CampbellReith
consulting engineers

# 4 Frognal Rise, London NW3 6RD

## Basement Impact Assessment Audit

For

London Borough of Camden

Project Number: 12336-32

Rev: F1

January 2017

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## Document History and Status

| Revision | Date | Purpose/Status | File Ref | Author | Check | Review |
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| D1 | July 2016 | Comment | AJMav12366-32-050716-4 Frognal Rise-D1.doc | A Marlow | E Brown | E Brown |
| D2 | October 2016 | Comment | AJMav12336-32-051016-4 Frognal Rise-D2.doc | A Marlow | E Brown | E Brown |
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## Document Details

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| Project Partner | E M Brown, BSc MSc CGeol FGS |
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| Project Name | 4 Frognal Rise, London NW3 6RD |
| Planning Reference | 2015/3525/P |

## Contents



## Appendix

## 1.0 NON-TECHNICAL SUMMARY

1.1. CampbellReith was instructed by London Borough of Camden (LBC) to carry out an audit on the Basement Impact Assessment submitted as part of the Planning Submission documentation for 4 Frognal Rise (planning reference 2015/3525/P). The basement is considered to fall within Category C as defined by the Terms of Reference.

1.2. The Audit reviewed the Basement Impact Assessment for potential impact on land stability and local ground and surface water conditions arising from basement development in accordance with LBC's policies and technical procedures.

1.3. CampbellReith was obtained the latest revision of submitted documentation from LBC's website and received information directly from the BIA author and reviewed it against an agreed audit check list. Information received directly from the author is presented in Appendix 3.

1.4. The BIA, SER and GMA have been carried out by well-known firms of engineering consultants using individuals who possess suitable qualifications.

1.5. The BIA has confirmed that an existing detached garage will be demolished, the existing two storey semi-detached house will be extended as its replacement and also extended backwards into the rear garden. A basement will be created below the new ground floor footprint which will retain 3 metres of soil at the front of the property and 6 metres of soil at the rear, due to the sloping nature of the site.

1.6. The BIA has shown that the proposed basement will be founded within the Bagshot Formation and will encounter perched groundwater. Further groundwater monitoring is requested to validate groundwater assumptions at the front of the property.

1.7. Although the development site has a slope marginally in excess of 7°, it is accepted that mitigation measures reduce the risk of slope failure. However, the construction sequence must clearly demonstrate that stability will be maintained at all times.

1.8. It is proposed to construct the basement using a combination of piled retaining walls at the rear of the property and conventional "hit and miss" underpinning elsewhere. Supplementary information has confirmed that none of the nearby properties have existing basements which extend below the proposed basement. On that basis, and the adoption of a contiguous piled wall, it is accepted that there are no cumulative impacts on the wider hydrogeology of the area. Should the retaining wall be altered to a secant piled wall, this will require review.

1.9. The Party Wall Approval process should be informed by the following additional information which is requested:

- Additional trial pits to confirm the depth of foundations to No. 2 Frognal Rise
- Details to ensure fine materials not removed during pumping operations
- Potential for subsoils to soften during the protracted underpinning process of forming reinforced concrete ell-shaped pins.

1.10. A Ground Movement Analysis has been undertaken. A number of queries were raised in the initial audits which have now largely been addressed. It is considered that the propping sequence is not realistic and it is therefore recommended that the final ground movement and building damage assessment is provided in a Basement Construction Plan.

1.11. It is accepted that the increased area of hardstanding and roof areas potentially discharging to the existing surface water drainage system have been mitigated by storage attenuation and the introduction of porous surfacing materials.

1.12. It is accepted that the site is not located within the Hampstead Heath pond chain catchment area, has no anticipated risk of groundwater or fluvial flooding and has no past history of flooding.

1.13. Queries and requests for further information are described in Section 4 and summarised in Appendix 2. It is accepted that, subject to the satisfactory completion of a BCP, the BIA and supporting documents identify the potential impacts arising out of the basement proposals and describe suitable mitigation.

## 2.0 INTRODUCTION

2.1. CampbellReith was instructed by London Borough of Camden (LBC) on 24 February 2016 to carry out a Category C Audit on the Basement Impact Assessment (BIA) submitted as part of the Planning Submission documentation for 4 Frognal Rise, Planning Reference 2015/3525/P. The audit was delayed until a ground movement assessment was made available on 1 June 2016.

2.2. The Audit was carried out in accordance with the Terms of Reference set by LBC, which can be viewed on Camden's website. It reviewed the Basement Impact Assessment for potential impact on land stability and local ground and surface water conditions arising from basement development.

2.3. A BIA is required for all planning applications with basements in Camden in general accordance with policies and technical procedures contained within

- Guidance for Subterranean Development (GSD). Issue 01. November 2010. Ove Arup & Partners.
- Camden Planning Guidance (CPG) 4: Basements and Lightwells.
- Camden Development Policy (DP) 27: Basements and Lightwells.
- Camden Development Policy (DP) 23: Water.

2.4. The BIA should demonstrate that schemes:

a) maintain the structural stability of the building and neighbouring properties;

b) avoid adversely affecting drainage and run off or causing other damage to the water environment; and,

c) avoid cumulative impacts upon structural stability or the water environment in the local area

and evaluate the impacts of the proposed basement considering the issues of hydrology, hydrogeology and land stability via the process described by the GSD and to make recommendations for the detailed design.

2.5. LBC's Audit Instruction described the planning proposal as the "*Erection of two storey side extension, part two storey, part single storey, part first floor rear extension, following a demolition of the existing single storey garage building and first floor rear extension, excavation of a new basement level and front lightwell, relocation of existing vehicular access and gate along Frognal Rise including building up of a new section of front boundary wall, landscaping of*

*the front garden area to create one off-street parking space including new bicycle and bin store all in connect with the existing single family dwellinghouse ."*

The Audit Instruction also confirmed that the basement proposals did not involve a listed building nor the site neighboured listed buildings.

2.6. CampbellReith accessed LBC's website on 16 June 2016 and downloaded the following relevant documents for audit purposes:

- Site Investigation & Basement Impact Assessment Report (BIA) dated June 2015 by GEA
- Structural Engineering Report & Subterranean Construction Method Statement (SER) dated June 2015 by Elliot Wood
- Ground Investigation Report (GIR) dated March 2015 by KF Geotechnical
- Ground Movement Report (GMA) dated May 2016 by GEA
- Architectural plans and sections, existing and proposed dated May and October 2015 by Stephen Brandes Architects

2.7. Further to the issue of the initial audit reports, responses to the queries raised were provided by GEA on 11 August and 07 December 2016. The later response is presented in Appendix 3 and considered in this final audit report.

## 3.0 BASEMENT IMPACT ASSESSMENT AUDIT CHECK LIST

| Item | Yes/No/NA | Comment |
|---|---|---|
| Are BIA Author(s) credentials satisfactory? | Yes | |
| Is data required by Cl.233 of the GSD presented? | Yes | BIA and SER. |
| Does the description of the proposed development include all aspects of temporary and permanent works which might impact upon geology, hydrogeology and hydrology? | Yes | SER Section 5. |
| Are suitable plan/maps included? | Yes | BIA Section 2. |
| Do the plans/maps show the whole of the relevant area of study and do they show it in sufficient detail? | Yes | |
| Land Stability Screening:<br>Have appropriate data sources been consulted?<br>Is justification provided for 'No' answers? | Yes | BIA Section 3.3. |
| Hydrogeology Screening:<br>Have appropriate data sources been consulted?<br>Is justification provided for 'No' answers? | Yes | BIA Section 3.2. |
| Hydrology Screening:<br>Have appropriate data sources been consulted?<br>Is justification provided for 'No' answers? | Yes | BIA Section 3.4. |
| Is a conceptual model presented? | Yes | BIA Section 7. |
| Land Stability Scoping Provided?<br>Is scoping consistent with screening outcome? | Yes | BIA Section 4.1. |

| Item | Yes/No/NA | Comment |
|---|---|---|
| Hydrogeology Scoping Provided?<br>Is scoping consistent with screening outcome? | Yes | BIA Section 4.1. |
| Hydrology Scoping Provided?<br>Is scoping consistent with screening outcome? | Yes | BIA Section 4.1. |
| Is factual ground investigation data provided? | Yes | GIR. |
| Is monitoring data presented? | Yes | GIR and BIA Section 8. |
| Is the ground investigation informed by a desk study? | Yes | GIR. |
| Has a site walkover been undertaken? | Yes | GIR. |
| Is the presence/absence of adjacent or nearby basements confirmed? | Yes | Supplementary information describes the nature and extent of basements in surrounding properties. |
| Is a geotechnical interpretation presented? | Yes | BIA Section 8. |
| Does the geotechnical interpretation include information on retaining wall design? | Yes | BIA Section 8.1.2. |
| Are reports on other investigations required by screening and scoping presented? | Yes | Ground Movement Assessment Aboricultural Impact Assessment, Archaeological Assessment. |
| Are baseline conditions described, based on the GSD? | Yes | |
| Do the base line conditions consider adjacent or nearby basements? | Yes | Addressed in supplementary information (Appendix 3). |
| Is an Impact Assessment provided? | Yes | BIA Section 9. |

| Item | Yes/No/NA | Comment |
|---|---|---|
| Are estimates of ground movement and structural impact presented? | Yes | GMA Section 7. |
| Is the Impact Assessment appropriate to the matters identified by screen and scoping? | Yes | |
| Has the need for mitigation been considered and are appropriate mitigation methods incorporated in the scheme? | Yes | However, GMA to be updated. |
| Has the need for monitoring during construction been considered? | Yes | GMA Section 7.2. |
| Have the residual (after mitigation) impacts been clearly identified? | Yes | Although final details to be provided in a BCP. |
| Has the scheme demonstrated that the structural stability of the building and neighbouring properties and infrastructure will be maintained? | Yes | Although final details to be provided in a BCP. |
| Has the scheme avoided adversely affecting drainage and run-off or causing other damage to the water environment? | Yes | |
| Has the scheme avoided cumulative impacts upon structural stability or the water environment in the local area? | Yes | Although final details to be provided in a BCP. |
| Does report state that damage to surrounding buildings will be no worse than Burland Category 2? | Yes | Revised GMA estimates damage to be Burland Category 0 or 1, with the exception of a small section of boundary wall along Windmill Hill where Category 2 damage is predicted. |
| Are non-technical summaries provided? | No | However, the report is well written and easily followed. |

## 4.0 DISCUSSION

4.1. The BIA has been carried out by a well-known firm of consultants, GEA, and the individuals concerned in its production have suitable qualifications. The SER has similarly been carried out by a well-known firm of engineering consultants, Elliott Wood, and their report has been reviewed by a suitably qualified and experienced individual. The GMA and building damage assessment has been prepared by GEA and was authored and reviewed by suitably qualified persons.

4.2. The site is located to the west of Hampstead Heath and lies in an area that slopes to the west/south west. No. 4 Frognal Rise is a two storey semi-detached property adjoining No. 2. The front elevation of No. 4 faces southwest and is approximately 4.0 metres lower than its rear garden. A detached garage and rear ground floor wall retain the rear garden, which abuts the highway of Windmill Hill behind the property.

4.3. It is proposed to demolish the existing garage, push back the rear ground floor retaining wall, and extend the ground floor to the north western boundary line. A basement will be introduced below the reconfigured ground floor footprint. At the front of the property, the external forecourt will step back up to existing levels via a series of terraces. The reconfigured new rear house perimeter will encompass existing garden retaining walls. The new basement walls will retain approximately 3.0 metres of soil at the front of the property increasing to approximately 6.0 metres at the rear.

4.4. The BIA has identified that the proposed basement is expected to encounter a significant thickness of Made Ground, overlying the sands and clay bands of the Bagshot Formation and Claygate Member, which approximately follow the slope of the topography. The soils investigation consisted of two boreholes in the front and rear of the property and three trial pits to identify anticipated existing foundation depths. Standpipes were incorporated into the boreholes and monitored on two occasions. The BIA identifies that localised groundwater inflows may be expected within the basement excavation in the north (rear) of the site. Although groundwater monitoring of the south (front) standpipe anticipated no inflow on this face of the excavation, the BIA recognised that the level in the standpipe had not reached equilibrium level (March and April 2015) and monitoring should be continued.

4.5. Supplementary information provided in August 2016 states that a further monitoring visit was undertaken towards the end of July. This encountered groundwater at 6.77m beneath the centre of the site. A 5m deep standpipe at the rear of the site was dry. A southerly direction of groundwater flow is assumed in the BIA and confirmation was requested. The groundwater monitoring should be related to Ordnance Datum to demonstrate whether or not this assumption has been verified. The monitoring data should also be reported relative to proposed

excavation levels (in m OD) to demonstrate whether the water table at the rear of the site has been established in sufficient detail.

4.6. Trial pits have been undertaken which identify that foundations to existing boundary walls on each side of the property are founded just into the Bagshot Formation as was the existing foundation to No. 4. It has been assumed that the adjoining foundations for No. 2 will be at a similar depth and that no basement is present next door. Further trial pits should be undertaken, prior to construction commencement, to confirm these assumptions and inform the Party Wall process.

4.7. The BIA notes that the general slope around the development site is approximately 7°/8°. Whilst it is accepted that the presence of a number of retaining walls exist to break up the slope, the construction works must be sequenced in such a way that slope stability is not compromised.

4.8. It is known that a number of basements are currently being constructed in the vicinity of the development site or have recently received planning permission. Supplementary information has noted that surrounding basements and lower ground floor levels are at or above the current ground level of No 4 Frognal Rise. On the basis of the proposed contiguous wall and the absence of other nearby basements, it is accepted that this additional basement will not have significant cumulative effects on the hydrogeology of the area. Should a review of groundwater levels require a secant piled wall, this will require to be reassessed.

4.9. The BIA notes that perched groundwater will be encountered during basement excavation although groundwater flow should be controllable by sump pumping. Care should be taken to ensure that fine materials are not washed out during pumping operations and further details should be provided by the contractor during the Party Wall Process.

4.10. Specific care should be taken during the underpinning process which is envisaged under all walls other than the northeastern (rear) retaining wall, which will be piled from existing ground level, to ensure that the subsoils do not soften during the hit and miss underpinning process. This is likely to be potentially significant since the proposed methodology of reinforced concrete 'L'-shaped pins will mean an increased time duration for this phase of the work. This should be considered further during the Party Wall process.

4.11. The BIA has identified the potential for heave of the underlying clay soils to occur and suitable mitigation is proposed.

4.12. A Ground Movement Assessment has been carried out by GEA to determine the effect of underpinning, piling and excavation on the adjoining/adjacent properties and the highway in Windmill Hill. The GMA predicts damage no worse than Burland Category 1 (very slight) for all

surrounding structures with the exception of a small length of the boundary wall along Windmill Hill where Cateogry 2 damage. The following observations are made

- The BIA refers to a 'top-down' methodology, and the construction sequence adopted in the Wallap is bottom up, however, this is conservative and is accepted.
- Whilst the temporary works assumed in the analyses seem unrealistic, it has been confirmed that significant propping is required to limit potential damage to surrounding structures and that it will form the basis of the tenders issued to the contractors. It is recommended that the final design of the basement and the temporary works are subject to a further assessment with respect to ground movements and building damage as part of a Basement Construction Plan.
- Whilst the input data appears to be at variance with the accompanying text, the simplification of the excavation in XDisp is reasonable in light of the reduced significance of ground movements adjacent to the footpath of Windmill Hill.
- There is discrepancy between the body of the GMA and the XDisp input where the text refers to 60% of CIRIA C580 movement to be anticipated, whilst the XDisp input adopts 50%. It was also requested that consideration was given to importing the movements predicted in the Wallap analyses for the damage assessment since the maximum movements occur at depth. Whilst GEA have confirmed that the XDisp outputs were halved in order to be consistent with the Wallap data, they have not incorporated the Wallap data into their analyses. However, this can be addressed in the BCP once other queries have been resolved in the BIA.
- The effects of underpinning and the remainder of the excavation have now been assessed using XDisp. Whilst there are significant limitations to this approach due to the method of construction and the ground conditions, it is accepted that is it conservative.
- The height of the neighbouring building, No. 2 Frognal Rise is taken as 8m in the damage assessment. Supplementary information confirms this is reasonable and that nos. 5 & 6 Windmill Hill are included.

4.13. The BIA and GMA identify the need for lateral stability of the excavations to be maintained by the introduction of temporary works. No details are provided in either document nor in the SER. Additional details were requested to ensure adequate stiffness of temporary propping to comply with the requirements of the GMA. These have not been received, and as recommended above, should be provided in a BCP.

4.14. It is accepted that the introduction of porous surfacing to new external terrace areas and the rainwater storage cistern to be installed in the area of the old demolished garage will mitigate the increased area of hardstanding and roof areas discharging to the existing surface water drainage system.

4.15. It is accepted that the site is not located within the catchment area of the Hampstead Heath pond chain.

4.16. It is accepted that the development site has no anticipated risk of groundwater or fluvial flooding and has no past history of flooding.

## 5.0 CONCLUSIONS

5.1. The BIA, SER and GMA have been carried out by well-known firms of engineering consultants using individuals who possess suitable qualifications.

5.2. The BIA has confirmed that an existing detached garage will be demolished, the existing two storey semi-detached house will be extended as its replacement and also extended backwards into the rear garden. A basement will be created below the new ground floor footprint which will retain 3 metres of soil at the front of the property and 6 metres of soil at the rear, due to the sloping nature of the site.

5.3. The BIA has shown that the proposed basement will be founded within the Bagshot Formation and will encounter perched groundwater. Further groundwater monitoring is requested to validate groundwater assumptions at the front of the property. This information should be presented in a Basement Construction Plan.

5.4. Although the development site has a slope marginally in excess of 7°, it is accepted that mitigation measures reduce the risk of slope failure. However, the construction sequence must clearly demonstrate that stability will be maintained at all times. This information may be presented in the BCP.

5.5. It is proposed to construct the basement using a combination of piled retaining walls at the rear of the property and conventional “hit and miss” underpinning elsewhere. Supplementary information has confirmed that none of the nearby properties have existing basements which extend below the proposed basement. On that basis, and the adoption of a contiguous piled wall, it is accepted that there are no cumulative impacts on the wider hydrogeology of the area. Should the retaining wall be altered to a secant piled wall, this will require review.

5.6. The Party Wall Approval process should be informed by the following additional information which is requested:

- Additional trial pits to confirm the depth of foundations to No. 2 Frognal Rise
- Details to ensure fine material not removed during pumping operations
- Potential for subsoils to soften during the protracted underpinning process of forming reinforced concrete L-shaped pins.

5.7. A Ground Movement Analysis has been undertaken. A number of queries were raised in the initial audit which have largely been addressed. It is considered that the propping sequence is not realistic and it is therefore recommended that the final ground movement and building damage assessment is provided in the BCP.

5.8. Additional details are requested to ensure adequate stiffness of temporary propping to comply with the requirements of the GMA, and confirm that the assumptions made in the GMA with regard to temporary works are reasonable. These should be provided in the BCP.

5.9. It is accepted that the increased area of hardstanding and roof areas potentially discharging to the existing surface water drainage system have been mitigated by storage attenuation and the introduction of porous surfacing materials.

5.10. It is accepted that the site is not located within the Hampstead Heath pond chain catchment area, has no anticipated risk of groundwater or fluvial flooding and has no past history of flooding.

# Appendix 1: Residents' Consultation Comments

Residents' Consultation Comments

| Surname | Address | Date | Issue raised | Response |
|---|---|---|---|---|
| Heath & Hampstead Society | N/A | 21/11/14 | Lack of GMA and damage assessment. | Predates the issue of a GMA, see 4.12. |
| Levy | 2 Frognal Rise | November 2015 | Underpinning, piling and groundwater affecting stability of adjoining property. | See 4.5 to 4.13. |
| Fossum | 6 Windmill Hill | | Damage to water main in Windmill Hill. | See 4.12. |
| Rustall | 5 Windmill Hill | | Damage to house | See 4.12. |
| Rubin | 22 Windmill Hill | 25.11.15 | Piling vibration and flooding due to basement obstruction. | See 4.5. |

# Appendix 2: Audit Query Tracker

Audit Query Tracker

| Query No | Subject | Query | Status | Date closed out |
|---|---|---|---|---|
| 1 | Hydrogeology | Further groundwater monitoring requested to determine flow rate, flow direction and pile type | Closed – to be further addressed in BCP. | 06.01.17 |
| 2 | Hydrogeology | Evidence of basements in vicinity of development site | Closed – will require review if retaining wall construction is revised. | 30.9.16 |
| 3 | Stability | Indicative temporary works proposal requested | Closed – to be provided in BCP. | 06.01.17 |
| 4 | Stability | Ground Movement and building damage assessment to be reviewed | Closed – final version to be presented in BCP. | 06.01.17 |
| 5 | Stability | Detailed proposals to ensure softening of clay materials do not occur | To be agreed for Party Wall Award | N/A |
| 6 | Stability | Detailed proposals to ensure fine material not removed during sump pumping | To be agreed for Party Wall Award | N/A |
| 7 | Stability | Additional trial pit(s) to verify depth of party wall and presence of adjoining basement | To be agreed for Party Wall Award | N/A |

# Appendix 3: Supplementary Supporting Documents

7 December 2016

Our ref J14373/MC/2

Geotechnical & Environmental Associates

Unit 1, Church Farm
Gotham Road, Kingston on Soar
Notts NG11 0DE

tel 01509 674888
fax 01509 674950
email mail@gea-ltd.co.uk
web www.gea-ltd.co.uk

Stephen Brandes
Stephen Brandes Architects Limited
5 Spedan Close
London
NW3 7XF

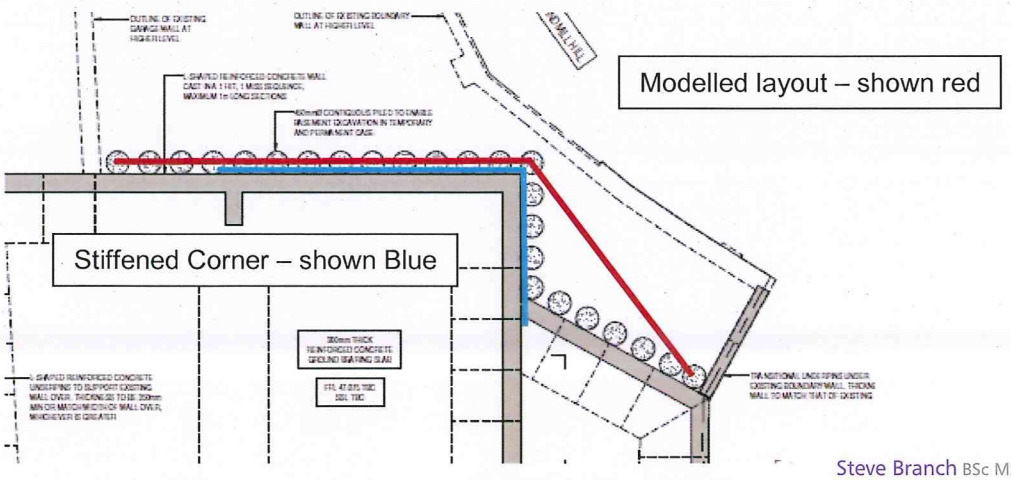
Dear Stephen

**Re: FURTHER RESPONSE TO THE AUDITS OF THE BASEMENT IMPACT ASSESSMENT FOR 4 FROGNAL RISE, LONDON NW3 6RD (2014/6736/P)**

Our Basement Impact Assessment (BIA) and Ground Movement Analysis (GMA) has been reviewed by Campbell Reith (CR) and we have discussed the outstanding items with Graham Kite of CR. The outstanding queries have been distilled to a number of points of detail and these are set out in italics along with our responses, where applicable, as follows.

1. *In the round, we want the GMA to be able to demonstrate that using 'reasonably conservative' parameters and methodology, stability of adjacent structures / environment will be maintained.* Response: Accepted

2. *Comments were raised about the effects of corner stiffening. Our comments remain that we're concerned the modelled stiffening effects in XDisp are not realistic and would direct you to the Oasys XDisp manual 19.3, section 2.2.1.* Response: The re-entrant corner in the bored pile wall is unable to be modelled within the X-Disp program. We have, therefore modelled this as two walls with an enclosed angle of roughly 127° and shown in red below. We have previously modelled this piled wall both with and without stiffening effects with satisfactory results in both cases. We have nonetheless reconsidered this approach in the light of CR comments. It is our opinion that the central 90° corner of the piled wall, shown blue below, may reasonably be considered as a fully stiffened corner even though the model reflects a wider angle. However the two ends of the bored pile wall have now been modelled without such effects. This is shown on the plan extract below.



3. *The structural proposal include 3 levels of props and you have already confirmed that this is in-line with EWP's instructions. However, its not considered 'reasonably conservative' to adopt a propping scheme that the Contractor is very likely to change due to buildability issues.* Response: The retaining wall has been remodelled using a 600 mm diameter piles and the stiffer piles have enabled a different propping arrangement to be adopted. Temporary steel props will be used at two levels during construction, 51.8 m OD and 49.3 m OD, reflecting one prop close to each floor level. The permanent propping remains as before with concrete slabs with centrelines at 46.72 m OD, 49.85 m OD and 52.7 m OD. Diagonal bracing will be installed at the 90° corner in the piled wall and the remaining propping forces will be transferred into the existing building at the 51.8 m (OD) level with temporary waling beams spreading the load across the rear of the building. Similarly the props at the 49.3 m OD level will bear against the existing building and be transferred longitudinally to the front of the structure. The excavation below 49.3 m OD will be in maximum 1.0 m width underpins which will be propped against the central earth bund until cured and adequate concrete strength has been gained.

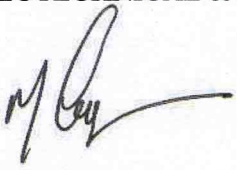
4. *In section 4.12 of the D2 Audit we comment that 'it is not clear whether the effects of underpinning and the remainder of the excavation' have been included within the GMA. I understand from our discussions that you have included this - for clarity please highlight where its included.* Response: We considered that the previous GMA included the effects of underpinning and the main excavation in the P-Disp analysis. However we have now also included the horizontal movements from a fuller excavation within the X-Disp analysis. Whilst not a perfect model due to the reduction in underpin height from rear to the front of the site, the model is considered to be a conservative representation of the key elements that comprise installation, excavation, settlement under load and heave due to unloading.

5. *The damage impact assessment currently indicates the adjacent house (No 2 Frognal Rise) to be category 0 whilst the retaining wall is category 2. Bearing in mind my comments 2 and 3 above, are these realistic?* Response: The results of the changes above indicate that the damage category for No 2 Frognal Rise is between Cat 0 – Negligible and Cat 1 – Very Slight. The retaining wall to Windmill Hill, behind the house, has been split into three sections and the combined segments for Wall 2, as well as Section Nos 1 and 3 all indicate Category 1 - Very slight damage.

6. *The GMA proposes that damage impact restrictions imposed by LBC should be relaxed for the retaining wall, as it is not a dwelling. Bearing in mind comments above regarding propping arrangements, discussion on what level of movement / damage would be acceptable for the retaining structure is required. Please also consider that mitigation measures will need to be proposed to control movements / damage, as well as monitoring mechanisms.* Response: The results of the changes above indicate that the maximum damage category is Cat 1 – very slight. The retaining wall structure is wholly within the 4 Frognal Rise site and as part of the development will be propped in part by the new rear extension and in consequence its long term stability is ensured. However it is proposed that the retaining wall, as well as No 2 Frognal Rise will be subject to a regime of monitoring and review through the weeks in advance of commencement and throughout the construction period. The detail of the monitoring regime remains to be finalised but will be agreed under the party wall process. It is considered that an inclinometer should be cast within one of the retaining wall piles and that survey targets should be affixed to No 2 Frognal Rise and the rear retaining walls and that survey point such as Hilti nails should be cast into the piled wall capping beam.

We trust that the foregoing comments are sufficient to address the Campbell Reith comments in respect of the BIA and GMA, but please do not hesitate to contact us if further clarification is required.

Yours sincerely
GEOTECHNICAL & ENVIRONMENTAL ASSOCIATES



Martin Cooper
BEng CEng MICE FGS

Steve Branch
BSc MSc CGeol FGS FRGS

Units: kN,m

**INPUT DATA**

**SOIL PROFILE**

| Stratum no. | Elevation of top of stratum | Soil types Active side | Passive side |
|---|---|---|---|
| 1 | 52.80 | 1 Made Ground | 1 Made Ground |
| 2 | 50.00 | 2 Bagshot (Upper Sand) | 2 Bagshot (Upper Sand) |
| 3 | 49.00 | 3 Bagshot (Si Sa Clay) | 3 Bagshot (Si Sa Clay) |
| 4 | 47.90 | 4 Bagshot (Lower Sand) | 4 Bagshot (Lower Sand) |
| 5 | 41.00 | 5 London Clay | 5 London Clay |

**SOIL PROPERTIES**

| No. | Soil type Description (Datum elev.) | Bulk density kN/m3 | Young's Modulus Eh,kN/m2 (dEh/dy ) | At rest coeff. Ko (dKo/dy) | Consol state. NC/OC ( Nu ) | Active limit Ka ( Kac ) | Passive limit Kp ( Kpc ) | Cohesion kN/m2 ( dc/dy ) |
|---|---|---|---|---|---|---|---|---|
| 1 | Made Ground | 17.00 | 10000 | 0.500 | OC (0.200) | 0.490 (0.000) | 2.040 ( 0.000) | |
| 2 | Bagshot (Upper Sand) | 18.50 | 36000 | 0.500 | OC (0.200) | 0.295 (0.000) | 3.392 ( 0.000) | |
| 3 | Bagshot (Si Sa Clay) | 18.50 | 50000 | 1.000 | OC (0.490) | 1.000 (2.000) | 1.000 ( 2.000) | 100.0u |
| 4 | Bagshot (.. ( 47.90 ) | 18.50 | 40000 ( 1739) | 1.000 | OC (0.200) | 0.295 (0.000) | 3.392 ( 0.000) | |
| 5 | London Clay ( 41.00 ) | 19.50 | 57500 ( 3750) | 1.000 | OC (0.490) | 1.000 (2.000) | 1.000 ( 2.000) | 115.0u ( 7.500) |

**Additional soil parameters associated with Ka and Kp**

| No. | Soil type Description | --- parameters for Ka --- Soil friction angle | Wall adhesion coeff. | Back-fill angle | --- parameters for Kp --- Soil friction angle | Wall adhesion coeff. | Back-fill angle |
|---|---|---|---|---|---|---|---|
| 1 | Made Ground | 20.00 | 0.000 | 0.00 | 20.00 | 0.000 | 0.00 |
| 2 | Bagshot (Upper Sand) | 33.00 | 0.000 | 0.00 | 33.00 | 0.000 | 0.00 |
| 3 | Bagshot (Si Sa Clay) | 0.00 | 0.000 | 0.00 | 0.00 | 0.000 | 0.00 |
| 4 | Bagshot (Lower Sand) | 33.00 | 0.000 | 0.00 | 33.00 | 0.000 | 0.00 |
| 5 | London Clay | 0.00 | 0.000 | 0.00 | 0.00 | 0.000 | 0.00 |

**GROUND WATER CONDITIONS**

Density of water = 10.00 kN/m3

| | Active side | Passive side |
|---|---|---|
| Initial water table elevation | 50.00 | 50.00 |

Automatic water pressure balancing at toe of wall : No

| Water press. profile no. | Active side Point no. | Elev. m | Piezo elev. m | Water press. kN/m2 | Passive side Point no. | Elev. m | Piezo elev. m | Water press. kN/m2 | |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 50.00 | 50.00 | 0.0 | 1 | 49.10 | 49.10 | 0.0 | MC+WC |
| 2 | 1 | 50.00 | 50.00 | 0.0 | 1 | 46.50 | 46.50 | 0.0 | MC |
| 3 | 1 | 50.00 | 50.00 | 0.0 | 1 | 46.47 | 46.47 | 0.0 | MC |

**WALL PROPERTIES**

Type of structure = Fully Embedded Wall
Elevation of toe of wall = 41.00
Maximum finite element length = 0.60 m
Youngs modulus of wall E = 2.8000E+07 kN/m2
Moment of inertia of wall I = 8.4820E-03 m4/m run
E.I = 237496 kN.m2/m run
Yield Moment of wall = Not defined

**STRUTS and ANCHORS**

| Strut/ anchor no. | Elev. | Strut spacing m | X-section area of strut sq.m | Youngs modulus kN/m2 | Free length m | Inclin -ation (degs) | Pre- stress /strut kN | Tension allowed |
|---|---|---|---|---|---|---|---|---|
| 1 | 51.80 | 3.00 | 0.100000 | 2.000E+08 | 3.00 | 0.00 | 0 | No |
| 2 | 49.30 | 3.00 | 0.100000 | 2.000E+08 | 3.00 | 0.00 | 0 | No |
| 3 | 46.72 | 1.00 | 0.400000 | 3.000E+07 | 3.00 | 0.00 | 0 | No |
| 4 | 49.85 | 1.00 | 0.300000 | 3.000E+07 | 3.00 | 0.00 | 0 | No |
| 5 | 52.70 | 1.00 | 0.250000 | 3.000E+07 | 3.00 | 0.00 | 0 | No |

**SURCHARGE LOADS**

| Surch -arge no. | Elev. | Distance from wall | Length parallel to wall | Width perpend. to wall | Surcharge ----- kN/m2 ----- Near edge | Far edge | Equiv. soil type | Partial factor/ Category |
|---|---|---|---|---|---|---|---|---|
| 1 | 52.80 | 0.00(A) | 20.00 | 30.00 | 14.40 | = | N/A | 1.00 - |
| 2 | 46.47 | -0.00(P) | 20.00 | 30.00 | 35.00 | = | N/A | 1.00 - |

Note: A = Active side, P = Passive side
Limit State Categories P/U = Permanent Unfavourable
P/F = Permanent Favourable
Var = Variable (unfavourable)

**CONSTRUCTION STAGES**

| Construction stage no. | Stage description |
|---|---|
| 1 | Change EI of wall to 1.0000E-05 kN.m2/m run<br>Yield moment not defined<br>No adjustments to wall displacements |
| 2 | Apply surcharge no.1 at elevation 52.80 |
| 3 | Change EI of wall to 237496 kN.m2/m run<br>Yield moment not defined<br>Reset wall displacements to zero at this stage |
| 4 | Excavate to elevation 51.50 on PASSIVE side |
| 5 | Install strut or anchor no.1 at elevation 51.80 |
| 6 | Apply water pressure profile no.1 ( Mod. Conserv. ) |
| 7 | Excavate to elevation 49.10 on PASSIVE side |
| 8 | Install strut or anchor no.2 at elevation 49.30 |
| 9 | Apply water pressure profile no.2 ( Mod. Conserv. ) |
| 10 | Apply water pressure profile no.3 ( Mod. Conserv. ) |
| 11 | Excavate to elevation 46.47 on PASSIVE side |
| 12 | Install strut or anchor no.3 at elevation 46.72 |
| 13 | Apply surcharge no.2 at elevation 46.47 |
| 14 | Install strut or anchor no.4 at elevation 49.85 |
| 15 | Remove strut or anchor no.2 at elevation 49.30 |
| 16 | Install strut or anchor no.5 at elevation 52.70 |
| 17 | Remove strut or anchor no.1 at elevation 51.80 |

**FACTORS OF SAFETY and ANALYSIS OPTIONS**

Limit State options: Serviceability Limit State
All loads and soil strengths are unfactored

Stability analysis:
Method of analysis - Strength Factor method
Factor on soil strength for calculating wall depth = 1.00

Parameters for undrained strata:
Minimum equivalent fluid density = 5.00 kN/m3
Maximum depth of water filled tension crack = 0.00 m

Bending moment and displacement calculation:
Method - Subgrade reaction model using Influence Coefficients
Open Tension Crack analysis? - No
Non-linear Modulus Parameter (L) = 0 m

Boundary conditions:
Length of wall (normal to plane of analysis) = 1000.00 m

Width of excavation on active side of wall = 20.00 m
Width of excavation on passive side of wall = 20.00 m

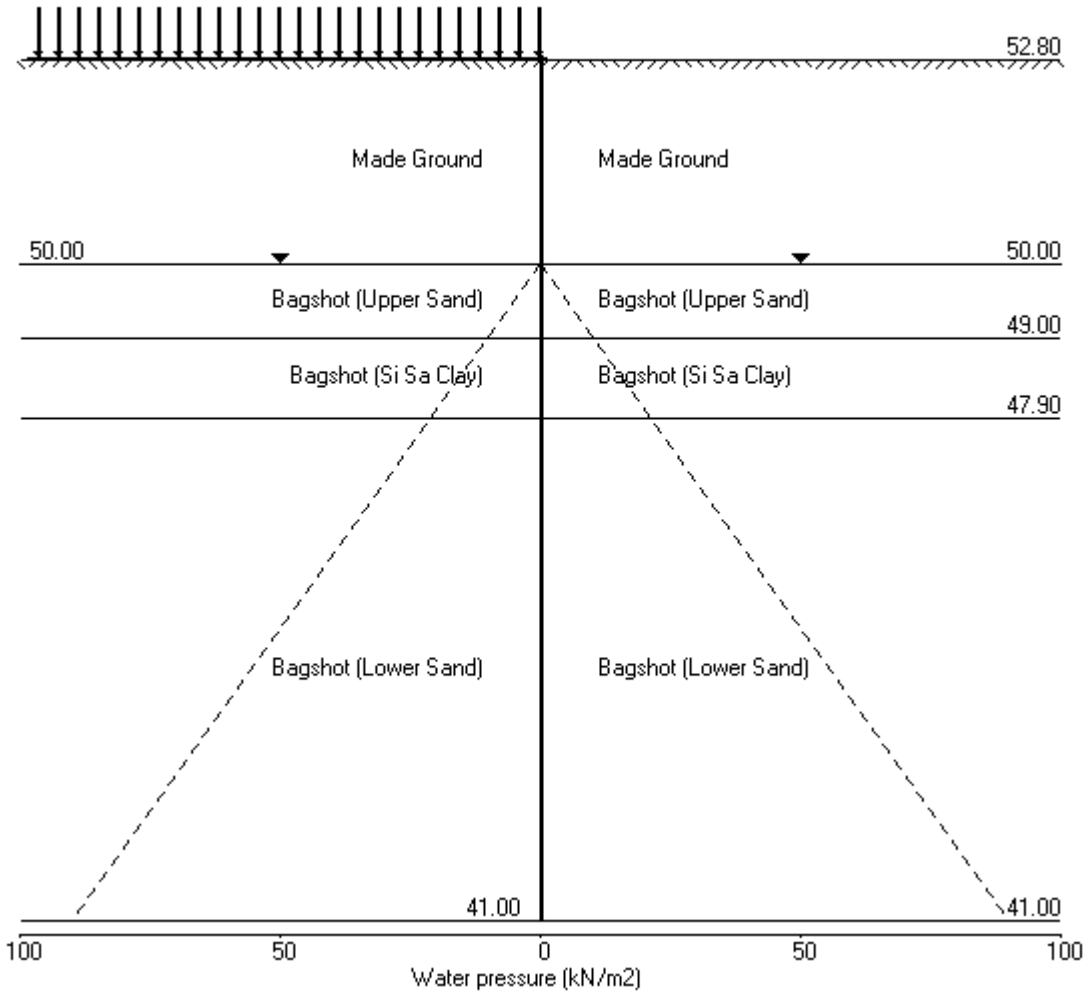
Distance to rigid boundary on active side = 20.00 m
Distance to rigid boundary on passive side = 20.00 m

**OUTPUT OPTIONS**

| Stage no. | Stage description | Output options: Displacement, Bending mom., Shear force | Active, Passive pressures | Graph. output |
|---|---|---|---|---|
| 1 | Change EI of wall to 1.0000E-05kN.m2/m | No | No | No |
| 2 | Apply surcharge no.1 at elev. 52.80 | Yes | No | Yes |
| 3 | Change EI of wall to 237496kN.m2/m run | No | Yes | Yes |
| 4 | Excav. to elev. 51.50 on PASSIVE side | No | No | No |
| 5 | Install strut no.1 at elev. 51.80 | No | No | No |
| 6 | Apply water pressure profile no.1 | No | No | No |
| 7 | Excav. to elev. 49.10 on PASSIVE side | No | No | No |
| 8 | Install strut no.2 at elev. 49.30 | No | No | No |
| 9 | Apply water pressure profile no.2 | No | No | No |
| 10 | Apply water pressure profile no.3 | No | No | No |
| 11 | Excav. to elev. 46.47 on PASSIVE side | Yes | No | Yes |
| 12 | Install strut no.3 at elev. 46.72 | No | No | No |
| 13 | Apply surcharge no.2 at elev. 46.47 | No | No | No |
| 14 | Install strut no.4 at elev. 49.85 | No | No | No |
| 15 | Remove strut no.2 at elev. 49.30 | No | No | No |
| 16 | Install strut no.5 at elev. 52.70 | No | No | No |
| 17 | Remove strut no.1 at elev. 51.80 | No | No | No |
| * | Summary output | Yes | - | Yes |

Units: kN,m

Stage No.2 Apply surcharge no.1 at elev. 52.80



Units: kN,m

Stage No. 2 Apply surcharge no.1 at elevation 52.80

**STABILITY ANALYSIS of Fully Embedded Wall according to Strength Factor method**
Factor of safety on soil strength

| Stage No. | --- G.L. --- Act. | Pass. | Strut Elev. | FoS for toe elev. = 41.00 Factor of Safety | Moment equilib. at elev. | Toe elev. for FoS = 1.000 Toe elev. | Wall Penetr -ation |
|---|---|---|---|---|---|---|---|
| 2 | 52.80 | 52.80 | Cant. | 11.063 | 42.24 | 52.09 | 0.71 |

**BENDING MOMENT and DISPLACEMENT ANALYSIS of Fully Embedded Wall**
**Analysis options**
Length of wall perpendicular to section = 1000.00m
Subgrade reaction model - Boussinesq Influence coefficients
Soil deformations are elastic until the active or passive limit is reached
Open Tension Crack analysis - No

Rigid boundaries: Active side 20.00 from wall
Passive side 20.00 from wall
**Limit State: Serviceability Limit State**
Calculated Bending Moments and Strut Forces are to be multiplied by a factor of 1.35 to obtain values for structural design. See summary for factored values.

*** Convergence failure - Out of balance shear force at elevation 41.00 is 64.749% of the maximum shear force. see Note.

| Node no. | Y coord | Nett pressure kN/m2 | Wall disp. m | Wall rotation rad. | Shear force kN/m | Bending moment kN.m/m | Strut forces kN/m | EI of wall kN.m2/m |
|---|---|---|---|---|---|---|---|---|
| 1 | 52.80 | 7.06 | 0.004 | 1.57E-04 | 0.0 | 0.0 | | 0 |
| 2 | 52.70 | 4.29 | 0.004 | 1.30E-04 | 0.6 | 0.0 | | 0 |
| 3 | 52.25 | 0.00 | 0.004 | 4.06E-05 | 1.6 | -0.0 | | 0 |
| 4 | 51.80 | -0.01 | 0.003 | 1.23E-04 | 1.6 | -0.0 | | 0 |
| 5 | 51.50 | 0.00 | 0.003 | 4.75E-05 | 1.6 | 0.0 | | 0 |
| 6 | 51.13 | 0.00 | 0.003 | 3.10E-04 | 1.6 | -0.0 | | 0 |
| 7 | 50.75 | 0.00 | 0.003 | -7.34E-04 | 1.6 | 0.0 | | 0 |
| 8 | 50.38 | 0.00 | 0.003 | 3.23E-03 | 1.6 | -0.0 | | 0 |
| 9 | 50.00 | 4.48 | 0.001 | 6.50E-03 | 2.4 | 0.0 | | 0 |
| | | -11.26 | 0.001 | 6.50E-03 | 2.4 | 0.0 | | |
| 10 | 49.85 | 0.01 | 0.000 | 3.64E-03 | 1.6 | 0.0 | | 0 |
| 11 | 49.30 | -0.00 | 0.000 | 3.16E-05 | 1.6 | -0.0 | | 0 |
| 12 | 49.10 | -0.00 | 0.000 | -1.39E-03 | 1.6 | 0.0 | | 0 |
| 13 | 49.00 | -3.01 | 0.000 | -2.13E-03 | 1.4 | -0.0 | | 0 |
| | | 0.59 | 0.000 | -2.13E-03 | 1.4 | -0.0 | | |
| 14 | 48.45 | 0.00 | 0.000 | 6.10E-04 | 1.6 | 0.0 | | 0 |
| 15 | 47.90 | 2.65 | 0.000 | 1.39E-04 | 2.3 | -0.0 | | 0 |
| | | -2.51 | 0.000 | 1.39E-04 | 2.3 | -0.0 | | |
| 16 | 47.31 | 0.00 | 0.000 | 1.93E-04 | 1.6 | 0.0 | | 0 |
| 17 | 46.72 | -0.01 | 0.000 | -2.65E-05 | 1.6 | -0.0 | | 0 |
| 18 | 46.50 | -0.01 | 0.000 | 5.89E-05 | 1.6 | -0.0 | | 0 |
| 19 | 46.47 | 0.01 | 0.000 | 5.93E-05 | 1.6 | 0.0 | | 0 |
| 20 | 46.04 | 0.00 | 0.000 | 3.39E-07 | 1.6 | -0.0 | | 0 |
| 21 | 45.60 | 0.01 | 0.000 | 1.79E-05 | 1.6 | 0.0 | | 0 |
| 22 | 45.00 | 0.00 | 0.000 | 1.14E-05 | 1.6 | -0.0 | | 0 |
| 23 | 44.40 | 0.00 | 0.000 | 1.31E-05 | 1.6 | 0.0 | | 0 |
| 24 | 43.80 | 0.00 | 0.000 | 1.21E-05 | 1.6 | 0.0 | | 0 |

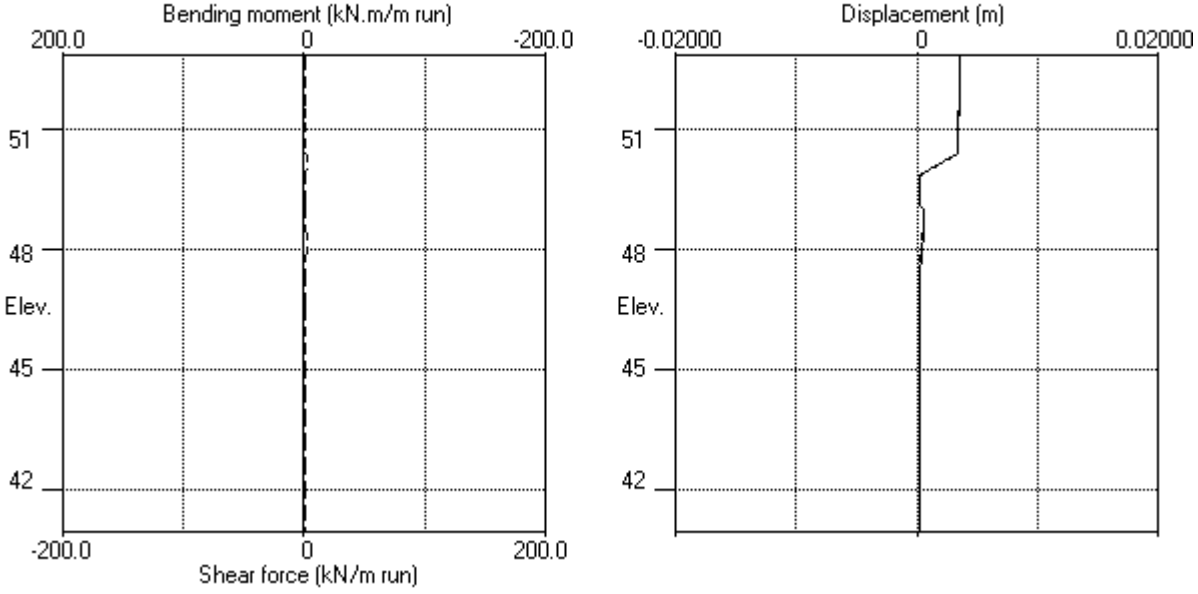
(continued)

Stage No.2 Apply surcharge no.1 at elevation 52.80

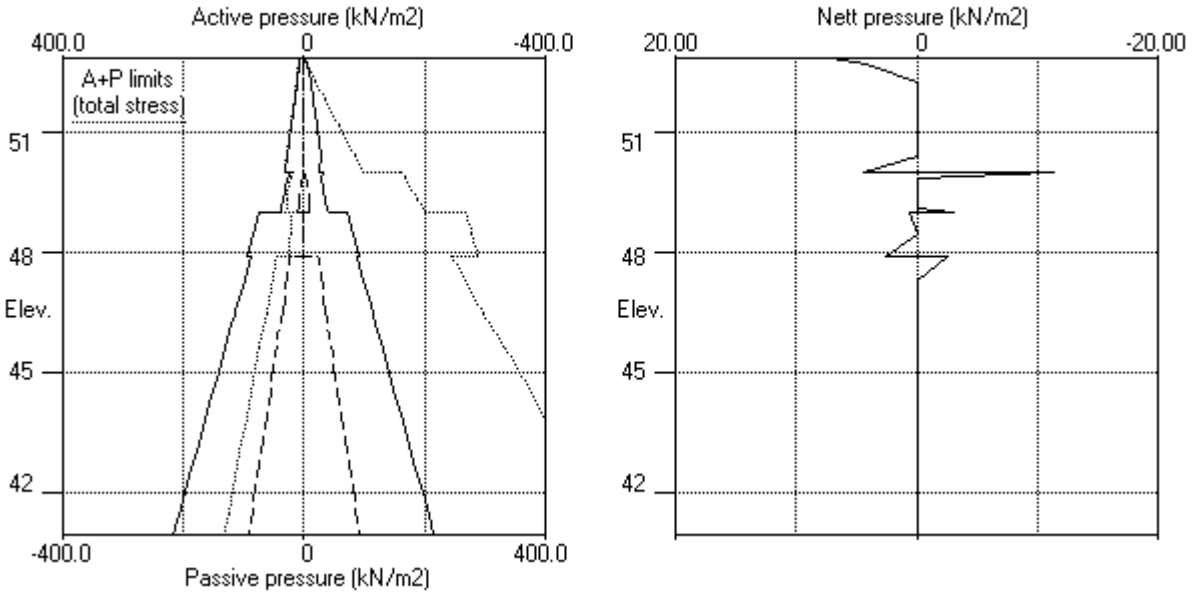
| Node no. | Y coord | Nett pressure kN/m2 | Wall disp. m | Wall rotation rad. | Shear force kN/m | Bending moment kN.m/m | Strut forces kN/m | EI of wall kN.m2/m |
|---|---|---|---|---|---|---|---|---|
| 25 | 43.20 | 0.00 | 0.000 | 1.19E-05 | 1.6 | 0.0 | | 0 |
| 26 | 42.60 | 0.00 | 0.000 | 1.09E-05 | 1.6 | 0.0 | | 0 |
| 27 | 42.00 | -0.00 | 0.000 | 1.12E-05 | 1.6 | -0.0 | | 0 |
| 28 | 41.50 | -0.00 | 0.000 | 9.88E-06 | 1.6 | 0.0 | | 0 |
| 29 | 41.00 | -0.02 | 0.000 | 7.64E-06 | 1.6 | 0.0 | | --- |

Units: kN,m

Stage No.2 Apply surcharge no.1 at elev. 52.80

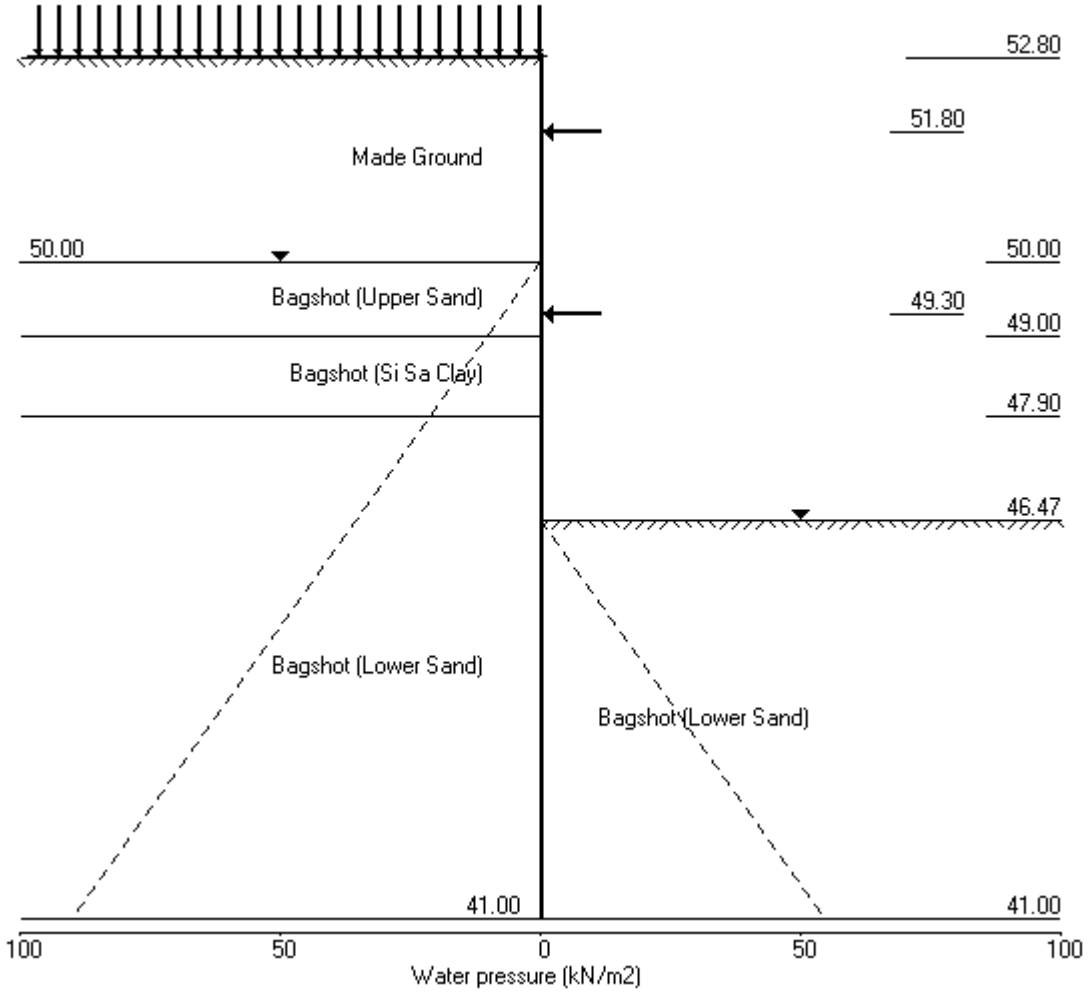



Stage No.2 Apply surcharge no.1 at elev. 52.80



Units: kN,m

Stage No.11 Excav. to elev. 46.47 on PASSIVE side



Units: kN,m

Stage No. 11 Excavate to elevation 46.47 on PASSIVE side

**STABILITY ANALYSIS of Fully Embedded Wall according to Strength Factor method**

Factor of safety on soil strength

| Stage No. | --- G.L. --- Act. | Pass. | Strut Elev. | FoS for toe elev. = 41.00 Factor of Safety | Moment equilib. at elev. | Toe elev. for FoS = 1.000 Toe elev. | Wall Penetr -ation |
|---|---|---|---|---|---|---|---|
| 11 | 52.80 | 46.47 | | More than one strut | | | |

**BENDING MOMENT and DISPLACEMENT ANALYSIS of Fully Embedded Wall**

**Analysis options**

Length of wall perpendicular to section = 1000.00m

Subgrade reaction model - Boussinesq Influence coefficients

Soil deformations are elastic until the active or passive limit is reached

Open Tension Crack analysis - No

Rigid boundaries: Active side 20.00 from wall
Passive side 20.00 from wall

**Limit State: Serviceability Limit State**

Calculated Bending Moments and Strut Forces are to be multiplied by a factor of 1.35 to obtain values for structural design. See summary for factored values.

*** Wall displacements reset to zero at stage 3

| Node no. | Y coord | Nett pressure kN/m2 | Wall disp. m | Wall rotation rad. | Shear force kN/m | Bending moment kN.m/m | Strut forces kN/m | EI of wall kN.m2/m |
|---|---|---|---|---|---|---|---|---|
| 1 | 52.80 | 23.88 | -0.000 | -1.07E-03 | 0.0 | 0.0 | | 237496 |
| 2 | 52.70 | 23.70 | -0.000 | -1.07E-03 | 2.5 | 0.1 | | 237496 |
| 3 | 52.25 | 22.94 | 0.000 | -1.07E-03 | 12.9 | 3.2 | | 237496 |
| 4 | 51.80 | 22.32 | 0.001 | -1.08E-03 | 23.1 | 10.7 | -0.0 | 237496 |
| 5 | 51.50 | 24.19 | 0.001 | -1.10E-03 | 30.0 | 18.2 | | 237496 |
| 6 | 51.13 | 26.50 | 0.002 | -1.14E-03 | 39.5 | 30.6 | | 237496 |
| 7 | 50.75 | 28.72 | 0.002 | -1.20E-03 | 49.9 | 47.0 | | 237496 |
| 8 | 50.38 | 30.83 | 0.002 | -1.29E-03 | 61.1 | 67.2 | | 237496 |
| 9 | 50.00 | 32.78 | 0.003 | -1.42E-03 | 73.0 | 91.6 | | 237496 |
| | | 27.02 | 0.003 | -1.42E-03 | 73.0 | 91.6 | | |
| 10 | 49.85 | 27.03 | 0.003 | -1.48E-03 | 77.0 | 102.6 | | 237496 |
| 11 | 49.30 | 26.96 | 0.004 | -1.77E-03 | 91.9 | 148.3 | 257.1 | 237496 |
| | | 26.96 | 0.004 | -1.77E-03 | -165.3 | 148.3 | | |
| 12 | 49.10 | 29.45 | 0.004 | -1.88E-03 | -159.6 | 115.5 | | 237496 |
| 13 | 49.00 | 30.70 | 0.005 | -1.92E-03 | -156.6 | 99.6 | | 237496 |
| | | 26.77 | 0.005 | -1.92E-03 | -156.6 | 99.6 | | |
| 14 | 48.45 | 29.18 | 0.006 | -2.06E-03 | -141.2 | 17.0 | | 237496 |
| 15 | 47.90 | 32.53 | 0.007 | -2.01E-03 | -124.3 | -56.7 | | 237496 |
| | | 53.83 | 0.007 | -2.01E-03 | -124.3 | -56.7 | | |
| 16 | 47.31 | 60.58 | 0.008 | -1.79E-03 | -90.6 | -120.8 | | 237496 |
| 17 | 46.72 | 66.39 | 0.009 | -1.44E-03 | -53.3 | -163.9 | | 237496 |
| 18 | 46.50 | 68.80 | 0.009 | -1.28E-03 | -38.1 | -174.6 | | 237496 |
| 19 | 46.47 | 69.08 | 0.009 | -1.26E-03 | -36.4 | -175.5 | | 237496 |
| 20 | 46.04 | 57.15 | 0.010 | -9.35E-04 | -8.8 | -185.4 | | 237496 |
| 21 | 45.60 | 45.79 | 0.010 | -5.94E-04 | 13.7 | -184.8 | | 237496 |
| 22 | 45.00 | 31.18 | 0.010 | -1.46E-04 | 36.8 | -170.0 | | 237496 |
| 23 | 44.40 | 17.70 | 0.010 | 2.50E-04 | 51.5 | -143.9 | | 237496 |
| 24 | 43.80 | 5.22 | 0.010 | 5.73E-04 | 58.3 | -111.6 | | 237496 |

(continued)

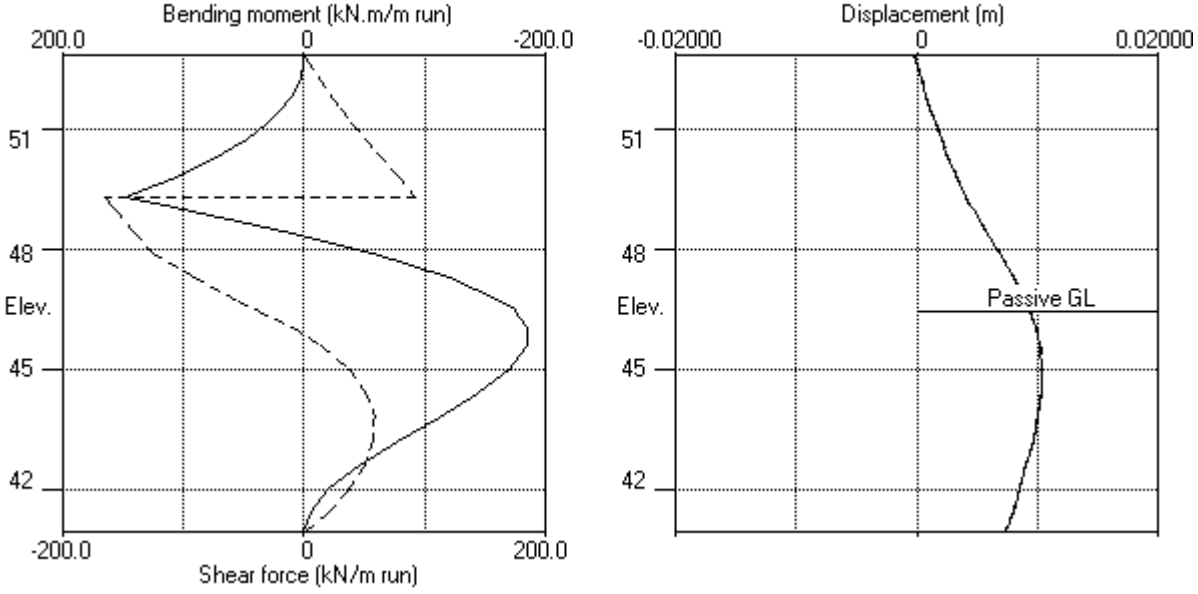
Stage No.11 Excavate to elevation 46.47 on PASSIVE side

| Node no. | Y coord | Nett pressure kN/m2 | Wall disp. m | Wall rotation rad. | Shear force kN/m | Bending moment kN.m/m | Strut forces kN/m | EI of wall kN.m2/m |
|---|---|---|---|---|---|---|---|---|
| 25 | 43.20 | -6.43 | 0.010 | 8.11E-04 | 58.0 | -77.3 | | 237496 |
| 26 | 42.60 | -17.48 | 0.009 | 9.66E-04 | 50.8 | -45.4 | | 237496 |
| 27 | 42.00 | -28.17 | 0.008 | 1.04E-03 | 37.1 | -19.7 | | 237496 |
| 28 | 41.50 | -36.94 | 0.008 | 1.07E-03 | 20.8 | -5.9 | | 237496 |
| 29 | 41.00 | -40.21 | 0.007 | 1.08E-03 | 1.6 | 0.0 | | --- |

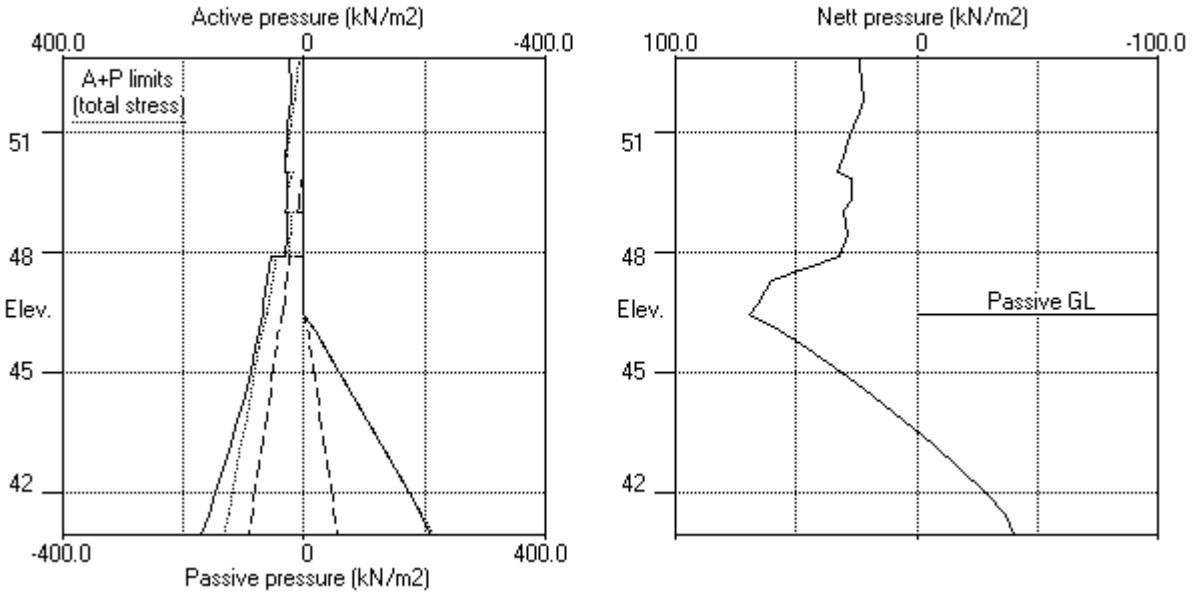
At elev. 51.80 The strut is slack
At elev. 49.30 Strut force = 771.4 kN/strut = 257.1 kN/m run

Units: kN,m

Stage No.11 Excav. to elev. 46.47 on PASSIVE side




Stage No.11 Excav. to elev. 46.47 on PASSIVE side



Units: kN,m

**Summary of results**

**LIMIT STATE PARAMETERS**

Limit State: Serviceability Limit State

All loads and soil strengths are unfactored

**STABILITY ANALYSIS of Fully Embedded Wall according to Strength Factor method**

Factor of safety on soil strength

| Stage No. | --- G.L. --- Act. | Pass. | Strut Elev. | FoS for toe elev. = 41.00 Factor of Safety | Moment equilib. at elev. | Toe elev. for FoS = 1.000 Toe elev. | Wall Penetr -ation |
|---|---|---|---|---|---|---|---|
| 1 | 52.80 | 52.80 | Cant. | Conditions not suitable for FoS calc. | | | |
| 2 | 52.80 | 52.80 | Cant. | 11.063 | 42.24 | 52.09 | 0.71 |
| 3 | 52.80 | 52.80 | | No analysis at this stage | | | |
| 4 | 52.80 | 51.50 | Cant. | 4.074 | 42.00 | 48.56 | 2.94 |
| 5 | 52.80 | 51.50 | | No analysis at this stage | | | |
| 6 | 52.80 | 51.50 | 51.80 | Conditions not suitable for FoS calc. | | | |
| 7 | 52.80 | 49.10 | 51.80 | 2.532 | n/a | 48.71 | 0.39 |
| 8 | 52.80 | 49.10 | | No analysis at this stage | | | |

All remaining stages have more than one strut - FoS calculation n/a

Units: kN,m

**Summary of results**

**BENDING MOMENT and DISPLACEMENT ANALYSIS of Fully Embedded Wall**

**Analysis options**

Length of wall perpendicular to section = 1000.00m
Subgrade reaction model - Boussinesq Influence coefficients
Soil deformations are elastic until the active or passive limit is reached
Open Tension Crack analysis - No

Rigid boundaries: Active side 20.00 from wall
Passive side 20.00 from wall

**Limit State: Serviceability Limit State**

Calculated Bending Moments and Strut Forces have been multiplied by a factor of 1.35 to obtain values for structural design.

**Bending moment, shear force and displacement envelopes**

| Node no. | Y coord | Displacement | | Bending moment Calculated | | Bending moment Factored | | Shear force Calculated | | Shear force Factored | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | max. | min. | max. | min. | max. | min. | max. | min. | max. | min. |
| | | m | m | kN.m/m | | kN.m/m | | kN/m | kN/m | kN/m | kN/m |
| 1 | 52.80 | 0.005 | -0.001 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2 | 52.70 | 0.004 | -0.001 | 0 | 0 | 0 | 0 | 3 | 0 | 4 | 0 |
| 3 | 52.25 | 0.004 | -0.000 | 4 | -0 | 5 | -0 | 14 | 0 | 19 | 0 |
| 4 | 51.80 | 0.004 | 0.000 | 12 | -0 | 16 | -0 | 25 | -44 | 34 | -59 |
| 5 | 51.50 | 0.004 | 0.000 | 20 | -6 | 27 | -8 | 33 | -39 | 44 | -52 |
| 6 | 51.13 | 0.004 | 0.000 | 34 | -20 | 46 | -27 | 43 | -31 | 58 | -42 |
| 7 | 50.75 | 0.004 | 0.000 | 51 | -31 | 69 | -41 | 53 | -23 | 72 | -31 |
| 8 | 50.38 | 0.004 | 0.000 | 73 | -38 | 99 | -51 | 65 | -13 | 87 | -18 |
| 9 | 50.00 | 0.004 | 0.000 | 99 | -42 | 133 | -56 | 77 | -2 | 104 | -3 |
| 10 | 49.85 | 0.004 | 0.000 | 110 | -42 | 149 | -57 | 81 | -132 | 109 | -179 |
| 11 | 49.30 | 0.004 | 0.000 | 148 | -40 | 200 | -53 | 92 | -165 | 124 | -223 |
| 12 | 49.10 | 0.005 | 0.000 | 116 | -37 | 156 | -50 | 19 | -160 | 26 | -215 |
| 13 | 49.00 | 0.005 | 0.000 | 100 | -35 | 134 | -47 | 22 | -157 | 29 | -211 |
| 14 | 48.45 | 0.006 | 0.000 | 48 | -51 | 65 | -68 | 11 | -141 | 14 | -191 |
| 15 | 47.90 | 0.007 | 0.000 | 45 | -100 | 60 | -136 | 3 | -124 | 4 | -168 |
| 16 | 47.31 | 0.008 | 0.000 | 40 | -140 | 53 | -189 | 13 | -91 | 18 | -122 |
| 17 | 46.72 | 0.009 | 0.000 | 33 | -164 | 45 | -221 | 17 | -53 | 23 | -72 |
| 18 | 46.50 | 0.009 | 0.000 | 31 | -175 | 41 | -236 | 17 | -38 | 22 | -51 |
| 19 | 46.47 | 0.009 | 0.000 | 30 | -176 | 41 | -237 | 17 | -36 | 22 | -49 |
| 20 | 46.04 | 0.010 | 0.000 | 25 | -185 | 34 | -250 | 14 | -10 | 18 | -13 |
| 21 | 45.60 | 0.010 | 0.000 | 21 | -185 | 28 | -249 | 17 | -9 | 23 | -12 |
| 22 | 45.00 | 0.010 | 0.000 | 15 | -170 | 20 | -229 | 37 | -7 | 50 | -10 |
| 23 | 44.40 | 0.010 | 0.000 | 10 | -144 | 13 | -194 | 51 | -6 | 69 | -8 |
| 24 | 43.80 | 0.010 | 0.000 | 6 | -112 | 8 | -151 | 58 | -4 | 79 | -5 |
| 25 | 43.20 | 0.010 | 0.000 | 5 | -77 | 7 | -104 | 58 | -2 | 78 | -3 |
| 26 | 42.60 | 0.009 | 0.000 | 3 | -45 | 4 | -61 | 51 | -1 | 69 | -2 |
| 27 | 42.00 | 0.008 | 0.000 | 2 | -20 | 2 | -27 | 37 | -1 | 50 | -1 |
| 28 | 41.50 | 0.008 | 0.000 | 0 | -6 | 1 | -8 | 21 | 0 | 28 | 0 |
| 29 | 41.00 | 0.007 | 0.000 | 0 | -0 | 0 | -0 | 2 | 0 | 2 | 0 |

**Summary of results (continued)**

Calculated Bending Moments and Strut Forces have been multiplied by a factor of 1.35 to obtain values for structural design.

**Maximum and minimum bending moment and shear force at each stage**

| Stage | Bending moment | | | | | | Shear force | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Calculated | | | | Factored | | Calculated | | | | Factored | |
| no. | max. | elev. | min. | elev. | max. | min. | max. | elev. | min. | elev. | max. | min. |
| | kN.m/m | | kN.m/m | | kN.m/m | | kN/m | | kN/m | | kN/m | kN/m |
| 1 | 0 | 52.80 | 0 | 52.80 | 0 | 0 | 0 | 52.80 | 0 | 52.80 | 0 | 0 |
| 2 | 0 | 49.10 | -0 | 50.38 | 0 | -0 | 2 | 50.00 | 0 | 52.80 | 3 | 0 |
| 3 | No calculation at this stage | | | | | | | | | | | |
| 4 | 49 | 49.00 | 0 | 52.80 | 66 | 0 | 23 | 50.00 | -10 | 46.47 | 31 | -13 |
| 5 | No calculation at this stage | | | | | | | | | | | |
| 6 | 48 | 49.00 | -0 | 41.50 | 65 | -0 | 22 | 50.00 | -11 | 47.31 | 30 | -15 |
| 7 | 7 | 51.80 | -42 | 49.85 | 9 | -57 | 22 | 49.00 | -44 | 51.80 | 29 | -59 |
| 8 | No calculation at this stage | | | | | | | | | | | |
| 9 | 6 | 51.80 | -20 | 46.72 | 9 | -27 | 30 | 49.30 | -28 | 51.80 | 40 | -37 |
| 10 | 6 | 51.80 | -20 | 46.72 | 9 | -27 | 30 | 49.30 | -28 | 51.80 | 40 | -37 |
| 11 | 148 | 49.30 | -185 | 46.04 | 200 | -250 | 92 | 49.30 | -165 | 49.30 | 124 | -223 |
| 12 | No calculation at this stage | | | | | | | | | | | |
| 13 | 144 | 49.30 | -179 | 46.04 | 194 | -242 | 90 | 49.30 | -163 | 49.30 | 121 | -221 |
| 14 | No calculation at this stage | | | | | | | | | | | |
| 15 | 110 | 49.85 | -173 | 46.04 | 149 | -234 | 81 | 49.85 | -132 | 49.85 | 109 | -179 |
| 16 | No calculation at this stage | | | | | | | | | | | |
| 17 | 110 | 49.85 | -173 | 46.04 | 149 | -234 | 81 | 49.85 | -132 | 49.85 | 109 | -179 |

**Maximum and minimum displacement at each stage**

| Stage | Displacement | | | | Stage description |
|---|---|---|---|---|---|
| no. | maximum | elev. | minimum | elev. | |
| | m | | m | | |
| 1 | 0.000 | 52.80 | 0.000 | 52.80 | Change EI of wall to 1.0000E-05kN.m2/m run |
| 2 | 0.004 | 52.80 | 0.000 | 52.80 | Apply surcharge no.1 at elev. 52.80 |
| 3 | Wall displacements reset to zero | | | | Change EI of wall to 237496kN.m2/m run |
| 4 | 0.005 | 52.80 | 0.000 | 52.80 | Excav. to elev. 51.50 on PASSIVE side |
| 5 | No calculation at this stage | | | | Install strut no.1 at elev. 51.80 |
| 6 | 0.004 | 52.80 | 0.000 | 52.80 | Apply water pressure profile no.1 |
| 7 | 0.004 | 49.85 | 0.000 | 52.80 | Excav. to elev. 49.10 on PASSIVE side |
| 8 | No calculation at this stage | | | | Install strut no.2 at elev. 49.30 |
| 9 | 0.004 | 46.72 | 0.000 | 52.80 | Apply water pressure profile no.2 |
| 10 | 0.004 | 46.72 | 0.000 | 52.80 | Apply water pressure profile no.3 |
| 11 | 0.010 | 45.00 | -0.000 | 52.80 | Excav. to elev. 46.47 on PASSIVE side |
| 12 | No calculation at this stage | | | | Install strut no.3 at elev. 46.72 |
| 13 | 0.010 | 45.00 | 0.000 | 52.80 | Apply surcharge no.2 at elev. 46.47 |
| 14 | No calculation at this stage | | | | Install strut no.4 at elev. 49.85 |
| 15 | 0.010 | 45.00 | -0.001 | 52.80 | Remove strut no.2 at elev. 49.30 |
| 16 | No calculation at this stage | | | | Install strut no.5 at elev. 52.70 |
| 17 | 0.010 | 45.00 | -0.001 | 52.80 | Remove strut no.1 at elev. 51.80 |

**Summary of results (continued)**

Calculated Bending Moments and Strut Forces have been multiplied by a factor of 1.35 to obtain values for structural design.

**Strut forces at each stage (horizontal components)**

| Stage no. | Strut no. 1 at elev. 51.80 | | | Strut no. 2 at elev. 49.30 | | | Strut no. 3 at elev. 46.72 | | |
|---|---|---|---|---|---|---|---|---|---|
| | --Calculated-- kN per m run | kN per strut | Factored kN per strut | --Calculated-- kN per m run | kN per strut | Factored kN per strut | --Calculated-- kN per m run | kN per strut | Factored kN per strut |
| 6 | 1 | 3 | 4 | --- | --- | --- | --- | --- | --- |
| 7 | 59 | 177 | 238 | --- | --- | --- | --- | --- | --- |
| 9 | 43 | 128 | 173 | 34 | 103 | 139 | --- | --- | --- |
| 10 | 43 | 128 | 172 | 34 | 103 | 139 | --- | --- | --- |
| 11 | slack | slack | slack | 257 | 771 | 1041 | --- | --- | --- |
| 13 | slack | slack | slack | 253 | 760 | 1026 | slack | slack | slack |
| 15 | slack | slack | slack | --- | --- | --- | 28 | 28 | 37 |
| 17 | --- | --- | --- | --- | --- | --- | 28 | 28 | 37 |

| Stage no. | Strut no. 4 at elev. 49.85 | | | Strut no. 5 at elev. 52.70 | | |
|---|---|---|---|---|---|---|
| | --Calculated-- kN per m run | kN per strut | Factored kN per strut | --Calculated-- kN per m run | kN per strut | Factored kN per strut |
| 15 | 213 | 213 | 287 | --- | --- | --- |
| 17 | 213 | 213 | 287 | slack | slack | slack |

* Indicates that the total force shown is the sum of the force in the strut plus a force applied at the same elevation which may represent temperature load or other forces which are part of the strut load. Force components are listed in the detailed results for individual stages.

*** Convergence errors have occurred in at least one Construction Stage. The errors are cumulative, and the results of all stages must be inspected for significant out of balance moment or shear at the toe of the wall.

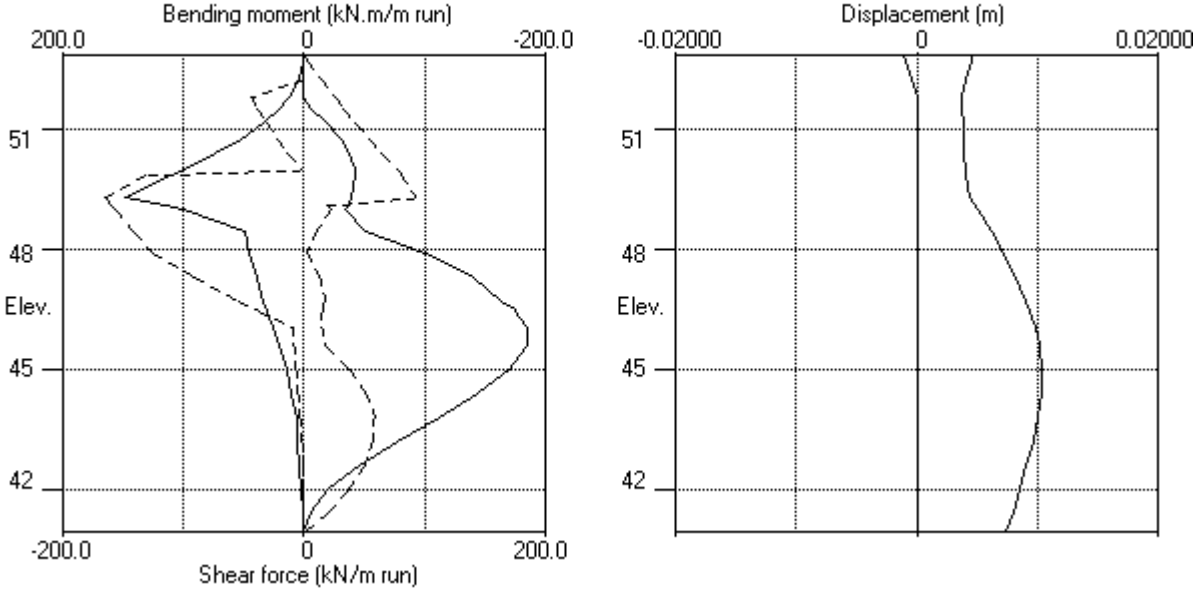
Failure of the iterative procedure to converge to an equilibrium solution may be due to a very high ratio of soil stiffness to wall stiffness. The data should be reviewed to see if realistic values have been specified

Out of balance shear forces.

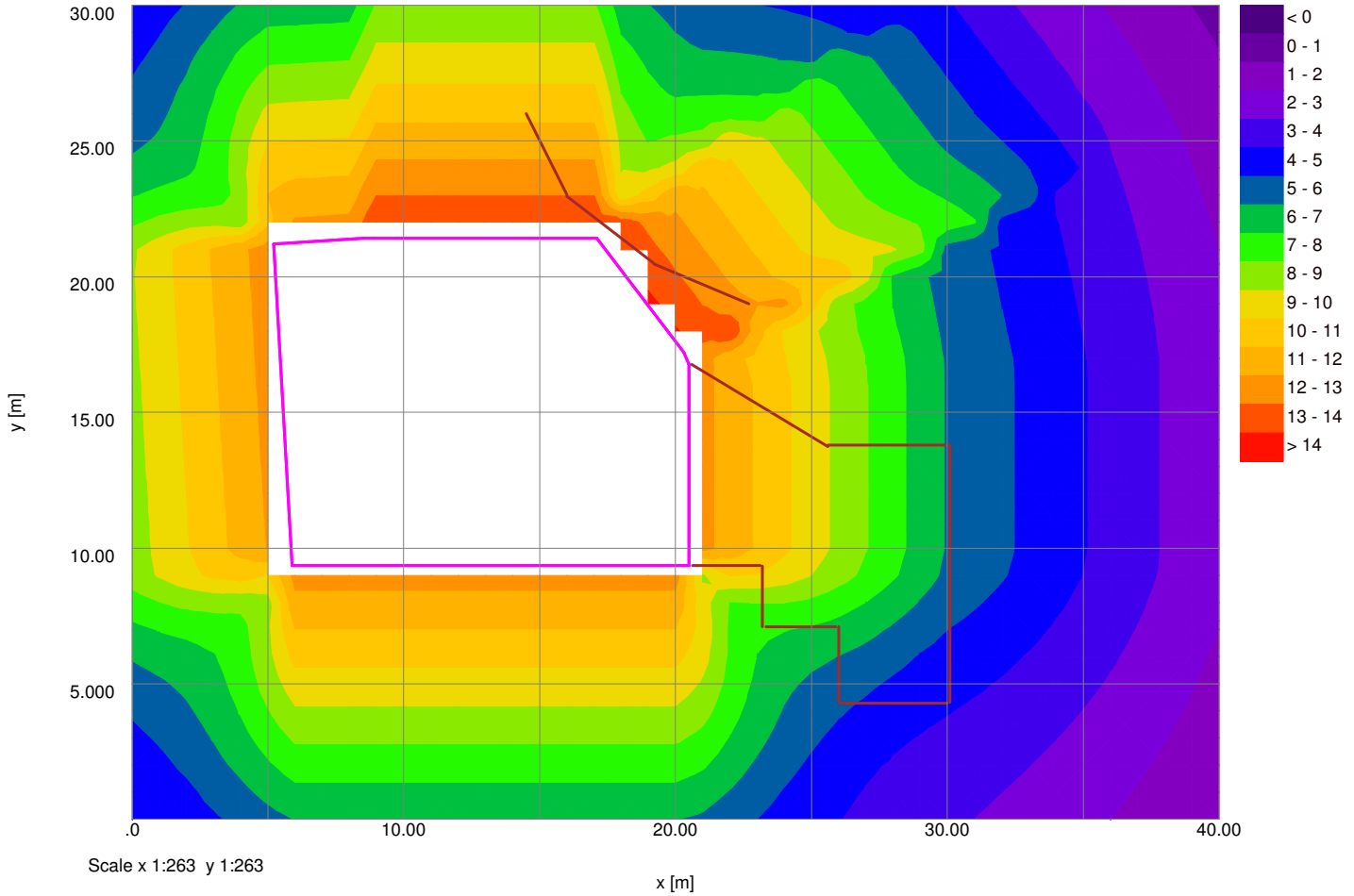
| Percentage Error | Interpretation |
|---|---|
| < 2% | Generally acceptable |
| 2% to 4% | Use with caution |
| > 4% | Should not be used |

Units: kN,m

Bending moment, shear force, displacement envelopes

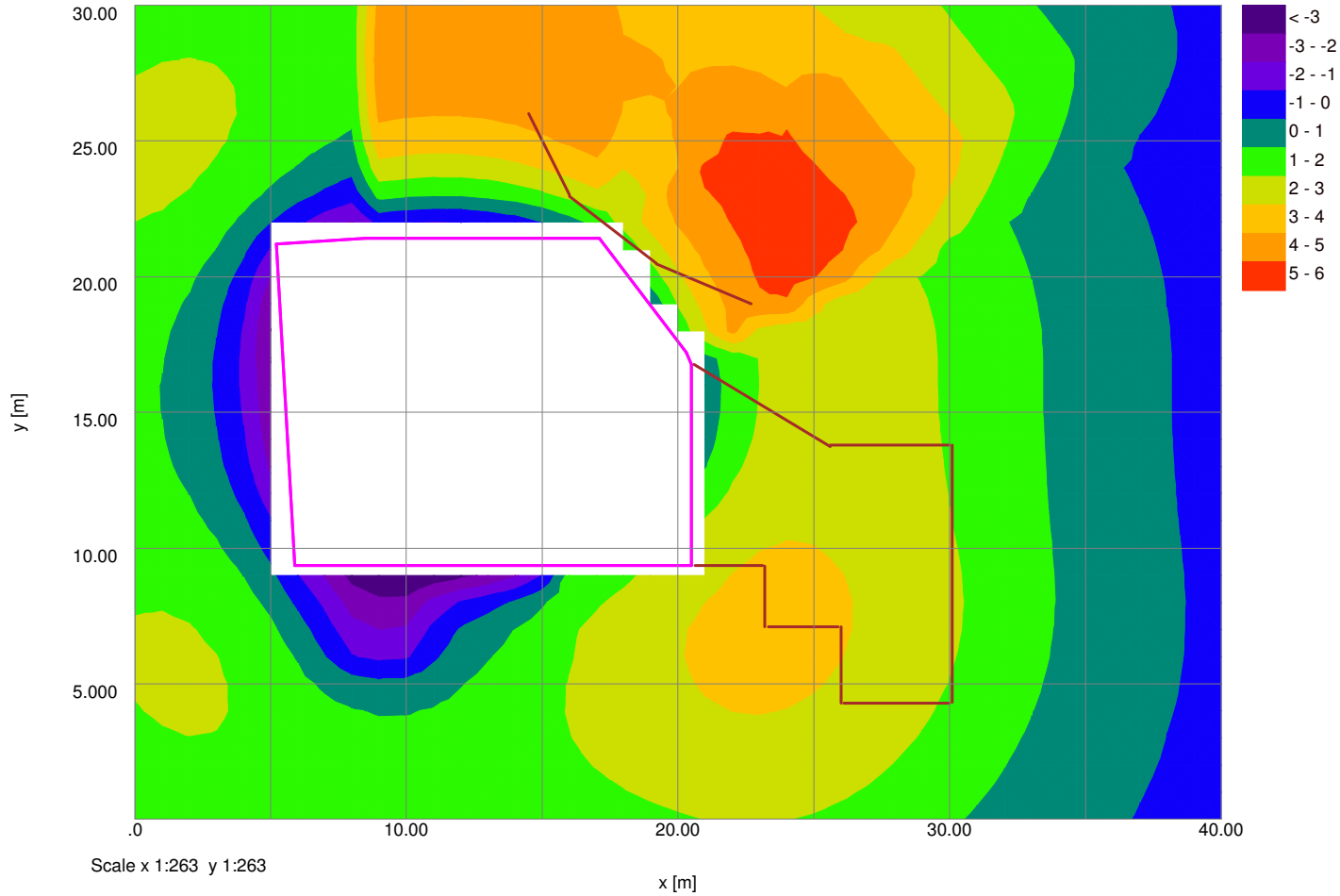


Horizontal Displacement Contours: Grid 2 (level 49.000m) Interval 1mm




Scale x 1:263 y 1:263

Vertical Settlement Contours: Grid 2 (level 49.000m) (Interval 1mm)



***Problem Type***

Problem Type : Tunnelling and Embedded Wall Excavations

***Displacement Data***

| Type | Name | Direction of extrusion | Point/Line/Line for extrusion | | | | | | No. of intervals across extrusion/line | Extrusion depth | No. of intervals along extrusion | Calculate | Surface type for tunnels |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | First point | | | Second point | | | | | | | |
| | | | X [m] | Y [m] | Z(level) [m] | X [m] | Y [m] | Z(level) [m] | | [m] | | | |
| Grid | Basement Grid | Global X | 0.00000 | 0.00000 | 46.47500 | - | 30.00000 | 46.47500 | 30 | 40.00000 | 40 | Yes | Surface |
| Grid | Foundation Level | Global X | 0.00000 | 0.00000 | 49.00000 | - | 30.00000 | 49.00000 | 30 | 40.00000 | 40 | Yes | Surface |
| Line | 2 FR Rear 1 | - | 20.60000 | 16.75000 | 49.00000 | 25.60000 | 13.75000 | 49.00000 | 12 | - | - | Yes | Surface |
| Line | 2 FR Rear 2 | - | 25.60000 | 13.80000 | 49.00000 | 30.00000 | 13.80000 | 49.00000 | 9 | - | - | Yes | Surface |
| Line | 2 FR Side | - | 30.10000 | 13.80000 | 49.00000 | 30.10000 | 4.30000 | 49.00000 | 18 | - | - | Yes | Surface |
| Line | 2 FR Front 1 | - | 30.00000 | 4.30000 | 49.00000 | 26.10000 | 4.30000 | 49.00000 | 8 | - | - | Yes | Surface |
| Line | 2 FR Front 2 | - | 26.00000 | 4.30000 | 49.00000 | 26.00000 | 7.10000 | 49.00000 | 6 | - | - | Yes | Surface |
| Line | 2 FR Front 3 | - | 25.90000 | 7.10000 | 49.00000 | 23.30000 | 7.10000 | 49.00000 | 6 | - | - | Yes | Surface |
| Line | 2 FR Front 4 | - | 23.20000 | 7.10000 | 49.00000 | 23.20000 | 9.35000 | 49.00000 | 5 | - | - | Yes | Surface |
| Line | 2 FR Front 5 | - | 23.10000 | 9.35000 | 49.00000 | 20.60000 | 9.35000 | 49.00000 | 6 | - | - | Yes | Surface |
| Line | Windmill Hill 1 | - | 14.50000 | 26.00000 | 52.80000 | 16.00000 | 23.00000 | 52.80000 | 5 | - | - | Yes | Surface |
| Line | Windmill Hill 2 | - | 16.00000 | 22.95000 | 52.80000 | 19.20000 | 20.50000 | 52.80000 | 5 | - | - | Yes | Surface |
| Line | Windmill Hill 3 | - | 19.20000 | 20.45000 | 52.80000 | 22.70000 | 19.00000 | 52.80000 | 5 | - | - | Yes | Surface |

***Vertical Ground Movement Curves***

**Curve Name:** **Installation of contiguous bored pile wall in stiff clay (CIRIA 580 Fig. 2.8(b))**
Coordinates: [Distance from wall / wall depth or max. excavation depth (x), Depth / wall depth or max. excavation depth (y), Settlement / wall depth or max. excavation depth (z)(%)]
[0.000,0.000,0.040][2.000,0.000,0.000]
Curve Fitting Method: Polynomial
x Order: 1
y Order: 0
Polynomial: z = $-2.0E-2x + 4.0E-2$
Coeff. of Determination: 1.0

**Curve Name:** **Installation of planar diaphragm wall in stiff clay (CIRIA 580 Fig. 2.9(b))**
Coordinates: [Distance from wall / wall depth or max. excavation depth (x), Depth / wall depth or max. excavation depth (y), Settlement / wall depth or max. excavation depth (z)(%)]
[0.000,0.000,0.050][0.050,0.000,0.047][0.100,0.000,0.043][0.150,0.000,0.040]
[0.200,0.000,0.037][0.250,0.000,0.034][0.300,0.000,0.031][0.350,0.000,0.028]
[0.400,0.000,0.025][0.450,0.000,0.022][0.500,0.000,0.020][0.550,0.000,0.018]
[0.600,0.000,0.016][0.650,0.000,0.014][0.700,0.000,0.012][0.750,0.000,0.010]
[0.800,0.000,0.008][0.850,0.000,0.007][0.900,0.000,0.006][0.950,0.000,0.005]
[1.000,0.000,0.004][1.050,0.000,0.003][1.100,0.000,0.003][1.150,0.000,0.002]
[1.200,0.000,0.002][1.250,0.000,0.001][1.300,0.000,0.001][1.350,0.000,0.001]
[1.400,0.000,0.001][1.450,0.000,0.000][1.500,0.000,0.000]
Curve Fitting Method: Polynomial
x Order: 4
y Order: 0
Polynomial: z = $-1.2355E-2x^4 + 3.4814E-2x^3 - 2.8885E-3x^2 - 6.5618E-2x + 4.9987E-2$
Coeff. of Determination: 1.0000

**Curve Name:** **Excavation in front of high stiffness wall in stiff clay (CIRIA 580 Fig. 2.11(b)**
Coordinates: [Distance from wall / wall depth or max. excavation depth (x), Depth / wall depth or max. excavation depth (y), Settlement / wall depth or max. excavation depth (z)(%)]
[0.000,0.000,0.039][0.100,0.000,0.049][0.200,0.000,0.056][0.300,0.000,0.062]
[0.400,0.000,0.067][0.500,0.000,0.070][0.600,0.000,0.072][0.700,0.000,0.073]
[0.800,0.000,0.073][0.900,0.000,0.072][1.000,0.000,0.070][1.100,0.000,0.068]
[1.200,0.000,0.065][1.300,0.000,0.061][1.400,0.000,0.058][1.500,0.000,0.054]
[1.600,0.000,0.050][1.700,0.000,0.046][1.800,0.000,0.042][1.900,0.000,0.038]
[2.000,0.000,0.034][2.100,0.000,0.030][2.200,0.000,0.027][2.300,0.000,0.023]
[2.400,0.000,0.020][2.500,0.000,0.017][2.600,0.000,0.014][2.700,0.000,0.012]
[2.800,0.000,0.010][2.900,0.000,0.008][3.000,0.000,0.007][3.100,0.000,0.005]
[3.200,0.000,0.004][3.300,0.000,0.004][3.400,0.000,0.003][3.500,0.000,0.002]
[3.600,0.000,0.002][3.700,0.000,0.002][3.800,0.000,0.001][3.900,0.000,0.001]
[4.000,0.000,0.000]
Curve Fitting Method: Polynomial
x Order: 4
y Order: 0
Polynomial: z = $-2.6455E-3x^4 + 2.8495E-2x^3 - 1.0051E-1x^2 + 1.0569E-1x + 3.8990E-2$
Coeff. of Determination: 9.9991E-1

***Horizontal Ground Movement Curves***

**Curve Name:** **Installation of contiguous bored pile wall in stiff clay (CIRIA 580 Fig. 2.8(a))**
Coordinates: [Distance from wall / wall depth or max. excavation depth (x), Depth / wall depth or max. excavation depth (y), Horizontal movement / wall depth or max. excavation depth (z)(%)]
[0.000,0.000,0.041][0.050,0.000,0.039][0.100,0.000,0.036][0.150,0.000,0.034]
[0.200,0.000,0.032][0.250,0.000,0.030][0.300,0.000,0.029][0.350,0.000,0.027]
[0.400,0.000,0.025][0.450,0.000,0.023][0.500,0.000,0.022][0.550,0.000,0.020]
[0.600,0.000,0.019][0.650,0.000,0.018][0.700,0.000,0.016][0.750,0.000,0.015]
[0.800,0.000,0.014][0.850,0.000,0.013][0.900,0.000,0.012][0.950,0.000,0.010]
[1.000,0.000,0.009][1.050,0.000,0.008][1.100,0.000,0.007][1.150,0.000,0.006]
[1.200,0.000,0.005][1.250,0.000,0.004][1.300,0.000,0.004][1.350,0.000,0.003]
[1.400,0.000,0.002][1.450,0.000,0.001][1.500,0.000,0.000]
Curve Fitting Method: Polynomial
x Order: 3
y Order: 0
Polynomial: z = $-4.2486E-3x^3 + 1.9096E-2x^2 - 4.6221E-2x + 4.0729E-2$
Coeff. of Determination: 1.0000

**Curve Name:** **Installation of planar diaphragm wall in stiff clay (CIRIA 580 Fig. 2.9(a))**
Coordinates: [Distance from wall / wall depth or max. excavation depth (x), Depth / wall depth or max. excavation depth (y), Horizontal movement / wall depth or max. excavation depth (z)(%)]
[0.000,0.000,0.050][1.500,0.000,0.000]
Curve Fitting Method: Polynomial
x Order: 1
y Order: 0
Polynomial: z = $-3.33E-2x + 5.00E-2$
Coeff. of Determination: 1.00

**Curve Name:** **Excavation in front of high stiffness wall in stiff clay (CIRIA 580 Fig. 2.11(a))**
Coordinates: [Distance from wall / wall depth or max. excavation depth (x), Depth / wall depth or max. excavation depth (y), Horizontal movement / wall depth or max. excavation depth (z)(%)]
[0.000,0.000,0.150][4.000,0.000,0.000]
Curve Fitting Method: Polynomial
x Order: 1
y Order: 0
Polynomial: z = $-3.75E-2x + 1.50E-1$
Coeff. of 1.00

| Type | Name | Direction of extrusion | Point/Line/Line for extrusion | No. of intervals across extrusion/line | Extrusion depth | No. of intervals along extrusion | Calculate Surface type for tunnels |
|---|---|---|---|---|---|---|---|

Determination:

### *Polygonal Excavations*

**Excavation Name:** Pile Installation
Surface level [m]: 52.800
Contribution: Positive
Enabled: Yes
Surface movement curves which are selected are applied between surface and [m]: 41.000

| Corner | x [m] | y [m] | Base Level [m] | Stiffened | Previous Side d [m] | Previous Side p1 [%] | Previous Side p2* [%] | Next Side d [m] | Next Side p1 [%] | Next Side p2* [%] |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 8.8500 | 21.400 | 41.000 | No | - | - | - | - | - | - |
| 2 | 17.100 | 21.400 | 41.000 | No | - | - | - | - | - | - |
| 3 | 20.300 | 17.200 | 41.000 | No | - | - | - | - | - | - |
| 4 | 20.500 | 16.750 | 46.475 | No | - | - | - | - | - | - |
| 5 | 20.500 | 9.3500 | 46.475 | No | - | - | - | - | - | - |
| 6 | 5.9000 | 9.3500 | 46.475 | No | - | - | - | - | - | - |
| 7 | 5.2000 | 21.200 | 46.475 | No | - | - | - | - | - | - |
| 8 | 8.5000 | 21.400 | 46.475 | No | - | - | - | - | - | - |

| Side | Corner 1 x [m] | Corner 1 y [m] | Corner 2 x [m] | Corner 2 y [m] | Ground Movement Curve Vertical | Ground Movement Curve Horizontal |
|---|---|---|---|---|---|---|
| 1 | 8.8500 | 21.400 | 17.100 | 21.400 | Installation of contiguous bored pile wall in stiff clay (CIRIA 580 Fig. 2.8(b)) | Installation of contiguous bored pile wall in stiff clay (CIRIA 580 Fig. 2.8(a)) |
| 2 | 17.100 | 21.400 | 20.300 | 17.200 | Installation of contiguous bored pile wall in stiff clay (CIRIA 580 Fig. 2.8(b)) | Installation of contiguous bored pile wall in stiff clay (CIRIA 580 Fig. 2.8(a)) |
| 3 | 20.300 | 17.200 | 20.500 | 16.750 | Installation of planar diaphragm wall in stiff clay (CIRIA 580 Fig. 2.9(b)) | Installation of planar diaphragm wall in stiff clay (CIRIA 580 Fig. 2.9(a)) |
| 4 | 20.500 | 16.750 | 20.500 | 9.3500 | Installation of planar diaphragm wall in stiff clay (CIRIA 580 Fig. 2.9(b)) | Installation of planar diaphragm wall in stiff clay (CIRIA 580 Fig. 2.9(a)) |
| 5 | 20.500 | 9.3500 | 5.9000 | 9.3500 | Installation of planar diaphragm wall in stiff clay (CIRIA 580 Fig. 2.9(b)) | Installation of planar diaphragm wall in stiff clay (CIRIA 580 Fig. 2.9(a)) |
| 6 | 5.9000 | 9.3500 | 5.2000 | 21.200 | Installation of planar diaphragm wall in stiff clay (CIRIA 580 Fig. 2.9(b)) | Installation of planar diaphragm wall in stiff clay (CIRIA 580 Fig. 2.9(a)) |
| 7 | 5.2000 | 21.200 | 8.5000 | 21.400 | Installation of planar diaphragm wall in stiff clay (CIRIA 580 Fig. 2.9(b)) | Installation of planar diaphragm wall in stiff clay (CIRIA 580 Fig. 2.9(a)) |
| 8 | 8.5000 | 21.400 | 8.8500 | 21.400 | Installation of planar diaphragm wall in stiff clay (CIRIA 580 Fig. 2.9(b)) | Installation of planar diaphragm wall in stiff clay (CIRIA 580 Fig. 2.9(a)) |

**Excavation Name:** Excavation
Surface level [m]: 52.800
Contribution: Positive
Enabled: Yes
Surface movement curves which are selected are applied between surface and [m]: 46.475

| Corner | x [m] | y [m] | Base Level [m] | Stiffened | Previous Side d [m] | Previous Side p1 [%] | Previous Side p2* [%] | Next Side d [m] | Next Side p1 [%] | Next Side p2* [%] |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 8.8500 | 21.400 | 46.475 | No | - | - | - | - | - | - |
| 2 | 17.100 | 21.400 | 46.475 | Yes | 0.0 | 67.000 | 25.000 | 0.0 | 67.000 | 25.000 |
| 3 | 20.300 | 17.200 | 46.475 | No | - | - | - | - | - | - |
| 4 | 20.500 | 16.750 | 46.475 | No | - | - | - | - | - | - |
| 5 | 20.500 | 9.3500 | 46.475 | No | - | - | - | - | - | - |
| 6 | 5.9000 | 9.3500 | 46.475 | No | - | - | - | - | - | - |
| 7 | 5.2000 | 21.200 | 46.475 | No | - | - | - | - | - | - |
| 8 | 8.5000 | 21.400 | 46.475 | No | - | - | - | - | - | - |

| Side | Corner 1 x [m] | Corner 1 y [m] | Corner 2 x [m] | Corner 2 y [m] | Ground Movement Curve Vertical | Ground Movement Curve Horizontal |
|---|---|---|---|---|---|---|
| 1 | 8.8500 | 21.400 | 17.100 | 21.400 | Excavation in front of high stiffness wall in stiff clay (CIRIA 580 Fig. 2.11(b) | Excavation in front of high stiffness wall in stiff clay (CIRIA 580 Fig. 2.11(a)) |
| 2 | 17.100 | 21.400 | 20.300 | 17.200 | Excavation in front of high stiffness wall in stiff clay (CIRIA 580 Fig. 2.11(b) | Excavation in front of high stiffness wall in stiff clay (CIRIA 580 Fig. 2.11(a)) |
| 3 | 20.300 | 17.200 | 20.500 | 16.750 | Excavation in front of high stiffness wall in stiff clay (CIRIA 580 Fig. 2.11(b) | Excavation in front of high stiffness wall in stiff clay (CIRIA 580 Fig. 2.11(a)) |
| 4 | 20.500 | 16.750 | 20.500 | 9.3500 | Excavation in front of high stiffness wall in stiff clay (CIRIA 580 Fig. 2.11(b) | Excavation in front of high stiffness wall in stiff clay (CIRIA 580 Fig. 2.11(a)) |
| 5 | 20.500 | 9.3500 | 5.9000 | 9.3500 | Excavation in front of high stiffness wall in stiff clay (CIRIA 580 Fig. 2.11(b) | Excavation in front of high stiffness wall in stiff clay (CIRIA 580 Fig. 2.11(a)) |
| 6 | 5.9000 | 9.3500 | 5.2000 | 21.200 | Excavation in front of high stiffness wall in stiff clay (CIRIA 580 Fig. 2.11(b) | Excavation in front of high stiffness wall in stiff clay (CIRIA 580 Fig. 2.11(a)) |
| 7 | 5.2000 | 21.200 | 8.5000 | 21.400 | Excavation in front of high stiffness wall in stiff clay (CIRIA 580 Fig. 2.11(b) | Excavation in front of high stiffness wall in stiff clay (CIRIA 580 Fig. 2.11(a)) |
| 8 | 8.5000 | 21.400 | 8.8500 | 21.400 | Excavation in front of high stiffness wall in stiff clay (CIRIA 580 Fig. 2.11(b) | Excavation in front of high stiffness wall in stiff clay (CIRIA 580 Fig. 2.11(a)) |

### *Damage Category Strains*

| Name | 0 (Negligible) to 1 (Very Slight) | 1 (Very Slight) to 2 (Slight) | 2 (Slight) to 3 (Moderate) | 3 (Moderate) to 4 (Severe) |
|---|---|---|---|---|
| Burland Strain Limits | 0.0 | 500.00E-6 | 750.00E-6 | 0.0015000 |

### *Specific Structures - Geometry*

| Structure Name | Sub-Structure Name | Displacement Line | Start Distance Along Line [m] | End Distance Along Line [m] | Vertical Offsets from Line for Vertical Movement Calculations [m] | Vertical Displacement Limit Sensitivity [mm] | Damage Category Strains | Poisson's Ratio | E/G |
|---|---|---|---|---|---|---|---|---|---|
| 2 Frognal Rise | 2 FR Rear 1 | 2 FR Rear 1 | 0.00000 | 5.82500 | 0.0 | 0.10000 | Burland Strain Limits | 0.20000 | 2.6000 |
| 2 Frognal Rise | 2 FR Rear 2 | 2 FR Rear 2 | 0.00000 | 4.39000 | 0.0 | 0.10000 | Burland Strain Limits | 0.20000 | 2.6000 |
| 2 Frognal Rise | 2 FR Side | 2 FR Side | 0.00000 | 9.49000 | 0.0 | 0.10000 | Burland Strain Limits | 0.20000 | 2.6000 |
| 2 Frognal Rise | 2 FR Front 1 | 2 FR Front 1 | 0.00000 | 3.89000 | 0.0 | 0.10000 | Burland Strain Limits | 0.20000 | 2.6000 |
| 2 Frognal Rise | 2 FR Front 2 | 2 FR Front 2 | 0.00000 | 2.79000 | 0.0 | 0.10000 | Burland Strain Limits | 0.20000 | 2.6000 |
| 2 Frognal Rise | 2 FR Front 3 | 2 FR Front 3 | 0.00000 | 2.59000 | 0.0 | 0.10000 | Burland Strain Limits | 0.20000 | 2.6000 |
| 2 Frognal Rise | 2 FR Front 4 | 2 FR Front 4 | 0.00000 | 2.24000 | 0.0 | 0.10000 | Burland Strain Limits | 0.20000 | 2.6000 |
| 2 Frognal Rise | 2 FR Front 5 | 2 FR Front 5 | 0.00000 | 2.49000 | 0.0 | 0.10000 | Burland Strain Limits | 0.20000 | 2.6000 |
| Windmill Hill | Windmill Hill 1 | Windmill Hill 1 | 0.00000 | 3.35300 | 0.0 | 0.10000 | Burland Strain Limits | 0.20000 | 2.6000 |
| Windmill Hill | Windmill Hill 2 | Windmill Hill 2 | 0.00000 | 4.02900 | 0.0 | 0.10000 | Burland Strain Limits | 0.20000 | 2.6000 |
| Windmill Hill | Windmill Hill 3 | Windmill Hill 3 | 0.00000 | 3.78700 | 0.0 | 0.10000 | Burland Strain Limits | 0.20000 | 2.6000 |

### *Specific Structures - Bending Parameters*

| Structure Name | Sub-Structure Name | Height | Default Properties | Hogging 2nd Moment | Hogging Distance | Hogging Distance | Sagging 2nd Moment | Sagging Distance | Sagging Distance |
|---|---|---|---|---|---|---|---|---|---|

| | | | | of Area (per unit width) | of Bending Strain from N.A. | of N.A. from Edge of Beam in Tension | of Area (per unit width) | of Bending Strain from N.A. | of N.A. from Edge of Beam in Tension |
|---|---|---|---|---|---|---|---|---|---|
| | | [m] | | [m³] | [m] | [m] | [m³] | [m] | [m] |
| 2 Frognal Rise | 2 FR Rear 1 | 8.0000 | Yes | 170.67 | 8.0000 | 8.0000 | 42.667 | 4.0000 | 4.0000 |
| 2 Frognal Rise | 2 FR Rear 2 | 8.0000 | Yes | 170.67 | 8.0000 | 8.0000 | 42.667 | 4.0000 | 4.0000 |
| 2 Frognal Rise | 2 FR Side | 8.0000 | Yes | 170.67 | 8.0000 | 8.0000 | 42.667 | 4.0000 | 4.0000 |
| 2 Frognal Rise | 2 FR Front 1 | 8.0000 | Yes | 170.67 | 8.0000 | 8.0000 | 42.667 | 4.0000 | 4.0000 |
| 2 Frognal Rise | 2 FR Front 2 | 8.0000 | Yes | 170.67 | 8.0000 | 8.0000 | 42.667 | 4.0000 | 4.0000 |
| 2 Frognal Rise | 2 FR Front 3 | 8.0000 | Yes | 170.67 | 8.0000 | 8.0000 | 42.667 | 4.0000 | 4.0000 |
| 2 Frognal Rise | 2 FR Front 4 | 8.0000 | Yes | 170.67 | 8.0000 | 8.0000 | 42.667 | 4.0000 | 4.0000 |
| 2 Frognal Rise | 2 FR Front 5 | 8.0000 | Yes | 170.67 | 8.0000 | 8.0000 | 42.667 | 4.0000 | 4.0000 |
| Windmill Hill | Windmill Hill 1 | 3.0000 | Yes | 9.0000 | 3.0000 | 3.0000 | 2.2500 | 1.5000 | 1.5000 |
| Windmill Hill | Windmill Hill 2 | 3.0000 | Yes | 9.0000 | 3.0000 | 3.0000 | 2.2500 | 1.5000 | 1.5000 |
| Windmill Hill | Windmill Hill 3 | 3.0000 | Yes | 9.0000 | 3.0000 | 3.0000 | 2.2500 | 1.5000 | 1.5000 |

### *Building Segment Combinations*

| Structure Name | Sub-Structure Name | Vertical Offset from Line for Vertical Movement Calculations | Segment | Start | Length | Curvature | Combined Segment |
|---|---|---|---|---|---|---|---|
| | | [m] | | [m] | [m] | | |
| Windmill Hill | Windmill Hill 2 | 0.0 | 1 | 0.0 | 0.85601 | Sagging | 1 |
| | | | 2 | 0.85601 | 2.0513 | Hogging | 1 |
| | | | 3 | 2.9073 | 0.61610 | Hogging | 1 |
| | | | 4 | 3.5234 | 0.50564 | None | 1 |

### *Utility Strain Calculation Options*

Neglect beneficial contribution of axial strains : No

### *Warnings*

1 Multiple excavations have been specified. The displacements resulting from these excavations are calculated by summing the displacements resulting from each individual excavation. No account has been taken of the interactions between excavations (e.g. overlapping zones of influence or 'shielding' of one excavation by another).

### *Errors*

None

### *Displacement and Strain Results*

| Type/No. Name | Dist. | Coordinates x | y | z | Displacements x | y | z | Horizontal displacement along Line | Horizontal displacement perpendicular to Line | Angle of Line to x Axis | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | [m] | [m] | [m] | [m] | [mm] | [mm] | [mm] | [mm] | [mm] | [°] | |
| Basement Grid | Grid 1 | 0.00000 | 0.00000 | 46.47500 | 1.9855 | 3.4699 | 1.3255 | - | - | - | * |
| | | 1.00000 | 0.00000 | 46.47500 | 1.7623 | 3.8677 | 1.4268 | - | - | - | * |
| | | 2.00000 | 0.00000 | 46.47500 | 1.4843 | 4.2892 | 1.4945 | - | - | - | * |
| | | 3.00000 | 0.00000 | 46.47500 | 1.1551 | 4.7276 | 1.5262 | - | - | - | * |
| | | 4.00000 | 0.00000 | 46.47500 | 0.78231 | 5.1721 | 1.5215 | - | - | - | * |
| | | 5.00000 | 0.00000 | 46.47500 | 0.37996 | 5.6383 | 1.4882 | - | - | - | * |
| | | 6.00000 | 0.00000 | 46.47500 | 0.0 | 6.0271 | 1.4194 | - | - | - | * |
| | | 7.00000 | 0.00000 | 46.47500 | 0.0 | 6.0271 | 1.3454 | - | - | - | * |
| | | 8.00000 | 0.00000 | 46.47500 | 0.0 | 6.0271 | 1.2895 | - | - | - | * |
| | | 9.00000 | 0.00000 | 46.47500 | 0.0 | 6.0271 | 1.2550 | - | - | - | * |
| | | 10.00000 | 0.00000 | 46.47500 | 0.0 | 6.0271 | 1.2437 | - | - | - | * |
| | | 11.00000 | 0.00000 | 46.47500 | 0.0 | 6.0271 | 1.2553 | - | - | - | * |
| | | 12.00000 | 0.00000 | 46.47500 | 0.0 | 6.0271 | 1.2877 | - | - | - | * |
| | | 13.00000 | 0.00000 | 46.47500 | 0.0 | 6.0271 | 1.3378 | - | - | - | * |
| | | 14.00000 | 0.00000 | 46.47500 | 0.0 | 6.0271 | 1.4020 | - | - | - | * |
| | | 15.00000 | 0.00000 | 46.47500 | 0.0 | 6.0271 | 1.4769 | - | - | - | * |
| | | 16.00000 | 0.00000 | 46.47500 | 0.0 | 6.0271 | 1.5596 | - | - | - | * |
| | | 17.00000 | 0.00000 | 46.47500 | 0.0 | 6.0271 | 1.6473 | - | - | - | * |
| | | 18.00000 | 0.00000 | 46.47500 | 0.0 | 6.0271 | 1.7380 | - | - | - | * |
| | | 19.00000 | 0.00000 | 46.47500 | 0.0 | 6.0271 | 1.8299 | - | - | - | * |
| | | 20.00000 | 0.00000 | 46.47500 | 0.0 | 6.0271 | 1.9219 | - | - | - | * |
| | | 21.00000 | 0.00000 | 46.47500 | -0.20467 | 5.8130 | 2.0069 | - | - | - | * |
| | | 22.00000 | 0.00000 | 46.47500 | -0.60178 | 5.3406 | 2.0485 | - | - | - | * |
| | | 23.00000 | 0.00000 | 46.47500 | -0.97436 | 4.8837 | 2.0512 | - | - | - | * |
| | | 24.00000 | 0.00000 | 46.47500 | -1.3097 | 4.4339 | 2.0133 | - | - | - | * |
| | | 25.00000 | 0.00000 | 46.47500 | -1.5981 | 3.9982 | 1.9349 | - | - | - | * |
| | | 26.00000 | 0.00000 | 46.47500 | -1.8346 | 3.5850 | 1.8196 | - | - | - | * |
| | | 27.00000 | 0.00000 | 46.47500 | -2.0177 | 3.1995 | 1.6722 | - | - | - | * |
| | | 28.00000 | 0.00000 | 46.47500 | -2.1487 | 2.8439 | 1.4989 | - | - | - | * |
| | | 29.00000 | 0.00000 | 46.47500 | -2.2306 | 2.5183 | 1.3070 | - | - | - | * |
| | | 30.00000 | 0.00000 | 46.47500 | -2.2672 | 2.2217 | 1.1043 | - | - | - | * |
| | | 31.00000 | 0.00000 | 46.47500 | -2.2629 | 1.9523 | 0.89873 | - | - | - | * |
| | | 32.00000 | 0.00000 | 46.47500 | -2.2218 | 1.7077 | 0.69794 | - | - | - | * |
| | | 33.00000 | 0.00000 | 46.47500 | -2.1481 | 1.4857 | 0.50893 | - | - | - | * |
| | | 34.00000 | 0.00000 | 46.47500 | -2.0455 | 1.2839 | 0.33770 | - | - | - | * |
| | | 35.00000 | 0.00000 | 46.47500 | -1.9173 | 1.1002 | 0.18893 | - | - | - | * |
| | | 36.00000 | 0.00000 | 46.47500 | -1.7666 | 0.93276 | 0.065770 | - | - | - | * |
| | | 37.00000 | 0.00000 | 46.47500 | -1.5959 | 0.77970 | -0.030330 | - | - | - | * |
| | | 38.00000 | 0.00000 | 46.47500 | -1.4076 | 0.63948 | -0.099799 | - | - | - | * |
| | | 39.00000 | 0.00000 | 46.47500 | -1.2036 | 0.51071 | -0.14506 | - | - | - | * |
| | | 40.00000 | 0.00000 | 46.47500 | -0.98567 | 0.39218 | -0.17061 | - | - | - | * |
| | | 0.00000 | 1.00000 | 46.47500 | 2.2963 | 3.4888 | 1.5262 | - | - | - | * |
| | | 1.00000 | 1.00000 | 46.47500 | 2.0523 | 3.9222 | 1.6224 | - | - | - | * |
| | | 2.00000 | 1.00000 | 46.47500 | 1.7664 | 4.4570 | 1.6946 | - | - | - | * |
| | | 3.00000 | 1.00000 | 46.47500 | 1.4102 | 5.0595 | 1.7275 | - | - | - | * |
| | | 4.00000 | 1.00000 | 46.47500 | 0.97273 | 5.6673 | 1.7141 | - | - | - | * |
| | | 5.00000 | 1.00000 | 46.47500 | 0.47510 | 6.2533 | 1.6585 | - | - | - | * |
| | | 6.00000 | 1.00000 | 46.47500 | 0.0 | 6.7354 | 1.5657 | - | - | - | * |
| | | 7.00000 | 1.00000 | 46.47500 | 0.0 | 6.7354 | 1.4701 | - | - | - | * |
| | | 8.00000 | 1.00000 | 46.47500 | 0.0 | 6.7354 | 1.3979 | - | - | - | * |
| | | 9.00000 | 1.00000 | 46.47500 | 0.0 | 6.7354 | 1.3545 | - | - | - | * |
| | | 10.00000 | 1.00000 | 46.47500 | 0.0 | 6.7354 | 1.3426 | - | - | - | * |
| | | 11.00000 | 1.00000 | 46.47500 | 0.0 | 6.7354 | 1.3613 | - | - | - | * |
| | | 12.00000 | 1.00000 | 46.47500 | 0.0 | 6.7354 | 1.4070 | - | - | - | * |
| | | 13.00000 | 1.00000 | 46.47500 | 0.0 | 6.7354 | 1.4742 | - | - | - | * |
| | | 14.00000 | 1.00000 | 46.47500 | 0.0 | 6.7354 | 1.5576 | - | - | - | * |
| | | 15.00000 | 1.00000 | 46.47500 | 0.0 | 6.7354 | 1.6524 | - | - | - | * |
| | | 16.00000 | 1.00000 | 46.47500 | 0.0 | 6.7354 | 1.7548 | - | - | - | * |
| | | 17.00000 | 1.00000 | 46.47500 | 0.0 | 6.7354 | 1.8616 | - | - | - | * |
| | | 18.00000 | 1.00000 | 46.47500 | 0.0 | 6.7354 | 1.9704 | - | - | - | * |
| | | 19.00000 | 1.00000 | 46.47500 | 0.0 | 6.7354 | 2.0793 | - | - | - | * |
| | | 20.00000 | 1.00000 | 46.47500 | 0.0 | 6.7354 | 2.1869 | - | - | - | * |
| | | 21.00000 | 1.00000 | 46.47500 | -0.25605 | 6.4688 | 2.2864 | - | - | - | * |
| | | 22.00000 | 1.00000 | 46.47500 | -0.75144 | 5.8893 | 2.3413 | - | - | - | * |
| | | 23.00000 | 1.00000 | 46.47500 | -1.1993 | 5.2767 | 2.3455 | - | - | - | * |
| | | 24.00000 | 1.00000 | 46.47500 | -1.5760 | 4.6609 | 2.2990 | - | - | - | * |
| | | 25.00000 | 1.00000 | 46.47500 | -1.8664 | 4.0648 | 2.2005 | - | - | - | * |
| | | 26.00000 | 1.00000 | 46.47500 | -2.1277 | 3.6103 | 2.0825 | - | - | - | * |
| | | 27.00000 | 1.00000 | 46.47500 | -2.3242 | 3.1952 | 1.9280 | - | - | - | * |
| | | 28.00000 | 1.00000 | 46.47500 | -2.4593 | 2.8193 | 1.7428 | - | - | - | * |
| | | 29.00000 | 1.00000 | 46.47500 | -2.5381 | 2.4812 | 1.5345 | - | - | - | * |
| | | 30.00000 | 1.00000 | 46.47500 | -2.5666 | 2.1779 | 1.3120 | - | - | - | * |
| | | 31.00000 | 1.00000 | 46.47500 | -2.5506 | 1.9061 | 1.0839 | - | - | - | * |
| | | 32.00000 | 1.00000 | 46.47500 | -2.4957 | 1.6625 | 0.85896 | - | - | - | * |
| | | 33.00000 | 1.00000 | 46.47500 | -2.4068 | 1.4436 | 0.64512 | - | - | - | * |

| Type/No. | | Coordinates | | | Displacements | | | | | Angle of Line | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Name | Dist. | x | y | z | x | y | z | Horizontal displacement | Horizontal displacement | to x Axis | |
| | | 34.00000 | 1.00000 | 46.47500 | -2.2883 | 1.2465 | 0.44923 | - | - | - | * |
| | | 35.00000 | 1.00000 | 46.47500 | -2.1442 | 1.0687 | 0.27677 | - | - | - | * |
| | | 36.00000 | 1.00000 | 46.47500 | -1.9776 | 0.90762 | 0.13164 | - | - | - | * |
| | | 37.00000 | 1.00000 | 46.47500 | -1.7914 | 0.76137 | 0.015916 | - | - | - | * |
| | | 38.00000 | 1.00000 | 46.47500 | -1.5881 | 0.62813 | -0.070255 | - | - | - | * |
| | | 39.00000 | 1.00000 | 46.47500 | -1.3697 | 0.50638 | -0.12879 | - | - | - | * |
| | | 40.00000 | 1.00000 | 46.47500 | -1.1380 | 0.39479 | -0.16376 | - | - | - | * |
| | | 0.00000 | 2.00000 | 46.47500 | 2.6682 | 3.4587 | 1.6994 | - | - | - | * |
| | | 1.00000 | 2.00000 | 46.47500 | 2.4821 | 4.0530 | 1.8118 | - | - | - | * |
| | | 2.00000 | 2.00000 | 46.47500 | 2.1764 | 4.7046 | 1.8707 | - | - | - | * |
| | | 3.00000 | 2.00000 | 46.47500 | 1.7502 | 5.4033 | 1.8803 | - | - | - | * |
| | | 4.00000 | 2.00000 | 46.47500 | 1.2148 | 6.1275 | 1.8420 | - | - | - | * |
| | | 5.00000 | 2.00000 | 46.47500 | 0.59575 | 6.8433 | 1.7577 | - | - | - | * |
| | | 6.00000 | 2.00000 | 46.47500 | 0.0 | 7.4437 | 1.6323 | - | - | - | * |
| | | 7.00000 | 2.00000 | 46.47500 | 0.0 | 7.4437 | 1.5054 | - | - | - | * |
| | | 8.00000 | 2.00000 | 46.47500 | 0.0 | 7.4437 | 1.4089 | - | - | - | * |
| | | 9.00000 | 2.00000 | 46.47500 | 0.0 | 7.4437 | 1.3528 | - | - | - | * |
| | | 10.00000 | 2.00000 | 46.47500 | 0.0 | 7.4437 | 1.3415 | - | - | - | * |
| | | 11.00000 | 2.00000 | 46.47500 | 0.0 | 7.4437 | 1.3731 | - | - | - | * |
| | | 12.00000 | 2.00000 | 46.47500 | 0.0 | 7.4437 | 1.4398 | - | - | - | * |
| | | 13.00000 | 2.00000 | 46.47500 | 0.0 | 7.4437 | 1.5323 | - | - | - | * |
| | | 14.00000 | 2.00000 | 46.47500 | 0.0 | 7.4437 | 1.6422 | - | - | - | * |
| | | 15.00000 | 2.00000 | 46.47500 | 0.0 | 7.4437 | 1.7634 | - | - | - | * |
| | | 16.00000 | 2.00000 | 46.47500 | 0.0 | 7.4437 | 1.8910 | - | - | - | * |
| | | 17.00000 | 2.00000 | 46.47500 | 0.0 | 7.4437 | 2.0215 | - | - | - | * |
| | | 18.00000 | 2.00000 | 46.47500 | 0.0 | 7.4437 | 2.1520 | - | - | - | * |
| | | 19.00000 | 2.00000 | 46.47500 | 0.0 | 7.4437 | 2.2809 | - | - | - | * |
| | | 20.00000 | 2.00000 | 46.47500 | 0.0 | 7.4437 | 2.4068 | - | - | - | * |
| | | 21.00000 | 2.00000 | 46.47500 | -0.32135 | 7.1104 | 2.5225 | - | - | - | * |
| | | 22.00000 | 2.00000 | 46.47500 | -0.94026 | 6.3962 | 2.5891 | - | - | - | * |
| | | 23.00000 | 2.00000 | 46.47500 | -1.4925 | 5.6583 | 2.6016 | - | - | - | * |
| | | 24.00000 | 2.00000 | 46.47500 | -1.9476 | 4.9361 | 2.5626 | - | - | - | * |
| | | 25.00000 | 2.00000 | 46.47500 | -2.2892 | 4.2562 | 2.4740 | - | - | - | * |
| | | 26.00000 | 2.00000 | 46.47500 | -2.5142 | 3.6333 | 2.3351 | - | - | - | * |
| | | 27.00000 | 2.00000 | 46.47500 | -2.6774 | 3.1307 | 2.1617 | - | - | - | * |
| | | 28.00000 | 2.00000 | 46.47500 | -2.8105 | 2.7391 | 1.9694 | - | - | - | * |
| | | 29.00000 | 2.00000 | 46.47500 | -2.8800 | 2.3936 | 1.7489 | - | - | - | * |
| | | 30.00000 | 2.00000 | 46.47500 | -2.8942 | 2.0890 | 1.5099 | - | - | - | * |
| | | 31.00000 | 2.00000 | 46.47500 | -2.8611 | 1.8200 | 1.2622 | - | - | - | * |
| | | 32.00000 | 2.00000 | 46.47500 | -2.7875 | 1.5819 | 1.0155 | - | - | - | * |
| | | 33.00000 | 2.00000 | 46.47500 | -2.6793 | 1.3704 | 0.77880 | - | - | - | * |
| | | 34.00000 | 2.00000 | 46.47500 | -2.5415 | 1.1818 | 0.55986 | - | - | - | * |
| | | 35.00000 | 2.00000 | 46.47500 | -2.3784 | 1.0129 | 0.36500 | - | - | - | * |
| | | 36.00000 | 2.00000 | 46.47500 | -2.1935 | 0.86106 | 0.19883 | - | - | - | * |
| | | 37.00000 | 2.00000 | 46.47500 | -1.9898 | 0.72402 | 0.064061 | - | - | - | * |
| | | 38.00000 | 2.00000 | 46.47500 | -1.7698 | 0.59986 | -0.038603 | - | - | - | * |
| | | 39.00000 | 2.00000 | 46.47500 | -1.5356 | 0.48693 | -0.11061 | - | - | - | * |
| | | 40.00000 | 2.00000 | 46.47500 | -1.2899 | 0.38386 | -0.15560 | - | - | - | * |
| | | 0.00000 | 3.00000 | 46.47500 | 3.2184 | 3.4763 | 1.8632 | - | - | - | * |
| | | 1.00000 | 3.00000 | 46.47500 | 3.0242 | 4.1178 | 1.9540 | - | - | - | * |
| | | 2.00000 | 3.00000 | 46.47500 | 2.6809 | 4.8443 | 1.9942 | - | - | - | * |
| | | 3.00000 | 3.00000 | 46.47500 | 2.1797 | 5.6505 | 1.9830 | - | - | - | * |
| | | 4.00000 | 3.00000 | 46.47500 | 1.5272 | 6.5154 | 1.9174 | - | - | - | * |
| | | 5.00000 | 3.00000 | 46.47500 | 0.75371 | 7.3966 | 1.7961 | - | - | - | * |
| | | 6.00000 | 3.00000 | 46.47500 | 0.0 | 8.1521 | 1.6234 | - | - | - | * |
| | | 7.00000 | 3.00000 | 46.47500 | 0.0 | 8.1521 | 1.4472 | - | - | - | * |
| | | 8.00000 | 3.00000 | 46.47500 | 0.0 | 8.1521 | 1.3114 | - | - | - | * |
| | | 9.00000 | 3.00000 | 46.47500 | 0.0 | 8.1521 | 1.2356 | - | - | - | * |
| | | 10.00000 | 3.00000 | 46.47500 | 0.0 | 8.1521 | 1.2286 | - | - | - | * |
| | | 11.00000 | 3.00000 | 46.47500 | 0.0 | 8.1521 | 1.2854 | - | - | - | * |
| | | 12.00000 | 3.00000 | 46.47500 | 0.0 | 8.1521 | 1.3886 | - | - | - | * |
| | | 13.00000 | 3.00000 | 46.47500 | 0.0 | 8.1521 | 1.5197 | - | - | - | * |
| | | 14.00000 | 3.00000 | 46.47500 | 0.0 | 8.1521 | 1.6668 | - | - | - | * |
| | | 15.00000 | 3.00000 | 46.47500 | 0.0 | 8.1521 | 1.8226 | - | - | - | * |
| | | 16.00000 | 3.00000 | 46.47500 | 0.0 | 8.1521 | 1.9823 | - | - | - | * |
| | | 17.00000 | 3.00000 | 46.47500 | 0.0 | 8.1521 | 2.1419 | - | - | - | * |
| | | 18.00000 | 3.00000 | 46.47500 | 0.0 | 8.1521 | 2.2986 | - | - | - | * |
| | | 19.00000 | 3.00000 | 46.47500 | 0.0 | 8.1521 | 2.4508 | - | - | - | * |
| | | 20.00000 | 3.00000 | 46.47500 | 0.0 | 8.1521 | 2.5977 | - | - | - | * |
| | | 21.00000 | 3.00000 | 46.47500 | -0.40711 | 7.7311 | 2.7315 | - | - | - | * |
| | | 22.00000 | 3.00000 | 46.47500 | -1.1856 | 6.8427 | 2.8091 | - | - | - | * |
| | | 23.00000 | 3.00000 | 46.47500 | -1.8663 | 5.9498 | 2.8263 | - | - | - | * |
| | | 24.00000 | 3.00000 | 46.47500 | -2.4097 | 5.1043 | 2.7884 | - | - | - | * |
| | | 25.00000 | 3.00000 | 46.47500 | -2.8012 | 4.3359 | 2.7009 | - | - | - | * |
| | | 26.00000 | 3.00000 | 46.47500 | -3.0443 | 3.6551 | 2.5672 | - | - | - | * |
| | | 27.00000 | 3.00000 | 46.47500 | -3.1529 | 3.0605 | 2.3855 | - | - | - | * |
| | | 28.00000 | 3.00000 | 46.47500 | -3.2072 | 2.5952 | 2.1698 | - | - | - | * |
| | | 29.00000 | 3.00000 | 46.47500 | -3.2586 | 2.2501 | 1.9420 | - | - | - | * |
| | | 30.00000 | 3.00000 | 46.47500 | -3.2510 | 1.9515 | 1.6907 | - | - | - | * |
| | | 31.00000 | 3.00000 | 46.47500 | -3.1941 | 1.6918 | 1.4269 | - | - | - | * |
| | | 32.00000 | 3.00000 | 46.47500 | -3.0963 | 1.4650 | 1.1615 | - | - | - | * |
| | | 33.00000 | 3.00000 | 46.47500 | -2.9641 | 1.2657 | 0.90460 | - | - | - | * |
| | | 34.00000 | 3.00000 | 46.47500 | -2.8033 | 1.0896 | 0.66492 | - | - | - | * |
| | | 35.00000 | 3.00000 | 46.47500 | -2.6182 | 0.93324 | 0.44961 | - | - | - | * |
| | | 36.00000 | 3.00000 | 46.47500 | -2.4125 | 0.79362 | 0.26402 | - | - | - | * |
| | | 37.00000 | 3.00000 | 46.47500 | -2.1893 | 0.66833 | 0.11147 | - | - | - | * |
| | | 38.00000 | 3.00000 | 46.47500 | -1.9509 | 0.55539 | -0.0068092 | - | - | - | * |
| | | 39.00000 | 3.00000 | 46.47500 | -1.6996 | 0.45313 | -0.091816 | - | - | - | * |
| | | 40.00000 | 3.00000 | 46.47500 | -1.4369 | 0.36016 | -0.14682 | - | - | - | * |
| | | 0.00000 | 4.00000 | 46.47500 | 3.8608 | 3.3691 | 1.9744 | - | - | - | * |
| | | 1.00000 | 4.00000 | 46.47500 | 3.6778 | 4.0442 | 2.0500 | - | - | - | * |
| | | 2.00000 | 4.00000 | 46.47500 | 3.3110 | 4.8392 | 2.0747 | - | - | - | * |
| | | 3.00000 | 4.00000 | 46.47500 | 2.7353 | 5.7610 | 2.0421 | - | - | - | * |
| | | 4.00000 | 4.00000 | 46.47500 | 1.9443 | 6.7957 | 1.9433 | - | - | - | * |
| | | 5.00000 | 4.00000 | 46.47500 | 0.96923 | 7.8935 | 1.7701 | - | - | - | * |
| | | 6.00000 | 4.00000 | 46.47500 | 0.0 | 8.8604 | 1.5225 | - | - | - | * |
| | | 7.00000 | 4.00000 | 46.47500 | 0.0 | 8.8604 | 1.2596 | - | - | - | * |
| | | 8.00000 | 4.00000 | 46.47500 | 0.0 | 8.8604 | 1.0501 | - | - | - | * |
| | | 9.00000 | 4.00000 | 46.47500 | 0.0 | 8.8604 | 0.93953 | - | - | - | * |
| | | 10.00000 | 4.00000 | 46.47500 | 0.0 | 8.8604 | 0.94705 | - | - | - | * |
| | | 11.00000 | 4.00000 | 46.47500 | 0.0 | 8.8604 | 1.0623 | - | - | - | * |
| | | 12.00000 | 4.00000 | 46.47500 | 0.0 | 8.8604 | 1.2374 | - | - | - | * |
| | | 13.00000 | 4.00000 | 46.47500 | 0.0 | 8.8604 | 1.4297 | - | - | - | * |
| | | 14.00000 | 4.00000 | 46.47500 | 0.0 | 8.8604 | 1.6281 | - | - | - | * |
| | | 15.00000 | 4.00000 | 46.47500 | 0.0 | 8.8604 | 1.8295 | - | - | - | * |
| | | 16.00000 | 4.00000 | 46.47500 | 0.0 | 8.8604 | 2.0299 | - | - | - | * |
| | | 17.00000 | 4.00000 | 46.47500 | 0.0 | 8.8604 | 2.2249 | - | - | - | * |
| | | 18.00000 | 4.00000 | 46.47500 | 0.0 | 8.8604 | 2.4124 | - | - | - | * |
| | | 19.00000 | 4.00000 | 46.47500 | 0.0 | 8.8604 | 2.5914 | - | - | - | * |
| | | 20.00000 | 4.00000 | 46.47500 | 0.0 | 8.8604 | 2.7620 | - | - | - | * |
| | | 21.00000 | 4.00000 | 46.47500 | -0.52466 | 8.3192 | 2.9159 | - | - | - | * |
| | | 22.00000 | 4.00000 | 46.47500 | -1.5165 | 7.1978 | 3.0049 | - | - | - | * |
| | | 23.00000 | 4.00000 | 46.47500 | -2.3563 | 6.1108 | 3.0251 | - | - | - | * |
| | | 24.00000 | 4.00000 | 46.47500 | -2.9953 | 5.1262 | 2.9844 | - | - | - | * |
| | | 25.00000 | 4.00000 | 46.47500 | -3.4272 | 4.2709 | 2.8921 | - | - | - | * |
| | | 26.00000 | 4.00000 | 46.47500 | -3.6710 | 3.5440 | 2.7555 | - | - | - | * |
| | | 27.00000 | 4.00000 | 46.47500 | -3.7553 | 2.9316 | 2.5772 | - | - | - | * |
| | | 28.00000 | 4.00000 | 46.47500 | -3.7086 | 2.4158 | 2.3521 | - | - | - | * |
| | | 29.00000 | 4.00000 | 46.47500 | -3.6751 | 2.0461 | 2.1066 | - | - | - | * |
| | | 30.00000 | 4.00000 | 46.47500 | -3.6361 | 1.7628 | 1.8476 | - | - | - | * |
| | | 31.00000 | 4.00000 | 46.47500 | -3.5478 | 1.5205 | 1.5717 | - | - | - | * |
| | | 32.00000 | 4.00000 | 46.47500 | -3.4197 | 1.3115 | 1.2912 | - | - | - | * |
| | | 33.00000 | 4.00000 | 46.47500 | -3.2588 | 1.1299 | 1.0174 | - | - | - | * |
| | | 34.00000 | 4.00000 | 46.47500 | -3.0711 | 0.97089 | 0.75983 | - | - | - | * |
| | | 35.00000 | 4.00000 | 46.47500 | -2.8610 | 0.83072 | 0.52666 | - | - | - | * |
| | | 36.00000 | 4.00000 | 46.47500 | -2.6321 | 0.70638 | 0.32388 | - | - | - | * |
| | | 37.00000 | 4.00000 | 46.47500 | -2.3875 | 0.59541 | 0.15542 | - | - | - | * |
| | | 38.00000 | 4.00000 | 46.47500 | -2.1293 | 0.49584 | 0.023007 | - | - | - | * |
| | | 39.00000 | 4.00000 | 46.47500 | -1.8597 | 0.40605 | -0.073945 | - | - | - | * |
| | | 40.00000 | 4.00000 | 46.47500 | -1.5801 | 0.32470 | -0.13835 | - | - | - | * |
| | | 0.00000 | 5.00000 | 46.47500 | 4.6067 | 3.1151 | 2.0405 | - | - | - | * |
| | | 1.00000 | 5.00000 | 46.47500 | 4.4675 | 3.7974 | 2.1038 | - | - | - | * |
| | | 2.00000 | 5.00000 | 46.47500 | 4.1080 | 4.6392 | 2.1129 | - | - | - | * |
| | | 3.00000 | 5.00000 | 46.47500 | 3.4737 | 5.6722 | 2.0550 | - | - | - | * |
| | | 4.00000 | 5.00000 | 46.47500 | 2.5255 | 6.9069 | 1.9131 | - | - | - | * |
| | | 5.00000 | 5.00000 | 46.47500 | 1.2803 | 8.2966 | 1.6664 | - | - | - | * |
| | | 6.00000 | 5.00000 | 46.47500 | 0.0 | 9.5687 | 1.2820 | - | - | - | * |
| | | 7.00000 | 5.00000 | 46.47500 | 0.0 | 9.5687 | 0.83063 | - | - | - | * |
| | | 8.00000 | 5.00000 | 46.47500 | 0.0 | 9.5687 | 0.42288 | - | - | - | * |
| | | 9.00000 | 5.00000 | 46.47500 | 0.0 | 9.5687 | 0.24276 | - | - | - | * |
| | | 10.00000 | 5.00000 | 46.47500 | 0.0 | 9.5687 | 0.28804 | - | - | - | * |

| Type/No. Name | Dist. | Coordinates x | y | z | Displacements x | y | z | Horizontal displacement | Horizontal displacement | Angle of Line to x Axis | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 11.00000 | 5.00000 | 46.47500 | 0.0 | 9.5687 | 0.59711 | - | - | - | * |
| | | 12.00000 | 5.00000 | 46.47500 | 0.0 | 9.5687 | 0.95756 | - | - | - | * |
| | | 13.00000 | 5.00000 | 46.47500 | 0.0 | 9.5687 | 1.2442 | - | - | - | * |
| | | 14.00000 | 5.00000 | 46.47500 | 0.0 | 9.5687 | 1.5107 | - | - | - | * |
| | | 15.00000 | 5.00000 | 46.47500 | 0.0 | 9.5687 | 1.7714 | - | - | - | * |
| | | 16.00000 | 5.00000 | 46.47500 | 0.0 | 9.5687 | 2.0236 | - | - | - | * |
| | | 17.00000 | 5.00000 | 46.47500 | 0.0 | 9.5687 | 2.2611 | - | - | - | * |
| | | 18.00000 | 5.00000 | 46.47500 | 0.0 | 9.5687 | 2.4829 | - | - | - | * |
| | | 19.00000 | 5.00000 | 46.47500 | 0.0 | 9.5687 | 2.6915 | - | - | - | * |
| | | 20.00000 | 5.00000 | 46.47500 | 0.0 | 9.5687 | 2.8882 | - | - | - | * |
| | | 21.00000 | 5.00000 | 46.47500 | -0.69565 | 8.8528 | 3.0645 | - | - | - | * |
| | | 22.00000 | 5.00000 | 46.47500 | -1.9852 | 7.4056 | 3.1669 | - | - | - | * |
| | | 23.00000 | 5.00000 | 46.47500 | -3.0206 | 6.0756 | 3.1914 | - | - | - | * |
| | | 24.00000 | 5.00000 | 46.47500 | -3.7505 | 4.9447 | 3.1478 | - | - | - | * |
| | | 25.00000 | 5.00000 | 46.47500 | -4.1970 | 4.0197 | 3.0484 | - | - | - | * |
| | | 26.00000 | 5.00000 | 46.47500 | -4.4099 | 3.2730 | 2.9049 | - | - | - | * |
| | | 27.00000 | 5.00000 | 46.47500 | -4.4404 | 2.6695 | 2.7240 | - | - | - | * |
| | | 28.00000 | 5.00000 | 46.47500 | -4.3308 | 2.1778 | 2.5042 | - | - | - | * |
| | | 29.00000 | 5.00000 | 46.47500 | -4.1281 | 1.7787 | 2.2368 | - | - | - | * |
| | | 30.00000 | 5.00000 | 46.47500 | -4.0468 | 1.5224 | 1.9749 | - | - | - | * |
| | | 31.00000 | 5.00000 | 46.47500 | -3.9189 | 1.3066 | 1.6912 | - | - | - | * |
| | | 32.00000 | 5.00000 | 46.47500 | -3.7541 | 1.1227 | 1.3996 | - | - | - | * |
| | | 33.00000 | 5.00000 | 46.47500 | -3.5597 | 0.96457 | 1.1124 | - | - | - | * |
| | | 34.00000 | 5.00000 | 46.47500 | -3.3414 | 0.82726 | 0.84036 | - | - | - | * |
| | | 35.00000 | 5.00000 | 46.47500 | -3.1035 | 0.70704 | 0.59241 | - | - | - | * |
| | | 36.00000 | 5.00000 | 46.47500 | -2.8494 | 0.60101 | 0.37521 | - | - | - | * |
| | | 37.00000 | 5.00000 | 46.47500 | -2.5817 | 0.50684 | 0.19327 | - | - | - | * |
| | | 38.00000 | 5.00000 | 46.47500 | -2.3026 | 0.42270 | 0.048740 | - | - | - | * |
| | | 39.00000 | 5.00000 | 46.47500 | -2.0137 | 0.34709 | -0.058569 | - | - | - | * |
| | | 40.00000 | 5.00000 | 46.47500 | -1.7165 | 0.27879 | -0.13127 | - | - | - | * |
| | | 0.00000 | 6.00000 | 46.47500 | 5.4613 | 2.6959 | 2.0624 | - | - | - | * |
| | | 1.00000 | 6.00000 | 46.47500 | 5.4156 | 3.3404 | 2.1125 | - | - | - | * |
| | | 2.00000 | 6.00000 | 46.47500 | 5.1222 | 4.1798 | 2.1023 | - | - | - | * |
| | | 3.00000 | 6.00000 | 46.47500 | 4.4813 | 5.2871 | 2.0118 | - | - | - | * |
| | | 4.00000 | 6.00000 | 46.47500 | 3.3802 | 6.7356 | 1.8148 | - | - | - | * |
| | | 5.00000 | 6.00000 | 46.47500 | 1.7665 | 8.5277 | 1.4761 | - | - | - | * |
| | | 6.00000 | 6.00000 | 46.47500 | 0.0 | 10.277 | 0.88910 | - | - | - | * |
| | | 7.00000 | 6.00000 | 46.47500 | 0.0 | 10.277 | 0.048262 | - | - | - | * |
| | | 8.00000 | 6.00000 | 46.47500 | 0.0 | 10.277 | -0.88539 | - | - | - | * |
| | | 9.00000 | 6.00000 | 46.47500 | 0.0 | 10.277 | -1.1600 | - | - | - | * |
| | | 10.00000 | 6.00000 | 46.47500 | 0.0 | 10.277 | -1.0680 | - | - | - | * |
| | | 11.00000 | 6.00000 | 46.47500 | 0.0 | 10.277 | -0.17244 | - | - | - | * |
| | | 12.00000 | 6.00000 | 46.47500 | 0.0 | 10.277 | 0.54338 | - | - | - | * |
| | | 13.00000 | 6.00000 | 46.47500 | 0.0 | 10.277 | 0.94021 | - | - | - | * |
| | | 14.00000 | 6.00000 | 46.47500 | 0.0 | 10.277 | 1.2891 | - | - | - | * |
| | | 15.00000 | 6.00000 | 46.47500 | 0.0 | 10.277 | 1.6298 | - | - | - | * |
| | | 16.00000 | 6.00000 | 46.47500 | 0.0 | 10.277 | 1.9518 | - | - | - | * |
| | | 17.00000 | 6.00000 | 46.47500 | 0.0 | 10.277 | 2.2348 | - | - | - | * |
| | | 18.00000 | 6.00000 | 46.47500 | 0.0 | 10.277 | 2.4887 | - | - | - | * |
| | | 19.00000 | 6.00000 | 46.47500 | 0.0 | 10.277 | 2.7274 | - | - | - | * |
| | | 20.00000 | 6.00000 | 46.47500 | 0.0 | 10.277 | 2.9519 | - | - | - | * |
| | | 21.00000 | 6.00000 | 46.47500 | -0.96687 | 9.2839 | 3.1525 | - | - | - | * |
| | | 22.00000 | 6.00000 | 46.47500 | -2.6935 | 7.3565 | 3.2739 | - | - | - | * |
| | | 23.00000 | 6.00000 | 46.47500 | -3.9546 | 5.7346 | 3.3091 | - | - | - | * |
| | | 24.00000 | 6.00000 | 46.47500 | -4.7376 | 4.4806 | 3.2671 | - | - | - | * |
| | | 25.00000 | 6.00000 | 46.47500 | -5.1416 | 3.5347 | 3.1630 | - | - | - | * |
| | | 26.00000 | 6.00000 | 46.47500 | -5.2714 | 2.8170 | 3.0128 | - | - | - | * |
| | | 27.00000 | 6.00000 | 46.47500 | -5.2072 | 2.2632 | 2.8274 | - | - | - | * |
| | | 28.00000 | 6.00000 | 46.47500 | -5.0046 | 1.8270 | 2.6090 | - | - | - | * |
| | | 29.00000 | 6.00000 | 46.47500 | -4.7018 | 1.4767 | 2.3484 | - | - | - | * |
| | | 30.00000 | 6.00000 | 46.47500 | -4.4776 | 1.2324 | 2.0682 | - | - | - | * |
| | | 31.00000 | 6.00000 | 46.47500 | -4.3017 | 1.0528 | 1.7810 | - | - | - | * |
| | | 32.00000 | 6.00000 | 46.47500 | -4.0942 | 0.90151 | 1.4822 | - | - | - | * |
| | | 33.00000 | 6.00000 | 46.47500 | -3.8620 | 0.77257 | 1.1856 | - | - | - | * |
| | | 34.00000 | 6.00000 | 46.47500 | -3.6100 | 0.66143 | 0.90282 | - | - | - | * |
| | | 35.00000 | 6.00000 | 46.47500 | -3.3421 | 0.56470 | 0.64358 | - | - | - | * |
| | | 36.00000 | 6.00000 | 46.47500 | -3.0610 | 0.47980 | 0.41518 | - | - | - | * |
| | | 37.00000 | 6.00000 | 46.47500 | -2.7690 | 0.40472 | 0.22261 | - | - | - | * |
| | | 38.00000 | 6.00000 | 46.47500 | -2.4680 | 0.33785 | 0.068447 | - | - | - | * |
| | | 39.00000 | 6.00000 | 46.47500 | -2.1592 | 0.27795 | -0.047182 | - | - | - | * |
| | | 40.00000 | 6.00000 | 46.47500 | -1.8439 | 0.22397 | -0.12661 | - | - | - | * |
| | | 0.00000 | 7.00000 | 46.47500 | 6.4147 | 2.1046 | 2.0371 | - | - | - | * |
| | | 1.00000 | 7.00000 | 46.47500 | 6.5295 | 2.6455 | 2.0697 | - | - | - | * |
| | | 2.00000 | 7.00000 | 46.47500 | 6.4006 | 3.3911 | 2.0330 | - | - | - | * |
| | | 3.00000 | 7.00000 | 46.47500 | 5.8789 | 4.4642 | 1.8991 | - | - | - | * |
| | | 4.00000 | 7.00000 | 46.47500 | 4.7182 | 6.0617 | 1.6319 | - | - | - | * |
| | | 5.00000 | 7.00000 | 46.47500 | 2.6246 | 8.3934 | 1.1867 | - | - | - | * |
| | | 6.00000 | 7.00000 | 46.47500 | 0.0 | 10.985 | 0.41404 | - | - | - | * |
| | | 7.00000 | 7.00000 | 46.47500 | 0.0 | 10.985 | -0.53909 | - | - | - | * |
| | | 8.00000 | 7.00000 | 46.47500 | 0.0 | 10.985 | -1.6029 | - | - | - | * |
| | | 9.00000 | 7.00000 | 46.47500 | 0.0 | 10.985 | -1.9443 | - | - | - | * |
| | | 10.00000 | 7.00000 | 46.47500 | 0.0 | 10.985 | -1.8493 | - | - | - | * |
| | | 11.00000 | 7.00000 | 46.47500 | 0.0 | 10.985 | -0.78161 | - | - | - | * |
| | | 12.00000 | 7.00000 | 46.47500 | 0.0 | 10.985 | 0.076707 | - | - | - | * |
| | | 13.00000 | 7.00000 | 46.47500 | 0.0 | 10.985 | 0.55349 | - | - | - | * |
| | | 14.00000 | 7.00000 | 46.47500 | 0.0 | 10.985 | 0.99688 | - | - | - | * |
| | | 15.00000 | 7.00000 | 46.47500 | 0.0 | 10.985 | 1.4639 | - | - | - | * |
| | | 16.00000 | 7.00000 | 46.47500 | 0.0 | 10.985 | 1.9048 | - | - | - | * |
| | | 17.00000 | 7.00000 | 46.47500 | 0.0 | 10.985 | 2.1471 | - | - | - | * |
| | | 18.00000 | 7.00000 | 46.47500 | 0.0 | 10.985 | 2.3979 | - | - | - | * |
| | | 19.00000 | 7.00000 | 46.47500 | 0.0 | 10.985 | 2.6649 | - | - | - | * |
| | | 20.00000 | 7.00000 | 46.47500 | 0.0 | 10.985 | 2.9177 | - | - | - | * |
| | | 21.00000 | 7.00000 | 46.47500 | -1.4612 | 9.4870 | 3.1437 | - | - | - | * |
| | | 22.00000 | 7.00000 | 46.47500 | -3.8609 | 6.8144 | 3.2964 | - | - | - | * |
| | | 23.00000 | 7.00000 | 46.47500 | -5.3110 | 4.9087 | 3.3565 | - | - | - | * |
| | | 24.00000 | 7.00000 | 46.47500 | -6.0261 | 3.6377 | 3.3264 | - | - | - | * |
| | | 25.00000 | 7.00000 | 46.47500 | -6.2800 | 2.7740 | 3.2246 | - | - | - | * |
| | | 26.00000 | 7.00000 | 46.47500 | -6.2507 | 2.1628 | 3.0724 | - | - | - | * |
| | | 27.00000 | 7.00000 | 46.47500 | -6.0416 | 1.7125 | 2.8850 | - | - | - | * |
| | | 28.00000 | 7.00000 | 46.47500 | -5.7137 | 1.3691 | 2.6679 | - | - | - | * |
| | | 29.00000 | 7.00000 | 46.47500 | -5.3037 | 1.0996 | 2.4145 | - | - | - | * |
| | | 30.00000 | 7.00000 | 46.47500 | -4.9195 | 0.89813 | 2.1246 | - | - | - | * |
| | | 31.00000 | 7.00000 | 46.47500 | -4.6883 | 0.76430 | 1.8377 | - | - | - | * |
| | | 32.00000 | 7.00000 | 46.47500 | -4.4332 | 0.65265 | 1.5358 | - | - | - | * |
| | | 33.00000 | 7.00000 | 46.47500 | -4.1597 | 0.55814 | 1.2337 | - | - | - | * |
| | | 34.00000 | 7.00000 | 46.47500 | -3.8717 | 0.47716 | 0.94420 | - | - | - | * |
| | | 35.00000 | 7.00000 | 46.47500 | -3.5720 | 0.40700 | 0.67747 | - | - | - | * |
| | | 36.00000 | 7.00000 | 46.47500 | -3.2629 | 0.34567 | 0.44141 | - | - | - | * |
| | | 37.00000 | 7.00000 | 46.47500 | -2.9460 | 0.29159 | 0.24144 | - | - | - | * |
| | | 38.00000 | 7.00000 | 46.47500 | -2.6225 | 0.24356 | 0.080476 | - | - | - | * |
| | | 39.00000 | 7.00000 | 46.47500 | -2.2936 | 0.20063 | -0.041076 | - | - | - | * |
| | | 40.00000 | 7.00000 | 46.47500 | -1.9601 | 0.16203 | -0.12533 | - | - | - | * |
| | | 0.00000 | 8.00000 | 46.47500 | 7.4319 | 1.3569 | 1.9607 | - | - | - | * |
| | | 1.00000 | 8.00000 | 46.47500 | 7.7802 | 1.7157 | 1.9683 | - | - | - | * |
| | | 2.00000 | 8.00000 | 46.47500 | 7.9484 | 2.2340 | 1.8958 | - | - | - | * |
| | | 3.00000 | 8.00000 | 46.47500 | 7.7833 | 3.0471 | 1.7061 | - | - | - | * |
| | | 4.00000 | 8.00000 | 46.47500 | 6.9218 | 4.4741 | 1.3498 | - | - | - | * |
| | | 5.00000 | 8.00000 | 46.47500 | 4.4654 | 7.2914 | 0.77071 | - | - | - | * |
| | | 6.00000 | 8.00000 | 46.47500 | 0.0 | 11.694 | -0.18764 | - | - | - | * |
| | | 7.00000 | 8.00000 | 46.47500 | 0.0 | 11.694 | -1.2007 | - | - | - | * |
| | | 8.00000 | 8.00000 | 46.47500 | 0.0 | 11.694 | -2.3399 | - | - | - | * |
| | | 9.00000 | 8.00000 | 46.47500 | 0.0 | 11.694 | -2.7435 | - | - | - | * |
| | | 10.00000 | 8.00000 | 46.47500 | 0.0 | 11.694 | -2.7171 | - | - | - | * |
| | | 11.00000 | 8.00000 | 46.47500 | 0.0 | 11.694 | -1.7228 | - | - | - | * |
| | | 12.00000 | 8.00000 | 46.47500 | 0.0 | 11.694 | -0.93091 | - | - | - | * |
| | | 13.00000 | 8.00000 | 46.47500 | 0.0 | 11.694 | -0.43205 | - | - | - | * |
| | | 14.00000 | 8.00000 | 46.47500 | 0.0 | 11.694 | 0.12267 | - | - | - | * |
| | | 15.00000 | 8.00000 | 46.47500 | 0.0 | 11.694 | 0.85131 | - | - | - | * |
| | | 16.00000 | 8.00000 | 46.47500 | 0.0 | 11.694 | 1.6803 | - | - | - | * |
| | | 17.00000 | 8.00000 | 46.47500 | 0.0 | 11.694 | 1.9324 | - | - | - | * |
| | | 18.00000 | 8.00000 | 46.47500 | 0.0 | 11.694 | 2.1708 | - | - | - | * |
| | | 19.00000 | 8.00000 | 46.47500 | 0.0 | 11.694 | 2.4701 | - | - | - | * |
| | | 20.00000 | 8.00000 | 46.47500 | 0.0 | 11.694 | 2.7504 | - | - | - | * |
| | | 21.00000 | 8.00000 | 46.47500 | -2.6263 | 9.0040 | 2.9974 | - | - | - | * |
| | | 22.00000 | 8.00000 | 46.47500 | -5.9859 | 5.2347 | 3.2083 | - | - | - | * |
| | | 23.00000 | 8.00000 | 46.47500 | -7.2844 | 3.3531 | 3.3153 | - | - | - | * |
| | | 24.00000 | 8.00000 | 46.47500 | -7.6509 | 2.3419 | 3.3111 | - | - | - | * |
| | | 25.00000 | 8.00000 | 46.47500 | -7.5925 | 1.7297 | 3.2220 | - | - | - | * |
| | | 26.00000 | 8.00000 | 46.47500 | -7.3148 | 1.3237 | 3.0758 | - | - | - | * |
| | | 27.00000 | 8.00000 | 46.47500 | -6.9115 | 1.0361 | 2.8924 | - | - | - | * |
| | | 28.00000 | 8.00000 | 46.47500 | -6.4299 | 0.82223 | 2.6800 | - | - | - | * |

| Type/No. | | Coordinates | | | Displacements | | | | | Angle of Line |
|---|---|---|---|---|---|---|---|---|---|---|
| Name | Dist. | x | y | z | x | y | z | Horizontal displacement | Horizontal displacement | to x Axis |
| | | 29.00000 | 8.00000 | 46.47500 | -5.8965 | 0.65716 | 2.4341 | - | - | - * |
| | | 30.00000 | 8.00000 | 46.47500 | -5.3600 | 0.52924 | 2.1425 | - | - | - * |
| | | 31.00000 | 8.00000 | 46.47500 | -5.0684 | 0.44916 | 1.8594 | - | - | - * |
| | | 32.00000 | 8.00000 | 46.47500 | -4.7626 | 0.38278 | 1.5581 | - | - | - * |
| | | 33.00000 | 8.00000 | 46.47500 | -4.4459 | 0.32688 | 1.2546 | - | - | - * |
| | | 34.00000 | 8.00000 | 46.47500 | -4.1206 | 0.27917 | 0.96236 | - | - | - * |
| | | 35.00000 | 8.00000 | 46.47500 | -3.7885 | 0.23797 | 0.69210 | - | - | - * |
| | | 36.00000 | 8.00000 | 46.47500 | -3.4510 | 0.20204 | 0.45214 | - | - | - * |
| | | 37.00000 | 8.00000 | 46.47500 | -3.1089 | 0.17043 | 0.24824 | - | - | - * |
| | | 38.00000 | 8.00000 | 46.47500 | -2.7631 | 0.14241 | 0.083576 | - | - | - * |
| | | 39.00000 | 8.00000 | 46.47500 | -2.4142 | 0.11740 | -0.041240 | - | - | - * |
| | | 40.00000 | 8.00000 | 46.47500 | -2.0626 | 0.094937 | -0.12815 | - | - | - * |
| | | 0.00000 | 9.00000 | 46.47500 | 8.4474 | 0.50040 | 1.8304 | - | - | - * |
| | | 1.00000 | 9.00000 | 46.47500 | 9.0799 | 0.61100 | 1.8046 | - | - | - * |
| | | 2.00000 | 9.00000 | 46.47500 | 9.6603 | 0.76991 | 1.6868 | - | - | - * |
| | | 3.00000 | 9.00000 | 46.47500 | 10.136 | 1.0264 | 1.4325 | - | - | - * |
| | | 4.00000 | 9.00000 | 46.47500 | 10.344 | 1.5302 | 0.97733 | - | - | - * |
| | | 5.00000 | 9.00000 | 46.47500 | 9.4808 | 3.0287 | 0.22828 | - | - | - * |
| | | 6.00000 | 9.00000 | 46.47500 | 0.0 | 12.402 | -0.92978 | - | - | - * |
| | | 7.00000 | 9.00000 | 46.47500 | 0.0 | 12.402 | -2.0724 | - | - | - * |
| | | 8.00000 | 9.00000 | 46.47500 | 0.0 | 12.402 | -3.2749 | - | - | - * |
| | | 9.00000 | 9.00000 | 46.47500 | 0.0 | 12.402 | -3.7413 | - | - | - * |
| | | 10.00000 | 9.00000 | 46.47500 | 0.0 | 12.402 | -3.8287 | - | - | - * |
| | | 11.00000 | 9.00000 | 46.47500 | 0.0 | 12.402 | -3.6005 | - | - | - * |
| | | 12.00000 | 9.00000 | 46.47500 | 0.0 | 12.402 | -3.2190 | - | - | - * |
| | | 13.00000 | 9.00000 | 46.47500 | 0.0 | 12.402 | -2.7525 | - | - | - * |
| | | 14.00000 | 9.00000 | 46.47500 | 0.0 | 12.402 | -2.0841 | - | - | - * |
| | | 15.00000 | 9.00000 | 46.47500 | 0.0 | 12.402 | -0.91904 | - | - | - * |
| | | 16.00000 | 9.00000 | 46.47500 | 0.0 | 12.402 | 1.3533 | - | - | - * |
| | | 17.00000 | 9.00000 | 46.47500 | 0.0 | 12.402 | 1.6206 | - | - | - * |
| | | 18.00000 | 9.00000 | 46.47500 | 0.0 | 12.402 | 1.8333 | - | - | - * |
| | | 19.00000 | 9.00000 | 46.47500 | 0.0 | 12.402 | 2.1875 | - | - | - * |
| | | 20.00000 | 9.00000 | 46.47500 | 0.0 | 12.402 | 2.4930 | - | - | - * |
| | | 21.00000 | 9.00000 | 46.47500 | -7.4674 | 4.7502 | 2.7100 | - | - | - * |
| | | 22.00000 | 9.00000 | 46.47500 | -9.8721 | 1.6868 | 3.0176 | - | - | - * |
| | | 23.00000 | 9.00000 | 46.47500 | -9.9001 | 0.96183 | 3.1821 | - | - | - * |
| | | 24.00000 | 9.00000 | 46.47500 | -9.5139 | 0.64457 | 3.2133 | - | - | - * |
| | | 25.00000 | 9.00000 | 46.47500 | -8.9858 | 0.46712 | 3.1473 | - | - | - * |
| | | 26.00000 | 9.00000 | 46.47500 | -8.3924 | 0.35385 | 3.0173 | - | - | - * |
| | | 27.00000 | 9.00000 | 46.47500 | -7.7639 | 0.27531 | 2.8461 | - | - | - * |
| | | 28.00000 | 9.00000 | 46.47500 | -7.1141 | 0.21766 | 2.6442 | - | - | - * |
| | | 29.00000 | 9.00000 | 46.47500 | -6.4505 | 0.17354 | 2.4084 | - | - | - * |
| | | 30.00000 | 9.00000 | 46.47500 | -5.7837 | 0.13885 | 2.1218 | - | - | - * |
| | | 31.00000 | 9.00000 | 46.47500 | -5.4301 | 0.11768 | 1.8451 | - | - | - * |
| | | 32.00000 | 9.00000 | 46.47500 | -5.0728 | 0.10020 | 1.5480 | - | - | - * |
| | | 33.00000 | 9.00000 | 46.47500 | -4.7127 | 0.085507 | 1.2470 | - | - | - * |
| | | 34.00000 | 9.00000 | 46.47500 | -4.3503 | 0.072990 | 0.95604 | - | - | - * |
| | | 35.00000 | 9.00000 | 46.47500 | -3.9862 | 0.062199 | 0.68628 | - | - | - * |
| | | 36.00000 | 9.00000 | 46.47500 | -3.6207 | 0.052799 | 0.44632 | - | - | - * |
| | | 37.00000 | 9.00000 | 46.47500 | -3.2541 | 0.044538 | 0.24209 | - | - | - * |
| | | 38.00000 | 9.00000 | 46.47500 | -2.8865 | 0.037221 | 0.076975 | - | - | - * |
| | | 39.00000 | 9.00000 | 46.47500 | -2.5181 | 0.030694 | -0.048288 | - | - | - * |
| | | 40.00000 | 9.00000 | 46.47500 | -2.1490 | 0.024837 | -0.13553 | - | - | - * |
| | | 0.00000 | 10.00000 | 46.47500 | 8.4905 | 0.50155 | 1.6778 | - | - | - * |
| | | 1.00000 | 10.00000 | 46.47500 | 9.1963 | 0.54324 | 1.6099 | - | - | - * |
| | | 2.00000 | 10.00000 | 46.47500 | 9.9022 | 0.58494 | 1.4373 | - | - | - * |
| | | 3.00000 | 10.00000 | 46.47500 | 10.608 | 0.62664 | 1.1109 | - | - | - * |
| | | 4.00000 | 10.00000 | 46.47500 | 11.314 | 0.66833 | 0.55930 | - | - | - * |
| | | 5.00000 | 10.00000 | 46.47500 | 12.020 | 0.71003 | -0.32639 | - | - | - * |
| | | 6.00000 | 10.00000 | 46.47500 | | | Point lies within an excavation. | | | * |
| | | 7.00000 | 10.00000 | 46.47500 | | | Point lies within an excavation. | | | * |
| | | 8.00000 | 10.00000 | 46.47500 | | | Point lies within an excavation. | | | * |
| | | 9.00000 | 10.00000 | 46.47500 | | | Point lies within an excavation. | | | * |
| | | 10.00000 | 10.00000 | 46.47500 | | | Point lies within an excavation. | | | * |
| | | 11.00000 | 10.00000 | 46.47500 | | | Point lies within an excavation. | | | * |
| | | 12.00000 | 10.00000 | 46.47500 | | | Point lies within an excavation. | | | * |
| | | 13.00000 | 10.00000 | 46.47500 | | | Point lies within an excavation. | | | * |
| | | 14.00000 | 10.00000 | 46.47500 | | | Point lies within an excavation. | | | * |
| | | 15.00000 | 10.00000 | 46.47500 | | | Point lies within an excavation. | | | * |
| | | 16.00000 | 10.00000 | 46.47500 | | | Point lies within an excavation. | | | * |
| | | 17.00000 | 10.00000 | 46.47500 | | | Point lies within an excavation. | | | * |
| | | 18.00000 | 10.00000 | 46.47500 | | | Point lies within an excavation. | | | * |
| | | 19.00000 | 10.00000 | 46.47500 | | | Point lies within an excavation. | | | * |
| | | 20.00000 | 10.00000 | 46.47500 | | | Point lies within an excavation. | | | * |
| | | 21.00000 | 10.00000 | 46.47500 | -12.296 | 0.0 | 2.4663 | - | - | - * |
| | | 22.00000 | 10.00000 | 46.47500 | -11.587 | 0.0 | 2.7720 | - | - | - * |
| | | 23.00000 | 10.00000 | 46.47500 | -10.879 | 0.0 | 2.9777 | - | - | - * |
| | | 24.00000 | 10.00000 | 46.47500 | -10.171 | 0.0 | 3.0479 | - | - | - * |
| | | 25.00000 | 10.00000 | 46.47500 | -9.4625 | 0.0 | 3.0137 | - | - | - * |
| | | 26.00000 | 10.00000 | 46.47500 | -8.7542 | 0.0 | 2.9088 | - | - | - * |
| | | 27.00000 | 10.00000 | 46.47500 | -8.0458 | 0.0 | 2.7575 | - | - | - * |
| | | 28.00000 | 10.00000 | 46.47500 | -7.3375 | 0.0 | 2.5714 | - | - | - * |
| | | 29.00000 | 10.00000 | 46.47500 | -6.6292 | 0.0 | 2.3482 | - | - | - * |
| | | 30.00000 | 10.00000 | 46.47500 | -5.9250 | 0.0 | 2.0717 | - | - | - * |
| | | 31.00000 | 10.00000 | 46.47500 | -5.5500 | 0.0 | 1.8032 | - | - | - * |
| | | 32.00000 | 10.00000 | 46.47500 | -5.1750 | 0.0 | 1.5128 | - | - | - * |
| | | 33.00000 | 10.00000 | 46.47500 | -4.8000 | 0.0 | 1.2172 | - | - | - * |
| | | 34.00000 | 10.00000 | 46.47500 | -4.4250 | 0.0 | 0.93068 | - | - | - * |
| | | 35.00000 | 10.00000 | 46.47500 | -4.0500 | 0.0 | 0.66456 | - | - | - * |
| | | 36.00000 | 10.00000 | 46.47500 | -3.6750 | 0.0 | 0.42760 | - | - | - * |
| | | 37.00000 | 10.00000 | 46.47500 | -3.3000 | 0.0 | 0.22588 | - | - | - * |
| | | 38.00000 | 10.00000 | 46.47500 | -2.9250 | 0.0 | 0.062865 | - | - | - * |
| | | 39.00000 | 10.00000 | 46.47500 | -2.5500 | 0.0 | -0.060618 | - | - | - * |
| | | 40.00000 | 10.00000 | 46.47500 | -2.1750 | 0.0 | -0.14634 | - | - | - * |
| | | 0.00000 | 11.00000 | 46.47500 | 8.5322 | 0.50401 | 1.5382 | - | - | - * |
| | | 1.00000 | 11.00000 | 46.47500 | 9.2380 | 0.54571 | 1.4285 | - | - | - * |
| | | 2.00000 | 11.00000 | 46.47500 | 9.9439 | 0.58740 | 1.1997 | - | - | - * |
| | | 3.00000 | 11.00000 | 46.47500 | 10.650 | 0.62910 | 0.79581 | - | - | - * |
| | | 4.00000 | 11.00000 | 46.47500 | 11.356 | 0.67080 | 0.13343 | - | - | - * |
| | | 5.00000 | 11.00000 | 46.47500 | 12.062 | 0.71249 | -0.91547 | - | - | - * |
| | | 6.00000 | 11.00000 | 46.47500 | | | Point lies within an excavation. | | | * |
| | | 7.00000 | 11.00000 | 46.47500 | | | Point lies within an excavation. | | | * |
| | | 8.00000 | 11.00000 | 46.47500 | | | Point lies within an excavation. | | | * |
| | | 9.00000 | 11.00000 | 46.47500 | | | Point lies within an excavation. | | | * |
| | | 10.00000 | 11.00000 | 46.47500 | | | Point lies within an excavation. | | | * |
| | | 11.00000 | 11.00000 | 46.47500 | | | Point lies within an excavation. | | | * |
| | | 12.00000 | 11.00000 | 46.47500 | | | Point lies within an excavation. | | | * |
| | | 13.00000 | 11.00000 | 46.47500 | | | Point lies within an excavation. | | | * |
| | | 14.00000 | 11.00000 | 46.47500 | | | Point lies within an excavation. | | | * |
| | | 15.00000 | 11.00000 | 46.47500 | | | Point lies within an excavation. | | | * |
| | | 16.00000 | 11.00000 | 46.47500 | | | Point lies within an excavation. | | | * |
| | | 17.00000 | 11.00000 | 46.47500 | | | Point lies within an excavation. | | | * |
| | | 18.00000 | 11.00000 | 46.47500 | | | Point lies within an excavation. | | | * |
| | | 19.00000 | 11.00000 | 46.47500 | | | Point lies within an excavation. | | | * |
| | | 20.00000 | 11.00000 | 46.47500 | | | Point lies within an excavation. | | | * |
| | | 21.00000 | 11.00000 | 46.47500 | -12.296 | 0.0 | 2.0533 | - | - | - * |
| | | 22.00000 | 11.00000 | 46.47500 | -11.587 | 0.0 | 2.4706 | - | - | - * |
| | | 23.00000 | 11.00000 | 46.47500 | -10.879 | 0.0 | 2.7510 | - | - | - * |
| | | 24.00000 | 11.00000 | 46.47500 | -10.171 | 0.0 | 2.8735 | - | - | - * |
| | | 25.00000 | 11.00000 | 46.47500 | -9.4625 | 0.0 | 2.8771 | - | - | - * |
| | | 26.00000 | 11.00000 | 46.47500 | -8.7542 | 0.0 | 2.8002 | - | - | - * |
| | | 27.00000 | 11.00000 | 46.47500 | -8.0458 | 0.0 | 2.6701 | - | - | - * |
| | | 28.00000 | 11.00000 | 46.47500 | -7.3375 | 0.0 | 2.5003 | - | - | - * |
| | | 29.00000 | 11.00000 | 46.47500 | -6.6292 | 0.0 | 2.2899 | - | - | - * |
| | | 30.00000 | 11.00000 | 46.47500 | -5.9250 | 0.0 | 2.0234 | - | - | - * |
| | | 31.00000 | 11.00000 | 46.47500 | -5.5500 | 0.0 | 1.7629 | - | - | - * |
| | | 32.00000 | 11.00000 | 46.47500 | -5.1750 | 0.0 | 1.4790 | - | - | - * |
| | | 33.00000 | 11.00000 | 46.47500 | -4.8000 | 0.0 | 1.1887 | - | - | - * |
| | | 34.00000 | 11.00000 | 46.47500 | -4.4250 | 0.0 | 0.90650 | - | - | - * |
| | | 35.00000 | 11.00000 | 46.47500 | -4.0500 | 0.0 | 0.64394 | - | - | - * |
| | | 36.00000 | 11.00000 | 46.47500 | -3.6750 | 0.0 | 0.40995 | - | - | - * |
| | | 37.00000 | 11.00000 | 46.47500 | -3.3000 | 0.0 | 0.21072 | - | - | - * |
| | | 38.00000 | 11.00000 | 46.47500 | -2.9250 | 0.0 | 0.049787 | - | - | - * |
| | | 39.00000 | 11.00000 | 46.47500 | -2.5500 | 0.0 | -0.071932 | - | - | - * |
| | | 40.00000 | 11.00000 | 46.47500 | -2.1750 | 0.0 | -0.15615 | - | - | - * |
| | | 0.00000 | 12.00000 | 46.47500 | 8.5738 | 0.50647 | 1.4170 | - | - | - * |
| | | 1.00000 | 12.00000 | 46.47500 | 9.2797 | 0.54817 | 1.2678 | - | - | - * |
| | | 2.00000 | 12.00000 | 46.47500 | 9.9856 | 0.58987 | 0.98447 | - | - | - * |
| | | 3.00000 | 12.00000 | 46.47500 | 10.691 | 0.63156 | 0.50224 | - | - | - * |
| | | 4.00000 | 12.00000 | 46.47500 | 11.397 | 0.67326 | -0.28271 | - | - | - * |
| | | 5.00000 | 12.00000 | 46.47500 | 12.103 | 0.71496 | -1.5760 | - | - | - * |

| Type/No. Name | Dist. | Coordinates x | y | z | Displacements x | y | z | Horizontal displacement | Horizontal displacement | Angle of Line to x Axis | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 6.00000 | 12.00000 | 46.47500 | | | Point lies within an excavation. | | | | * |
| | | 7.00000 | 12.00000 | 46.47500 | | | Point lies within an excavation. | | | | * |
| | | 8.00000 | 12.00000 | 46.47500 | | | Point lies within an excavation. | | | | * |
| | | 9.00000 | 12.00000 | 46.47500 | | | Point lies within an excavation. | | | | * |
| | | 10.00000 | 12.00000 | 46.47500 | | | Point lies within an excavation. | | | | * |
| | | 11.00000 | 12.00000 | 46.47500 | | | Point lies within an excavation. | | | | * |
| | | 12.00000 | 12.00000 | 46.47500 | | | Point lies within an excavation. | | | | * |
| | | 13.00000 | 12.00000 | 46.47500 | | | Point lies within an excavation. | | | | * |
| | | 14.00000 | 12.00000 | 46.47500 | | | Point lies within an excavation. | | | | * |
| | | 15.00000 | 12.00000 | 46.47500 | | | Point lies within an excavation. | | | | * |
| | | 16.00000 | 12.00000 | 46.47500 | | | Point lies within an excavation. | | | | * |
| | | 17.00000 | 12.00000 | 46.47500 | | | Point lies within an excavation. | | | | * |
| | | 18.00000 | 12.00000 | 46.47500 | | | Point lies within an excavation. | | | | * |
| | | 19.00000 | 12.00000 | 46.47500 | | | Point lies within an excavation. | | | | * |
| | | 20.00000 | 12.00000 | 46.47500 | | | Point lies within an excavation. | | | | * |
| | | 21.00000 | 12.00000 | 46.47500 | -12.296 | 0.0 | 1.4730 | - | - | - | * |
| | | 22.00000 | 12.00000 | 46.47500 | -11.587 | 0.0 | 2.1325 | - | - | - | * |
| | | 23.00000 | 12.00000 | 46.47500 | -10.879 | 0.0 | 2.5193 | - | - | - | * |
| | | 24.00000 | 12.00000 | 46.47500 | -10.171 | 0.0 | 2.7037 | - | - | - | * |
| | | 25.00000 | 12.00000 | 46.47500 | -9.4625 | 0.0 | 2.7481 | - | - | - | * |
| | | 26.00000 | 12.00000 | 46.47500 | -8.7542 | 0.0 | 2.6998 | - | - | - | * |
| | | 27.00000 | 12.00000 | 46.47500 | -8.0458 | 0.0 | 2.5906 | - | - | - | * |
| | | 28.00000 | 12.00000 | 46.47500 | -7.3375 | 0.0 | 2.4365 | - | - | - | * |
| | | 29.00000 | 12.00000 | 46.47500 | -6.6292 | 0.0 | 2.2380 | - | - | - | * |
| | | 30.00000 | 12.00000 | 46.47500 | -5.9250 | 0.0 | 1.9808 | - | - | - | * |
| | | 31.00000 | 12.00000 | 46.47500 | -5.5500 | 0.0 | 1.7277 | - | - | - | * |
| | | 32.00000 | 12.00000 | 46.47500 | -5.1750 | 0.0 | 1.4496 | - | - | - | * |
| | | 33.00000 | 12.00000 | 46.47500 | -4.8000 | 0.0 | 1.1640 | - | - | - | * |
| | | 34.00000 | 12.00000 | 46.47500 | -4.4250 | 0.0 | 0.88565 | - | - | - | * |
| | | 35.00000 | 12.00000 | 46.47500 | -4.0500 | 0.0 | 0.62624 | - | - | - | * |
| | | 36.00000 | 12.00000 | 46.47500 | -3.6750 | 0.0 | 0.39485 | - | - | - | * |
| | | 37.00000 | 12.00000 | 46.47500 | -3.3000 | 0.0 | 0.19778 | - | - | - | * |
| | | 38.00000 | 12.00000 | 46.47500 | -2.9250 | 0.0 | 0.038657 | - | - | - | * |
| | | 39.00000 | 12.00000 | 46.47500 | -2.5500 | 0.0 | -0.081538 | - | - | - | * |
| | | 40.00000 | 12.00000 | 46.47500 | -2.1750 | 0.0 | -0.16447 | - | - | - | * |
| | | 0.00000 | 13.00000 | 46.47500 | 8.6155 | 0.50894 | 1.3198 | - | - | - | * |
| | | 1.00000 | 13.00000 | 46.47500 | 9.3214 | 0.55063 | 1.1356 | - | - | - | * |
| | | 2.00000 | 13.00000 | 46.47500 | 10.027 | 0.59233 | 0.80335 | - | - | - | * |
| | | 3.00000 | 13.00000 | 46.47500 | 10.733 | 0.63403 | 0.25043 | - | - | - | * |
| | | 4.00000 | 13.00000 | 46.47500 | 11.439 | 0.67572 | -0.64472 | - | - | - | * |
| | | 5.00000 | 13.00000 | 46.47500 | 12.145 | 0.71742 | -2.1503 | - | - | - | * |
| | | 6.00000 | 13.00000 | 46.47500 | | | Point lies within an excavation. | | | | * |
| | | 7.00000 | 13.00000 | 46.47500 | | | Point lies within an excavation. | | | | * |
| | | 8.00000 | 13.00000 | 46.47500 | | | Point lies within an excavation. | | | | * |
| | | 9.00000 | 13.00000 | 46.47500 | | | Point lies within an excavation. | | | | * |
| | | 10.00000 | 13.00000 | 46.47500 | | | Point lies within an excavation. | | | | * |
| | | 11.00000 | 13.00000 | 46.47500 | | | Point lies within an excavation. | | | | * |
| | | 12.00000 | 13.00000 | 46.47500 | | | Point lies within an excavation. | | | | * |
| | | 13.00000 | 13.00000 | 46.47500 | | | Point lies within an excavation. | | | | * |
| | | 14.00000 | 13.00000 | 46.47500 | | | Point lies within an excavation. | | | | * |
| | | 15.00000 | 13.00000 | 46.47500 | | | Point lies within an excavation. | | | | * |
| | | 16.00000 | 13.00000 | 46.47500 | | | Point lies within an excavation. | | | | * |
| | | 17.00000 | 13.00000 | 46.47500 | | | Point lies within an excavation. | | | | * |
| | | 18.00000 | 13.00000 | 46.47500 | | | Point lies within an excavation. | | | | * |
| | | 19.00000 | 13.00000 | 46.47500 | | | Point lies within an excavation. | | | | * |
| | | 20.00000 | 13.00000 | 46.47500 | | | Point lies within an excavation. | | | | * |
| | | 21.00000 | 13.00000 | 46.47500 | -12.296 | 0.0 | 0.94227 | - | - | - | * |
| | | 22.00000 | 13.00000 | 46.47500 | -11.587 | 0.0 | 1.8191 | - | - | - | * |
| | | 23.00000 | 13.00000 | 46.47500 | -10.879 | 0.0 | 2.3084 | - | - | - | * |
| | | 24.00000 | 13.00000 | 46.47500 | -10.171 | 0.0 | 2.5523 | - | - | - | * |
| | | 25.00000 | 13.00000 | 46.47500 | -9.4625 | 0.0 | 2.6350 | - | - | - | * |
| | | 26.00000 | 13.00000 | 46.47500 | -8.7542 | 0.0 | 2.6131 | - | - | - | * |
| | | 27.00000 | 13.00000 | 46.47500 | -8.0458 | 0.0 | 2.5227 | - | - | - | * |
| | | 28.00000 | 13.00000 | 46.47500 | -7.3375 | 0.0 | 2.3824 | - | - | - | * |
| | | 29.00000 | 13.00000 | 46.47500 | -6.6292 | 0.0 | 2.1945 | - | - | - | * |
| | | 30.00000 | 13.00000 | 46.47500 | -5.9250 | 0.0 | 1.9453 | - | - | - | * |
| | | 31.00000 | 13.00000 | 46.47500 | -5.5500 | 0.0 | 1.6985 | - | - | - | * |
| | | 32.00000 | 13.00000 | 46.47500 | -5.1750 | 0.0 | 1.4254 | - | - | - | * |
| | | 33.00000 | 13.00000 | 46.47500 | -4.8000 | 0.0 | 1.1438 | - | - | - | * |
| | | 34.00000 | 13.00000 | 46.47500 | -4.4250 | 0.0 | 0.86861 | - | - | - | * |
| | | 35.00000 | 13.00000 | 46.47500 | -4.0500 | 0.0 | 0.61182 | - | - | - | * |
| | | 36.00000 | 13.00000 | 46.47500 | -3.6750 | 0.0 | 0.38258 | - | - | - | * |
| | | 37.00000 | 13.00000 | 46.47500 | -3.3000 | 0.0 | 0.18729 | - | - | - | * |
| | | 38.00000 | 13.00000 | 46.47500 | -2.9250 | 0.0 | 0.029663 | - | - | - | * |
| | | 39.00000 | 13.00000 | 46.47500 | -2.5500 | 0.0 | -0.089284 | - | - | - | * |
| | | 40.00000 | 13.00000 | 46.47500 | -2.1750 | 0.0 | -0.17116 | - | - | - | * |
| | | 0.00000 | 14.00000 | 46.47500 | 8.6572 | 0.51140 | 1.2521 | - | - | - | * |
| | | 1.00000 | 14.00000 | 46.47500 | 9.3631 | 0.55310 | 1.0396 | - | - | - | * |
| | | 2.00000 | 14.00000 | 46.47500 | 10.069 | 0.59479 | 0.66744 | - | - | - | * |
| | | 3.00000 | 14.00000 | 46.47500 | 10.775 | 0.63649 | 0.058650 | - | - | - | * |
| | | 4.00000 | 14.00000 | 46.47500 | 11.481 | 0.67819 | -0.91286 | - | - | - | * |
| | | 5.00000 | 14.00000 | 46.47500 | 12.187 | 0.71988 | -2.5144 | - | - | - | * |
| | | 6.00000 | 14.00000 | 46.47500 | | | Point lies within an excavation. | | | | * |
| | | 7.00000 | 14.00000 | 46.47500 | | | Point lies within an excavation. | | | | * |
| | | 8.00000 | 14.00000 | 46.47500 | | | Point lies within an excavation. | | | | * |
| | | 9.00000 | 14.00000 | 46.47500 | | | Point lies within an excavation. | | | | * |
| | | 10.00000 | 14.00000 | 46.47500 | | | Point lies within an excavation. | | | | * |
| | | 11.00000 | 14.00000 | 46.47500 | | | Point lies within an excavation. | | | | * |
| | | 12.00000 | 14.00000 | 46.47500 | | | Point lies within an excavation. | | | | * |
| | | 13.00000 | 14.00000 | 46.47500 | | | Point lies within an excavation. | | | | * |
| | | 14.00000 | 14.00000 | 46.47500 | | | Point lies within an excavation. | | | | * |
| | | 15.00000 | 14.00000 | 46.47500 | | | Point lies within an excavation. | | | | * |
| | | 16.00000 | 14.00000 | 46.47500 | | | Point lies within an excavation. | | | | * |
| | | 17.00000 | 14.00000 | 46.47500 | | | Point lies within an excavation. | | | | * |
| | | 18.00000 | 14.00000 | 46.47500 | | | Point lies within an excavation. | | | | * |
| | | 19.00000 | 14.00000 | 46.47500 | | | Point lies within an excavation. | | | | * |
| | | 20.00000 | 14.00000 | 46.47500 | | | Point lies within an excavation. | | | | * |
| | | 21.00000 | 14.00000 | 46.47500 | -12.296 | 0.0 | 0.59536 | - | - | - | * |
| | | 22.00000 | 14.00000 | 46.47500 | -11.587 | 0.0 | 1.5833 | - | - | - | * |
| | | 23.00000 | 14.00000 | 46.47500 | -10.879 | 0.0 | 2.1435 | - | - | - | * |
| | | 24.00000 | 14.00000 | 46.47500 | -10.171 | 0.0 | 2.4328 | - | - | - | * |
| | | 25.00000 | 14.00000 | 46.47500 | -9.4625 | 0.0 | 2.5459 | - | - | - | * |
| | | 26.00000 | 14.00000 | 46.47500 | -8.7542 | 0.0 | 2.5450 | - | - | - | * |
| | | 27.00000 | 14.00000 | 46.47500 | -8.0458 | 0.0 | 2.4698 | - | - | - | * |
| | | 28.00000 | 14.00000 | 46.47500 | -7.3375 | 0.0 | 2.3406 | - | - | - | * |
| | | 29.00000 | 14.00000 | 46.47500 | -6.6292 | 0.0 | 2.1610 | - | - | - | * |
| | | 30.00000 | 14.00000 | 46.47500 | -5.9250 | 0.0 | 1.9192 | - | - | - | * |
| | | 31.00000 | 14.00000 | 46.47500 | -5.5500 | 0.0 | 1.6763 | - | - | - | * |
| | | 32.00000 | 14.00000 | 46.47500 | -5.1750 | 0.0 | 1.4070 | - | - | - | * |
| | | 33.00000 | 14.00000 | 46.47500 | -4.8000 | 0.0 | 1.1285 | - | - | - | * |
| | | 34.00000 | 14.00000 | 46.47500 | -4.4250 | 0.0 | 0.85577 | - | - | - | * |
| | | 35.00000 | 14.00000 | 46.47500 | -4.0500 | 0.0 | 0.60099 | - | - | - | * |
| | | 36.00000 | 14.00000 | 46.47500 | -3.6750 | 0.0 | 0.37339 | - | - | - | * |
| | | 37.00000 | 14.00000 | 46.47500 | -3.3000 | 0.0 | 0.17947 | - | - | - | * |
| | | 38.00000 | 14.00000 | 46.47500 | -2.9250 | 0.0 | 0.022964 | - | - | - | * |
| | | 39.00000 | 14.00000 | 46.47500 | -2.5500 | 0.0 | -0.095040 | - | - | - | * |
| | | 40.00000 | 14.00000 | 46.47500 | -2.1750 | 0.0 | -0.17613 | - | - | - | * |
| | | 0.00000 | 15.00000 | 46.47500 | 8.6989 | 0.51386 | 1.2185 | - | - | - | * |
| | | 1.00000 | 15.00000 | 46.47500 | 9.4048 | 0.55556 | 0.98591 | - | - | - | * |
| | | 2.00000 | 15.00000 | 46.47500 | 10.111 | 0.59726 | 0.58471 | - | - | - | * |
| | | 3.00000 | 15.00000 | 46.47500 | 10.817 | 0.63895 | -0.064552 | - | - | - | * |
| | | 4.00000 | 15.00000 | 46.47500 | 11.522 | 0.68065 | -1.0836 | - | - | - | * |
| | | 5.00000 | 15.00000 | 46.47500 | 12.228 | 0.72235 | -2.6868 | - | - | - | * |
| | | 6.00000 | 15.00000 | 46.47500 | | | Point lies within an excavation. | | | | * |
| | | 7.00000 | 15.00000 | 46.47500 | | | Point lies within an excavation. | | | | * |
| | | 8.00000 | 15.00000 | 46.47500 | | | Point lies within an excavation. | | | | * |
| | | 9.00000 | 15.00000 | 46.47500 | | | Point lies within an excavation. | | | | * |
| | | 10.00000 | 15.00000 | 46.47500 | | | Point lies within an excavation. | | | | * |
| | | 11.00000 | 15.00000 | 46.47500 | | | Point lies within an excavation. | | | | * |
| | | 12.00000 | 15.00000 | 46.47500 | | | Point lies within an excavation. | | | | * |
| | | 13.00000 | 15.00000 | 46.47500 | | | Point lies within an excavation. | | | | * |
| | | 14.00000 | 15.00000 | 46.47500 | | | Point lies within an excavation. | | | | * |
| | | 15.00000 | 15.00000 | 46.47500 | | | Point lies within an excavation. | | | | * |
| | | 16.00000 | 15.00000 | 46.47500 | | | Point lies within an excavation. | | | | * |
| | | 17.00000 | 15.00000 | 46.47500 | | | Point lies within an excavation. | | | | * |
| | | 18.00000 | 15.00000 | 46.47500 | | | Point lies within an excavation. | | | | * |
| | | 19.00000 | 15.00000 | 46.47500 | | | Point lies within an excavation. | | | | * |
| | | 20.00000 | 15.00000 | 46.47500 | | | Point lies within an excavation. | | | | * |
| | | 21.00000 | 15.00000 | 46.47500 | -12.296 | 0.0 | 0.41138 | - | - | - | * |
| | | 22.00000 | 15.00000 | 46.47500 | -11.587 | 0.0 | 1.4437 | - | - | - | * |
| | | 23.00000 | 15.00000 | 46.47500 | -10.879 | 0.0 | 2.0397 | - | - | - | * |

| Type/No. | | Coordinates | | | Displacements | | | | | Angle of Line to x Axis | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Name | Dist. | x | y | z | x | y | z | Horizontal displacement | Horizontal displacement | | |
| | | 24.00000 | 15.00000 | 46.47500 | -10.171 | 0.0 | 2.3552 | - | - | - | * |
| | | 25.00000 | 15.00000 | 46.47500 | -9.4625 | 0.0 | 2.4872 | - | - | - | * |
| | | 26.00000 | 15.00000 | 46.47500 | -8.7542 | 0.0 | 2.4999 | - | - | - | * |
| | | 27.00000 | 15.00000 | 46.47500 | -8.0458 | 0.0 | 2.4346 | - | - | - | * |
| | | 28.00000 | 15.00000 | 46.47500 | -7.3375 | 0.0 | 2.3129 | - | - | - | * |
| | | 29.00000 | 15.00000 | 46.47500 | -6.6292 | 0.0 | 2.1388 | - | - | - | * |
| | | 30.00000 | 15.00000 | 46.47500 | -5.9250 | 0.0 | 1.9003 | - | - | - | * |
| | | 31.00000 | 15.00000 | 46.47500 | -5.5500 | 0.0 | 1.6617 | - | - | - | * |
| | | 32.00000 | 15.00000 | 46.47500 | -5.1750 | 0.0 | 1.3950 | - | - | - | * |
| | | 33.00000 | 15.00000 | 46.47500 | -4.8000 | 0.0 | 1.1185 | - | - | - | * |
| | | 34.00000 | 15.00000 | 46.47500 | -4.4250 | 0.0 | 0.84746 | - | - | - | * |
| | | 35.00000 | 15.00000 | 46.47500 | -4.0500 | 0.0 | 0.59400 | - | - | - | * |
| | | 36.00000 | 15.00000 | 46.47500 | -3.6750 | 0.0 | 0.36749 | - | - | - | * |
| | | 37.00000 | 15.00000 | 46.47500 | -3.3000 | 0.0 | 0.17445 | - | - | - | * |
| | | 38.00000 | 15.00000 | 46.47500 | -2.9250 | 0.0 | 0.018684 | - | - | - | * |
| | | 39.00000 | 15.00000 | 46.47500 | -2.5500 | 0.0 | -0.098708 | - | - | - | * |
| | | 40.00000 | 15.00000 | 46.47500 | -2.1750 | 0.0 | -0.17928 | - | - | - | * |
| | | 0.00000 | 16.00000 | 46.47500 | 8.7406 | 0.51632 | 1.2227 | - | - | - | * |
| | | 1.00000 | 16.00000 | 46.47500 | 9.4465 | 0.55802 | 0.97958 | - | - | - | * |
| | | 2.00000 | 16.00000 | 46.47500 | 10.152 | 0.59972 | 0.56083 | - | - | - | * |
| | | 3.00000 | 16.00000 | 46.47500 | 10.858 | 0.64142 | -0.11699 | - | - | - | * |
| | | 4.00000 | 16.00000 | 46.47500 | 11.564 | 0.68311 | -1.1795 | - | - | - | * |
| | | 5.00000 | 16.00000 | 46.47500 | 12.270 | 0.72481 | -2.8205 | - | - | - | * |
| | | 6.00000 | 16.00000 | 46.47500 | Point lies within an excavation. | | | | | | * |
| | | 7.00000 | 16.00000 | 46.47500 | Point lies within an excavation. | | | | | | * |
| | | 8.00000 | 16.00000 | 46.47500 | Point lies within an excavation. | | | | | | * |
| | | 9.00000 | 16.00000 | 46.47500 | Point lies within an excavation. | | | | | | * |
| | | 10.00000 | 16.00000 | 46.47500 | Point lies within an excavation. | | | | | | * |
| | | 11.00000 | 16.00000 | 46.47500 | Point lies within an excavation. | | | | | | * |
| | | 12.00000 | 16.00000 | 46.47500 | Point lies within an excavation. | | | | | | * |
| | | 13.00000 | 16.00000 | 46.47500 | Point lies within an excavation. | | | | | | * |
| | | 14.00000 | 16.00000 | 46.47500 | Point lies within an excavation. | | | | | | * |
| | | 15.00000 | 16.00000 | 46.47500 | Point lies within an excavation. | | | | | | * |
| | | 16.00000 | 16.00000 | 46.47500 | Point lies within an excavation. | | | | | | * |
| | | 17.00000 | 16.00000 | 46.47500 | Point lies within an excavation. | | | | | | * |
| | | 18.00000 | 16.00000 | 46.47500 | Point lies within an excavation. | | | | | | * |
| | | 19.00000 | 16.00000 | 46.47500 | Point lies within an excavation. | | | | | | * |
| | | 20.00000 | 16.00000 | 46.47500 | Point lies within an excavation. | | | | | | * |
| | | 21.00000 | 16.00000 | 46.47500 | -12.296 | 0.0 | 0.36797 | - | - | - | * |
| | | 22.00000 | 16.00000 | 46.47500 | -11.587 | 0.0 | 1.4020 | - | - | - | * |
| | | 23.00000 | 16.00000 | 46.47500 | -10.879 | 0.0 | 2.0021 | - | - | - | * |
| | | 24.00000 | 16.00000 | 46.47500 | -10.171 | 0.0 | 2.3241 | - | - | - | * |
| | | 25.00000 | 16.00000 | 46.47500 | -9.4625 | 0.0 | 2.4623 | - | - | - | * |
| | | 26.00000 | 16.00000 | 46.47500 | -8.7542 | 0.0 | 2.4803 | - | - | - | * |
| | | 27.00000 | 16.00000 | 46.47500 | -8.0458 | 0.0 | 2.4191 | - | - | - | * |
| | | 28.00000 | 16.00000 | 46.47500 | -7.3375 | 0.0 | 2.3005 | - | - | - | * |
| | | 29.00000 | 16.00000 | 46.47500 | -6.6292 | 0.0 | 2.1290 | - | - | - | * |
| | | 30.00000 | 16.00000 | 46.47500 | -5.9250 | 0.0 | 1.8923 | - | - | - | * |
| | | 31.00000 | 16.00000 | 46.47500 | -5.5500 | 0.0 | 1.6552 | - | - | - | * |
| | | 32.00000 | 16.00000 | 46.47500 | -5.1750 | 0.0 | 1.3897 | - | - | - | * |
| | | 33.00000 | 16.00000 | 46.47500 | -4.8000 | 0.0 | 1.1142 | - | - | - | * |
| | | 34.00000 | 16.00000 | 46.47500 | -4.4250 | 0.0 | 0.84388 | - | - | - | * |
| | | 35.00000 | 16.00000 | 46.47500 | -4.0500 | 0.0 | 0.59102 | - | - | - | * |
| | | 36.00000 | 16.00000 | 46.47500 | -3.6750 | 0.0 | 0.36499 | - | - | - | * |
| | | 37.00000 | 16.00000 | 46.47500 | -3.3000 | 0.0 | 0.17235 | - | - | - | * |
| | | 38.00000 | 16.00000 | 46.47500 | -2.9250 | 0.0 | 0.016905 | - | - | - | * |
| | | 39.00000 | 16.00000 | 46.47500 | -2.5500 | 0.0 | -0.10022 | - | - | - | * |
| | | 40.00000 | 16.00000 | 46.47500 | -2.1750 | 0.0 | -0.18057 | - | - | - | * |
| | | 0.00000 | 17.00000 | 46.47500 | 8.7823 | 0.51879 | 1.2671 | - | - | - | * |
| | | 1.00000 | 17.00000 | 46.47500 | 9.4892 | 0.56048 | 1.0244 | - | - | - | * |
| | | 2.00000 | 17.00000 | 46.47500 | 10.194 | 0.60218 | 0.60160 | - | - | - | * |
| | | 3.00000 | 17.00000 | 46.47500 | 10.900 | 0.64388 | -0.091320 | - | - | - | * |
| | | 4.00000 | 17.00000 | 46.47500 | 11.606 | 0.68558 | -1.2008 | - | - | - | * |
| | | 5.00000 | 17.00000 | 46.47500 | 12.312 | 0.72727 | -3.0414 | - | - | - | * |
| | | 6.00000 | 17.00000 | 46.47500 | Point lies within an excavation. | | | | | | * |
| | | 7.00000 | 17.00000 | 46.47500 | Point lies within an excavation. | | | | | | * |
| | | 8.00000 | 17.00000 | 46.47500 | Point lies within an excavation. | | | | | | * |
| | | 9.00000 | 17.00000 | 46.47500 | Point lies within an excavation. | | | | | | * |
| | | 10.00000 | 17.00000 | 46.47500 | Point lies within an excavation. | | | | | | * |
| | | 11.00000 | 17.00000 | 46.47500 | Point lies within an excavation. | | | | | | * |
| | | 12.00000 | 17.00000 | 46.47500 | Point lies within an excavation. | | | | | | * |
| | | 13.00000 | 17.00000 | 46.47500 | Point lies within an excavation. | | | | | | * |
| | | 14.00000 | 17.00000 | 46.47500 | Point lies within an excavation. | | | | | | * |
| | | 15.00000 | 17.00000 | 46.47500 | Point lies within an excavation. | | | | | | * |
| | | 16.00000 | 17.00000 | 46.47500 | Point lies within an excavation. | | | | | | * |
| | | 17.00000 | 17.00000 | 46.47500 | Point lies within an excavation. | | | | | | * |
| | | 18.00000 | 17.00000 | 46.47500 | Point lies within an excavation. | | | | | | * |
| | | 19.00000 | 17.00000 | 46.47500 | Point lies within an excavation. | | | | | | * |
| | | 20.00000 | 17.00000 | 46.47500 | Point lies within an excavation. | | | | | | * |
| | | 21.00000 | 17.00000 | 46.47500 | -11.327 | -5.0343 | 0.64062 | - | - | - | * |
| | | 22.00000 | 17.00000 | 46.47500 | -11.179 | -1.8560 | 1.4525 | - | - | - | * |
| | | 23.00000 | 17.00000 | 46.47500 | -10.647 | -1.0521 | 2.0264 | - | - | - | * |
| | | 24.00000 | 17.00000 | 46.47500 | -10.015 | -0.70386 | 2.3369 | - | - | - | * |
| | | 25.00000 | 17.00000 | 46.47500 | -9.3494 | -0.50971 | 2.4695 | - | - | - | * |
| | | 26.00000 | 17.00000 | 46.47500 | -8.6682 | -0.38597 | 2.4847 | - | - | - | * |
| | | 27.00000 | 17.00000 | 46.47500 | -7.9787 | -0.30024 | 2.4220 | - | - | - | * |
| | | 28.00000 | 17.00000 | 46.47500 | -7.2842 | -0.23733 | 2.3025 | - | - | - | * |
| | | 29.00000 | 17.00000 | 46.47500 | -6.5864 | -0.18921 | 2.1303 | - | - | - | * |
| | | 30.00000 | 17.00000 | 46.47500 | -5.8916 | -0.15135 | 1.8934 | - | - | - | * |
| | | 31.00000 | 17.00000 | 46.47500 | -5.5217 | -0.12827 | 1.6560 | - | - | - | * |
| | | 32.00000 | 17.00000 | 46.47500 | -5.1508 | -0.10921 | 1.3903 | - | - | - | * |
| | | 33.00000 | 17.00000 | 46.47500 | -4.7793 | -0.093195 | 1.1147 | - | - | - | * |
| | | 34.00000 | 17.00000 | 46.47500 | -4.4072 | -0.079552 | 0.84430 | - | - | - | * |
| | | 35.00000 | 17.00000 | 46.47500 | -4.0348 | -0.067789 | 0.59141 | - | - | - | * |
| | | 36.00000 | 17.00000 | 46.47500 | -3.6620 | -0.057544 | 0.36538 | - | - | - | * |
| | | 37.00000 | 17.00000 | 46.47500 | -3.2890 | -0.048541 | 0.17274 | - | - | - | * |
| | | 38.00000 | 17.00000 | 46.47500 | -2.9157 | -0.040566 | 0.017305 | - | - | - | * |
| | | 39.00000 | 17.00000 | 46.47500 | -2.5423 | -0.033453 | -0.099812 | - | - | - | * |
| | | 40.00000 | 17.00000 | 46.47500 | -2.1687 | -0.027070 | -0.18016 | - | - | - | * |
| | | 0.00000 | 18.00000 | 46.47500 | 8.8240 | 0.52125 | 1.3526 | - | - | - | * |
| | | 1.00000 | 18.00000 | 46.47500 | 9.5299 | 0.56295 | 1.1227 | - | - | - | * |
| | | 2.00000 | 18.00000 | 46.47500 | 10.236 | 0.60464 | 0.71292 | - | - | - | * |
| | | 3.00000 | 18.00000 | 46.47500 | 10.942 | 0.64634 | 0.028447 | - | - | - | * |
| | | 4.00000 | 18.00000 | 46.47500 | 11.648 | 0.68804 | -1.0942 | - | - | - | * |
| | | 5.00000 | 18.00000 | 46.47500 | 12.353 | 0.72974 | -3.0236 | - | - | - | * |
| | | 6.00000 | 18.00000 | 46.47500 | Point lies within an excavation. | | | | | | * |
| | | 7.00000 | 18.00000 | 46.47500 | Point lies within an excavation. | | | | | | * |
| | | 8.00000 | 18.00000 | 46.47500 | Point lies within an excavation. | | | | | | * |
| | | 9.00000 | 18.00000 | 46.47500 | Point lies within an excavation. | | | | | | * |
| | | 10.00000 | 18.00000 | 46.47500 | Point lies within an excavation. | | | | | | * |
| | | 11.00000 | 18.00000 | 46.47500 | Point lies within an excavation. | | | | | | * |
| | | 12.00000 | 18.00000 | 46.47500 | Point lies within an excavation. | | | | | | * |
| | | 13.00000 | 18.00000 | 46.47500 | Point lies within an excavation. | | | | | | * |
| | | 14.00000 | 18.00000 | 46.47500 | Point lies within an excavation. | | | | | | * |
| | | 15.00000 | 18.00000 | 46.47500 | Point lies within an excavation. | | | | | | * |
| | | 16.00000 | 18.00000 | 46.47500 | Point lies within an excavation. | | | | | | * |
| | | 17.00000 | 18.00000 | 46.47500 | Point lies within an excavation. | | | | | | * |
| | | 18.00000 | 18.00000 | 46.47500 | Point lies within an excavation. | | | | | | * |
| | | 19.00000 | 18.00000 | 46.47500 | Point lies within an excavation. | | | | | | * |
| | | 20.00000 | 18.00000 | 46.47500 | -11.206 | -8.5381 | 1.2984 | - | - | - | * |
| | | 21.00000 | 18.00000 | 46.47500 | -10.690 | -8.1444 | 2.8122 | - | - | - | * |
| | | 22.00000 | 18.00000 | 46.47500 | -12.596 | -5.8978 | 4.2429 | - | - | - | * |
| | | 23.00000 | 18.00000 | 46.47500 | -10.397 | -4.6209 | 2.7215 | - | - | - | * |
| | | 24.00000 | 18.00000 | 46.47500 | -9.3093 | -3.3369 | 2.3378 | - | - | - | * |
| | | 25.00000 | 18.00000 | 46.47500 | -8.8202 | -2.4580 | 2.4576 | - | - | - | * |
| | | 26.00000 | 18.00000 | 46.47500 | -8.2562 | -1.8783 | 2.4680 | - | - | - | * |
| | | 27.00000 | 18.00000 | 46.47500 | -7.6498 | -1.4689 | 2.4039 | - | - | - | * |
| | | 28.00000 | 18.00000 | 46.47500 | -7.0170 | -1.1650 | 2.2837 | - | - | - | * |
| | | 29.00000 | 18.00000 | 46.47500 | -6.3669 | -0.93079 | 2.1100 | - | - | - | * |
| | | 30.00000 | 18.00000 | 46.47500 | -5.7354 | -0.74885 | 1.8749 | - | - | - | * |
| | | 31.00000 | 18.00000 | 46.47500 | -5.3874 | -0.63542 | 1.6372 | - | - | - | * |
| | | 32.00000 | 18.00000 | 46.47500 | -5.0347 | -0.54144 | 1.3724 | - | - | - | * |
| | | 33.00000 | 18.00000 | 46.47500 | -4.6785 | -0.46232 | 1.0983 | - | - | - | * |
| | | 34.00000 | 18.00000 | 46.47500 | -4.3196 | -0.39481 | 0.83003 | - | - | - | * |
| | | 35.00000 | 18.00000 | 46.47500 | -3.9584 | -0.33653 | 0.57943 | - | - | - | * |
| | | 36.00000 | 18.00000 | 46.47500 | -3.5955 | -0.28571 | 0.35573 | - | - | - | * |
| | | 37.00000 | 18.00000 | 46.47500 | -3.2311 | -0.24101 | 0.16535 | - | - | - | * |
| | | 38.00000 | 18.00000 | 46.47500 | -2.8655 | -0.20139 | 0.011998 | - | - | - | * |
| | | 39.00000 | 18.00000 | 46.47500 | -2.4989 | -0.16603 | -0.10328 | - | - | - | * |
| | | 40.00000 | 18.00000 | 46.47500 | -2.1315 | -0.13428 | -0.18210 | - | - | - | * |
| | | 0.00000 | 19.00000 | 46.47500 | 8.8657 | 0.52371 | 1.4777 | - | - | - | * |

| Type/No. | | Coordinates | | | Displacements | | | | | Angle of Line |
|---|---|---|---|---|---|---|---|---|---|---|
| Name | Dist. | x | y | z | x | y | z | Horizontal displacement | Horizontal displacement | to x Axis |
| | | 1.00000 | 19.00000 | 46.47500 | 9.5716 | 0.56541 | 1.2737 | - | - | - * |
| | | 2.00000 | 19.00000 | 46.47500 | 10.277 | 0.60711 | 0.89669 | - | - | - * |
| | | 3.00000 | 19.00000 | 46.47500 | 10.983 | 0.64880 | 0.25358 | - | - | - * |
| | | 4.00000 | 19.00000 | 46.47500 | 11.689 | 0.69050 | -0.82085 | - | - | - * |
| | | 5.00000 | 19.00000 | 46.47500 | 12.395 | 0.73220 | -2.7586 | - | - | - * |
| | | 6.00000 | 19.00000 | 46.47500 | Point lies within an excavation. | | | | | * |
| | | 7.00000 | 19.00000 | 46.47500 | Point lies within an excavation. | | | | | * |
| | | 8.00000 | 19.00000 | 46.47500 | Point lies within an excavation. | | | | | * |
| | | 9.00000 | 19.00000 | 46.47500 | Point lies within an excavation. | | | | | * |
| | | 10.00000 | 19.00000 | 46.47500 | Point lies within an excavation. | | | | | * |
| | | 11.00000 | 19.00000 | 46.47500 | Point lies within an excavation. | | | | | * |
| | | 12.00000 | 19.00000 | 46.47500 | Point lies within an excavation. | | | | | * |
| | | 13.00000 | 19.00000 | 46.47500 | Point lies within an excavation. | | | | | * |
| | | 14.00000 | 19.00000 | 46.47500 | Point lies within an excavation. | | | | | * |
| | | 15.00000 | 19.00000 | 46.47500 | Point lies within an excavation. | | | | | * |
| | | 16.00000 | 19.00000 | 46.47500 | Point lies within an excavation. | | | | | * |
| | | 17.00000 | 19.00000 | 46.47500 | Point lies within an excavation. | | | | | * |
| | | 18.00000 | 19.00000 | 46.47500 | Point lies within an excavation. | | | | | * |
| | | 19.00000 | 19.00000 | 46.47500 | -11.332 | -8.6337 | 0.19371 | - | - | - * |
| | | 20.00000 | 19.00000 | 46.47500 | -10.811 | -8.2371 | 2.0597 | - | - | - * |
| | | 21.00000 | 19.00000 | 46.47500 | -10.306 | -7.8523 | 3.3443 | - | - | - * |
| | | 22.00000 | 19.00000 | 46.47500 | -9.8158 | -7.4787 | 4.2723 | - | - | - * |
| | | 23.00000 | 19.00000 | 46.47500 | -10.047 | -6.6262 | 4.8631 | - | - | - * |
| | | 24.00000 | 19.00000 | 46.47500 | -11.017 | -5.3124 | 4.8607 | - | - | - * |
| | | 25.00000 | 19.00000 | 46.47500 | -9.4670 | -4.2076 | 3.3664 | - | - | - * |
| | | 26.00000 | 19.00000 | 46.47500 | -7.7653 | -3.1830 | 2.4151 | - | - | - * |
| | | 27.00000 | 19.00000 | 46.47500 | -7.2436 | -2.5170 | 2.3497 | - | - | - * |
| | | 28.00000 | 19.00000 | 46.47500 | -6.6769 | -2.0106 | 2.2301 | - | - | - * |
| | | 29.00000 | 19.00000 | 46.47500 | -6.0793 | -1.6138 | 2.0543 | - | - | - * |
| | | 30.00000 | 19.00000 | 46.47500 | -5.5472 | -1.3158 | 1.8254 | - | - | - * |
| | | 31.00000 | 19.00000 | 46.47500 | -5.2231 | -1.1194 | 1.5883 | - | - | - * |
| | | 32.00000 | 19.00000 | 46.47500 | -4.8904 | -0.95563 | 1.3264 | - | - | - * |
| | | 33.00000 | 19.00000 | 46.47500 | -4.5513 | -0.81711 | 1.0569 | - | - | - * |
| | | 34.00000 | 19.00000 | 46.47500 | -4.2069 | -0.69847 | 0.79400 | - | - | - * |
| | | 35.00000 | 19.00000 | 46.47500 | -3.8585 | -0.59573 | 0.54916 | - | - | - * |
| | | 36.00000 | 19.00000 | 46.47500 | -3.5067 | -0.50593 | 0.33123 | - | - | - * |
| | | 37.00000 | 19.00000 | 46.47500 | -3.1522 | -0.42678 | 0.14638 | - | - | - * |
| | | 38.00000 | 19.00000 | 46.47500 | -2.7953 | -0.35650 | -0.0018921 | - | - | - * |
| | | 39.00000 | 19.00000 | 46.47500 | -2.4366 | -0.29369 | -0.11272 | - | - | - * |
| | | 40.00000 | 19.00000 | 46.47500 | -2.0761 | -0.23722 | -0.18785 | - | - | - * |
| | | 0.00000 | 20.00000 | 46.47500 | 8.9074 | 0.52618 | 1.6382 | - | - | - * |
| | | 1.00000 | 20.00000 | 46.47500 | 9.6133 | 0.56787 | 1.4719 | - | - | - * |
| | | 2.00000 | 20.00000 | 46.47500 | 10.319 | 0.60957 | 1.1465 | - | - | - * |
| | | 3.00000 | 20.00000 | 46.47500 | 11.025 | 0.65127 | 0.57836 | - | - | - * |
| | | 4.00000 | 20.00000 | 46.47500 | 11.731 | 0.69296 | -0.37496 | - | - | - * |
| | | 5.00000 | 20.00000 | 46.47500 | 12.437 | 0.73466 | -2.0460 | - | - | - * |
| | | 6.00000 | 20.00000 | 46.47500 | Point lies within an excavation. | | | | | * |
| | | 7.00000 | 20.00000 | 46.47500 | Point lies within an excavation. | | | | | * |
| | | 8.00000 | 20.00000 | 46.47500 | Point lies within an excavation. | | | | | * |
| | | 9.00000 | 20.00000 | 46.47500 | Point lies within an excavation. | | | | | * |
| | | 10.00000 | 20.00000 | 46.47500 | Point lies within an excavation. | | | | | * |
| | | 11.00000 | 20.00000 | 46.47500 | Point lies within an excavation. | | | | | * |
| | | 12.00000 | 20.00000 | 46.47500 | Point lies within an excavation. | | | | | * |
| | | 13.00000 | 20.00000 | 46.47500 | Point lies within an excavation. | | | | | * |
| | | 14.00000 | 20.00000 | 46.47500 | Point lies within an excavation. | | | | | * |
| | | 15.00000 | 20.00000 | 46.47500 | Point lies within an excavation. | | | | | * |
| | | 16.00000 | 20.00000 | 46.47500 | Point lies within an excavation. | | | | | * |
| | | 17.00000 | 20.00000 | 46.47500 | Point lies within an excavation. | | | | | * |
| | | 18.00000 | 20.00000 | 46.47500 | Point lies within an excavation. | | | | | * |
| | | 19.00000 | 20.00000 | 46.47500 | -10.934 | -8.3304 | 1.4753 | - | - | - * |
| | | 20.00000 | 20.00000 | 46.47500 | -10.425 | -7.9428 | 2.8259 | - | - | - * |
| | | 21.00000 | 20.00000 | 46.47500 | -9.9313 | -7.5667 | 3.8397 | - | - | - * |
| | | 22.00000 | 20.00000 | 46.47500 | -9.4517 | -7.2013 | 4.5748 | - | - | - * |
| | | 23.00000 | 20.00000 | 46.47500 | -8.9857 | -6.8462 | 5.0819 | - | - | - * |
| | | 24.00000 | 20.00000 | 46.47500 | -8.5678 | -6.4786 | 5.3890 | - | - | - * |
| | | 25.00000 | 20.00000 | 46.47500 | -9.2682 | -5.4294 | 5.0371 | - | - | - * |
| | | 26.00000 | 20.00000 | 46.47500 | -9.5628 | -4.6477 | 4.4572 | - | - | - * |
| | | 27.00000 | 20.00000 | 46.47500 | -8.5369 | -3.7942 | 3.2034 | - | - | - * |
| | | 28.00000 | 20.00000 | 46.47500 | -6.2821 | -2.7241 | 2.1425 | - | - | - * |
| | | 29.00000 | 20.00000 | 46.47500 | -5.7371 | -2.2003 | 1.9623 | - | - | - * |
| | | 30.00000 | 20.00000 | 46.47500 | -5.3336 | -1.8317 | 1.7451 | - | - | - * |
| | | 31.00000 | 20.00000 | 46.47500 | -5.0338 | -1.5641 | 1.5102 | - | - | - * |
| | | 32.00000 | 20.00000 | 46.47500 | -4.7219 | -1.3390 | 1.2538 | - | - | - * |
| | | 33.00000 | 20.00000 | 46.47500 | -4.4007 | -1.1472 | 0.99186 | - | - | - * |
| | | 34.00000 | 20.00000 | 46.47500 | -4.0720 | -0.98199 | 0.73759 | - | - | - * |
| | | 35.00000 | 20.00000 | 46.47500 | -3.7372 | -0.83831 | 0.50189 | - | - | - * |
| | | 36.00000 | 20.00000 | 46.47500 | -3.3975 | -0.71224 | 0.29306 | - | - | - * |
| | | 37.00000 | 20.00000 | 46.47500 | -3.0536 | -0.60079 | 0.11686 | - | - | - * |
| | | 38.00000 | 20.00000 | 46.47500 | -2.7064 | -0.50157 | -0.023512 | - | - | - * |
| | | 39.00000 | 20.00000 | 46.47500 | -2.3562 | -0.41269 | -0.12745 | - | - | - * |
| | | 40.00000 | 20.00000 | 46.47500 | -2.0035 | -0.33264 | -0.19688 | - | - | - * |
| | | 0.00000 | 21.00000 | 46.47500 | 8.8382 | 0.40444 | 1.8270 | - | - | - * |
| | | 1.00000 | 21.00000 | 46.47500 | 9.5888 | 0.49592 | 1.7071 | - | - | - * |
| | | 2.00000 | 21.00000 | 46.47500 | 10.361 | 0.61203 | 1.4464 | - | - | - * |
| | | 3.00000 | 21.00000 | 46.47500 | 11.067 | 0.65373 | 0.97568 | - | - | - * |
| | | 4.00000 | 21.00000 | 46.47500 | 11.773 | 0.69543 | 0.19004 | - | - | - * |
| | | 5.00000 | 21.00000 | 46.47500 | 12.478 | 0.73713 | -1.1122 | - | - | - * |
| | | 6.00000 | 21.00000 | 46.47500 | Point lies within an excavation. | | | | | * |
| | | 7.00000 | 21.00000 | 46.47500 | Point lies within an excavation. | | | | | * |
| | | 8.00000 | 21.00000 | 46.47500 | Point lies within an excavation. | | | | | * |
| | | 9.00000 | 21.00000 | 46.47500 | Point lies within an excavation. | | | | | * |
| | | 10.00000 | 21.00000 | 46.47500 | Point lies within an excavation. | | | | | * |
| | | 11.00000 | 21.00000 | 46.47500 | Point lies within an excavation. | | | | | * |
| | | 12.00000 | 21.00000 | 46.47500 | Point lies within an excavation. | | | | | * |
| | | 13.00000 | 21.00000 | 46.47500 | Point lies within an excavation. | | | | | * |
| | | 14.00000 | 21.00000 | 46.47500 | Point lies within an excavation. | | | | | * |
| | | 15.00000 | 21.00000 | 46.47500 | Point lies within an excavation. | | | | | * |
| | | 16.00000 | 21.00000 | 46.47500 | Point lies within an excavation. | | | | | * |
| | | 17.00000 | 21.00000 | 46.47500 | Point lies within an excavation. | | | | | * |
| | | 18.00000 | 21.00000 | 46.47500 | -11.057 | -8.4244 | 1.1654 | - | - | - * |
| | | 19.00000 | 21.00000 | 46.47500 | -10.545 | -8.0341 | 2.4825 | - | - | - * |
| | | 20.00000 | 21.00000 | 46.47500 | -10.047 | -7.6552 | 3.5068 | - | - | - * |
| | | 21.00000 | 21.00000 | 46.47500 | -9.5647 | -7.2874 | 4.2792 | - | - | - * |
| | | 22.00000 | 21.00000 | 46.47500 | -9.0955 | -6.9299 | 4.8313 | - | - | - * |
| | | 23.00000 | 21.00000 | 46.47500 | -8.6392 | -6.5823 | 5.1946 | - | - | - * |
| | | 24.00000 | 21.00000 | 46.47500 | -8.1951 | -6.2439 | 5.3976 | - | - | - * |
| | | 25.00000 | 21.00000 | 46.47500 | -7.7625 | -5.9143 | 5.4661 | - | - | - * |
| | | 26.00000 | 21.00000 | 46.47500 | -7.9548 | -5.2329 | 5.0311 | - | - | - * |
| | | 27.00000 | 21.00000 | 46.47500 | -8.1597 | -4.5447 | 4.3221 | - | - | - * |
| | | 28.00000 | 21.00000 | 46.47500 | -8.1481 | -3.9748 | 3.5484 | - | - | - * |
| | | 29.00000 | 21.00000 | 46.47500 | -7.6068 | -3.3808 | 2.6105 | - | - | - * |
| | | 30.00000 | 21.00000 | 46.47500 | -5.1034 | -2.2682 | 1.6353 | - | - | - * |
| | | 31.00000 | 21.00000 | 46.47500 | -4.8244 | -1.9570 | 1.4048 | - | - | - * |
| | | 32.00000 | 21.00000 | 46.47500 | -4.5332 | -1.6810 | 1.1567 | - | - | - * |
| | | 33.00000 | 21.00000 | 46.47500 | -4.2301 | -1.4438 | 0.90534 | - | - | - * |
| | | 34.00000 | 21.00000 | 46.47500 | -3.9173 | -1.2380 | 0.66297 | - | - | - * |
| | | 35.00000 | 21.00000 | 46.47500 | -3.5967 | -1.0580 | 0.43963 | - | - | - * |
| | | 36.00000 | 21.00000 | 46.47500 | -3.2696 | -0.89931 | 0.24300 | - | - | - * |
| | | 37.00000 | 21.00000 | 46.47500 | -2.9371 | -0.75843 | 0.078339 | - | - | - * |
| | | 38.00000 | 21.00000 | 46.47500 | -2.6000 | -0.63259 | -0.051570 | - | - | - * |
| | | 39.00000 | 21.00000 | 46.47500 | -2.2590 | -0.51955 | -0.14642 | - | - | - * |
| | | 40.00000 | 21.00000 | 46.47500 | -1.9147 | -0.41748 | -0.20841 | - | - | - * |
| | | 0.00000 | 22.00000 | 46.47500 | 7.7792 | -0.74609 | 1.9959 | - | - | - * |
| | | 1.00000 | 22.00000 | 46.47500 | 8.1833 | -1.0350 | 1.9264 | - | - | - * |
| | | 2.00000 | 22.00000 | 46.47500 | 8.4221 | -1.5038 | 1.7390 | - | - | - * |
| | | 3.00000 | 22.00000 | 46.47500 | 8.2942 | -2.3712 | 1.3825 | - | - | - * |
| | | 4.00000 | 22.00000 | 46.47500 | 7.1122 | -4.3826 | 0.80067 | - | - | - * |
| | | 5.00000 | 22.00000 | 46.47500 | 2.0599 | -10.545 | 0.0021585 | - | - | - * |
| | | 6.00000 | 22.00000 | 46.47500 | 0.73312 | -12.096 | -0.80470 | - | - | - * |
| | | 7.00000 | 22.00000 | 46.47500 | 0.73571 | -12.139 | -1.5245 | - | - | - * |
| | | 8.00000 | 22.00000 | 46.47500 | 0.73830 | -12.182 | -2.1090 | - | - | - * |
| | | 9.00000 | 22.00000 | 46.47500 | 0.0 | -13.797 | -0.70423 | - | - | - * |
| | | 10.00000 | 22.00000 | 46.47500 | 0.0 | -13.797 | -0.97027 | - | - | - * |
| | | 11.00000 | 22.00000 | 46.47500 | 0.0 | -13.797 | -1.0832 | - | - | - * |
| | | 12.00000 | 22.00000 | 46.47500 | 0.0 | -13.797 | -1.0448 | - | - | - * |
| | | 13.00000 | 22.00000 | 46.47500 | 0.0 | -13.797 | -0.85553 | - | - | - * |
| | | 14.00000 | 22.00000 | 46.47500 | 0.0 | -13.797 | -0.51517 | - | - | - * |
| | | 15.00000 | 22.00000 | 46.47500 | 0.0 | -13.797 | -0.027053 | - | - | - * |
| | | 16.00000 | 22.00000 | 46.47500 | 0.0 | -13.797 | 0.59730 | - | - | - * |
| | | 17.00000 | 22.00000 | 46.47500 | 0.0 | -13.797 | 1.3251 | - | - | - * |
| | | 18.00000 | 22.00000 | 46.47500 | -10.665 | -8.1259 | 2.3324 | - | - | - * |

| Type/No. | | Coordinates | | | Displacements | | | | | Angle of Line | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Name | Dist. | x | y | z | x | y | z | Horizontal displacement | Horizontal displacement | to x Axis | |
| | | 19.00000 | 22.00000 | 46.47500 | -10.165 | -7.7444 | 3.3199 | - | - | - | * |
| | | 20.00000 | 22.00000 | 46.47500 | -9.6784 | -7.3740 | 4.0842 | - | - | - | * |
| | | 21.00000 | 22.00000 | 46.47500 | -9.2060 | -7.0141 | 4.6487 | - | - | - | * |
| | | 22.00000 | 22.00000 | 46.47500 | -8.7467 | -6.6642 | 5.0351 | - | - | - | * |
| | | 23.00000 | 22.00000 | 46.47500 | -8.2998 | -6.3237 | 5.2658 | - | - | - | * |
| | | 24.00000 | 22.00000 | 46.47500 | -7.8645 | -5.9920 | 5.3626 | - | - | - | * |
| | | 25.00000 | 22.00000 | 46.47500 | -7.4402 | -5.6687 | 5.3463 | - | - | - | * |
| | | 26.00000 | 22.00000 | 46.47500 | -7.0259 | -5.3531 | 5.2362 | - | - | - | * |
| | | 27.00000 | 22.00000 | 46.47500 | -6.8855 | -4.8962 | 4.8340 | - | - | - | * |
| | | 28.00000 | 22.00000 | 46.47500 | -7.0028 | -4.2901 | 4.0551 | - | - | - | * |
| | | 29.00000 | 22.00000 | 46.47500 | -6.9489 | -3.7663 | 3.2639 | - | - | - | * |
| | | 30.00000 | 22.00000 | 46.47500 | -6.7556 | -3.3044 | 2.4972 | - | - | - | * |
| | | 31.00000 | 22.00000 | 46.47500 | -6.4476 | -2.8889 | 1.7850 | - | - | - | * |
| | | 32.00000 | 22.00000 | 46.47500 | -4.3380 | -1.9280 | 1.0384 | - | - | - | * |
| | | 33.00000 | 22.00000 | 46.47500 | -4.0425 | -1.7003 | 0.80045 | - | - | - | * |
| | | 34.00000 | 22.00000 | 46.47500 | -3.7457 | -1.4607 | 0.57303 | - | - | - | * |
| | | 35.00000 | 22.00000 | 46.47500 | -3.4394 | -1.2497 | 0.36503 | - | - | - | * |
| | | 36.00000 | 22.00000 | 46.47500 | -3.1251 | -1.0626 | 0.18340 | - | - | - | * |
| | | 37.00000 | 22.00000 | 46.47500 | -2.8042 | -0.89576 | 0.032814 | - | - | - | * |
| | | 38.00000 | 22.00000 | 46.47500 | -2.4777 | -0.74609 | -0.084404 | - | - | - | * |
| | | 39.00000 | 22.00000 | 46.47500 | -2.1464 | -0.61117 | -0.16833 | - | - | - | * |
| | | 40.00000 | 22.00000 | 46.47500 | -1.8108 | -0.48898 | -0.22148 | - | - | - | * |
| | | 0.00000 | 23.00000 | 46.47500 | 6.6855 | -1.7966 | 2.1110 | - | - | - | * |
| | | 1.00000 | 23.00000 | 46.47500 | 6.7874 | -2.3866 | 2.0844 | - | - | - | * |
| | | 2.00000 | 23.00000 | 46.47500 | 6.6005 | -3.2756 | 1.9642 | - | - | - | * |
| | | 3.00000 | 23.00000 | 46.47500 | 5.8844 | -4.7090 | 1.7193 | - | - | - | * |
| | | 4.00000 | 23.00000 | 46.47500 | 4.1769 | -7.1468 | 1.3298 | - | - | - | * |
| | | 5.00000 | 23.00000 | 46.47500 | 1.0281 | -10.963 | 0.82267 | - | - | - | * |
| | | 6.00000 | 23.00000 | 46.47500 | 0.69035 | -11.391 | 0.28420 | - | - | - | * |
| | | 7.00000 | 23.00000 | 46.47500 | 0.69294 | -11.433 | -0.21241 | - | - | - | * |
| | | 8.00000 | 23.00000 | 46.47500 | 0.69553 | -11.476 | -0.62962 | - | - | - | * |
| | | 9.00000 | 23.00000 | 46.47500 | 0.0 | -12.994 | 1.3210 | - | - | - | * |
| | | 10.00000 | 23.00000 | 46.47500 | 0.0 | -12.994 | 1.1155 | - | - | - | * |
| | | 11.00000 | 23.00000 | 46.47500 | 0.0 | -12.994 | 1.0260 | - | - | - | * |
| | | 12.00000 | 23.00000 | 46.47500 | 0.0 | -12.994 | 1.0534 | - | - | - | * |
| | | 13.00000 | 23.00000 | 46.47500 | 0.0 | -12.994 | 1.1964 | - | - | - | * |
| | | 14.00000 | 23.00000 | 46.47500 | 0.0 | -12.994 | 1.4508 | - | - | - | * |
| | | 15.00000 | 23.00000 | 46.47500 | 0.0 | -12.994 | 1.8078 | - | - | - | * |
| | | 16.00000 | 23.00000 | 46.47500 | 0.0 | -12.994 | 2.2503 | - | - | - | * |
| | | 17.00000 | 23.00000 | 46.47500 | 0.0 | -12.994 | 2.7485 | - | - | - | * |
| | | 18.00000 | 23.00000 | 46.47500 | -4.6144 | -8.0479 | 2.2467 | - | - | - | * |
| | | 19.00000 | 23.00000 | 46.47500 | -7.9902 | -6.6082 | 3.1538 | - | - | - | * |
| | | 20.00000 | 23.00000 | 46.47500 | -9.3172 | -7.0988 | 4.5580 | - | - | - | * |
| | | 21.00000 | 23.00000 | 46.47500 | -8.8549 | -6.7466 | 4.9428 | - | - | - | * |
| | | 22.00000 | 23.00000 | 46.47500 | -8.4051 | -6.4039 | 5.1824 | - | - | - | * |
| | | 23.00000 | 23.00000 | 46.47500 | -7.9672 | -6.0702 | 5.2939 | - | - | - | * |
| | | 24.00000 | 23.00000 | 46.47500 | -7.5402 | -5.7449 | 5.2948 | - | - | - | * |
| | | 25.00000 | 23.00000 | 46.47500 | -7.1237 | -5.4276 | 5.2021 | - | - | - | * |
| | | 26.00000 | 23.00000 | 46.47500 | -6.7167 | -5.1175 | 5.0323 | - | - | - | * |
| | | 27.00000 | 23.00000 | 46.47500 | -6.3186 | -4.8142 | 4.8007 | - | - | - | * |
| | | 28.00000 | 23.00000 | 46.47500 | -5.9733 | -4.4924 | 4.4773 | - | - | - | * |
| | | 29.00000 | 23.00000 | 46.47500 | -6.0121 | -3.9535 | 3.6796 | - | - | - | * |
| | | 30.00000 | 23.00000 | 46.47500 | -5.9120 | -3.4727 | 2.9064 | - | - | - | * |
| | | 31.00000 | 23.00000 | 46.47500 | -5.6946 | -3.0375 | 2.1845 | - | - | - | * |
| | | 32.00000 | 23.00000 | 46.47500 | -5.3776 | -2.6378 | 1.5341 | - | - | - | * |
| | | 33.00000 | 23.00000 | 46.47500 | -4.9758 | -2.2659 | 0.96826 | - | - | - | * |
| | | 34.00000 | 23.00000 | 46.47500 | -3.5725 | -1.5878 | 0.47185 | - | - | - | * |
| | | 35.00000 | 23.00000 | 46.47500 | -3.2673 | -1.4095 | 0.28126 | - | - | - | * |
| | | 36.00000 | 23.00000 | 46.47500 | -2.9659 | -1.1986 | 0.11703 | - | - | - | * |
| | | 37.00000 | 23.00000 | 46.47500 | -2.6567 | -1.0095 | -0.017354 | - | - | - | * |
| | | 38.00000 | 23.00000 | 46.47500 | -2.3410 | -0.83912 | -0.12009 | - | - | - | * |
| | | 39.00000 | 23.00000 | 46.47500 | -2.0194 | -0.68491 | -0.19170 | - | - | - | * |
| | | 40.00000 | 23.00000 | 46.47500 | -1.6930 | -0.54475 | -0.23504 | - | - | - | * |
| | | 0.00000 | 24.00000 | 46.47500 | 5.6543 | -2.6545 | 2.1703 | - | - | - | * |
| | | 1.00000 | 24.00000 | 46.47500 | 5.5502 | -3.4201 | 2.1761 | - | - | - | * |
| | | 2.00000 | 24.00000 | 46.47500 | 5.1414 | -4.4819 | 2.1081 | - | - | - | * |
| | | 3.00000 | 24.00000 | 46.47500 | 4.2769 | -5.9785 | 1.9475 | - | - | - | * |
| | | 4.00000 | 24.00000 | 46.47500 | 2.7938 | -8.0390 | 1.6845 | - | - | - | * |
| | | 5.00000 | 24.00000 | 46.47500 | 0.71363 | -10.565 | 1.3297 | - | - | - | * |
| | | 6.00000 | 24.00000 | 46.47500 | 0.64757 | -10.685 | 0.94237 | - | - | - | * |
| | | 7.00000 | 24.00000 | 46.47500 | 0.65017 | -10.728 | 0.58602 | - | - | - | * |
| | | 8.00000 | 24.00000 | 46.47500 | 0.65276 | -10.771 | 0.28413 | - | - | - | * |
| | | 9.00000 | 24.00000 | 46.47500 | 0.0 | -12.221 | 2.6924 | - | - | - | * |
| | | 10.00000 | 24.00000 | 46.47500 | 0.0 | -12.221 | 2.5342 | - | - | - | * |
| | | 11.00000 | 24.00000 | 46.47500 | 0.0 | -12.221 | 2.4639 | - | - | - | * |
| | | 12.00000 | 24.00000 | 46.47500 | 0.0 | -12.221 | 2.4834 | - | - | - | * |
| | | 13.00000 | 24.00000 | 46.47500 | 0.0 | -12.221 | 2.5912 | - | - | - | * |
| | | 14.00000 | 24.00000 | 46.47500 | 0.0 | -12.221 | 2.7826 | - | - | - | * |
| | | 15.00000 | 24.00000 | 46.47500 | 0.0 | -12.221 | 3.0488 | - | - | - | * |
| | | 16.00000 | 24.00000 | 46.47500 | 0.0 | -12.221 | 3.3756 | - | - | - | * |
| | | 17.00000 | 24.00000 | 46.47500 | 0.0 | -12.221 | 3.7432 | - | - | - | * |
| | | 18.00000 | 24.00000 | 46.47500 | -2.7757 | -8.4877 | 3.0070 | - | - | - | * |
| | | 19.00000 | 24.00000 | 46.47500 | -5.3370 | -6.9947 | 3.4387 | - | - | - | * |
| | | 20.00000 | 24.00000 | 46.47500 | -6.9975 | -6.1048 | 3.9678 | - | - | - | * |
| | | 21.00000 | 24.00000 | 46.47500 | -8.5111 | -6.4847 | 5.1609 | - | - | - | * |
| | | 22.00000 | 24.00000 | 46.47500 | -8.0704 | -6.1489 | 5.2724 | - | - | - | * |
| | | 23.00000 | 24.00000 | 46.47500 | -7.6409 | -5.8217 | 5.2788 | - | - | - | * |
| | | 24.00000 | 24.00000 | 46.47500 | -7.2220 | -5.5024 | 5.1948 | - | - | - | * |
| | | 25.00000 | 24.00000 | 46.47500 | -6.8128 | -5.1907 | 5.0348 | - | - | - | * |
| | | 26.00000 | 24.00000 | 46.47500 | -6.4126 | -4.8858 | 4.8129 | - | - | - | * |
| | | 27.00000 | 24.00000 | 46.47500 | -6.0208 | -4.5873 | 4.5423 | - | - | - | * |
| | | 28.00000 | 24.00000 | 46.47500 | -5.6366 | -4.2945 | 4.2354 | - | - | - | * |
| | | 29.00000 | 24.00000 | 46.47500 | -5.2592 | -4.0070 | 3.9031 | - | - | - | * |
| | | 30.00000 | 24.00000 | 46.47500 | -5.1408 | -3.5711 | 3.2275 | - | - | - | * |
| | | 31.00000 | 24.00000 | 46.47500 | -4.9951 | -3.1276 | 2.5012 | - | - | - | * |
| | | 32.00000 | 24.00000 | 46.47500 | -4.7494 | -2.7179 | 1.8429 | - | - | - | * |
| | | 33.00000 | 24.00000 | 46.47500 | -4.4168 | -2.3353 | 1.2647 | - | - | - | * |
| | | 34.00000 | 24.00000 | 46.47500 | -4.0089 | -1.9745 | 0.77208 | - | - | - | * |
| | | 35.00000 | 24.00000 | 46.47500 | -3.5356 | -1.6315 | 0.36343 | - | - | - | * |
| | | 36.00000 | 24.00000 | 46.47500 | -2.8070 | -1.2476 | 0.047665 | - | - | - | * |
| | | 37.00000 | 24.00000 | 46.47500 | -2.4962 | -1.0972 | -0.069593 | - | - | - | * |
| | | 38.00000 | 24.00000 | 46.47500 | -2.1911 | -0.90933 | -0.15657 | - | - | - | * |
| | | 39.00000 | 24.00000 | 46.47500 | -1.8796 | -0.73857 | -0.21495 | - | - | - | * |
| | | 40.00000 | 24.00000 | 46.47500 | -1.5623 | -0.58278 | -0.24801 | - | - | - | * |
| | | 0.00000 | 25.00000 | 46.47500 | 4.7386 | -3.2830 | 2.1763 | - | - | - | * |
| | | 1.00000 | 25.00000 | 46.47500 | 4.5222 | -4.1135 | 2.2041 | - | - | - | * |
| | | 2.00000 | 25.00000 | 46.47500 | 4.0411 | -5.5815 | 2.1717 | - | - | - | * |
| | | 3.00000 | 25.00000 | 46.47500 | 3.2238 | -6.5387 | 2.0670 | - | - | - | * |
| | | 4.00000 | 25.00000 | 46.47500 | 2.0353 | -8.1851 | 1.8825 | - | - | - | * |
| | | 5.00000 | 25.00000 | 46.47500 | 0.60221 | -9.9365 | 1.6209 | - | - | - | * |
| | | 6.00000 | 25.00000 | 46.47500 | 0.60480 | -9.9792 | 1.3335 | - | - | - | * |
| | | 7.00000 | 25.00000 | 46.47500 | 0.60739 | -10.022 | 1.0716 | - | - | - | * |
| | | 8.00000 | 25.00000 | 46.47500 | 0.60999 | -10.065 | 0.85049 | - | - | - | * |
| | | 9.00000 | 25.00000 | 46.47500 | 0.0 | -11.475 | 3.6084 | - | - | - | * |
| | | 10.00000 | 25.00000 | 46.47500 | 0.0 | -11.475 | 3.4861 | - | - | - | * |
| | | 11.00000 | 25.00000 | 46.47500 | 0.0 | -11.475 | 3.4310 | - | - | - | * |
| | | 12.00000 | 25.00000 | 46.47500 | 0.0 | -11.475 | 3.4448 | - | - | - | * |
| | | 13.00000 | 25.00000 | 46.47500 | 0.0 | -11.475 | 3.5265 | - | - | - | * |
| | | 14.00000 | 25.00000 | 46.47500 | 0.0 | -11.475 | 3.6719 | - | - | - | * |
| | | 15.00000 | 25.00000 | 46.47500 | 0.0 | -11.475 | 3.8738 | - | - | - | * |
| | | 16.00000 | 25.00000 | 46.47500 | 0.0 | -11.475 | 4.1216 | - | - | - | * |
| | | 17.00000 | 25.00000 | 46.47500 | 0.0 | -11.475 | 4.4019 | - | - | - | * |
| | | 18.00000 | 25.00000 | 46.47500 | -1.9119 | -8.4535 | 3.5769 | - | - | - | * |
| | | 19.00000 | 25.00000 | 46.47500 | -3.7323 | -6.9983 | 3.6526 | - | - | - | * |
| | | 20.00000 | 25.00000 | 46.47500 | -5.2582 | -6.2310 | 4.0495 | - | - | - | * |
| | | 21.00000 | 25.00000 | 46.47500 | -6.2292 | -5.5734 | 4.3199 | - | - | - | * |
| | | 22.00000 | 25.00000 | 46.47500 | -7.7422 | -5.8988 | 5.3065 | - | - | - | * |
| | | 23.00000 | 25.00000 | 46.47500 | -7.3208 | -5.5778 | 5.2219 | - | - | - | * |
| | | 24.00000 | 25.00000 | 46.47500 | -6.9094 | -5.2643 | 5.0643 | - | - | - | * |
| | | 25.00000 | 25.00000 | 46.47500 | -6.5071 | -4.9578 | 4.8463 | - | - | - | * |
| | | 26.00000 | 25.00000 | 46.47500 | -6.1134 | -4.6578 | 4.5800 | - | - | - | * |
| | | 27.00000 | 25.00000 | 46.47500 | -5.7274 | -4.3637 | 4.2771 | - | - | - | * |
| | | 28.00000 | 25.00000 | 46.47500 | -5.3485 | -4.0750 | 3.9481 | - | - | - | * |
| | | 29.00000 | 25.00000 | 46.47500 | -4.9758 | -3.7911 | 3.6029 | - | - | - | * |
| | | 30.00000 | 25.00000 | 46.47500 | -4.6087 | -3.5114 | 3.2502 | - | - | - | * |
| | | 31.00000 | 25.00000 | 46.47500 | -4.3583 | -3.1621 | 2.7323 | - | - | - | * |
| | | 32.00000 | 25.00000 | 46.47500 | -4.1692 | -2.7501 | 2.0732 | - | - | - | * |
| | | 33.00000 | 25.00000 | 46.47500 | -3.8938 | -2.3631 | 1.4905 | - | - | - | * |
| | | 34.00000 | 25.00000 | 46.47500 | -3.5422 | -1.9968 | 0.98874 | - | - | - | * |
| | | 35.00000 | 25.00000 | 46.47500 | -3.1235 | -1.6476 | 0.56633 | - | - | - | * |
| | | 36.00000 | 25.00000 | 46.47500 | -2.6457 | -1.3128 | 0.21469 | - | - | - | * |

| Type/No. Name | Dist. | Coordinates x | y | z | Displacements x | y | z | Horizontal displacement | Horizontal displacement | Angle of Line to x Axis | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 37.00000 | 25.00000 | 46.47500 | -2.3291 | -1.0875 | -0.035593 | - | - | - | * |
| | | 38.00000 | 25.00000 | 46.47500 | -2.0416 | -0.90736 | -0.19119 | - | - | - | * |
| | | 39.00000 | 25.00000 | 46.47500 | -1.7284 | -0.76819 | -0.23660 | - | - | - | * |
| | | 40.00000 | 25.00000 | 46.47500 | -1.4198 | -0.60147 | -0.25946 | - | - | - | * |
| | | 0.00000 | 26.00000 | 46.47500 | 3.9527 | -3.6883 | 2.1342 | - | - | - | * |
| | | 1.00000 | 26.00000 | 46.47500 | 3.6911 | -4.5110 | 2.1769 | - | - | - | * |
| | | 2.00000 | 26.00000 | 46.47500 | 3.2174 | -5.5051 | 2.1674 | - | - | - | * |
| | | 3.00000 | 26.00000 | 46.47500 | 2.5049 | -6.6774 | 2.0983 | - | - | - | * |
| | | 4.00000 | 26.00000 | 46.47500 | 1.5613 | -7.9923 | 1.9641 | - | - | - | * |
| | | 5.00000 | 26.00000 | 46.47500 | 0.55944 | -9.2307 | 1.7648 | - | - | - | * |
| | | 6.00000 | 26.00000 | 46.47500 | 0.56203 | -9.2735 | 1.5477 | - | - | - | * |
| | | 7.00000 | 26.00000 | 46.47500 | 0.56462 | -9.3163 | 1.3521 | - | - | - | * |
| | | 8.00000 | 26.00000 | 46.47500 | 0.56721 | -9.3590 | 1.1885 | - | - | - | * |
| | | 9.00000 | 26.00000 | 46.47500 | 0.0 | -10.755 | 4.1780 | - | - | - | * |
| | | 10.00000 | 26.00000 | 46.47500 | 0.0 | -10.755 | 4.0829 | - | - | - | * |
| | | 11.00000 | 26.00000 | 46.47500 | 0.0 | -10.755 | 4.0396 | - | - | - | * |
| | | 12.00000 | 26.00000 | 46.47500 | 0.0 | -10.755 | 4.0495 | - | - | - | * |
| | | 13.00000 | 26.00000 | 46.47500 | 0.0 | -10.755 | 4.1119 | - | - | - | * |
| | | 14.00000 | 26.00000 | 46.47500 | 0.0 | -10.755 | 4.2235 | - | - | - | * |
| | | 15.00000 | 26.00000 | 46.47500 | 0.0 | -10.755 | 4.3789 | - | - | - | * |
| | | 16.00000 | 26.00000 | 46.47500 | 0.0 | -10.755 | 4.5702 | - | - | - | * |
| | | 17.00000 | 26.00000 | 46.47500 | 0.0 | -10.755 | 4.7883 | - | - | - | * |
| | | 18.00000 | 26.00000 | 46.47500 | -1.4087 | -8.1789 | 3.9218 | - | - | - | * |
| | | 19.00000 | 26.00000 | 46.47500 | -2.7978 | -6.9856 | 3.9024 | - | - | - | * |
| | | 20.00000 | 26.00000 | 46.47500 | -4.0185 | -6.1650 | 4.0604 | - | - | - | * |
| | | 21.00000 | 26.00000 | 46.47500 | -4.9559 | -5.5768 | 4.2528 | - | - | - | * |
| | | 22.00000 | 26.00000 | 46.47500 | -5.5618 | -5.0493 | 4.3370 | - | - | - | * |
| | | 23.00000 | 26.00000 | 46.47500 | -5.9004 | -4.5785 | 4.3166 | - | - | - | * |
| | | 24.00000 | 26.00000 | 46.47500 | -6.6021 | -5.0302 | 4.9056 | - | - | - | * |
| | | 25.00000 | 26.00000 | 46.47500 | -6.2064 | -4.7287 | 4.6387 | - | - | - | * |
| | | 26.00000 | 26.00000 | 46.47500 | -5.8186 | -4.4333 | 4.3359 | - | - | - | * |
| | | 27.00000 | 26.00000 | 46.47500 | -5.4381 | -4.1433 | 4.0070 | - | - | - | * |
| | | 28.00000 | 26.00000 | 46.47500 | -5.0640 | -3.8583 | 3.6616 | - | - | - | * |
| | | 29.00000 | 26.00000 | 46.47500 | -4.6956 | -3.5776 | 3.3080 | - | - | - | * |
| | | 30.00000 | 26.00000 | 46.47500 | -4.3322 | -3.3008 | 2.9538 | - | - | - | * |
| | | 31.00000 | 26.00000 | 46.47500 | -3.9731 | -3.0272 | 2.6055 | - | - | - | * |
| | | 32.00000 | 26.00000 | 46.47500 | -3.6433 | -2.7370 | 2.2247 | - | - | - | * |
| | | 33.00000 | 26.00000 | 46.47500 | -3.4133 | -2.3509 | 1.6454 | - | - | - | * |
| | | 34.00000 | 26.00000 | 46.47500 | -3.1081 | -1.9834 | 1.1427 | - | - | - | * |
| | | 35.00000 | 26.00000 | 46.47500 | -2.7355 | -1.6318 | 0.71471 | - | - | - | * |
| | | 36.00000 | 26.00000 | 46.47500 | -2.3732 | -1.3299 | 0.36367 | - | - | - | * |
| | | 37.00000 | 26.00000 | 46.47500 | -2.1194 | -1.1163 | 0.10646 | - | - | - | * |
| | | 38.00000 | 26.00000 | 46.47500 | -1.8506 | -0.91959 | -0.078814 | - | - | - | * |
| | | 39.00000 | 26.00000 | 46.47500 | -1.5685 | -0.73784 | -0.19966 | - | - | - | * |
| | | 40.00000 | 26.00000 | 46.47500 | -1.2748 | -0.56941 | -0.26510 | - | - | - | * |
| | | 0.00000 | 27.00000 | 46.47500 | 3.2887 | -3.8983 | 2.0481 | - | - | - | * |
| | | 1.00000 | 27.00000 | 46.47500 | 3.0223 | -4.6734 | 2.1028 | - | - | - | * |
| | | 2.00000 | 27.00000 | 46.47500 | 2.5911 | -5.5650 | 2.1094 | - | - | - | * |
| | | 3.00000 | 27.00000 | 46.47500 | 1.9895 | -6.5612 | 2.0642 | - | - | - | * |
| | | 4.00000 | 27.00000 | 46.47500 | 1.2364 | -7.6220 | 1.9641 | - | - | - | * |
| | | 5.00000 | 27.00000 | 46.47500 | 0.51667 | -8.5250 | 1.8093 | - | - | - | * |
| | | 6.00000 | 27.00000 | 46.47500 | 0.51926 | -8.5678 | 1.6433 | - | - | - | * |
| | | 7.00000 | 27.00000 | 46.47500 | 0.52185 | -8.6105 | 1.4955 | - | - | - | * |
| | | 8.00000 | 27.00000 | 46.47500 | 0.52444 | -8.6533 | 1.3734 | - | - | - | * |
| | | 9.00000 | 27.00000 | 46.47500 | 0.0 | -10.059 | 4.4770 | - | - | - | * |
| | | 10.00000 | 27.00000 | 46.47500 | 0.0 | -10.059 | 4.4024 | - | - | - | * |
| | | 11.00000 | 27.00000 | 46.47500 | 0.0 | -10.059 | 4.3681 | - | - | - | * |
| | | 12.00000 | 27.00000 | 46.47500 | 0.0 | -10.059 | 4.3753 | - | - | - | * |
| | | 13.00000 | 27.00000 | 46.47500 | 0.0 | -10.059 | 4.4235 | - | - | - | * |
| | | 14.00000 | 27.00000 | 46.47500 | 0.0 | -10.059 | 4.5101 | - | - | - | * |
| | | 15.00000 | 27.00000 | 46.47500 | 0.0 | -10.059 | 4.6312 | - | - | - | * |
| | | 16.00000 | 27.00000 | 46.47500 | 0.0 | -10.059 | 4.7812 | - | - | - | * |
| | | 17.00000 | 27.00000 | 46.47500 | 0.0 | -10.059 | 4.9533 | - | - | - | * |
| | | 18.00000 | 27.00000 | 46.47500 | -1.0826 | -7.7976 | 4.0830 | - | - | - | * |
| | | 19.00000 | 27.00000 | 46.47500 | -2.1831 | -6.8448 | 4.0391 | - | - | - | * |
| | | 20.00000 | 27.00000 | 46.47500 | -3.1197 | -5.9783 | 3.9956 | - | - | - | * |
| | | 21.00000 | 27.00000 | 46.47500 | -3.9696 | -5.4651 | 4.1260 | - | - | - | * |
| | | 22.00000 | 27.00000 | 46.47500 | -4.5718 | -4.9846 | 4.1660 | - | - | - | * |
| | | 23.00000 | 27.00000 | 46.47500 | -4.9552 | -4.5410 | 4.1177 | - | - | - | * |
| | | 24.00000 | 27.00000 | 46.47500 | -5.1569 | -4.1332 | 3.9885 | - | - | - | * |
| | | 25.00000 | 27.00000 | 46.47500 | -5.9103 | -4.5031 | 4.4148 | - | - | - | * |
| | | 26.00000 | 27.00000 | 46.47500 | -5.5281 | -4.2119 | 4.0828 | - | - | - | * |
| | | 27.00000 | 27.00000 | 46.47500 | -5.1525 | -3.9257 | 3.7343 | - | - | - | * |
| | | 28.00000 | 27.00000 | 46.47500 | -4.7828 | -3.6441 | 3.3776 | - | - | - | * |
| | | 29.00000 | 27.00000 | 46.47500 | -4.4183 | -3.3664 | 3.0200 | - | - | - | * |
| | | 30.00000 | 27.00000 | 46.47500 | -4.0583 | -3.0920 | 2.6679 | - | - | - | * |
| | | 31.00000 | 27.00000 | 46.47500 | -3.7020 | -2.8205 | 2.3268 | - | - | - | * |
| | | 32.00000 | 27.00000 | 46.47500 | -3.3486 | -2.5513 | 2.0010 | - | - | - | * |
| | | 33.00000 | 27.00000 | 46.47500 | -2.9975 | -2.2838 | 1.6941 | - | - | - | * |
| | | 34.00000 | 27.00000 | 46.47500 | -2.7110 | -1.9357 | 1.2363 | - | - | - | * |
| | | 35.00000 | 27.00000 | 46.47500 | -2.3762 | -1.5847 | 0.81094 | - | - | - | * |
| | | 36.00000 | 27.00000 | 46.47500 | -2.1466 | -1.3402 | 0.46946 | - | - | - | * |
| | | 37.00000 | 27.00000 | 46.47500 | -1.9072 | -1.1191 | 0.20357 | - | - | - | * |
| | | 38.00000 | 27.00000 | 46.47500 | -1.6523 | -0.91454 | 0.0062282 | - | - | - | * |
| | | 39.00000 | 27.00000 | 46.47500 | -1.3835 | -0.72473 | -0.13017 | - | - | - | * |
| | | 40.00000 | 27.00000 | 46.47500 | -1.1026 | -0.54820 | -0.21478 | - | - | - | * |
| | | 0.00000 | 28.00000 | 46.47500 | 2.7297 | -3.9463 | 1.9173 | - | - | - | * |
| | | 1.00000 | 28.00000 | 46.47500 | 2.4807 | -4.6560 | 1.9860 | - | - | - | * |
| | | 2.00000 | 28.00000 | 46.47500 | 2.1039 | -5.4411 | 2.0070 | - | - | - | * |
| | | 3.00000 | 28.00000 | 46.47500 | 1.6033 | -6.2837 | 1.9804 | - | - | - | * |
| | | 4.00000 | 28.00000 | 46.47500 | 0.99860 | -7.1481 | 1.9056 | - | - | - | * |
| | | 5.00000 | 28.00000 | 46.47500 | 0.47389 | -7.8192 | 1.7844 | - | - | - | * |
| | | 6.00000 | 28.00000 | 46.47500 | 0.47649 | -7.8620 | 1.6564 | - | - | - | * |
| | | 7.00000 | 28.00000 | 46.47500 | 0.47908 | -7.9048 | 1.5440 | - | - | - | * |
| | | 8.00000 | 28.00000 | 46.47500 | 0.48167 | -7.9476 | 1.4526 | - | - | - | * |
| | | 9.00000 | 28.00000 | 46.47500 | 0.0 | -9.3851 | 4.5637 | - | - | - | * |
| | | 10.00000 | 28.00000 | 46.47500 | 0.0 | -9.3851 | 4.5047 | - | - | - | * |
| | | 11.00000 | 28.00000 | 46.47500 | 0.0 | -9.3851 | 4.4773 | - | - | - | * |
| | | 12.00000 | 28.00000 | 46.47500 | 0.0 | -9.3851 | 4.4827 | - | - | - | * |
| | | 13.00000 | 28.00000 | 46.47500 | 0.0 | -9.3851 | 4.5202 | - | - | - | * |
| | | 14.00000 | 28.00000 | 46.47500 | 0.0 | -9.3851 | 4.5883 | - | - | - | * |
| | | 15.00000 | 28.00000 | 46.47500 | 0.0 | -9.3851 | 4.6838 | - | - | - | * |
| | | 16.00000 | 28.00000 | 46.47500 | 0.0 | -9.3851 | 4.8026 | - | - | - | * |
| | | 17.00000 | 28.00000 | 46.47500 | 0.0 | -9.3851 | 4.9401 | - | - | - | * |
| | | 18.00000 | 28.00000 | 46.47500 | -0.85547 | -7.3654 | 4.0953 | - | - | - | * |
| | | 19.00000 | 28.00000 | 46.47500 | -1.7417 | -6.5905 | 4.0390 | - | - | - | * |
| | | 20.00000 | 28.00000 | 46.47500 | -2.5059 | -5.8249 | 3.9440 | - | - | - | * |
| | | 21.00000 | 28.00000 | 46.47500 | -3.2012 | -5.2733 | 3.9429 | - | - | - | * |
| | | 22.00000 | 28.00000 | 46.47500 | -3.7655 | -4.8434 | 3.9487 | - | - | - | * |
| | | 23.00000 | 28.00000 | 46.47500 | -4.1554 | -4.4347 | 3.8793 | - | - | - | * |
| | | 24.00000 | 28.00000 | 46.47500 | -4.3909 | -4.0500 | 3.7405 | - | - | - | * |
| | | 25.00000 | 28.00000 | 46.47500 | -4.4950 | -3.6889 | 3.5414 | - | - | - | * |
| | | 26.00000 | 28.00000 | 46.47500 | -5.2414 | -3.9934 | 3.8232 | - | - | - | * |
| | | 27.00000 | 28.00000 | 46.47500 | -4.8704 | -3.7108 | 3.4611 | - | - | - | * |
| | | 28.00000 | 28.00000 | 46.47500 | -4.5047 | -3.4322 | 3.0981 | - | - | - | * |
| | | 29.00000 | 28.00000 | 46.47500 | -4.1437 | -3.1571 | 2.7405 | - | - | - | * |
| | | 30.00000 | 28.00000 | 46.47500 | -3.7865 | -2.8850 | 2.3938 | - | - | - | * |
| | | 31.00000 | 28.00000 | 46.47500 | -3.4325 | -2.6152 | 2.0624 | - | - | - | * |
| | | 32.00000 | 28.00000 | 46.47500 | -3.0809 | -2.3473 | 1.7497 | - | - | - | * |
| | | 33.00000 | 28.00000 | 46.47500 | -2.7310 | -2.0807 | 1.4582 | - | - | - | * |
| | | 34.00000 | 28.00000 | 46.47500 | -2.3820 | -1.8149 | 1.1895 | - | - | - | * |
| | | 35.00000 | 28.00000 | 46.47500 | -2.1291 | -1.5647 | 0.86272 | - | - | - | * |
| | | 36.00000 | 28.00000 | 46.47500 | -1.9203 | -1.3215 | 0.52433 | - | - | - | * |
| | | 37.00000 | 28.00000 | 46.47500 | -1.6938 | -1.0958 | 0.25600 | - | - | - | * |
| | | 38.00000 | 28.00000 | 46.47500 | -1.4516 | -0.88583 | 0.051643 | - | - | - | * |
| | | 39.00000 | 28.00000 | 46.47500 | -1.1952 | -0.69020 | -0.096344 | - | - | - | * |
| | | 40.00000 | 28.00000 | 46.47500 | -0.92611 | -0.50755 | -0.19721 | - | - | - | * |
| | | 0.00000 | 29.00000 | 46.47500 | 2.2579 | -3.8633 | 1.7338 | - | - | - | * |
| | | 1.00000 | 29.00000 | 46.47500 | 2.0367 | -4.5020 | 1.8221 | - | - | - | * |
| | | 2.00000 | 29.00000 | 46.47500 | 1.7161 | -5.1868 | 1.8602 | - | - | - | * |
| | | 3.00000 | 29.00000 | 46.47500 | 1.3031 | -5.8990 | 1.8517 | - | - | - | * |
| | | 4.00000 | 29.00000 | 46.47500 | 0.81573 | -6.6090 | 1.7982 | - | - | - | * |
| | | 5.00000 | 29.00000 | 46.47500 | 0.43112 | -7.1135 | 1.7036 | - | - | - | * |
| | | 6.00000 | 29.00000 | 46.47500 | 0.43371 | -7.1563 | 1.6051 | - | - | - | * |
| | | 7.00000 | 29.00000 | 46.47500 | 0.43631 | -7.1990 | 1.5200 | - | - | - | * |
| | | 8.00000 | 29.00000 | 46.47500 | 0.43890 | -7.2418 | 1.4520 | - | - | - | * |
| | | 9.00000 | 29.00000 | 46.47500 | 0.0 | -8.7315 | 4.4857 | - | - | - | * |
| | | 10.00000 | 29.00000 | 46.47500 | 0.0 | -8.7315 | 4.4385 | - | - | - | * |
| | | 11.00000 | 29.00000 | 46.47500 | 0.0 | -8.7315 | 4.4165 | - | - | - | * |
| | | 12.00000 | 29.00000 | 46.47500 | 0.0 | -8.7315 | 4.4205 | - | - | - | * |
| | | 13.00000 | 29.00000 | 46.47500 | 0.0 | -8.7315 | 4.4501 | - | - | - | * |

| Type/No. Name | Dist. | Coordinates x | y | z | Displacements x | y | z | Horizontal displacement | Horizontal displacement | Angle of Line to x Axis | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 14.00000 | 29.00000 | 46.47500 | 0.0 | -8.7315 | 4.5041 | - | - | - | * |
| | | 15.00000 | 29.00000 | 46.47500 | 0.0 | -8.7315 | 4.5803 | - | - | - | * |
| | | 16.00000 | 29.00000 | 46.47500 | 0.0 | -8.7315 | 4.6755 | - | - | - | * |
| | | 17.00000 | 29.00000 | 46.47500 | 0.0 | -8.7315 | 4.7864 | - | - | - | * |
| | | 18.00000 | 29.00000 | 46.47500 | -0.68913 | -6.9085 | 3.9892 | - | - | - | * |
| | | 19.00000 | 29.00000 | 46.47500 | -1.4119 | -6.2692 | 3.9282 | - | - | - | * |
| | | 20.00000 | 29.00000 | 46.47500 | -2.0509 | -5.6224 | 3.8266 | - | - | - | * |
| | | 21.00000 | 29.00000 | 46.47500 | -2.5958 | -5.0266 | 3.7113 | - | - | - | * |
| | | 22.00000 | 29.00000 | 46.47500 | -3.1078 | -4.6454 | 3.6917 | - | - | - | * |
| | | 23.00000 | 29.00000 | 46.47500 | -3.4818 | -4.2739 | 3.6075 | - | - | - | * |
| | | 24.00000 | 29.00000 | 46.47500 | -3.7273 | -3.9165 | 3.4638 | - | - | - | * |
| | | 25.00000 | 29.00000 | 46.47500 | -3.8581 | -3.5751 | 3.2682 | - | - | - | * |
| | | 26.00000 | 29.00000 | 46.47500 | -3.8894 | -3.2498 | 3.0300 | - | - | - | * |
| | | 27.00000 | 29.00000 | 46.47500 | -3.8357 | -2.9397 | 2.7595 | - | - | - | * |
| | | 28.00000 | 29.00000 | 46.47500 | -4.2292 | -3.2223 | 2.8247 | - | - | - | * |
| | | 29.00000 | 29.00000 | 46.47500 | -3.8712 | -2.9495 | 2.4709 | - | - | - | * |
| | | 30.00000 | 29.00000 | 46.47500 | -3.5165 | -2.6793 | 2.1324 | - | - | - | * |
| | | 31.00000 | 29.00000 | 46.47500 | -3.1644 | -2.4110 | 1.8128 | - | - | - | * |
| | | 32.00000 | 29.00000 | 46.47500 | -2.8142 | -2.1441 | 1.5146 | - | - | - | * |
| | | 33.00000 | 29.00000 | 46.47500 | -2.4651 | -1.8781 | 1.2394 | - | - | - | * |
| | | 34.00000 | 29.00000 | 46.47500 | -2.1630 | -1.6480 | 0.98782 | - | - | - | * |
| | | 35.00000 | 29.00000 | 46.47500 | -1.9257 | -1.4672 | 0.75942 | - | - | - | * |
| | | 36.00000 | 29.00000 | 46.47500 | -1.6954 | -1.2744 | 0.53035 | - | - | - | * |
| | | 37.00000 | 29.00000 | 46.47500 | -1.4805 | -1.0465 | 0.26445 | - | - | - | * |
| | | 38.00000 | 29.00000 | 46.47500 | -1.2497 | -0.83348 | 0.056990 | - | - | - | * |
| | | 39.00000 | 29.00000 | 46.47500 | -1.0046 | -0.63409 | -0.099639 | - | - | - | * |
| | | 40.00000 | 29.00000 | 46.47500 | -0.74652 | -0.44718 | -0.21473 | - | - | - | * |
| | | 0.00000 | 30.00000 | 46.47500 | 1.9409 | -3.8417 | 1.5387 | - | - | - | * |
| | | 1.00000 | 30.00000 | 46.47500 | 1.6934 | -4.3089 | 1.6136 | - | - | - | * |
| | | 2.00000 | 30.00000 | 46.47500 | 1.4005 | -4.8379 | 1.6578 | - | - | - | * |
| | | 3.00000 | 30.00000 | 46.47500 | 1.0627 | -5.4400 | 1.6699 | - | - | - | * |
| | | 4.00000 | 30.00000 | 46.47500 | 0.66967 | -6.0261 | 1.6371 | - | - | - | * |
| | | 5.00000 | 30.00000 | 46.47500 | 0.38835 | -6.4078 | 1.5650 | - | - | - | * |
| | | 6.00000 | 30.00000 | 46.47500 | 0.39094 | -6.4505 | 1.4906 | - | - | - | * |
| | | 7.00000 | 30.00000 | 46.47500 | 0.39353 | -6.4933 | 1.4275 | - | - | - | * |
| | | 8.00000 | 30.00000 | 46.47500 | 0.38004 | -6.5365 | 1.3786 | - | - | - | * |
| | | 9.00000 | 30.00000 | 46.47500 | 0.0 | -8.0963 | 4.2826 | - | - | - | * |
| | | 10.00000 | 30.00000 | 46.47500 | 0.0 | -8.0963 | 4.2446 | - | - | - | * |
| | | 11.00000 | 30.00000 | 46.47500 | 0.0 | -8.0963 | 4.2268 | - | - | - | * |
| | | 12.00000 | 30.00000 | 46.47500 | 0.0 | -8.0963 | 4.2298 | - | - | - | * |
| | | 13.00000 | 30.00000 | 46.47500 | 0.0 | -8.0963 | 4.2534 | - | - | - | * |
| | | 14.00000 | 30.00000 | 46.47500 | 0.0 | -8.0963 | 4.2967 | - | - | - | * |
| | | 15.00000 | 30.00000 | 46.47500 | 0.0 | -8.0963 | 4.3580 | - | - | - | * |
| | | 16.00000 | 30.00000 | 46.47500 | 0.0 | -8.0963 | 4.4351 | - | - | - | * |
| | | 17.00000 | 30.00000 | 46.47500 | 0.0 | -8.0963 | 4.5253 | - | - | - | * |
| | | 18.00000 | 30.00000 | 46.47500 | -0.56261 | -6.4407 | 3.7914 | - | - | - | * |
| | | 19.00000 | 30.00000 | 46.47500 | -1.1577 | -5.9073 | 3.7307 | - | - | - | * |
| | | 20.00000 | 30.00000 | 46.47500 | -1.6930 | -5.3577 | 3.6294 | - | - | - | * |
| | | 21.00000 | 30.00000 | 46.47500 | -2.1478 | -4.8131 | 3.4914 | - | - | - | * |
| | | 22.00000 | 30.00000 | 46.47500 | -2.5684 | -4.4059 | 3.4032 | - | - | - | * |
| | | 23.00000 | 30.00000 | 46.47500 | -2.9147 | -4.0707 | 3.3100 | - | - | - | * |
| | | 24.00000 | 30.00000 | 46.47500 | -3.1547 | -3.7420 | 3.1656 | - | - | - | * |
| | | 25.00000 | 30.00000 | 46.47500 | -3.2963 | -3.4227 | 2.9766 | - | - | - | * |
| | | 26.00000 | 30.00000 | 46.47500 | -3.3493 | -3.1142 | 2.7509 | - | - | - | * |
| | | 27.00000 | 30.00000 | 46.47500 | -3.3240 | -2.8167 | 2.4976 | - | - | - | * |
| | | 28.00000 | 30.00000 | 46.47500 | -3.2304 | -2.5297 | 2.2258 | - | - | - | * |
| | | 29.00000 | 30.00000 | 46.47500 | -3.6007 | -2.7434 | 2.2123 | - | - | - | * |
| | | 30.00000 | 30.00000 | 46.47500 | -3.2481 | -2.4747 | 1.8846 | - | - | - | * |
| | | 31.00000 | 30.00000 | 46.47500 | -2.8974 | -2.2076 | 1.5786 | - | - | - | * |
| | | 32.00000 | 30.00000 | 46.47500 | -2.5481 | -1.9414 | 1.2950 | - | - | - | * |
| | | 33.00000 | 30.00000 | 46.47500 | -2.2195 | -1.6910 | 1.0373 | - | - | - | * |
| | | 34.00000 | 30.00000 | 46.47500 | -1.9822 | -1.5102 | 0.80258 | - | - | - | * |
| | | 35.00000 | 30.00000 | 46.47500 | -1.7449 | -1.3295 | 0.59035 | - | - | - | * |
| | | 36.00000 | 30.00000 | 46.47500 | -1.5077 | -1.1487 | 0.39840 | - | - | - | * |
| | | 37.00000 | 30.00000 | 46.47500 | -1.2704 | -0.96791 | 0.22345 | - | - | - | * |
| | | 38.00000 | 30.00000 | 46.47500 | -1.0475 | -0.75780 | 0.021844 | - | - | - | * |
| | | 39.00000 | 30.00000 | 46.47500 | -0.81269 | -0.55652 | -0.14157 | - | - | - | * |
| | | 40.00000 | 30.00000 | 46.47500 | -0.56474 | -0.36707 | -0.26985 | - | - | - | * |
| Foundation Grid 2 Level | | 0.00000 | 0.00000 | 49.00000 | 1.9855 | 3.4699 | 1.3255 | - | - | - | * |
| | | 1.00000 | 0.00000 | 49.00000 | 1.7623 | 3.8677 | 1.4268 | - | - | - | * |
| | | 2.00000 | 0.00000 | 49.00000 | 1.4843 | 4.2892 | 1.4945 | - | - | - | * |
| | | 3.00000 | 0.00000 | 49.00000 | 1.1551 | 4.7276 | 1.5262 | - | - | - | * |
| | | 4.00000 | 0.00000 | 49.00000 | 0.78231 | 5.1721 | 1.5215 | - | - | - | * |
| | | 5.00000 | 0.00000 | 49.00000 | 0.37996 | 5.6383 | 1.4881 | - | - | - | * |
| | | 6.00000 | 0.00000 | 49.00000 | 0.0 | 6.0271 | 1.4194 | - | - | - | * |
| | | 7.00000 | 0.00000 | 49.00000 | 0.0 | 6.0271 | 1.3453 | - | - | - | * |
| | | 8.00000 | 0.00000 | 49.00000 | 0.0 | 6.0271 | 1.2894 | - | - | - | * |
| | | 9.00000 | 0.00000 | 49.00000 | 0.0 | 6.0271 | 1.2550 | - | - | - | * |
| | | 10.00000 | 0.00000 | 49.00000 | 0.0 | 6.0271 | 1.2437 | - | - | - | * |
| | | 11.00000 | 0.00000 | 49.00000 | 0.0 | 6.0271 | 1.2553 | - | - | - | * |
| | | 12.00000 | 0.00000 | 49.00000 | 0.0 | 6.0271 | 1.2877 | - | - | - | * |
| | | 13.00000 | 0.00000 | 49.00000 | 0.0 | 6.0271 | 1.3377 | - | - | - | * |
| | | 14.00000 | 0.00000 | 49.00000 | 0.0 | 6.0271 | 1.4020 | - | - | - | * |
| | | 15.00000 | 0.00000 | 49.00000 | 0.0 | 6.0271 | 1.4769 | - | - | - | * |
| | | 16.00000 | 0.00000 | 49.00000 | 0.0 | 6.0271 | 1.5595 | - | - | - | * |
| | | 17.00000 | 0.00000 | 49.00000 | 0.0 | 6.0271 | 1.6472 | - | - | - | * |
| | | 18.00000 | 0.00000 | 49.00000 | 0.0 | 6.0271 | 1.7379 | - | - | - | * |
| | | 19.00000 | 0.00000 | 49.00000 | 0.0 | 6.0271 | 1.8299 | - | - | - | * |
| | | 20.00000 | 0.00000 | 49.00000 | 0.0 | 6.0271 | 1.9219 | - | - | - | * |
| | | 21.00000 | 0.00000 | 49.00000 | -0.20467 | 5.8130 | 2.0069 | - | - | - | * |
| | | 22.00000 | 0.00000 | 49.00000 | -0.60178 | 5.3406 | 2.0485 | - | - | - | * |
| | | 23.00000 | 0.00000 | 49.00000 | -0.97436 | 4.8837 | 2.0512 | - | - | - | * |
| | | 24.00000 | 0.00000 | 49.00000 | -1.3097 | 4.4339 | 2.0132 | - | - | - | * |
| | | 25.00000 | 0.00000 | 49.00000 | -1.5981 | 3.9982 | 1.9349 | - | - | - | * |
| | | 26.00000 | 0.00000 | 49.00000 | -1.8346 | 3.5850 | 1.8196 | - | - | - | * |
| | | 27.00000 | 0.00000 | 49.00000 | -2.0177 | 3.1995 | 1.6722 | - | - | - | * |
| | | 28.00000 | 0.00000 | 49.00000 | -2.1487 | 2.8439 | 1.4989 | - | - | - | * |
| | | 29.00000 | 0.00000 | 49.00000 | -2.2306 | 2.5183 | 1.3070 | - | - | - | * |
| | | 30.00000 | 0.00000 | 49.00000 | -2.2672 | 2.2217 | 1.1043 | - | - | - | * |
| | | 31.00000 | 0.00000 | 49.00000 | -2.2629 | 1.9523 | 0.89872 | - | - | - | * |
| | | 32.00000 | 0.00000 | 49.00000 | -2.2218 | 1.7077 | 0.69793 | - | - | - | * |
| | | 33.00000 | 0.00000 | 49.00000 | -2.1481 | 1.4857 | 0.50893 | - | - | - | * |
| | | 34.00000 | 0.00000 | 49.00000 | -2.0455 | 1.2839 | 0.33770 | - | - | - | * |
| | | 35.00000 | 0.00000 | 49.00000 | -1.9173 | 1.1002 | 0.18892 | - | - | - | * |
| | | 36.00000 | 0.00000 | 49.00000 | -1.7666 | 0.93276 | 0.065766 | - | - | - | * |
| | | 37.00000 | 0.00000 | 49.00000 | -1.5959 | 0.77970 | -0.030334 | - | - | - | * |
| | | 38.00000 | 0.00000 | 49.00000 | -1.4076 | 0.63948 | -0.099802 | - | - | - | * |
| | | 39.00000 | 0.00000 | 49.00000 | -1.2036 | 0.51071 | -0.14506 | - | - | - | * |
| | | 40.00000 | 0.00000 | 49.00000 | -0.98567 | 0.39218 | -0.17061 | - | - | - | * |
| | | 0.00000 | 1.00000 | 49.00000 | 2.2963 | 3.4888 | 1.5262 | - | - | - | * |
| | | 1.00000 | 1.00000 | 49.00000 | 2.0523 | 3.9222 | 1.6224 | - | - | - | * |
| | | 2.00000 | 1.00000 | 49.00000 | 1.7664 | 4.4570 | 1.6946 | - | - | - | * |
| | | 3.00000 | 1.00000 | 49.00000 | 1.4102 | 5.0595 | 1.7274 | - | - | - | * |
| | | 4.00000 | 1.00000 | 49.00000 | 0.97273 | 5.6673 | 1.7140 | - | - | - | * |
| | | 5.00000 | 1.00000 | 49.00000 | 0.47510 | 6.2533 | 1.6584 | - | - | - | * |
| | | 6.00000 | 1.00000 | 49.00000 | 0.0 | 6.7354 | 1.5656 | - | - | - | * |
| | | 7.00000 | 1.00000 | 49.00000 | 0.0 | 6.7354 | 1.4701 | - | - | - | * |
| | | 8.00000 | 1.00000 | 49.00000 | 0.0 | 6.7354 | 1.3979 | - | - | - | * |
| | | 9.00000 | 1.00000 | 49.00000 | 0.0 | 6.7354 | 1.3545 | - | - | - | * |
| | | 10.00000 | 1.00000 | 49.00000 | 0.0 | 6.7354 | 1.3425 | - | - | - | * |
| | | 11.00000 | 1.00000 | 49.00000 | 0.0 | 6.7354 | 1.3613 | - | - | - | * |
| | | 12.00000 | 1.00000 | 49.00000 | 0.0 | 6.7354 | 1.4069 | - | - | - | * |
| | | 13.00000 | 1.00000 | 49.00000 | 0.0 | 6.7354 | 1.4741 | - | - | - | * |
| | | 14.00000 | 1.00000 | 49.00000 | 0.0 | 6.7354 | 1.5575 | - | - | - | * |
| | | 15.00000 | 1.00000 | 49.00000 | 0.0 | 6.7354 | 1.6524 | - | - | - | * |
| | | 16.00000 | 1.00000 | 49.00000 | 0.0 | 6.7354 | 1.7548 | - | - | - | * |
| | | 17.00000 | 1.00000 | 49.00000 | 0.0 | 6.7354 | 1.8616 | - | - | - | * |
| | | 18.00000 | 1.00000 | 49.00000 | 0.0 | 6.7354 | 1.9704 | - | - | - | * |
| | | 19.00000 | 1.00000 | 49.00000 | 0.0 | 6.7354 | 2.0793 | - | - | - | * |
| | | 20.00000 | 1.00000 | 49.00000 | 0.0 | 6.7354 | 2.1869 | - | - | - | * |
| | | 21.00000 | 1.00000 | 49.00000 | -0.25605 | 6.4688 | 2.2864 | - | - | - | * |
| | | 22.00000 | 1.00000 | 49.00000 | -0.75144 | 5.8893 | 2.3412 | - | - | - | * |
| | | 23.00000 | 1.00000 | 49.00000 | -1.1993 | 5.2767 | 2.3455 | - | - | - | * |
| | | 24.00000 | 1.00000 | 49.00000 | -1.5760 | 4.6609 | 2.2990 | - | - | - | * |
| | | 25.00000 | 1.00000 | 49.00000 | -1.8664 | 4.0648 | 2.2005 | - | - | - | * |
| | | 26.00000 | 1.00000 | 49.00000 | -2.1277 | 3.6103 | 2.0825 | - | - | - | * |
| | | 27.00000 | 1.00000 | 49.00000 | -2.3242 | 3.1952 | 1.9280 | - | - | - | * |
| | | 28.00000 | 1.00000 | 49.00000 | -2.4593 | 2.8193 | 1.7428 | - | - | - | * |
| | | 29.00000 | 1.00000 | 49.00000 | -2.5381 | 2.4812 | 1.5345 | - | - | - | * |
| | | 30.00000 | 1.00000 | 49.00000 | -2.5666 | 2.1779 | 1.3119 | - | - | - | * |

| Type/No. | | Coordinates | | | Displacements | | | | | Angle of Line to x Axis | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Name | Dist. | x | y | z | x | y | z | Horizontal displacement | Horizontal displacement | | |
| | | 31.00000 | 1.00000 | 49.00000 | -2.5506 | 1.9061 | 1.0839 | - | - | - | * |
| | | 32.00000 | 1.00000 | 49.00000 | -2.4957 | 1.6625 | 0.85895 | - | - | - | * |
| | | 33.00000 | 1.00000 | 49.00000 | -2.4068 | 1.4436 | 0.64511 | - | - | - | * |
| | | 34.00000 | 1.00000 | 49.00000 | -2.2883 | 1.2465 | 0.44922 | - | - | - | * |
| | | 35.00000 | 1.00000 | 49.00000 | -2.1442 | 1.0687 | 0.27677 | - | - | - | * |
| | | 36.00000 | 1.00000 | 49.00000 | -1.9776 | 0.90762 | 0.13163 | - | - | - | * |
| | | 37.00000 | 1.00000 | 49.00000 | -1.7914 | 0.76137 | 0.015912 | - | - | - | * |
| | | 38.00000 | 1.00000 | 49.00000 | -1.5881 | 0.62813 | -0.070259 | - | - | - | * |
| | | 39.00000 | 1.00000 | 49.00000 | -1.3697 | 0.50638 | -0.12880 | - | - | - | * |
| | | 40.00000 | 1.00000 | 49.00000 | -1.1380 | 0.39479 | -0.16377 | - | - | - | * |
| | | 0.00000 | 2.00000 | 49.00000 | 2.6682 | 3.4587 | 1.6994 | - | - | - | * |
| | | 1.00000 | 2.00000 | 49.00000 | 2.4821 | 4.0530 | 1.8118 | - | - | - | * |
| | | 2.00000 | 2.00000 | 49.00000 | 2.1764 | 4.7046 | 1.8707 | - | - | - | * |
| | | 3.00000 | 2.00000 | 49.00000 | 1.7502 | 5.4033 | 1.8802 | - | - | - | * |
| | | 4.00000 | 2.00000 | 49.00000 | 1.2148 | 6.1275 | 1.8419 | - | - | - | * |
| | | 5.00000 | 2.00000 | 49.00000 | 0.59575 | 6.8433 | 1.7576 | - | - | - | * |
| | | 6.00000 | 2.00000 | 49.00000 | 0.0 | 7.4437 | 1.6323 | - | - | - | * |
| | | 7.00000 | 2.00000 | 49.00000 | 0.0 | 7.4437 | 1.5053 | - | - | - | * |
| | | 8.00000 | 2.00000 | 49.00000 | 0.0 | 7.4437 | 1.4088 | - | - | - | * |
| | | 9.00000 | 2.00000 | 49.00000 | 0.0 | 7.4437 | 1.3527 | - | - | - | * |
| | | 10.00000 | 2.00000 | 49.00000 | 0.0 | 7.4437 | 1.3414 | - | - | - | * |
| | | 11.00000 | 2.00000 | 49.00000 | 0.0 | 7.4437 | 1.3730 | - | - | - | * |
| | | 12.00000 | 2.00000 | 49.00000 | 0.0 | 7.4437 | 1.4397 | - | - | - | * |
| | | 13.00000 | 2.00000 | 49.00000 | 0.0 | 7.4437 | 1.5322 | - | - | - | * |
| | | 14.00000 | 2.00000 | 49.00000 | 0.0 | 7.4437 | 1.6422 | - | - | - | * |
| | | 15.00000 | 2.00000 | 49.00000 | 0.0 | 7.4437 | 1.7633 | - | - | - | * |
| | | 16.00000 | 2.00000 | 49.00000 | 0.0 | 7.4437 | 1.8910 | - | - | - | * |
| | | 17.00000 | 2.00000 | 49.00000 | 0.0 | 7.4437 | 2.0214 | - | - | - | * |
| | | 18.00000 | 2.00000 | 49.00000 | 0.0 | 7.4437 | 2.1520 | - | - | - | * |
| | | 19.00000 | 2.00000 | 49.00000 | 0.0 | 7.4437 | 2.2809 | - | - | - | * |
| | | 20.00000 | 2.00000 | 49.00000 | 0.0 | 7.4437 | 2.4068 | - | - | - | * |
| | | 21.00000 | 2.00000 | 49.00000 | -0.32135 | 7.1104 | 2.5224 | - | - | - | * |
| | | 22.00000 | 2.00000 | 49.00000 | -0.94026 | 6.3962 | 2.5890 | - | - | - | * |
| | | 23.00000 | 2.00000 | 49.00000 | -1.4925 | 5.6583 | 2.6016 | - | - | - | * |
| | | 24.00000 | 2.00000 | 49.00000 | -1.9476 | 4.9361 | 2.5626 | - | - | - | * |
| | | 25.00000 | 2.00000 | 49.00000 | -2.2892 | 4.2562 | 2.4740 | - | - | - | * |
| | | 26.00000 | 2.00000 | 49.00000 | -2.5142 | 3.6333 | 2.3351 | - | - | - | * |
| | | 27.00000 | 2.00000 | 49.00000 | -2.6774 | 3.1307 | 2.1617 | - | - | - | * |
| | | 28.00000 | 2.00000 | 49.00000 | -2.8105 | 2.7391 | 1.9694 | - | - | - | * |
| | | 29.00000 | 2.00000 | 49.00000 | -2.8800 | 2.3936 | 1.7489 | - | - | - | * |
| | | 30.00000 | 2.00000 | 49.00000 | -2.8942 | 2.0890 | 1.5099 | - | - | - | * |
| | | 31.00000 | 2.00000 | 49.00000 | -2.8611 | 1.8200 | 1.2622 | - | - | - | * |
| | | 32.00000 | 2.00000 | 49.00000 | -2.7875 | 1.5819 | 1.0155 | - | - | - | * |
| | | 33.00000 | 2.00000 | 49.00000 | -2.6793 | 1.3704 | 0.77879 | - | - | - | * |
| | | 34.00000 | 2.00000 | 49.00000 | -2.5415 | 1.1818 | 0.55985 | - | - | - | * |
| | | 35.00000 | 2.00000 | 49.00000 | -2.3784 | 1.0129 | 0.36499 | - | - | - | * |
| | | 36.00000 | 2.00000 | 49.00000 | -2.1935 | 0.86106 | 0.19882 | - | - | - | * |
| | | 37.00000 | 2.00000 | 49.00000 | -1.9898 | 0.72402 | 0.064057 | - | - | - | * |
| | | 38.00000 | 2.00000 | 49.00000 | -1.7698 | 0.59986 | -0.038607 | - | - | - | * |
| | | 39.00000 | 2.00000 | 49.00000 | -1.5356 | 0.48693 | -0.11061 | - | - | - | * |
| | | 40.00000 | 2.00000 | 49.00000 | -1.2889 | 0.38386 | -0.15561 | - | - | - | * |
| | | 0.00000 | 3.00000 | 49.00000 | 3.2184 | 3.4763 | 1.8632 | - | - | - | * |
| | | 1.00000 | 3.00000 | 49.00000 | 3.0242 | 4.1178 | 1.9540 | - | - | - | * |
| | | 2.00000 | 3.00000 | 49.00000 | 2.6809 | 4.8443 | 1.9941 | - | - | - | * |
| | | 3.00000 | 3.00000 | 49.00000 | 2.1797 | 5.6505 | 1.9829 | - | - | - | * |
| | | 4.00000 | 3.00000 | 49.00000 | 1.5272 | 6.5154 | 1.9174 | - | - | - | * |
| | | 5.00000 | 3.00000 | 49.00000 | 0.75371 | 7.3966 | 1.7960 | - | - | - | * |
| | | 6.00000 | 3.00000 | 49.00000 | 0.0 | 8.1521 | 1.6233 | - | - | - | * |
| | | 7.00000 | 3.00000 | 49.00000 | 0.0 | 8.1521 | 1.4470 | - | - | - | * |
| | | 8.00000 | 3.00000 | 49.00000 | 0.0 | 8.1521 | 1.3113 | - | - | - | * |
| | | 9.00000 | 3.00000 | 49.00000 | 0.0 | 8.1521 | 1.2354 | - | - | - | * |
| | | 10.00000 | 3.00000 | 49.00000 | 0.0 | 8.1521 | 1.2285 | - | - | - | * |
| | | 11.00000 | 3.00000 | 49.00000 | 0.0 | 8.1521 | 1.2853 | - | - | - | * |
| | | 12.00000 | 3.00000 | 49.00000 | 0.0 | 8.1521 | 1.3885 | - | - | - | * |
| | | 13.00000 | 3.00000 | 49.00000 | 0.0 | 8.1521 | 1.5196 | - | - | - | * |
| | | 14.00000 | 3.00000 | 49.00000 | 0.0 | 8.1521 | 1.6667 | - | - | - | * |
| | | 15.00000 | 3.00000 | 49.00000 | 0.0 | 8.1521 | 1.8226 | - | - | - | * |
| | | 16.00000 | 3.00000 | 49.00000 | 0.0 | 8.1521 | 1.9823 | - | - | - | * |
| | | 17.00000 | 3.00000 | 49.00000 | 0.0 | 8.1521 | 2.1419 | - | - | - | * |
| | | 18.00000 | 3.00000 | 49.00000 | 0.0 | 8.1521 | 2.2986 | - | - | - | * |
| | | 19.00000 | 3.00000 | 49.00000 | 0.0 | 8.1521 | 2.4508 | - | - | - | * |
| | | 20.00000 | 3.00000 | 49.00000 | 0.0 | 8.1521 | 2.5977 | - | - | - | * |
| | | 21.00000 | 3.00000 | 49.00000 | -0.40711 | 7.7311 | 2.7315 | - | - | - | * |
| | | 22.00000 | 3.00000 | 49.00000 | -1.1856 | 6.8427 | 2.8091 | - | - | - | * |
| | | 23.00000 | 3.00000 | 49.00000 | -1.8663 | 5.9498 | 2.8263 | - | - | - | * |
| | | 24.00000 | 3.00000 | 49.00000 | -2.4097 | 5.1043 | 2.7884 | - | - | - | * |
| | | 25.00000 | 3.00000 | 49.00000 | -2.8012 | 4.3359 | 2.7009 | - | - | - | * |
| | | 26.00000 | 3.00000 | 49.00000 | -3.0443 | 3.6551 | 2.5671 | - | - | - | * |
| | | 27.00000 | 3.00000 | 49.00000 | -3.1529 | 3.0605 | 2.3855 | - | - | - | * |
| | | 28.00000 | 3.00000 | 49.00000 | -3.2072 | 2.5952 | 2.1697 | - | - | - | * |
| | | 29.00000 | 3.00000 | 49.00000 | -3.2586 | 2.2501 | 1.9420 | - | - | - | * |
| | | 30.00000 | 3.00000 | 49.00000 | -3.2510 | 1.9515 | 1.6907 | - | - | - | * |
| | | 31.00000 | 3.00000 | 49.00000 | -3.1941 | 1.6918 | 1.4269 | - | - | - | * |
| | | 32.00000 | 3.00000 | 49.00000 | -3.0963 | 1.4650 | 1.1615 | - | - | - | * |
| | | 33.00000 | 3.00000 | 49.00000 | -2.9641 | 1.2657 | 0.90459 | - | - | - | * |
| | | 34.00000 | 3.00000 | 49.00000 | -2.8033 | 1.0896 | 0.66491 | - | - | - | * |
| | | 35.00000 | 3.00000 | 49.00000 | -2.6182 | 0.93324 | 0.44961 | - | - | - | * |
| | | 36.00000 | 3.00000 | 49.00000 | -2.4125 | 0.79362 | 0.26402 | - | - | - | * |
| | | 37.00000 | 3.00000 | 49.00000 | -2.1893 | 0.66833 | 0.11147 | - | - | - | * |
| | | 38.00000 | 3.00000 | 49.00000 | -1.9509 | 0.55539 | -0.0068132 | - | - | - | * |
| | | 39.00000 | 3.00000 | 49.00000 | -1.6996 | 0.45313 | -0.091820 | - | - | - | * |
| | | 40.00000 | 3.00000 | 49.00000 | -1.4369 | 0.36016 | -0.14682 | - | - | - | * |
| | | 0.00000 | 4.00000 | 49.00000 | 3.8608 | 3.3691 | 1.9744 | - | - | - | * |
| | | 1.00000 | 4.00000 | 49.00000 | 3.6778 | 4.0442 | 2.0500 | - | - | - | * |
| | | 2.00000 | 4.00000 | 49.00000 | 3.3110 | 4.8392 | 2.0747 | - | - | - | * |
| | | 3.00000 | 4.00000 | 49.00000 | 2.7353 | 5.7610 | 2.0421 | - | - | - | * |
| | | 4.00000 | 4.00000 | 49.00000 | 1.9443 | 6.7957 | 1.9432 | - | - | - | * |
| | | 5.00000 | 4.00000 | 49.00000 | 0.96923 | 7.8935 | 1.7699 | - | - | - | * |
| | | 6.00000 | 4.00000 | 49.00000 | 0.0 | 8.8604 | 1.5223 | - | - | - | * |
| | | 7.00000 | 4.00000 | 49.00000 | 0.0 | 8.8604 | 1.2593 | - | - | - | * |
| | | 8.00000 | 4.00000 | 49.00000 | 0.0 | 8.8604 | 1.0497 | - | - | - | * |
| | | 9.00000 | 4.00000 | 49.00000 | 0.0 | 8.8604 | 0.93915 | - | - | - | * |
| | | 10.00000 | 4.00000 | 49.00000 | 0.0 | 8.8604 | 0.94670 | - | - | - | * |
| | | 11.00000 | 4.00000 | 49.00000 | 0.0 | 8.8604 | 1.0620 | - | - | - | * |
| | | 12.00000 | 4.00000 | 49.00000 | 0.0 | 8.8604 | 1.2372 | - | - | - | * |
| | | 13.00000 | 4.00000 | 49.00000 | 0.0 | 8.8604 | 1.4296 | - | - | - | * |
| | | 14.00000 | 4.00000 | 49.00000 | 0.0 | 8.8604 | 1.6280 | - | - | - | * |
| | | 15.00000 | 4.00000 | 49.00000 | 0.0 | 8.8604 | 1.8295 | - | - | - | * |
| | | 16.00000 | 4.00000 | 49.00000 | 0.0 | 8.8604 | 2.0298 | - | - | - | * |
| | | 17.00000 | 4.00000 | 49.00000 | 0.0 | 8.8604 | 2.2249 | - | - | - | * |
| | | 18.00000 | 4.00000 | 49.00000 | 0.0 | 8.8604 | 2.4123 | - | - | - | * |
| | | 19.00000 | 4.00000 | 49.00000 | 0.0 | 8.8604 | 2.5914 | - | - | - | * |
| | | 20.00000 | 4.00000 | 49.00000 | 0.0 | 8.8604 | 2.7620 | - | - | - | * |
| | | 21.00000 | 4.00000 | 49.00000 | -0.52466 | 8.3192 | 2.9159 | - | - | - | * |
| | | 22.00000 | 4.00000 | 49.00000 | -1.5165 | 7.1978 | 3.0049 | - | - | - | * |
| | | 23.00000 | 4.00000 | 49.00000 | -2.3563 | 6.1108 | 3.0250 | - | - | - | * |
| | | 24.00000 | 4.00000 | 49.00000 | -2.9953 | 5.1262 | 2.9844 | - | - | - | * |
| | | 25.00000 | 4.00000 | 49.00000 | -3.4272 | 4.2709 | 2.8921 | - | - | - | * |
| | | 26.00000 | 4.00000 | 49.00000 | -3.6710 | 3.5440 | 2.7555 | - | - | - | * |
| | | 27.00000 | 4.00000 | 49.00000 | -3.7553 | 2.9316 | 2.5772 | - | - | - | * |
| | | 28.00000 | 4.00000 | 49.00000 | -3.7086 | 2.4158 | 2.3521 | - | - | - | * |
| | | 29.00000 | 4.00000 | 49.00000 | -3.6751 | 2.0461 | 2.1066 | - | - | - | * |
| | | 30.00000 | 4.00000 | 49.00000 | -3.6361 | 1.7628 | 1.8476 | - | - | - | * |
| | | 31.00000 | 4.00000 | 49.00000 | -3.5478 | 1.5205 | 1.5717 | - | - | - | * |
| | | 32.00000 | 4.00000 | 49.00000 | -3.4197 | 1.3115 | 1.2912 | - | - | - | * |
| | | 33.00000 | 4.00000 | 49.00000 | -3.2588 | 1.1299 | 1.0173 | - | - | - | * |
| | | 34.00000 | 4.00000 | 49.00000 | -3.0711 | 0.97089 | 0.75982 | - | - | - | * |
| | | 35.00000 | 4.00000 | 49.00000 | -2.8610 | 0.83072 | 0.52665 | - | - | - | * |
| | | 36.00000 | 4.00000 | 49.00000 | -2.6321 | 0.70638 | 0.32387 | - | - | - | * |
| | | 37.00000 | 4.00000 | 49.00000 | -2.3875 | 0.59541 | 0.15542 | - | - | - | * |
| | | 38.00000 | 4.00000 | 49.00000 | -2.1293 | 0.49584 | 0.023003 | - | - | - | * |
| | | 39.00000 | 4.00000 | 49.00000 | -1.8597 | 0.40605 | -0.073949 | - | - | - | * |
| | | 40.00000 | 4.00000 | 49.00000 | -1.5801 | 0.32470 | -0.13836 | - | - | - | * |
| | | 0.00000 | 5.00000 | 49.00000 | 4.6067 | 3.1151 | 2.0404 | - | - | - | * |
| | | 1.00000 | 5.00000 | 49.00000 | 4.4675 | 3.7974 | 2.1037 | - | - | - | * |
| | | 2.00000 | 5.00000 | 49.00000 | 4.1080 | 4.6392 | 2.1129 | - | - | - | * |
| | | 3.00000 | 5.00000 | 49.00000 | 3.4737 | 5.6722 | 2.0550 | - | - | - | * |
| | | 4.00000 | 5.00000 | 49.00000 | 2.5255 | 6.9069 | 1.9129 | - | - | - | * |
| | | 5.00000 | 5.00000 | 49.00000 | 1.2803 | 8.2966 | 1.6662 | - | - | - | * |
| | | 6.00000 | 5.00000 | 49.00000 | 0.0 | 9.5687 | 1.2813 | - | - | - | * |
| | | 7.00000 | 5.00000 | 49.00000 | 0.0 | 9.5687 | 0.82905 | - | - | - | * |

| Type/No. | | Coordinates | | | Displacements | | | | | Angle of Line to x Axis | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Name | Dist. | x | y | z | x | y | z | Horizontal displacement | Horizontal displacement | | |
| | | 8.00000 | 5.00000 | 49.00000 | 0.0 | 9.5687 | 0.41972 | - | - | - | * |
| | | 9.00000 | 5.00000 | 49.00000 | 0.0 | 9.5687 | 0.23944 | - | - | - | * |
| | | 10.00000 | 5.00000 | 49.00000 | 0.0 | 9.5687 | 0.28484 | - | - | - | * |
| | | 11.00000 | 5.00000 | 49.00000 | 0.0 | 9.5687 | 0.59564 | - | - | - | * |
| | | 12.00000 | 5.00000 | 49.00000 | 0.0 | 9.5687 | 0.95727 | - | - | - | * |
| | | 13.00000 | 5.00000 | 49.00000 | 0.0 | 9.5687 | 1.2440 | - | - | - | * |
| | | 14.00000 | 5.00000 | 49.00000 | 0.0 | 9.5687 | 1.5105 | - | - | - | * |
| | | 15.00000 | 5.00000 | 49.00000 | 0.0 | 9.5687 | 1.7714 | - | - | - | * |
| | | 16.00000 | 5.00000 | 49.00000 | 0.0 | 9.5687 | 2.0236 | - | - | - | * |
| | | 17.00000 | 5.00000 | 49.00000 | 0.0 | 9.5687 | 2.2610 | - | - | - | * |
| | | 18.00000 | 5.00000 | 49.00000 | 0.0 | 9.5687 | 2.4828 | - | - | - | * |
| | | 19.00000 | 5.00000 | 49.00000 | 0.0 | 9.5687 | 2.6914 | - | - | - | * |
| | | 20.00000 | 5.00000 | 49.00000 | 0.0 | 9.5687 | 2.8882 | - | - | - | * |
| | | 21.00000 | 5.00000 | 49.00000 | -0.69565 | 8.8528 | 3.0644 | - | - | - | * |
| | | 22.00000 | 5.00000 | 49.00000 | -1.9852 | 7.4056 | 3.1669 | - | - | - | * |
| | | 23.00000 | 5.00000 | 49.00000 | -3.0206 | 6.0756 | 3.1914 | - | - | - | * |
| | | 24.00000 | 5.00000 | 49.00000 | -3.7505 | 4.9447 | 3.1477 | - | - | - | * |
| | | 25.00000 | 5.00000 | 49.00000 | -4.1970 | 4.0197 | 3.0484 | - | - | - | * |
| | | 26.00000 | 5.00000 | 49.00000 | -4.4099 | 3.2730 | 2.9049 | - | - | - | * |
| | | 27.00000 | 5.00000 | 49.00000 | -4.4404 | 2.6695 | 2.7240 | - | - | - | * |
| | | 28.00000 | 5.00000 | 49.00000 | -4.3308 | 2.1778 | 2.5041 | - | - | - | * |
| | | 29.00000 | 5.00000 | 49.00000 | -4.1281 | 1.7787 | 2.2368 | - | - | - | * |
| | | 30.00000 | 5.00000 | 49.00000 | -4.0468 | 1.5224 | 1.9749 | - | - | - | * |
| | | 31.00000 | 5.00000 | 49.00000 | -3.9189 | 1.3066 | 1.6912 | - | - | - | * |
| | | 32.00000 | 5.00000 | 49.00000 | -3.7541 | 1.1227 | 1.3996 | - | - | - | * |
| | | 33.00000 | 5.00000 | 49.00000 | -3.5597 | 0.96457 | 1.1124 | - | - | - | * |
| | | 34.00000 | 5.00000 | 49.00000 | -3.3414 | 0.82726 | 0.84035 | - | - | - | * |
| | | 35.00000 | 5.00000 | 49.00000 | -3.1035 | 0.70704 | 0.59240 | - | - | - | * |
| | | 36.00000 | 5.00000 | 49.00000 | -2.8494 | 0.60101 | 0.37521 | - | - | - | * |
| | | 37.00000 | 5.00000 | 49.00000 | -2.5817 | 0.50684 | 0.19326 | - | - | - | * |
| | | 38.00000 | 5.00000 | 49.00000 | -2.3026 | 0.42270 | 0.048736 | - | - | - | * |
| | | 39.00000 | 5.00000 | 49.00000 | -2.0137 | 0.34709 | -0.058573 | - | - | - | * |
| | | 40.00000 | 5.00000 | 49.00000 | -1.7165 | 0.27879 | -0.13127 | - | - | - | * |
| | | 0.00000 | 6.00000 | 49.00000 | 5.4613 | 2.6959 | 2.0623 | - | - | - | * |
| | | 1.00000 | 6.00000 | 49.00000 | 5.4156 | 3.3404 | 2.1125 | - | - | - | * |
| | | 2.00000 | 6.00000 | 49.00000 | 5.1222 | 4.1798 | 2.1023 | - | - | - | * |
| | | 3.00000 | 6.00000 | 49.00000 | 4.4813 | 5.2871 | 2.0117 | - | - | - | * |
| | | 4.00000 | 6.00000 | 49.00000 | 3.3802 | 6.7356 | 1.8146 | - | - | - | * |
| | | 5.00000 | 6.00000 | 49.00000 | 1.7665 | 8.5277 | 1.4758 | - | - | - | * |
| | | 6.00000 | 6.00000 | 49.00000 | 0.0 | 10.277 | 0.90774 | - | - | - | * |
| | | 7.00000 | 6.00000 | 49.00000 | 0.0 | 10.277 | 0.025128 | - | - | - | * |
| | | 8.00000 | 6.00000 | 49.00000 | 0.0 | 10.277 | -0.94790 | - | - | - | * |
| | | 9.00000 | 6.00000 | 49.00000 | 0.0 | 10.277 | -1.2229 | - | - | - | * |
| | | 10.00000 | 6.00000 | 49.00000 | 0.0 | 10.277 | -1.1307 | - | - | - | * |
| | | 11.00000 | 6.00000 | 49.00000 | 0.0 | 10.277 | -0.16041 | - | - | - | * |
| | | 12.00000 | 6.00000 | 49.00000 | 0.0 | 10.277 | 0.54296 | - | - | - | * |
| | | 13.00000 | 6.00000 | 49.00000 | 0.0 | 10.277 | 0.94006 | - | - | - | * |
| | | 14.00000 | 6.00000 | 49.00000 | 0.0 | 10.277 | 1.2890 | - | - | - | * |
| | | 15.00000 | 6.00000 | 49.00000 | 0.0 | 10.277 | 1.6298 | - | - | - | * |
| | | 16.00000 | 6.00000 | 49.00000 | 0.0 | 10.277 | 1.9518 | - | - | - | * |
| | | 17.00000 | 6.00000 | 49.00000 | 0.0 | 10.277 | 2.2348 | - | - | - | * |
| | | 18.00000 | 6.00000 | 49.00000 | 0.0 | 10.277 | 2.4886 | - | - | - | * |
| | | 19.00000 | 6.00000 | 49.00000 | 0.0 | 10.277 | 2.7274 | - | - | - | * |
| | | 20.00000 | 6.00000 | 49.00000 | 0.0 | 10.277 | 2.9518 | - | - | - | * |
| | | 21.00000 | 6.00000 | 49.00000 | -0.96687 | 9.2839 | 3.1524 | - | - | - | * |
| | | 22.00000 | 6.00000 | 49.00000 | -2.6935 | 7.3565 | 3.2738 | - | - | - | * |
| | | 23.00000 | 6.00000 | 49.00000 | -3.9546 | 5.7346 | 3.3091 | - | - | - | * |
| | | 24.00000 | 6.00000 | 49.00000 | -4.7376 | 4.4806 | 3.2670 | - | - | - | * |
| | | 25.00000 | 6.00000 | 49.00000 | -5.1416 | 3.5347 | 3.1629 | - | - | - | * |
| | | 26.00000 | 6.00000 | 49.00000 | -5.2714 | 2.8170 | 3.0127 | - | - | - | * |
| | | 27.00000 | 6.00000 | 49.00000 | -5.2072 | 2.2632 | 2.8274 | - | - | - | * |
| | | 28.00000 | 6.00000 | 49.00000 | -5.0046 | 1.8270 | 2.6090 | - | - | - | * |
| | | 29.00000 | 6.00000 | 49.00000 | -4.7018 | 1.4767 | 2.3483 | - | - | - | * |
| | | 30.00000 | 6.00000 | 49.00000 | -4.4776 | 1.2324 | 2.0682 | - | - | - | * |
| | | 31.00000 | 6.00000 | 49.00000 | -4.3017 | 1.0528 | 1.7810 | - | - | - | * |
| | | 32.00000 | 6.00000 | 49.00000 | -4.0942 | 0.90151 | 1.4822 | - | - | - | * |
| | | 33.00000 | 6.00000 | 49.00000 | -3.8620 | 0.77257 | 1.1856 | - | - | - | * |
| | | 34.00000 | 6.00000 | 49.00000 | -3.6100 | 0.66143 | 0.90281 | - | - | - | * |
| | | 35.00000 | 6.00000 | 49.00000 | -3.3421 | 0.56470 | 0.64357 | - | - | - | * |
| | | 36.00000 | 6.00000 | 49.00000 | -3.0610 | 0.47980 | 0.41517 | - | - | - | * |
| | | 37.00000 | 6.00000 | 49.00000 | -2.7690 | 0.40472 | 0.22261 | - | - | - | * |
| | | 38.00000 | 6.00000 | 49.00000 | -2.4680 | 0.33785 | 0.068442 | - | - | - | * |
| | | 39.00000 | 6.00000 | 49.00000 | -2.1592 | 0.27795 | -0.047187 | - | - | - | * |
| | | 40.00000 | 6.00000 | 49.00000 | -1.8439 | 0.22397 | -0.12662 | - | - | - | * |
| | | 0.00000 | 7.00000 | 49.00000 | 6.4147 | 2.1046 | 2.0371 | - | - | - | * |
| | | 1.00000 | 7.00000 | 49.00000 | 6.5295 | 2.6455 | 2.0696 | - | - | - | * |
| | | 2.00000 | 7.00000 | 49.00000 | 6.4006 | 3.3911 | 2.0329 | - | - | - | * |
| | | 3.00000 | 7.00000 | 49.00000 | 5.8789 | 4.4642 | 1.8989 | - | - | - | * |
| | | 4.00000 | 7.00000 | 49.00000 | 4.7182 | 6.0617 | 1.6317 | - | - | - | * |
| | | 5.00000 | 7.00000 | 49.00000 | 2.6246 | 8.3934 | 1.1863 | - | - | - | * |
| | | 6.00000 | 7.00000 | 49.00000 | 0.0 | 10.985 | 0.43939 | - | - | - | * |
| | | 7.00000 | 7.00000 | 49.00000 | 0.0 | 10.985 | -0.56292 | - | - | - | * |
| | | 8.00000 | 7.00000 | 49.00000 | 0.0 | 10.985 | -1.6661 | - | - | - | * |
| | | 9.00000 | 7.00000 | 49.00000 | 0.0 | 10.985 | -2.0079 | - | - | - | * |
| | | 10.00000 | 7.00000 | 49.00000 | 0.0 | 10.985 | -1.9126 | - | - | - | * |
| | | 11.00000 | 7.00000 | 49.00000 | 0.0 | 10.985 | -0.75719 | - | - | - | * |
| | | 12.00000 | 7.00000 | 49.00000 | 0.0 | 10.985 | 0.086706 | - | - | - | * |
| | | 13.00000 | 7.00000 | 49.00000 | 0.0 | 10.985 | 0.56382 | - | - | - | * |
| | | 14.00000 | 7.00000 | 49.00000 | 0.0 | 10.985 | 1.0073 | - | - | - | * |
| | | 15.00000 | 7.00000 | 49.00000 | 0.0 | 10.985 | 1.4745 | - | - | - | * |
| | | 16.00000 | 7.00000 | 49.00000 | 0.0 | 10.985 | 1.9155 | - | - | - | * |
| | | 17.00000 | 7.00000 | 49.00000 | 0.0 | 10.985 | 2.1475 | - | - | - | * |
| | | 18.00000 | 7.00000 | 49.00000 | 0.0 | 10.985 | 2.3979 | - | - | - | * |
| | | 19.00000 | 7.00000 | 49.00000 | 0.0 | 10.985 | 2.6649 | - | - | - | * |
| | | 20.00000 | 7.00000 | 49.00000 | 0.0 | 10.985 | 2.9177 | - | - | - | * |
| | | 21.00000 | 7.00000 | 49.00000 | -1.4612 | 9.4870 | 3.1437 | - | - | - | * |
| | | 22.00000 | 7.00000 | 49.00000 | -3.8609 | 6.8144 | 3.2964 | - | - | - | * |
| | | 23.00000 | 7.00000 | 49.00000 | -5.3110 | 4.9087 | 3.3564 | - | - | - | * |
| | | 24.00000 | 7.00000 | 49.00000 | -6.0261 | 3.6377 | 3.3264 | - | - | - | * |
| | | 25.00000 | 7.00000 | 49.00000 | -6.2800 | 2.7740 | 3.2246 | - | - | - | * |
| | | 26.00000 | 7.00000 | 49.00000 | -6.2507 | 2.1628 | 3.0723 | - | - | - | * |
| | | 27.00000 | 7.00000 | 49.00000 | -6.0416 | 1.7125 | 2.8850 | - | - | - | * |
| | | 28.00000 | 7.00000 | 49.00000 | -5.7137 | 1.3691 | 2.6679 | - | - | - | * |
| | | 29.00000 | 7.00000 | 49.00000 | -5.3037 | 1.0996 | 2.4145 | - | - | - | * |
| | | 30.00000 | 7.00000 | 49.00000 | -4.9195 | 0.89813 | 2.1246 | - | - | - | * |
| | | 31.00000 | 7.00000 | 49.00000 | -4.6883 | 0.76430 | 1.8377 | - | - | - | * |
| | | 32.00000 | 7.00000 | 49.00000 | -4.4332 | 0.65265 | 1.5358 | - | - | - | * |
| | | 33.00000 | 7.00000 | 49.00000 | -4.1597 | 0.55814 | 1.2337 | - | - | - | * |
| | | 34.00000 | 7.00000 | 49.00000 | -3.8717 | 0.47716 | 0.94420 | - | - | - | * |
| | | 35.00000 | 7.00000 | 49.00000 | -3.5720 | 0.40700 | 0.67746 | - | - | - | * |
| | | 36.00000 | 7.00000 | 49.00000 | -3.2629 | 0.34567 | 0.44140 | - | - | - | * |
| | | 37.00000 | 7.00000 | 49.00000 | -2.9460 | 0.29159 | 0.24143 | - | - | - | * |
| | | 38.00000 | 7.00000 | 49.00000 | -2.6225 | 0.24356 | 0.080471 | - | - | - | * |
| | | 39.00000 | 7.00000 | 49.00000 | -2.2936 | 0.20063 | -0.041081 | - | - | - | * |
| | | 40.00000 | 7.00000 | 49.00000 | -1.9601 | 0.16203 | -0.12533 | - | - | - | * |
| | | 0.00000 | 8.00000 | 49.00000 | 7.4319 | 1.3569 | 1.9606 | - | - | - | * |
| | | 1.00000 | 8.00000 | 49.00000 | 7.7802 | 1.7157 | 1.9682 | - | - | - | * |
| | | 2.00000 | 8.00000 | 49.00000 | 7.9484 | 2.2340 | 1.8957 | - | - | - | * |
| | | 3.00000 | 8.00000 | 49.00000 | 7.7833 | 3.0471 | 1.7059 | - | - | - | * |
| | | 4.00000 | 8.00000 | 49.00000 | 6.9218 | 4.4741 | 1.3496 | - | - | - | * |
| | | 5.00000 | 8.00000 | 49.00000 | 4.4654 | 7.2914 | 0.77027 | - | - | - | * |
| | | 6.00000 | 8.00000 | 49.00000 | 0.0 | 11.694 | -0.21223 | - | - | - | * |
| | | 7.00000 | 8.00000 | 49.00000 | 0.0 | 11.694 | -1.2250 | - | - | - | * |
| | | 8.00000 | 8.00000 | 49.00000 | 0.0 | 11.694 | -2.4033 | - | - | - | * |
| | | 9.00000 | 8.00000 | 49.00000 | 0.0 | 11.694 | -2.8074 | - | - | - | * |
| | | 10.00000 | 8.00000 | 49.00000 | 0.0 | 11.694 | -2.7807 | - | - | - | * |
| | | 11.00000 | 8.00000 | 49.00000 | 0.0 | 11.694 | -1.6876 | - | - | - | * |
| | | 12.00000 | 8.00000 | 49.00000 | 0.0 | 11.694 | -0.91338 | - | - | - | * |
| | | 13.00000 | 8.00000 | 49.00000 | 0.0 | 11.694 | -0.41422 | - | - | - | * |
| | | 14.00000 | 8.00000 | 49.00000 | 0.0 | 11.694 | 0.14072 | - | - | - | * |
| | | 15.00000 | 8.00000 | 49.00000 | 0.0 | 11.694 | 0.87017 | - | - | - | * |
| | | 16.00000 | 8.00000 | 49.00000 | 0.0 | 11.694 | 1.7023 | - | - | - | * |
| | | 17.00000 | 8.00000 | 49.00000 | 0.0 | 11.694 | 1.9336 | - | - | - | * |
| | | 18.00000 | 8.00000 | 49.00000 | 0.0 | 11.694 | 2.1710 | - | - | - | * |
| | | 19.00000 | 8.00000 | 49.00000 | 0.0 | 11.694 | 2.4702 | - | - | - | * |
| | | 20.00000 | 8.00000 | 49.00000 | 0.0 | 11.694 | 2.7505 | - | - | - | * |
| | | 21.00000 | 8.00000 | 49.00000 | -2.6263 | 9.0040 | 2.9974 | - | - | - | * |
| | | 22.00000 | 8.00000 | 49.00000 | -5.9859 | 5.2347 | 3.2083 | - | - | - | * |
| | | 23.00000 | 8.00000 | 49.00000 | -7.2844 | 3.3531 | 3.3152 | - | - | - | * |
| | | 24.00000 | 8.00000 | 49.00000 | -7.6509 | 2.3419 | 3.3111 | - | - | - | * |
| | | 25.00000 | 8.00000 | 49.00000 | -7.5925 | 1.7297 | 3.2220 | - | - | - | * |

| Type/No. | | Coordinates | | | Displacements | | | | | Angle of Line | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Name | Dist. | x | y | z | x | y | z | Horizontal displacement | Horizontal displacement | to x Axis | |
| | | 26.00000 | 8.00000 | 49.00000 | -7.3148 | 1.3237 | 3.0758 | - | - | - | * |
| | | 27.00000 | 8.00000 | 49.00000 | -6.9115 | 1.0361 | 2.8924 | - | - | - | * |
| | | 28.00000 | 8.00000 | 49.00000 | -6.4299 | 0.82223 | 2.6800 | - | - | - | * |
| | | 29.00000 | 8.00000 | 49.00000 | -5.8965 | 0.65716 | 2.4341 | - | - | - | * |
| | | 30.00000 | 8.00000 | 49.00000 | -5.3600 | 0.52924 | 2.1425 | - | - | - | * |
| | | 31.00000 | 8.00000 | 49.00000 | -5.0684 | 0.44916 | 1.8593 | - | - | - | * |
| | | 32.00000 | 8.00000 | 49.00000 | -4.7626 | 0.38278 | 1.5581 | - | - | - | * |
| | | 33.00000 | 8.00000 | 49.00000 | -4.4459 | 0.32688 | 1.2546 | - | - | - | * |
| | | 34.00000 | 8.00000 | 49.00000 | -4.1206 | 0.27917 | 0.96236 | - | - | - | * |
| | | 35.00000 | 8.00000 | 49.00000 | -3.7885 | 0.23797 | 0.69209 | - | - | - | * |
| | | 36.00000 | 8.00000 | 49.00000 | -3.4510 | 0.20204 | 0.45213 | - | - | - | * |
| | | 37.00000 | 8.00000 | 49.00000 | -3.1089 | 0.17043 | 0.24824 | - | - | - | * |
| | | 38.00000 | 8.00000 | 49.00000 | -2.7631 | 0.14241 | 0.083571 | - | - | - | * |
| | | 39.00000 | 8.00000 | 49.00000 | -2.4142 | 0.11740 | -0.041245 | - | - | - | * |
| | | 40.00000 | 8.00000 | 49.00000 | -2.0626 | 0.094937 | -0.12815 | - | - | - | * |
| | | 0.00000 | 9.00000 | 49.00000 | 8.4474 | 0.50040 | 1.8303 | - | - | - | * |
| | | 1.00000 | 9.00000 | 49.00000 | 9.0799 | 0.61100 | 1.8045 | - | - | - | * |
| | | 2.00000 | 9.00000 | 49.00000 | 9.6603 | 0.76991 | 1.6866 | - | - | - | * |
| | | 3.00000 | 9.00000 | 49.00000 | 10.136 | 1.0264 | 1.4324 | - | - | - | * |
| | | 4.00000 | 9.00000 | 49.00000 | 10.344 | 1.5302 | 0.97708 | - | - | - | * |
| | | 5.00000 | 9.00000 | 49.00000 | 9.4808 | 3.0287 | 0.22778 | - | - | - | * |
| | | 6.00000 | 9.00000 | 49.00000 | 0.0 | 12.402 | -0.96437 | - | - | - | * |
| | | 7.00000 | 9.00000 | 49.00000 | 0.0 | 12.402 | -2.0969 | - | - | - | * |
| | | 8.00000 | 9.00000 | 49.00000 | 0.0 | 12.402 | -3.3384 | - | - | - | * |
| | | 9.00000 | 9.00000 | 49.00000 | 0.0 | 12.402 | -3.8053 | - | - | - | * |
| | | 10.00000 | 9.00000 | 49.00000 | 0.0 | 12.402 | -3.8926 | - | - | - | * |
| | | 11.00000 | 9.00000 | 49.00000 | 0.0 | 12.402 | -3.6639 | - | - | - | * |
| | | 12.00000 | 9.00000 | 49.00000 | 0.0 | 12.402 | -3.2819 | - | - | - | * |
| | | 13.00000 | 9.00000 | 49.00000 | 0.0 | 12.402 | -2.8152 | - | - | - | * |
| | | 14.00000 | 9.00000 | 49.00000 | 0.0 | 12.402 | -2.1465 | - | - | - | * |
| | | 15.00000 | 9.00000 | 49.00000 | 0.0 | 12.402 | -0.97792 | - | - | - | * |
| | | 16.00000 | 9.00000 | 49.00000 | 0.0 | 12.402 | 1.4029 | - | - | - | * |
| | | 17.00000 | 9.00000 | 49.00000 | 0.0 | 12.402 | 1.6253 | - | - | - | * |
| | | 18.00000 | 9.00000 | 49.00000 | 0.0 | 12.402 | 1.8363 | - | - | - | * |
| | | 19.00000 | 9.00000 | 49.00000 | 0.0 | 12.402 | 2.1902 | - | - | - | * |
| | | 20.00000 | 9.00000 | 49.00000 | 0.0 | 12.402 | 2.4952 | - | - | - | * |
| | | 21.00000 | 9.00000 | 49.00000 | -7.4674 | 4.7502 | 2.7103 | - | - | - | * |
| | | 22.00000 | 9.00000 | 49.00000 | -9.8721 | 1.6868 | 3.0176 | - | - | - | * |
| | | 23.00000 | 9.00000 | 49.00000 | -9.9001 | 0.96183 | 3.1821 | - | - | - | * |
| | | 24.00000 | 9.00000 | 49.00000 | -9.5139 | 0.64457 | 3.2133 | - | - | - | * |
| | | 25.00000 | 9.00000 | 49.00000 | -8.9858 | 0.46712 | 3.1473 | - | - | - | * |
| | | 26.00000 | 9.00000 | 49.00000 | -8.3924 | 0.35385 | 3.0172 | - | - | - | * |
| | | 27.00000 | 9.00000 | 49.00000 | -7.7639 | 0.27531 | 2.8461 | - | - | - | * |
| | | 28.00000 | 9.00000 | 49.00000 | -7.1141 | 0.21766 | 2.6442 | - | - | - | * |
| | | 29.00000 | 9.00000 | 49.00000 | -6.4505 | 0.17354 | 2.4083 | - | - | - | * |
| | | 30.00000 | 9.00000 | 49.00000 | -5.7837 | 0.13885 | 2.1218 | - | - | - | * |
| | | 31.00000 | 9.00000 | 49.00000 | -5.4301 | 0.11768 | 1.8450 | - | - | - | * |
| | | 32.00000 | 9.00000 | 49.00000 | -5.0728 | 0.10020 | 1.5480 | - | - | - | * |
| | | 33.00000 | 9.00000 | 49.00000 | -4.7127 | 0.085507 | 1.2470 | - | - | - | * |
| | | 34.00000 | 9.00000 | 49.00000 | -4.3503 | 0.072990 | 0.95603 | - | - | - | * |
| | | 35.00000 | 9.00000 | 49.00000 | -3.9862 | 0.062199 | 0.68628 | - | - | - | * |
| | | 36.00000 | 9.00000 | 49.00000 | -3.6207 | 0.052799 | 0.44631 | - | - | - | * |
| | | 37.00000 | 9.00000 | 49.00000 | -3.2541 | 0.044538 | 0.24209 | - | - | - | * |
| | | 38.00000 | 9.00000 | 49.00000 | -2.8865 | 0.037221 | 0.076970 | - | - | - | * |
| | | 39.00000 | 9.00000 | 49.00000 | -2.5181 | 0.030694 | -0.048292 | - | - | - | * |
| | | 40.00000 | 9.00000 | 49.00000 | -2.1490 | 0.024837 | -0.13553 | - | - | - | * |
| | | 0.00000 | 10.00000 | 49.00000 | 8.4905 | 0.50155 | 1.6778 | - | - | - | * |
| | | 1.00000 | 10.00000 | 49.00000 | 9.1963 | 0.54324 | 1.6098 | - | - | - | * |
| | | 2.00000 | 10.00000 | 49.00000 | 9.9022 | 0.58494 | 1.4372 | - | - | - | * |
| | | 3.00000 | 10.00000 | 49.00000 | 10.608 | 0.62664 | 1.1107 | - | - | - | * |
| | | 4.00000 | 10.00000 | 49.00000 | 11.314 | 0.66833 | 0.55900 | - | - | - | * |
| | | 5.00000 | 10.00000 | 49.00000 | 12.020 | 0.71003 | -0.32705 | - | - | - | * |
| | | 6.00000 | 10.00000 | 49.00000 | Point lies within an excavation. | | | | | | * |
| | | 7.00000 | 10.00000 | 49.00000 | Point lies within an excavation. | | | | | | * |
| | | 8.00000 | 10.00000 | 49.00000 | Point lies within an excavation. | | | | | | * |
| | | 9.00000 | 10.00000 | 49.00000 | Point lies within an excavation. | | | | | | * |
| | | 10.00000 | 10.00000 | 49.00000 | Point lies within an excavation. | | | | | | * |
| | | 11.00000 | 10.00000 | 49.00000 | Point lies within an excavation. | | | | | | * |
| | | 12.00000 | 10.00000 | 49.00000 | Point lies within an excavation. | | | | | | * |
| | | 13.00000 | 10.00000 | 49.00000 | Point lies within an excavation. | | | | | | * |
| | | 14.00000 | 10.00000 | 49.00000 | Point lies within an excavation. | | | | | | * |
| | | 15.00000 | 10.00000 | 49.00000 | Point lies within an excavation. | | | | | | * |
| | | 16.00000 | 10.00000 | 49.00000 | Point lies within an excavation. | | | | | | * |
| | | 17.00000 | 10.00000 | 49.00000 | Point lies within an excavation. | | | | | | * |
| | | 18.00000 | 10.00000 | 49.00000 | Point lies within an excavation. | | | | | | * |
| | | 19.00000 | 10.00000 | 49.00000 | Point lies within an excavation. | | | | | | * |
| | | 20.00000 | 10.00000 | 49.00000 | Point lies within an excavation. | | | | | | * |
| | | 21.00000 | 10.00000 | 49.00000 | -12.296 | 0.0 | 2.4673 | - | - | - | * |
| | | 22.00000 | 10.00000 | 49.00000 | -11.587 | 0.0 | 2.7721 | - | - | - | * |
| | | 23.00000 | 10.00000 | 49.00000 | -10.879 | 0.0 | 2.9776 | - | - | - | * |
| | | 24.00000 | 10.00000 | 49.00000 | -10.171 | 0.0 | 3.0479 | - | - | - | * |
| | | 25.00000 | 10.00000 | 49.00000 | -9.4625 | 0.0 | 3.0137 | - | - | - | * |
| | | 26.00000 | 10.00000 | 49.00000 | -8.7542 | 0.0 | 2.9088 | - | - | - | * |
| | | 27.00000 | 10.00000 | 49.00000 | -8.0458 | 0.0 | 2.7574 | - | - | - | * |
| | | 28.00000 | 10.00000 | 49.00000 | -7.3375 | 0.0 | 2.5713 | - | - | - | * |
| | | 29.00000 | 10.00000 | 49.00000 | -6.6292 | 0.0 | 2.3482 | - | - | - | * |
| | | 30.00000 | 10.00000 | 49.00000 | -5.9250 | 0.0 | 2.0716 | - | - | - | * |
| | | 31.00000 | 10.00000 | 49.00000 | -5.5500 | 0.0 | 1.8032 | - | - | - | * |
| | | 32.00000 | 10.00000 | 49.00000 | -5.1750 | 0.0 | 1.5128 | - | - | - | * |
| | | 33.00000 | 10.00000 | 49.00000 | -4.8000 | 0.0 | 1.2172 | - | - | - | * |
| | | 34.00000 | 10.00000 | 49.00000 | -4.4250 | 0.0 | 0.93068 | - | - | - | * |
| | | 35.00000 | 10.00000 | 49.00000 | -4.0500 | 0.0 | 0.66455 | - | - | - | * |
| | | 36.00000 | 10.00000 | 49.00000 | -3.6750 | 0.0 | 0.42759 | - | - | - | * |
| | | 37.00000 | 10.00000 | 49.00000 | -3.3000 | 0.0 | 0.22587 | - | - | - | * |
| | | 38.00000 | 10.00000 | 49.00000 | -2.9250 | 0.0 | 0.062859 | - | - | - | * |
| | | 39.00000 | 10.00000 | 49.00000 | -2.5500 | 0.0 | -0.060623 | - | - | - | * |
| | | 40.00000 | 10.00000 | 49.00000 | -2.1750 | 0.0 | -0.14634 | - | - | - | * |
| | | 0.00000 | 11.00000 | 49.00000 | 8.5322 | 0.50401 | 1.5381 | - | - | - | * |
| | | 1.00000 | 11.00000 | 49.00000 | 9.2380 | 0.54571 | 1.4284 | - | - | - | * |
| | | 2.00000 | 11.00000 | 49.00000 | 9.9439 | 0.58740 | 1.1996 | - | - | - | * |
| | | 3.00000 | 11.00000 | 49.00000 | 10.650 | 0.62910 | 0.79559 | - | - | - | * |
| | | 4.00000 | 11.00000 | 49.00000 | 11.356 | 0.67080 | 0.13306 | - | - | - | * |
| | | 5.00000 | 11.00000 | 49.00000 | 12.062 | 0.71249 | -0.91631 | - | - | - | * |
| | | 6.00000 | 11.00000 | 49.00000 | Point lies within an excavation. | | | | | | * |
| | | 7.00000 | 11.00000 | 49.00000 | Point lies within an excavation. | | | | | | * |
| | | 8.00000 | 11.00000 | 49.00000 | Point lies within an excavation. | | | | | | * |
| | | 9.00000 | 11.00000 | 49.00000 | Point lies within an excavation. | | | | | | * |
| | | 10.00000 | 11.00000 | 49.00000 | Point lies within an excavation. | | | | | | * |
| | | 11.00000 | 11.00000 | 49.00000 | Point lies within an excavation. | | | | | | * |
| | | 12.00000 | 11.00000 | 49.00000 | Point lies within an excavation. | | | | | | * |
| | | 13.00000 | 11.00000 | 49.00000 | Point lies within an excavation. | | | | | | * |
| | | 14.00000 | 11.00000 | 49.00000 | Point lies within an excavation. | | | | | | * |
| | | 15.00000 | 11.00000 | 49.00000 | Point lies within an excavation. | | | | | | * |
| | | 16.00000 | 11.00000 | 49.00000 | Point lies within an excavation. | | | | | | * |
| | | 17.00000 | 11.00000 | 49.00000 | Point lies within an excavation. | | | | | | * |
| | | 18.00000 | 11.00000 | 49.00000 | Point lies within an excavation. | | | | | | * |
| | | 19.00000 | 11.00000 | 49.00000 | Point lies within an excavation. | | | | | | * |
| | | 20.00000 | 11.00000 | 49.00000 | Point lies within an excavation. | | | | | | * |
| | | 21.00000 | 11.00000 | 49.00000 | -12.296 | 0.0 | 2.0543 | - | - | - | * |
| | | 22.00000 | 11.00000 | 49.00000 | -11.587 | 0.0 | 2.4706 | - | - | - | * |
| | | 23.00000 | 11.00000 | 49.00000 | -10.879 | 0.0 | 2.7509 | - | - | - | * |
| | | 24.00000 | 11.00000 | 49.00000 | -10.171 | 0.0 | 2.8734 | - | - | - | * |
| | | 25.00000 | 11.00000 | 49.00000 | -9.4625 | 0.0 | 2.8770 | - | - | - | * |
| | | 26.00000 | 11.00000 | 49.00000 | -8.7542 | 0.0 | 2.8001 | - | - | - | * |
| | | 27.00000 | 11.00000 | 49.00000 | -8.0458 | 0.0 | 2.6700 | - | - | - | * |
| | | 28.00000 | 11.00000 | 49.00000 | -7.3375 | 0.0 | 2.5003 | - | - | - | * |
| | | 29.00000 | 11.00000 | 49.00000 | -6.6292 | 0.0 | 2.2899 | - | - | - | * |
| | | 30.00000 | 11.00000 | 49.00000 | -5.9250 | 0.0 | 2.0234 | - | - | - | * |
| | | 31.00000 | 11.00000 | 49.00000 | -5.5500 | 0.0 | 1.7629 | - | - | - | * |
| | | 32.00000 | 11.00000 | 49.00000 | -5.1750 | 0.0 | 1.4790 | - | - | - | * |
| | | 33.00000 | 11.00000 | 49.00000 | -4.8000 | 0.0 | 1.1887 | - | - | - | * |
| | | 34.00000 | 11.00000 | 49.00000 | -4.4250 | 0.0 | 0.90649 | - | - | - | * |
| | | 35.00000 | 11.00000 | 49.00000 | -4.0500 | 0.0 | 0.64394 | - | - | - | * |
| | | 36.00000 | 11.00000 | 49.00000 | -3.6750 | 0.0 | 0.40994 | - | - | - | * |
| | | 37.00000 | 11.00000 | 49.00000 | -3.3000 | 0.0 | 0.21071 | - | - | - | * |
| | | 38.00000 | 11.00000 | 49.00000 | -2.9250 | 0.0 | 0.049781 | - | - | - | * |
| | | 39.00000 | 11.00000 | 49.00000 | -2.5500 | 0.0 | -0.071937 | - | - | - | * |
| | | 40.00000 | 11.00000 | 49.00000 | -2.1750 | 0.0 | -0.15616 | - | - | - | * |
| | | 0.00000 | 12.00000 | 49.00000 | 8.5738 | 0.50647 | 1.4169 | - | - | - | * |
| | | 1.00000 | 12.00000 | 49.00000 | 9.2797 | 0.54817 | 1.2677 | - | - | - | * |
| | | 2.00000 | 12.00000 | 49.00000 | 9.9856 | 0.58987 | 0.98430 | - | - | - | * |

| Type/No. | | Coordinates | | | Displacements | | | | | Angle of Line | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Name | Dist. | x | y | z | x | y | z | Horizontal displacement | Horizontal displacement | to x Axis | |
| | | 3.00000 | 12.00000 | 49.00000 | 10.691 | 0.63156 | 0.50199 | - | - | - | * |
| | | 4.00000 | 12.00000 | 49.00000 | 11.397 | 0.67326 | -0.28317 | - | - | - | * |
| | | 5.00000 | 12.00000 | 49.00000 | 12.103 | 0.71496 | -1.5776 | - | - | - | * |
| | | 6.00000 | 12.00000 | 49.00000 | | | Point lies within an excavation. | | | | * |
| | | 7.00000 | 12.00000 | 49.00000 | | | Point lies within an excavation. | | | | * |
| | | 8.00000 | 12.00000 | 49.00000 | | | Point lies within an excavation. | | | | * |
| | | 9.00000 | 12.00000 | 49.00000 | | | Point lies within an excavation. | | | | * |
| | | 10.00000 | 12.00000 | 49.00000 | | | Point lies within an excavation. | | | | * |
| | | 11.00000 | 12.00000 | 49.00000 | | | Point lies within an excavation. | | | | * |
| | | 12.00000 | 12.00000 | 49.00000 | | | Point lies within an excavation. | | | | * |
| | | 13.00000 | 12.00000 | 49.00000 | | | Point lies within an excavation. | | | | * |
| | | 14.00000 | 12.00000 | 49.00000 | | | Point lies within an excavation. | | | | * |
| | | 15.00000 | 12.00000 | 49.00000 | | | Point lies within an excavation. | | | | * |
| | | 16.00000 | 12.00000 | 49.00000 | | | Point lies within an excavation. | | | | * |
| | | 17.00000 | 12.00000 | 49.00000 | | | Point lies within an excavation. | | | | * |
| | | 18.00000 | 12.00000 | 49.00000 | | | Point lies within an excavation. | | | | * |
| | | 19.00000 | 12.00000 | 49.00000 | | | Point lies within an excavation. | | | | * |
| | | 20.00000 | 12.00000 | 49.00000 | | | Point lies within an excavation. | | | | * |
| | | 21.00000 | 12.00000 | 49.00000 | -12.296 | 0.0 | 1.4732 | - | - | - | * |
| | | 22.00000 | 12.00000 | 49.00000 | -11.587 | 0.0 | 2.1324 | - | - | - | * |
| | | 23.00000 | 12.00000 | 49.00000 | -10.879 | 0.0 | 2.5192 | - | - | - | * |
| | | 24.00000 | 12.00000 | 49.00000 | -10.171 | 0.0 | 2.7037 | - | - | - | * |
| | | 25.00000 | 12.00000 | 49.00000 | -9.4625 | 0.0 | 2.7481 | - | - | - | * |
| | | 26.00000 | 12.00000 | 49.00000 | -8.7542 | 0.0 | 2.6998 | - | - | - | * |
| | | 27.00000 | 12.00000 | 49.00000 | -8.0458 | 0.0 | 2.5906 | - | - | - | * |
| | | 28.00000 | 12.00000 | 49.00000 | -7.3375 | 0.0 | 2.4364 | - | - | - | * |
| | | 29.00000 | 12.00000 | 49.00000 | -6.6292 | 0.0 | 2.2380 | - | - | - | * |
| | | 30.00000 | 12.00000 | 49.00000 | -5.9250 | 0.0 | 1.9808 | - | - | - | * |
| | | 31.00000 | 12.00000 | 49.00000 | -5.5500 | 0.0 | 1.7277 | - | - | - | * |
| | | 32.00000 | 12.00000 | 49.00000 | -5.1750 | 0.0 | 1.4496 | - | - | - | * |
| | | 33.00000 | 12.00000 | 49.00000 | -4.8000 | 0.0 | 1.1640 | - | - | - | * |
| | | 34.00000 | 12.00000 | 49.00000 | -4.4250 | 0.0 | 0.88564 | - | - | - | * |
| | | 35.00000 | 12.00000 | 49.00000 | -4.0500 | 0.0 | 0.62623 | - | - | - | * |
| | | 36.00000 | 12.00000 | 49.00000 | -3.6750 | 0.0 | 0.39484 | - | - | - | * |
| | | 37.00000 | 12.00000 | 49.00000 | -3.3000 | 0.0 | 0.19777 | - | - | - | * |
| | | 38.00000 | 12.00000 | 49.00000 | -2.9250 | 0.0 | 0.038652 | - | - | - | * |
| | | 39.00000 | 12.00000 | 49.00000 | -2.5500 | 0.0 | -0.081543 | - | - | - | * |
| | | 40.00000 | 12.00000 | 49.00000 | -2.1750 | 0.0 | -0.16447 | - | - | - | * |
| | | 0.00000 | 13.00000 | 49.00000 | 8.6155 | 0.50894 | 1.3197 | - | - | - | * |
| | | 1.00000 | 13.00000 | 49.00000 | 9.3214 | 0.55063 | 1.1355 | - | - | - | * |
| | | 2.00000 | 13.00000 | 49.00000 | 10.027 | 0.59233 | 0.80318 | - | - | - | * |
| | | 3.00000 | 13.00000 | 49.00000 | 10.733 | 0.63403 | 0.25015 | - | - | - | * |
| | | 4.00000 | 13.00000 | 49.00000 | 11.439 | 0.67572 | -0.64526 | - | - | - | * |
| | | 5.00000 | 13.00000 | 49.00000 | 12.145 | 0.71742 | -2.1524 | - | - | - | * |
| | | 6.00000 | 13.00000 | 49.00000 | | | Point lies within an excavation. | | | | * |
| | | 7.00000 | 13.00000 | 49.00000 | | | Point lies within an excavation. | | | | * |
| | | 8.00000 | 13.00000 | 49.00000 | | | Point lies within an excavation. | | | | * |
| | | 9.00000 | 13.00000 | 49.00000 | | | Point lies within an excavation. | | | | * |
| | | 10.00000 | 13.00000 | 49.00000 | | | Point lies within an excavation. | | | | * |
| | | 11.00000 | 13.00000 | 49.00000 | | | Point lies within an excavation. | | | | * |
| | | 12.00000 | 13.00000 | 49.00000 | | | Point lies within an excavation. | | | | * |
| | | 13.00000 | 13.00000 | 49.00000 | | | Point lies within an excavation. | | | | * |
| | | 14.00000 | 13.00000 | 49.00000 | | | Point lies within an excavation. | | | | * |
| | | 15.00000 | 13.00000 | 49.00000 | | | Point lies within an excavation. | | | | * |
| | | 16.00000 | 13.00000 | 49.00000 | | | Point lies within an excavation. | | | | * |
| | | 17.00000 | 13.00000 | 49.00000 | | | Point lies within an excavation. | | | | * |
| | | 18.00000 | 13.00000 | 49.00000 | | | Point lies within an excavation. | | | | * |
| | | 19.00000 | 13.00000 | 49.00000 | | | Point lies within an excavation. | | | | * |
| | | 20.00000 | 13.00000 | 49.00000 | | | Point lies within an excavation. | | | | * |
| | | 21.00000 | 13.00000 | 49.00000 | -12.296 | 0.0 | 0.94182 | - | - | - | * |
| | | 22.00000 | 13.00000 | 49.00000 | -11.587 | 0.0 | 1.8190 | - | - | - | * |
| | | 23.00000 | 13.00000 | 49.00000 | -10.879 | 0.0 | 2.3083 | - | - | - | * |
| | | 24.00000 | 13.00000 | 49.00000 | -10.171 | 0.0 | 2.5522 | - | - | - | * |
| | | 25.00000 | 13.00000 | 49.00000 | -9.4625 | 0.0 | 2.6349 | - | - | - | * |
| | | 26.00000 | 13.00000 | 49.00000 | -8.7542 | 0.0 | 2.6130 | - | - | - | * |
| | | 27.00000 | 13.00000 | 49.00000 | -8.0458 | 0.0 | 2.5227 | - | - | - | * |
| | | 28.00000 | 13.00000 | 49.00000 | -7.3375 | 0.0 | 2.3824 | - | - | - | * |
| | | 29.00000 | 13.00000 | 49.00000 | -6.6292 | 0.0 | 2.1945 | - | - | - | * |
| | | 30.00000 | 13.00000 | 49.00000 | -5.9250 | 0.0 | 1.9453 | - | - | - | * |
| | | 31.00000 | 13.00000 | 49.00000 | -5.5500 | 0.0 | 1.6985 | - | - | - | * |
| | | 32.00000 | 13.00000 | 49.00000 | -5.1750 | 0.0 | 1.4254 | - | - | - | * |
| | | 33.00000 | 13.00000 | 49.00000 | -4.8000 | 0.0 | 1.1438 | - | - | - | * |
| | | 34.00000 | 13.00000 | 49.00000 | -4.4250 | 0.0 | 0.86860 | - | - | - | * |
| | | 35.00000 | 13.00000 | 49.00000 | -4.0500 | 0.0 | 0.61181 | - | - | - | * |
| | | 36.00000 | 13.00000 | 49.00000 | -3.6750 | 0.0 | 0.38257 | - | - | - | * |
| | | 37.00000 | 13.00000 | 49.00000 | -3.3000 | 0.0 | 0.18729 | - | - | - | * |
| | | 38.00000 | 13.00000 | 49.00000 | -2.9250 | 0.0 | 0.029658 | - | - | - | * |
| | | 39.00000 | 13.00000 | 49.00000 | -2.5500 | 0.0 | -0.089289 | - | - | - | * |
| | | 40.00000 | 13.00000 | 49.00000 | -2.1750 | 0.0 | -0.17117 | - | - | - | * |
| | | 0.00000 | 14.00000 | 49.00000 | 8.6572 | 0.51140 | 1.2520 | - | - | - | * |
| | | 1.00000 | 14.00000 | 49.00000 | 9.3631 | 0.55310 | 1.0394 | - | - | - | * |
| | | 2.00000 | 14.00000 | 49.00000 | 10.069 | 0.59479 | 0.66725 | - | - | - | * |
| | | 3.00000 | 14.00000 | 49.00000 | 10.775 | 0.63649 | 0.058349 | - | - | - | * |
| | | 4.00000 | 14.00000 | 49.00000 | 11.481 | 0.67819 | -0.91342 | - | - | - | * |
| | | 5.00000 | 14.00000 | 49.00000 | 12.187 | 0.71988 | -2.5164 | - | - | - | * |
| | | 6.00000 | 14.00000 | 49.00000 | | | Point lies within an excavation. | | | | * |
| | | 7.00000 | 14.00000 | 49.00000 | | | Point lies within an excavation. | | | | * |
| | | 8.00000 | 14.00000 | 49.00000 | | | Point lies within an excavation. | | | | * |
| | | 9.00000 | 14.00000 | 49.00000 | | | Point lies within an excavation. | | | | * |
| | | 10.00000 | 14.00000 | 49.00000 | | | Point lies within an excavation. | | | | * |
| | | 11.00000 | 14.00000 | 49.00000 | | | Point lies within an excavation. | | | | * |
| | | 12.00000 | 14.00000 | 49.00000 | | | Point lies within an excavation. | | | | * |
| | | 13.00000 | 14.00000 | 49.00000 | | | Point lies within an excavation. | | | | * |
| | | 14.00000 | 14.00000 | 49.00000 | | | Point lies within an excavation. | | | | * |
| | | 15.00000 | 14.00000 | 49.00000 | | | Point lies within an excavation. | | | | * |
| | | 16.00000 | 14.00000 | 49.00000 | | | Point lies within an excavation. | | | | * |
| | | 17.00000 | 14.00000 | 49.00000 | | | Point lies within an excavation. | | | | * |
| | | 18.00000 | 14.00000 | 49.00000 | | | Point lies within an excavation. | | | | * |
| | | 19.00000 | 14.00000 | 49.00000 | | | Point lies within an excavation. | | | | * |
| | | 20.00000 | 14.00000 | 49.00000 | | | Point lies within an excavation. | | | | * |
| | | 21.00000 | 14.00000 | 49.00000 | -12.296 | 0.0 | 0.59479 | - | - | - | * |
| | | 22.00000 | 14.00000 | 49.00000 | -11.587 | 0.0 | 1.5831 | - | - | - | * |
| | | 23.00000 | 14.00000 | 49.00000 | -10.879 | 0.0 | 2.1434 | - | - | - | * |
| | | 24.00000 | 14.00000 | 49.00000 | -10.171 | 0.0 | 2.4327 | - | - | - | * |
| | | 25.00000 | 14.00000 | 49.00000 | -9.4625 | 0.0 | 2.5458 | - | - | - | * |
| | | 26.00000 | 14.00000 | 49.00000 | -8.7542 | 0.0 | 2.5450 | - | - | - | * |
| | | 27.00000 | 14.00000 | 49.00000 | -8.0458 | 0.0 | 2.4697 | - | - | - | * |
| | | 28.00000 | 14.00000 | 49.00000 | -7.3375 | 0.0 | 2.3406 | - | - | - | * |
| | | 29.00000 | 14.00000 | 49.00000 | -6.6292 | 0.0 | 2.1609 | - | - | - | * |
| | | 30.00000 | 14.00000 | 49.00000 | -5.9250 | 0.0 | 1.9181 | - | - | - | * |
| | | 31.00000 | 14.00000 | 49.00000 | -5.5500 | 0.0 | 1.6762 | - | - | - | * |
| | | 32.00000 | 14.00000 | 49.00000 | -5.1750 | 0.0 | 1.4070 | - | - | - | * |
| | | 33.00000 | 14.00000 | 49.00000 | -4.8000 | 0.0 | 1.1285 | - | - | - | * |
| | | 34.00000 | 14.00000 | 49.00000 | -4.4250 | 0.0 | 0.85576 | - | - | - | * |
| | | 35.00000 | 14.00000 | 49.00000 | -4.0500 | 0.0 | 0.60098 | - | - | - | * |
| | | 36.00000 | 14.00000 | 49.00000 | -3.6750 | 0.0 | 0.37339 | - | - | - | * |
| | | 37.00000 | 14.00000 | 49.00000 | -3.3000 | 0.0 | 0.17946 | - | - | - | * |
| | | 38.00000 | 14.00000 | 49.00000 | -2.9250 | 0.0 | 0.022959 | - | - | - | * |
| | | 39.00000 | 14.00000 | 49.00000 | -2.5500 | 0.0 | -0.095045 | - | - | - | * |
| | | 40.00000 | 14.00000 | 49.00000 | -2.1750 | 0.0 | -0.17613 | - | - | - | * |
| | | 0.00000 | 15.00000 | 49.00000 | 8.6989 | 0.51386 | 1.2184 | - | - | - | * |
| | | 1.00000 | 15.00000 | 49.00000 | 9.4048 | 0.55556 | 0.98577 | - | - | - | * |
| | | 2.00000 | 15.00000 | 49.00000 | 10.111 | 0.59726 | 0.58451 | - | - | - | * |
| | | 3.00000 | 15.00000 | 49.00000 | 10.817 | 0.63895 | -0.064864 | - | - | - | * |
| | | 4.00000 | 15.00000 | 49.00000 | 11.522 | 0.68065 | -1.0841 | - | - | - | * |
| | | 5.00000 | 15.00000 | 49.00000 | 12.228 | 0.72235 | -2.6884 | - | - | - | * |
| | | 6.00000 | 15.00000 | 49.00000 | | | Point lies within an excavation. | | | | * |
| | | 7.00000 | 15.00000 | 49.00000 | | | Point lies within an excavation. | | | | * |
| | | 8.00000 | 15.00000 | 49.00000 | | | Point lies within an excavation. | | | | * |
| | | 9.00000 | 15.00000 | 49.00000 | | | Point lies within an excavation. | | | | * |
| | | 10.00000 | 15.00000 | 49.00000 | | | Point lies within an excavation. | | | | * |
| | | 11.00000 | 15.00000 | 49.00000 | | | Point lies within an excavation. | | | | * |
| | | 12.00000 | 15.00000 | 49.00000 | | | Point lies within an excavation. | | | | * |
| | | 13.00000 | 15.00000 | 49.00000 | | | Point lies within an excavation. | | | | * |
| | | 14.00000 | 15.00000 | 49.00000 | | | Point lies within an excavation. | | | | * |
| | | 15.00000 | 15.00000 | 49.00000 | | | Point lies within an excavation. | | | | * |
| | | 16.00000 | 15.00000 | 49.00000 | | | Point lies within an excavation. | | | | * |
| | | 17.00000 | 15.00000 | 49.00000 | | | Point lies within an excavation. | | | | * |
| | | 18.00000 | 15.00000 | 49.00000 | | | Point lies within an excavation. | | | | * |
| | | 19.00000 | 15.00000 | 49.00000 | | | Point lies within an excavation. | | | | * |
| | | 20.00000 | 15.00000 | 49.00000 | | | Point lies within an excavation. | | | | * |

| Type/No. | | Coordinates | | | Displacements | | | | | Angle of Line | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Name | Dist. | x | y | z | x | y | z | Horizontal displacement | Horizontal displacement | to x Axis | |
| | | 21.00000 | 15.00000 | 49.00000 | -12.296 | 0.0 | 0.41078 | - | - | - | * |
| | | 22.00000 | 15.00000 | 49.00000 | -11.587 | 0.0 | 1.4435 | - | - | - | * |
| | | 23.00000 | 15.00000 | 49.00000 | -10.879 | 0.0 | 2.0396 | - | - | - | * |
| | | 24.00000 | 15.00000 | 49.00000 | -10.171 | 0.0 | 2.3551 | - | - | - | * |
| | | 25.00000 | 15.00000 | 49.00000 | -9.4625 | 0.0 | 2.4871 | - | - | - | * |
| | | 26.00000 | 15.00000 | 49.00000 | -8.7542 | 0.0 | 2.4999 | - | - | - | * |
| | | 27.00000 | 15.00000 | 49.00000 | -8.0458 | 0.0 | 2.4346 | - | - | - | * |
| | | 28.00000 | 15.00000 | 49.00000 | -7.3375 | 0.0 | 2.3128 | - | - | - | * |
| | | 29.00000 | 15.00000 | 49.00000 | -6.6292 | 0.0 | 2.1388 | - | - | - | * |
| | | 30.00000 | 15.00000 | 49.00000 | -5.9250 | 0.0 | 1.9002 | - | - | - | * |
| | | 31.00000 | 15.00000 | 49.00000 | -5.5500 | 0.0 | 1.6617 | - | - | - | * |
| | | 32.00000 | 15.00000 | 49.00000 | -5.1750 | 0.0 | 1.3950 | - | - | - | * |
| | | 33.00000 | 15.00000 | 49.00000 | -4.8000 | 0.0 | 1.1185 | - | - | - | * |
| | | 34.00000 | 15.00000 | 49.00000 | -4.4250 | 0.0 | 0.84745 | - | - | - | * |
| | | 35.00000 | 15.00000 | 49.00000 | -4.0500 | 0.0 | 0.59399 | - | - | - | * |
| | | 36.00000 | 15.00000 | 49.00000 | -3.6750 | 0.0 | 0.36748 | - | - | - | * |
| | | 37.00000 | 15.00000 | 49.00000 | -3.3000 | 0.0 | 0.17444 | - | - | - | * |
| | | 38.00000 | 15.00000 | 49.00000 | -2.9250 | 0.0 | 0.018678 | - | - | - | * |
| | | 39.00000 | 15.00000 | 49.00000 | -2.5500 | 0.0 | -0.098713 | - | - | - | * |
| | | 40.00000 | 15.00000 | 49.00000 | -2.1750 | 0.0 | -0.17929 | - | - | - | * |
| | | 0.00000 | 16.00000 | 49.00000 | 8.7406 | 0.51632 | 1.2226 | - | - | - | * |
| | | 1.00000 | 16.00000 | 49.00000 | 9.4465 | 0.55802 | 0.97944 | - | - | - | * |
| | | 2.00000 | 16.00000 | 49.00000 | 10.152 | 0.59972 | 0.56062 | - | - | - | * |
| | | 3.00000 | 16.00000 | 49.00000 | 10.858 | 0.64142 | -0.11732 | - | - | - | * |
| | | 4.00000 | 16.00000 | 49.00000 | 11.564 | 0.68311 | -1.1801 | - | - | - | * |
| | | 5.00000 | 16.00000 | 49.00000 | 12.270 | 0.72481 | -2.8217 | - | - | - | * |
| | | 6.00000 | 16.00000 | 49.00000 | Point lies within an excavation. | | | | | | * |
| | | 7.00000 | 16.00000 | 49.00000 | Point lies within an excavation. | | | | | | * |
| | | 8.00000 | 16.00000 | 49.00000 | Point lies within an excavation. | | | | | | * |
| | | 9.00000 | 16.00000 | 49.00000 | Point lies within an excavation. | | | | | | * |
| | | 10.00000 | 16.00000 | 49.00000 | Point lies within an excavation. | | | | | | * |
| | | 11.00000 | 16.00000 | 49.00000 | Point lies within an excavation. | | | | | | * |
| | | 12.00000 | 16.00000 | 49.00000 | Point lies within an excavation. | | | | | | * |
| | | 13.00000 | 16.00000 | 49.00000 | Point lies within an excavation. | | | | | | * |
| | | 14.00000 | 16.00000 | 49.00000 | Point lies within an excavation. | | | | | | * |
| | | 15.00000 | 16.00000 | 49.00000 | Point lies within an excavation. | | | | | | * |
| | | 16.00000 | 16.00000 | 49.00000 | Point lies within an excavation. | | | | | | * |
| | | 17.00000 | 16.00000 | 49.00000 | Point lies within an excavation. | | | | | | * |
| | | 18.00000 | 16.00000 | 49.00000 | Point lies within an excavation. | | | | | | * |
| | | 19.00000 | 16.00000 | 49.00000 | Point lies within an excavation. | | | | | | * |
| | | 20.00000 | 16.00000 | 49.00000 | Point lies within an excavation. | | | | | | * |
| | | 21.00000 | 16.00000 | 49.00000 | -12.296 | 0.0 | 0.36726 | - | - | - | * |
| | | 22.00000 | 16.00000 | 49.00000 | -11.587 | 0.0 | 1.4017 | - | - | - | * |
| | | 23.00000 | 16.00000 | 49.00000 | -10.879 | 0.0 | 2.0020 | - | - | - | * |
| | | 24.00000 | 16.00000 | 49.00000 | -10.171 | 0.0 | 2.3240 | - | - | - | * |
| | | 25.00000 | 16.00000 | 49.00000 | -9.4625 | 0.0 | 2.4622 | - | - | - | * |
| | | 26.00000 | 16.00000 | 49.00000 | -8.7542 | 0.0 | 2.4802 | - | - | - | * |
| | | 27.00000 | 16.00000 | 49.00000 | -8.0458 | 0.0 | 2.4191 | - | - | - | * |
| | | 28.00000 | 16.00000 | 49.00000 | -7.3375 | 0.0 | 2.3005 | - | - | - | * |
| | | 29.00000 | 16.00000 | 49.00000 | -6.6292 | 0.0 | 2.1289 | - | - | - | * |
| | | 30.00000 | 16.00000 | 49.00000 | -5.9250 | 0.0 | 1.8923 | - | - | - | * |
| | | 31.00000 | 16.00000 | 49.00000 | -5.5500 | 0.0 | 1.6552 | - | - | - | * |
| | | 32.00000 | 16.00000 | 49.00000 | -5.1750 | 0.0 | 1.3897 | - | - | - | * |
| | | 33.00000 | 16.00000 | 49.00000 | -4.8000 | 0.0 | 1.1142 | - | - | - | * |
| | | 34.00000 | 16.00000 | 49.00000 | -4.4250 | 0.0 | 0.84387 | - | - | - | * |
| | | 35.00000 | 16.00000 | 49.00000 | -4.0500 | 0.0 | 0.59102 | - | - | - | * |
| | | 36.00000 | 16.00000 | 49.00000 | -3.6750 | 0.0 | 0.36499 | - | - | - | * |
| | | 37.00000 | 16.00000 | 49.00000 | -3.3000 | 0.0 | 0.17234 | - | - | - | * |
| | | 38.00000 | 16.00000 | 49.00000 | -2.9250 | 0.0 | 0.016899 | - | - | - | * |
| | | 39.00000 | 16.00000 | 49.00000 | -2.5500 | 0.0 | -0.1023 | - | - | - | * |
| | | 40.00000 | 16.00000 | 49.00000 | -2.1750 | 0.0 | -0.18058 | - | - | - | * |
| | | 0.00000 | 17.00000 | 49.00000 | 8.7823 | 0.51879 | 1.2670 | - | - | - | * |
| | | 1.00000 | 17.00000 | 49.00000 | 9.4882 | 0.56048 | 1.0243 | - | - | - | * |
| | | 2.00000 | 17.00000 | 49.00000 | 10.194 | 0.60218 | 0.60140 | - | - | - | * |
| | | 3.00000 | 17.00000 | 49.00000 | 10.900 | 0.64388 | -0.091656 | - | - | - | * |
| | | 4.00000 | 17.00000 | 49.00000 | 11.606 | 0.68558 | -1.2015 | - | - | - | * |
| | | 5.00000 | 17.00000 | 49.00000 | 12.312 | 0.72727 | -3.0445 | - | - | - | * |
| | | 6.00000 | 17.00000 | 49.00000 | Point lies within an excavation. | | | | | | * |
| | | 7.00000 | 17.00000 | 49.00000 | Point lies within an excavation. | | | | | | * |
| | | 8.00000 | 17.00000 | 49.00000 | Point lies within an excavation. | | | | | | * |
| | | 9.00000 | 17.00000 | 49.00000 | Point lies within an excavation. | | | | | | * |
| | | 10.00000 | 17.00000 | 49.00000 | Point lies within an excavation. | | | | | | * |
| | | 11.00000 | 17.00000 | 49.00000 | Point lies within an excavation. | | | | | | * |
| | | 12.00000 | 17.00000 | 49.00000 | Point lies within an excavation. | | | | | | * |
| | | 13.00000 | 17.00000 | 49.00000 | Point lies within an excavation. | | | | | | * |
| | | 14.00000 | 17.00000 | 49.00000 | Point lies within an excavation. | | | | | | * |
| | | 15.00000 | 17.00000 | 49.00000 | Point lies within an excavation. | | | | | | * |
| | | 16.00000 | 17.00000 | 49.00000 | Point lies within an excavation. | | | | | | * |
| | | 17.00000 | 17.00000 | 49.00000 | Point lies within an excavation. | | | | | | * |
| | | 18.00000 | 17.00000 | 49.00000 | Point lies within an excavation. | | | | | | * |
| | | 19.00000 | 17.00000 | 49.00000 | Point lies within an excavation. | | | | | | * |
| | | 20.00000 | 17.00000 | 49.00000 | Point lies within an excavation. | | | | | | * |
| | | 21.00000 | 17.00000 | 49.00000 | -11.327 | -5.0343 | 0.64011 | - | - | - | * |
| | | 22.00000 | 17.00000 | 49.00000 | -11.179 | -1.8560 | 1.4523 | - | - | - | * |
| | | 23.00000 | 17.00000 | 49.00000 | -10.647 | -1.0521 | 2.0263 | - | - | - | * |
| | | 24.00000 | 17.00000 | 49.00000 | -10.015 | -0.70386 | 2.3368 | - | - | - | * |
| | | 25.00000 | 17.00000 | 49.00000 | -9.3494 | -0.50971 | 2.4694 | - | - | - | * |
| | | 26.00000 | 17.00000 | 49.00000 | -8.6682 | -0.38597 | 2.4846 | - | - | - | * |
| | | 27.00000 | 17.00000 | 49.00000 | -7.9787 | -0.30024 | 2.4219 | - | - | - | * |
| | | 28.00000 | 17.00000 | 49.00000 | -7.2842 | -0.23733 | 2.3025 | - | - | - | * |
| | | 29.00000 | 17.00000 | 49.00000 | -6.5864 | -0.18921 | 2.1303 | - | - | - | * |
| | | 30.00000 | 17.00000 | 49.00000 | -5.8916 | -0.15135 | 1.8934 | - | - | - | * |
| | | 31.00000 | 17.00000 | 49.00000 | -5.5217 | -0.12827 | 1.6560 | - | - | - | * |
| | | 32.00000 | 17.00000 | 49.00000 | -5.1508 | -0.10921 | 1.3903 | - | - | - | * |
| | | 33.00000 | 17.00000 | 49.00000 | -4.7793 | -0.093195 | 1.1147 | - | - | - | * |
| | | 34.00000 | 17.00000 | 49.00000 | -4.4072 | -0.079552 | 0.84429 | - | - | - | * |
| | | 35.00000 | 17.00000 | 49.00000 | -4.0348 | -0.067789 | 0.59141 | - | - | - | * |
| | | 36.00000 | 17.00000 | 49.00000 | -3.6620 | -0.057544 | 0.36537 | - | - | - | * |
| | | 37.00000 | 17.00000 | 49.00000 | -3.2890 | -0.048541 | 0.17273 | - | - | - | * |
| | | 38.00000 | 17.00000 | 49.00000 | -2.9157 | -0.040566 | 0.017299 | - | - | - | * |
| | | 39.00000 | 17.00000 | 49.00000 | -2.5423 | -0.033453 | -0.099817 | - | - | - | * |
| | | 40.00000 | 17.00000 | 49.00000 | -2.1687 | -0.027070 | -0.18016 | - | - | - | * |
| | | 0.00000 | 18.00000 | 49.00000 | 8.8240 | 0.52125 | 1.3525 | - | - | - | * |
| | | 1.00000 | 18.00000 | 49.00000 | 9.5299 | 0.56295 | 1.1226 | - | - | - | * |
| | | 2.00000 | 18.00000 | 49.00000 | 10.236 | 0.60464 | 0.71272 | - | - | - | * |
| | | 3.00000 | 18.00000 | 49.00000 | 10.942 | 0.64634 | 0.028107 | - | - | - | * |
| | | 4.00000 | 18.00000 | 49.00000 | 11.648 | 0.68804 | -1.0949 | - | - | - | * |
| | | 5.00000 | 18.00000 | 49.00000 | 12.353 | 0.72974 | -3.0270 | - | - | - | * |
| | | 6.00000 | 18.00000 | 49.00000 | Point lies within an excavation. | | | | | | * |
| | | 7.00000 | 18.00000 | 49.00000 | Point lies within an excavation. | | | | | | * |
| | | 8.00000 | 18.00000 | 49.00000 | Point lies within an excavation. | | | | | | * |
| | | 9.00000 | 18.00000 | 49.00000 | Point lies within an excavation. | | | | | | * |
| | | 10.00000 | 18.00000 | 49.00000 | Point lies within an excavation. | | | | | | * |
| | | 11.00000 | 18.00000 | 49.00000 | Point lies within an excavation. | | | | | | * |
| | | 12.00000 | 18.00000 | 49.00000 | Point lies within an excavation. | | | | | | * |
| | | 13.00000 | 18.00000 | 49.00000 | Point lies within an excavation. | | | | | | * |
| | | 14.00000 | 18.00000 | 49.00000 | Point lies within an excavation. | | | | | | * |
| | | 15.00000 | 18.00000 | 49.00000 | Point lies within an excavation. | | | | | | * |
| | | 16.00000 | 18.00000 | 49.00000 | Point lies within an excavation. | | | | | | * |
| | | 17.00000 | 18.00000 | 49.00000 | Point lies within an excavation. | | | | | | * |
| | | 18.00000 | 18.00000 | 49.00000 | Point lies within an excavation. | | | | | | * |
| | | 19.00000 | 18.00000 | 49.00000 | Point lies within an excavation. | | | | | | * |
| | | 20.00000 | 18.00000 | 49.00000 | -11.206 | -8.5381 | 1.2979 | - | - | - | * |
| | | 21.00000 | 18.00000 | 49.00000 | -10.690 | -8.1444 | 2.8119 | - | - | - | * |
| | | 22.00000 | 18.00000 | 49.00000 | -12.596 | -5.8978 | 4.2428 | - | - | - | * |
| | | 23.00000 | 18.00000 | 49.00000 | -10.397 | -4.6209 | 2.7214 | - | - | - | * |
| | | 24.00000 | 18.00000 | 49.00000 | -9.3093 | -3.3369 | 2.3377 | - | - | - | * |
| | | 25.00000 | 18.00000 | 49.00000 | -8.8202 | -2.4580 | 2.4575 | - | - | - | * |
| | | 26.00000 | 18.00000 | 49.00000 | -8.2562 | -1.8783 | 2.4680 | - | - | - | * |
| | | 27.00000 | 18.00000 | 49.00000 | -7.6498 | -1.4689 | 2.4038 | - | - | - | * |
| | | 28.00000 | 18.00000 | 49.00000 | -7.0170 | -1.1650 | 2.2836 | - | - | - | * |
| | | 29.00000 | 18.00000 | 49.00000 | -6.3669 | -0.93079 | 2.1100 | - | - | - | * |
| | | 30.00000 | 18.00000 | 49.00000 | -5.7354 | -0.74885 | 1.8749 | - | - | - | * |
| | | 31.00000 | 18.00000 | 49.00000 | -5.3874 | -0.63542 | 1.6372 | - | - | - | * |
| | | 32.00000 | 18.00000 | 49.00000 | -5.0347 | -0.54144 | 1.3724 | - | - | - | * |
| | | 33.00000 | 18.00000 | 49.00000 | -4.6785 | -0.46232 | 1.0983 | - | - | - | * |
| | | 34.00000 | 18.00000 | 49.00000 | -4.3196 | -0.39481 | 0.83002 | - | - | - | * |
| | | 35.00000 | 18.00000 | 49.00000 | -3.9584 | -0.33653 | 0.57942 | - | - | - | * |
| | | 36.00000 | 18.00000 | 49.00000 | -3.5955 | -0.28571 | 0.35572 | - | - | - | * |
| | | 37.00000 | 18.00000 | 49.00000 | -3.2311 | -0.24101 | 0.16534 | - | - | - | * |
| | | 38.00000 | 18.00000 | 49.00000 | -2.8655 | -0.20139 | 0.011992 | - | - | - | * |

| Type/No. | | Coordinates | | | Displacements | | | | | Angle of Line | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Name | Dist. | x | y | z | x | y | z | Horizontal displacement | Horizontal displacement | to x Axis | |
| | | 39.00000 | 18.00000 | 49.00000 | -2.4989 | -0.16603 | -0.10329 | - | - | - | * |
| | | 40.00000 | 18.00000 | 49.00000 | -2.1315 | -0.13428 | -0.18211 | - | - | - | * |
| | | 0.00000 | 19.00000 | 49.00000 | 8.8657 | 0.52371 | 1.4776 | - | - | - | * |
| | | 1.00000 | 19.00000 | 49.00000 | 9.5716 | 0.56541 | 1.2735 | - | - | - | * |
| | | 2.00000 | 19.00000 | 49.00000 | 10.277 | 0.60711 | 0.89650 | - | - | - | * |
| | | 3.00000 | 19.00000 | 49.00000 | 10.983 | 0.64880 | 0.25326 | - | - | - | * |
| | | 4.00000 | 19.00000 | 49.00000 | 11.689 | 0.69050 | -0.82155 | - | - | - | * |
| | | 5.00000 | 19.00000 | 49.00000 | 12.395 | 0.73220 | -2.7641 | - | - | - | * |
| | | 6.00000 | 19.00000 | 49.00000 | | | Point lies within an excavation. | | | | * |
| | | 7.00000 | 19.00000 | 49.00000 | | | Point lies within an excavation. | | | | * |
| | | 8.00000 | 19.00000 | 49.00000 | | | Point lies within an excavation. | | | | * |
| | | 9.00000 | 19.00000 | 49.00000 | | | Point lies within an excavation. | | | | * |
| | | 10.00000 | 19.00000 | 49.00000 | | | Point lies within an excavation. | | | | * |
| | | 11.00000 | 19.00000 | 49.00000 | | | Point lies within an excavation. | | | | * |
| | | 12.00000 | 19.00000 | 49.00000 | | | Point lies within an excavation. | | | | * |
| | | 13.00000 | 19.00000 | 49.00000 | | | Point lies within an excavation. | | | | * |
| | | 14.00000 | 19.00000 | 49.00000 | | | Point lies within an excavation. | | | | * |
| | | 15.00000 | 19.00000 | 49.00000 | | | Point lies within an excavation. | | | | * |
| | | 16.00000 | 19.00000 | 49.00000 | | | Point lies within an excavation. | | | | * |
| | | 17.00000 | 19.00000 | 49.00000 | | | Point lies within an excavation. | | | | * |
| | | 18.00000 | 19.00000 | 49.00000 | | | Point lies within an excavation. | | | | * |
| | | 19.00000 | 19.00000 | 49.00000 | -11.332 | -8.6337 | 0.19103 | - | - | - | * |
| | | 20.00000 | 19.00000 | 49.00000 | -10.811 | -8.2371 | 2.0592 | - | - | - | * |
| | | 21.00000 | 19.00000 | 49.00000 | -10.306 | -7.8523 | 3.3440 | - | - | - | * |
| | | 22.00000 | 19.00000 | 49.00000 | -9.8158 | -7.4787 | 4.2722 | - | - | - | * |
| | | 23.00000 | 19.00000 | 49.00000 | -10.047 | -6.6262 | 4.8630 | - | - | - | * |
| | | 24.00000 | 19.00000 | 49.00000 | -11.017 | -5.3124 | 4.8607 | - | - | - | * |
| | | 25.00000 | 19.00000 | 49.00000 | -9.4670 | -4.2076 | 3.3664 | - | - | - | * |
| | | 26.00000 | 19.00000 | 49.00000 | -7.7653 | -3.1830 | 2.4131 | - | - | - | * |
| | | 27.00000 | 19.00000 | 49.00000 | -7.2436 | -2.5170 | 2.3497 | - | - | - | * |
| | | 28.00000 | 19.00000 | 49.00000 | -6.6769 | -2.0106 | 2.2301 | - | - | - | * |
| | | 29.00000 | 19.00000 | 49.00000 | -6.0793 | -1.6138 | 2.0543 | - | - | - | * |
| | | 30.00000 | 19.00000 | 49.00000 | -5.5472 | -1.3158 | 1.8254 | - | - | - | * |
| | | 31.00000 | 19.00000 | 49.00000 | -5.2231 | -1.1194 | 1.5882 | - | - | - | * |
| | | 32.00000 | 19.00000 | 49.00000 | -4.8904 | -0.95563 | 1.3264 | - | - | - | * |
| | | 33.00000 | 19.00000 | 49.00000 | -4.5513 | -0.81711 | 1.0569 | - | - | - | * |
| | | 34.00000 | 19.00000 | 49.00000 | -4.2069 | -0.69847 | 0.79399 | - | - | - | * |
| | | 35.00000 | 19.00000 | 49.00000 | -3.8585 | -0.59573 | 0.54915 | - | - | - | * |
| | | 36.00000 | 19.00000 | 49.00000 | -3.5067 | -0.50593 | 0.33123 | - | - | - | * |
| | | 37.00000 | 19.00000 | 49.00000 | -3.1522 | -0.42678 | 0.14638 | - | - | - | * |
| | | 38.00000 | 19.00000 | 49.00000 | -2.7953 | -0.35650 | -0.0018979 | - | - | - | * |
| | | 39.00000 | 19.00000 | 49.00000 | -2.4366 | -0.29369 | -0.11273 | - | - | - | * |
| | | 40.00000 | 19.00000 | 49.00000 | -2.0761 | -0.23722 | -0.18786 | - | - | - | * |
| | | 0.00000 | 20.00000 | 49.00000 | 8.9074 | 0.52618 | 1.6381 | - | - | - | * |
| | | 1.00000 | 20.00000 | 49.00000 | 9.6133 | 0.56787 | 1.4717 | - | - | - | * |
| | | 2.00000 | 20.00000 | 49.00000 | 10.319 | 0.60957 | 1.1463 | - | - | - | * |
| | | 3.00000 | 20.00000 | 49.00000 | 11.025 | 0.65127 | 0.57808 | - | - | - | * |
| | | 4.00000 | 20.00000 | 49.00000 | 11.731 | 0.69296 | -0.37557 | - | - | - | * |
| | | 5.00000 | 20.00000 | 49.00000 | 12.437 | 0.73466 | -2.0505 | - | - | - | * |
| | | 6.00000 | 20.00000 | 49.00000 | | | Point lies within an excavation. | | | | * |
| | | 7.00000 | 20.00000 | 49.00000 | | | Point lies within an excavation. | | | | * |
| | | 8.00000 | 20.00000 | 49.00000 | | | Point lies within an excavation. | | | | * |
| | | 9.00000 | 20.00000 | 49.00000 | | | Point lies within an excavation. | | | | * |
| | | 10.00000 | 20.00000 | 49.00000 | | | Point lies within an excavation. | | | | * |
| | | 11.00000 | 20.00000 | 49.00000 | | | Point lies within an excavation. | | | | * |
| | | 12.00000 | 20.00000 | 49.00000 | | | Point lies within an excavation. | | | | * |
| | | 13.00000 | 20.00000 | 49.00000 | | | Point lies within an excavation. | | | | * |
| | | 14.00000 | 20.00000 | 49.00000 | | | Point lies within an excavation. | | | | * |
| | | 15.00000 | 20.00000 | 49.00000 | | | Point lies within an excavation. | | | | * |
| | | 16.00000 | 20.00000 | 49.00000 | | | Point lies within an excavation. | | | | * |
| | | 17.00000 | 20.00000 | 49.00000 | | | Point lies within an excavation. | | | | * |
| | | 18.00000 | 20.00000 | 49.00000 | | | Point lies within an excavation. | | | | * |
| | | 19.00000 | 20.00000 | 49.00000 | -10.934 | -8.3304 | 1.4747 | - | - | - | * |
| | | 20.00000 | 20.00000 | 49.00000 | -10.425 | -7.9428 | 2.8256 | - | - | - | * |
| | | 21.00000 | 20.00000 | 49.00000 | -9.9313 | -7.5667 | 3.8395 | - | - | - | * |
| | | 22.00000 | 20.00000 | 49.00000 | -9.4517 | -7.2013 | 4.5746 | - | - | - | * |
| | | 23.00000 | 20.00000 | 49.00000 | -8.9857 | -6.8462 | 5.0818 | - | - | - | * |
| | | 24.00000 | 20.00000 | 49.00000 | -8.5678 | -6.4786 | 5.3889 | - | - | - | * |
| | | 25.00000 | 20.00000 | 49.00000 | -9.2682 | -5.4294 | 5.0370 | - | - | - | * |
| | | 26.00000 | 20.00000 | 49.00000 | -9.5628 | -4.6477 | 4.4572 | - | - | - | * |
| | | 27.00000 | 20.00000 | 49.00000 | -8.5369 | -3.7942 | 3.2034 | - | - | - | * |
| | | 28.00000 | 20.00000 | 49.00000 | -6.2821 | -2.7241 | 2.1425 | - | - | - | * |
| | | 29.00000 | 20.00000 | 49.00000 | -5.7371 | -2.2003 | 1.9623 | - | - | - | * |
| | | 30.00000 | 20.00000 | 49.00000 | -5.3336 | -1.8317 | 1.7451 | - | - | - | * |
| | | 31.00000 | 20.00000 | 49.00000 | -5.0338 | -1.5641 | 1.5102 | - | - | - | * |
| | | 32.00000 | 20.00000 | 49.00000 | -4.7219 | -1.3390 | 1.2538 | - | - | - | * |
| | | 33.00000 | 20.00000 | 49.00000 | -4.4007 | -1.1472 | 0.99184 | - | - | - | * |
| | | 34.00000 | 20.00000 | 49.00000 | -4.0720 | -0.98199 | 0.73758 | - | - | - | * |
| | | 35.00000 | 20.00000 | 49.00000 | -3.7372 | -0.83831 | 0.50188 | - | - | - | * |
| | | 36.00000 | 20.00000 | 49.00000 | -3.3975 | -0.71224 | 0.29305 | - | - | - | * |
| | | 37.00000 | 20.00000 | 49.00000 | -3.0536 | -0.60079 | 0.11686 | - | - | - | * |
| | | 38.00000 | 20.00000 | 49.00000 | -2.7064 | -0.50157 | -0.023518 | - | - | - | * |
| | | 39.00000 | 20.00000 | 49.00000 | -2.3562 | -0.41269 | -0.12745 | - | - | - | * |
| | | 40.00000 | 20.00000 | 49.00000 | -2.0035 | -0.33264 | -0.19688 | - | - | - | * |
| | | 0.00000 | 21.00000 | 49.00000 | 8.8382 | 0.40444 | 1.8270 | - | - | - | * |
| | | 1.00000 | 21.00000 | 49.00000 | 9.5888 | 0.49592 | 1.7070 | - | - | - | * |
| | | 2.00000 | 21.00000 | 49.00000 | 10.361 | 0.61203 | 1.4463 | - | - | - | * |
| | | 3.00000 | 21.00000 | 49.00000 | 11.067 | 0.65373 | 0.97545 | - | - | - | * |
| | | 4.00000 | 21.00000 | 49.00000 | 11.773 | 0.69543 | 0.18960 | - | - | - | * |
| | | 5.00000 | 21.00000 | 49.00000 | 12.478 | 0.73713 | -1.1150 | - | - | - | * |
| | | 6.00000 | 21.00000 | 49.00000 | | | Point lies within an excavation. | | | | * |
| | | 7.00000 | 21.00000 | 49.00000 | | | Point lies within an excavation. | | | | * |
| | | 8.00000 | 21.00000 | 49.00000 | | | Point lies within an excavation. | | | | * |
| | | 9.00000 | 21.00000 | 49.00000 | | | Point lies within an excavation. | | | | * |
| | | 10.00000 | 21.00000 | 49.00000 | | | Point lies within an excavation. | | | | * |
| | | 11.00000 | 21.00000 | 49.00000 | | | Point lies within an excavation. | | | | * |
| | | 12.00000 | 21.00000 | 49.00000 | | | Point lies within an excavation. | | | | * |
| | | 13.00000 | 21.00000 | 49.00000 | | | Point lies within an excavation. | | | | * |
| | | 14.00000 | 21.00000 | 49.00000 | | | Point lies within an excavation. | | | | * |
| | | 15.00000 | 21.00000 | 49.00000 | | | Point lies within an excavation. | | | | * |
| | | 16.00000 | 21.00000 | 49.00000 | | | Point lies within an excavation. | | | | * |
| | | 17.00000 | 21.00000 | 49.00000 | | | Point lies within an excavation. | | | | * |
| | | 18.00000 | 21.00000 | 49.00000 | -11.057 | -8.4244 | 1.1648 | - | - | - | * |
| | | 19.00000 | 21.00000 | 49.00000 | -10.545 | -8.0341 | 2.4822 | - | - | - | * |
| | | 20.00000 | 21.00000 | 49.00000 | -10.047 | -7.6552 | 3.5066 | - | - | - | * |
| | | 21.00000 | 21.00000 | 49.00000 | -9.5647 | -7.2874 | 4.2790 | - | - | - | * |
| | | 22.00000 | 21.00000 | 49.00000 | -9.0955 | -6.9299 | 4.8312 | - | - | - | * |
| | | 23.00000 | 21.00000 | 49.00000 | -8.6392 | -6.5823 | 5.1945 | - | - | - | * |
| | | 24.00000 | 21.00000 | 49.00000 | -8.1951 | -6.2439 | 5.3976 | - | - | - | * |
| | | 25.00000 | 21.00000 | 49.00000 | -7.7625 | -5.9143 | 5.4660 | - | - | - | * |
| | | 26.00000 | 21.00000 | 49.00000 | -7.9548 | -5.2329 | 5.0311 | - | - | - | * |
| | | 27.00000 | 21.00000 | 49.00000 | -8.1597 | -4.5447 | 4.3220 | - | - | - | * |
| | | 28.00000 | 21.00000 | 49.00000 | -8.1481 | -3.9748 | 3.5484 | - | - | - | * |
| | | 29.00000 | 21.00000 | 49.00000 | -7.6068 | -3.3808 | 2.6105 | - | - | - | * |
| | | 30.00000 | 21.00000 | 49.00000 | -5.1034 | -2.2682 | 1.6352 | - | - | - | * |
| | | 31.00000 | 21.00000 | 49.00000 | -4.8244 | -1.9570 | 1.4048 | - | - | - | * |
| | | 32.00000 | 21.00000 | 49.00000 | -4.5332 | -1.6810 | 1.1567 | - | - | - | * |
| | | 33.00000 | 21.00000 | 49.00000 | -4.2301 | -1.4438 | 0.90533 | - | - | - | * |
| | | 34.00000 | 21.00000 | 49.00000 | -3.9173 | -1.2380 | 0.66296 | - | - | - | * |
| | | 35.00000 | 21.00000 | 49.00000 | -3.5967 | -1.0580 | 0.43962 | - | - | - | * |
| | | 36.00000 | 21.00000 | 49.00000 | -3.2696 | -0.89931 | 0.24300 | - | - | - | * |
| | | 37.00000 | 21.00000 | 49.00000 | -2.9371 | -0.75843 | 0.078333 | - | - | - | * |
| | | 38.00000 | 21.00000 | 49.00000 | -2.6000 | -0.63259 | -0.051575 | - | - | - | * |
| | | 39.00000 | 21.00000 | 49.00000 | -2.2590 | -0.51955 | -0.14642 | - | - | - | * |
| | | 40.00000 | 21.00000 | 49.00000 | -1.9147 | -0.41748 | -0.20841 | - | - | - | * |
| | | 0.00000 | 22.00000 | 49.00000 | 7.7792 | -0.74609 | 1.9958 | - | - | - | * |
| | | 1.00000 | 22.00000 | 49.00000 | 8.1833 | -1.0350 | 1.9263 | - | - | - | * |
| | | 2.00000 | 22.00000 | 49.00000 | 8.4221 | -1.5038 | 1.7388 | - | - | - | * |
| | | 3.00000 | 22.00000 | 49.00000 | 8.2942 | -2.3712 | 1.3823 | - | - | - | * |
| | | 4.00000 | 22.00000 | 49.00000 | 7.1122 | -4.3826 | 0.80038 | - | - | - | * |
| | | 5.00000 | 22.00000 | 49.00000 | 2.0599 | -10.545 | 0.0016246 | - | - | - | * |
| | | 6.00000 | 22.00000 | 49.00000 | 0.73312 | -12.096 | -0.80563 | - | - | - | * |
| | | 7.00000 | 22.00000 | 49.00000 | 0.73571 | -12.139 | -1.5256 | - | - | - | * |
| | | 8.00000 | 22.00000 | 49.00000 | 0.73830 | -12.182 | -2.1102 | - | - | - | * |
| | | 9.00000 | 22.00000 | 49.00000 | 0.0 | -13.797 | -0.70555 | - | - | - | * |
| | | 10.00000 | 22.00000 | 49.00000 | 0.0 | -13.797 | -0.97163 | - | - | - | * |
| | | 11.00000 | 22.00000 | 49.00000 | 0.0 | -13.797 | -1.0846 | - | - | - | * |
| | | 12.00000 | 22.00000 | 49.00000 | 0.0 | -13.797 | -1.0462 | - | - | - | * |
| | | 13.00000 | 22.00000 | 49.00000 | 0.0 | -13.797 | -0.85686 | - | - | - | * |
| | | 14.00000 | 22.00000 | 49.00000 | 0.0 | -13.797 | -0.51644 | - | - | - | * |
| | | 15.00000 | 22.00000 | 49.00000 | 0.0 | -13.797 | -0.028229 | - | - | - | * |

| Type/No. | | Coordinates | | | Displacements | | | | | Angle of Line | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Name | Dist. | x | y | z | x | y | z | Horizontal displacement | Horizontal displacement | to x Axis | |
| | | 16.00000 | 22.00000 | 49.00000 | 0.0 | -13.797 | 0.59631 | - | - | - | * |
| | | 17.00000 | 22.00000 | 49.00000 | 0.0 | -13.797 | 1.3244 | - | - | - | * |
| | | 18.00000 | 22.00000 | 49.00000 | -10.665 | -8.1259 | 2.3320 | - | - | - | * |
| | | 19.00000 | 22.00000 | 49.00000 | -10.165 | -7.7444 | 3.3197 | - | - | - | * |
| | | 20.00000 | 22.00000 | 49.00000 | -9.6784 | -7.3740 | 4.0840 | - | - | - | * |
| | | 21.00000 | 22.00000 | 49.00000 | -9.2060 | -7.0141 | 4.6485 | - | - | - | * |
| | | 22.00000 | 22.00000 | 49.00000 | -8.7467 | -6.6642 | 5.0350 | - | - | - | * |
| | | 23.00000 | 22.00000 | 49.00000 | -8.2998 | -6.3237 | 5.2657 | - | - | - | * |
| | | 24.00000 | 22.00000 | 49.00000 | -7.8645 | -5.9920 | 5.3626 | - | - | - | * |
| | | 25.00000 | 22.00000 | 49.00000 | -7.4402 | -5.6687 | 5.3463 | - | - | - | * |
| | | 26.00000 | 22.00000 | 49.00000 | -7.0259 | -5.3531 | 5.2362 | - | - | - | * |
| | | 27.00000 | 22.00000 | 49.00000 | -6.8855 | -4.8962 | 4.8339 | - | - | - | * |
| | | 28.00000 | 22.00000 | 49.00000 | -7.0028 | -4.2901 | 4.0551 | - | - | - | * |
| | | 29.00000 | 22.00000 | 49.00000 | -6.9489 | -3.7663 | 3.2638 | - | - | - | * |
| | | 30.00000 | 22.00000 | 49.00000 | -6.7556 | -3.3044 | 2.4972 | - | - | - | * |
| | | 31.00000 | 22.00000 | 49.00000 | -6.4476 | -2.8889 | 1.7850 | - | - | - | * |
| | | 32.00000 | 22.00000 | 49.00000 | -4.3380 | -1.9280 | 1.0384 | - | - | - | * |
| | | 33.00000 | 22.00000 | 49.00000 | -4.0425 | -1.7003 | 0.80044 | - | - | - | * |
| | | 34.00000 | 22.00000 | 49.00000 | -3.7457 | -1.4607 | 0.57302 | - | - | - | * |
| | | 35.00000 | 22.00000 | 49.00000 | -3.4394 | -1.2497 | 0.36502 | - | - | - | * |
| | | 36.00000 | 22.00000 | 49.00000 | -3.1251 | -1.0626 | 0.18339 | - | - | - | * |
| | | 37.00000 | 22.00000 | 49.00000 | -2.8042 | -0.89576 | 0.032808 | - | - | - | * |
| | | 38.00000 | 22.00000 | 49.00000 | -2.4777 | -0.74609 | -0.084410 | - | - | - | * |
| | | 39.00000 | 22.00000 | 49.00000 | -2.1464 | -0.61117 | -0.16834 | - | - | - | * |
| | | 40.00000 | 22.00000 | 49.00000 | -1.8108 | -0.48898 | -0.22149 | - | - | - | * |
| | | 0.00000 | 23.00000 | 49.00000 | 6.6855 | -1.7966 | 2.1110 | - | - | - | * |
| | | 1.00000 | 23.00000 | 49.00000 | 6.7874 | -2.3866 | 2.0843 | - | - | - | * |
| | | 2.00000 | 23.00000 | 49.00000 | 6.6005 | -3.2756 | 1.9641 | - | - | - | * |
| | | 3.00000 | 23.00000 | 49.00000 | 5.8844 | -4.7090 | 1.7191 | - | - | - | * |
| | | 4.00000 | 23.00000 | 49.00000 | 4.1769 | -7.1468 | 1.3296 | - | - | - | * |
| | | 5.00000 | 23.00000 | 49.00000 | 1.0281 | -10.963 | 0.82241 | - | - | - | * |
| | | 6.00000 | 23.00000 | 49.00000 | 0.69035 | -11.391 | 0.28385 | - | - | - | * |
| | | 7.00000 | 23.00000 | 49.00000 | 0.69294 | -11.433 | -0.21284 | - | - | - | * |
| | | 8.00000 | 23.00000 | 49.00000 | 0.69553 | -11.476 | -0.63011 | - | - | - | * |
| | | 9.00000 | 23.00000 | 49.00000 | 0.0 | -12.994 | 1.3204 | - | - | - | * |
| | | 10.00000 | 23.00000 | 49.00000 | 0.0 | -12.994 | 1.1149 | - | - | - | * |
| | | 11.00000 | 23.00000 | 49.00000 | 0.0 | -12.994 | 1.0255 | - | - | - | * |
| | | 12.00000 | 23.00000 | 49.00000 | 0.0 | -12.994 | 1.0529 | - | - | - | * |
| | | 13.00000 | 23.00000 | 49.00000 | 0.0 | -12.994 | 1.1958 | - | - | - | * |
| | | 14.00000 | 23.00000 | 49.00000 | 0.0 | -12.994 | 1.4503 | - | - | - | * |
| | | 15.00000 | 23.00000 | 49.00000 | 0.0 | -12.994 | 1.8073 | - | - | - | * |
| | | 16.00000 | 23.00000 | 49.00000 | 0.0 | -12.994 | 2.2499 | - | - | - | * |
| | | 17.00000 | 23.00000 | 49.00000 | 0.0 | -12.994 | 2.7482 | - | - | - | * |
| | | 18.00000 | 23.00000 | 49.00000 | -4.6144 | -8.0479 | 2.2465 | - | - | - | * |
| | | 19.00000 | 23.00000 | 49.00000 | -7.9902 | -6.6082 | 3.1536 | - | - | - | * |
| | | 20.00000 | 23.00000 | 49.00000 | -9.3172 | -7.0988 | 4.5578 | - | - | - | * |
| | | 21.00000 | 23.00000 | 49.00000 | -8.8549 | -6.7466 | 4.9427 | - | - | - | * |
| | | 22.00000 | 23.00000 | 49.00000 | -8.4051 | -6.4039 | 5.1824 | - | - | - | * |
| | | 23.00000 | 23.00000 | 49.00000 | -7.9672 | -6.0702 | 5.2939 | - | - | - | * |
| | | 24.00000 | 23.00000 | 49.00000 | -7.5402 | -5.7449 | 5.2947 | - | - | - | * |
| | | 25.00000 | 23.00000 | 49.00000 | -7.1237 | -5.4276 | 5.2020 | - | - | - | * |
| | | 26.00000 | 23.00000 | 49.00000 | -6.7167 | -5.1175 | 5.0323 | - | - | - | * |
| | | 27.00000 | 23.00000 | 49.00000 | -6.3186 | -4.8142 | 4.8007 | - | - | - | * |
| | | 28.00000 | 23.00000 | 49.00000 | -5.9733 | -4.4924 | 4.4773 | - | - | - | * |
| | | 29.00000 | 23.00000 | 49.00000 | -6.0121 | -3.9535 | 3.6795 | - | - | - | * |
| | | 30.00000 | 23.00000 | 49.00000 | -5.9120 | -3.4727 | 2.9064 | - | - | - | * |
| | | 31.00000 | 23.00000 | 49.00000 | -5.6946 | -3.0375 | 2.1845 | - | - | - | * |
| | | 32.00000 | 23.00000 | 49.00000 | -5.3776 | -2.6378 | 1.5341 | - | - | - | * |
| | | 33.00000 | 23.00000 | 49.00000 | -4.9758 | -2.2659 | 0.96825 | - | - | - | * |
| | | 34.00000 | 23.00000 | 49.00000 | -3.5725 | -1.5878 | 0.47184 | - | - | - | * |
| | | 35.00000 | 23.00000 | 49.00000 | -3.2673 | -1.4095 | 0.28125 | - | - | - | * |
| | | 36.00000 | 23.00000 | 49.00000 | -2.9659 | -1.1986 | 0.11702 | - | - | - | * |
| | | 37.00000 | 23.00000 | 49.00000 | -2.6567 | -1.0095 | -0.017360 | - | - | - | * |
| | | 38.00000 | 23.00000 | 49.00000 | -2.3410 | -0.83912 | -0.12010 | - | - | - | * |
| | | 39.00000 | 23.00000 | 49.00000 | -2.0194 | -0.68491 | -0.19170 | - | - | - | * |
| | | 40.00000 | 23.00000 | 49.00000 | -1.6930 | -0.54475 | -0.23504 | - | - | - | * |
| | | 0.00000 | 24.00000 | 49.00000 | 5.6543 | -2.6545 | 2.1703 | - | - | - | * |
| | | 1.00000 | 24.00000 | 49.00000 | 5.5502 | -3.4201 | 2.1760 | - | - | - | * |
| | | 2.00000 | 24.00000 | 49.00000 | 5.1414 | -4.4819 | 2.1080 | - | - | - | * |
| | | 3.00000 | 24.00000 | 49.00000 | 4.2769 | -5.9785 | 1.9474 | - | - | - | * |
| | | 4.00000 | 24.00000 | 49.00000 | 2.7938 | -8.0390 | 1.6843 | - | - | - | * |
| | | 5.00000 | 24.00000 | 49.00000 | 0.71363 | -10.565 | 1.3296 | - | - | - | * |
| | | 6.00000 | 24.00000 | 49.00000 | 0.64757 | -10.685 | 0.94216 | - | - | - | * |
| | | 7.00000 | 24.00000 | 49.00000 | 0.65017 | -10.728 | 0.58578 | - | - | - | * |
| | | 8.00000 | 24.00000 | 49.00000 | 0.65276 | -10.771 | 0.28386 | - | - | - | * |
| | | 9.00000 | 24.00000 | 49.00000 | 0.0 | -12.221 | 2.6921 | - | - | - | * |
| | | 10.00000 | 24.00000 | 49.00000 | 0.0 | -12.221 | 2.5339 | - | - | - | * |
| | | 11.00000 | 24.00000 | 49.00000 | 0.0 | -12.221 | 2.4636 | - | - | - | * |
| | | 12.00000 | 24.00000 | 49.00000 | 0.0 | -12.221 | 2.4831 | - | - | - | * |
| | | 13.00000 | 24.00000 | 49.00000 | 0.0 | -12.221 | 2.5909 | - | - | - | * |
| | | 14.00000 | 24.00000 | 49.00000 | 0.0 | -12.221 | 2.7823 | - | - | - | * |
| | | 15.00000 | 24.00000 | 49.00000 | 0.0 | -12.221 | 3.0485 | - | - | - | * |
| | | 16.00000 | 24.00000 | 49.00000 | 0.0 | -12.221 | 3.3754 | - | - | - | * |
| | | 17.00000 | 24.00000 | 49.00000 | 0.0 | -12.221 | 3.7430 | - | - | - | * |
| | | 18.00000 | 24.00000 | 49.00000 | -2.7757 | -8.4877 | 3.0068 | - | - | - | * |
| | | 19.00000 | 24.00000 | 49.00000 | -5.3370 | -6.9947 | 3.4385 | - | - | - | * |
| | | 20.00000 | 24.00000 | 49.00000 | -6.9975 | -6.1048 | 3.9677 | - | - | - | * |
| | | 21.00000 | 24.00000 | 49.00000 | -8.5111 | -6.4847 | 5.1608 | - | - | - | * |
| | | 22.00000 | 24.00000 | 49.00000 | -8.0704 | -6.1489 | 5.2723 | - | - | - | * |
| | | 23.00000 | 24.00000 | 49.00000 | -7.6409 | -5.8217 | 5.2788 | - | - | - | * |
| | | 24.00000 | 24.00000 | 49.00000 | -7.2220 | -5.5024 | 5.1947 | - | - | - | * |
| | | 25.00000 | 24.00000 | 49.00000 | -6.8128 | -5.1907 | 5.0348 | - | - | - | * |
| | | 26.00000 | 24.00000 | 49.00000 | -6.4126 | -4.8858 | 4.8129 | - | - | - | * |
| | | 27.00000 | 24.00000 | 49.00000 | -6.0208 | -4.5873 | 4.5423 | - | - | - | * |
| | | 28.00000 | 24.00000 | 49.00000 | -5.6366 | -4.2945 | 4.2353 | - | - | - | * |
| | | 29.00000 | 24.00000 | 49.00000 | -5.2592 | -4.0070 | 3.9031 | - | - | - | * |
| | | 30.00000 | 24.00000 | 49.00000 | -5.1408 | -3.5711 | 3.2275 | - | - | - | * |
| | | 31.00000 | 24.00000 | 49.00000 | -4.9951 | -3.1276 | 2.5011 | - | - | - | * |
| | | 32.00000 | 24.00000 | 49.00000 | -4.7494 | -2.7179 | 1.8429 | - | - | - | * |
| | | 33.00000 | 24.00000 | 49.00000 | -4.4168 | -2.3353 | 1.2647 | - | - | - | * |
| | | 34.00000 | 24.00000 | 49.00000 | -4.0089 | -1.9745 | 0.77208 | - | - | - | * |
| | | 35.00000 | 24.00000 | 49.00000 | -3.5356 | -1.6315 | 0.36342 | - | - | - | * |
| | | 36.00000 | 24.00000 | 49.00000 | -2.8070 | -1.2476 | 0.047659 | - | - | - | * |
| | | 37.00000 | 24.00000 | 49.00000 | -2.4962 | -1.0972 | -0.069599 | - | - | - | * |
| | | 38.00000 | 24.00000 | 49.00000 | -2.1911 | -0.90933 | -0.15658 | - | - | - | * |
| | | 39.00000 | 24.00000 | 49.00000 | -1.8796 | -0.73857 | -0.21496 | - | - | - | * |
| | | 40.00000 | 24.00000 | 49.00000 | -1.5623 | -0.58278 | -0.24801 | - | - | - | * |
| | | 0.00000 | 25.00000 | 49.00000 | 4.7386 | -3.2830 | 2.1763 | - | - | - | * |
| | | 1.00000 | 25.00000 | 49.00000 | 4.5222 | -4.1135 | 2.2041 | - | - | - | * |
| | | 2.00000 | 25.00000 | 49.00000 | 4.0411 | -5.1815 | 2.1716 | - | - | - | * |
| | | 3.00000 | 25.00000 | 49.00000 | 3.2238 | -6.5387 | 2.0669 | - | - | - | * |
| | | 4.00000 | 25.00000 | 49.00000 | 2.0353 | -8.1851 | 1.8824 | - | - | - | * |
| | | 5.00000 | 25.00000 | 49.00000 | 0.60221 | -9.9365 | 1.6207 | - | - | - | * |
| | | 6.00000 | 25.00000 | 49.00000 | 0.60480 | -9.9792 | 1.3334 | - | - | - | * |
| | | 7.00000 | 25.00000 | 49.00000 | 0.60739 | -10.022 | 1.0714 | - | - | - | * |
| | | 8.00000 | 25.00000 | 49.00000 | 0.60999 | -10.065 | 0.85031 | - | - | - | * |
| | | 9.00000 | 25.00000 | 49.00000 | 0.0 | -11.475 | 3.6082 | - | - | - | * |
| | | 10.00000 | 25.00000 | 49.00000 | 0.0 | -11.475 | 3.4859 | - | - | - | * |
| | | 11.00000 | 25.00000 | 49.00000 | 0.0 | -11.475 | 3.4308 | - | - | - | * |
| | | 12.00000 | 25.00000 | 49.00000 | 0.0 | -11.475 | 3.4446 | - | - | - | * |
| | | 13.00000 | 25.00000 | 49.00000 | 0.0 | -11.475 | 3.5263 | - | - | - | * |
| | | 14.00000 | 25.00000 | 49.00000 | 0.0 | -11.475 | 3.6717 | - | - | - | * |
| | | 15.00000 | 25.00000 | 49.00000 | 0.0 | -11.475 | 3.8736 | - | - | - | * |
| | | 16.00000 | 25.00000 | 49.00000 | 0.0 | -11.475 | 4.1214 | - | - | - | * |
| | | 17.00000 | 25.00000 | 49.00000 | 0.0 | -11.475 | 4.4018 | - | - | - | * |
| | | 18.00000 | 25.00000 | 49.00000 | -1.9119 | -8.4535 | 3.5768 | - | - | - | * |
| | | 19.00000 | 25.00000 | 49.00000 | -3.7323 | -6.9983 | 3.6525 | - | - | - | * |
| | | 20.00000 | 25.00000 | 49.00000 | -5.2582 | -6.2310 | 4.0494 | - | - | - | * |
| | | 21.00000 | 25.00000 | 49.00000 | -6.2292 | -5.5734 | 4.3199 | - | - | - | * |
| | | 22.00000 | 25.00000 | 49.00000 | -7.7422 | -5.8988 | 5.3064 | - | - | - | * |
| | | 23.00000 | 25.00000 | 49.00000 | -7.3208 | -5.5778 | 5.2218 | - | - | - | * |
| | | 24.00000 | 25.00000 | 49.00000 | -6.9094 | -5.2643 | 5.0642 | - | - | - | * |
| | | 25.00000 | 25.00000 | 49.00000 | -6.5071 | -4.9578 | 4.8462 | - | - | - | * |
| | | 26.00000 | 25.00000 | 49.00000 | -6.1134 | -4.6578 | 4.5800 | - | - | - | * |
| | | 27.00000 | 25.00000 | 49.00000 | -5.7274 | -4.3637 | 4.2771 | - | - | - | * |
| | | 28.00000 | 25.00000 | 49.00000 | -5.3485 | -4.0750 | 3.9481 | - | - | - | * |
| | | 29.00000 | 25.00000 | 49.00000 | -4.9758 | -3.7911 | 3.6029 | - | - | - | * |
| | | 30.00000 | 25.00000 | 49.00000 | -4.6087 | -3.5114 | 3.2501 | - | - | - | * |
| | | 31.00000 | 25.00000 | 49.00000 | -4.3583 | -3.1621 | 2.7323 | - | - | - | * |
| | | 32.00000 | 25.00000 | 49.00000 | -4.1692 | -2.7501 | 2.0732 | - | - | - | * |
| | | 33.00000 | 25.00000 | 49.00000 | -3.8938 | -2.3631 | 1.4905 | - | - | - | * |

| Type/No. | | Coordinates | | | Displacements | | | | | Angle of Line | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Name | Dist. | x | y | z | x | y | z | Horizontal displacement | Horizontal displacement | to x Axis | |
| | | 34.00000 | 25.00000 | 49.00000 | -3.5422 | -1.9968 | 0.98873 | - | - | - | * |
| | | 35.00000 | 25.00000 | 49.00000 | -3.1235 | -1.6476 | 0.56632 | - | - | - | * |
| | | 36.00000 | 25.00000 | 49.00000 | -2.6457 | -1.3128 | 0.21468 | - | - | - | * |
| | | 37.00000 | 25.00000 | 49.00000 | -2.3291 | -1.0875 | -0.035599 | - | - | - | * |
| | | 38.00000 | 25.00000 | 49.00000 | -2.0416 | -0.90736 | -0.19119 | - | - | - | * |
| | | 39.00000 | 25.00000 | 49.00000 | -1.7284 | -0.76819 | -0.23661 | - | - | - | * |
| | | 40.00000 | 25.00000 | 49.00000 | -1.4198 | -0.60147 | -0.25946 | - | - | - | * |
| | | 0.00000 | 26.00000 | 49.00000 | 3.9527 | -3.6883 | 2.1342 | - | - | - | * |
| | | 1.00000 | 26.00000 | 49.00000 | 3.6911 | -4.5110 | 2.1768 | - | - | - | * |
| | | 2.00000 | 26.00000 | 49.00000 | 3.2174 | -5.5051 | 2.1674 | - | - | - | * |
| | | 3.00000 | 26.00000 | 49.00000 | 2.5049 | -6.6774 | 2.0982 | - | - | - | * |
| | | 4.00000 | 26.00000 | 49.00000 | 1.5613 | -7.9923 | 1.9640 | - | - | - | * |
| | | 5.00000 | 26.00000 | 49.00000 | 0.55944 | -9.2307 | 1.7647 | - | - | - | * |
| | | 6.00000 | 26.00000 | 49.00000 | 0.56203 | -9.2735 | 1.5476 | - | - | - | * |
| | | 7.00000 | 26.00000 | 49.00000 | 0.56462 | -9.3163 | 1.3520 | - | - | - | * |
| | | 8.00000 | 26.00000 | 49.00000 | 0.56721 | -9.3590 | 1.1884 | - | - | - | * |
| | | 9.00000 | 26.00000 | 49.00000 | 0.0 | -10.755 | 4.1779 | - | - | - | * |
| | | 10.00000 | 26.00000 | 49.00000 | 0.0 | -10.755 | 4.0828 | - | - | - | * |
| | | 11.00000 | 26.00000 | 49.00000 | 0.0 | -10.755 | 4.0394 | - | - | - | * |
| | | 12.00000 | 26.00000 | 49.00000 | 0.0 | -10.755 | 4.0494 | - | - | - | * |
| | | 13.00000 | 26.00000 | 49.00000 | 0.0 | -10.755 | 4.1117 | - | - | - | * |
| | | 14.00000 | 26.00000 | 49.00000 | 0.0 | -10.755 | 4.2234 | - | - | - | * |
| | | 15.00000 | 26.00000 | 49.00000 | 0.0 | -10.755 | 4.3787 | - | - | - | * |
| | | 16.00000 | 26.00000 | 49.00000 | 0.0 | -10.755 | 4.5701 | - | - | - | * |
| | | 17.00000 | 26.00000 | 49.00000 | 0.0 | -10.755 | 4.7882 | - | - | - | * |
| | | 18.00000 | 26.00000 | 49.00000 | -1.4087 | -8.1789 | 3.9217 | - | - | - | * |
| | | 19.00000 | 26.00000 | 49.00000 | -2.7978 | -6.9856 | 3.9023 | - | - | - | * |
| | | 20.00000 | 26.00000 | 49.00000 | -4.0185 | -6.1650 | 4.0604 | - | - | - | * |
| | | 21.00000 | 26.00000 | 49.00000 | -4.9559 | -5.5768 | 4.2527 | - | - | - | * |
| | | 22.00000 | 26.00000 | 49.00000 | -5.5618 | -5.0493 | 4.3370 | - | - | - | * |
| | | 23.00000 | 26.00000 | 49.00000 | -5.9004 | -4.5785 | 4.3166 | - | - | - | * |
| | | 24.00000 | 26.00000 | 49.00000 | -6.6021 | -5.0302 | 4.9056 | - | - | - | * |
| | | 25.00000 | 26.00000 | 49.00000 | -6.2064 | -4.7287 | 4.6387 | - | - | - | * |
| | | 26.00000 | 26.00000 | 49.00000 | -5.8186 | -4.4333 | 4.3358 | - | - | - | * |
| | | 27.00000 | 26.00000 | 49.00000 | -5.4381 | -4.1433 | 4.0070 | - | - | - | * |
| | | 28.00000 | 26.00000 | 49.00000 | -5.0640 | -3.8583 | 3.6616 | - | - | - | * |
| | | 29.00000 | 26.00000 | 49.00000 | -4.6956 | -3.5776 | 3.3080 | - | - | - | * |
| | | 30.00000 | 26.00000 | 49.00000 | -4.3322 | -3.3008 | 2.9538 | - | - | - | * |
| | | 31.00000 | 26.00000 | 49.00000 | -3.9731 | -3.0272 | 2.6054 | - | - | - | * |
| | | 32.00000 | 26.00000 | 49.00000 | -3.6433 | -2.7370 | 2.2247 | - | - | - | * |
| | | 33.00000 | 26.00000 | 49.00000 | -3.4133 | -2.3509 | 1.6454 | - | - | - | * |
| | | 34.00000 | 26.00000 | 49.00000 | -3.1081 | -1.9834 | 1.1427 | - | - | - | * |
| | | 35.00000 | 26.00000 | 49.00000 | -2.7355 | -1.6318 | 0.71471 | - | - | - | * |
| | | 36.00000 | 26.00000 | 49.00000 | -2.3732 | -1.3299 | 0.36367 | - | - | - | * |
| | | 37.00000 | 26.00000 | 49.00000 | -2.1194 | -1.1163 | 0.10646 | - | - | - | * |
| | | 38.00000 | 26.00000 | 49.00000 | -1.8506 | -0.91959 | -0.078818 | - | - | - | * |
| | | 39.00000 | 26.00000 | 49.00000 | -1.5685 | -0.73784 | -0.19967 | - | - | - | * |
| | | 40.00000 | 26.00000 | 49.00000 | -1.2748 | -0.56941 | -0.26510 | - | - | - | * |
| | | 0.00000 | 27.00000 | 49.00000 | 3.2887 | -3.8983 | 2.0480 | - | - | - | * |
| | | 1.00000 | 27.00000 | 49.00000 | 3.0223 | -4.6734 | 2.1028 | - | - | - | * |
| | | 2.00000 | 27.00000 | 49.00000 | 2.5911 | -5.5650 | 2.1094 | - | - | - | * |
| | | 3.00000 | 27.00000 | 49.00000 | 1.9895 | -6.5612 | 2.0642 | - | - | - | * |
| | | 4.00000 | 27.00000 | 49.00000 | 1.2364 | -7.6220 | 1.9640 | - | - | - | * |
| | | 5.00000 | 27.00000 | 49.00000 | 0.51667 | -8.5250 | 1.8093 | - | - | - | * |
| | | 6.00000 | 27.00000 | 49.00000 | 0.51926 | -8.5678 | 1.6432 | - | - | - | * |
| | | 7.00000 | 27.00000 | 49.00000 | 0.52185 | -8.6105 | 1.4954 | - | - | - | * |
| | | 8.00000 | 27.00000 | 49.00000 | 0.52444 | -8.6533 | 1.3733 | - | - | - | * |
| | | 9.00000 | 27.00000 | 49.00000 | 0.0 | -10.059 | 4.4769 | - | - | - | * |
| | | 10.00000 | 27.00000 | 49.00000 | 0.0 | -10.059 | 4.4024 | - | - | - | * |
| | | 11.00000 | 27.00000 | 49.00000 | 0.0 | -10.059 | 4.3680 | - | - | - | * |
| | | 12.00000 | 27.00000 | 49.00000 | 0.0 | -10.059 | 4.3752 | - | - | - | * |
| | | 13.00000 | 27.00000 | 49.00000 | 0.0 | -10.059 | 4.4234 | - | - | - | * |
| | | 14.00000 | 27.00000 | 49.00000 | 0.0 | -10.059 | 4.5101 | - | - | - | * |
| | | 15.00000 | 27.00000 | 49.00000 | 0.0 | -10.059 | 4.6311 | - | - | - | * |
| | | 16.00000 | 27.00000 | 49.00000 | 0.0 | -10.059 | 4.7811 | - | - | - | * |
| | | 17.00000 | 27.00000 | 49.00000 | 0.0 | -10.059 | 4.9532 | - | - | - | * |
| | | 18.00000 | 27.00000 | 49.00000 | -1.0826 | -7.7976 | 4.0829 | - | - | - | * |
| | | 19.00000 | 27.00000 | 49.00000 | -2.1831 | -6.8448 | 4.0390 | - | - | - | * |
| | | 20.00000 | 27.00000 | 49.00000 | -3.1197 | -5.9783 | 3.9956 | - | - | - | * |
| | | 21.00000 | 27.00000 | 49.00000 | -3.9696 | -5.4651 | 4.1259 | - | - | - | * |
| | | 22.00000 | 27.00000 | 49.00000 | -4.5718 | -4.9846 | 4.1660 | - | - | - | * |
| | | 23.00000 | 27.00000 | 49.00000 | -4.9552 | -4.5410 | 4.1177 | - | - | - | * |
| | | 24.00000 | 27.00000 | 49.00000 | -5.1569 | -4.1332 | 3.9885 | - | - | - | * |
| | | 25.00000 | 27.00000 | 49.00000 | -5.9103 | -4.5031 | 4.4148 | - | - | - | * |
| | | 26.00000 | 27.00000 | 49.00000 | -5.5281 | -4.2119 | 4.0827 | - | - | - | * |
| | | 27.00000 | 27.00000 | 49.00000 | -5.1525 | -3.9257 | 3.7343 | - | - | - | * |
| | | 28.00000 | 27.00000 | 49.00000 | -4.7828 | -3.6441 | 3.3776 | - | - | - | * |
| | | 29.00000 | 27.00000 | 49.00000 | -4.4183 | -3.3664 | 3.0200 | - | - | - | * |
| | | 30.00000 | 27.00000 | 49.00000 | -4.0583 | -3.0920 | 2.6679 | - | - | - | * |
| | | 31.00000 | 27.00000 | 49.00000 | -3.7020 | -2.8205 | 2.3268 | - | - | - | * |
| | | 32.00000 | 27.00000 | 49.00000 | -3.3486 | -2.5513 | 2.0010 | - | - | - | * |
| | | 33.00000 | 27.00000 | 49.00000 | -2.9975 | -2.2838 | 1.6941 | - | - | - | * |
| | | 34.00000 | 27.00000 | 49.00000 | -2.7110 | -1.9357 | 1.2363 | - | - | - | * |
| | | 35.00000 | 27.00000 | 49.00000 | -2.3762 | -1.5847 | 0.81093 | - | - | - | * |
| | | 36.00000 | 27.00000 | 49.00000 | -2.1466 | -1.3402 | 0.46945 | - | - | - | * |
| | | 37.00000 | 27.00000 | 49.00000 | -1.9072 | -1.1191 | 0.20357 | - | - | - | * |
| | | 38.00000 | 27.00000 | 49.00000 | -1.6523 | -0.91454 | 0.0062236 | - | - | - | * |
| | | 39.00000 | 27.00000 | 49.00000 | -1.3835 | -0.72473 | -0.13017 | - | - | - | * |
| | | 40.00000 | 27.00000 | 49.00000 | -1.1026 | -0.54820 | -0.21478 | - | - | - | * |
| | | 0.00000 | 28.00000 | 49.00000 | 2.7297 | -3.9463 | 1.9173 | - | - | - | * |
| | | 1.00000 | 28.00000 | 49.00000 | 2.4807 | -4.6560 | 1.9859 | - | - | - | * |
| | | 2.00000 | 28.00000 | 49.00000 | 2.1039 | -5.4411 | 2.0069 | - | - | - | * |
| | | 3.00000 | 28.00000 | 49.00000 | 1.6033 | -6.2837 | 1.9804 | - | - | - | * |
| | | 4.00000 | 28.00000 | 49.00000 | 0.99860 | -7.1481 | 1.9056 | - | - | - | * |
| | | 5.00000 | 28.00000 | 49.00000 | 0.47389 | -7.8192 | 1.7843 | - | - | - | * |
| | | 6.00000 | 28.00000 | 49.00000 | 0.47649 | -7.8620 | 1.6563 | - | - | - | * |
| | | 7.00000 | 28.00000 | 49.00000 | 0.47908 | -7.9048 | 1.5440 | - | - | - | * |
| | | 8.00000 | 28.00000 | 49.00000 | 0.48167 | -7.9476 | 1.4525 | - | - | - | * |
| | | 9.00000 | 28.00000 | 49.00000 | 0.0 | -9.3851 | 4.5636 | - | - | - | * |
| | | 10.00000 | 28.00000 | 49.00000 | 0.0 | -9.3851 | 4.5046 | - | - | - | * |
| | | 11.00000 | 28.00000 | 49.00000 | 0.0 | -9.3851 | 4.4773 | - | - | - | * |
| | | 12.00000 | 28.00000 | 49.00000 | 0.0 | -9.3851 | 4.4826 | - | - | - | * |
| | | 13.00000 | 28.00000 | 49.00000 | 0.0 | -9.3851 | 4.5201 | - | - | - | * |
| | | 14.00000 | 28.00000 | 49.00000 | 0.0 | -9.3851 | 4.5882 | - | - | - | * |
| | | 15.00000 | 28.00000 | 49.00000 | 0.0 | -9.3851 | 4.6837 | - | - | - | * |
| | | 16.00000 | 28.00000 | 49.00000 | 0.0 | -9.3851 | 4.8026 | - | - | - | * |
| | | 17.00000 | 28.00000 | 49.00000 | 0.0 | -9.3851 | 4.9400 | - | - | - | * |
| | | 18.00000 | 28.00000 | 49.00000 | -0.85547 | -7.3654 | 4.0953 | - | - | - | * |
| | | 19.00000 | 28.00000 | 49.00000 | -1.7417 | -6.5905 | 4.0389 | - | - | - | * |
| | | 20.00000 | 28.00000 | 49.00000 | -2.5059 | -5.8249 | 3.9439 | - | - | - | * |
| | | 21.00000 | 28.00000 | 49.00000 | -3.2012 | -5.2733 | 3.9429 | - | - | - | * |
| | | 22.00000 | 28.00000 | 49.00000 | -3.7655 | -4.8434 | 3.9487 | - | - | - | * |
| | | 23.00000 | 28.00000 | 49.00000 | -4.1554 | -4.4347 | 3.8793 | - | - | - | * |
| | | 24.00000 | 28.00000 | 49.00000 | -4.3909 | -4.0500 | 3.7405 | - | - | - | * |
| | | 25.00000 | 28.00000 | 49.00000 | -4.4950 | -3.6889 | 3.5414 | - | - | - | * |
| | | 26.00000 | 28.00000 | 49.00000 | -5.2414 | -3.9934 | 3.8232 | - | - | - | * |
| | | 27.00000 | 28.00000 | 49.00000 | -4.8704 | -3.7108 | 3.4610 | - | - | - | * |
| | | 28.00000 | 28.00000 | 49.00000 | -4.5047 | -3.4322 | 3.0981 | - | - | - | * |
| | | 29.00000 | 28.00000 | 49.00000 | -4.1437 | -3.1571 | 2.7405 | - | - | - | * |
| | | 30.00000 | 28.00000 | 49.00000 | -3.7865 | -2.8850 | 2.3938 | - | - | - | * |
| | | 31.00000 | 28.00000 | 49.00000 | -3.4325 | -2.6152 | 2.0623 | - | - | - | * |
| | | 32.00000 | 28.00000 | 49.00000 | -3.0809 | -2.3473 | 1.7497 | - | - | - | * |
| | | 33.00000 | 28.00000 | 49.00000 | -2.7310 | -2.0807 | 1.4582 | - | - | - | * |
| | | 34.00000 | 28.00000 | 49.00000 | -2.3820 | -1.8149 | 1.1895 | - | - | - | * |
| | | 35.00000 | 28.00000 | 49.00000 | -2.1291 | -1.5647 | 0.86271 | - | - | - | * |
| | | 36.00000 | 28.00000 | 49.00000 | -1.9203 | -1.3215 | 0.52433 | - | - | - | * |
| | | 37.00000 | 28.00000 | 49.00000 | -1.6938 | -1.0958 | 0.25599 | - | - | - | * |
| | | 38.00000 | 28.00000 | 49.00000 | -1.4516 | -0.88583 | 0.051638 | - | - | - | * |
| | | 39.00000 | 28.00000 | 49.00000 | -1.1952 | -0.69020 | -0.096348 | - | - | - | * |
| | | 40.00000 | 28.00000 | 49.00000 | -0.92611 | -0.50755 | -0.19721 | - | - | - | * |
| | | 0.00000 | 29.00000 | 49.00000 | 2.2579 | -3.8633 | 1.7337 | - | - | - | * |
| | | 1.00000 | 29.00000 | 49.00000 | 2.0367 | -4.5020 | 1.8221 | - | - | - | * |
| | | 2.00000 | 29.00000 | 49.00000 | 1.7161 | -5.1868 | 1.8602 | - | - | - | * |
| | | 3.00000 | 29.00000 | 49.00000 | 1.3031 | -5.8990 | 1.8516 | - | - | - | * |
| | | 4.00000 | 29.00000 | 49.00000 | 0.81573 | -6.6090 | 1.7982 | - | - | - | * |
| | | 5.00000 | 29.00000 | 49.00000 | 0.43112 | -7.1135 | 1.7035 | - | - | - | * |
| | | 6.00000 | 29.00000 | 49.00000 | 0.43371 | -7.1563 | 1.6051 | - | - | - | * |
| | | 7.00000 | 29.00000 | 49.00000 | 0.43631 | -7.1990 | 1.5199 | - | - | - | * |
| | | 8.00000 | 29.00000 | 49.00000 | 0.43890 | -7.2418 | 1.4519 | - | - | - | * |
| | | 9.00000 | 29.00000 | 49.00000 | 0.0 | -8.7315 | 4.4856 | - | - | - | * |
| | | 10.00000 | 29.00000 | 49.00000 | 0.0 | -8.7315 | 4.4385 | - | - | - | * |

| Type/No. Name | Dist. | Coordinates x | y | z | Displacements x | y | z | Horizontal displacement | Horizontal displacement | Angle of Line to x Axis | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 11.00000 | 29.00000 | 49.00000 | 0.0 | -8.7315 | 4.4165 | - | - | - | * |
| | | 12.00000 | 29.00000 | 49.00000 | 0.0 | -8.7315 | 4.4204 | - | - | - | * |
| | | 13.00000 | 29.00000 | 49.00000 | 0.0 | -8.7315 | 4.4501 | - | - | - | * |
| | | 14.00000 | 29.00000 | 49.00000 | 0.0 | -8.7315 | 4.5041 | - | - | - | * |
| | | 15.00000 | 29.00000 | 49.00000 | 0.0 | -8.7315 | 4.5802 | - | - | - | * |
| | | 16.00000 | 29.00000 | 49.00000 | 0.0 | -8.7315 | 4.6755 | - | - | - | * |
| | | 17.00000 | 29.00000 | 49.00000 | 0.0 | -8.7315 | 4.7864 | - | - | - | * |
| | | 18.00000 | 29.00000 | 49.00000 | -0.68913 | -6.9085 | 3.9891 | - | - | - | * |
| | | 19.00000 | 29.00000 | 49.00000 | -1.4119 | -6.2692 | 3.9281 | - | - | - | * |
| | | 20.00000 | 29.00000 | 49.00000 | -2.0509 | -5.6224 | 3.8265 | - | - | - | * |
| | | 21.00000 | 29.00000 | 49.00000 | -2.5958 | -5.0266 | 3.7112 | - | - | - | * |
| | | 22.00000 | 29.00000 | 49.00000 | -3.1078 | -4.6454 | 3.6917 | - | - | - | * |
| | | 23.00000 | 29.00000 | 49.00000 | -3.4818 | -4.2739 | 3.6075 | - | - | - | * |
| | | 24.00000 | 29.00000 | 49.00000 | -3.7273 | -3.9165 | 3.4638 | - | - | - | * |
| | | 25.00000 | 29.00000 | 49.00000 | -3.8581 | -3.5751 | 3.2682 | - | - | - | * |
| | | 26.00000 | 29.00000 | 49.00000 | -3.8894 | -3.2498 | 3.0300 | - | - | - | * |
| | | 27.00000 | 29.00000 | 49.00000 | -3.8357 | -2.9397 | 2.7595 | - | - | - | * |
| | | 28.00000 | 29.00000 | 49.00000 | -4.2292 | -3.2223 | 2.8247 | - | - | - | * |
| | | 29.00000 | 29.00000 | 49.00000 | -3.8712 | -2.9495 | 2.4709 | - | - | - | * |
| | | 30.00000 | 29.00000 | 49.00000 | -3.5165 | -2.6793 | 2.1324 | - | - | - | * |
| | | 31.00000 | 29.00000 | 49.00000 | -3.1644 | -2.4110 | 1.8128 | - | - | - | * |
| | | 32.00000 | 29.00000 | 49.00000 | -2.8142 | -2.1441 | 1.5146 | - | - | - | * |
| | | 33.00000 | 29.00000 | 49.00000 | -2.4651 | -1.8781 | 1.2394 | - | - | - | * |
| | | 34.00000 | 29.00000 | 49.00000 | -2.1630 | -1.6480 | 0.98781 | - | - | - | * |
| | | 35.00000 | 29.00000 | 49.00000 | -1.9257 | -1.4672 | 0.75941 | - | - | - | * |
| | | 36.00000 | 29.00000 | 49.00000 | -1.6954 | -1.2744 | 0.53035 | - | - | - | * |
| | | 37.00000 | 29.00000 | 49.00000 | -1.4805 | -1.0465 | 0.26445 | - | - | - | * |
| | | 38.00000 | 29.00000 | 49.00000 | -1.2497 | -0.83348 | 0.056985 | - | - | - | * |
| | | 39.00000 | 29.00000 | 49.00000 | -1.0046 | -0.63409 | -0.099642 | - | - | - | * |
| | | 40.00000 | 29.00000 | 49.00000 | -0.74652 | -0.44718 | -0.21474 | - | - | - | * |
| | | 0.00000 | 30.00000 | 49.00000 | 1.9409 | -3.8417 | 1.5386 | - | - | - | * |
| | | 1.00000 | 30.00000 | 49.00000 | 1.6934 | -4.3089 | 1.6136 | - | - | - | * |
| | | 2.00000 | 30.00000 | 49.00000 | 1.4005 | -4.8379 | 1.6578 | - | - | - | * |
| | | 3.00000 | 30.00000 | 49.00000 | 1.0627 | -5.4400 | 1.6699 | - | - | - | * |
| | | 4.00000 | 30.00000 | 49.00000 | 0.66967 | -6.0261 | 1.6370 | - | - | - | * |
| | | 5.00000 | 30.00000 | 49.00000 | 0.38835 | -6.4078 | 1.5649 | - | - | - | * |
| | | 6.00000 | 30.00000 | 49.00000 | 0.39094 | -6.4505 | 1.4906 | - | - | - | * |
| | | 7.00000 | 30.00000 | 49.00000 | 0.39353 | -6.4933 | 1.4275 | - | - | - | * |
| | | 8.00000 | 30.00000 | 49.00000 | 0.38004 | -6.5365 | 1.3785 | - | - | - | * |
| | | 9.00000 | 30.00000 | 49.00000 | 0.0 | -8.0963 | 4.2825 | - | - | - | * |
| | | 10.00000 | 30.00000 | 49.00000 | 0.0 | -8.0963 | 4.2445 | - | - | - | * |
| | | 11.00000 | 30.00000 | 49.00000 | 0.0 | -8.0963 | 4.2267 | - | - | - | * |
| | | 12.00000 | 30.00000 | 49.00000 | 0.0 | -8.0963 | 4.2297 | - | - | - | * |
| | | 13.00000 | 30.00000 | 49.00000 | 0.0 | -8.0963 | 4.2534 | - | - | - | * |
| | | 14.00000 | 30.00000 | 49.00000 | 0.0 | -8.0963 | 4.2967 | - | - | - | * |
| | | 15.00000 | 30.00000 | 49.00000 | 0.0 | -8.0963 | 4.3580 | - | - | - | * |
| | | 16.00000 | 30.00000 | 49.00000 | 0.0 | -8.0963 | 4.4351 | - | - | - | * |
| | | 17.00000 | 30.00000 | 49.00000 | 0.0 | -8.0963 | 4.5253 | - | - | - | * |
| | | 18.00000 | 30.00000 | 49.00000 | -0.56261 | -6.4407 | 3.7913 | - | - | - | * |
| | | 19.00000 | 30.00000 | 49.00000 | -1.1577 | -5.9073 | 3.7307 | - | - | - | * |
| | | 20.00000 | 30.00000 | 49.00000 | -1.6930 | -5.3577 | 3.6294 | - | - | - | * |
| | | 21.00000 | 30.00000 | 49.00000 | -2.1478 | -4.8131 | 3.4914 | - | - | - | * |
| | | 22.00000 | 30.00000 | 49.00000 | -2.5684 | -4.4059 | 3.4031 | - | - | - | * |
| | | 23.00000 | 30.00000 | 49.00000 | -2.9147 | -4.0707 | 3.3100 | - | - | - | * |
| | | 24.00000 | 30.00000 | 49.00000 | -3.1547 | -3.7420 | 3.1656 | - | - | - | * |
| | | 25.00000 | 30.00000 | 49.00000 | -3.2963 | -3.4227 | 2.9765 | - | - | - | * |
| | | 26.00000 | 30.00000 | 49.00000 | -3.3493 | -3.1142 | 2.7509 | - | - | - | * |
| | | 27.00000 | 30.00000 | 49.00000 | -3.3240 | -2.8167 | 2.4976 | - | - | - | * |
| | | 28.00000 | 30.00000 | 49.00000 | -3.2304 | -2.5297 | 2.2257 | - | - | - | * |
| | | 29.00000 | 30.00000 | 49.00000 | -3.6007 | -2.7434 | 2.2123 | - | - | - | * |
| | | 30.00000 | 30.00000 | 49.00000 | -3.2481 | -2.2747 | 1.8845 | - | - | - | * |
| | | 31.00000 | 30.00000 | 49.00000 | -2.8974 | -2.2076 | 1.5785 | - | - | - | * |
| | | 32.00000 | 30.00000 | 49.00000 | -2.5481 | -1.9414 | 1.2959 | - | - | - | * |
| | | 33.00000 | 30.00000 | 49.00000 | -2.2195 | -1.6910 | 1.0373 | - | - | - | * |
| | | 34.00000 | 30.00000 | 49.00000 | -1.9822 | -1.5102 | 0.80257 | - | - | - | * |
| | | 35.00000 | 30.00000 | 49.00000 | -1.7449 | -1.3295 | 0.59035 | - | - | - | * |
| | | 36.00000 | 30.00000 | 49.00000 | -1.5077 | -1.1487 | 0.39839 | - | - | - | * |
| | | 37.00000 | 30.00000 | 49.00000 | -1.2704 | -0.96791 | 0.22344 | - | - | - | * |
| | | 38.00000 | 30.00000 | 49.00000 | -1.0475 | -0.75780 | 0.021840 | - | - | - | * |
| | | 39.00000 | 30.00000 | 49.00000 | -0.81269 | -0.55652 | -0.14157 | - | - | - | * |
| | | 40.00000 | 30.00000 | 49.00000 | -0.56474 | -0.36707 | -0.26985 | - | - | - | * |
| 2 FR Rear 1 | Line 1 | 20.60000 | 16.75000 | 49.00000 | -12.579 | 0.0 | -0.15133 | -10.787 | -6.4719 | 329.04 | * |
| | 0.48591 | 21.01667 | 16.50000 | 49.00000 | -12.284 | 0.0 | 0.42108 | -10.533 | -6.3201 | 329.04 | * |
| | 0.97183 | 21.43333 | 16.25000 | 49.00000 | -11.989 | 0.0 | 0.89237 | -10.280 | -6.1682 | 329.04 | * |
| | 1.4577 | 21.85000 | 16.00000 | 49.00000 | -11.694 | 0.0 | 1.2795 | -10.027 | -6.0164 | 329.04 | * |
| | 1.9437 | 22.26667 | 15.75000 | 49.00000 | -11.399 | 0.0 | 1.5982 | -9.7742 | -5.8645 | 329.04 | * |
| | 2.4296 | 22.68333 | 15.50000 | 49.00000 | -11.103 | 0.0 | 1.8580 | -9.5211 | -5.7127 | 329.04 | * |
| | 2.9155 | 23.10000 | 15.25000 | 49.00000 | -10.808 | 0.0 | 2.0666 | -9.2681 | -5.5608 | 329.04 | * |
| | 3.4014 | 23.51667 | 15.00000 | 49.00000 | -10.513 | 0.0 | 2.2306 | -9.0150 | -5.4090 | 329.04 | * |
| | 3.8873 | 23.93333 | 14.75000 | 49.00000 | -10.218 | 0.0 | 2.3561 | -8.7619 | -5.2571 | 329.04 | * |
| | 4.3732 | 24.35000 | 14.50000 | 49.00000 | -9.9229 | 0.0 | 2.4485 | -8.5088 | -5.1053 | 329.04 | * |
| | 4.8591 | 24.76667 | 14.25000 | 49.00000 | -9.6278 | 0.0 | 2.5126 | -8.2558 | -4.9535 | 329.04 | * |
| | 5.3450 | 25.18333 | 14.00000 | 49.00000 | -9.3326 | 0.0 | 2.5528 | -8.0027 | -4.8016 | 329.04 | * |
| | 5.8310 | 25.60000 | 13.75000 | 49.00000 | -9.0375 | 0.0 | 2.5727 | -7.7496 | -4.6498 | 329.04 | * |
| 2 FR Rear 2 | Line 2 | 25.60000 | 13.80000 | 49.00000 | -9.0375 | 0.0 | 2.5692 | -9.0375 | 0.0 | 0.0 | * |
| | 0.48889 | 26.08889 | 13.80000 | 49.00000 | -8.6912 | 0.0 | 2.5525 | -8.6912 | 0.0 | 0.0 | * |
| | 0.97778 | 26.57778 | 13.80000 | 49.00000 | -8.3449 | 0.0 | 2.5191 | -8.3449 | 0.0 | 0.0 | * |
| | 1.4667 | 27.06667 | 13.80000 | 49.00000 | -7.9986 | 0.0 | 2.4718 | -7.9986 | 0.0 | 0.0 | * |
| | 1.9556 | 27.55556 | 13.80000 | 49.00000 | -7.6523 | 0.0 | 2.4121 | -7.6523 | 0.0 | 0.0 | * |
| | 2.4444 | 28.04444 | 13.80000 | 49.00000 | -7.3060 | 0.0 | 2.3409 | -7.3060 | 0.0 | 0.0 | * |
| | 2.9333 | 28.53333 | 13.80000 | 49.00000 | -6.9597 | 0.0 | 2.2580 | -6.9597 | 0.0 | 0.0 | * |
| | 3.4222 | 29.02222 | 13.80000 | 49.00000 | -6.6134 | 0.0 | 2.1621 | -6.6134 | 0.0 | 0.0 | * |
| | 3.9111 | 29.51111 | 13.80000 | 49.00000 | -6.2671 | 0.0 | 2.0514 | -6.2671 | 0.0 | 0.0 | * |
| | 4.4000 | 30.00000 | 13.80000 | 49.00000 | -5.9250 | 0.0 | 1.9229 | -5.9250 | 0.0 | 0.0 | * |
| 2 FR Side | Line 3 | 30.10000 | 13.80000 | 49.00000 | -5.8875 | 0.0 | 1.9004 | 0.0 | -5.8875 | 270.00 | * |
| | 0.52778 | 30.10000 | 13.27222 | 49.00000 | -5.8875 | 0.0 | 1.9143 | 0.0 | -5.8875 | 270.00 | * |
| | 1.0556 | 30.10000 | 12.74444 | 49.00000 | -5.8875 | 0.0 | 1.9306 | 0.0 | -5.8875 | 270.00 | * |
| | 1.5833 | 30.10000 | 12.21667 | 49.00000 | -5.8875 | 0.0 | 1.9490 | 0.0 | -5.8875 | 270.00 | * |
| | 2.1111 | 30.10000 | 11.68889 | 49.00000 | -5.8875 | 0.0 | 1.9695 | 0.0 | -5.8875 | 270.00 | * |
| | 2.6389 | 30.10000 | 11.16111 | 49.00000 | -5.8875 | 0.0 | 1.9918 | 0.0 | -5.8875 | 270.00 | * |
| | 3.1667 | 30.10000 | 10.63333 | 49.00000 | -5.8875 | 0.0 | 2.0157 | 0.0 | -5.8875 | 270.00 | * |
| | 3.6944 | 30.10000 | 10.10556 | 49.00000 | -5.8875 | 0.0 | 2.0411 | 0.0 | -5.8875 | 270.00 | * |
| | 4.2222 | 30.10000 | 9.57778 | 49.00000 | -5.8875 | 0.0 | 2.0677 | 0.0 | -5.8875 | 270.00 | * |
| | 4.7500 | 30.10000 | 9.05000 | 49.00000 | -5.7687 | 0.11706 | 2.0935 | -0.11706 | -5.7687 | 270.00 | * |
| | 5.2778 | 30.10000 | 8.52222 | 49.00000 | -5.5525 | 0.32166 | 2.1099 | -0.32166 | -5.5525 | 270.00 | * |
| | 5.8056 | 30.10000 | 7.99444 | 49.00000 | -5.3292 | 0.52258 | 2.1155 | -0.52258 | -5.3292 | 270.00 | * |
| | 6.3333 | 30.10000 | 7.46667 | 49.00000 | -5.1013 | 0.71762 | 2.1104 | -0.71762 | -5.1013 | 270.00 | * |
| | 6.8611 | 30.10000 | 6.93889 | 49.00000 | -4.8709 | 0.90477 | 2.0946 | -0.90477 | -4.8709 | 270.00 | * |
| | 7.3889 | 30.10000 | 6.41111 | 49.00000 | -4.6403 | 1.0823 | 2.0682 | -1.0823 | -4.6403 | 270.00 | * |
| | 7.9167 | 30.10000 | 5.88333 | 49.00000 | -4.4113 | 1.2487 | 2.0314 | -1.2487 | -4.4113 | 270.00 | * |
| | 8.4444 | 30.10000 | 5.35556 | 49.00000 | -4.1855 | 1.4028 | 1.9844 | -1.4028 | -4.1855 | 270.00 | * |
| | 8.9722 | 30.10000 | 4.82778 | 49.00000 | -3.9644 | 1.5437 | 1.9277 | -1.5437 | -3.9644 | 270.00 | * |
| | 9.5000 | 30.10000 | 4.30000 | 49.00000 | -3.7489 | 1.6709 | 1.8619 | -1.6709 | -3.7489 | 270.00 | * |
| 2 FR Front 1 | Line 4 | 30.00000 | 4.30000 | 49.00000 | -3.7568 | 1.6961 | 1.8891 | 3.7568 | -1.6961 | 180.00 | * |
| | 0.48750 | 29.51250 | 4.30000 | 49.00000 | -3.7882 | 1.8252 | 2.0191 | 3.7882 | -1.8252 | 180.00 | * |
| | 0.97500 | 29.02500 | 4.30000 | 49.00000 | -3.8067 | 1.9651 | 2.1433 | 3.8067 | -1.9651 | 180.00 | * |
| | 1.4625 | 28.53750 | 4.30000 | 49.00000 | -3.8109 | 2.1170 | 2.2600 | 3.8109 | -2.1170 | 180.00 | * |
| | 1.9500 | 28.05000 | 4.30000 | 49.00000 | -3.8831 | 2.3329 | 2.3904 | 3.8831 | -2.3329 | 180.00 | * |
| | 2.4375 | 27.56250 | 4.30000 | 49.00000 | -3.9314 | 2.5687 | 2.5065 | 3.9314 | -2.5687 | 180.00 | * |
| | 2.9250 | 27.07500 | 4.30000 | 49.00000 | -3.9516 | 2.8260 | 2.6107 | 3.9516 | -2.8260 | 180.00 | * |
| | 3.4125 | 26.58750 | 4.30000 | 49.00000 | -3.9405 | 3.1070 | 2.7044 | 3.9405 | -3.1070 | 180.00 | * |
| | 3.9000 | 26.10000 | 4.30000 | 49.00000 | -3.8944 | 3.4143 | 2.7884 | 3.8944 | -3.4143 | 180.00 | * |
| 2 FR Front 2 | Line 5 | 26.00000 | 4.30000 | 49.00000 | -3.8803 | 3.4808 | 2.8044 | 3.4808 | 3.8803 | 90.000 | * |
| | 0.46667 | 26.00000 | 4.76667 | 49.00000 | -4.2268 | 3.3520 | 2.8735 | 3.3520 | 4.2268 | 90.000 | * |
| | 0.93333 | 26.00000 | 5.23333 | 49.00000 | -4.5998 | 3.1839 | 2.9340 | 3.1839 | 4.5998 | 90.000 | * |
| | 1.4000 | 26.00000 | 5.70000 | 49.00000 | -4.9999 | 2.9744 | 2.9851 | 2.9744 | 4.9999 | 90.000 | * |
| | 1.8667 | 26.00000 | 6.16667 | 49.00000 | -5.4269 | 2.7218 | 3.0262 | 2.7218 | 5.4269 | 90.000 | * |
| | 2.3333 | 26.00000 | 6.63333 | 49.00000 | -5.8792 | 2.4256 | 3.0566 | 2.4256 | 5.8792 | 90.000 | * |
| | 2.8000 | 26.00000 | 7.10000 | 49.00000 | -6.3541 | 2.0867 | 3.0753 | 2.0867 | 6.3541 | 90.000 | * |
| 2 FR Front 3 | Line 6 | 25.90000 | 7.10000 | 49.00000 | -6.3684 | 2.1379 | 3.0923 | 6.3684 | -2.1379 | 180.00 | * |
| | 0.43333 | 25.46667 | 7.10000 | 49.00000 | -6.4081 | 2.3797 | 3.1616 | 6.4081 | -2.3797 | 180.00 | * |
| | 0.86667 | 25.03333 | 7.10000 | 49.00000 | -6.4064 | 2.6587 | 3.2231 | 6.4064 | -2.6587 | 180.00 | * |
| | 1.3000 | 24.60000 | 7.10000 | 49.00000 | -6.3538 | 2.9835 | 3.2751 | 6.3538 | -2.9835 | 180.00 | * |
| | 1.7333 | 24.16667 | 7.10000 | 49.00000 | -6.2381 | 3.3647 | 3.3160 | 6.2381 | -3.3647 | 180.00 | * |
| | 2.1667 | 23.73333 | 7.10000 | 49.00000 | -6.0437 | 3.8161 | 3.3440 | 6.0437 | -3.8161 | 180.00 | * |
| | 2.6000 | 23.30000 | 7.10000 | 49.00000 | -5.7508 | 4.3549 | 3.3570 | 5.7508 | -4.3549 | 180.00 | * |

| Name | Type/No. | Dist. | Coordinates x | y | z | Displacements x | y | z | Horizontal displacement | Horizontal displacement | Angle of Line to x Axis | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2 FR Front 4 | Line 7 | | 23.20000 | 7.10000 | 49.00000 | -5.6667 | 4.4938 | 3.3578 | 4.4938 | 5.6667 | 90.000 | * |
| | | 0.45000 | 23.20000 | 7.55000 | 49.00000 | -6.4766 | 3.8749 | 3.3494 | 3.8749 | 6.4766 | 90.000 | * |
| | | 0.90000 | 23.20000 | 8.00000 | 49.00000 | -7.4090 | 3.1027 | 3.3226 | 3.1027 | 7.4090 | 90.000 | * |
| | | 1.3500 | 23.20000 | 8.45000 | 49.00000 | -8.4558 | 2.1782 | 3.2774 | 2.1782 | 8.4558 | 90.000 | * |
| | | 1.8000 | 23.20000 | 8.90000 | 49.00000 | -9.5850 | 1.1261 | 3.2143 | 1.1261 | 9.5850 | 90.000 | * |
| | | 2.2500 | 23.20000 | 9.35000 | 49.00000 | -10.737 | 0.0 | 3.1339 | 0.0 | 10.737 | 90.000 | * |
| 2 FR Front 5 | Line 8 | | 23.10000 | 9.35000 | 49.00000 | -10.808 | 0.0 | 3.1253 | 10.808 | 0.0 | 180.00 | * |
| | | 0.41667 | 22.68333 | 9.35000 | 49.00000 | -11.103 | 0.0 | 3.0748 | 11.103 | 0.0 | 180.00 | * |
| | | 0.83333 | 22.26667 | 9.35000 | 49.00000 | -11.399 | 0.0 | 2.9991 | 11.399 | 0.0 | 180.00 | * |
| | | 1.2500 | 21.85000 | 9.35000 | 49.00000 | -11.694 | 0.0 | 2.8973 | 11.694 | 0.0 | 180.00 | * |
| | | 1.6667 | 21.43333 | 9.35000 | 49.00000 | -11.989 | 0.0 | 2.7709 | 11.989 | 0.0 | 180.00 | * |
| | | 2.0833 | 21.01667 | 9.35000 | 49.00000 | -12.284 | 0.0 | 2.6285 | 12.284 | 0.0 | 180.00 | * |
| | | 2.5000 | 20.60000 | 9.35000 | 49.00000 | -12.579 | 0.0 | 2.5035 | 12.579 | 0.0 | 180.00 | * |
| Windmill Hill 1 | Line 9 | | 14.50000 | 26.00000 | 52.80000 | 0.0 | -10.755 | 4.2960 | 9.6196 | -4.8098 | 296.57 | * |
| | | 0.67082 | 14.80000 | 25.40000 | 52.80000 | 0.0 | -11.184 | 4.0699 | 10.003 | -5.0017 | 296.57 | * |
| | | 1.3416 | 15.10000 | 24.80000 | 52.80000 | 0.0 | -11.622 | 3.7609 | 10.395 | -5.1975 | 296.57 | * |
| | | 2.0125 | 15.40000 | 24.20000 | 52.80000 | 0.0 | -12.069 | 3.3607 | 10.795 | -5.3976 | 296.57 | * |
| | | 2.6833 | 15.70000 | 23.60000 | 52.80000 | 0.0 | -12.527 | 2.8604 | 11.204 | -5.6021 | 296.57 | * |
| | | 3.3541 | 16.00000 | 23.00000 | 52.80000 | 0.0 | -12.994 | 2.2499 | 11.622 | -5.8112 | 296.57 | * |
| Windmill Hill 2 | Line 10 | | 16.00000 | 22.95000 | 52.80000 | 0.0 | -13.034 | 2.1816 | 7.9232 | -10.349 | 322.56 | * |
| | | 0.80604 | 16.64000 | 22.46000 | 52.80000 | 0.0 | -13.424 | 1.8195 | 8.1605 | -10.659 | 322.56 | * |
| | | 1.6121 | 17.28000 | 21.97000 | 52.80000 | -2.9330 | -9.9430 | 0.71327 | 3.7157 | -9.6778 | 322.56 | * |
| | | 2.4181 | 17.92000 | 21.48000 | 52.80000 | -10.909 | -8.3117 | 1.6460 | -3.6091 | -13.231 | 322.56 | * |
| | | 3.2242 | 18.56000 | 20.99000 | 52.80000 | -10.772 | -8.2073 | 1.9320 | -3.5638 | -13.065 | 322.56 | * |
| | | 4.0302 | 19.20000 | 20.50000 | 52.80000 | -10.636 | -8.1038 | 2.2630 | -3.5189 | -12.900 | 322.56 | * |
| Windmill Hill 3 | Line 11 | | 19.20000 | 20.45000 | 52.80000 | -10.656 | -8.1186 | 2.2162 | -6.7370 | -11.579 | 337.50 | * |
| | | 0.75769 | 19.90000 | 20.16000 | 52.80000 | -10.414 | -7.9345 | 2.8272 | -6.5842 | -11.316 | 337.50 | * |
| | | 1.5154 | 20.60000 | 19.87000 | 52.80000 | -10.176 | -7.7530 | 3.3969 | -6.4336 | -11.057 | 337.50 | * |
| | | 2.2731 | 21.30000 | 19.58000 | 52.80000 | -9.9410 | -7.5741 | 3.9108 | -6.2851 | -10.802 | 337.50 | * |
| | | 3.0308 | 22.00000 | 19.29000 | 52.80000 | -9.7094 | -7.3976 | 4.3642 | -6.1387 | -10.551 | 337.50 | * |
| | | 3.7885 | 22.70000 | 19.00000 | 52.80000 | -9.5668 | -7.1638 | 4.7532 | -6.0965 | -10.280 | 337.50 | * |

* Result includes imported displacement(s).

***Specific Building Damage Results - Horizontal Displacements***

Structure: 2 Frognal Rise | Sub-structure: 2 FR Rear 1

| Dist. | Coordinates x | y | z | Displacements x | y | Horizontal displacement along the Line | Horizontal displacement perpendicular to Line | |
|---|---|---|---|---|---|---|---|---|
| [m] | [m] | [m] | [m] | [mm] | [mm] | [mm] | [mm] | |
| 0.0 | 20.60000 | 16.75000 | 49.00000 | -12.579 | 0.0 | -10.787 | -6.4719 | d |
| 0.48591 | 21.01667 | 16.50000 | 49.00000 | -12.284 | 0.0 | -10.533 | -6.3201 | d |
| 0.97183 | 21.43333 | 16.25000 | 49.00000 | -11.989 | 0.0 | -10.280 | -6.1682 | d |
| 1.4577 | 21.85000 | 16.00000 | 49.00000 | -11.694 | 0.0 | -10.027 | -6.0164 | d |
| 1.9437 | 22.26667 | 15.75000 | 49.00000 | -11.399 | 0.0 | -9.7742 | -5.8645 | d |
| 2.4296 | 22.68333 | 15.50000 | 49.00000 | -11.103 | 0.0 | -9.5211 | -5.7127 | d |
| 2.9155 | 23.10000 | 15.25000 | 49.00000 | -10.808 | 0.0 | -9.2681 | -5.5608 | d |
| 3.4014 | 23.51667 | 15.00000 | 49.00000 | -10.513 | 0.0 | -9.0150 | -5.4090 | d |
| 3.8873 | 23.93333 | 14.75000 | 49.00000 | -10.218 | 0.0 | -8.7619 | -5.2571 | d |
| 4.3732 | 24.35000 | 14.50000 | 49.00000 | -9.9229 | 0.0 | -8.5088 | -5.1053 | d |
| 4.8591 | 24.76667 | 14.25000 | 49.00000 | -9.6278 | 0.0 | -8.2558 | -4.9535 | d |
| 5.3450 | 25.18333 | 14.00000 | 49.00000 | -9.3326 | 0.0 | -8.0027 | -4.8016 | d |
| 5.8310 | 25.60000 | 13.75000 | 49.00000 | -9.0375 | 0.0 | -7.7496 | -4.6498 | d |

d - Displacements include imported displacements.

Structure: 2 Frognal Rise | Sub-structure: 2 FR Rear 2

| Dist. | Coordinates x | y | z | Displacements x | y | Horizontal displacement along the Line | Horizontal displacement perpendicular to Line | |
|---|---|---|---|---|---|---|---|---|
| [m] | [m] | [m] | [m] | [mm] | [mm] | [mm] | [mm] | |
| 0.0 | 25.60000 | 13.80000 | 49.00000 | -9.0375 | 0.0 | -9.0375 | 0.0 | d |
| 0.48889 | 26.08889 | 13.80000 | 49.00000 | -8.6912 | 0.0 | -8.6912 | 0.0 | d |
| 0.97778 | 26.57778 | 13.80000 | 49.00000 | -8.3449 | 0.0 | -8.3449 | 0.0 | d |
| 1.4667 | 27.06667 | 13.80000 | 49.00000 | -7.9986 | 0.0 | -7.9986 | 0.0 | d |
| 1.9556 | 27.55556 | 13.80000 | 49.00000 | -7.6523 | 0.0 | -7.6523 | 0.0 | d |
| 2.4444 | 28.04444 | 13.80000 | 49.00000 | -7.3060 | 0.0 | -7.3060 | 0.0 | d |
| 2.9333 | 28.53333 | 13.80000 | 49.00000 | -6.9597 | 0.0 | -6.9597 | 0.0 | d |
| 3.4222 | 29.02222 | 13.80000 | 49.00000 | -6.6134 | 0.0 | -6.6134 | 0.0 | d |
| 3.9111 | 29.51111 | 13.80000 | 49.00000 | -6.2671 | 0.0 | -6.2671 | 0.0 | d |
| 4.4000 | 30.00000 | 13.80000 | 49.00000 | -5.9250 | 0.0 | -5.9250 | 0.0 | d |

d - Displacements include imported displacements.

Structure: 2 Frognal Rise | Sub-structure: 2 FR Side

| Dist. | Coordinates x | y | z | Displacements x | y | Horizontal displacement along the Line | Horizontal displacement perpendicular to Line | |
|---|---|---|---|---|---|---|---|---|
| [m] | [m] | [m] | [m] | [mm] | [mm] | [mm] | [mm] | |
| 0.0 | 30.10000 | 13.80000 | 49.00000 | -5.8875 | 0.0 | 0.0 | -5.8875 | d |
| 0.52778 | 30.10000 | 13.27222 | 49.00000 | -5.8875 | 0.0 | 0.0 | -5.8875 | d |
| 1.0556 | 30.10000 | 12.74444 | 49.00000 | -5.8875 | 0.0 | 0.0 | -5.8875 | d |
| 1.5833 | 30.10000 | 12.21667 | 49.00000 | -5.8875 | 0.0 | 0.0 | -5.8875 | d |
| 2.1111 | 30.10000 | 11.68889 | 49.00000 | -5.8875 | 0.0 | 0.0 | -5.8875 | d |
| 2.6389 | 30.10000 | 11.16111 | 49.00000 | -5.8875 | 0.0 | 0.0 | -5.8875 | d |
| 3.1667 | 30.10000 | 10.63333 | 49.00000 | -5.8875 | 0.0 | 0.0 | -5.8875 | d |
| 3.6944 | 30.10000 | 10.10556 | 49.00000 | -5.8875 | 0.0 | 0.0 | -5.8875 | d |
| 4.2222 | 30.10000 | 9.57778 | 49.00000 | -5.8875 | 0.0 | 0.0 | -5.8875 | d |
| 4.7500 | 30.10000 | 9.05000 | 49.00000 | -5.7687 | 0.11706 | -0.11706 | -5.7687 | d |
| 5.2778 | 30.10000 | 8.52222 | 49.00000 | -5.5525 | 0.32166 | -0.32166 | -5.5525 | d |
| 5.8056 | 30.10000 | 7.99444 | 49.00000 | -5.3292 | 0.52258 | -0.52258 | -5.3292 | d |
| 6.3333 | 30.10000 | 7.46667 | 49.00000 | -5.1013 | 0.71762 | -0.71762 | -5.1013 | d |
| 6.8611 | 30.10000 | 6.93889 | 49.00000 | -4.8709 | 0.90477 | -0.90477 | -4.8709 | d |
| 7.3889 | 30.10000 | 6.41111 | 49.00000 | -4.6403 | 1.0823 | -1.0823 | -4.6403 | d |
| 7.9167 | 30.10000 | 5.88333 | 49.00000 | -4.4113 | 1.2487 | -1.2487 | -4.4113 | d |
| 8.4444 | 30.10000 | 5.35556 | 49.00000 | -4.1855 | 1.4028 | -1.4028 | -4.1855 | d |
| 8.9722 | 30.10000 | 4.82778 | 49.00000 | -3.9644 | 1.5437 | -1.5437 | -3.9644 | d |
| 9.5000 | 30.10000 | 4.30000 | 49.00000 | -3.7489 | 1.6709 | -1.6709 | -3.7489 | d |

d - Displacements include imported displacements.

Structure: 2 Frognal Rise | Sub-structure: 2 FR Front 1

| Dist. | Coordinates x | y | z | Displacements x | y | Horizontal displacement along the Line | Horizontal displacement perpendicular to Line | |
|---|---|---|---|---|---|---|---|---|
| [m] | [m] | [m] | [m] | [mm] | [mm] | [mm] | [mm] | |
| 0.0 | 30.00000 | 4.30000 | 49.00000 | -3.7568 | 1.6961 | 3.7568 | -1.6961 | d |
| 0.48750 | 29.51250 | 4.30000 | 49.00000 | -3.7882 | 1.8252 | 3.7882 | -1.8252 | d |
| 0.97500 | 29.02500 | 4.30000 | 49.00000 | -3.8067 | 1.9651 | 3.8067 | -1.9651 | d |
| 1.4625 | 28.53750 | 4.30000 | 49.00000 | -3.8109 | 2.1170 | 3.8109 | -2.1170 | d |
| 1.9500 | 28.05000 | 4.30000 | 49.00000 | -3.8831 | 2.3329 | 3.8831 | -2.3329 | d |
| 2.4375 | 27.56250 | 4.30000 | 49.00000 | -3.9314 | 2.5687 | 3.9314 | -2.5687 | d |
| 2.9250 | 27.07500 | 4.30000 | 49.00000 | -3.9516 | 2.8260 | 3.9516 | -2.8260 | d |
| 3.4125 | 26.58750 | 4.30000 | 49.00000 | -3.9405 | 3.1070 | 3.9405 | -3.1070 | d |
| 3.9000 | 26.10000 | 4.30000 | 49.00000 | -3.8944 | 3.4143 | 3.8944 | -3.4143 | d |

d - Displacements include imported displacements.

Structure: 2 Frognal Rise | Sub-structure: 2 FR Front 2

| Dist. | Coordinates | | | Displacements | | | |
|---|---|---|---|---|---|---|---|
| | x | y | z | x | y | Horizontal displacement along the Line | Horizontal displacement perpendicular to Line |
| [m] | [m] | [m] | [m] | [mm] | [mm] | [mm] | [mm] |
| 0.0 | 26.00000 | 4.30000 | 49.00000 | -3.8803 | 3.4808 | 3.4808 | 3.8803 d |
| 0.46667 | 26.00000 | 4.76667 | 49.00000 | -4.2268 | 3.3520 | 3.3520 | 4.2268 d |
| 0.93333 | 26.00000 | 5.23333 | 49.00000 | -4.5998 | 3.1839 | 3.1839 | 4.5998 d |
| 1.4000 | 26.00000 | 5.70000 | 49.00000 | -4.9999 | 2.9744 | 2.9744 | 4.9999 d |
| 1.8667 | 26.00000 | 6.16667 | 49.00000 | -5.4269 | 2.7218 | 2.7218 | 5.4269 d |
| 2.3333 | 26.00000 | 6.63333 | 49.00000 | -5.8792 | 2.4256 | 2.4256 | 5.8792 d |
| 2.8000 | 26.00000 | 7.10000 | 49.00000 | -6.3541 | 2.0867 | 2.0867 | 6.3541 d |

d - Displacements include imported displacements.

Structure: 2 Frognal Rise | Sub-structure: 2 FR Front 3

| Dist. | Coordinates | | | Displacements | | | |
|---|---|---|---|---|---|---|---|
| | x | y | z | x | y | Horizontal displacement along the Line | Horizontal displacement perpendicular to Line |
| [m] | [m] | [m] | [m] | [mm] | [mm] | [mm] | [mm] |
| 0.0 | 25.90000 | 7.10000 | 49.00000 | -6.3684 | 2.1379 | 6.3684 | -2.1379 d |
| 0.43333 | 25.46667 | 7.10000 | 49.00000 | -6.4081 | 2.3797 | 6.4081 | -2.3797 d |
| 0.86667 | 25.03333 | 7.10000 | 49.00000 | -6.4064 | 2.6587 | 6.4064 | -2.6587 d |
| 1.3000 | 24.60000 | 7.10000 | 49.00000 | -6.3538 | 2.9835 | 6.3538 | -2.9835 d |
| 1.7333 | 24.16667 | 7.10000 | 49.00000 | -6.2381 | 3.3647 | 6.2381 | -3.3647 d |
| 2.1667 | 23.73333 | 7.10000 | 49.00000 | -6.0437 | 3.8161 | 6.0437 | -3.8161 d |
| 2.6000 | 23.30000 | 7.10000 | 49.00000 | -5.7508 | 4.3549 | 5.7508 | -4.3549 d |

d - Displacements include imported displacements.

Structure: 2 Frognal Rise | Sub-structure: 2 FR Front 4

| Dist. | Coordinates | | | Displacements | | | |
|---|---|---|---|---|---|---|---|
| | x | y | z | x | y | Horizontal displacement along the Line | Horizontal displacement perpendicular to Line |
| [m] | [m] | [m] | [m] | [mm] | [mm] | [mm] | [mm] |
| 0.0 | 23.20000 | 7.10000 | 49.00000 | -5.6667 | 4.4938 | 4.4938 | 5.6667 d |
| 0.45000 | 23.20000 | 7.55000 | 49.00000 | -6.4766 | 3.8749 | 3.8749 | 6.4766 d |
| 0.90000 | 23.20000 | 8.00000 | 49.00000 | -7.4090 | 3.1027 | 3.1027 | 7.4090 d |
| 1.3500 | 23.20000 | 8.45000 | 49.00000 | -8.4558 | 2.1782 | 2.1782 | 8.4558 d |
| 1.8000 | 23.20000 | 8.90000 | 49.00000 | -9.5850 | 1.1261 | 1.1261 | 9.5850 d |
| 2.2500 | 23.20000 | 9.35000 | 49.00000 | -10.737 | 0.0 | 0.0 | 10.737 d |

d - Displacements include imported displacements.

Structure: 2 Frognal Rise | Sub-structure: 2 FR Front 5

| Dist. | Coordinates | | | Displacements | | | |
|---|---|---|---|---|---|---|---|
| | x | y | z | x | y | Horizontal displacement along the Line | Horizontal displacement perpendicular to Line |
| [m] | [m] | [m] | [m] | [mm] | [mm] | [mm] | [mm] |
| 0.0 | 23.10000 | 9.35000 | 49.00000 | -10.808 | 0.0 | 10.808 | 0.0 d |
| 0.41667 | 22.68333 | 9.35000 | 49.00000 | -11.103 | 0.0 | 11.103 | 0.0 d |
| 0.83333 | 22.26667 | 9.35000 | 49.00000 | -11.399 | 0.0 | 11.399 | 0.0 d |
| 1.2500 | 21.85000 | 9.35000 | 49.00000 | -11.694 | 0.0 | 11.694 | 0.0 d |
| 1.6667 | 21.43333 | 9.35000 | 49.00000 | -11.989 | 0.0 | 11.989 | 0.0 d |
| 2.0833 | 21.01667 | 9.35000 | 49.00000 | -12.284 | 0.0 | 12.284 | 0.0 d |
| 2.5000 | 20.60000 | 9.35000 | 49.00000 | -12.579 | 0.0 | 12.579 | 0.0 d |

d - Displacements include imported displacements.

Structure: Windmill Hill | Sub-structure: Windmill Hill 1

| Dist. | Coordinates | | | Displacements | | | |
|---|---|---|---|---|---|---|---|
| | x | y | z | x | y | Horizontal displacement along the Line | Horizontal displacement perpendicular to Line |
| [m] | [m] | [m] | [m] | [mm] | [mm] | [mm] | [mm] |
| 0.0 | 14.50000 | 26.00000 | 52.80000 | 0.0 | -10.755 | 9.6196 | -4.8098 d |
| 0.67082 | 14.80000 | 25.40000 | 52.80000 | 0.0 | -11.184 | 10.003 | -5.0017 d |
| 1.3416 | 15.10000 | 24.80000 | 52.80000 | 0.0 | -11.622 | 10.395 | -5.1975 d |
| 2.0125 | 15.40000 | 24.20000 | 52.80000 | 0.0 | -12.069 | 10.795 | -5.3976 d |
| 2.6833 | 15.70000 | 23.60000 | 52.80000 | 0.0 | -12.527 | 11.204 | -5.6021 d |
| 3.3541 | 16.00000 | 23.00000 | 52.80000 | 0.0 | -12.994 | 11.622 | -5.8112 d |

d - Displacements include imported displacements.

Structure: Windmill Hill | Sub-structure: Windmill Hill 2

| Dist. | Coordinates | | | Displacements | | | |
|---|---|---|---|---|---|---|---|
| | x | y | z | x | y | Horizontal displacement along the Line | Horizontal displacement perpendicular to Line |
| [m] | [m] | [m] | [m] | [mm] | [mm] | [mm] | [mm] |
| 0.0 | 16.00000 | 22.95000 | 52.80000 | 0.0 | -13.034 | 7.9232 | -10.349 d |
| 0.80604 | 16.64000 | 22.46000 | 52.80000 | 0.0 | -13.424 | 8.1605 | -10.659 d |
| 1.6121 | 17.28000 | 21.97000 | 52.80000 | -2.9330 | -9.9430 | 3.7157 | -9.6778 d |
| 2.4181 | 17.92000 | 21.48000 | 52.80000 | -10.909 | -8.3117 | -3.6091 | -13.231 d |
| 3.2242 | 18.56000 | 20.99000 | 52.80000 | -10.772 | -8.2073 | -3.5638 | -13.065 d |
| 4.0302 | 19.20000 | 20.50000 | 52.80000 | -10.636 | -8.1038 | -3.5189 | -12.900 d |

d - Displacements include imported displacements.

Structure: Windmill Hill | Sub-structure: Windmill Hill 3

| Dist. | Coordinates | | | Displacements | | | |
|---|---|---|---|---|---|---|---|
| | x | y | z | x | y | Horizontal displacement along the Line | Horizontal displacement perpendicular to Line |
| [m] | [m] | [m] | [m] | [mm] | [mm] | [mm] | [mm] |
| 0.0 | 19.20000 | 20.45000 | 52.80000 | -10.656 | -8.1186 | -6.7370 | -11.579 d |
| 0.75769 | 19.90000 | 20.16000 | 52.80000 | -10.414 | -7.9345 | -6.5842 | -11.316 d |
| 1.5154 | 20.60000 | 19.87000 | 52.80000 | -10.176 | -7.7530 | -6.4336 | -11.057 d |
| 2.2731 | 21.30000 | 19.58000 | 52.80000 | -9.9410 | -7.5741 | -6.2851 | -10.802 d |
| 3.0308 | 22.00000 | 19.29000 | 52.80000 | -9.7094 | -7.3976 | -6.1387 | -10.551 d |
| 3.7885 | 22.70000 | 19.00000 | 52.80000 | -9.5668 | -7.1638 | -6.0965 | -10.280 d |

d - Displacements include imported displacements.

***Specific Building Damage Results - Vertical Displacements***

Structure: 2 Frognal Rise | Sub-structure: 2 FR Rear 1

| Dist. | Coordinates | | | Displacements |
|---|---|---|---|---|
| | x | y | z | z |
| [m] | [m] | [m] | [m] | [mm] |
| **Vertical Offset 1** | | | | |
| 0.0 | 20.60000 | 16.75000 | 49.00000 | -0.15133 d |
| 0.48591 | 21.01667 | 16.50000 | 49.00000 | 0.42108 d |
| 0.97183 | 21.43333 | 16.25000 | 49.00000 | 0.89237 d |
| 1.4577 | 21.85000 | 16.00000 | 49.00000 | 1.2795 d |
| 1.9437 | 22.26667 | 15.75000 | 49.00000 | 1.5982 d |
| 2.4296 | 22.68333 | 15.50000 | 49.00000 | 1.8580 d |
| 2.9155 | 23.10000 | 15.25000 | 49.00000 | 2.0666 d |
| 3.4014 | 23.51667 | 15.00000 | 49.00000 | 2.2306 d |

| Dist. | Coordinates x | y | z | Displacements z |
|---|---|---|---|---|
| [m] | [m] | [m] | [m] | [mm] |
| 3.8873 | 23.93333 | 14.75000 | 49.00000 | 2.3561 d |
| 4.3732 | 24.35000 | 14.50000 | 49.00000 | 2.4485 d |
| 4.8591 | 24.76667 | 14.25000 | 49.00000 | 2.5126 d |
| 5.3450 | 25.18333 | 14.00000 | 49.00000 | 2.5528 d |
| 5.8310 | 25.60000 | 13.75000 | 49.00000 | 2.5727 d |

d - Displacements include imported displacements.

Structure: 2 Frognal Rise | Sub-structure: 2 FR Rear 2

| Dist. | Coordinates x | y | z | Displacements z |
|---|---|---|---|---|
| [m] | [m] | [m] | [m] | [mm] |
| **Vertical Offset 1** | | | | |
| 0.0 | 25.60000 | 13.80000 | 49.00000 | 2.5692 d |
| 0.48889 | 26.08889 | 13.80000 | 49.00000 | 2.5525 d |
| 0.97778 | 26.57778 | 13.80000 | 49.00000 | 2.5191 d |
| 1.4667 | 27.06667 | 13.80000 | 49.00000 | 2.4718 d |
| 1.9556 | 27.55556 | 13.80000 | 49.00000 | 2.4121 d |
| 2.4444 | 28.04444 | 13.80000 | 49.00000 | 2.3409 d |
| 2.9333 | 28.53333 | 13.80000 | 49.00000 | 2.2580 d |
| 3.4222 | 29.02222 | 13.80000 | 49.00000 | 2.1621 d |
| 3.9111 | 29.51111 | 13.80000 | 49.00000 | 2.0514 d |
| 4.4000 | 30.00000 | 13.80000 | 49.00000 | 1.9229 d |

d - Displacements include imported displacements.

Structure: 2 Frognal Rise | Sub-structure: 2 FR Side

| Dist. | Coordinates x | y | z | Displacements z |
|---|---|---|---|---|
| [m] | [m] | [m] | [m] | [mm] |
| **Vertical Offset 1** | | | | |
| 0.0 | 30.10000 | 13.80000 | 49.00000 | 1.9004 d |
| 0.52778 | 30.10000 | 13.27222 | 49.00000 | 1.9143 d |
| 1.0556 | 30.10000 | 12.74444 | 49.00000 | 1.9306 d |
| 1.5833 | 30.10000 | 12.21667 | 49.00000 | 1.9490 d |
| 2.1111 | 30.10000 | 11.68889 | 49.00000 | 1.9695 d |
| 2.6389 | 30.10000 | 11.16111 | 49.00000 | 1.9918 d |
| 3.1667 | 30.10000 | 10.63333 | 49.00000 | 2.0157 d |
| 3.6944 | 30.10000 | 10.10556 | 49.00000 | 2.0411 d |
| 4.2222 | 30.10000 | 9.57778 | 49.00000 | 2.0677 d |
| 4.7500 | 30.10000 | 9.05000 | 49.00000 | 2.0935 d |
| 5.2778 | 30.10000 | 8.52222 | 49.00000 | 2.1099 d |
| 5.8056 | 30.10000 | 7.99444 | 49.00000 | 2.1155 d |
| 6.3333 | 30.10000 | 7.46667 | 49.00000 | 2.1104 d |
| 6.8611 | 30.10000 | 6.93889 | 49.00000 | 2.0946 d |
| 7.3889 | 30.10000 | 6.41111 | 49.00000 | 2.0682 d |
| 7.9167 | 30.10000 | 5.88333 | 49.00000 | 2.0314 d |
| 8.4444 | 30.10000 | 5.35556 | 49.00000 | 1.9844 d |
| 8.9722 | 30.10000 | 4.82778 | 49.00000 | 1.9277 d |
| 9.5000 | 30.10000 | 4.30000 | 49.00000 | 1.8619 d |

d - Displacements include imported displacements.

Structure: 2 Frognal Rise | Sub-structure: 2 FR Front 1

| Dist. | Coordinates x | y | z | Displacements z |
|---|---|---|---|---|
| [m] | [m] | [m] | [m] | [mm] |
| **Vertical Offset 1** | | | | |
| 0.0 | 30.00000 | 4.30000 | 49.00000 | 1.8891 d |
| 0.48750 | 29.51250 | 4.30000 | 49.00000 | 2.0191 d |
| 0.97500 | 29.02500 | 4.30000 | 49.00000 | 2.1433 d |
| 1.4625 | 28.53750 | 4.30000 | 49.00000 | 2.2600 d |
| 1.9500 | 28.05000 | 4.30000 | 49.00000 | 2.3904 d |
| 2.4375 | 27.56250 | 4.30000 | 49.00000 | 2.5065 d |
| 2.9250 | 27.07500 | 4.30000 | 49.00000 | 2.6107 d |
| 3.4125 | 26.58750 | 4.30000 | 49.00000 | 2.7044 d |
| 3.9000 | 26.10000 | 4.30000 | 49.00000 | 2.7884 d |

d - Displacements include imported displacements.

Structure: 2 Frognal Rise | Sub-structure: 2 FR Front 2

| Dist. | Coordinates x | y | z | Displacements z |
|---|---|---|---|---|
| [m] | [m] | [m] | [m] | [mm] |
| **Vertical Offset 1** | | | | |
| 0.0 | 26.00000 | 4.30000 | 49.00000 | 2.8044 d |
| 0.46667 | 26.00000 | 4.76667 | 49.00000 | 2.8735 d |
| 0.93333 | 26.00000 | 5.23333 | 49.00000 | 2.9340 d |
| 1.4000 | 26.00000 | 5.70000 | 49.00000 | 2.9851 d |
| 1.8667 | 26.00000 | 6.16667 | 49.00000 | 3.0262 d |
| 2.3333 | 26.00000 | 6.63333 | 49.00000 | 3.0566 d |
| 2.8000 | 26.00000 | 7.10000 | 49.00000 | 3.0753 d |

d - Displacements include imported displacements.

Structure: 2 Frognal Rise | Sub-structure: 2 FR Front 3

| Dist. | Coordinates x | y | z | Displacements z |
|---|---|---|---|---|
| [m] | [m] | [m] | [m] | [mm] |
| **Vertical Offset 1** | | | | |
| 0.0 | 25.90000 | 7.10000 | 49.00000 | 3.0923 d |
| 0.43333 | 25.46667 | 7.10000 | 49.00000 | 3.1616 d |
| 0.86667 | 25.03333 | 7.10000 | 49.00000 | 3.2231 d |
| 1.3000 | 24.60000 | 7.10000 | 49.00000 | 3.2751 d |
| 1.7333 | 24.16667 | 7.10000 | 49.00000 | 3.3160 d |
| 2.1667 | 23.73333 | 7.10000 | 49.00000 | 3.3440 d |
| 2.6000 | 23.30000 | 7.10000 | 49.00000 | 3.3570 d |

d - Displacements include imported displacements.

Structure: 2 Frognal Rise | Sub-structure: 2 FR Front 4

| Dist. | Coordinates x | y | z | Displacements z |
|---|---|---|---|---|
| [m] | [m] | [m] | [m] | [mm] |
| **Vertical Offset 1** | | | | |
| 0.0 | 23.20000 | 7.10000 | 49.00000 | 3.3578 d |
| 0.45000 | 23.20000 | 7.55000 | 49.00000 | 3.3494 d |
| 0.90000 | 23.20000 | 8.00000 | 49.00000 | 3.3226 d |
| 1.3500 | 23.20000 | 8.45000 | 49.00000 | 3.2774 d |
| 1.8000 | 23.20000 | 8.90000 | 49.00000 | 3.2143 d |
| 2.2500 | 23.20000 | 9.35000 | 49.00000 | 3.1339 d |

d - Displacements include imported displacements.

Structure: 2 Frognal Rise | Sub-structure: 2 FR Front 5

| Dist. | Coordinates x | y | z | Displacements z |
|---|---|---|---|---|
| [m] | [m] | [m] | [m] | [mm] |
| **Vertical Offset 1** | | | | |
| 0.0 | 23.10000 | 9.35000 | 49.00000 | 3.1253 d |
| 0.41667 | 22.68333 | 9.35000 | 49.00000 | 3.0748 d |
| 0.83333 | 22.26667 | 9.35000 | 49.00000 | 2.9991 d |
| 1.2500 | 21.85000 | 9.35000 | 49.00000 | 2.8973 d |
| 1.6667 | 21.43333 | 9.35000 | 49.00000 | 2.7709 d |
| 2.0833 | 21.01667 | 9.35000 | 49.00000 | 2.6285 d |

| Dist. | Coordinates x | y | z | Displacements z |
|---|---|---|---|---|
| [m] | [m] | [m] | [m] | [mm] |
| 2.5000 | 20.60000 | 9.35000 | 49.00000 | 2.5035 d |

d - Displacements include imported displacements.

Structure: Windmill Hill | Sub-structure: Windmill Hill 1

| Dist. | Coordinates x | y | z | Displacements z |
|---|---|---|---|---|
| [m] | [m] | [m] | [m] | [mm] |
| **Vertical Offset 1** | | | | |
| 0.0 | 14.50000 | 26.00000 | 52.80000 | 4.2960 d |
| 0.67082 | 14.80000 | 25.40000 | 52.80000 | 4.0699 d |
| 1.3416 | 15.10000 | 24.80000 | 52.80000 | 3.7609 d |
| 2.0125 | 15.40000 | 24.20000 | 52.80000 | 3.3607 d |
| 2.6833 | 15.70000 | 23.60000 | 52.80000 | 2.8604 d |
| 3.3541 | 16.00000 | 23.00000 | 52.80000 | 2.2499 d |

d - Displacements include imported displacements.

Structure: Windmill Hill | Sub-structure: Windmill Hill 2

| Dist. | Coordinates x | y | z | Displacements z |
|---|---|---|---|---|
| [m] | [m] | [m] | [m] | [mm] |
| **Vertical Offset 1** | | | | |
| 0.0 | 16.00000 | 22.95000 | 52.80000 | 2.1816 d |
| 0.80604 | 16.64000 | 22.46000 | 52.80000 | 1.8195 d |
| 1.6121 | 17.28000 | 21.97000 | 52.80000 | 0.71327 d |
| 2.4181 | 17.92000 | 21.48000 | 52.80000 | 1.6460 d |
| 3.2242 | 18.56000 | 20.99000 | 52.80000 | 1.9320 d |
| 4.0302 | 19.20000 | 20.50000 | 52.80000 | 2.2630 d |

d - Displacements include imported displacements.

Structure: Windmill Hill | Sub-structure: Windmill Hill 3

| Dist. | Coordinates x | y | z | Displacements z |
|---|---|---|---|---|
| [m] | [m] | [m] | [m] | [mm] |
| **Vertical Offset 1** | | | | |
| 0.0 | 19.20000 | 20.45000 | 52.80000 | 2.2162 d |
| 0.75769 | 19.90000 | 20.16000 | 52.80000 | 2.8272 d |
| 1.5154 | 20.60000 | 19.87000 | 52.80000 | 3.3969 d |
| 2.2731 | 21.30000 | 19.58000 | 52.80000 | 3.9108 d |
| 3.0308 | 22.00000 | 19.29000 | 52.80000 | 4.3642 d |
| 3.7885 | 22.70000 | 19.00000 | 52.80000 | 4.7532 d |

d - Displacements include imported displacements.

***Specific Building Damage Results - All Segments***

Structure: 2 Frognal Rise | Sub-structure: 2 FR Rear 1

| Vertical Offset from Line for Vertical Movement Calculations | Segment | Start | Length | Curvature | Deflection Ratio | Average Horizontal Strain | Max Tensile Strain | Max Gradient of Horizontal Displacement Curve | Max Gradient of Vertical Displacement Curve | Min Radius of Curvature | Damage Category |
|---|---|---|---|---|---|---|---|---|---|---|---|
| [m] | | [m] | [m] | | [%] | [%] | [%] | | | [m] | |
| 0.0 | 1 | 0.0 | 5.8250 | Sagging | 0.014964 | 0.052083 | 0.066840 | -520.56E-6 | -0.0011774 | 2243.5 | 1 (Very Slight) |

Tensile horizontal strains are +ve, compressive horizontal strains are -ve.

Structure: 2 Frognal Rise | Sub-structure: 2 FR Rear 2

| Vertical Offset from Line for Vertical Movement Calculations | Segment | Start | Length | Curvature | Deflection Ratio | Average Horizontal Strain | Max Tensile Strain | Max Gradient of Horizontal Displacement Curve | Max Gradient of Vertical Displacement Curve | Min Radius of Curvature | Damage Category |
|---|---|---|---|---|---|---|---|---|---|---|---|
| [m] | | [m] | [m] | | [%] | [%] | [%] | | | [m] | |
| 0.0 | 1 | 0.0 | 4.3900 | Sagging | 0.0029622 | 0.070740 | 0.073062 | -707.83E-6 | 262.65E-6 | 12820. | 1 (Very Slight) |

Tensile horizontal strains are +ve, compressive horizontal strains are -ve.

Structure: 2 Frognal Rise | Sub-structure: 2 FR Side

| Vertical Offset from Line for Vertical Movement Calculations | Segment | Start | Length | Curvature | Deflection Ratio | Average Horizontal Strain | Max Tensile Strain | Max Gradient of Horizontal Displacement Curve | Max Gradient of Vertical Displacement Curve | Min Radius of Curvature | Damage Category |
|---|---|---|---|---|---|---|---|---|---|---|---|
| [m] | | [m] | [m] | | [%] | [%] | [%] | | | [m] | |
| 0.0 | 1 | 0.0 | 3.8224 | Hogging | 322.64E-6 | 0.0 | 317.97E-6 | 0.0 | -50.440E-6 | 116310. | 0 (Negligible) |
| | 2 | 3.8224 | 5.6676 | Sagging | 0.0025764 | -0.029439 | 0.0060346 | 387.82E-6 | 124.85E-6 | 25971. | 0 (Negligible) |

Tensile horizontal strains are +ve, compressive horizontal strains are -ve.

Structure: 2 Frognal Rise | Sub-structure: 2 FR Front 1

| Vertical Offset from Line for Vertical Movement Calculations | Segment | Start | Length | Curvature | Deflection Ratio | Average Horizontal Strain | Max Tensile Strain | Max Gradient of Horizontal Displacement Curve | Max Gradient of Vertical Displacement Curve | Min Radius of Curvature | Damage Category |
|---|---|---|---|---|---|---|---|---|---|---|---|
| [m] | | [m] | [m] | | [%] | [%] | [%] | | | [m] | |
| 0.0 | 1 | 0.0 | 1.2491 | Sagging | 415.95E-6 | 0.0041828 | 0.0042821 | -64.402E-6 | -266.70E-6 | 38098. | 0 (Negligible) |
| | 2 | 1.2491 | 0.29669 | Hogging | 561.26E-6 | 0.0047723 | 0.0048268 | -148.17E-6 | -267.35E-6 | 172680. | 0 (Negligible) |
| | 3 | 1.5458 | 2.3442 | Sagging | 0.0013784 | 0.0030764 | 0.0036845 | -148.17E-6 | -267.35E-6 | 19631. | 0 (Negligible) |

Tensile horizontal strains are +ve, compressive horizontal strains are -ve.

Structure: 2 Frognal Rise | Sub-structure: 2 FR Front 2

| Vertical Offset from Line for Vertical Movement Calculations | Segment | Start | Length | Curvature | Deflection Ratio | Average Horizontal Strain | Max Tensile Strain | Max Gradient of Horizontal Displacement Curve | Max Gradient of Vertical Displacement Curve | Min Radius of Curvature | Damage Category |
|---|---|---|---|---|---|---|---|---|---|---|---|
| [m] | | [m] | [m] | | [%] | [%] | [%] | | | [m] | |
| 0.0 | 1 | 0.0 | 2.7900 | Sagging | 0.0016079 | -0.049708 | 0.0099822 | 726.88E-6 | -148.19E-6 | 18129. | 0 (Negligible) |

Tensile horizontal strains are +ve, compressive horizontal strains are -ve.

Structure: 2 Frognal Rise | Sub-structure: 2 FR Front 3

| Vertical Offset from Line for Vertical Movement Calculations | Segment | Start | Length | Curvature | Deflection Ratio | Average Horizontal Strain | Max Tensile Strain | Max Gradient of Horizontal Displacement Curve | Max Gradient of Vertical Displacement Curve | Min Radius of Curvature | Damage Category |
|---|---|---|---|---|---|---|---|---|---|---|---|
| [m] | | [m] | [m] | | [%] | [%] | [%] | | | [m] | |
| 0.0 | 1 | 0.0 | 2.5900 | Sagging | 0.0019295 | -0.023585 | 0.0048412 | 676.46E-6 | -159.93E-6 | 12078. | 0 (Negligible) |

Tensile horizontal strains are +ve, compressive horizontal strains are -ve.

| Vertical Offset from Line for Vertical Movement Calculations | Segment | Start | Length | Curvature | Deflection Ratio | Average Horizontal Strain | Max Tensile Strain | Max Gradient of Horizontal Displacement Curve | Max Gradient of Vertical Displacement Curve | Min Radius of Curvature | Damage Category |
|---|---|---|---|---|---|---|---|---|---|---|---|
| [m] | | [m] | [m] | | [%] | [%] | [%] | | | [m] | |
| 0.0 | 1 | 0.0 | 2.2400 | Sagging | 0.0024219 | -0.19950 | 0.039923 | 0.0025088 | 179.22E-6 | 10957. | 0 (Negligible) |

Tensile horizontal strains are +ve, compressive horizontal strains are -ve.

Structure: 2 Frognal Rise | Sub-structure: 2 FR Front 4

| Vertical Offset from Line for Vertical Movement Calculations | Segment | Start | Length | Curvature | Deflection Ratio | Average Horizontal Strain | Max Tensile Strain | Max Gradient of Horizontal Displacement Curve | Max Gradient of Vertical Displacement Curve | Min Radius of Curvature | Damage Category |
|---|---|---|---|---|---|---|---|---|---|---|---|
| [m] | | [m] | [m] | | [%] | [%] | [%] | | | [m] | |
| 0.0 | 1 | 0.0 | 2.2400 | Sagging | 0.0024219 | -0.19950 | 0.039923 | 0.0025088 | 179.22E-6 | 10957. | 0 (Negligible) |

Tensile horizontal strains are +ve, compressive horizontal strains are -ve.

Structure: 2 Frognal Rise | Sub-structure: 2 FR Front 5

| Vertical Offset from Line for Vertical Movement Calculations | Segment | Start | Length | Curvature | Deflection Ratio | Average Horizontal Strain | Max Tensile Strain | Max Gradient of Horizontal Displacement Curve | Max Gradient of Vertical Displacement Curve | Min Radius of Curvature | Damage Category |
|---|---|---|---|---|---|---|---|---|---|---|---|
| [m] | | [m] | [m] | | [%] | [%] | [%] | | | [m] | |
| 0.0 | 1 | 0.0 | 1.8791 | Sagging | 0.0033612 | 0.070833 | 0.072031 | -707.83E-6 | 341.46E-6 | 6808.7 | 1 (Very Slight) |
| | 2 | 1.8791 | 0.61085 | Hogging | 926.64E-6 | 0.070833 | 0.070888 | -707.83E-6 | 341.46E-6 | 6709.4 | 1 (Very Slight) |

Tensile horizontal strains are +ve, compressive horizontal strains are -ve.

Structure: Windmill Hill | Sub-structure: Windmill Hill 1

| Vertical Offset from Line for Vertical Movement Calculations | Segment | Start | Length | Curvature | Deflection Ratio | Average Horizontal Strain | Max Tensile Strain | Max Gradient of Horizontal Displacement Curve | Max Gradient of Vertical Displacement Curve | Min Radius of Curvature | Damage Category |
|---|---|---|---|---|---|---|---|---|---|---|---|
| [m] | | [m] | [m] | | [%] | [%] | [%] | | | [m] | |
| 0.0 | 1 | 0.0 | 3.3530 | Sagging | 0.0087004 | 0.059708 | 0.071039 | -622.85E-6 | 909.40E-6 | 3997.6 | 1 (Very Slight) |

Tensile horizontal strains are +ve, compressive horizontal strains are -ve.

Structure: Windmill Hill | Sub-structure: Windmill Hill 2

| Vertical Offset from Line for Vertical Movement Calculations | Segment | Start | Length | Curvature | Deflection Ratio | Average Horizontal Strain | Max Tensile Strain | Max Gradient of Horizontal Displacement Curve | Max Gradient of Vertical Displacement Curve | Min Radius of Curvature | Damage Category |
|---|---|---|---|---|---|---|---|---|---|---|---|
| [m] | | [m] | [m] | | [%] | [%] | [%] | | | [m] | |
| 0.0 | 1 | 0.0 | 0.85601 | Sagging | 0.0050777 | -0.0044728 | 0.0038626 | 0.0055450 | 0.0013801 | 445.07 | 0 (Negligible) |
| | 2 | 0.85601 | 2.0513 | Hogging | 0.051531 | -0.55900 | 0.11551 | 0.0091707 | 0.0013801 | 961.83 | 2 (Slight) |
| | 3 | 2.9073 | 0.61610 | Hogging | 0.0013933 | 0.0055992 | 0.0058753 | -56.208E-6 | -410.66E-6 | 4981.5 | 0 (Negligible) |
| | 4 | 3.5234 | 0.50564 | None | 0.0 | 0.0055760 | 0.0055760 | -55.757E-6 | -410.66E-6 | 2942.9 | 0 (Negligible) |

Tensile horizontal strains are +ve, compressive horizontal strains are -ve.

Structure: Windmill Hill | Sub-structure: Windmill Hill 3

| Vertical Offset from Line for Vertical Movement Calculations | Segment | Start | Length | Curvature | Deflection Ratio | Average Horizontal Strain | Max Tensile Strain | Max Gradient of Horizontal Displacement Curve | Max Gradient of Vertical Displacement Curve | Min Radius of Curvature | Damage Category |
|---|---|---|---|---|---|---|---|---|---|---|---|
| [m] | | [m] | [m] | | [%] | [%] | [%] | | | [m] | |
| 0.0 | 1 | 0.0 | 3.7870 | Sagging | 0.0045431 | 0.016911 | 0.023174 | -201.57E-6 | -806.34E-6 | 8781.6 | 0 (Negligible) |

Tensile horizontal strains are +ve, compressive horizontal strains are -ve.

***Specific Building Damage Results - Critical Values for All Segments within Each Sub-Structure***

Structure: 2 Frognal Rise | Sub-structure: 2 FR Rear 1

| Vertical Offset from Line for Vertical Movement Calculations | Deflection Ratio | Average Horizontal Strain | Max Slope | Max Settlement | Max Tensile Strain | Max Gradient of Horizontal Displacement Curve | Max Gradient of Vertical Displacement Curve | Min Radius of Curvature (Hogging) | Min Radius of Curvature (Sagging) | Damage Category |
|---|---|---|---|---|---|---|---|---|---|---|
| [m] | [%] | [%] | | [mm] | [%] | | | [m] | [m] | |
| 0.0 | 0.014964 | 0.052083 | -0.0011774 | 2.5724 | 0.066840 | -520.56E-6 | -0.0011774 | - | 2243.5 | 1 (Very Slight) |

Structure: 2 Frognal Rise | Sub-structure: 2 FR Rear 2

| Vertical Offset from Line for Vertical Movement Calculations | Deflection Ratio | Average Horizontal Strain | Max Slope | Max Settlement | Max Tensile Strain | Max Gradient of Horizontal Displacement Curve | Max Gradient of Vertical Displacement Curve | Min Radius of Curvature (Hogging) | Min Radius of Curvature (Sagging) | Damage Category |
|---|---|---|---|---|---|---|---|---|---|---|
| [m] | [%] | [%] | | [mm] | [%] | | | [m] | [m] | |
| 0.0 | 0.0029622 | 0.070740 | 262.65E-6 | 2.5692 | 0.073062 | -707.83E-6 | 262.65E-6 | - | 12820. | 1 (Very Slight) |

Structure: 2 Frognal Rise | Sub-structure: 2 FR Side

| Vertical Offset from Line for Vertical Movement Calculations | Deflection Ratio | Average Horizontal Strain | Max Slope | Max Settlement | Max Tensile Strain | Max Gradient of Horizontal Displacement Curve | Max Gradient of Vertical Displacement Curve | Min Radius of Curvature (Hogging) | Min Radius of Curvature (Sagging) | Damage Category |
|---|---|---|---|---|---|---|---|---|---|---|
| [m] | [%] | [%] | | [mm] | [%] | | | [m] | [m] | |
| 0.0 | 0.0025764 | -0.029439 | 124.85E-6 | 2.1153 | 0.0060346 | 387.82E-6 | 124.85E-6 | 116310. | 25971. | 0 (Negligible) |

Structure: 2 Frognal Rise | Sub-structure: 2 FR Front 1

| Vertical Offset from Line for Vertical Movement Calculations | Deflection Ratio | Average Horizontal Strain | Max Slope | Max Settlement | Max Tensile Strain | Max Gradient of Horizontal Displacement Curve | Max Gradient of Vertical Displacement Curve | Min Radius of Curvature (Hogging) | Min Radius of Curvature (Sagging) | Damage Category |
|---|---|---|---|---|---|---|---|---|---|---|
| [m] | [%] | [%] | | [mm] | [%] | | | [m] | [m] | |
| 0.0 | 0.0013784 | 0.0047723 | -267.35E-6 | 2.7866 | 0.0048268 | -148.17E-6 | -267.35E-6 | 172680. | 19631. | 0 (Negligible) |

Structure: 2 Frognal Rise | Sub-structure: 2 FR Front 2

| Vertical Offset from Line for Vertical Movement Calculations | Deflection Ratio | Average Horizontal Strain | Max Slope | Max Settlement | Max Tensile Strain | Max Gradient of Horizontal Displacement Curve | Max Gradient of Vertical Displacement Curve | Min Radius of Curvature (Hogging) | Min Radius of Curvature (Sagging) | Damage Category |
|---|---|---|---|---|---|---|---|---|---|---|
| [m] | [%] | [%] | | [mm] | [%] | | | [m] | [m] | |
| 0.0 | 0.0016079 | -0.049708 | -148.19E-6 | 3.0749 | 0.0099822 | 726.88E-6 | -148.19E-6 | - | 18129. | 0 (Negligible) |

| Vertical Offset from Line for Vertical | Deflection Ratio | Average Horizontal Strain | Max Slope | Max Settlement | Max Tensile Strain | Max Gradient of Horizontal Displacement | Max Gradient of Vertical Displacement Curve | Min Radius of Curvature (Hogging) | Min Radius of Curvature (Sagging) | Damage Category |
|---|---|---|---|---|---|---|---|---|---|---|
| [m] | [%] | [%] | | [mm] | [%] | | | [m] | [m] | |
| 0.0 | 0.0019295 | -0.023585 | -159.93E-6 | 3.3567 | 0.0048412 | 676.46E-6 | -159.93E-6 | - | 12078. | 0 (Negligible) |

Structure: 2 Frognal Rise | Sub-structure: 2 FR Front 4

| Vertical Offset from Line for Vertical | Deflection Ratio | Average Horizontal Strain | Max Slope | Max Settlement | Max Tensile Strain | Max Gradient of Horizontal Displacement Curve | Max Gradient of Vertical Displacement Curve | Min Radius of Curvature (Hogging) | Min Radius of Curvature (Sagging) | Damage Category |
|---|---|---|---|---|---|---|---|---|---|---|
| [m] | [%] | [%] | | [mm] | [%] | | | [m] | [m] | |
| 0.0 | 0.0024219 | -0.19950 | 179.22E-6 | 3.3578 | 0.039923 | 0.0025088 | 179.22E-6 | - | 10957. | 0 (Negligible) |

Structure: 2 Frognal Rise | Sub-structure: 2 FR Front 5

| Vertical Offset from Line for Vertical | Deflection Ratio | Average Horizontal Strain | Max Slope | Max Settlement | Max Tensile Strain | Max Gradient of Horizontal Displacement Curve | Max Gradient of Vertical Displacement Curve | Min Radius of Curvature (Hogging) | Min Radius of Curvature (Sagging) | Damage Category |
|---|---|---|---|---|---|---|---|---|---|---|
| [m] | [%] | [%] | | [mm] | [%] | | | [m] | [m] | |
| 0.0 | 0.0033612 | 0.070833 | 341.46E-6 | 3.1253 | 0.072031 | -707.83E-6 | 341.46E-6 | 6709.4 | 6808.7 | 1 (Very Slight) |

Structure: Windmill Hill | Sub-structure: Windmill Hill 1

| Vertical Offset from Line for Vertical | Deflection Ratio | Average Horizontal Strain | Max Slope | Max Settlement | Max Tensile Strain | Max Gradient of Horizontal Displacement Curve | Max Gradient of Vertical Displacement Curve | Min Radius of Curvature (Hogging) | Min Radius of Curvature (Sagging) | Damage Category |
|---|---|---|---|---|---|---|---|---|---|---|
| [m] | [%] | [%] | | [mm] | [%] | | | [m] | [m] | |
| 0.0 | 0.0087004 | 0.059708 | 909.40E-6 | 4.2960 | 0.071039 | -622.85E-6 | 909.40E-6 | - | 3997.6 | 1 (Very Slight) |

Structure: Windmill Hill | Sub-structure: Windmill Hill 2

| Vertical Offset from Line for Vertical | Deflection Ratio | Average Horizontal Strain | Max Slope | Max Settlement | Max Tensile Strain | Max Gradient of Horizontal Displacement Curve | Max Gradient of Vertical Displacement Curve | Min Radius of Curvature (Hogging) | Min Radius of Curvature (Sagging) | Damage Category |
|---|---|---|---|---|---|---|---|---|---|---|
| [m] | [%] | [%] | | [mm] | [%] | | | [m] | [m] | |
| 0.0 | 0.051531 | -0.55900 | 0.0013801 | 2.2625 | 0.11551 | 0.0091707 | 0.0013801 | 961.83 | 445.07 | 2 (Slight) |

Structure: Windmill Hill | Sub-structure: Windmill Hill 3

| Vertical Offset from Line for Vertical | Deflection Ratio | Average Horizontal Strain | Max Slope | Max Settlement | Max Tensile Strain | Max Gradient of Horizontal Displacement Curve | Max Gradient of Vertical Displacement Curve | Min Radius of Curvature (Hogging) | Min Radius of Curvature (Sagging) | Damage Category |
|---|---|---|---|---|---|---|---|---|---|---|
| [m] | [%] | [%] | | [mm] | [%] | | | [m] | [m] | |
| 0.0 | 0.0045431 | 0.016911 | -806.34E-6 | 4.7524 | 0.023174 | -201.57E-6 | -806.34E-6 | - | 8781.6 | 0 (Negligible) |

***Specific Building Damage Results - Critical Segments within Each Structure***

| Structure Name | Parameter | Critical Sub-Structure | Critical Segment | Start | End | Curvature | Max Slope | Max Settlement | Max Tensile Strain | Min Radius of Curvature (Hogging) | Min Radius of Curvature (Sagging) | Damage Category |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | [m] | [m] | | | [mm] | [%] | [m] | [m] | |
| 2 Frognal Rise | Max Slope | 2 FR Rear 1 | 1 | 0.0 | 5.8250 | Sagging | **0.0011774** | 2.5724 | 0.066840 | - | 2243.5 | 1 (Very Slight) |
| | Max Settlement | 2 FR Front 4 | 1 | 0.0 | 2.2400 | Sagging | 179.22E-6 | **3.3578** | 0.039923 | - | 10957. | 0 (Negligible) |
| | Max Tensile Strain | 2 FR Rear 2 | 1 | 0.0 | 4.3900 | Sagging | 262.65E-6 | 2.5692 | **0.073062** | - | 12820. | 1 (Very Slight) |
| | Min Radius of Curvature (Hogging) | 2 FR Front 5 | 2 | 1.8791 | 2.4900 | Hogging | 341.46E-6 | 2.6983 | 0.070888 | **6709.4** | - | 1 (Very Slight) |
| | Min Radius of Curvature (Sagging) | 2 FR Rear 1 | 1 | 0.0 | 5.8250 | Sagging | 0.0011774 | 2.5724 | 0.066840 | - | **2243.5** | 1 (Very Slight) |
| Windmill Hill | Max Slope | Windmill Hill 2 | 1 | 0.0 | 0.85601 | Sagging | **0.0013801** | 2.1816 | 0.0038626 | - | 445.07 | 0 (Negligible) |
| | Max Settlement | Windmill Hill 3 | 1 | 0.0 | 3.7870 | Sagging | 806.34E-6 | **4.7524** | 0.023174 | - | 8781.6 | 0 (Negligible) |
| | Max Tensile Strain | Windmill Hill 2 | 2 | 0.85601 | 2.9073 | Hogging | 0.0013801 | 1.8195 | **0.11551** | 961.83 | - | 2 (Slight) |
| | Min Radius of Curvature (Hogging) | Windmill Hill 2 | 2 | 0.85601 | 2.9073 | Hogging | 0.0013801 | 1.8195 | 0.11551 | **961.83** | - | 2 (Slight) |
| | Min Radius of Curvature (Sagging) | Windmill Hill 2 | 1 | 0.0 | 0.85601 | Sagging | 0.0013801 | 2.1816 | 0.0038626 | - | **445.07** | 0 (Negligible) |

***Specific Building Damage Results - All Combined Segments***

Structure: 2 Frognal Rise | Sub-structure: 2 FR Rear 1

| Vertical Offset from Line for Vertical Movement Calculations | Combined Start Segment | Length | Curvature | Deflection Ratio | Average Horizontal Strain | Max Tensile Strain | Damage Category |
|---|---|---|---|---|---|---|---|
| [m] | [m] | [m] | | [%] | [%] | [%] | |

No structures have segments combined.

Structure: 2 Frognal Rise | Sub-structure: 2 FR Rear 2

| Vertical Offset from Line for Vertical Movement Calculations | Combined Start Segment | Length | Curvature | Deflection Ratio | Average Horizontal Strain | Max Tensile Strain | Damage Category |
|---|---|---|---|---|---|---|---|
| [m] | [m] | [m] | | [%] | [%] | [%] | |

No structures have segments combined.

Structure: 2 Frognal Rise | Sub-structure: 2 FR Side

| Vertical Offset from Line for Vertical Movement | Combined Start Segment | Length | Curvature | Deflection Ratio | Average Horizontal Strain | Max Tensile Strain | Damage Category |
|---|---|---|---|---|---|---|---|

| Vertical Offset from Line for Vertical Movement Calculations | Combined Segment | Start | Length | Curvature | Deflection Ratio | Average Horizontal Strain | Max Tensile Strain | Damage Category |
|---|---|---|---|---|---|---|---|---|
| [m] | | [m] | [m] | | [%] | [%] | [%] | |

No structures have segments combined.

Structure: 2 Frognal Rise | Sub-structure: 2 FR Front 1

| Vertical Offset from Line for Vertical Movement Calculations | Combined Segment | Start | Length | Curvature | Deflection Ratio | Average Horizontal Strain | Max Tensile Strain | Damage Category |
|---|---|---|---|---|---|---|---|---|
| [m] | | [m] | [m] | | [%] | [%] | [%] | |

No structures have segments combined.

Structure: 2 Frognal Rise | Sub-structure: 2 FR Front 2

| Vertical Offset from Line for Vertical Movement Calculations | Combined Segment | Start | Length | Curvature | Deflection Ratio | Average Horizontal Strain | Max Tensile Strain | Damage Category |
|---|---|---|---|---|---|---|---|---|
| [m] | | [m] | [m] | | [%] | [%] | [%] | |

No structures have segments combined.

Structure: 2 Frognal Rise | Sub-structure: 2 FR Front 3

| Vertical Offset from Line for Vertical Movement Calculations | Combined Segment | Start | Length | Curvature | Deflection Ratio | Average Horizontal Strain | Max Tensile Strain | Damage Category |
|---|---|---|---|---|---|---|---|---|
| [m] | | [m] | [m] | | [%] | [%] | [%] | |

No structures have segments combined.

Structure: 2 Frognal Rise | Sub-structure: 2 FR Front 4

| Vertical Offset from Line for Vertical Movement Calculations | Combined Segment | Start | Length | Curvature | Deflection Ratio | Average Horizontal Strain | Max Tensile Strain | Damage Category |
|---|---|---|---|---|---|---|---|---|
| [m] | | [m] | [m] | | [%] | [%] | [%] | |

No structures have segments combined.

Structure: 2 Frognal Rise | Sub-structure: 2 FR Front 5

| Vertical Offset from Line for Vertical Movement Calculations | Combined Segment | Start | Length | Curvature | Deflection Ratio | Average Horizontal Strain | Max Tensile Strain | Damage Category |
|---|---|---|---|---|---|---|---|---|
| [m] | | [m] | [m] | | [%] | [%] | [%] | |

No structures have segments combined.

Structure: Windmill Hill | Sub-structure: Windmill Hill 1

| Vertical Offset from Line for Vertical Movement Calculations | Combined Segment | Start | Length | Curvature | Deflection Ratio | Average Horizontal Strain | Max Tensile Strain | Damage Category |
|---|---|---|---|---|---|---|---|---|
| [m] | | [m] | [m] | | [%] | [%] | [%] | |

No structures have segments combined.

Structure: Windmill Hill | Sub-structure: Windmill Hill 2

| Vertical Offset from Line for Vertical Movement Calculations | Combined Segment | Start | Length | Curvature | Deflection Ratio | Average Horizontal Strain | Max Tensile Strain | Damage Category |
|---|---|---|---|---|---|---|---|---|
| [m] | | [m] | [m] | | [%] | [%] | [%] | |
| 0.0 | 1 | 0.0 | 4.0290 | Hogging | 0.036914 | -0.28400 | 0.059982 | 1 (Very Slight) |

Tensile horizontal strains are +ve, compressive horizontal strains are -ve.

Structure: Windmill Hill | Sub-structure: Windmill Hill 3

| Vertical Offset from Line for Vertical Movement Calculations | Combined Segment | Start | Length | Curvature | Deflection Ratio | Average Horizontal Strain | Max Tensile Strain | Damage Category |
|---|---|---|---|---|---|---|---|---|
| [m] | | [m] | [m] | | [%] | [%] | [%] | |

No structures have segments combined.

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