | 59.863 | 128.15 | 806.31E-6 |
| | 4.00000 | 2.00000 | 42.65000 | 9.9397 | 42.238 | 59.878 | 129.17 | 791.05E-6 |
| | 5.00000 | 2.00000 | 42.65000 | 10.222 | 42.238 | 59.883 | 129.70 | 782.92E-6 |
| | 6.00000 | 2.00000 | 42.65000 | 10.429 | 42.238 | 59.885 | 130.01 | 778.14E-6 |
| | 7.00000 | 2.00000 | 42.65000 | 10.584 | 42.238 | 59.886 | 130.21 | 775.15E-6 |
| | 8.00000 | 2.00000 | 42.65000 | 10.700 | 42.238 | 59.886 | 130.33 | 773.18E-6 |
| | 9.00000 | 2.00000 | 42.65000 | 10.787 | 42.238 | 59.886 | 130.42 | 771.87E-6 |
| | 10.00000 | 2.00000 | 42.65000 | 10.849 | 42.238 | 59.887 | 130.47 | 771.00E-6 |
| | 11.00000 | 2.00000 | 42.65000 | 10.892 | 42.238 | 59.887 | 130.51 | 770.44E-6 |
| | 12.00000 | 2.00000 | 42.65000 | 10.916 | 42.238 | 59.887 | 130.53 | 770.13E-6 |
| | 13.00000 | 2.00000 | 42.65000 | 10.924 | 42.238 | 59.887 | 130.54 | 770.03E-6 |
| | 14.00000 | 2.00000 | 42.65000 | 10.916 | 42.238 | 59.887 | 130.53 | 770.13E-6 |
| | 15.00000 | 2.00000 | 42.65000 | 10.892 | 42.238 | 59.887 | 130.51 | 770.44E-6 |
| | 16.00000 | 2.00000 | 42.65000 | 10.849 | 42.238 | 59.887 | 130.47 | 771.00E-6 |
| | 17.00000 | 2.00000 | 42.65000 | 10.787 | 42.238 | 59.886 | 130.42 | 771.87E-6 |
| | 18.00000 | 2.00000 | 42.65000 | 10.700 | 42.238 | 59.886 | 130.33 | 773.18E-6 |
| | 19.00000 | 2.00000 | 42.65000 | 10.584 | 42.238 | 59.886 | 130.21 | 775.15E-6 |
| | 20.00000 | 2.00000 | 42.65000 | 10.429 | 42.238 | 59.885 | 130.01 | 778.14E-6 |
| | 21.00000 | 2.00000 | 42.65000 | 10.222 | 42.238 | 59.883 | 129.70 | 782.92E-6 |
| | 22.00000 | 2.00000 | 42.65000 | 9.9397 | 42.238 | 59.878 | 129.17 | 791.05E-6 |
| | 23.00000 | 2.00000 | 42.65000 | 9.5443 | 42.238 | 59.863 | 128.15 | 806.31E-6 |
| | 24.00000 | 2.00000 | 42.65000 | 8.9594 | 42.238 | 59.796 | 125.82 | 839.68E-6 |
| | 25.00000 | 2.00000 | 42.65000 | 8.0091 | 42.238 | 59.179 | 118.22 | 929.81E-6 |
| | 26.00000 | 2.00000 | 42.65000 | 5.6995 | 42.238 | 29.943 | 65.410 | 382.80E-6 |
| | 0.00000 | 3.00000 | 42.65000 | 5.9062 | 42.238 | 29.977 | 66.470 | 367.75E-6 |
| | 1.00000 | 3.00000 | 42.65000 | 8.2832 | 42.238 | 59.232 | 119.76 | 908.20E-6 |
| | 2.00000 | 3.00000 | 42.65000 | 9.2840 | 42.238 | 59.858 | 127.65 | 813.86E-6 |
| | 3.00000 | 3.00000 | 42.65000 | 9.9011 | 42.238 | 59.928 | 130.13 | 778.34E-6 |
| | 4.00000 | 3.00000 | 42.65000 | 10.316 | 42.238 | 59.944 | 131.22 | 762.07E-6 |
| | 5.00000 | 3.00000 | 42.65000 | 10.610 | 42.238 | 59.950 | 131.78 | 753.44E-6 |
| | 6.00000 | 3.00000 | 42.65000 | 10.825 | 42.238 | 59.952 | 132.11 | 748.41E-6 |
| | 7.00000 | 3.00000 | 42.65000 | 10.984 | 42.238 | 59.953 | 132.31 | 745.28E-6 |
| | 8.00000 | 3.00000 | 42.65000 | 11.104 | 42.238 | 59.953 | 132.44 | 743.24E-6 |
| | 9.00000 | 3.00000 | 42.65000 | 11.193 | 42.238 | 59.953 | 132.53 | 741.88E-6 |
| | 10.00000 | 3.00000 | 42.65000 | 11.257 | 42.238 | 59.954 | 132.59 | 740.98E-6 |
| | 11.00000 | 3.00000 | 42.65000 | 11.300 | 42.238 | 59.954 | 132.63 | 740.41E-6 |
| | 12.00000 | 3.00000 | 42.65000 | 11.325 | 42.238 | 59.954 | 132.65 | 740.09E-6 |
| | 13.00000 | 3.00000 | 42.65000 | 11.333 | 42.238 | 59.954 | 132.65 | 739.99E-6 |
| | 14.00000 | 3.00000 | 42.65000 | 11.325 | 42.238 | 59.954 | 132.65 | 740.09E-6 |
| | 15.00000 | 3.00000 | 42.65000 | 11.300 | 42.238 | 59.954 | 132.63 | 740.41E-6 |
| | 16.00000 | 3.00000 | 42.65000 | 11.257 | 42.238 | 59.954 | 132.59 | 740.98E-6 |
| | 17.00000 | 3.00000 | 42.65000 | 11.193 | 42.238 | 59.953 | 132.53 | 741.88E-6 |
| | 18.00000 | 3.00000 | 42.65000 | 11.104 | 42.238 | 59.953 | 132.44 | 743.24E-6 |
| | 19.00000 | 3.00000 | 42.65000 | 10.984 | 42.238 | 59.953 | 132.31 | 745.28E-6 |
| | 20.00000 | 3.00000 | 42.65000 | 10.825 | 42.238 | 59.952 | 132.11 | 748.41E-6 |
| | 21.00000 | 3.00000 | 42.65000 | 10.610 | 42.238 | 59.950 | 131.78 | 753.44E-6 |
| | 22.00000 | 3.00000 | 42.65000 | 10.316 | 42.238 | 59.944 | 131.22 | 762.07E-6 |
| | 23.00000 | 3.00000 | 42.65000 | 9.9011 | 42.238 | 59.928 | 130.13 | 778.34E-6 |
| | 24.00000 | 3.00000 | 42.65000 | 9.2840 | 42.238 | 59.858 | 127.65 | 813.86E-6 |
| | 25.00000 | 3.00000 | 42.65000 | 8.2832 | 42.238 | 59.232 | 119.76 | 908.20E-6 |
| | 26.00000 | 3.00000 | 42.65000 | 5.9062 | 42.238 | 29.977 | 66.470 | 367.75E-6 |
| | 0.00000 | 4.00000 | 42.65000 | 5.9062 | 42.238 | 29.977 | 66.470 | 367.75E-6 |
| | 1.00000 | 4.00000 | 42.65000 | 8.2832 | 42.238 | 59.232 | 119.76 | 908.20E-6 |
| | 2.00000 | 4.00000 | 42.65000 | 9.2840 | 42.238 | 59.858 | 127.65 | 813.86E-6 |
| | 3.00000 | 4.00000 | 42.65000 | 9.9011 | 42.238 | 59.928 | 130.13 | 778.34E-6 |
| | 4.00000 | 4.00000 | 42.65000 | 10.316 | 42.238 | 59.944 | 131.22 | 762.07E-6 |
| | 5.00000 | 4.00000 | 42.65000 | 10.610 | 42.238 | 59.950 | 131.78 | 753.44E-6 |
| | 6.00000 | 4.00000 | 42.65000 | 10.825 | 42.238 | 59.952 | 132.11 | 748.41E-6 |
| | 7.00000 | 4.00000 | 42.65000 | 10.984 | 42.238 | 59.953 | 132.31 | 745.28E-6 |
| | 8.00000 | 4.00000 | 42.65000 | 11.104 | 42.238 | 59.953 | 132.44 | 743.24E-6 |
| | 9.00000 | 4.00000 | 42.65000 | 11.193 | 42.238 | 59.953 | 132.53 | 741.88E-6 |
| | 10.00000 | 4.00000 | 42.65000 | 11.257 | 42.238 | 59.954 | 132.59 | 740.98E-6 |
| | 11.00000 | 4.00000 | 42.65000 | 11.300 | 42.238 | 59.954 | 132.63 | 740.41E-6 |
| | 12.00000 | 4.00000 | 42.65000 | 11.325 | 42.238 | 59.954 | 132.65 | 740.09E-6 |
| | 13.00000 | 4.00000 | 42.65000 | 11.333 | 42.238 | 59.954 | 132.65 | 739.99E-6 |
| | 14.00000 | 4.00000 | 42.65000 | 11.325 | 42.238 | 59.954 | 132.65 | 740.09E-6 |
| | 15.00000 | 4.00000 | 42.65000 | 11.300 | 42.238 | 59.954 | 132.63 | 740.41E-6 |
| | 16.00000 | 4.00000 | 42.65000 | 11.257 | 42.238 | 59.954 | 132.59 | 740.98E-6 |
| | 17.00000 | 4.00000 | 42.65000 | 11.193 | 42.238 | 59.953 | 132.53 | 741.88E-6 |
| | 18.00000 | 4.00000 | 42.65000 | 11.104 | 42.238 | 59.953 | 132.44 | 743.24E-6 |
| | 19.00000 | 4.00000 | 42.65000 | 10.984 | 42.238 | 59.953 | 132.31 | 745.28E-6 |
| | 20.00000 | 4.00000 | 42.65000 | 10.825 | 42.238 | 59.952 | 132.11 | 748.41E-6 |
| | 21.00000 | 4.00000 | 42.65000 | 10.610 | 42.238 | 59.950 | 131.78 | 753.44E-6 |
| | 22.00000 | 4.00000 | 42.65000 | 10.316 | 42.238 | 59.944 | 131.22 | 762.07E-6 |
| | 23.00000 | 4.00000 | 42.65000 | 9.9011 | 42.238 | 59.928 | 130.13 | 778.34E-6 |
| | 24.00000 | 4.00000 | 42.65000 | 9.2840 | 42.238 | 59.858 | 127.65 | 813.86E-6 |
| | 25.00000 | 4.00000 | 42.65000 | 8.2832 | 42.238 | 59.232 | 119.76 | 908.20E-6 |
| | 26.00000 | 4.00000 | 42.65000 | 5.9062 | 42.238 | 29.977 | 66.470 | 367.75E-6 |
| | 0.00000 | 5.00000 | 42.65000 | 5.6995 | 42.238 | 29.943 | 65.410 | 382.80E-6 |
| | 1.00000 | 5.00000 | 42.65000 | 8.0091 | 42.238 | 59.179 | 118.22 | 929.81E-6 |
| | 2.00000 | 5.00000 | 42.65000 | 8.9594 | 42.238 | 59.796 | 125.82 | 839.68E-6 |
| | 3.00000 | 5.00000 | 42.65000 | 9.5443 | 42.238 | 59.863 | 128.15 | 806.31E-6 |
| | 4.00000 | 5.00000 | 42.65000 | 9.9397 | 42.238 | 59.878 | 129.17 | 791.05E-6 |
| | 5.00000 | 5.00000 | 42.65000 | 10.222 | 42.238 | 59.883 | 129.70 | 782.92E-6 |
| | 6.00000 | 5.00000 | 42.65000 | 10.429 | 42.238 | 59.885 | 130.01 | 778.14E-6 |
| | 7.00000 | 5.00000 | 42.65000 | 10.584 | 42.238 | 59.886 | 130.21 | 775.15E-6 |
| | 8.00000 | 5.00000 | 42.65000 | 10.700 | 42.238 | 59.886 | 130.33 | 773.18E-6 |
| | 9.00000 | 5.00000 | 42.65000 | 10.787 | 42.238 | 59.886 | 130.42 | 771.87E-6 |
| | 10.00000 | 5.00000 | 42.65000 | 10.849 | 42.238 | 59.887 | 130.47 | 771.00E-6 |
| | 11.00000 | 5.00000 | 42.65000 | 10.892 | 42.238 | 59.887 | 130.51 | 770.44E-6 |
| | 12.00000 | 5.00000 | 42.65000 | 10.916 | 42.238 | 59.887 | 130.53 | 770.13E-6 |
| | 13.00000 | 5.00000 | 42.65000 | 10.924 | 42.238 | 59.887 | 130.54 | 770.03E-6 |
| | 14.00000 | 5.00000 | 42.65000 | 10.916 | 42.238 | 59.887 | 130.53 | 770.13E-6 |
| | 15.00000 | 5.00000 | 42.65000 | 10.892 | 42.238 | 59.887 | 130.51 | 770.44E-6 |
| | 16.00000 | 5.00000 | 42.65000 | 10.849 | 42.238 | 59.887 | 130.47 | 771.00E-6 |
| | 17.00000 | 5.00000 | 42.65000 | 10.787 | 42.238 | 59.886 | 130.42 | 771.87E-6 |
| | 18.00000 | 5.00000 | 42.65000 | 10.700 | 42.238 | 59.886 | 130.33 | 773.18E-6 |
| | 19.00000 | 5.00000 | 42.65000 | 10.584 | 42.238 | 59.886 | 130.21 | 775.15E-6 |
| | 20.00000 | 5.00000 | 42.65000 | 10.429 | 42.238 | 59.885 | 130.01 | 778.14E-6 |
| | 21.00000 | 5.00000 | 42.65000 | 10.222 | 42.238 | 59.883 | 129.70 | 782.92E-6 |
| | 22.00000 | 5.00000 | 42.65000 | 9.9397 | 42.238 | 59.878 | 129.17 | 791.05E-6 |
| | 23.00000 | 5.00000 | 42.65000 | 9.5443 | 42.238 | 59.863 | 128.15 | 806.31E-6 |
| | 24.00000 | 5.00000 | 42.65000 | 8.9594 | 42.238 | 59.796 | 125.82 | 839.68E-6 |
| | 25.00000 | 5.00000 | 42.65000 | 8.0091 | 42.238 | 59.179 | 118.22 | 929.81E-6 |
| | 26.00000 | 5.00000 | 42.65000 | 5.6995 | 42.238 | 29.943 | 65.410 | 382.80E-6 |
| | 0.00000 | 6.00000 | 42.65000 | 5.2209 | 42.238 | 29.629 | 61.422 | 430.53E-6 |
| | 1.00000 | 6.00000 | 42.65000 | 7.3426 | 42.238 | 58.618 | 111.83 | 0.0010036 |
| | 2.00000 | 6.00000 | 42.65000 | 8.1757 | 42.238 | 59.181 | 118.46 | 926.11E-6 |
| | 3.00000 | 6.00000 | 42.65000 | 8.6951 | 42.238 | 59.238 | 120.45 | 897.65E-6 |
| | 4.00000 | 6.00000 | 42.65000 | 9.0529 | 42.238 | 59.251 | 121.33 | 884.44E-6 |
| | 5.00000 | 6.00000 | 42.65000 | 9.3121 | 42.238 | 59.255 | 121.80 | 877.26E-6 |
| | 6.00000 | 6.00000 | 42.65000 | 9.5052 | 42.238 | 59.256 | 122.08 | 872.95E-6 |
| | 7.00000 | 6.00000 | 42.65000 | 9.6510 | 42.238 | 59.257 | 122.26 | 870.20E-6 |
| | 8.00000 | 6.00000 | 42.65000 | 9.7613 | 42.238 | 59.258 | 122.37 | 868.38E-6 |
| | 9.00000 | 6.00000 | 42.65000 | 9.8440 | 42.238 | 59.258 | 122.45 | 867.15E-6 |
| | 10.00000 | 6.00000 | 42.65000 | 9.9039 | 42.238 | 59.258 | 122.51 | 866.33E-6 |
| | 11.00000 | 6.00000 | 42.65000 | 9.9447 | 42.238 | 59.258 | 122.54 | 865.80E-6 |
| | 12.00000 | 6.00000 | 42.65000 | 9.9683 | 42.238 | 59.258 | 122.56 | 865.50E-6 |
| | 13.00000 | 6.00000 | 42.65000 | 9.9761 | 42.238 | 59.258 | 122.57 | 865.41E-6 |
| | 14.00000 | 6.00000 | 42.65000 | 9.9683 | 42.238 | 59.258 | 122.56 | 865.50E-6 |
| | 15.00000 | 6.00000 | 42.65000 | 9.9447 | 42.238 | 59.258 | 122.54 | 865.80E-6 |
| | 16.00000 | 6.00000 | 42.65000 | 9.9039 | 42.238 | 59.258 | 122.51 | 866.33E-6 |
| | 17.00000 | 6.00000 | 42.65000 | 9.8440 | 42.238 | 59.258 | 122.45 | 867.15E-6 |

| Name | Location X [m] | Y [m] | Z[Level] [mOD] | Z [mm] | Stresses Calc Level [mOD] | Vert Stress [kN/m²] | Sum Princ [kN/m²] | Vert Strain [-] |
|---|---|---|---|---|---|---|---|---|
| | 18.00000 | 6.00000 | 42.65000 | 9.7613 | 42.238 | 59.258 | 122.37 | 868.38E-6 |
| | 19.00000 | 6.00000 | 42.65000 | 9.6510 | 42.238 | 59.257 | 122.26 | 870.20E-6 |
| | 20.00000 | 6.00000 | 42.65000 | 9.5052 | 42.238 | 59.256 | 122.08 | 872.95E-6 |
| | 21.00000 | 6.00000 | 42.65000 | 9.3121 | 42.238 | 59.255 | 121.80 | 877.26E-6 |
| | 22.00000 | 6.00000 | 42.65000 | 9.0529 | 42.238 | 59.251 | 121.33 | 884.44E-6 |
| | 23.00000 | 6.00000 | 42.65000 | 8.6951 | 42.238 | 59.238 | 120.45 | 897.65E-6 |
| | 24.00000 | 6.00000 | 42.65000 | 8.1757 | 42.238 | 59.181 | 118.46 | 926.11E-6 |
| | 25.00000 | 6.00000 | 42.65000 | 7.3426 | 42.238 | 58.618 | 111.83 | 0.0010036 |
| | 26.00000 | 6.00000 | 42.65000 | 5.2209 | 42.238 | 29.629 | 61.422 | 430.53E-6 |
| | 0.00000 | 7.00000 | 42.65000 | 3.9964 | 42.238 | 14.999 | 34.604 | 162.89E-6 |
| | 1.00000 | 7.00000 | 42.65000 | 5.3307 | 42.238 | 29.630 | 61.547 | 428.60E-6 |
| | 2.00000 | 7.00000 | 42.65000 | 5.9662 | 42.238 | 29.945 | 65.751 | 377.54E-6 |
| | 3.00000 | 7.00000 | 42.65000 | 6.3928 | 42.238 | 29.982 | 67.187 | 356.76E-6 |
| | 4.00000 | 7.00000 | 42.65000 | 6.7000 | 42.238 | 29.991 | 67.876 | 346.39E-6 |
| | 5.00000 | 7.00000 | 42.65000 | 6.9290 | 42.238 | 29.994 | 68.264 | 340.46E-6 |
| | 6.00000 | 7.00000 | 42.65000 | 7.1032 | 42.238 | 29.996 | 68.503 | 336.77E-6 |
| | 7.00000 | 7.00000 | 42.65000 | 7.2367 | 42.238 | 29.996 | 68.659 | 334.36E-6 |
| | 8.00000 | 7.00000 | 42.65000 | 7.3388 | 42.238 | 29.997 | 68.764 | 332.73E-6 |
| | 9.00000 | 7.00000 | 42.65000 | 7.4159 | 42.238 | 29.997 | 68.835 | 331.62E-6 |
| | 10.00000 | 7.00000 | 42.65000 | 7.4722 | 42.238 | 29.997 | 68.884 | 330.86E-6 |
| | 11.00000 | 7.00000 | 42.65000 | 7.5106 | 42.238 | 29.997 | 68.915 | 330.37E-6 |
| | 12.00000 | 7.00000 | 42.65000 | 7.5329 | 42.238 | 29.997 | 68.933 | 330.10E-6 |
| | 13.00000 | 7.00000 | 42.65000 | 7.5402 | 42.238 | 29.997 | 68.939 | 330.01E-6 |
| | 14.00000 | 7.00000 | 42.65000 | 7.5329 | 42.238 | 29.997 | 68.933 | 330.10E-6 |
| | 15.00000 | 7.00000 | 42.65000 | 7.5106 | 42.238 | 29.997 | 68.915 | 330.37E-6 |
| | 16.00000 | 7.00000 | 42.65000 | 7.4722 | 42.238 | 29.997 | 68.884 | 330.86E-6 |
| | 17.00000 | 7.00000 | 42.65000 | 7.4159 | 42.238 | 29.997 | 68.835 | 331.62E-6 |
| | 18.00000 | 7.00000 | 42.65000 | 7.3388 | 42.238 | 29.997 | 68.764 | 332.73E-6 |
| | 19.00000 | 7.00000 | 42.65000 | 7.2367 | 42.238 | 29.996 | 68.659 | 334.36E-6 |
| | 20.00000 | 7.00000 | 42.65000 | 7.1032 | 42.238 | 29.996 | 68.503 | 336.77E-6 |
| | 21.00000 | 7.00000 | 42.65000 | 6.9290 | 42.238 | 29.994 | 68.264 | 340.46E-6 |
| | 22.00000 | 7.00000 | 42.65000 | 6.7000 | 42.238 | 29.991 | 67.876 | 346.39E-6 |
| | 23.00000 | 7.00000 | 42.65000 | 6.3928 | 42.238 | 29.982 | 67.187 | 356.76E-6 |
| | 24.00000 | 7.00000 | 42.65000 | 5.9662 | 42.238 | 29.945 | 65.751 | 377.54E-6 |
| | 25.00000 | 7.00000 | 42.65000 | 5.3307 | 42.238 | 29.630 | 61.547 | 428.60E-6 |
| | 26.00000 | 7.00000 | 42.65000 | 3.9964 | 42.238 | 14.999 | 34.604 | 162.89E-6 |
| GL1 | 0.00000 | 0.00000 | 44.75000 | 3.9703 | 44.537 | 0.0 | 0.0 | 0.0 |
| | 0.00000 | 1.00000 | 44.75000 | 5.1594 | 44.537 | 0.0 | 0.0 | 0.0 |
| | 0.00000 | 2.00000 | 44.75000 | 5.6438 | 44.537 | 0.0 | 0.0 | 0.0 |
| | 0.00000 | 3.00000 | 44.75000 | 5.8516 | 44.537 | 0.0 | 0.0 | 0.0 |
| | 0.00000 | 4.00000 | 44.75000 | 5.8516 | 44.537 | 0.0 | 0.0 | 0.0 |
| | 0.00000 | 5.00000 | 44.75000 | 5.6438 | 44.537 | 0.0 | 0.0 | 0.0 |
| | 0.00000 | 6.00000 | 44.75000 | 5.1594 | 44.537 | 0.0 | 0.0 | 0.0 |
| | 0.00000 | 7.00000 | 44.75000 | 3.9703 | 44.537 | 0.0 | 0.0 | 0.0 |
| | 0.00000 | 8.00000 | 44.75000 | 2.7450 | 44.537 | 0.0 | 0.0 | 0.0 |
| GL2 | -4.50000 | 0.00000 | 44.75000 | 1.1519 | 44.537 | 0.0 | 0.0 | 0.0 |
| | -4.50000 | 1.00000 | 44.75000 | 1.2307 | 44.537 | 0.0 | 0.0 | 0.0 |
| | -4.50000 | 2.00000 | 44.75000 | 1.2882 | 44.537 | 0.0 | 0.0 | 0.0 |
| | -4.50000 | 3.00000 | 44.75000 | 1.3185 | 44.537 | 0.0 | 0.0 | 0.0 |
| | -4.50000 | 4.00000 | 44.75000 | 1.3185 | 44.537 | 0.0 | 0.0 | 0.0 |
| | -4.50000 | 5.00000 | 44.75000 | 1.2882 | 44.537 | 0.0 | 0.0 | 0.0 |
| | -4.50000 | 6.00000 | 44.75000 | 1.2307 | 44.537 | 0.0 | 0.0 | 0.0 |
| | -4.50000 | 7.00000 | 44.75000 | 1.1519 | 44.537 | 0.0 | 0.0 | 0.0 |
| | -4.50000 | 8.00000 | 44.75000 | 1.0594 | 44.537 | 0.0 | 0.0 | 0.0 |
| GL3 | -9.00000 | 0.00000 | 44.75000 | 0.49090 | 44.537 | 0.0 | 0.0 | 0.0 |
| | -9.00000 | 1.00000 | 44.75000 | 0.50976 | 44.537 | 0.0 | 0.0 | 0.0 |
| | -9.00000 | 2.00000 | 44.75000 | 0.52296 | 44.537 | 0.0 | 0.0 | 0.0 |
| | -9.00000 | 3.00000 | 44.75000 | 0.52976 | 44.537 | 0.0 | 0.0 | 0.0 |
| | -9.00000 | 4.00000 | 44.75000 | 0.52976 | 44.537 | 0.0 | 0.0 | 0.0 |
| | -9.00000 | 5.00000 | 44.75000 | 0.52296 | 44.537 | 0.0 | 0.0 | 0.0 |
| | -9.00000 | 6.00000 | 44.75000 | 0.50976 | 44.537 | 0.0 | 0.0 | 0.0 |
| | -9.00000 | 7.00000 | 44.75000 | 0.49090 | 44.537 | 0.0 | 0.0 | 0.0 |
| | -9.00000 | 8.00000 | 44.75000 | 0.46738 | 44.537 | 0.0 | 0.0 | 0.0 |
| GL4 | 0.00000 | 4.00000 | 44.75000 | 5.8516 | 44.537 | 0.0 | 0.0 | 0.0 |
| | -1.00000 | 4.00000 | 44.75000 | 3.5446 | 44.537 | 0.0 | 0.0 | 0.0 |
| | -2.00000 | 4.00000 | 44.75000 | 2.5295 | 44.537 | 0.0 | 0.0 | 0.0 |
| | -3.00000 | 4.00000 | 44.75000 | 1.9051 | 44.537 | 0.0 | 0.0 | 0.0 |
| | -4.00000 | 4.00000 | 44.75000 | 1.4820 | 44.537 | 0.0 | 0.0 | 0.0 |
| | -5.00000 | 4.00000 | 44.75000 | 1.1784 | 44.537 | 0.0 | 0.0 | 0.0 |
| | -6.00000 | 4.00000 | 44.75000 | 0.95164 | 44.537 | 0.0 | 0.0 | 0.0 |
| | -7.00000 | 4.00000 | 44.75000 | 0.77717 | 44.537 | 0.0 | 0.0 | 0.0 |
| | -8.00000 | 4.00000 | 44.75000 | 0.63983 | 44.537 | 0.0 | 0.0 | 0.0 |
| | -9.00000 | 4.00000 | 44.75000 | 0.52976 | 44.537 | 0.0 | 0.0 | 0.0 |
| GL5 | 13.00000 | -6.00000 | 44.75000 | 1.7420 | 44.537 | 0.0 | 0.0 | 0.0 |
| | 13.00000 | -7.00000 | 44.75000 | 1.4638 | 44.537 | 0.0 | 0.0 | 0.0 |
| | 13.00000 | -8.00000 | 44.75000 | 1.2366 | 44.537 | 0.0 | 0.0 | 0.0 |
| | 13.00000 | -9.00000 | 44.75000 | 1.0487 | 44.537 | 0.0 | 0.0 | 0.0 |
| | 13.00000 | -10.00000 | 44.75000 | 0.89196 | 44.537 | 0.0 | 0.0 | 0.0 |
| | 13.00000 | -11.00000 | 44.75000 | 0.76015 | 44.537 | 0.0 | 0.0 | 0.0 |
| | 13.00000 | -12.00000 | 44.75000 | 0.64861 | 44.537 | 0.0 | 0.0 | 0.0 |
| GL6 | 26.00000 | -6.00000 | 44.75000 | 1.0306 | 44.537 | 0.0 | 0.0 | 0.0 |
| | 26.00000 | -7.00000 | 44.75000 | 0.87860 | 44.537 | 0.0 | 0.0 | 0.0 |
| | 26.00000 | -8.00000 | 44.75000 | 0.75218 | 44.537 | 0.0 | 0.0 | 0.0 |
| | 26.00000 | -9.00000 | 44.75000 | 0.64578 | 44.537 | 0.0 | 0.0 | 0.0 |
| | 26.00000 | -10.00000 | 44.75000 | 0.55537 | 44.537 | 0.0 | 0.0 | 0.0 |
| | 26.00000 | -11.00000 | 44.75000 | 0.47798 | 44.537 | 0.0 | 0.0 | 0.0 |
| | 26.00000 | -12.00000 | 44.75000 | 0.41135 | 44.537 | 0.0 | 0.0 | 0.0 |

### Notes
E'= 0.75Eu
Eu=400Cu
Cu=70+6z

### Analysis Options
Analysis: Boussinesq
Global Poisson's ratio: 0.20
Maximum allowable ratio between values of E: 1.5
Horizontal rigid boundary level: 0.00 [m OD]
Displacements at area centroids calculated.

### Soil ProfilesSoil Profile

| Layer | Level at top | Number of intermediate displacement levels | Youngs Modulus Top | Youngs Modulus Btm | Poissons ratio | Non-linear curve |
|---|---|---|---|---|---|---|
| | [mOD] | | [kN/m²] | [kN/m²] | | |
| 1 | 45.400 | 2 | 5000.0 | 5000.0 | 0.20000 | None |
| 2 | 43.900 | 43 | 21000. | 98400. | 0.20000 | None |

### Soil Zones

| Zone | Name | X coordinates min [m] | X coordinates max [m] | Y coordinates min [m] | Y coordinates max [m] | Profile |
|---|---|---|---|---|---|---|
| 1 | SZ1 | -60.000 | 60.000 | -60.000 | 60.000 | Soil Profile |

### Non-linear Curve Coordinates - Non-linear Curve 1

| Point | Strain [%] | Factor |
|---|---|---|

### 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 | Rectangle tolerance | Number of rectangles | Load value Normal (local z) [kN/m²] | Tangential (local x) [kN/m²] | (local y) [kN/m²] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Basement | Rectangular | Horizontal | 13.000 | 3.5000 | 42.650 | 0.0 | 26.000 | 7.0000 | N/A | N/A | 1 | 60.000 | 0.0 | 0.0 |

### Displacement Data

| Ref. | Type | Name | Direction of Extrusion | Line/Line for extrusion First point X [m] | Y [m] | Z(level) [m] | Second point X [m] | Y [m] | Z(level) [m] | No. of intrvls across extrusion/line | Extrusion Depth [m] | No. of intrvls along extrusion | Calculate | Show Detailed results |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Grid | BL | Global X | 0.0 | 0.0 | 42.650 | N/A | 7.0000 | 42.650 | 7 | 26.000 | 26 | Yes | No |
| 2 | Line | GL1 | N/A | 0.0 | 0.0 | 44.750 | 0.0 | 8.0000 | 44.750 | 8 | N/A | N/A | Yes | No |
| 3 | Line | GL2 | N/A | -4.5000 | 0.0 | 44.750 | -4.5000 | 8.0000 | 44.750 | 8 | N/A | N/A | Yes | No |
| 4 | Line | GL3 | N/A | -9.0000 | 0.0 | 44.750 | -9.0000 | 8.0000 | 44.750 | 8 | N/A | N/A | Yes | No |
| 5 | Line | GL4 | N/A | 0.0 | 4.0000 | 44.750 | -9.0000 | 4.0000 | 44.750 | 9 | N/A | N/A | Yes | No |
| 6 | Line | GL5 | N/A | 13.000 | -6.0000 | 44.750 | 13.000 | -12.000 | 44.750 | 6 | N/A | N/A | Yes | No |
| 7 | Line | GL6 | N/A | 26.000 | -6.0000 | 44.750 | 26.000 | -12.000 | 44.750 | 6 | N/A | N/A | Yes | No |

### RESULTS FOR GRIDS

Analysis: Boussinesq
Global Poisson's ratio: 0.20
Horizontal rigid boundary level: 0.00 [m OD]

The maximum displacement difference between
Boussinesq method (8.9971mm) and Mindlin method (7.9041mm)
occurs at point X=0.0m Y=3.0000m Level 44.750mOD and is 1.0929mm

| Name | Location X [m] | Y [m] | Z[Level] [mOD] | Z [mm] | Stresses Calc Level [mOD] | Vert Stress [kN/m²] | Sum Princ [kN/m²] | Vert Strain [-] |
|---|---|---|---|---|---|---|---|---|
| Basement | 13.00000 | 3.50000 | 42.65000 | 17.373 | 42.238 | 59.959 | 132.87 | 0.0018968 |
| BL | 0.00000 | 0.00000 | 42.65000 | 6.3508 | 42.238 | 14.999 | 34.604 | 463.05E-6 |
| | 1.00000 | 0.00000 | 42.65000 | 8.3065 | 42.238 | 29.630 | 61.547 | 971.71E-6 |
| | 2.00000 | 0.00000 | 42.65000 | 9.2713 | 42.238 | 29.945 | 65.751 | 952.40E-6 |
| | 3.00000 | 0.00000 | 42.65000 | 9.9254 | 42.238 | 29.982 | 67.187 | 942.23E-6 |
| | 4.00000 | 0.00000 | 42.65000 | 10.401 | 42.238 | 29.991 | 67.876 | 936.93E-6 |
| | 5.00000 | 0.00000 | 42.65000 | 10.758 | 42.238 | 29.994 | 68.264 | 933.85E-6 |
| | 6.00000 | 0.00000 | 42.65000 | 11.032 | 42.238 | 29.996 | 68.503 | 931.92E-6 |
| | 7.00000 | 0.00000 | 42.65000 | 11.243 | 42.238 | 29.996 | 68.659 | 930.65E-6 |
| | 8.00000 | 0.00000 | 42.65000 | 11.406 | 42.238 | 29.997 | 68.764 | 929.79E-6 |
| | 9.00000 | 0.00000 | 42.65000 | 11.529 | 42.238 | 29.997 | 68.835 | 929.20E-6 |
| | 10.00000 | 0.00000 | 42.65000 | 11.619 | 42.238 | 29.997 | 68.884 | 928.80E-6 |
| | 11.00000 | 0.00000 | 42.65000 | 11.681 | 42.238 | 29.997 | 68.915 | 928.54E-6 |
| | 12.00000 | 0.00000 | 42.65000 | 11.717 | 42.238 | 29.997 | 68.933 | 928.39E-6 |
| | 13.00000 | 0.00000 | 42.65000 | 11.729 | 42.238 | 29.997 | 68.939 | 928.35E-6 |
| | 14.00000 | 0.00000 | 42.65000 | 11.717 | 42.238 | 29.997 | 68.933 | 928.39E-6 |
| | 15.00000 | 0.00000 | 42.65000 | 11.681 | 42.238 | 29.997 | 68.915 | 928.54E-6 |
| | 16.00000 | 0.00000 | 42.65000 | 11.619 | 42.238 | 29.997 | 68.884 | 928.80E-6 |
| | 17.00000 | 0.00000 | 42.65000 | 11.529 | 42.238 | 29.997 | 68.835 | 929.20E-6 |
| | 18.00000 | 0.00000 | 42.65000 | 11.406 | 42.238 | 29.997 | 68.764 | 929.79E-6 |
| | 19.00000 | 0.00000 | 42.65000 | 11.243 | 42.238 | 29.996 | 68.659 | 930.65E-6 |
| | 20.00000 | 0.00000 | 42.65000 | 11.032 | 42.238 | 29.996 | 68.503 | 931.92E-6 |
| | 21.00000 | 0.00000 | 42.65000 | 10.758 | 42.238 | 29.994 | 68.264 | 933.85E-6 |
| | 22.00000 | 0.00000 | 42.65000 | 10.401 | 42.238 | 29.991 | 67.876 | 936.93E-6 |
| | 23.00000 | 0.00000 | 42.65000 | 9.9254 | 42.238 | 29.982 | 67.187 | 942.23E-6 |
| | 24.00000 | 0.00000 | 42.65000 | 9.2713 | 42.238 | 29.945 | 65.751 | 952.40E-6 |
| | 25.00000 | 0.00000 | 42.65000 | 8.3065 | 42.238 | 29.630 | 61.547 | 971.71E-6 |
| | 26.00000 | 0.00000 | 42.65000 | 6.3508 | 42.238 | 14.999 | 34.604 | 463.05E-6 |
| | 0.00000 | 1.00000 | 42.65000 | 8.1310 | 42.238 | 29.629 | 61.422 | 972.73E-6 |
| | 1.00000 | 1.00000 | 42.65000 | 11.209 | 42.238 | 58.618 | 111.83 | 0.0020054 |
| | 2.00000 | 1.00000 | 42.65000 | 12.468 | 42.238 | 59.181 | 118.46 | 0.0019782 |
| | 3.00000 | 1.00000 | 42.65000 | 13.261 | 42.238 | 59.238 | 120.45 | 0.0019645 |
| | 4.00000 | 1.00000 | 42.65000 | 13.812 | 42.238 | 59.251 | 121.33 | 0.0019577 |
| | 5.00000 | 1.00000 | 42.65000 | 14.215 | 42.238 | 59.255 | 121.80 | 0.0019540 |
| | 6.00000 | 1.00000 | 42.65000 | 14.518 | 42.238 | 59.256 | 122.08 | 0.0019518 |
| | 7.00000 | 1.00000 | 42.65000 | 14.748 | 42.238 | 59.257 | 122.26 | 0.0019503 |
| | 8.00000 | 1.00000 | 42.65000 | 14.923 | 42.238 | 59.258 | 122.37 | 0.0019493 |
| | 9.00000 | 1.00000 | 42.65000 | 15.055 | 42.238 | 59.258 | 122.45 | 0.0019487 |
| | 10.00000 | 1.00000 | 42.65000 | 15.151 | 42.238 | 59.258 | 122.51 | 0.0019483 |
| | 11.00000 | 1.00000 | 42.65000 | 15.216 | 42.238 | 59.258 | 122.54 | 0.0019480 |
| | 12.00000 | 1.00000 | 42.65000 | 15.254 | 42.238 | 59.258 | 122.56 | 0.0019478 |
| | 13.00000 | 1.00000 | 42.65000 | 15.267 | 42.238 | 59.258 | 122.57 | 0.0019478 |
| | 14.00000 | 1.00000 | 42.65000 | 15.254 | 42.238 | 59.258 | 122.56 | 0.0019478 |
| | 15.00000 | 1.00000 | 42.65000 | 15.216 | 42.238 | 59.258 | 122.54 | 0.0019480 |
| | 16.00000 | 1.00000 | 42.65000 | 15.151 | 42.238 | 59.258 | 122.51 | 0.0019483 |
| | 17.00000 | 1.00000 | 42.65000 | 15.055 | 42.238 | 59.258 | 122.45 | 0.0019487 |
| | 18.00000 | 1.00000 | 42.65000 | 14.923 | 42.238 | 59.258 | 122.37 | 0.0019493 |
| | 19.00000 | 1.00000 | 42.65000 | 14.748 | 42.238 | 59.257 | 122.26 | 0.0019503 |
| | 20.00000 | 1.00000 | 42.65000 | 14.518 | 42.238 | 59.256 | 122.08 | 0.0019518 |
| | 21.00000 | 1.00000 | 42.65000 | 14.215 | 42.238 | 59.255 | 121.80 | 0.0019540 |

| Name | Location | | | | Stresses | | | |
|---|---|---|---|---|---|---|---|---|
| | X [m] | Y [m] | Z[Level] [mOD] | Z [mm] | Calc Level [mOD] | Vert Stress [kN/m²] | Sum Princ [kN/m²] | Vert Strain [-] |
| | 22.00000 | 1.00000 | 42.65000 | 13.812 | 42.238 | 59.251 | 121.33 | 0.0019577 |
| | 23.00000 | 1.00000 | 42.65000 | 13.261 | 42.238 | 59.238 | 120.45 | 0.0019645 |
| | 24.00000 | 1.00000 | 42.65000 | 12.468 | 42.238 | 59.181 | 118.46 | 0.0019782 |
| | 25.00000 | 1.00000 | 42.65000 | 11.209 | 42.238 | 58.618 | 111.83 | 0.0020054 |
| | 26.00000 | 1.00000 | 42.65000 | 8.1310 | 42.238 | 29.629 | 61.422 | 972.73E-6 |
| | 0.00000 | 2.00000 | 42.65000 | 8.8483 | 42.238 | 29.943 | 65.410 | 955.15E-6 |
| | 1.00000 | 2.00000 | 42.65000 | 12.206 | 42.238 | 59.179 | 118.22 | 0.0019801 |
| | 2.00000 | 2.00000 | 42.65000 | 13.639 | 42.238 | 59.796 | 125.82 | 0.0019475 |
| | 3.00000 | 2.00000 | 42.65000 | 14.530 | 42.238 | 59.863 | 128.15 | 0.0019314 |
| | 4.00000 | 2.00000 | 42.65000 | 15.138 | 42.238 | 59.878 | 129.17 | 0.0019237 |
| | 5.00000 | 2.00000 | 42.65000 | 15.575 | 42.238 | 59.883 | 129.70 | 0.0019194 |
| | 6.00000 | 2.00000 | 42.65000 | 15.900 | 42.238 | 59.885 | 130.01 | 0.0019169 |
| | 7.00000 | 2.00000 | 42.65000 | 16.144 | 42.238 | 59.886 | 130.21 | 0.0019154 |
| | 8.00000 | 2.00000 | 42.65000 | 16.328 | 42.238 | 59.886 | 130.33 | 0.0019143 |
| | 9.00000 | 2.00000 | 42.65000 | 16.466 | 42.238 | 59.886 | 130.42 | 0.0019136 |
| | 10.00000 | 2.00000 | 42.65000 | 16.566 | 42.238 | 59.887 | 130.47 | 0.0019132 |
| | 11.00000 | 2.00000 | 42.65000 | 16.634 | 42.238 | 59.887 | 130.51 | 0.0019129 |
| | 12.00000 | 2.00000 | 42.65000 | 16.674 | 42.238 | 59.887 | 130.53 | 0.0019127 |
| | 13.00000 | 2.00000 | 42.65000 | 16.687 | 42.238 | 59.887 | 130.54 | 0.0019127 |
| | 14.00000 | 2.00000 | 42.65000 | 16.674 | 42.238 | 59.887 | 130.53 | 0.0019127 |
| | 15.00000 | 2.00000 | 42.65000 | 16.634 | 42.238 | 59.887 | 130.51 | 0.0019129 |
| | 16.00000 | 2.00000 | 42.65000 | 16.566 | 42.238 | 59.887 | 130.47 | 0.0019132 |
| | 17.00000 | 2.00000 | 42.65000 | 16.466 | 42.238 | 59.886 | 130.42 | 0.0019136 |
| | 18.00000 | 2.00000 | 42.65000 | 16.328 | 42.238 | 59.886 | 130.33 | 0.0019143 |
| | 19.00000 | 2.00000 | 42.65000 | 16.144 | 42.238 | 59.886 | 130.21 | 0.0019154 |
| | 20.00000 | 2.00000 | 42.65000 | 15.900 | 42.238 | 59.885 | 130.01 | 0.0019169 |
| | 21.00000 | 2.00000 | 42.65000 | 15.575 | 42.238 | 59.883 | 129.70 | 0.0019194 |
| | 22.00000 | 2.00000 | 42.65000 | 15.138 | 42.238 | 59.878 | 129.17 | 0.0019237 |
| | 23.00000 | 2.00000 | 42.65000 | 14.530 | 42.238 | 59.863 | 128.15 | 0.0019314 |
| | 24.00000 | 2.00000 | 42.65000 | 13.639 | 42.238 | 59.796 | 125.82 | 0.0019475 |
| | 25.00000 | 2.00000 | 42.65000 | 12.206 | 42.238 | 59.179 | 118.22 | 0.0019801 |
| | 26.00000 | 2.00000 | 42.65000 | 8.8483 | 42.238 | 29.943 | 65.410 | 955.15E-6 |
| | 0.00000 | 3.00000 | 42.65000 | 9.1589 | 42.238 | 29.977 | 66.470 | 947.97E-6 |
| | 1.00000 | 3.00000 | 42.65000 | 12.616 | 42.238 | 59.232 | 119.76 | 0.0019699 |
| | 2.00000 | 3.00000 | 42.65000 | 14.125 | 42.238 | 59.858 | 127.65 | 0.0019353 |
| | 3.00000 | 3.00000 | 42.65000 | 15.064 | 42.238 | 59.928 | 130.13 | 0.0019181 |
| | 4.00000 | 3.00000 | 42.65000 | 15.702 | 42.238 | 59.944 | 131.22 | 0.0019099 |
| | 5.00000 | 3.00000 | 42.65000 | 16.157 | 42.238 | 59.950 | 131.78 | 0.0019054 |
| | 6.00000 | 3.00000 | 42.65000 | 16.493 | 42.238 | 59.952 | 132.11 | 0.0019028 |
| | 7.00000 | 3.00000 | 42.65000 | 16.744 | 42.238 | 59.953 | 132.31 | 0.0019011 |
| | 8.00000 | 3.00000 | 42.65000 | 16.934 | 42.238 | 59.953 | 132.44 | 0.0019000 |
| | 9.00000 | 3.00000 | 42.65000 | 17.075 | 42.238 | 59.953 | 132.53 | 0.0018993 |
| | 10.00000 | 3.00000 | 42.65000 | 17.177 | 42.238 | 59.954 | 132.59 | 0.0018989 |
| | 11.00000 | 3.00000 | 42.65000 | 17.246 | 42.238 | 59.954 | 132.63 | 0.0018985 |
| | 12.00000 | 3.00000 | 42.65000 | 17.287 | 42.238 | 59.954 | 132.65 | 0.0018984 |
| | 13.00000 | 3.00000 | 42.65000 | 17.300 | 42.238 | 59.954 | 132.65 | 0.0018983 |
| | 14.00000 | 3.00000 | 42.65000 | 17.287 | 42.238 | 59.954 | 132.65 | 0.0018984 |
| | 15.00000 | 3.00000 | 42.65000 | 17.246 | 42.238 | 59.954 | 132.63 | 0.0018985 |
| | 16.00000 | 3.00000 | 42.65000 | 17.177 | 42.238 | 59.954 | 132.59 | 0.0018989 |
| | 17.00000 | 3.00000 | 42.65000 | 17.075 | 42.238 | 59.953 | 132.53 | 0.0018993 |
| | 18.00000 | 3.00000 | 42.65000 | 16.934 | 42.238 | 59.953 | 132.44 | 0.0019000 |
| | 19.00000 | 3.00000 | 42.65000 | 16.744 | 42.238 | 59.953 | 132.31 | 0.0019011 |
| | 20.00000 | 3.00000 | 42.65000 | 16.493 | 42.238 | 59.952 | 132.11 | 0.0019028 |
| | 21.00000 | 3.00000 | 42.65000 | 16.157 | 42.238 | 59.950 | 131.78 | 0.0019054 |
| | 22.00000 | 3.00000 | 42.65000 | 15.702 | 42.238 | 59.944 | 131.22 | 0.0019099 |
| | 23.00000 | 3.00000 | 42.65000 | 15.064 | 42.238 | 59.928 | 130.13 | 0.0019181 |
| | 24.00000 | 3.00000 | 42.65000 | 14.125 | 42.238 | 59.858 | 127.65 | 0.0019353 |
| | 25.00000 | 3.00000 | 42.65000 | 12.616 | 42.238 | 59.232 | 119.76 | 0.0019699 |
| | 26.00000 | 3.00000 | 42.65000 | 9.1589 | 42.238 | 29.977 | 66.470 | 947.97E-6 |
| | 0.00000 | 4.00000 | 42.65000 | 9.1589 | 42.238 | 29.977 | 66.470 | 947.97E-6 |
| | 1.00000 | 4.00000 | 42.65000 | 12.616 | 42.238 | 59.232 | 119.76 | 0.0019699 |
| | 2.00000 | 4.00000 | 42.65000 | 14.125 | 42.238 | 59.858 | 127.65 | 0.0019353 |
| | 3.00000 | 4.00000 | 42.65000 | 15.064 | 42.238 | 59.928 | 130.13 | 0.0019181 |
| | 4.00000 | 4.00000 | 42.65000 | 15.702 | 42.238 | 59.944 | 131.22 | 0.0019099 |
| | 5.00000 | 4.00000 | 42.65000 | 16.157 | 42.238 | 59.950 | 131.78 | 0.0019054 |
| | 6.00000 | 4.00000 | 42.65000 | 16.493 | 42.238 | 59.952 | 132.11 | 0.0019028 |
| | 7.00000 | 4.00000 | 42.65000 | 16.744 | 42.238 | 59.953 | 132.31 | 0.0019011 |
| | 8.00000 | 4.00000 | 42.65000 | 16.934 | 42.238 | 59.953 | 132.44 | 0.0019000 |
| | 9.00000 | 4.00000 | 42.65000 | 17.075 | 42.238 | 59.953 | 132.53 | 0.0018993 |
| | 10.00000 | 4.00000 | 42.65000 | 17.177 | 42.238 | 59.954 | 132.59 | 0.0018989 |
| | 11.00000 | 4.00000 | 42.65000 | 17.246 | 42.238 | 59.954 | 132.63 | 0.0018985 |
| | 12.00000 | 4.00000 | 42.65000 | 17.287 | 42.238 | 59.954 | 132.65 | 0.0018984 |
| | 13.00000 | 4.00000 | 42.65000 | 17.300 | 42.238 | 59.954 | 132.65 | 0.0018983 |
| | 14.00000 | 4.00000 | 42.65000 | 17.287 | 42.238 | 59.954 | 132.65 | 0.0018984 |
| | 15.00000 | 4.00000 | 42.65000 | 17.246 | 42.238 | 59.954 | 132.63 | 0.0018985 |
| | 16.00000 | 4.00000 | 42.65000 | 17.177 | 42.238 | 59.954 | 132.59 | 0.0018989 |
| | 17.00000 | 4.00000 | 42.65000 | 17.075 | 42.238 | 59.953 | 132.53 | 0.0018993 |
| | 18.00000 | 4.00000 | 42.65000 | 16.934 | 42.238 | 59.953 | 132.44 | 0.0019000 |
| | 19.00000 | 4.00000 | 42.65000 | 16.744 | 42.238 | 59.953 | 132.31 | 0.0019011 |
| | 20.00000 | 4.00000 | 42.65000 | 16.493 | 42.238 | 59.952 | 132.11 | 0.0019028 |
| | 21.00000 | 4.00000 | 42.65000 | 16.157 | 42.238 | 59.950 | 131.78 | 0.0019054 |
| | 22.00000 | 4.00000 | 42.65000 | 15.702 | 42.238 | 59.944 | 131.22 | 0.0019099 |
| | 23.00000 | 4.00000 | 42.65000 | 15.064 | 42.238 | 59.928 | 130.13 | 0.0019181 |
| | 24.00000 | 4.00000 | 42.65000 | 14.125 | 42.238 | 59.858 | 127.65 | 0.0019353 |
| | 25.00000 | 4.00000 | 42.65000 | 12.616 | 42.238 | 59.232 | 119.76 | 0.0019699 |
| | 26.00000 | 4.00000 | 42.65000 | 9.1589 | 42.238 | 29.977 | 66.470 | 947.97E-6 |
| | 0.00000 | 5.00000 | 42.65000 | 8.8483 | 42.238 | 29.943 | 65.410 | 955.15E-6 |
| | 1.00000 | 5.00000 | 42.65000 | 12.206 | 42.238 | 59.179 | 118.22 | 0.0019801 |
| | 2.00000 | 5.00000 | 42.65000 | 13.639 | 42.238 | 59.796 | 125.82 | 0.0019475 |
| | 3.00000 | 5.00000 | 42.65000 | 14.530 | 42.238 | 59.863 | 128.15 | 0.0019314 |
| | 4.00000 | 5.00000 | 42.65000 | 15.138 | 42.238 | 59.878 | 129.17 | 0.0019237 |
| | 5.00000 | 5.00000 | 42.65000 | 15.575 | 42.238 | 59.883 | 129.70 | 0.0019194 |
| | 6.00000 | 5.00000 | 42.65000 | 15.900 | 42.238 | 59.885 | 130.01 | 0.0019169 |
| | 7.00000 | 5.00000 | 42.65000 | 16.144 | 42.238 | 59.886 | 130.21 | 0.0019154 |
| | 8.00000 | 5.00000 | 42.65000 | 16.328 | 42.238 | 59.886 | 130.33 | 0.0019143 |
| | 9.00000 | 5.00000 | 42.65000 | 16.466 | 42.238 | 59.886 | 130.42 | 0.0019136 |
| | 10.00000 | 5.00000 | 42.65000 | 16.566 | 42.238 | 59.887 | 130.47 | 0.0019132 |
| | 11.00000 | 5.00000 | 42.65000 | 16.634 | 42.238 | 59.887 | 130.51 | 0.0019129 |
| | 12.00000 | 5.00000 | 42.65000 | 16.674 | 42.238 | 59.887 | 130.53 | 0.0019127 |
| | 13.00000 | 5.00000 | 42.65000 | 16.687 | 42.238 | 59.887 | 130.54 | 0.0019127 |
| | 14.00000 | 5.00000 | 42.65000 | 16.674 | 42.238 | 59.887 | 130.53 | 0.0019127 |
| | 15.00000 | 5.00000 | 42.65000 | 16.634 | 42.238 | 59.887 | 130.51 | 0.0019129 |
| | 16.00000 | 5.00000 | 42.65000 | 16.566 | 42.238 | 59.887 | 130.47 | 0.0019132 |
| | 17.00000 | 5.00000 | 42.65000 | 16.466 | 42.238 | 59.886 | 130.42 | 0.0019136 |
| | 18.00000 | 5.00000 | 42.65000 | 16.328 | 42.238 | 59.886 | 130.33 | 0.0019143 |
| | 19.00000 | 5.00000 | 42.65000 | 16.144 | 42.238 | 59.886 | 130.21 | 0.0019154 |
| | 20.00000 | 5.00000 | 42.65000 | 15.900 | 42.238 | 59.885 | 130.01 | 0.0019169 |
| | 21.00000 | 5.00000 | 42.65000 | 15.575 | 42.238 | 59.883 | 129.70 | 0.0019194 |
| | 22.00000 | 5.00000 | 42.65000 | 15.138 | 42.238 | 59.878 | 129.17 | 0.0019237 |
| | 23.00000 | 5.00000 | 42.65000 | 14.530 | 42.238 | 59.863 | 128.15 | 0.0019314 |
| | 24.00000 | 5.00000 | 42.65000 | 13.639 | 42.238 | 59.796 | 125.82 | 0.0019475 |
| | 25.00000 | 5.00000 | 42.65000 | 12.206 | 42.238 | 59.179 | 118.22 | 0.0019801 |
| | 26.00000 | 5.00000 | 42.65000 | 8.8483 | 42.238 | 29.943 | 65.410 | 955.15E-6 |
| | 0.00000 | 6.00000 | 42.65000 | 8.1310 | 42.238 | 29.629 | 61.422 | 972.73E-6 |
| | 1.00000 | 6.00000 | 42.65000 | 11.209 | 42.238 | 58.618 | 111.83 | 0.0020054 |
| | 2.00000 | 6.00000 | 42.65000 | 12.468 | 42.238 | 59.181 | 118.46 | 0.0019782 |
| | 3.00000 | 6.00000 | 42.65000 | 13.261 | 42.238 | 59.238 | 120.45 | 0.0019645 |
| | 4.00000 | 6.00000 | 42.65000 | 13.812 | 42.238 | 59.251 | 121.33 | 0.0019577 |
| | 5.00000 | 6.00000 | 42.65000 | 14.215 | 42.238 | 59.255 | 121.80 | 0.0019540 |
| | 6.00000 | 6.00000 | 42.65000 | 14.518 | 42.238 | 59.256 | 122.08 | 0.0019518 |
| | 7.00000 | 6.00000 | 42.65000 | 14.748 | 42.238 | 59.257 | 122.26 | 0.0019503 |
| | 8.00000 | 6.00000 | 42.65000 | 14.923 | 42.238 | 59.258 | 122.37 | 0.0019493 |
| | 9.00000 | 6.00000 | 42.65000 | 15.055 | 42.238 | 59.258 | 122.45 | 0.0019487 |
| | 10.00000 | 6.00000 | 42.65000 | 15.151 | 42.238 | 59.258 | 122.51 | 0.0019483 |
| | 11.00000 | 6.00000 | 42.65000 | 15.216 | 42.238 | 59.258 | 122.54 | 0.0019480 |
| | 12.00000 | 6.00000 | 42.65000 | 15.254 | 42.238 | 59.258 | 122.56 | 0.0019478 |
| | 13.00000 | 6.00000 | 42.65000 | 15.267 | 42.238 | 59.258 | 122.57 | 0.0019478 |
| | 14.00000 | 6.00000 | 42.65000 | 15.254 | 42.238 | 59.258 | 122.56 | 0.0019478 |
| | 15.00000 | 6.00000 | 42.65000 | 15.216 | 42.238 | 59.258 | 122.54 | 0.0019480 |
| | 16.00000 | 6.00000 | 42.65000 | 15.151 | 42.238 | 59.258 | 122.51 | 0.0019483 |

| Name | Location X [m] | Y [m] | Z[Level] [mOD] | Z [mm] | Stresses Calc Level [mOD] | Vert Stress [kN/m²] | Sum Princ [kN/m²] | Vert Strain [-] |
|---|---|---|---|---|---|---|---|---|
| | 17.00000 | 6.00000 | 42.65000 | 15.055 | 42.238 | 59.258 | 122.45 | 0.0019487 |
| | 18.00000 | 6.00000 | 42.65000 | 14.923 | 42.238 | 59.258 | 122.37 | 0.0019493 |
| | 19.00000 | 6.00000 | 42.65000 | 14.748 | 42.238 | 59.257 | 122.26 | 0.0019503 |
| | 20.00000 | 6.00000 | 42.65000 | 14.518 | 42.238 | 59.256 | 122.08 | 0.0019518 |
| | 21.00000 | 6.00000 | 42.65000 | 14.215 | 42.238 | 59.255 | 121.80 | 0.0019540 |
| | 22.00000 | 6.00000 | 42.65000 | 13.812 | 42.238 | 59.251 | 121.33 | 0.0019577 |
| | 23.00000 | 6.00000 | 42.65000 | 13.261 | 42.238 | 59.238 | 120.45 | 0.0019645 |
| | 24.00000 | 6.00000 | 42.65000 | 12.468 | 42.238 | 59.181 | 118.46 | 0.0019782 |
| | 25.00000 | 6.00000 | 42.65000 | 11.209 | 42.238 | 58.618 | 111.83 | 0.0020054 |
| | 26.00000 | 6.00000 | 42.65000 | 8.1310 | 42.238 | 29.629 | 61.422 | 972.73E-6 |
| | 0.00000 | 7.00000 | 42.65000 | 6.3508 | 42.238 | 14.999 | 34.604 | 463.05E-6 |
| | 1.00000 | 7.00000 | 42.65000 | 8.3065 | 42.238 | 29.630 | 61.547 | 971.71E-6 |
| | 2.00000 | 7.00000 | 42.65000 | 9.2713 | 42.238 | 29.945 | 65.751 | 952.40E-6 |
| | 3.00000 | 7.00000 | 42.65000 | 9.9254 | 42.238 | 29.982 | 67.187 | 942.23E-6 |
| | 4.00000 | 7.00000 | 42.65000 | 10.401 | 42.238 | 29.991 | 67.876 | 936.93E-6 |
| | 5.00000 | 7.00000 | 42.65000 | 10.758 | 42.238 | 29.994 | 68.264 | 933.85E-6 |
| | 6.00000 | 7.00000 | 42.65000 | 11.032 | 42.238 | 29.996 | 68.503 | 931.92E-6 |
| | 7.00000 | 7.00000 | 42.65000 | 11.243 | 42.238 | 29.996 | 68.659 | 930.65E-6 |
| | 8.00000 | 7.00000 | 42.65000 | 11.406 | 42.238 | 29.997 | 68.764 | 929.79E-6 |
| | 9.00000 | 7.00000 | 42.65000 | 11.529 | 42.238 | 29.997 | 68.835 | 929.20E-6 |
| | 10.00000 | 7.00000 | 42.65000 | 11.619 | 42.238 | 29.997 | 68.884 | 928.80E-6 |
| | 11.00000 | 7.00000 | 42.65000 | 11.681 | 42.238 | 29.997 | 68.915 | 928.54E-6 |
| | 12.00000 | 7.00000 | 42.65000 | 11.717 | 42.238 | 29.997 | 68.933 | 928.39E-6 |
| | 13.00000 | 7.00000 | 42.65000 | 11.729 | 42.238 | 29.997 | 68.939 | 928.35E-6 |
| | 14.00000 | 7.00000 | 42.65000 | 11.717 | 42.238 | 29.997 | 68.933 | 928.39E-6 |
| | 15.00000 | 7.00000 | 42.65000 | 11.681 | 42.238 | 29.997 | 68.915 | 928.54E-6 |
| | 16.00000 | 7.00000 | 42.65000 | 11.619 | 42.238 | 29.997 | 68.884 | 928.80E-6 |
| | 17.00000 | 7.00000 | 42.65000 | 11.529 | 42.238 | 29.997 | 68.835 | 929.20E-6 |
| | 18.00000 | 7.00000 | 42.65000 | 11.406 | 42.238 | 29.997 | 68.764 | 929.79E-6 |
| | 19.00000 | 7.00000 | 42.65000 | 11.243 | 42.238 | 29.996 | 68.659 | 930.65E-6 |
| | 20.00000 | 7.00000 | 42.65000 | 11.032 | 42.238 | 29.996 | 68.503 | 931.92E-6 |
| | 21.00000 | 7.00000 | 42.65000 | 10.758 | 42.238 | 29.994 | 68.264 | 933.85E-6 |
| | 22.00000 | 7.00000 | 42.65000 | 10.401 | 42.238 | 29.991 | 67.876 | 936.93E-6 |
| | 23.00000 | 7.00000 | 42.65000 | 9.9254 | 42.238 | 29.982 | 67.187 | 942.23E-6 |
| | 24.00000 | 7.00000 | 42.65000 | 9.2713 | 42.238 | 29.945 | 65.751 | 952.40E-6 |
| | 25.00000 | 7.00000 | 42.65000 | 8.3065 | 42.238 | 29.630 | 61.547 | 971.71E-6 |
| | 26.00000 | 7.00000 | 42.65000 | 6.3508 | 42.238 | 14.999 | 34.604 | 463.05E-6 |
| GL1 | 0.00000 | 0.00000 | 44.75000 | 6.2706 | 44.537 | 0.0 | 0.0 | 0.0 |
| | 0.00000 | 1.00000 | 44.75000 | 7.9647 | 44.537 | 0.0 | 0.0 | 0.0 |
| | 0.00000 | 2.00000 | 44.75000 | 8.6859 | 44.537 | 0.0 | 0.0 | 0.0 |
| | 0.00000 | 3.00000 | 44.75000 | 8.9971 | 44.537 | 0.0 | 0.0 | 0.0 |
| | 0.00000 | 4.00000 | 44.75000 | 8.9971 | 44.537 | 0.0 | 0.0 | 0.0 |
| | 0.00000 | 5.00000 | 44.75000 | 8.6859 | 44.537 | 0.0 | 0.0 | 0.0 |
| | 0.00000 | 6.00000 | 44.75000 | 7.9647 | 44.537 | 0.0 | 0.0 | 0.0 |
| | 0.00000 | 7.00000 | 44.75000 | 6.2706 | 44.537 | 0.0 | 0.0 | 0.0 |
| | 0.00000 | 8.00000 | 44.75000 | 4.5204 | 44.537 | 0.0 | 0.0 | 0.0 |
| GL2 | -4.50000 | 0.00000 | 44.75000 | 2.0740 | 44.537 | 0.0 | 0.0 | 0.0 |
| | -4.50000 | 1.00000 | 44.75000 | 2.1966 | 44.537 | 0.0 | 0.0 | 0.0 |
| | -4.50000 | 2.00000 | 44.75000 | 2.2859 | 44.537 | 0.0 | 0.0 | 0.0 |
| | -4.50000 | 3.00000 | 44.75000 | 2.3328 | 44.537 | 0.0 | 0.0 | 0.0 |
| | -4.50000 | 4.00000 | 44.75000 | 2.3328 | 44.537 | 0.0 | 0.0 | 0.0 |
| | -4.50000 | 5.00000 | 44.75000 | 2.2859 | 44.537 | 0.0 | 0.0 | 0.0 |
| | -4.50000 | 6.00000 | 44.75000 | 2.1966 | 44.537 | 0.0 | 0.0 | 0.0 |
| | -4.50000 | 7.00000 | 44.75000 | 2.0740 | 44.537 | 0.0 | 0.0 | 0.0 |
| | -4.50000 | 8.00000 | 44.75000 | 1.9297 | 44.537 | 0.0 | 0.0 | 0.0 |
| GL3 | -9.00000 | 0.00000 | 44.75000 | 1.0129 | 44.537 | 0.0 | 0.0 | 0.0 |
| | -9.00000 | 1.00000 | 44.75000 | 1.0436 | 44.537 | 0.0 | 0.0 | 0.0 |
| | -9.00000 | 2.00000 | 44.75000 | 1.0651 | 44.537 | 0.0 | 0.0 | 0.0 |
| | -9.00000 | 3.00000 | 44.75000 | 1.0762 | 44.537 | 0.0 | 0.0 | 0.0 |
| | -9.00000 | 4.00000 | 44.75000 | 1.0762 | 44.537 | 0.0 | 0.0 | 0.0 |
| | -9.00000 | 5.00000 | 44.75000 | 1.0651 | 44.537 | 0.0 | 0.0 | 0.0 |
| | -9.00000 | 6.00000 | 44.75000 | 1.0436 | 44.537 | 0.0 | 0.0 | 0.0 |
| | -9.00000 | 7.00000 | 44.75000 | 1.0129 | 44.537 | 0.0 | 0.0 | 0.0 |
| | -9.00000 | 8.00000 | 44.75000 | 0.97444 | 44.537 | 0.0 | 0.0 | 0.0 |
| GL4 | 0.00000 | 4.00000 | 44.75000 | 8.9971 | 44.537 | 0.0 | 0.0 | 0.0 |
| | -1.00000 | 4.00000 | 44.75000 | 5.7098 | 44.537 | 0.0 | 0.0 | 0.0 |
| | -2.00000 | 4.00000 | 44.75000 | 4.1878 | 44.537 | 0.0 | 0.0 | 0.0 |
| | -3.00000 | 4.00000 | 44.75000 | 3.2384 | 44.537 | 0.0 | 0.0 | 0.0 |
| | -4.00000 | 4.00000 | 44.75000 | 2.5869 | 44.537 | 0.0 | 0.0 | 0.0 |
| | -5.00000 | 4.00000 | 44.75000 | 2.1138 | 44.537 | 0.0 | 0.0 | 0.0 |
| | -6.00000 | 4.00000 | 44.75000 | 1.7562 | 44.537 | 0.0 | 0.0 | 0.0 |
| | -7.00000 | 4.00000 | 44.75000 | 1.4778 | 44.537 | 0.0 | 0.0 | 0.0 |
| | -8.00000 | 4.00000 | 44.75000 | 1.2560 | 44.537 | 0.0 | 0.0 | 0.0 |
| | -9.00000 | 4.00000 | 44.75000 | 1.0762 | 44.537 | 0.0 | 0.0 | 0.0 |
| GL5 | 13.00000 | -6.00000 | 44.75000 | 3.0581 | 44.537 | 0.0 | 0.0 | 0.0 |
| | 13.00000 | -7.00000 | 44.75000 | 2.6201 | 44.537 | 0.0 | 0.0 | 0.0 |
| | 13.00000 | -8.00000 | 44.75000 | 2.2592 | 44.537 | 0.0 | 0.0 | 0.0 |
| | 13.00000 | -9.00000 | 44.75000 | 1.9582 | 44.537 | 0.0 | 0.0 | 0.0 |
| | 13.00000 | -10.00000 | 44.75000 | 1.7049 | 44.537 | 0.0 | 0.0 | 0.0 |
| | 13.00000 | -11.00000 | 44.75000 | 1.4899 | 44.537 | 0.0 | 0.0 | 0.0 |
| | 13.00000 | -12.00000 | 44.75000 | 1.3063 | 44.537 | 0.0 | 0.0 | 0.0 |
| GL6 | 26.00000 | -6.00000 | 44.75000 | 1.9019 | 44.537 | 0.0 | 0.0 | 0.0 |
| | 26.00000 | -7.00000 | 44.75000 | 1.6605 | 44.537 | 0.0 | 0.0 | 0.0 |
| | 26.00000 | -8.00000 | 44.75000 | 1.4577 | 44.537 | 0.0 | 0.0 | 0.0 |
| | 26.00000 | -9.00000 | 44.75000 | 1.2853 | 44.537 | 0.0 | 0.0 | 0.0 |
| | 26.00000 | -10.00000 | 44.75000 | 1.1373 | 44.537 | 0.0 | 0.0 | 0.0 |
| | 26.00000 | -11.00000 | 44.75000 | 1.0093 | 44.537 | 0.0 | 0.0 | 0.0 |
| | 26.00000 | -12.00000 | 44.75000 | 0.89782 | 44.537 | 0.0 | 0.0 | 0.0 |

Table 2 - Summary of Pdisp Output

| | Name | Coords | | Level (mOD) | Demolition & Excavation -90 kPa (heave) | | | Construction +60 kPa (settlement) | | Total settlement - Long term heave (mm) |
|---|---|---|---|---|---|---|---|---|---|---|
| | | X | Y | | Imm(mm) | Total(mm) | Long term(mm) | Imm(mm) | Total(mm) | |
| 103 Camden Mews | GL1 | 0 | 0 | 44.75 | -6.6955 | -10.754 | -4.0585 | 3.9703 | 6.2706 | 2.2121 |
| | | 0 | 1 | 44.75 | -8.6128 | -13.504 | -4.8912 | 5.1594 | 7.9647 | 3.0735 |
| | | 0 | 2 | 44.75 | -9.5059 | -14.844 | -5.3381 | 5.6438 | 8.6859 | 3.3478 |
| | | 0 | 3 | 44.75 | -10.031 | -15.639 | -5.608 | 5.8516 | 8.9971 | 3.3891 |
| | | 0 | 4 | 44.75 | -10.315 | -16.071 | -5.756 | 5.8516 | 8.9971 | 3.2411 |
| | | 0 | 5 | 44.75 | -10.406 | -16.209 | -5.803 | 5.6438 | 8.6859 | 2.8829 |
| | | 0 | 6 | 44.75 | -10.315 | -16.071 | -5.756 | 5.1594 | 7.9647 | 2.2087 |
| | | 0 | 7 | 44.75 | -10.031 | -15.639 | -5.608 | 3.9703 | 6.2706 | 0.6626 |
| | | 0 | 8 | 44.75 | -9.5059 | -14.844 | -5.3381 | 2.745 | 4.5204 | -0.8177 |
| | GL2 | -4.5 | 0 | 44.75 | -2.1586 | -3.9564 | -1.7978 | 1.1519 | 2.074 | 0.2762 |
| | | -4.5 | 1 | 44.75 | -2.3326 | -4.2297 | -1.8971 | 1.2307 | 2.1966 | 0.2995 |
| | | -4.5 | 2 | 44.75 | -2.4799 | -4.4607 | -1.9808 | 1.2882 | 2.2859 | 0.3051 |
| | | -4.5 | 3 | 44.75 | -2.5912 | -4.635 | -2.0438 | 1.3185 | 2.3328 | 0.289 |
| | | -4.5 | 4 | 44.75 | -2.6602 | -4.743 | -2.0828 | 1.3185 | 2.3328 | 0.25 |
| | | -4.5 | 5 | 44.75 | -2.6835 | -4.7796 | -2.0961 | 1.2882 | 2.2859 | 0.1898 |
| | | -4.5 | 6 | 44.75 | -2.6602 | -4.743 | -2.0828 | 1.2307 | 2.1966 | 0.1138 |
| | | -4.5 | 7 | 44.75 | -2.5912 | -4.635 | -2.0438 | 1.1519 | 2.074 | 0.0302 |
| | | -4.5 | 8 | 44.75 | -2.4799 | -4.4607 | -1.9808 | 1.0594 | 1.9297 | -0.0511 |
| | GL3 | -9 | 0 | 44.75 | -0.96001 | -2.0191 | -1.05909 | 0.4909 | 1.0129 | -0.04619 |
| | | -9 | 1 | 44.75 | -1.0091 | -2.0999 | -1.0908 | 0.50976 | 1.0436 | -0.0472 |
| | | -9 | 2 | 44.75 | -1.0497 | -2.1666 | -1.1169 | 0.52296 | 1.0651 | -0.0518 |
| | | -9 | 3 | 44.75 | -1.08 | -2.2163 | -1.1363 | 0.52976 | 1.0762 | -0.0601 |
| | | -9 | 4 | 44.75 | -1.0988 | -2.247 | -1.1482 | 0.52976 | 1.0762 | -0.072 |
| | | -9 | 5 | 44.75 | -1.1052 | -2.2573 | -1.1521 | 0.52296 | 1.0651 | -0.087 |
| | | -9 | 6 | 44.75 | -1.0988 | -2.247 | -1.1482 | 0.50976 | 1.0436 | -0.1046 |
| | | -9 | 7 | 44.75 | -1.08 | -2.2163 | -1.1363 | 0.4909 | 1.0129 | -0.1234 |
| | | -9 | 8 | 44.75 | -1.0497 | -2.1666 | -1.1169 | 0.46738 | 0.97444 | -0.14246 |
| | GL4 | 0 | 4 | 44.75 | -10.315 | -16.071 | -5.756 | 5.8516 | 8.9971 | 3.2411 |
| | | -1 | 4 | 44.75 | -6.6205 | -10.778 | -4.1575 | 3.5446 | 5.7098 | 1.5523 |
| | | -2 | 4 | 44.75 | -4.883 | -8.1621 | -3.2791 | 2.5295 | 4.1878 | 0.9087 |
| | | -3 | 4 | 44.75 | -3.761 | -6.4491 | -2.6881 | 1.9051 | 3.2384 | 0.5503 |
| | | -4 | 4 | 44.75 | -2.972 | -5.2294 | -2.2574 | 1.482 | 2.5869 | 0.3295 |
| | | -5 | 4 | 44.75 | -2.3898 | -4.3188 | -1.929 | 1.1784 | 2.1138 | 0.1848 |
| | | -6 | 4 | 44.75 | -1.9458 | -3.6163 | -1.6705 | 0.95164 | 1.7562 | 0.0857 |
| | | -7 | 4 | 44.75 | -1.5988 | -3.0609 | -1.4621 | 0.77717 | 1.4778 | 0.0157 |
| | | -8 | 4 | 44.75 | -1.3224 | -2.6133 | -1.2909 | 0.63983 | 1.256 | -0.0349 |
| | | -9 | 4 | 44.75 | -1.0988 | -2.247 | -1.1482 | 0.52976 | 1.0762 | -0.072 |
| 84 - 90 Camden Mews & 59 Camden Park Road | GL5 | 13 | -6 | 44.75 | -3.0813 | -5.5134 | -2.4321 | 1.742 | 3.0581 | 0.626 |
| | | 13 | -7 | 44.75 | -2.5959 | -4.7437 | -2.1478 | 1.4638 | 2.6201 | 0.4723 |
| | | 13 | -8 | 44.75 | -2.1968 | -4.1052 | -1.9084 | 1.2366 | 2.2592 | 0.3508 |
| | | 13 | -9 | 44.75 | -1.8652 | -3.5697 | -1.7045 | 1.0487 | 1.9582 | 0.2537 |
| | | 13 | -10 | 44.75 | -1.5872 | -3.1166 | -1.5294 | 0.89196 | 1.7049 | 0.1755 |
| | | 13 | -11 | 44.75 | -1.3525 | -2.7303 | -1.3778 | 0.76015 | 1.4899 | 0.1121 |
| | | 13 | -12 | 44.75 | -1.1532 | -2.3991 | -1.2459 | 0.64861 | 1.3063 | 0.0604 |
| | GL6 | 26 | -6 | 44.75 | -1.8423 | -3.4849 | -1.6426 | 1.0306 | 1.9019 | 0.2593 |
| | | 26 | -7 | 44.75 | -1.5732 | -3.0537 | -1.4805 | 0.8786 | 1.6605 | 0.18 |
| | | 26 | -8 | 44.75 | -1.3479 | -2.6889 | -1.341 | 0.75218 | 1.4577 | 0.1167 |
| | | 26 | -9 | 44.75 | -1.1572 | -2.3769 | -1.2197 | 0.64578 | 1.2853 | 0.0656 |
| | | 26 | -10 | 44.75 | -0.99448 | -2.1077 | -1.11322 | 0.55537 | 1.1373 | 0.02408 |
| | | 26 | -11 | 44.75 | -0.85467 | -1.8738 | -1.01913 | 0.47798 | 1.0093 | -0.00983 |
| | | 26 | -12 | 44.75 | -0.73392 | -1.6694 | -0.93548 | 0.41135 | 0.89782 | -0.03766 |

Notes

Negative values represent heave, positive values represent settlement

ASHTON COURT

GROUND MOVEMENT ASSESSMENT
(Ground movements & strain calculations).

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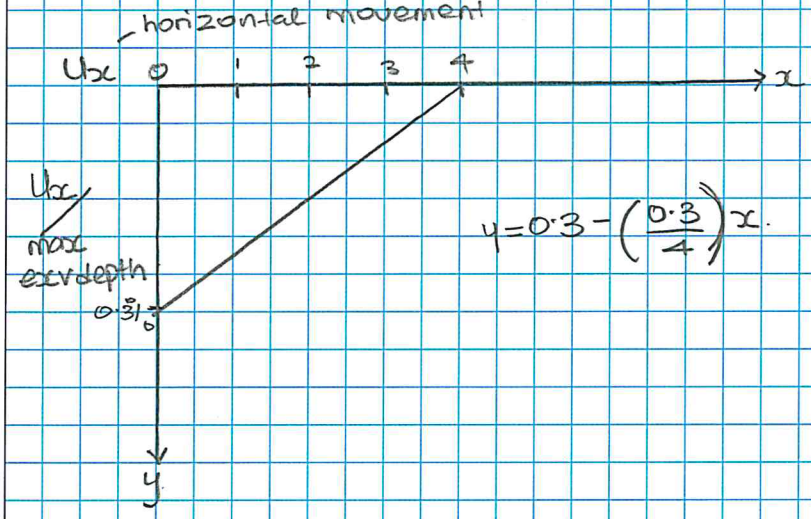
| Office | Engineer | Checked |
|---|---|---|
| LDN | FD | EMB. |

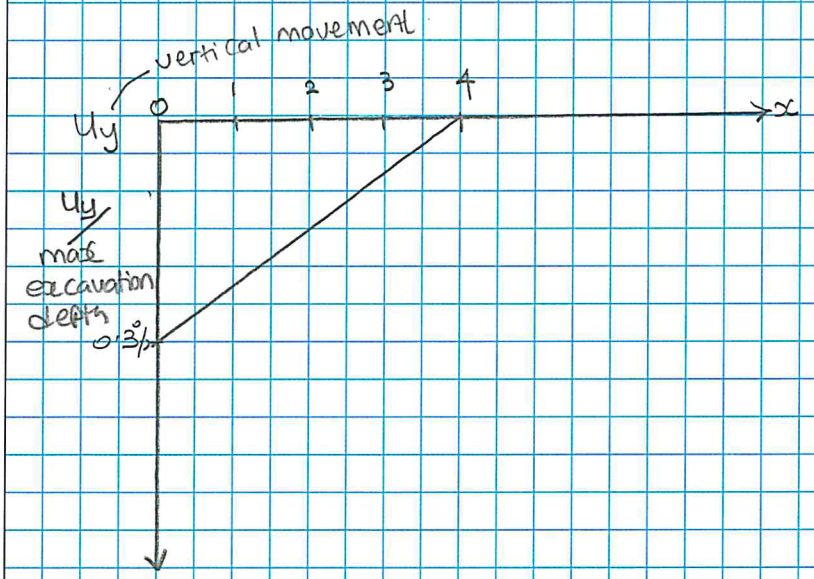
L (length of 103 Camden Mews) = 9m

H = 6m (two storey building)

Ground surface movement of 0.8% of max excavation depth (derived from Table 2.4 of CIRIA C580).




$y = 0.3 - \left(\frac{0.3}{4}\right)x$




$L/H$ if considering full length of building

$= 9/6 = 1.5$

$L/H = 0.75$ if considering movements at halfway along.

103 Camden Mews

ASHTON COURT GMA.

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| LDN. | FD | EMB |

SAMPLE CALC.

max exc. depth = 3m

Movement @ 0m (i.e on the party wall)

$$y = 0.3 - \left(\frac{0.3}{4}\right) \times 0$$

$$y = 0.3\%$$

$$y = \frac{Ux}{\text{max excavation depth}}$$

$$\frac{0.3}{100} = \frac{Ux}{3}$$

$$Ux = 9mm$$

Since graphs for Ux & Uy are the same

$Uy = 9mm$ @ 0m.

| | Distance from sheet pile wall (m) | | |
|---|---|---|---|
| | 0 | 4.5 | 9 |
| Ux | 9 | 6 | 3 |
| Uy | 9 | 6 | 3 |

For L = 4.5 (halfway on 103 Camden Mews)

$$\varepsilon_h = \frac{\delta h}{L} = \frac{0.003}{4.5} \times 100$$

$$= 0.06\%$$

For L = 9 (whole length of building)

$$\varepsilon_h = \frac{\delta h}{L} = \frac{0.06}{9} \times 100$$

$$= 0.06\%$$

Vertical movement

@ 0m C580 - 9mm (settlement)
Pdisp - 10mm (heave)

resultant = 1mm

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| LDN | FD. | EMB |

@ 4.5m C580 – 6mm
Pdisp. – 3mm

resultant 3mm

@ 9m C580 – 3mm
Pdisp – 1mm

resultant 2mm.

∴ Δ = 3mm + 1mm
= 4mm

$\frac{\Delta}{L} = \frac{0.004}{4.5} \times 100$
$= 0.08\%$

$\frac{\Delta}{L} = \frac{0.002}{4.5} \times 100$
$= 0.04\%$.

$\varepsilon_{lim}$ values
= 0.075 – 0.15% (Table 2.5 of CIRIA C580)

$\frac{\varepsilon_h}{\varepsilon_{lim}} = \frac{0.06}{0.15} = 0.4$.

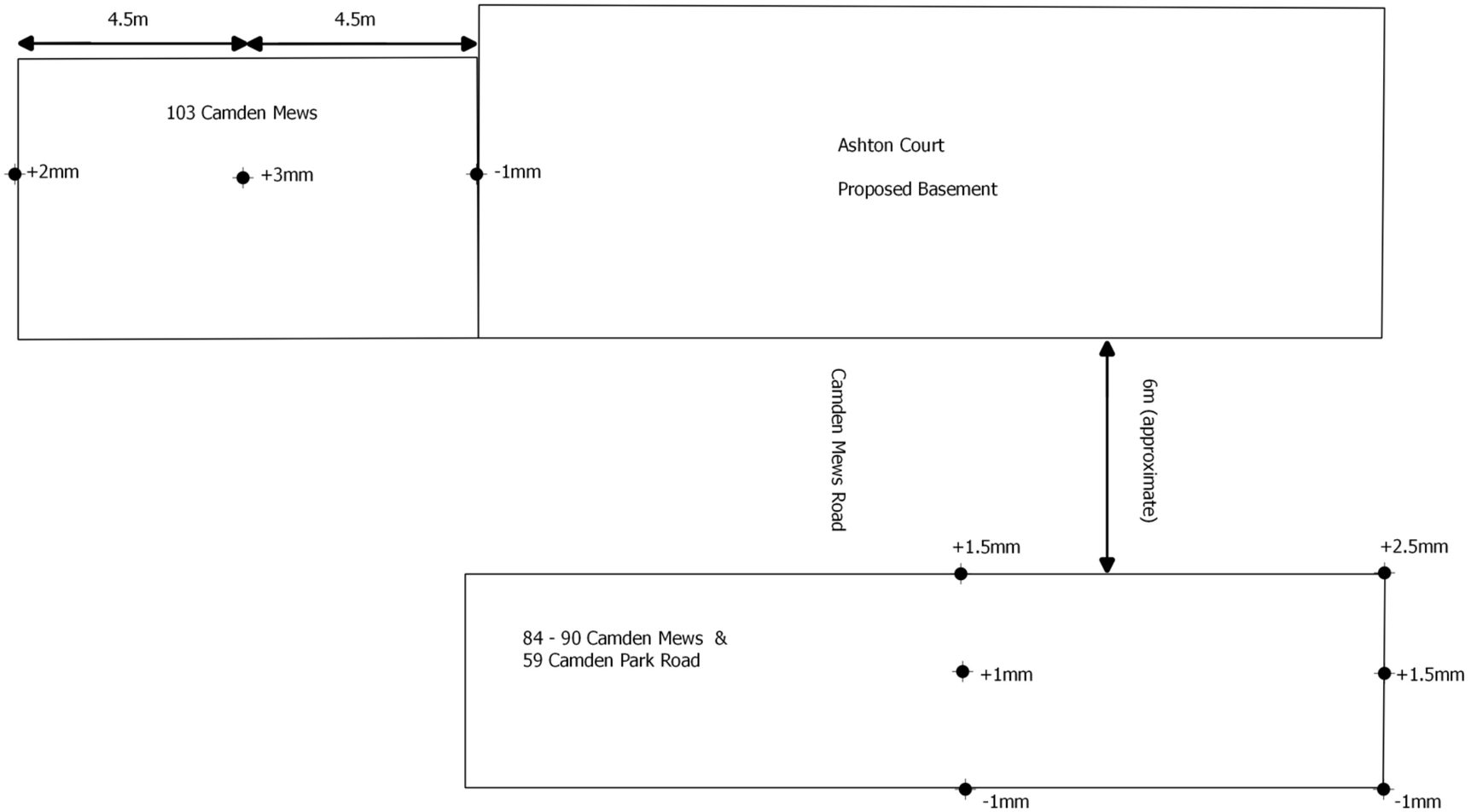
$\frac{\Delta/L}{\varepsilon_{lim}} = \frac{0.08}{0.15} = 0.5$

Figure 2.18b shows that for $L/H = 0.5$ and 1.5, damage to 103 Camden Mews is less than the upper bound of 'slight'

Figure 2.18c shows that the damage category is 2 for $L/H = 1$

Legend

- \- Heave
- \+ Settlement




NTS

Ashton Court

Client: Origin Housing

Vertical surface movements due to demolition and excavation

Scale: NTS



Job Number: 12047
Drawn by - Checked by: LB - FD
Drg No - Status/Revision: GIS0010 - B
File location: N:\12000 - 12249\12047 L - Ashton Court\Project_Workspaces (pdf in Outputs)
Date (Revision History): 01/07/2015 (A, First Issue, 17/06/15, LB;B, Minor Changes, 01/07/15, LB)

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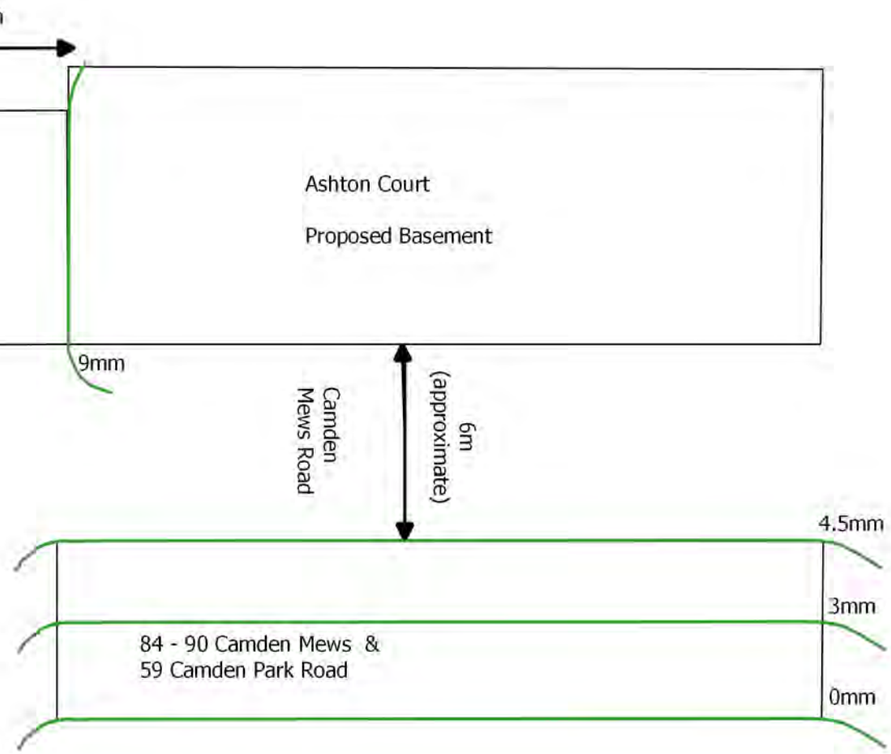
Legend

Horizontal Movement




NTS

Ashton Court

Client: Origin Housing

Contour plot of horizontal surface movements around the site due to demolition and excavation

Scale: NTS
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Job Number: 12047
Drawn by - Checked by: LB - FD
Drg No - Status/Revision: GIS0011 - B
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