

16 July 2021

Your ref: 2095
Our ref: J20296/ML/01
Planning ref: 2021/0250/P



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Mr Krzysztof Balcerowicz
Engineers HRW
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237 Long Lane
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Dear Krzysztof

Re: 7 GREENAWAY GARDENS, LONDON NW3 7DJ

Further to the Basement Impact Assessment (BIA) audit undertaken by Campbell Reith (ref: 13398-86, dated May 2021), we have reviewed and revised the ground movement assessment (GMA), which was originally carried as part of our previous BIA (report ref: J20296, dated February 2021). This letter provides a summary of the revised assessment and forms our response to the remaining query from the BIA audit. This letter should be read in conjunction with our previous report as it provides important information and sets out the basis of the analysis.

It is understood that the GMA carried out as part of the BIA is not considered sufficiently conservative by the auditors. As there are no movement curves for underpinned walls within Ciria C760, we previously utilised the movement curve for 'installation of planar diaphragm wall' to model the installation phase, and the curve for 'excavation in front of a high stiffness wall in stiff clay' for the excavation phase. The curves were applied to the full retained height, and given the variation in depth of underpinning, yielded vertical movements of between 3 mm and 8 mm and horizontal movements of between 6 mm to 12 mm. It is however understood that the auditors hold the view that because the underpinning is to be carried out in two-stages, that effectively a doubling of movements occurs, with movements expected to be in the order of 5 mm to 10 mm per stage, in both the vertical and horizontal direction.

Whilst we do not agree with the above view, we have carried out further analysis to model the proposed basement retaining walls to somewhat take account of the fact that two-stage underpinning is being utilised and we have enclosed the full inputs and outputs from the analysis. One of the issues with the premise put forward by the auditors, is that it does not take account of the depth of the underpinning and therefore the height of the underpins. This is in contrast to essentially all of the movement curves provided within Ciria C760, where the total movements are calculated as a percentage of the retained height, or depth of installation. We simply do not agree that 5 mm to 10 mm of movement will occur per stage of underpinning regardless of the depth of underpins formed at each stage. We have therefore assumed that a depth of a single stage of underpinning is 3 m and have therefore produced a movement curve that produces 5 mm over a 3 m retained height (0.166% of wall depth). This therefore takes into account that the circa 4 m deep basement section will be formed of two 2 m underpin stages, whereas the circa 6.5 m deep section will be formed of two approximately 3 m deep underpin stages.

To confirm some elements of the previous assessment, there is an existing cellar/basement level and only a single stage of underpinning will be utilised to extend the existing structure down to the proposed formation level. In this instance a 5 mm curve has been adopted. In addition, a small section of excavation that links the main basement to the basement area below the rear building

will be excavated as a small trench that is supported by trench sheeting in the temporary condition, to allow insitu reinforced concrete retaining walls to be formed. This has been modelled using the movement curves for 'installation of planar diaphragm wall' and 'excavation against stiff wall in stiff clay'. Due to the limitations of the software, we have also simplified the basement shape to remove as many re-entrant corners as possible, adopting a slightly larger basement excavation as to remain conservative.

From this new updated analysis, both vertical and horizontal movements arising from the basement retaining walls and excavation are shown to be in the order of between 8 mm and 12 mm, where two stage underpinning is taking place. These movements are shown to result in a potential building damage to the neighbouring elevations of either Category 0 – Negligible or Category 1 – Very Slight, and as such are within the acceptable limits.

It is our view that this revised assessment is sufficiently conservative and that with the right procedures and working practises being in place during underpinning, restricting movements to the above magnitudes is achievable. Afterall, the magnitude of movements will ultimately come down to the competence and experience of the chosen contractor.

Please do not hesitate to contact us if you have any questions or require further clarification.

Yours sincerely
GEOTECHNICAL & ENVIRONMENTAL ASSOCIATES

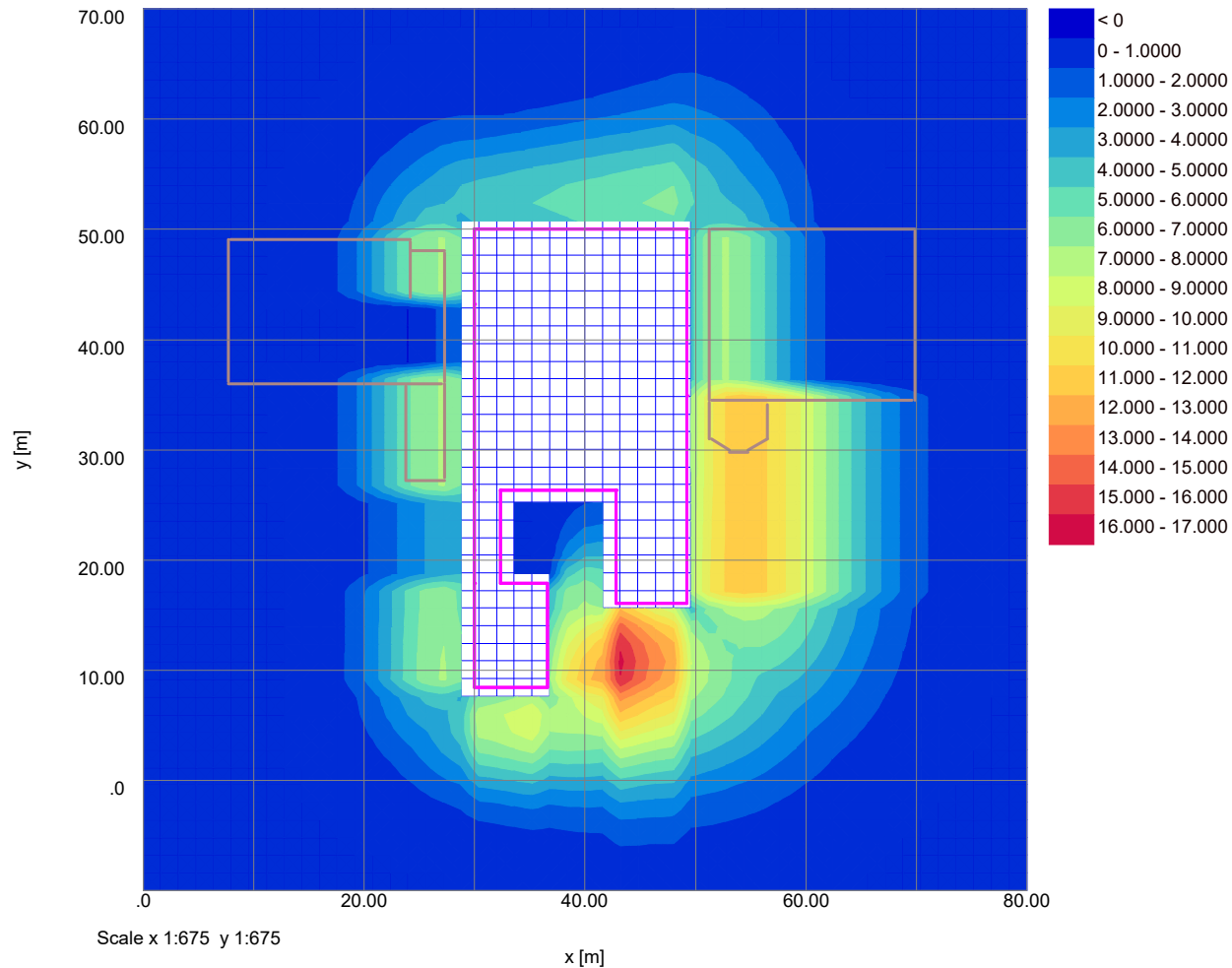
A handwritten signature in black ink, appearing to read 'M. Legg', with a horizontal line extending to the right.

Matt Legg

Encs

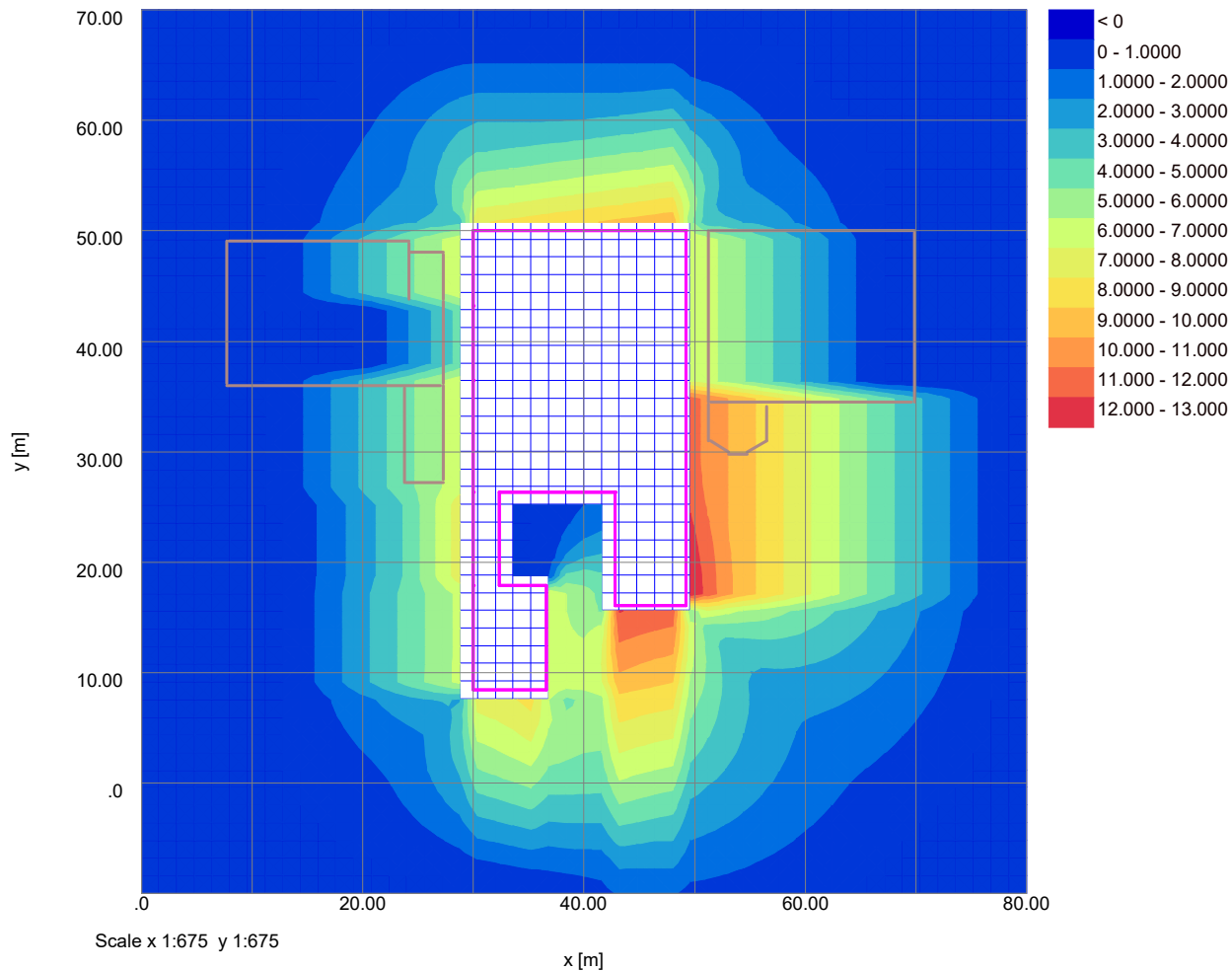
Job No.	Sheet No.	Rev.
Drg. Ref.		
Made by	Date 16-Jul-2021	Checked Date

Vertical Settlement Contours: Grid 1 (level 91.300m) (Interval 1mm)



Job No.	Sheet No.	Rev.
Drg. Ref.		
Made by	Date 16-Jul-2021	Checked Date

Horizontal Displacement Contours: Grid 1 (level 91.300m) Interval 1mm





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Job No.	Sheet No.	Rev.
Drg. Ref.		
Made by	Date 16-Jul-2021	Checked Date

Specific Building Damage Results - Detail

Stage: Ref.	Stage: Name	Specific Building: Ref.	Specific Building: Name	Sub-building Name	Vertical Offset from Line for Vertical Movement Calculations [m]	Segment	Start [m]	Length [m]	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 [m]	Damage Category
0	Base Model	1	NO 8	8A	0.0	1	0.0	8.5490	None	0.0	0.0	35.763E-9	0.0	0.0	-	0 (Negligible)
		2	NO 8	8B	0.0	1	0.0	3.3500	None	0.012660	0.040000	0.053826	-399.84E-6	-697.45E-6	2390.1	1 (Very Slight)
		3	NO 8	8C	0.0	1	0.0	8.5200	None	0.0	0.0	35.763E-9	0.0	0.0	-	0 (Negligible)
		4	NO 8	8D	0.0	1	0.0	5.1245	None	0.012643	0.040000	0.050225	-399.84E-6	887.72E-6	3327.9	1 (Very Slight)
						2	5.1245	8.3855	Hogging	0.012338	0.040000	0.048376	-399.84E-6	887.72E-6	8344.5	0 (Negligible)
		5	NO 8	8E	0.0	All vertical displacements are less than the limit sensitivity.										
		6	NO 8	8F	0.0	1	6.0975	9.3523	Hogging	0.012800	0.040000	0.051805	-399.84E-6	-857.91E-6	8230.1	1 (Very Slight)
						2	15.450	0.80916	None	0.0	0.040000	0.040000	-399.84E-6	-857.91E-6	50639.0	0 (Negligible)
		7	NO 8	8G	0.0	1	0.0	5.0790	None	0.0	0.0	35.763E-9	0.0	0.0	-	0 (Negligible)
		8	NO 8	8H	0.0	1	0.0	3.0000	None	0.011958	0.040000	0.054643	-399.84E-6	-638.75E-6	2323.3	1 (Very Slight)
		9	NO 8	8I	0.0	1	0.0	4.0790	None	0.0	0.0	35.763E-9	0.0	0.0	-	0 (Negligible)
		10	NO 8	8J	0.0	1	0.0	3.1714	Hogging	0.11770	0.0	0.11617	0.0	0.0052965	159.67	2 (Slight)
						2	3.1714	1.0571	None	0.0	0.0	35.763E-9	0.0	0.0	-	0 (Negligible)
						3	4.2286	3.1704	Hogging	0.11763	0.0	0.11610	0.0	-0.0052965	159.61	2 (Slight)
		11	NO 6	6A	0.0	1	0.0	5.8125	Hogging	0.034185	0.0	0.033460	0.0	0.0015383	1007.6	0 (Negligible)
						2	5.8125	3.8750	None	0.0	0.0	35.763E-9	0.0	0.0	-	0 (Negligible)
						3	9.6875	5.8125	Sagging	0.025468	0.0	0.023438	0.0	0.0011461	1352.4	0 (Negligible)
		12	NO 6	6B	0.0	1	0.0	5.8848	None	0.011900	0.026800	0.039830	-267.93E-6	590.26E-6	3875.7	0 (Negligible)
						2	5.8848	8.4419	None	0.0083662	0.026800	0.038106	-267.93E-6	590.26E-6	12509.0	0 (Negligible)
		13	NO 6	6C	0.0	1	15.299	0.0	None	0.0	0.0	35.763E-9	0.0	-713.08E-6	2145.2	0 (Negligible)
		14	NO 6	6D	0.0	1	0.0	7.6491	None	0.0065668	0.040000	0.048452	-399.84E-6	-885.76E-6	11202.0	0 (Negligible)
						2	7.6491	10.500	Sagging	0.025156	0.040000	0.076813	-399.84E-6	-885.76E-6	2725.2	2 (Slight)
		15	NO 6	6E	0.0	1	0.0	3.2990	None	0.0	0.0	35.763E-9	0.0	0.0	-	0 (Negligible)
		16	NO 6	6F	0.0	1	0.0	1.9030	None	0.0070025	0.028964	0.031490	-289.55E-6	-806.65E-6	3365.1	0 (Negligible)
		17	NO 6	6G	0.0	1	0.0	1.6490	None	0.0064434	0.040000	0.042021	-399.84E-6	-319.77E-6	3169.9	0 (Negligible)
		18	NO 6	6H	0.0	1	0.0	2.0590	None	0.0044038	0.030566	0.032281	-305.57E-6	329.48E-6	5787.4	0 (Negligible)
		19	NO 6	6I	0.0	1	0.0	3.1000	None	0.0	0.0	35.763E-9	0.0	0.0	-	0 (Negligible)

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



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Job No.	Sheet No.	Rev.
Drg. Ref.		
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Specific Building Damage Results - All Combined Segments

Stage: Ref.	Stage: Name	Specific Building: Ref.	Specific Building: Name	Sub-building Name	Vertical Offset from Line for Vertical Movement Calculations [m]	Combined Segment	Start [m]	Length [m]	Curvature	Deflection Ratio [%]	Average Horizontal Strain [%]	Max Tensile Strain [%]	Damage Category
0	Base Model	1	NO 8	8A	0.0	No combined segments for this stage, specific building and offset.							
		2	NO 8	8B	0.0	No combined segments for this stage, specific building and offset.							
		3	NO 8	8C	0.0	No combined segments for this stage, specific building and offset.							
		4	NO 8	8D	0.0	1 0.0 13.510 None				0.0092393	0.040000	0.053524	1 (Very Slight)
		5	NO 8	8E	0.0	No combined segments for this stage, specific building and offset.							
		6	NO 8	8F	0.0	1 6.0975 10.162 Hogging				0.012765	0.040000	0.052558	1 (Very Slight)
		7	NO 8	8G	0.0	No combined segments for this stage, specific building and offset.							
		8	NO 8	8H	0.0	No combined segments for this stage, specific building and offset.							
		9	NO 8	8I	0.0	No combined segments for this stage, specific building and offset.							
		10	NO 8	8J	0.0	1 0.0 7.3990 Hogging				0.075664	0.0	0.070607	1 (Very Slight)
		11	NO 6	6A	0.0	1 0.0 15.500 None				0.014823	0.0	0.021873	0 (Negligible)
		12	NO 6	6B	0.0	1 0.0 14.327 None				0.0050998	0.026800	0.034542	0 (Negligible)
		13	NO 6	6C	0.0	No combined segments for this stage, specific building and offset.							
		14	NO 6	6D	0.0	1 0.0 18.149 Sagging				0.018520	0.040000	0.067122	1 (Very Slight)
		15	NO 6	6E	0.0	No combined segments for this stage, specific building and offset.							
		16	NO 6	6F	0.0	No combined segments for this stage, specific building and offset.							
		17	NO 6	6G	0.0	No combined segments for this stage, specific building and offset.							
		18	NO 6	6H	0.0	No combined segments for this stage, specific building and offset.							
		19	NO 6	6I	0.0	No combined segments for this stage, specific building and offset.							

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



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7 Greenaway Gardens
Underpinning Sensitivity Analysis

Job No.	Sheet No.	Rev.
J20269		
Drg. Ref.		
Made by ML	Date 18-Jul-2021	Checked Date

Titles

Job No.: J20269
Job Title: 7 Greenaway Gardens
Sub-title: Underpinning Sensitivity Analysis
Calculation Heading:
Initials: ML
Checker:
Date Saved: 18-Jul-2021
Date Checked:
Notes:
File Name: J20268 Alternative Model.xdd
File Path: C:\Users\Matt Legg\OneDrive - Geotechnical & Environmental Associates\Desktop

History

Date	Time	By	Notes
15-Jul-2021	15:54	Matt Legg	New
15-Jul-2021	16:04	Matt Legg	
15-Jul-2021	20:12	Matt Legg	
15-Jul-2021	20:34	Matt Legg	
15-Jul-2021	22:05	Matt Legg	
16-Jul-2021	17:43	Matt Legg	
18-Jul-2021	21:38	Matt Legg	

Displacement Lines

Ref.	Name	x1	y1	z1	x2	y2	z2	Intervals	Surface type for tunnels	Interpolate imported displacements	Calculate
		[m]	[m]	[m]	[m]	[m]	[m]	[No.]			
1	8A	23.77000	35.80000	88.62000	23.77000	27.25000	88.62000	8	Surface	Yes	Yes
2	8B	23.95000	27.25000	88.62000	27.30000	27.25000	88.62000	3	Surface	Yes	Yes
3	8C	27.30000	27.50000	88.62000	27.30000	36.02000	88.62000	9	Surface	Yes	Yes
4	8D	27.00000	36.02000	87.10000	7.70000	36.02000	87.10000	10	Surface	Yes	Yes
5	8E	7.70000	36.20000	87.10000	7.70000	49.08000	87.10000	7	Surface	Yes	Yes
6	8F	7.90000	49.08000	89.60000	24.16000	49.08000	89.60000	8	Surface	Yes	Yes
7	8G	24.16000	48.90000	89.60000	24.16000	43.82000	89.60000	5	Surface	Yes	Yes
8	8H	24.30000	48.08000	89.60000	27.30000	48.08000	89.60000	3	Surface	Yes	Yes
9	8I	27.30000	47.90000	89.60000	27.30000	43.82000	89.60000	4	Surface	Yes	Yes
10	8J	27.30000	43.60000	89.60000	27.30000	36.20000	89.60000	7	Surface	Yes	Yes
11	6A	51.27000	34.50000	88.30000	51.27000	50.00000	88.30000	8	Surface	Yes	Yes
12	6B	51.45000	50.00000	90.80000	69.87000	50.00000	90.80000	9	Surface	Yes	Yes
13	6C	69.87000	49.80000	90.80000	69.87000	34.50000	90.80000	8	Surface	Yes	Yes
14	6D	69.60000	34.50000	90.80000	51.45000	34.50000	90.80000	9	Surface	Yes	Yes
15	6E	51.27000	34.30000	89.30000	51.27000	31.00000	88.30000	3	Surface	Yes	Yes
16	6F	51.45000	31.00000	88.30000	53.07000	30.00000	88.30000	2	Surface	Yes	Yes
17	6G	53.07000	29.80000	88.30000	54.72000	29.80000	88.30000	2	Surface	Yes	Yes
18	6H	54.72000	30.00000	88.30000	56.52000	31.00000	88.30000	2	Surface	Yes	Yes
19	6I	56.52000	31.00000	88.30000	56.52000	34.10000	88.30000	3	Surface	Yes	Yes

Displacement Grids

Ref.	Name	Extrusion: Direction	Base line start: X [m]	Base line start: Y [m]	Base line start: Z (level) [m]	Base line end: X [m]	Base line end: Y [m]	Base line end: Z (level) [m]	Intervals	Extrusion: Distance [m]	Extrusion: Intervals	Surface type for tunnels	Calculate
									[No.]		[No.]		
1	Grid 1	Global X	0.00000	-10.00000	91.30000	-	70.00000	91.30000	50	80.00000	50	Surface	Yes

Polygonal Excavations

Ref. 1
Excavation Name: Excavation
Surface level [m]: 91.300
Contribution: Positive
Surface movement curves which are selected are applied between surface and [m]: 86.850

Corner	x	y	Base Level	Arc Enabled	Stiffened	Prev. Side: d	Prev. Side: p1	Prev. Side: p2*	Next Side: d	Next Side: p1	Next Side: p2*
	[m]	[m]	[m]			[m]	[%]	[%]	[m]	[%]	[%]
1	49.220	50.000	86.850	Yes	Yes	0.0	67.000	25.000	0.0	67.000	25.000
2	30.000	50.000	86.850	Yes	No	-	-	-	-	-	-
3	30.000	50.000	86.850	Yes	Yes	0.0	67.000	25.000	0.0	67.000	25.000
4	30.000	43.210	86.850	Yes	No	-	-	-	-	-	-
5	30.000	43.210	86.850	Yes	No	-	-	-	-	-	-
6	30.000	36.500	88.850	Yes	No	-	-	-	-	-	-
7	30.000	36.500	86.850	Yes	No	-	-	-	-	-	-
8	30.000	26.320	86.850	Yes	No	-	-	-	-	-	-
9	30.000	26.320	87.100	Yes	No	-	-	-	-	-	-
10	30.000	17.920	87.100	Yes	No	-	-	-	-	-	-
11	30.000	17.920	87.100	Yes	No	-	-	-	-	-	-
12	30.000	8.4700	87.100	Yes	Yes	0.0	67.000	25.000	0.0	67.000	25.000
13	36.600	8.4700	87.100	Yes	Yes	0.0	67.000	25.000	0.0	67.000	25.000
14	36.600	17.920	87.100	Yes	No	-	-	-	-	-	-
15	32.330	17.920	87.100	Yes	No	-	-	-	-	-	-
16	32.330	26.320	87.100	Yes	No	-	-	-	-	-	-
17	32.330	26.320	86.850	Yes	No	-	-	-	-	-	-
18	42.820	26.320	86.850	Yes	No	-	-	-	-	-	-
19	42.820	26.320	84.100	Yes	No	-	-	-	-	-	-
20	42.820	16.070	84.100	Yes	Yes	0.0	67.000	25.000	0.0	67.000	25.000
21	49.220	16.070	84.100	Yes	Yes	0.0	67.000	25.000	0.0	67.000	25.000
22	49.220	34.900	84.100	Yes	No	-	-	-	-	-	-
23	49.220	34.900	86.850	Yes	No	-	-	-	-	-	-
Side	x1	y1	x2	y2	G.M. Curve: Vertical			G.M. Curve: Horizontal			
	[m]	[m]	[m]	[m]							
1	49.220	50.000	30.000	50.000	Exc. in front of high stiffness wall in stiff clay (CIRIA C760 Fig. 6.15(b))			Exc. in front of high stiffness wall in stiff clay (CIRIA C760 Fig. 6.15(a))			
2	30.000	50.000	30.000	50.000	No vertical ground movement			No horizontal ground movement			
3	30.000	50.000	30.000	43.210	5mm Underpinning			5mm Underpinning			
4	30.000	43.210	30.000	43.210	No vertical ground movement			No horizontal ground movement			
5	30.000	43.210	30.000	36.500	5mm Underpinning A			5mm Underpinning A			
6	30.000	36.500	30.000	36.500	No vertical ground movement			No horizontal ground movement			
7	30.000	36.500	30.000	26.320	5mm Underpinning			5mm Underpinning			
8	30.000	26.320	30.000	26.320	No vertical ground movement			No horizontal ground movement			
9	30.000	26.320	30.000	17.920	Exc. in front of high stiffness wall in stiff clay			Exc. in front of high stiffness wall in stiff clay			



GEOTECHNICAL AND ENVIRONMENTAL ASSOCIATES LTD

7 Greenaway Gardens
Underpinning Sensitivity Analysis

Job No.	Sheet No.	Rev.
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Side	x1 [m]	y1 [m]	x2 [m]	y2 [m]	G.M. Curve: Vertical	G.M. Curve: Horizontal
(CIRIA C760 Fig. 6.15(b)) (CIRIA C760 Fig. 6.15(a))						
10	30.000	17.920	30.000	17.920	No vertical ground movement	No horizontal ground movement
11	30.000	17.920	30.000	8.4700	5mm Underpinning	5mm Underpinning
12	30.000	8.4700	36.600	8.4700	5mm Underpinning	5mm Underpinning
13	36.600	8.4700	36.600	17.920	5mm Underpinning	5mm Underpinning
14	36.600	17.920	32.330	17.920	No vertical ground movement	No horizontal ground movement
15	32.330	17.920	32.330	26.320	No vertical ground movement	No horizontal ground movement
16	32.330	26.320	32.330	26.320	No vertical ground movement	No horizontal ground movement
17	32.330	26.320	42.820	26.320	No vertical ground movement	No horizontal ground movement
18	42.820	26.320	42.820	26.320	No vertical ground movement	No horizontal ground movement
19	42.820	26.320	42.820	16.070	No vertical ground movement	No horizontal ground movement
20	42.820	16.070	49.220	16.070	5mm Underpinning	5mm Underpinning
21	49.220	16.070	49.220	34.900	5mm Underpinning	5mm Underpinning
22	49.220	34.900	49.220	34.900	No vertical ground movement	No horizontal ground movement
23	49.220	34.900	49.220	50.000	5mm Underpinning	5mm Underpinning

Ref. 2
Excavation Name: Installation
Surface level [m]: 91.300
Contribution: Positive
Surface movement curves which are selected are applied between surface and [m]: 82.000

Corner	x	y	Base Level	Arc Enabled	Stiffened	Prev. Side:	Prev. Side:	Prev. Side:	Next Side:	Next Side:	Next Side:
	[m]	[m]	[m]			d	p1	p2*	d	p1	p2*
						[m]	[%]	[%]	[m]	[%]	[%]
1	49.220	50.000	82.000	Yes	No	-	-	-	-	-	-
2	30.000	50.000	86.850	Yes	No	-	-	-	-	-	-
3	30.000	50.000	86.850	Yes	No	-	-	-	-	-	-
4	30.000	43.210	86.850	Yes	No	-	-	-	-	-	-
5	30.000	43.210	88.850	Yes	No	-	-	-	-	-	-
6	30.000	36.500	88.850	Yes	No	-	-	-	-	-	-
7	30.000	36.500	86.850	Yes	No	-	-	-	-	-	-
8	30.000	26.320	86.850	Yes	No	-	-	-	-	-	-
9	30.000	26.320	87.100	Yes	No	-	-	-	-	-	-
10	30.000	17.920	87.100	Yes	No	-	-	-	-	-	-
11	30.000	17.920	87.100	Yes	No	-	-	-	-	-	-
12	30.000	8.4700	87.100	Yes	No	-	-	-	-	-	-
13	36.600	8.4700	87.100	Yes	No	-	-	-	-	-	-
14	36.600	17.920	87.100	Yes	No	-	-	-	-	-	-
15	32.330	17.920	87.100	Yes	No	-	-	-	-	-	-
16	32.330	26.320	87.100	Yes	No	-	-	-	-	-	-
17	32.330	26.320	86.850	Yes	No	-	-	-	-	-	-
18	42.820	26.320	86.850	Yes	No	-	-	-	-	-	-
19	42.820	26.320	84.100	Yes	No	-	-	-	-	-	-
20	42.820	16.070	84.100	Yes	No	-	-	-	-	-	-
21	49.220	16.070	84.100	Yes	No	-	-	-	-	-	-
22	49.220	34.900	84.100	Yes	No	-	-	-	-	-	-
23	49.220	34.900	86.850	Yes	No	-	-	-	-	-	-
24	49.220	50.000	86.850	Yes	No	-	-	-	-	-	-

Side	x1 [m]	y1 [m]	x2 [m]	y2 [m]	G.M. Curve: Vertical	G.M. Curve: Horizontal
1	49.220	50.000	30.000	50.000	Inst. of contiguous bored pile wall in stiff clay (CIRIA C760 Fig. 6.8(b))	Inst. of contiguous bored pile wall in stiff clay (CIRIA C760 Fig. 6.8(a))
2	30.000	50.000	30.000	50.000	No vertical ground movement	No horizontal ground movement
3	30.000	50.000	30.000	43.210	No vertical ground movement	No horizontal ground movement
4	30.000	43.210	30.000	43.210	No vertical ground movement	No horizontal ground movement
5	30.000	43.210	30.000	36.500	No vertical ground movement	No horizontal ground movement
6	30.000	36.500	30.000	36.500	No vertical ground movement	No horizontal ground movement
7	30.000	36.500	30.000	26.320	No vertical ground movement	No horizontal ground movement
8	30.000	26.320	30.000	26.320	No vertical ground movement	No horizontal ground movement
9	30.000	26.320	30.000	17.920	Inst. of planar diaphragm wall in stiff clay (CIRIA C760 Fig. 6.9(b))	Inst. of planar diaphragm wall in stiff clay (CIRIA C760 Fig. 6.9(a))
10	30.000	17.920	30.000	17.920	No vertical ground movement	No horizontal ground movement
11	30.000	17.920	30.000	8.4700	No vertical ground movement	No horizontal ground movement
12	30.000	8.4700	36.600	8.4700	No vertical ground movement	No horizontal ground movement
13	36.600	8.4700	36.600	17.920	No vertical ground movement	No horizontal ground movement
14	36.600	17.920	32.330	17.920	No vertical ground movement	No horizontal ground movement
15	32.330	17.920	32.330	26.320	No vertical ground movement	No horizontal ground movement
16	32.330	26.320	32.330	26.320	No vertical ground movement	No horizontal ground movement
17	32.330	26.320	42.820	26.320	No vertical ground movement	No horizontal ground movement
18	42.820	26.320	42.820	26.320	No vertical ground movement	No horizontal ground movement
19	42.820	26.320	42.820	16.070	No vertical ground movement	No horizontal ground movement
20	42.820	16.070	49.220	16.070	No vertical ground movement	No horizontal ground movement
21	49.220	16.070	49.220	34.900	No vertical ground movement	No horizontal ground movement
22	49.220	34.900	49.220	34.900	No vertical ground movement	No horizontal ground movement
23	49.220	34.900	49.220	50.000	No vertical ground movement	No horizontal ground movement
24	49.220	50.000	49.220	50.000	No vertical ground movement	No horizontal ground movement

Circular Excavations

Vertical Ground Movement Curves

Curve Name: No vertical ground movement
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) (%)]
[0.000,0.000,0.000] [1.000,0.000,0.000] [0.000,1.000,0.000] [1.000,1.000,0.000]
Curve Fitting Method: Polynomial
x Order: 1
y Order: 0
Polynomial: z = 0.0x + 0.0
Coeff. of Determination:

Curve Name: Inst. of contiguous bored pile wall in stiff clay (CIRIA C760 Fig. 6.8(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: Inst. of planar diaphragm wall in stiff clay (CIRIA C760 Fig. 6.9(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]
[0.600,0.000,0.015] [0.650,0.000,0.013] [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]



GEOTECHNICAL AND ENVIRONMENTAL ASSOCIATES LTD

7 Greenaway Gardens
Underpinning Sensitivity Analysis

Job No.	Sheet No.	Rev.
Drg. Ref.		
Made by ML	Date 18-Jul-2021	Checked Date

Side	x1 [m]	y1 [m]	x2 [m]	y2 [m]	G.M. Curve: Vertical	G.M. Curve: Horizontal
					[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:	Exc. in front of high stiffness wall in stiff clay (CIRIA C760 Fig. 6.15(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					
Curve Name:	5mm Underpinning					
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) (%)]					
	[0.000,0.000,0.085][0.100,0.000,0.107][0.200,0.000,0.123][0.300,0.000,0.136] [0.400,0.000,0.147][0.500,0.000,0.153][0.600,0.000,0.158][0.700,0.000,0.160] [0.800,0.000,0.160][0.900,0.000,0.158][1.000,0.000,0.153][1.100,0.000,0.149] [1.200,0.000,0.142][1.300,0.000,0.134][1.400,0.000,0.127][1.500,0.000,0.118] [1.600,0.000,0.110][1.700,0.000,0.101][1.800,0.000,0.092][1.900,0.000,0.083] [2.000,0.000,0.075][2.100,0.000,0.066][2.200,0.000,0.059][2.300,0.000,0.050] [2.400,0.000,0.044][2.500,0.000,0.037][2.600,0.000,0.031][2.700,0.000,0.026] [2.800,0.000,0.022][2.900,0.000,0.018][3.000,0.000,0.015][3.100,0.000,0.011] [3.200,0.000,0.009][3.300,0.000,0.009][3.400,0.000,0.007][3.500,0.000,0.004] [3.600,0.000,0.004][3.700,0.000,0.004][3.800,0.000,0.002][3.900,0.000,0.002] [4.000,0.000,0.000]					
Curve Fitting Method:	Polynomial					
x Order:	4					
y Order:	0					
Polynomial: z =	-5.8253E-3x ⁴ + 6.2662E-2x ³ - 2.2084E-1x ² + 2.3226E-1x + 8.5218E-2					
Coeff. of Determination:	9.9991E-1					
Curve Name:	5mm Underpinning A					
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) (%)]					
	[0.000,0.000,0.017][0.100,0.000,0.021][0.200,0.000,0.025][0.300,0.000,0.027] [0.400,0.000,0.029][0.500,0.000,0.031][0.600,0.000,0.032][0.700,0.000,0.030] [0.800,0.000,0.020][0.900,0.000,0.032][1.000,0.000,0.031][1.100,0.000,0.030] [1.200,0.000,0.028][1.300,0.000,0.027][1.400,0.000,0.025][1.500,0.000,0.024] [1.600,0.000,0.022][1.700,0.000,0.020][1.800,0.000,0.018][1.900,0.000,0.017] [2.000,0.000,0.015][2.100,0.000,0.013][2.200,0.000,0.012][2.300,0.000,0.010] [2.400,0.000,0.009][2.500,0.000,0.007][2.600,0.000,0.006][2.700,0.000,0.005] [2.800,0.000,0.004][2.900,0.000,0.004][3.000,0.000,0.003][3.100,0.000,0.002] [3.200,0.000,0.002][3.300,0.000,0.002][3.400,0.000,0.001][3.500,0.000,0.001] [3.600,0.000,0.001][3.700,0.000,0.001][3.800,0.000,0.000][3.900,0.000,0.000] [4.000,0.000,0.000]					
Curve Fitting Method:	Polynomial					
x Order:	4					
y Order:	0					
Polynomial: z =	-8.8331E-3x ⁴ + 7.9669E-2x ³ - 2.3455E-1x ² + 2.2579E-1x + 9.5702E-4					
Coeff. of Determination:	3.7740E-1					
Horizontal Ground Movement Curves						
Curve Name:	No horizontal ground movement					
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) (%)]					
	[0.000,0.000,0.000][1.000,0.000,0.000][0.000,1.000,0.000][1.000,1.000,0.000]					
Curve Fitting Method:	Polynomial					
x Order:	0					
y Order:	0					
Polynomial: z =	0.0					
Coeff. of Determination:						
Curve Name:	Inst. of contiguous bored pile wall in stiff clay (CIRIA C760 Fig. 6.8(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][0.050,0.000,0.038][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][0.900,0.000,0.011][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:	Inst. of planar diaphragm wall in stiff clay (CIRIA C760 Fig. 6.9(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:	Exc. in front of high stiffness wall in stiff clay (CIRIA C760 Fig. 6.15(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]					



GEOTECHNICAL AND ENVIRONMENTAL ASSOCIATES LTD

7 Greenaway Gardens Underpinning Sensitivity Analysis

Oasys 7 Greenaway Gardens Underpinning Sensitivity Analysis	GEOTECHNICAL AND ENVIRONMENTALASSOCIATES LTD		Job No. Sheet No. Rev.	
	D J20269			
	Drg. Ref.			
	Made by ML	Date 18-Jul-2021	Checked	Date

Side	x1 [m]	y1 [m]	x2 [m]	y2 [m]	G.M. Curve: Vertical	G.M. Curve: Horizontal				
Curve Fitting Method: Polynomial										
x Order: 1										
y Order: 0										
Polynomial: z = -3.75E-2x + 1.50E-1										
Coeff. of Determination: 1.00										
Curve Name: 5mm Underpinning										
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) (%)]										
[0.000,0.000,0.160][4.000,0.000,0.000]										
Curve Fitting Method: Polynomial										
x Order: 1										
y Order: 0										
Polynomial: z = -4.00E-2x + 1.60E-1										
Coeff. of Determination: 1.00										
Curve Name: 5mm Underpinning 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) (%)]										
[0.000,0.000,0.200][4.000,0.000,0.000]										
Curve Fitting Method: Polynomial										
x Order: 1										
y Order: 0										
Polynomial: z = -5.00E-2x + 2.00E-1										
Coeff. of Determination: 1.00										
Damage Category Strains										
Ref.	Name	0 (Negligible)	1 (Very Slight)	2 (Slight)	3 (Moderate)					
		to		to						
		1 (Very Slight)	2 (Slight)	3 (Moderate)	4 (Severe)					
1	Burland Strain Limits	0.0	500.00E-6	750.00E-6	0.0015000					
Specific Buildings - Geometry										
Ref.	Building Name	Sub-Building Name	Displacement Line	Distance Along Line: Start	Distance Along Line: End	Vertical Offsets from Line for Vertical Movement Calculations [m]	Vertical Displacement Limit Sensitivity [mm]	Damage Category Strains	Poisson's Ratio	E/G
1	NO 8	8A	8A	0.00000	8.54900	0.0	0.10000	Burland Strain Limits	0.20000	2.6000
2	NO 8	8B	8B	0.00000	3.35000	0.0	0.10000	Burland Strain Limits	0.20000	2.6000
3	NO 8	8C	8C	0.00000	8.52000	0.0	0.10000	Burland Strain Limits	0.20000	2.6000
4	NO 8	8D	8D	0.00000	19.30000	0.0	0.10000	Burland Strain Limits	0.20000	2.6000
5	NO 8	8E	8E	0.00000	12.87900	0.0	0.10000	Burland Strain Limits	0.20000	2.6000
6	NO 8	8F	8F	0.00000	16.25900	0.0	0.10000	Burland Strain Limits	0.20000	2.6000
7	NO 8	8G	8G	0.00000	5.07900	0.0	0.10000	Burland Strain Limits	0.20000	2.6000
8	NO 8	8H	8H	0.00000	3.00000	0.0	0.10000	Burland Strain Limits	0.20000	2.6000
9	NO 8	8I	8I	0.00000	4.07900	0.0	0.10000	Burland Strain Limits	0.20000	2.6000
10	NO 8	8J	8J	0.00000	7.39900	0.0	0.10000	Burland Strain Limits	0.20000	2.6000
11	NO 6	6A	6A	0.00000	15.50000	0.0	0.10000	Burland Strain Limits	0.20000	2.6000
12	NO 6	6B	6B	0.00000	18.42000	0.0	0.10000	Burland Strain Limits	0.20000	2.6000
13	NO 6	6C	6C	0.00000	15.29900	0.0	0.10000	Burland Strain Limits	0.20000	2.6000
14	NO 6	6D	6D	0.00000	18.14900	0.0	0.10000	Burland Strain Limits	0.20000	2.6000
15	NO 6	6E	6E	0.00000	3.29900	0.0	0.10000	Burland Strain Limits	0.20000	2.6000
16	NO 6	6F	6F	0.00000	1.90300	0.0	0.10000	Burland Strain Limits	0.20000	2.6000
17	NO 6	6G	6G	0.00000	1.64900	0.0	0.10000	Burland Strain Limits	0.20000	2.6000
18	NO 6	6H	6H	0.00000	2.05900	0.0	0.10000	Burland Strain Limits	0.20000	2.6000
19	NO 6	6I	6I	0.00000	3.10000	0.0	0.10000	Burland Strain Limits	0.20000	2.6000
Specific Buildings - Bending Parameters										
Ref.	Building Name	Sub-Building Name	Height	Default	Hogging: 2nd Mom. of Area (per unit width)	Hogging: Dist. of Bending Strain from N.A.	Hogging: Dist. of N.A. from Edge of Beam in Tension	Sagging: 2nd Mom. of Area (per unit width)	Sagging: Dist. of Bending Strain from N.A.	Sagging: Dist. of N.A. from Edge of Beam in Tension
			[m]		[m²]	[m]	[m]	[m²]	[m]	[m]
1	NO 8	8A	4.0000	Yes	21.333	4.0000	4.0000	5.3333	2.0000	2.0000
2	NO 8	8B	4.0000	Yes	21.333	4.0000	4.0000	5.3333	2.0000	2.0000
3	NO 8	8C	4.0000	Yes	21.333	4.0000	4.0000	5.3333	2.0000	2.0000
4	NO 8	8D	9.0000	Yes	243.00	9.0000	9.0000	60.750	4.5000	4.5000
5	NO 8	8E	10.000	Yes	333.33	10.000	10.000	83.333	5.0000	5.0000
6	NO 8	8F	7.0000	Yes	114.33	7.0000	7.0000	28.583	3.5000	3.5000
7	NO 8	8G	7.0000	Yes	114.33	7.0000	7.0000	28.583	3.5000	3.5000
8	NO 8	8H	3.0000	Yes	9.0000	3.0000	3.0000	2.2500	1.5000	1.5000
9	NO 8	8I	3.0000	Yes	9.0000	3.0000	3.0000	2.2500	1.5000	1.5000
10	NO 8	8J	7.0000	Yes	114.33	7.0000	7.0000	28.583	3.5000	3.5000
11	NO 6	6A	10.000	Yes	333.33	10.000	10.000	83.333	5.0000	5.0000
12	NO 6	6B	7.0000	Yes	114.33	7.0000	7.0000	28.583	3.5000	3.5000
13	NO 6	6C	7.0000	Yes	114.33	7.0000	7.0000	28.583	3.5000	3.5000
14	NO 6	6D	7.0000	Yes	114.33	7.0000	7.0000	28.583	3.5000	3.5000
15	NO 6	6E	8.0000	Yes	170.67	8.0000	8.0000	42.667	4.0000	4.0000
16	NO 6	6F	8.0000	Yes	170.67	8.0000	8.0000	42.667	4.0000	4.0000
17	NO 6	6G	8.0000	Yes	170.67	8.0000	8.0000	42.667	4.0000	4.0000
18	NO 6	6H	8.0000	Yes	170.67	8.0000	8.0000	42.667	4.0000	4.0000
19	NO 6	6I	8.0000	Yes	170.67	8.0000	8.0000	42.667	4.0000	4.0000
Specific Buildings - Segment Combinations										
Stage Ref.	Stage Name	Building Ref.	Building Name	Sub-Building Name	Vertical Offset from Line for Vertical Movement Calculations [m]	Segment Start	Length	Curvature	Combined Segment	
0	Base Model	1	NO 8	8A	0.0	No combined segments for this stage, specific building and offset				
		2	NO 8	8B	0.0	No combined segments for this stage, specific building and offset				
		3	NO 8	8C	0.0	No combined segments for this stage, specific building and offset				
		4	NO 8	8D	0.0	5	0.0	0.0 None	1	
		5	NO 8	8E	0.0	No combined segments for this stage, specific building and offset				
		6	NO 8	8F	0.0	8	0.0	0.0 Hogging	1	
		7	NO 8	8G	0.0	No combined segments for this stage, specific building and offset				
		8	NO 8	8H	0.0	No combined segments for this stage, specific building and offset				
		9	NO 8	8I	0.0	No combined segments for this stage, specific building and offset				
		10	NO 8	8J	0.0	13	0.0	1.5708 Hogging	1	
		11	NO 6	6A	0.0	15	0.0	0.0 Hogging	1	
		12	NO 6	6B	0.0	17	0.0	0.0 None	1	
		13	NO 6	6C	0.0	No combined segments for this stage, specific building and offset				
		14	NO 6	6D	0.0	20	0.0	0.0 None	0	
		15	NO 6	6E	0.0	No combined segments for this stage, specific building and offset				
		16	NO 6	6F	0.0	No combined segments for this stage, specific building and offset				



GEOTECHNICAL AND ENVIRONMENTAL ASSOCIATES LTD

DJ20269

7 Greenaway Gardens
Underpinning Sensitivity Analysis

Job No.	Sheet No.	Rev.
Drg. Ref.		
Made by ML	Date 18-Jul-2021	Checked Date

Stage Ref.	Stage Name	Building Ref.	Building Name	Sub-Building Name	Vertical Offset from Line for Vertical	Segment Start	Length	Curvature	Combined Segment
17		NO 6	6G		0.0	No combined segments for this stage, specific building and offset			
18		NO 6	6H		0.0	No combined segments for this stage, specific building and offset			
19		NO 6	6I		0.0	No combined segments for this stage, specific building and offset			

Warnings

- Multiple excavations have been specified. Displacements resulting from each excavation are summed with no account taken of the interactions between excavations (e.g. overlapping zones of influence or 'shielding' of one excavation by another).
- The following polygonal excavations have one or more re-entrant corners; 1, 2. The use of re-entrant corners is permitted but not recommended. CIRIA C580/C760, on which XDisp's method for modelling ground movements behind walls of excavations is based, considers only movements for points lying at right angles behind single walls. It does not consider how movements should be calculated within the zone of influence of re-entrant corners, i.e. where movements would be influenced by two walls adjacent to the re-entrant corner. By default, XDisp will merely sum the effects from both walls, making no allowance for interaction or stiffening of the corner. Please refer to help manual for artificial smoothing options. Re-entrant corners should be used with caution. Results in their vicinity should be validated independently.

Errors

None

Displacement Results - Displacement Lines

Stage Ref.	Stage Name	Disp. Line: Ref.	Disp. Line: Name	Chainage	x	y	z	δx	δy	δz	δH//	δHperp.	Angle
				[m]	[m]	[m]	[m]	[mm]	[mm]	[mm]	[mm]	[mm]	[°]
0	Base Model 1	8A		0.0	23.77000	35.80000	88.62000	4.6280	0.0	5.6560	0.0	4.6280	270.00
				1.0688	23.77000	34.73125	88.62000	4.6280	0.0	5.6560	0.0	4.6280	270.00
				2.1375	23.77000	33.66250	88.62000	4.6280	0.0	5.6560	0.0	4.6280	270.00
				3.2062	23.77000	32.59375	88.62000	4.6280	0.0	5.6560	0.0	4.6280	270.00
				4.2750	23.77000	31.52500	88.62000	4.6280	0.0	5.6560	0.0	4.6280	270.00
				5.3438	23.77000	30.45625	88.62000	4.6280	0.0	5.6560	0.0	4.6280	270.00
				6.4125	23.77000	29.38750	88.62000	4.6280	0.0	5.6560	0.0	4.6280	270.00
				7.4812	23.77000	28.31875	88.62000	4.6280	0.0	5.6560	0.0	4.6280	270.00
				8.5500	23.77000	27.25000	88.62000	4.6280	0.0	5.6560	0.0	4.6280	270.00
	2	8B		0.0	23.95000	27.25000	88.62000	4.7000	0.0	5.8008	4.7000	0.0	0.0
				1.1167	25.06667	27.25000	88.62000	5.1467	0.0	6.5800	5.1467	0.0	0.0
				2.2333	26.18333	27.25000	88.62000	5.5933	0.0	7.0466	5.5933	0.0	0.0
				3.3500	27.30000	27.25000	88.62000	6.0400	0.0	7.0331	6.0400	0.0	0.0
	3	8C		0.94667	27.30000	28.44667	88.62000	6.0400	0.0	7.0331	0.0	-6.0400	90.00
				1.8933	27.30000	29.39333	88.62000	6.0400	0.0	7.0331	0.0	-6.0400	90.00
				2.8400	27.30000	30.34000	88.62000	6.0400	0.0	7.0331	0.0	-6.0400	90.00
				3.7867	27.30000	31.28667	88.62000	6.0400	0.0	7.0331	0.0	-6.0400	90.00
				4.7333	27.30000	32.23333	88.62000	6.0400	0.0	7.0331	0.0	-6.0400	90.00
				5.6800	27.30000	33.18000	88.62000	6.0400	0.0	7.0331	0.0	-6.0400	90.00
				6.6267	27.30000	34.12667	88.62000	6.0400	0.0	7.0331	0.0	-6.0400	90.00
				7.5733	27.30000	35.07333	88.62000	6.0400	0.0	7.0331	0.0	-6.0400	90.00
				8.5200	27.30000	36.02000	88.62000	6.0400	0.0	7.0331	0.0	-6.0400	90.00
	4	8D		0.0	27.00000	36.02000	87.10000	5.9200	0.0	7.0944	-5.9200	0.0	180.00
				1.9300	25.07000	36.02000	87.10000	5.1480	0.0	6.5819	-5.1480	0.0	180.00
				3.8600	23.14000	36.02000	87.10000	4.3760	0.0	5.1224	-4.3760	0.0	180.00
				5.7900	21.21000	36.02000	87.10000	3.6040	0.0	3.4084	-3.6040	0.0	180.00
				7.7200	19.28000	36.02000	87.10000	2.8320	0.0	1.9124	-2.8320	0.0	180.00
				9.6500	17.35000	36.02000	87.10000	2.0600	0.0	0.88653	-2.0600	0.0	180.00
				11.580	15.42000	36.02000	87.10000	1.2980	0.0	0.36307	-1.2980	0.0	180.00
				13.510	13.49000	36.02000	87.10000	0.51600	0.0	0.15404	-0.51600	0.0	180.00
				15.440	11.56000	36.02000	87.10000	0.0	0.0	0.0	0.0	0.0	180.00
				17.370	9.63000	36.02000	87.10000	0.0	0.0	0.0	0.0	0.0	180.00
				19.300	7.70000	36.02000	87.10000	0.0	0.0	0.0	0.0	0.0	180.00
	5	8E		0.0	7.70000	36.20000	87.10000	0.0	0.0	0.0	0.0	0.0	90.00
				1.8400	7.70000	38.04000	87.10000	0.0	0.0	0.0	0.0	0.0	90.00
				3.6800	7.70000	39.88000	87.10000	0.0	0.0	0.0	0.0	0.0	90.00
				5.5200	7.70000	41.72000	87.10000	0.0	0.0	0.0	0.0	0.0	90.00
				7.3600	7.70000	43.56000	87.10000	0.0	0.0	0.0	0.0	0.0	90.00
				9.2000	7.70000	45.40000	87.10000	0.0	0.0	0.0	0.0	0.0	90.00
				11.040	7.70000	47.24000	87.10000	0.0	0.0	0.0	0.0	0.0	90.00
				12.880	7.70000	49.08000	87.10000	0.0	0.0	0.0	0.0	0.0	90.00
	6	8F		0.0	7.90000	49.08000	89.60000	0.0	0.0	0.0	0.0	0.0	0.0
				2.0325	9.93250	49.08000	89.60000	0.0	0.0	0.0	0.0	0.0	0.0
				4.0650	11.96500	49.08000	89.60000	0.0	0.0	0.0	0.0	0.0	0.0
				6.0975	13.99750	49.08000	89.60000	0.71900	0.0	0.19754	0.71900	0.0	0.0
				8.1300	16.03000	49.08000	89.60000	1.5320	0.0	0.48123	1.5320	0.0	0.0
				10.162	18.06250	49.08000	89.60000	2.3450	0.0	1.2037	2.3450	0.0	0.0
				12.195	20.09500	49.08000	89.60000	3.1580	0.0	2.4963	3.1580	0.0	0.0
				14.227	22.12750	49.08000	89.60000	3.9710	0.0	4.2199	3.9710	0.0	0.0
				16.260	24.16000	49.08000	89.60000	4.7840	0.0	5.9643	4.7840	0.0	0.0
	7	8G		0.0	24.16000	48.90000	89.60000	4.7840	0.0	5.9643	0.0	4.7840	270.00
				1.0160	24.16000	47.88400	89.60000	4.7840	0.0	5.9643	0.0	4.7840	270.00
				2.0320	24.16000	46.86800	89.60000	4.7840	0.0	5.9643	0.0	4.7840	270.00
				3.0480	24.16000	45.85200	89.60000	4.7840	0.0	5.9643	0.0	4.7840	270.00
				4.0640	24.16000	44.83600	89.60000	4.7840	0.0	5.9643	0.0	4.7840	270.00
				5.0800	24.16000	43.82000	89.60000	4.7840	0.0	5.9643	0.0	4.7840	270.00
	8	8H		0.0	24.30000	48.08000	89.60000	4.8400	0.0	6.0695	4.8400	0.0	0.0
				1.0000	25.30000	48.08000	89.60000	5.2400	0.0	6.7085	5.2400	0.0	0.0
				2.0000	26.30000	48.08000	89.60000	5.6400	0.0	7.0708	5.6400	0.0	0.0
				3.0000	27.30000	48.08000	89.60000	6.0400	0.0	7.0331	6.0400	0.0	0.0
	9	8I		0.0	27.30000	47.90000	89.60000	6.0400	0.0	7.0331	0.0	6.0400	270.00
				1.0200	27.30000	46.88000	89.60000	6.0400	0.0	7.0331	0.0	6.0400	270.00
				2.0400	27.30000	45.86000	89.60000	6.0400	0.0	7.0331	0.0	6.0400	270.00
				3.0600	27.30000	44.84000	89.60000	6.0400	0.0	7.0331	0.0	6.0400	270.00
				4.0800	27.30000	43.82000	89.60000	6.0400	0.0	7.0331	0.0	6.0400	270.00
	10	8J		0.0	27.30000	43.60000	89.60000	6.0400	0.0	7.0331	0.0	6.0400	270.00
				1.0571	27.30000	42.54286	89.60000	3.5500	0.0	1.4339	0.0	3.5500	270.00
				2.1143	27.30000	41.48571	89.60000	3.5500	0.0	1.4339	0.0	3.5500	270.00
				3.1714	27.30000	40.42857	89.60000	3.5500	0.0	1.4339	0.0	3.5500	270.00
				4.2286	27.30000	39.37143	89.60000	3.5500	0.0	1.4339	0.0	3.5500	270.00
				5.2857	27.30000	38.31429	89.60000	3.5500	0.0	1.4339	0.0	3.5500	270.00
				6.3429	27.30000	37.25714	89.60000	3.5500	0.0	1.4339	0.0	3.5500	270.00
				7.4000	27.30000	36.20000	89.60000	6.0400	0.0	7.0331	0.0	6.0400	270.00
	11	6A		0.0	51.27000	34.50000	88.30000	-10.700	0.0	9.7094	0.0	10.700	90.00
				1.9375	51.27000	36.43750	88.30000	-6.3000	0.0	6.7289	0.0	6.3000	90.00
				3.8750	51.27000	38.37500	88.30000	-6.3000	0.0	6.7289	0.0	6.3000	90.00
				5.8125	51.27000	40.31250	88.30000	-6.3000	0.0	6.7289	0.0	6.3000	90.00
				7.7500	51.27000	42.25000	88.30000	-6.3000	0.0	6.7289	0.0	6.3000	90.00
				9.6875	51.27000	44.18750	88.30000	-6.3000	0.0	6.7289	0.0	6.3000	90.00
				11.625	51.27000	46.12500	88.30000	-6.3000	0.0	6.7289	0.0	6.3000	90.00
				13.563	51.27000	48.06250	88.30000	-6.3000	0.0	6.7289	0.0	6.3000	90.00
				15.500	51.27000	50.00000	88.30000	-4.2210	0.0	4.5083	0.0	4.2210	90.00
	12	6B		0.0	51.45000	50.00000	90.80000	-4.1728	0.0	4.5816	-4.1728	0.0	0.0
				2.0467	53.49667	50.00000	90.80000	-3.6243	0.0	4.6246	-3.6243	0.0	0.0
				4.0933	55.54333	50.00000	90.80000	-3.0757	0.0	3.7382	-3.0757	0.0	0.0
				6.1400	57.59000	50.00000	90.80000	-2.5272	0.0	2.5298	-2.5272	0.0	0.0
				8.1867	59.63667	50.00000	90.80000	-1.9787	0.0	1.4205	-1.9787	0.0	0.0
				10.233	61.68333	50.00000	90.80000	-1.4302	0.0	0.64497	-1.4302	0.0	0.0
				12.280	63.73000	50.00000	90.80000	-0.88172	0.0	0.25110	-0.88172	0.0	0.0
				14.327	65.77667	50.00000	90.80000	-0.33321	0.0	0.10045	-0.33321	0.0	0.0
				16.375	67.82333	50.00000	90.80000	0.0	0.0	0.0	0.0	0.0	0.0
				18.420	69.87000	50.00000	90.80000	0.0	0.0	0.0	0.0	0.0	0.0



7 Greenaway Gardens
Underpinning Sensitivity Analysis

GEOTECHNICAL AND ENVIRONMENTAL ASSOCIATES LTD

Job No. Sheet No. Rev.

DJ20269

Drg. Ref.

Made by
ML

Date
18-Jul-2021

Checked

Date

Stage: Ref.	Stage: Name	Disp. Line: Ref.	Disp. Line: Name	Chainage	x	y	z	δx	δy	δz	δH//	δHperp.	Angle
				[m]	[m]	[m]	[m]	[mm]	[mm]	[mm]	[mm]	[mm]	[°]
	13	6C		0.0	69.87000	49.80000	90.80000	0.0	0.0	0.0	0.0	0.0	270.00
				1.9125	69.87000	47.88750	90.80000	0.0	0.0	0.0	0.0	0.0	270.00
				3.8250	69.87000	45.97500	90.80000	0.0	0.0	0.0	0.0	0.0	270.00
				5.7375	69.87000	44.06250	90.80000	0.0	0.0	0.0	0.0	0.0	270.00
				7.6500	69.87000	42.15000	90.80000	0.0	0.0	0.0	0.0	0.0	270.00
				9.5625	69.87000	40.23750	90.80000	0.0	0.0	0.0	0.0	0.0	270.00
				11.475	69.87000	38.32500	90.80000	0.0	0.0	0.0	0.0	0.0	270.00
				13.387	69.87000	36.41250	90.80000	0.0	0.0	0.0	0.0	0.0	270.00
				15.300	69.87000	34.50000	90.80000	-3.2600	0.0	1.3638	0.0	-3.2600	270.00
				0.0	69.60000	34.50000	90.80000	-3.3680	0.0	1.4692	3.3680	0.0	180.00
				2.0167	67.58333	34.50000	90.80000	-4.1747	0.0	2.4594	4.1747	0.0	180.00
				4.0333	65.56667	34.50000	90.80000	-4.9813	0.0	3.7975	4.9813	0.0	180.00
				6.0500	63.55000	34.50000	90.80000	-5.7880	0.0	5.4218	5.7880	0.0	180.00
				8.0667	61.53333	34.50000	90.80000	-6.5947	0.0	7.2088	6.5947	0.0	180.00
				10.083	59.51667	34.50000	90.80000	-7.4013	0.0	8.9729	7.4013	0.0	180.00
				12.100	57.50000	34.50000	90.80000	-8.2080	0.0	10.466	8.2080	0.0	180.00
				14.117	55.48333	34.50000	90.80000	-9.0147	0.0	11.380	9.0147	0.0	180.00
				16.133	53.46667	34.50000	90.80000	-9.8213	0.0	11.342	9.8213	0.0	180.00
				18.150	51.45000	34.50000	90.80000	-10.628	0.0	9.9199	10.628	0.0	180.00
				0.0	51.27000	34.30000	88.30000	-10.700	0.0	9.7094	0.0	-10.700	270.00
	15	6E		1.1000	51.27000	32.20000	88.30000	-10.700	0.0	9.7094	0.0	-10.700	270.00
				2.2000	51.27000	32.10000	88.30000	-10.700	0.0	9.7094	0.0	-10.700	270.00
				3.3000	51.27000	31.00000	88.30000	-10.700	0.0	9.7094	0.0	-10.700	270.00
				0.0	51.45000	31.00000	88.30000	-10.628	0.0	9.9199	-9.0437	-5.5826	328.31
				0.95189	52.26000	30.50000	88.30000	-10.304	0.0	10.688	-8.7680	-5.4124	328.31
				1.9038	53.21000	30.00000	88.30000	-9.9840	0.0	11.187	-8.4923	-5.2422	328.31
				0.0	53.07000	29.80000	88.30000	-9.9800	0.0	11.187	-9.9800	0.0	0.0
				0.82500	53.89500	29.80000	88.30000	-9.6500	0.0	11.451	-9.6500	0.0	0.0
				1.6500	54.72000	29.80000	88.30000	-9.3200	0.0	11.500	-9.3200	0.0	0.0
				0.0	54.72000	30.00000	88.30000	-9.3200	0.0	11.500	-8.1471	4.5262	29.055
	18	6H		1.0024	55.62000	30.50000	88.30000	-9.9600	0.0	11.344	-7.8324	4.3514	29.055
				2.0591	56.52000	31.00000	88.30000	-8.6000	0.0	11.004	-7.5178	4.1765	29.055
				0.0	56.52000	31.00000	88.30000	-8.6000	0.0	11.004	0.0	8.6000	90.000
				1.0333	56.52000	32.03333	88.30000	-8.6000	0.0	11.004	0.0	8.6000	90.000
				2.0667	56.52000	33.06667	88.30000	-8.6000	0.0	11.004	0.0	8.6000	90.000
				3.1000	56.52000	34.10000	88.30000	-8.6000	0.0	11.004	0.0	8.6000	90.000

Displacement Results - Displacement Grids

Stage: Ref.	Stage: Name	Disp: Grid: Ref.	Disp: Grid: Name	x	y	z	δx	δy	δz
				[m]	[m]	[m]	[mm]	[mm]	[mm]
0	Base Model 1		Grid 1	0.00000	-10.00000	91.30000	0.0	0.0	0.0
				1.60000	-10.00000	91.30000	0.0	0.0	0.0
				3.20000	-10.00000	91.30000	0.0	0.0	0.0
				4.80000	-10.00000	91.30000	0.0	0.0	0.0
				6.40000	-10.00000	91.30000	0.0	0.0	0.0
				8.00000	-10.00000	91.30000	0.0	0.0	0.0
				9.60000	-10.00000	91.30000	0.0	0.0	0.0
				11.20000	-10.00000	91.30000	0.0	0.0	0.0
				12.80000	-10.00000	91.30000	0.0	0.0	0.0
				14.40000	-10.00000	91.30000	0.0	0.0	0.0
				16.00000	-10.00000	91.30000	0.0	0.0	0.0
				17.60000	-10.00000	91.30000	0.0	0.0	0.0
				19.20000	-10.00000	91.30000	0.0	0.0	0.0
				20.80000	-10.00000	91.30000	0.0	0.0	0.0
				22.40000	-10.00000	91.30000	0.0	0.0	0.0
				24.00000	-10.00000	91.30000	0.0	0.0	0.0
				25.60000	-10.00000	91.30000	0.0	0.0	0.0
				27.20000	-10.00000	91.30000	0.0	0.0	0.0
				28.80000	-10.00000	91.30000	0.0	0.0	0.0
				30.40000	-10.00000	91.30000	0.0	0.0	0.0
				32.00000	-10.00000	91.30000	0.0	0.10550	0.039199
				33.60000	-10.00000	91.30000	0.0	0.22412	0.076783
				35.20000	-10.00000	91.30000	0.0	0.33960	0.10784
				36.80000	-10.00000	91.30000	0.0	0.44856	0.13465
				38.40000	-10.00000	91.30000	0.0	0.54723	0.15819
				40.00000	-10.00000	91.30000	0.0	0.63147	0.17842
				41.60000	-10.00000	91.30000	0.0	0.69697	0.19470
				43.20000	-10.00000	91.30000	0.0	1.0920	0.30430
				44.80000	-10.00000	91.30000	0.0	1.0920	0.30430
				46.40000	-10.00000	91.30000	0.0	1.0920	0.30430
				48.00000	-10.00000	91.30000	0.0	1.0920	0.30430
				49.60000	-10.00000	91.30000	-0.0050611	0.72240	0.20276
				51.20000	-10.00000	91.30000	-0.025624	0.66847	0.19471
				52.80000	-10.00000	91.30000	-0.043185	0.59352	0.18157
				54.40000	-10.00000	91.30000	-0.055450	0.50190	0.16368
				56.00000	-10.00000	91.30000	-0.060346	0.39785	0.14092
				57.60000	-10.00000	91.30000	-0.056083	0.28534	0.11215
				59.20000	-10.00000	91.30000	-0.041199	0.16798	0.074640
				60.80000	-10.00000	91.30000	-0.014575	0.048905	0.023400
				62.40000	-10.00000	91.30000	0.0	0.0	0.0
				64.00000	-10.00000	91.30000	0.0	0.0	0.0
				65.60000	-10.00000	91.30000	0.0	0.0	0.0
				67.20000	-10.00000	91.30000	0.0	0.0	0.0
				68.80000	-10.00000	91.30000	0.0	0.0	0.0
				70.40000	-10.00000	91.30000	0.0	0.0	0.0
				72.00000	-10.00000	91.30000	0.0	0.0	0.0
				73.60000	-10.00000	91.30000	0.0	0.0	0.0
				75.20000	-10.00000	91.30000	0.0	0.0	0.0
				76.80000	-10.00000	91.30000	0.0	0.0	0.0
				78.40000	-10.00000	91.30000	0.0	0.0	0.0
				80.00000	-10.00000	91.30000	0.0	0.0	0.0
				0.00000	-8.40000	91.30000	0.0	0.0	0.0
				1.60000	-8.40000	91.30000	0.0	0.0	0.0
				3.20000	-8.40000	91.30000	0.0	0.0	0.0
				4.80000	-8.40000	91.30000	0.0	0.0	0.0
				6.40000	-8.40000	91.30000	0.0	0.0	0.0
				8.00000	-8.40000	91.30000	0.0	0.0	0.0
				9.60000	-8.40000	91.30000	0.0	0.0	0.0
				11.20000	-8.40000	91.30000	0.0	0.0	0.0
				12.80000	-8.40000	91.30000	0.0	0.0	0.0
				14.40000	-8.40000	91.30000	0.0	0.0	0.0
				16.00000	-8.40000	91.30000	0.0	0.0	0.0
				17.60000	-8.40000	91.30000	0.0	0.0	0.0
				19.20000	-8.40000	91.30000	0.0	0.0	0.0
				20.80000	-8.40000	91.30000	0.0	0.0	0.0
				22.40000	-8.40000	91.30000	0.0	0.0	0.0
				24.00000	-8.40000	91.30000	0.0	0.0	0.0
				25.60000	-8.40000	91.30000	0.0	0.0	0.0
				27.20000	-8.40000	91.30000	0.0	0.0	0.0
				28.80000	-8.40000	91.30000	0.0	0.093743	0.034746
				30.40000	-8.40000	91.30000	0.0	0.22759	0.075430
				32.00000	-8.40000	91.30000	0.0	0.36587	0.10982
				33.60000	-8.40000	91.30000	0.0	0.50607	0.14202
				35.20000	-8.40000	91.30000	0.0	0.64506	0.17429
				36.80000	-8.40000	91.30000	0.0	0.77912	0.20715
				38.40000	-8.40000	91.30000	0.0	0.90394	0.23966
				40.00000	-8.40000	91.30000	0.0	1.0147	0.26984
				41.60000	-8.40000	91.30000	0.0	1.1065	0.29524
				43.20000	-8.40000	91.30000	0.0	1.7320	0.46260
				44.80000	-8.40000	91.30000	0.0	1.7320	0.46260
				46.40000	-8.40000	91.30000	0.0	1.7320	0.46260
				48.00000	-8.40000	91.30000	-0.0085549	1.1453	0.30815
				49.60000	-8.40000	91.30000	-0.043691	1.6566	0.25957
				52.80000	-8.40000	91.30000	-0.075272	0.96417	0.27593



GEOTECHNICAL AND ENVIRONMENTAL ASSOCIATES LTD

7 Greenaway Gardens
Underpinning Sensitivity Analysis

Job No.	Sheet No.	Rev.
DJ20269		
Drg. Ref.		
Made by ML	Date 18-Jul-2021	Checked Date

Stage: Ref.	Stage: Name	Disp. Grid: Ref.	Disp. Grid: Name	x	y	z	δx	δy	δz
				[m]	[m]	[m]	[mm]	[mm]	[mm]
				54.40000	-8.40000	91.30000	-0.10061	0.84610	0.25105
				56.00000	-8.40000	91.30000	-0.11729	0.71632	0.22285
				57.60000	-8.40000	91.30000	-0.12329	0.57941	0.19269
				59.20000	-8.40000	91.30000	-0.11701	0.43941	0.16058
				60.80000	-8.40000	91.30000	-0.097265	0.29978	0.12445
				62.40000	-8.40000	91.30000	-0.063298	0.16333	0.079384
				64.00000	-8.40000	91.30000	-0.014720	0.032294	0.016853
				65.60000	-8.40000	91.30000	0.0	0.0	0.0
				67.20000	-8.40000	91.30000	0.0	0.0	0.0
				68.80000	-8.40000	91.30000	0.0	0.0	0.0
				70.40000	-8.40000	91.30000	0.0	0.0	0.0
				72.00000	-8.40000	91.30000	0.0	0.0	0.0
				73.60000	-8.40000	91.30000	0.0	0.0	0.0
				75.20000	-8.40000	91.30000	0.0	0.0	0.0
				76.80000	-8.40000	91.30000	0.0	0.0	0.0
				78.40000	-8.40000	91.30000	0.0	0.0	0.0
				80.00000	-8.40000	91.30000	0.0	0.0	0.0
				0.00000	-6.80000	91.30000	0.0	0.0	0.0
				1.60000	-6.80000	91.30000	0.0	0.0	0.0
				3.20000	-6.80000	91.30000	0.0	0.0	0.0
				4.80000	-6.80000	91.30000	0.0	0.0	0.0
				6.40000	-6.80000	91.30000	0.0	0.0	0.0
				8.00000	-6.80000	91.30000	0.0	0.0	0.0
				9.60000	-6.80000	91.30000	0.0	0.0	0.0
				11.20000	-6.80000	91.30000	0.0	0.0	0.0
				12.80000	-6.80000	91.30000	0.0	0.0	0.0
				14.40000	-6.80000	91.30000	0.0	0.0	0.0
				16.00000	-6.80000	91.30000	0.0	0.0	0.0
				17.60000	-6.80000	91.30000	0.0	0.0	0.0
				19.20000	-6.80000	91.30000	0.0	0.0	0.0
				20.80000	-6.80000	91.30000	0.0	0.0	0.0
				22.40000	-6.80000	91.30000	0.0	0.0	0.0
				24.00000	-6.80000	91.30000	0.018758	0.073947	0.034062
				25.60000	-6.80000	91.30000	0.032460	0.21135	0.078907
				27.20000	-6.80000	91.30000	0.029450	0.44682	0.14817
				28.80000	-6.80000	91.30000	0.014807	0.66947	0.19977
				30.40000	-6.80000	91.30000	0.0	1.0604	0.29667
				32.00000	-6.80000	91.30000	0.0	1.2191	0.33401
				33.60000	-6.80000	91.30000	0.0	1.3824	0.37695
				35.20000	-6.80000	91.30000	0.0	1.5471	0.42607
				36.80000	-6.80000	91.30000	-0.0025492	1.5023	0.42244
				38.40000	-6.80000	91.30000	-0.021278	1.5969	0.46789
				40.00000	-6.80000	91.30000	-0.032248	1.6474	0.50163
				41.60000	-6.80000	91.30000	-0.029502	1.6600	0.51744
				43.20000	-6.80000	91.30000	-0.0085557	2.4018	0.73498
				44.80000	-6.80000	91.30000	0.0	2.3720	0.72082
				46.40000	-6.80000	91.30000	0.0	2.3720	0.72082
				48.00000	-6.80000	91.30000	0.0	2.3720	0.72082
				49.60000	-6.80000	91.30000	-0.012538	1.5673	0.47992
				51.20000	-6.80000	91.30000	-0.064265	1.4583	0.45806
				52.80000	-6.80000	91.30000	-0.11173	1.3269	0.42351
				54.40000	-6.80000	91.30000	-0.15175	1.1791	0.37997
				56.00000	-6.80000	91.30000	-0.18150	1.0207	0.33179
				57.60000	-6.80000	91.30000	-0.19869	0.85694	0.28312
				59.20000	-6.80000	91.30000	-0.20156	0.69246	0.23701
				60.80000	-6.80000	91.30000	-0.18890	0.53097	0.19456
				62.40000	-6.80000	91.30000	-0.16003	0.37543	0.15401
				64.00000	-6.80000	91.30000	-0.11467	0.22805	0.10997
				65.60000	-6.80000	91.30000	-0.052958	0.090378	0.052700
				67.20000	-6.80000	91.30000	0.0	0.0	0.0
				68.80000	-6.80000	91.30000	0.0	0.0	0.0
				70.40000	-6.80000	91.30000	0.0	0.0	0.0
				72.00000	-6.80000	91.30000	0.0	0.0	0.0
				73.60000	-6.80000	91.30000	0.0	0.0	0.0
				75.20000	-6.80000	91.30000	0.0	0.0	0.0
				76.80000	-6.80000	91.30000	0.0	0.0	0.0
				78.40000	-6.80000	91.30000	0.0	0.0	0.0
				80.00000	-6.80000	91.30000	0.0	0.0	0.0
				0.00000	-5.20000	91.30000	0.0	0.0	0.0
				1.60000	-5.20000	91.30000	0.0	0.0	0.0
				3.20000	-5.20000	91.30000	0.0	0.0	0.0
				4.80000	-5.20000	91.30000	0.0	0.0	0.0
				6.40000	-5.20000	91.30000	0.0	0.0	0.0
				8.00000	-5.20000	91.30000	0.0	0.0	0.0
				9.60000	-5.20000	91.30000	0.0	0.0	0.0
				11.20000	-5.20000	91.30000	0.0	0.0	0.0
				12.80000	-5.20000	91.30000	0.0	0.0	0.0
				14.40000	-5.20000	91.30000	0.0	0.0	0.0
				16.00000	-5.20000	91.30000	0.0	0.0	0.0
				17.60000	-5.20000	91.30000	0.0	0.0	0.0
				19.20000	-5.20000	91.30000	0.0	0.0	0.0
				20.80000	-5.20000	91.30000	0.024322	0.045561	0.026016
				22.40000	-5.20000	91.30000	0.074902	0.18488	0.078559
				24.00000	-5.20000	91.30000	0.098540	0.38107	0.13408
				25.60000	-5.20000	91.30000	0.096716	0.66672	0.21388
				27.20000	-5.20000	91.30000	-0.073215	0.95921	0.28767
				28.80000	-5.20000	91.30000	0.034308	1.2437	0.35507
				30.40000	-5.20000	91.30000	0.0	1.8980	0.52978
				32.00000	-5.20000	91.30000	0.0	2.0780	0.58580
				33.60000	-5.20000	91.30000	0.0	2.2660	0.65541
				35.20000	-5.20000	91.30000	0.0	2.4586	0.73745
				36.80000	-5.20000	91.30000	-0.0058275	2.2278	0.70864
				38.40000	-5.20000	91.30000	-0.050209	2.3090	0.78019
				40.00000	-5.20000	91.30000	-0.084223	2.3468	0.83231
				41.60000	-5.20000	91.30000	-0.10020	2.3499	0.86622
				43.20000	-5.20000	91.30000	-0.092875	3.2903	1.2481
				44.80000	-5.20000	91.30000	-0.059109	3.1430	1.2069
				46.40000	-5.20000	91.30000	0.0	3.0120	1.1451
				48.00000	-5.20000	91.30000	0.0	3.0120	1.1451
				49.60000	-5.20000	91.30000	-0.017119	1.9884	0.76202
				51.20000	-5.20000	91.30000	-0.087906	1.8457	0.72486
				52.80000	-5.20000	91.30000	-0.15352	1.6799	0.66615
				54.40000	-5.20000	91.30000	-0.21012	1.4984	0.59190
				56.00000	-5.20000	91.30000	-0.25442	1.3080	0.50924
				57.60000	-5.20000	91.30000	-0.28379	1.1148	0.42546
				59.20000	-5.20000	91.30000	-0.29633	0.92392	0.34692
				60.80000	-5.20000	91.30000	-0.29086	0.73934	0.27805
				62.40000	-5.20000	91.30000	-0.26681	0.56412	0.22037
				64.00000	-5.20000	91.30000	-0.22415	0.40035	0.17169
				65.60000	-5.20000	91.30000	-0.16325	0.24936	0.12534
				67.20000	-5.20000	91.30000	-0.084771	0.11184	0.069485
				68.80000	-5.20000	91.30000	0.0	0.0	0.0
				70.40000	-5.20000	91.30000	0.0	0.0	0.0
				72.00000	-5.20000	91.30000	0.0	0.0	0.0
				73.60000	-5.20000	91.30000	0.0	0.0	0.0
				75.20000	-5.20000	91.30000	0.0	0.0	0.0
				76.80000	-5.20000	91.30000	0.0	0.0	0.0
				78.40000	-5.20000	91.30000	0.0	0.0	0.0
				80.00000	-5.20000	91.30000	0.0	0.0	0.0
				0.00000	-3.60000	91.30000	0.0	0.0	0.0
				1.60000	-3.60000	91.30000	0.0	0.0	0.0
				3.20000	-3.60000	91.30000	0.0	0.0	0.0
				4.80000	-3.60000	91.30000	0.0	0.0	0.0
				6.40000	-3.60000	91.30000	0.0	0.0	0.0
				8.00000	-3.60000	91.30000	0.0	0.0	0.0
				9.60000	-3.60000	91.30000	0.0	0.0	0.0
				11.20000	-3.60000	91.30000	0.0	0.0	0.0
				12.80000	-3.60000	91.30000	0.0	0.0	0.0
				14.40000	-3.60000	91.30000	0.0	0.0	0.0
				16.00000	-3.60000	91.30000	0.0	0.0	0.0



GEOTECHNICAL AND ENVIRONMENTAL ASSOCIATES LTD

J20269

7 Greenaway Gardens
Underpinning Sensitivity Analysis

Job No.	Sheet No.	Rev.
Drg. Ref.		
Made by ML	Date 18-Jul-2021	Checked Date

Stage: Ref.	Stage: Name	Disp. Grid: Ref.	Disp. Grid: Name	x	y	z	δx	δy	δz
				[m]	[m]	[m]	[mm]	[mm]	[mm]
				17.60000	-3.60000	91.30000	0.0	0.0	0.0
				19.20000	-3.60000	91.30000	0.056092	0.067517	0.043107
				20.80000	-3.60000	91.30000	0.13463	0.20893	0.095311
				22.40000	-3.60000	91.30000	0.18149	0.41855	0.16505
				24.00000	-3.60000	91.30000	0.19506	0.72743	0.27690
				25.60000	-3.60000	91.30000	0.17594	1.0673	0.40455
				27.20000	-3.60000	91.30000	0.12798	1.4250	0.53969
				28.80000	-3.60000	91.30000	0.058928	1.7823	0.66618
				30.40000	-3.60000	91.30000	0.0	2.7089	1.0240
				32.00000	-3.60000	91.30000	0.0	2.9108	1.1129
				33.60000	-3.60000	91.30000	0.0	3.1250	1.2242
				35.20000	-3.60000	91.30000	0.0	3.3479	1.3550
				36.80000	-3.60000	91.30000	-0.0099748	2.9331	1.2363
				38.40000	-3.60000	91.30000	-0.086639	2.9932	1.3311
				40.00000	-3.60000	91.30000	-0.14894	3.0125	1.3829
				41.60000	-3.60000	91.30000	-0.18678	3.0035	1.4026
				43.20000	-3.60000	91.30000	-0.19390	4.1419	1.9697
				44.80000	-3.60000	91.30000	-0.16777	3.9619	1.9035
				46.40000	-3.60000	91.30000	-0.10876	3.8050	1.8544
				48.00000	-3.60000	91.30000	-0.019027	3.6729	1.7918
				49.60000	-3.60000	91.30000	-0.022446	2.4081	1.1819
				51.20000	-3.60000	91.30000	-0.11535	2.2264	1.1222
				52.80000	-3.60000	91.30000	-0.20187	2.0211	1.0294
				54.40000	-3.60000	91.30000	-0.27735	1.8012	0.91225
				56.00000	-3.60000	91.30000	-0.33786	1.5749	0.78107
				57.60000	-3.60000	91.30000	-0.38045	1.3492	0.64657
				59.20000	-3.60000	91.30000	-0.40311	1.1299	0.51862
				60.80000	-3.60000	91.30000	-0.40475	0.92118	0.40509
				62.40000	-3.60000	91.30000	-0.38504	0.72598	0.31087
				64.00000	-3.60000	91.30000	-0.34427	0.54615	0.23693
				65.60000	-3.60000	91.30000	-0.28937	0.38264	0.17956
				67.20000	-3.60000	91.30000	-0.20278	0.23570	0.12986
				68.80000	-3.60000	91.30000	-0.10429	0.10511	0.072898
				70.40000	-3.60000	91.30000	0.0	0.0	0.0
				72.00000	-3.60000	91.30000	0.0	0.0	0.0
				73.60000	-3.60000	91.30000	0.0	0.0	0.0
				75.20000	-3.60000	91.30000	0.0	0.0	0.0
				76.80000	-3.60000	91.30000	0.0	0.0	0.0
				78.40000	-3.60000	91.30000	0.0	0.0	0.0
				80.00000	-3.60000	91.30000	0.0	0.0	0.0
				0.00000	-2.00000	91.30000	0.0	0.0	0.0
				1.60000	-2.00000	91.30000	0.0	0.0	0.0
				3.20000	-2.00000	91.30000	0.0	0.0	0.0
				4.80000	-2.00000	91.30000	0.0	0.0	0.0
				6.40000	-2.00000	91.30000	0.0	0.0	0.0
				8.00000	-2.00000	91.30000	0.0	0.0	0.0
				9.60000	-2.00000	91.30000	0.0	0.0	0.0
				11.20000	-2.00000	91.30000	0.0	0.0	0.0
				12.80000	-2.00000	91.30000	0.0	0.0	0.0
				14.40000	-2.00000	91.30000	0.0	0.0	0.0
				16.00000	-2.00000	91.30000	0.0	0.0	0.0
				17.60000	-2.00000	91.30000	0.067381	0.050978	0.041635
				19.20000	-2.00000	91.30000	0.18164	0.17233	0.096539
				20.80000	-2.00000	91.30000	0.26273	0.35325	0.17220
				22.40000	-2.00000	91.30000	0.30878	0.65775	0.32002
				24.00000	-2.00000	91.30000	0.31357	1.0055	0.51255
				25.60000	-2.00000	91.30000	0.27571	1.3992	0.74461
				27.20000	-2.00000	91.30000	0.19837	1.8324	0.99233
				28.80000	-2.00000	91.30000	0.090976	2.2773	1.2206
				30.40000	-2.00000	91.30000	0.0	3.4887	1.9090
				32.00000	-2.00000	91.30000	0.0	3.7128	2.0427
				33.60000	-2.00000	91.30000	0.0	3.9545	2.2088
				35.20000	-2.00000	91.30000	0.0	4.2103	2.4031
				36.80000	-2.00000	91.30000	-0.015389	3.6131	2.0886
				38.40000	-2.00000	91.30000	-0.13389	3.6399	2.1996
				40.00000	-2.00000	91.30000	-0.23155	3.6321	2.2340
				41.60000	-2.00000	91.30000	-0.29483	3.6081	2.2145
				43.20000	-2.00000	91.30000	-0.31677	4.9453	3.0049
				44.80000	-2.00000	91.30000	-0.29617	4.7327	2.8591
				46.40000	-2.00000	91.30000	-0.23557	4.5553	2.7660
				48.00000	-2.00000	91.30000	-0.14417	4.4170	2.7118
				49.60000	-2.00000	91.30000	-0.042003	2.8357	1.7586
				51.20000	-2.00000	91.30000	-0.14760	2.5987	1.6600
				52.80000	-2.00000	91.30000	-0.25846	2.3473	1.5227
				54.40000	-2.00000	91.30000	-0.35554	2.0833	1.3506
				56.00000	-2.00000	91.30000	-0.43418	1.8166	1.1578
				57.60000	-2.00000	91.30000	-0.49104	1.5553	0.95854
				59.20000	-2.00000	91.30000	-0.52409	1.3057	0.76630
				60.80000	-2.00000	91.30000	-0.53246	1.0720	0.59242
				62.40000	-2.00000	91.30000	-0.51624	0.85703	0.44507
				64.00000	-2.00000	91.30000	-0.47620	0.66201	0.32890
				65.60000	-2.00000	91.30000	-0.41356	0.48734	0.24131
				67.20000	-2.00000	91.30000	-0.32982	0.33264	0.17780
				68.80000	-2.00000	91.30000	-0.23409	0.20460	0.12984
				70.40000	-2.00000	91.30000	-0.11213	0.086252	0.069997
				72.00000	-2.00000	91.30000	0.0	0.0	0.0
				73.60000	-2.00000	91.30000	0.0	0.0	0.0
				75.20000	-2.00000	91.30000	0.0	0.0	0.0
				76.80000	-2.00000	91.30000	0.0	0.0	0.0
				78.40000	-2.00000	91.30000	0.0	0.0	0.0
				80.00000	-2.00000	91.30000	0.0	0.0	0.0
				0.00000	-0.40000	91.30000	0.0	0.0	0.0
				1.60000	-0.40000	91.30000	0.0	0.0	0.0
				3.20000	-0.40000	91.30000	0.0	0.0	0.0
				4.80000	-0.40000	91.30000	0.0	0.0	0.0
				6.40000	-0.40000	91.30000	0.0	0.0	0.0
				8.00000	-0.40000	91.30000	0.0	0.0	0.0
				9.60000	-0.40000	91.30000	0.0	0.0	0.0
				11.20000	-0.40000	91.30000	0.0	0.0	0.0
				12.80000	-0.40000	91.30000	0.0	0.0	0.0
				14.40000	-0.40000	91.30000	0.0	0.0	0.0
				16.00000	-0.40000	91.30000	0.033359	0.016295	0.018602
				17.60000	-0.40000	91.30000	0.21008	0.12287	0.093322
				19.20000	-0.40000	91.30000	0.34153	0.24764	0.16034
				20.80000	-0.40000	91.30000	0.41775	0.49916	0.31570
				22.40000	-0.40000	91.30000	0.46178	0.81794	0.55035
				24.00000	-0.40000	91.30000	0.46126	1.2045	0.86955
				25.60000	-0.40000	91.30000	0.40447	1.6524	1.2470
				27.20000	-0.40000	91.30000	0.29193	2.1638	1.6445
				28.80000	-0.40000	91.30000	0.13439	2.7179	2.0130
				30.40000	-0.40000	91.30000	0.0	4.2327	3.1798
				32.00000	-0.40000	91.30000	0.0	4.4785	3.3667
				33.60000	-0.40000	91.30000	0.0	4.7484	3.5979
				35.20000	-0.40000	91.30000	0.0	5.0395	3.8682
				36.80000	-0.40000	91.30000	-0.022756	4.2609	3.2502
				38.40000	-0.40000	91.30000	-0.19754	4.2343	3.3663
				40.00000	-0.40000	91.30000	-0.34025	4.1866	3.3713
				41.60000	-0.40000	91.30000	-0.43251	4.1450	3.3009
				43.20000	-0.40000	91.30000	-0.46784	5.6854	4.3677
				44.80000	-0.40000	91.30000	-0.44846	5.4437	4.1045
				46.40000	-0.40000	91.30000	-0.39633	5.2675	3.9347
				48.00000	-0.40000	91.30000	-0.29814	5.1303	3.8382
				49.60000	-0.40000	91.30000	-0.18484	3.3234	2.5337
				51.20000	-0.40000	91.30000	-0.18602	2.9601	2.3317
				52.80000	-0.40000	91.30000	-0.32553	2.6545	2.1392
				54.40000	-0.40000	91.30000	-0.44752	2.3395	1.9011
				56.00000	-0.40000	91.30000	-0.54640	2.0271	1.6351
				57.60000	-0.40000	91.30000	-0.61849	1.7269	1.3594
				59.20000	-0.40000	91.30000	-0.66189	1.4453	1.0908
				60.80000	-0.40000	91.30000	-0.67620	1.1866	0.84420



GEOTECHNICAL AND ENVIRONMENTAL ASSOCIATES LTD

7 Greenaway Gardens
Underpinning Sensitivity Analysis

Job No.	Sheet No.	Rev.
DJ20269		
Drg. Ref.		
Made by ML	Date 18-Jul-2021	Checked Date

Stage: Ref.	Stage: Name	Disp. Grid: Ref.	Disp. Grid: Name	x	y	z	δx	δy	δz
				[m]	[m]	[m]	[mm]	[mm]	[mm]
				62.40000	-0.40000	91.30000	-0.66214	0.95271	0.63066
				64.00000	-0.40000	91.30000	-0.62118	0.74415	0.45718
				65.60000	-0.40000	91.30000	-0.55520	0.56041	0.32563
				67.20000	-0.40000	91.30000	-0.48306	0.41704	0.24116
				68.80000	-0.40000	91.30000	-0.38058	0.28619	0.17975
				70.40000	-0.40000	91.30000	-0.24943	0.16579	0.12585
				72.00000	-0.40000	91.30000	-0.092486	0.054972	0.054077
				73.60000	-0.40000	91.30000	0.0	0.0	0.0
				75.20000	-0.40000	91.30000	0.0	0.0	0.0
				76.80000	-0.40000	91.30000	0.0	0.0	0.0
				78.40000	-0.40000	91.30000	0.0	0.0	0.0
				80.00000	-0.40000	91.30000	0.0	0.0	0.0
				0.00000	1.20000	91.30000	0.0	0.0	0.0
				1.60000	1.20000	91.30000	0.0	0.0	0.0
				3.20000	1.20000	91.30000	0.0	0.0	0.0
				4.80000	1.20000	91.30000	0.0	0.0	0.0
				6.40000	1.20000	91.30000	0.0	0.0	0.0
				8.00000	1.20000	91.30000	0.0	0.0	0.0
				9.60000	1.20000	91.30000	0.0	0.0	0.0
				11.20000	1.20000	91.30000	0.0	0.0	0.0
				12.80000	1.20000	91.30000	0.0	0.0	0.0
				14.40000	1.20000	91.30000	0.0	0.0	0.0
				16.00000	1.20000	91.30000	0.16968	0.062503	0.072477
				17.60000	1.20000	91.30000	0.37498	0.16379	0.14325
				19.20000	1.20000	91.30000	0.53414	0.34883	0.28996
				20.80000	1.20000	91.30000	0.63404	0.60066	0.53501
				22.40000	1.20000	91.30000	0.65809	0.89417	0.85813
				24.00000	1.20000	91.30000	0.64780	1.2978	1.3081
				25.60000	1.20000	91.30000	0.57531	1.8070	1.8502
				27.20000	1.20000	91.30000	0.42172	2.4068	2.4160
				28.80000	1.20000	91.30000	0.19645	3.0865	2.9471
				30.40000	1.20000	91.30000	0.0	4.9351	4.6981
				32.00000	1.20000	91.30000	0.0	5.2012	4.9421
				33.60000	1.20000	91.30000	0.0	5.4994	5.2442
				35.20000	1.20000	91.30000	0.0	5.8277	5.5994
				36.80000	1.20000	91.30000	-0.033363	4.8666	4.6082
				38.40000	1.20000	91.30000	-0.28772	4.7516	4.7151
				40.00000	1.20000	91.30000	-0.48871	4.6448	4.6902
				41.60000	1.20000	91.30000	-0.61187	4.5866	4.5791
				43.20000	1.20000	91.30000	-0.65520	6.3422	5.9906
				44.80000	1.20000	91.30000	-0.65915	6.1115	5.6296
				46.40000	1.20000	91.30000	-0.60450	5.9456	5.3572
				48.00000	1.20000	91.30000	-0.48062	5.8090	5.1753
				49.60000	1.20000	91.30000	-0.34810	3.7795	3.4109
				51.20000	1.20000	91.30000	-0.31548	3.3362	3.1544
				52.80000	1.20000	91.30000	-0.40625	2.9369	2.8562
				54.40000	1.20000	91.30000	-0.55712	2.5624	2.5424
				56.00000	1.20000	91.30000	-0.67852	2.1986	2.1944
				57.60000	1.20000	91.30000	-0.76653	1.8562	1.8338
				59.20000	1.20000	91.30000	-0.81970	1.5418	1.4809
				60.80000	1.20000	91.30000	-0.83847	1.2587	1.1532
				62.40000	1.20000	91.30000	-0.82455	1.0079	0.86473
				64.00000	1.20000	91.30000	-0.78039	0.78851	0.62499
				65.60000	1.20000	91.30000	-0.73667	0.62667	0.45693
				67.20000	1.20000	91.30000	-0.65716	0.48106	0.32871
				68.80000	1.20000	91.30000	-0.54382	0.34946	0.23752
				70.40000	1.20000	91.30000	-0.40040	0.22768	0.17239
				72.00000	1.20000	91.30000	-0.23033	0.11754	0.11117
				73.60000	1.20000	91.30000	-0.036658	0.016946	0.019537
				75.20000	1.20000	91.30000	0.0	0.0	0.0
				76.80000	1.20000	91.30000	0.0	0.0	0.0
				78.40000	1.20000	91.30000	0.0	0.0	0.0
				80.00000	1.20000	91.30000	0.0	0.0	0.0
				0.00000	2.80000	91.30000	0.0	0.0	0.0
				1.60000	2.80000	91.30000	0.0	0.0	0.0
				3.20000	2.80000	91.30000	0.0	0.0	0.0
				4.80000	2.80000	91.30000	0.0	0.0	0.0
				6.40000	2.80000	91.30000	0.0	0.0	0.0
				8.00000	2.80000	91.30000	0.0	0.0	0.0
				9.60000	2.80000	91.30000	0.0	0.0	0.0
				11.20000	2.80000	91.30000	0.0	0.0	0.0
				12.80000	2.80000	91.30000	0.0	0.0	0.0
				14.40000	2.80000	91.30000	0.038984	0.0089458	0.017906
				16.00000	2.80000	91.30000	0.31482	0.083067	0.10933
				17.60000	2.80000	91.30000	0.55790	0.19146	0.21707
				19.20000	2.80000	91.30000	0.75745	0.39457	0.45312
				20.80000	2.80000	91.30000	0.89810	0.63488	0.81769
				22.40000	2.80000	91.30000	0.95788	0.92352	1.2856
				24.00000	2.80000	91.30000	0.90615	1.2751	1.7807
				25.60000	2.80000	91.30000	0.80859	1.8107	2.4286
				27.20000	2.80000	91.30000	0.61185	2.5244	3.1529
				28.80000	2.80000	91.30000	0.29222	3.3746	3.8495
				30.40000	2.80000	91.30000	0.0	5.5896	6.1946
				32.00000	2.80000	91.30000	0.0	5.8730	6.4936
				33.60000	2.80000	91.30000	0.0	6.1979	6.8665
				35.20000	2.80000	91.30000	0.0	6.5644	7.3101
				36.80000	2.80000	91.30000	-0.049950	5.4150	5.9522
				38.40000	2.80000	91.30000	-0.42470	5.1458	6.0357
				40.00000	2.80000	91.30000	-0.70073	4.9537	6.0050
				41.60000	2.80000	91.30000	-0.85025	4.8916	5.8988
				43.20000	2.80000	91.30000	-0.94095	6.9439	7.8350
				44.80000	2.80000	91.30000	-0.94668	6.7381	7.3782
				46.40000	2.80000	91.30000	-0.85349	6.5778	6.9682
				48.00000	2.80000	91.30000	-0.68858	6.4510	6.6756
				49.60000	2.80000	91.30000	-0.52777	4.2026	4.3761
				51.20000	2.80000	91.30000	-0.50485	3.6889	4.0499
				52.80000	2.80000	91.30000	-0.50513	3.1863	3.6355
				54.40000	2.80000	91.30000	-0.68968	2.7420	3.2389
				56.00000	2.80000	91.30000	-0.83586	2.3205	2.8038
				57.60000	2.80000	91.30000	-0.93988	1.9333	2.3547
				59.20000	2.80000	91.30000	-1.0013	1.5863	1.9142
				60.80000	2.80000	91.30000	-1.0221	1.2813	1.5024
				62.40000	2.80000	91.30000	-1.0053	1.0170	1.1354
				64.00000	2.80000	91.30000	-0.99650	0.83250	0.86406
				65.60000	2.80000	91.30000	-0.94449	0.66921	0.63154
				67.20000	2.80000	91.30000	-0.85183	0.52242	0.44656
				68.80000	2.80000	91.30000	-0.72362	0.39033	0.31232
				70.40000	2.80000	91.30000	-0.56439	0.27125	0.22157
				72.00000	2.80000	91.30000	-0.37811	0.16365	0.15528
				73.60000	2.80000	91.30000	-0.16824	0.066164	0.081645
				75.20000	2.80000	91.30000	0.0	0.0	0.0
				76.80000	2.80000	91.30000	0.0	0.0	0.0
				78.40000	2.80000	91.30000	0.0	0.0	0.0
				80.00000	2.80000	91.30000	0.0	0.0	0.0
				0.00000	4.40000	91.30000	0.0	0.0	0.0
				1.60000	4.40000	91.30000	0.0	0.0	0.0
				3.20000	4.40000	91.30000	0.0	0.0	0.0
				4.80000	4.40000	91.30000	0.0	0.0	0.0
				6.40000	4.40000	91.30000	0.0	0.0	0.0
				8.00000	4.40000	91.30000	0.0	0.0	0.0
				9.60000	4.40000	91.30000	0.0	0.0	0.0
				11.20000	4.40000	91.30000	0.0	0.0	0.0
				12.80000	4.40000	91.30000	0.0	0.0	0.0
				14.40000	4.40000	91.30000	0.14465	0.022025	0.056975
				16.00000	4.40000	91.30000	0.48069	0.079983	0.14336
				17.60000	4.40000	91.30000	0.75043	0.20717	0.31153
				19.20000	4.40000	91.30000	1.0039	0.38470	0.63632
				20.80000	4.40000	91.30000	1.2058	0.59810	1.1328
				22.40000	4.40000	91.30000	1.3318	0.86107	1.7561
				24.00000	4.40000	91.30000	1.3418	1.1951	2.3993



GEOTECHNICAL AND ENVIRONMENTAL ASSOCIATES LTD

7 Greenaway Gardens
Underpinning Sensitivity Analysis

Job No.	Sheet No.	Rev.
DJ20269		
Drg. Ref.		
Made by ML	Date 18-Jul-2021	Checked Date

Stage: Ref.	Stage: Name	Disp. Grid: Ref.	Disp. Grid: Name	x	y	z	δx	δy	δz
				[m]	[m]	[m]	[mm]	[mm]	[mm]
				25.60000	4.40000	91.30000	1.1706	1.6336	2.9144
				27.20000	4.40000	91.30000	0.90995	2.4097	3.6359
				28.80000	4.40000	91.30000	0.45840	3.5283	4.4660
				30.40000	4.40000	91.30000	0.0	6.2212	7.2934
				32.00000	4.40000	91.30000	0.0	6.4847	7.6159
				33.60000	4.40000	91.30000	0.0	6.9325	8.0517
				35.20000	4.40000	91.30000	0.0	7.2362	8.5794
				36.80000	4.40000	91.30000	-0.079553	5.8797	6.9746
				38.40000	4.40000	91.30000	-0.65475	5.3198	7.0305
				40.00000	4.40000	91.30000	-1.0187	5.0187	7.0701
				41.60000	4.40000	91.30000	-1.2616	5.0941	7.2841
				43.20000	4.40000	91.30000	-1.3551	7.4884	9.8173
				44.80000	4.40000	91.30000	-1.2955	7.3005	9.2141
				46.40000	4.40000	91.30000	-1.1374	7.1622	8.6581
				48.00000	4.40000	91.30000	-0.91393	7.0570	8.2455
				49.60000	4.40000	91.30000	-0.71637	4.5927	5.3786
				51.20000	4.40000	91.30000	-0.70784	3.9932	4.9494
				52.80000	4.40000	91.30000	-0.64966	3.3935	4.4316
				54.40000	4.40000	91.30000	-0.85273	2.8640	3.9413
				56.00000	4.40000	91.30000	-1.0255	2.3784	3.4198
				57.60000	4.40000	91.30000	-1.1444	1.9454	2.8848
				59.20000	4.40000	91.30000	-1.2111	1.5685	2.3602
				60.80000	4.40000	91.30000	-1.2299	1.2462	1.8673
				62.40000	4.40000	91.30000	-1.2649	1.0331	1.5006
				64.00000	4.40000	91.30000	-1.2464	0.84827	1.1543
				65.60000	4.40000	91.30000	-1.1780	0.68477	0.84696
				67.20000	4.40000	91.30000	-1.0668	0.53985	0.59564
				68.80000	4.40000	91.30000	-0.91910	0.41102	0.40794
				70.40000	4.40000	91.30000	-0.74012	0.29609	0.28018
				72.00000	4.40000	91.30000	-0.53433	0.19318	0.19622
				73.60000	4.40000	91.30000	-0.30549	0.10066	0.12653
				75.20000	4.40000	91.30000	-0.056741	0.017165	0.027518
				76.80000	4.40000	91.30000	0.0	0.0	0.0
				78.40000	4.40000	91.30000	0.0	0.0	0.0
				80.00000	4.40000	91.30000	0.0	0.0	0.0
				0.00000	6.00000	91.30000	0.0	0.0	0.0
				1.60000	6.00000	91.30000	0.0	0.0	0.0
				3.20000	6.00000	91.30000	0.0	0.0	0.0
				4.80000	6.00000	91.30000	0.0	0.0	0.0
				6.40000	6.00000	91.30000	0.0	0.0	0.0
				8.00000	6.00000	91.30000	0.0	0.0	0.0
				9.60000	6.00000	91.30000	0.0	0.0	0.0
				11.20000	6.00000	91.30000	0.0	0.0	0.0
				12.80000	6.00000	91.30000	0.0	0.0	0.0
				14.40000	6.00000	91.30000	0.23574	0.020107	0.080245
				16.00000	6.00000	91.30000	0.59594	0.064394	0.17747
				17.60000	6.00000	91.30000	0.93910	0.18357	0.39832
				19.20000	6.00000	91.30000	1.2581	0.32402	0.80890
				20.80000	6.00000	91.30000	1.5414	0.49342	1.4305
				22.40000	6.00000	91.30000	1.7686	0.70430	2.2049
				24.00000	6.00000	91.30000	1.9021	0.97908	2.9987
				25.60000	6.00000	91.30000	1.8640	1.3619	3.6142
				27.20000	6.00000	91.30000	1.4814	1.9474	3.8234
				28.80000	6.00000	91.30000	0.80925	3.3220	4.4479
				30.40000	6.00000	91.30000	0.0	6.8432	7.4960
				32.00000	6.00000	91.30000	0.0	7.0698	7.8163
				33.60000	6.00000	91.30000	0.0	7.3893	8.2584
				35.20000	6.00000	91.30000	0.0	7.8253	8.8553
				36.80000	6.00000	91.30000	-0.14733	6.1978	7.2690
				38.40000	6.00000	91.30000	-1.1020	5.0280	7.3416
				40.00000	6.00000	91.30000	-1.6832	4.8522	8.0729
				41.60000	6.00000	91.30000	-1.9063	5.1744	8.6939
				43.20000	6.00000	91.30000	-1.8667	7.9367	11.723
				44.80000	6.00000	91.30000	-1.6918	7.7988	10.972
				46.40000	6.00000	91.30000	-1.4404	7.7024	10.277
				48.00000	6.00000	91.30000	-1.1419	7.6315	9.7526
				49.60000	6.00000	91.30000	-0.90271	4.9519	6.3374
				51.20000	6.00000	91.30000	-0.92080	4.2407	5.7874
				52.80000	6.00000	91.30000	-0.88500	3.5387	5.1907
				54.40000	6.00000	91.30000	-1.0571	2.9075	4.5888
				56.00000	6.00000	91.30000	-1.2570	2.3532	3.9997
				57.60000	6.00000	91.30000	-1.3873	1.8767	3.3797
				59.20000	6.00000	91.30000	-1.4539	1.4763	2.7820
				60.80000	6.00000	91.30000	-1.5458	1.2261	2.3559
				62.40000	6.00000	91.30000	-1.5687	1.0146	1.9150
				64.00000	6.00000	91.30000	-1.5289	0.83122	1.4848
				65.60000	6.00000	91.30000	-1.4367	0.67180	1.0964
				67.20000	6.00000	91.30000	-1.3009	0.53252	0.77199
				68.80000	6.00000	91.30000	-1.1285	0.41020	0.52346
				70.40000	6.00000	91.30000	-0.92555	0.30220	0.35046
				72.00000	6.00000	91.30000	-0.69681	0.20634	0.23943
				73.60000	6.00000	91.30000	-0.44620	0.12080	0.16276
				75.20000	6.00000	91.30000	-0.17694	0.044100	0.078260
				76.80000	6.00000	91.30000	0.0	0.0	0.0
				78.40000	6.00000	91.30000	0.0	0.0	0.0
				80.00000	6.00000	91.30000	0.0	0.0	0.0
				0.00000	7.60000	91.30000	0.0	0.0	0.0
				1.60000	7.60000	91.30000	0.0	0.0	0.0
				3.20000	7.60000	91.30000	0.0	0.0	0.0
				4.80000	7.60000	91.30000	0.0	0.0	0.0
				6.40000	7.60000	91.30000	0.0	0.0	0.0
				8.00000	7.60000	91.30000	0.0	0.0	0.0
				9.60000	7.60000	91.30000	0.0	0.0	0.0
				11.20000	7.60000	91.30000	0.0	0.0	0.0
				12.80000	7.60000	91.30000	0.0	0.0	0.0
				14.40000	7.60000	91.30000	0.30109	0.008340	0.093229
				16.00000	7.60000	91.30000	0.70635	0.048176	0.20808
				17.60000	7.60000	91.30000	1.1056	0.12955	0.45918
				19.20000	7.60000	91.30000	1.4961	0.22357	0.93356
				20.80000	7.60000	91.30000	1.8734	0.33420	1.6529
				22.40000	7.60000	91.30000	2.2292	0.46786	2.5559
				24.00000	7.60000	91.30000	2.5469	0.63633	3.4979
				25.60000	7.60000	91.30000	2.7862	0.86539	4.2508
				27.20000	7.60000	91.30000	2.8230	1.2298	4.5017
				28.80000	7.60000	91.30000	2.0498	2.0829	3.8464
				30.40000	7.60000	91.30000	0.0	7.4211	6.1448
				32.00000	7.60000	91.30000	0.0	7.6455	6.4793
				33.60000	7.60000	91.30000	0.0	7.9122	6.8858
				35.20000	7.60000	91.30000	0.0	8.3092	7.4589
				36.80000	7.60000	91.30000	-0.45765	5.9947	6.2860
				38.40000	7.60000	91.30000	-2.5412	4.0263	7.6101
				40.00000	7.60000	91.30000	-2.8497	4.3836	9.1058
				41.60000	7.60000	91.30000	-2.7102	5.0628	9.8675
				43.20000	7.60000	91.30000	-2.4339	8.3013	13.344
				44.80000	7.60000	91.30000	-2.0991	8.2471	12.455
				46.40000	7.60000	91.30000	-1.7338	8.2105	11.644
				48.00000	7.60000	91.30000	-1.3509	8.1840	11.035
				49.60000	7.60000	91.30000	-1.0727	5.2834	7.1490
				51.20000	7.60000	91.30000	-1.1427	4.4163	6.4744
				52.80000	7.60000	91.30000	-1.1461	3.5810	5.7946
				54.40000	7.60000	91.30000	-1.3189	2.8419	5.1118
				56.00000	7.60000	91.30000	-1.5428	2.2188	4.4555
				57.60000	7.60000	91.30000	-1.6770	1.7078	3.7918
				59.20000	7.60000	91.30000	-1.8454	1.4077	3.3711
				60.80000	7.60000	91.30000	-1.9210	1.1621	2.8837
				62.40000	7.60000	91.30000	-1.9151	0.95511	2.3591
				64.00000	7.60000	91.30000	-1.8434	0.77952	1.8416
				65.60000	7.60000	91.30000	-1.7189	0.62948	1.3686
				67.20000	7.60000	91.30000	-1.5514	0.50027	0.96747
				68.80000	7.60000	91.30000	-1.3490	0.38814	0.65402



GEOTECHNICAL AND ENVIRONMENTAL ASSOCIATES LTD

J20269

7 Greenaway Gardens
Underpinning Sensitivity Analysis

Job No.	Sheet No.	Rev.
Drg. Ref.		
Made by ML	Date 18-Jul-2021	Checked Date

Stage: Ref.	Stage: Name	Disp. Grid: Ref.	Disp. Grid: Name	x	y	z	δx	δy	δz
				[m]	[m]	[m]	[mm]	[mm]	[mm]
				70.40000	7.60000	91.30000	-1.1177	0.29010	0.43089
				72.00000	7.60000	91.30000	-0.86264	0.20379	0.28666
				73.60000	7.60000	91.30000	-0.58758	0.12732	0.19528
				75.20000	7.60000	91.30000	-0.29570	0.059153	0.11552
				76.80000	7.60000	91.30000	0.0	0.0	0.0
				78.40000	7.60000	91.30000	0.0	0.0	0.0
				80.00000	7.60000	91.30000	0.0	0.0	0.0
				0.00000	9.20000	91.30000	0.0	0.0	0.0
				1.60000	9.20000	91.30000	0.0	0.0	0.0
				3.20000	9.20000	91.30000	0.0	0.0	0.0
				4.80000	9.20000	91.30000	0.0	0.0	0.0
				6.40000	9.20000	91.30000	0.0	0.0	0.0
				8.00000	9.20000	91.30000	0.0	0.0	0.0
				9.60000	9.20000	91.30000	0.0	0.0	0.0
				11.20000	9.20000	91.30000	0.0	0.0	0.0
				12.80000	9.20000	91.30000	0.0	0.0	0.0
				14.40000	9.20000	91.30000	0.48000	0.0	0.14384
				16.00000	9.20000	91.30000	1.1200	0.035571	0.31830
				17.60000	9.20000	91.30000	1.7600	0.090108	0.69567
				19.20000	9.20000	91.30000	2.4000	0.15140	1.4245
				20.80000	9.20000	91.30000	3.0400	0.22076	2.5365
				22.40000	9.20000	91.30000	3.6800	0.29980	3.9399
				24.00000	9.20000	91.30000	4.3200	0.39062	5.4192
				25.60000	9.20000	91.30000	4.9600	0.49590	6.6351
				27.20000	9.20000	91.30000	5.6000	0.61916	7.1247
				28.80000	9.20000	91.30000	6.2400	0.76502	6.3013
				30.40000	9.20000	91.30000	Point lies within an excavation.		
				32.00000	9.20000	91.30000	Point lies within an excavation.		
				33.60000	9.20000	91.30000	Point lies within an excavation.		
				35.20000	9.20000	91.30000	Point lies within an excavation.		
				36.80000	9.20000	91.30000	-6.6400	2.2435	6.8423
				38.40000	9.20000	91.30000	-6.0000	3.0061	10.093
				40.00000	9.20000	91.30000	-5.3600	3.9474	11.742
				41.60000	9.20000	91.30000	-4.7200	5.0280	12.415
				43.20000	9.20000	91.30000	-4.0800	8.7720	15.912
				44.80000	9.20000	91.30000	-3.4400	8.7720	14.487
				46.40000	9.20000	91.30000	-2.8000	8.7720	13.211
				48.00000	9.20000	91.30000	-2.1600	8.7720	12.259
				49.60000	9.20000	91.30000	-1.6742	5.6153	7.8570
				51.20000	9.20000	91.30000	-1.6535	4.5028	6.9794
				52.80000	9.20000	91.30000	-1.5277	3.4789	6.1846
				54.40000	9.20000	91.30000	-1.6613	2.6215	5.4377
				56.00000	9.20000	91.30000	-1.8987	1.9418	4.7601
				57.60000	9.20000	91.30000	-2.1756	1.5707	4.4400
				59.20000	9.20000	91.30000	-2.3198	1.2807	3.9948
				60.80000	9.20000	91.30000	-2.3535	1.0455	3.4234
				62.40000	9.20000	91.30000	-2.3027	0.85265	2.8133
				64.00000	9.20000	91.30000	-2.1868	0.69257	2.2072
				65.60000	9.20000	91.30000	-2.0205	0.55811	1.6489
				67.20000	9.20000	91.30000	-1.8143	0.44389	1.1707
				68.80000	9.20000	91.30000	-1.5763	0.34586	0.79169
				70.40000	9.20000	91.30000	-1.3127	0.26093	0.51697
				72.00000	9.20000	91.30000	-1.0281	0.18672	0.33680
				73.60000	9.20000	91.30000	-0.72620	0.12137	0.22612
				75.20000	9.20000	91.30000	-0.40988	0.063428	0.14429
				76.80000	9.20000	91.30000	-0.061401	0.011726	0.034873
				78.40000	9.20000	91.30000	0.0	0.0	0.0
				80.00000	9.20000	91.30000	0.0	0.0	0.0
				0.00000	10.80000	91.30000	0.0	0.0	0.0
				1.60000	10.80000	91.30000	0.0	0.0	0.0
				3.20000	10.80000	91.30000	0.0	0.0	0.0
				4.80000	10.80000	91.30000	0.0	0.0	0.0
				6.40000	10.80000	91.30000	0.0	0.0	0.0
				8.00000	10.80000	91.30000	0.0	0.0	0.0
				9.60000	10.80000	91.30000	0.0	0.0	0.0
				11.20000	10.80000	91.30000	0.0	0.0	0.0
				12.80000	10.80000	91.30000	0.0	0.0	0.0
				14.40000	10.80000	91.30000	0.48000	0.0	0.14384
				16.00000	10.80000	91.30000	1.1200	0.036244	0.31787
				17.60000	10.80000	91.30000	1.7600	0.079610	0.69209
				19.20000	10.80000	91.30000	2.4000	0.12855	1.4189
				20.80000	10.80000	91.30000	3.0400	0.18419	2.5285
				22.40000	10.80000	91.30000	3.6800	0.24797	3.9275
				24.00000	10.80000	91.30000	4.3200	0.32177	5.3991
				25.60000	10.80000	91.30000	4.9600	0.40807	6.6026
				27.20000	10.80000	91.30000	5.6000	0.51022	7.0743
				28.80000	10.80000	91.30000	6.2400	0.63278	6.2268
				30.40000	10.80000	91.30000	Point lies within an excavation.		
				32.00000	10.80000	91.30000	Point lies within an excavation.		
				33.60000	10.80000	91.30000	Point lies within an excavation.		
				35.20000	10.80000	91.30000	Point lies within an excavation.		
				36.80000	10.80000	91.30000	-6.6400	1.9043	6.4572
				38.40000	10.80000	91.30000	-6.0000	2.6025	9.5744
				40.00000	10.80000	91.30000	-5.3600	3.7179	11.349
				41.60000	10.80000	91.30000	-4.7200	5.1305	12.304
				43.20000	10.80000	91.30000	-4.0800	9.4120	16.231
				44.80000	10.80000	91.30000	-3.4400	9.4120	14.806
				46.40000	10.80000	91.30000	-2.8000	9.4120	13.529
				48.00000	10.80000	91.30000	-2.1600	9.4120	12.577
				49.60000	10.80000	91.30000	-1.7355	5.9403	8.0278
				51.20000	10.80000	91.30000	-1.9403	4.4284	7.0379
				52.80000	10.80000	91.30000	-1.9441	3.1482	6.2233
				54.40000	10.80000	91.30000	-2.1176	2.1805	5.5014
				56.00000	10.80000	91.30000	-2.5603	1.7004	5.4110
				57.60000	10.80000	91.30000	-2.7957	1.3510	5.0995
				59.20000	10.80000	91.30000	-2.8736	1.0834	4.5993
				60.80000	10.80000	91.30000	-2.8400	0.87424	3.9510
				62.40000	10.80000	91.30000	-2.7259	0.70736	3.2548
				64.00000	10.80000	91.30000	-2.5527	0.57166	2.5614
				65.60000	10.80000	91.30000	-2.3350	0.45947	1.9204
				67.20000	10.80000	91.30000	-2.0833	0.36533	1.3681
				68.80000	10.80000	91.30000	-1.8049	0.28532	0.92649
				70.40000	10.80000	91.30000	-1.5053	0.21655	0.60225
				72.00000	10.80000	91.30000	-1.1886	0.15684	0.38667
				73.60000	10.80000	91.30000	-0.85802	0.10454	0.25518
				75.20000	10.80000	91.30000	-0.51589	0.058376	0.16726
				76.80000	10.80000	91.30000	-0.16411	0.017333	0.066273
				78.40000	10.80000	91.30000	0.0	0.0	0.0
				80.00000	10.80000	91.30000	0.0	0.0	0.0
				0.00000	12.40000	91.30000	0.0	0.0	0.0
				1.60000	12.40000	91.30000	0.0	0.0	0.0
				3.20000	12.40000	91.30000	0.0	0.0	0.0
				4.80000	12.40000	91.30000	0.0	0.0	0.0
				6.40000	12.40000	91.30000	0.0	0.0	0.0
				8.00000	12.40000	91.30000	0.0	0.0	0.0
				9.60000	12.40000	91.30000	0.0	0.0	0.0
				11.20000	12.40000	91.30000	0.0	0.0	0.0
				12.80000	12.40000	91.30000	0.0	0.0	0.0
				14.40000	12.40000	91.30000	0.48000	0.0023549	0.14462
				16.00000	12.40000	91.30000	1.1200	0.029957	0.31544
				17.60000	12.40000	91.30000	1.7600	0.060981	0.68677
				19.20000	12.40000	91.30000	2.4000	0.096102	1.4106
				20.80000	12.40000	91.30000	3.0400	0.13618	2.5153
				22.40000	12.40000	91.30000	3.6800	0.18233	3.9057
				24.00000	12.40000	91.30000	4.3200	0.23603	5.3632
				25.60000	12.40000	91.30000	4.9600	0.29926	6.5455
				27.20000	12.40000	91.30000	5.6000	0.37476	6.9871
				28.80000	12.40000	91.30000	6.2400	0.46640	6.0994
				30.40000	12.40000	91.30000	Point lies within an excavation.		
				32.00000	12.40000	91.30000	Point lies within an excavation.		



GEOTECHNICAL AND ENVIRONMENTAL ASSOCIATES LTD

7 Greenaway Gardens
Underpinning Sensitivity Analysis

Job No.	Sheet No.	Rev.
DJ20269		
Drg. Ref.		
Made by ML	Date 18-Jul-2021	Checked Date

Stage: Ref.	Stage: Name	Disp. Grid: Ref.	Disp. Grid: Name	x	y	z	δx	δy	δz
				[m]	[m]	[m]	[mm]	[mm]	[mm]
				33.60000	12.40000	91.30000	Point lies within an excavation.		
				35.20000	12.40000	91.30000	Point lies within an excavation.		
				36.80000	12.40000	91.30000	-6.6400	1.5161	5.9599
				38.40000	12.40000	91.30000	-6.0000	2.0341	8.7867
				40.00000	12.40000	91.30000	-5.3600	3.0905	10.346
				41.60000	12.40000	91.30000	-4.7200	4.9703	11.575
				43.20000	12.40000	91.30000	-4.0800	10.052	15.822
				44.80000	12.40000	91.30000	-3.4400	10.052	14.398
				46.40000	12.40000	91.30000	-2.8000	10.052	13.121
				48.00000	12.40000	91.30000	-2.1600	10.052	12.169
				49.60000	12.40000	91.30000	-1.8499	6.1754	7.6922
				51.20000	12.40000	91.30000	-2.4315	3.9942	6.6036
				52.80000	12.40000	91.30000	-2.5699	2.4302	5.8658
				54.40000	12.40000	91.30000	-3.0568	1.7621	6.0945
				56.00000	12.40000	91.30000	-3.4140	1.3323	6.0755
				57.60000	12.40000	91.30000	-3.5315	1.0328	5.7339
				59.20000	12.40000	91.30000	-3.4993	0.81509	5.1593
				60.80000	12.40000	91.30000	-3.3696	0.65073	4.4408
				62.40000	12.40000	91.30000	-3.1735	0.52277	3.6590
				64.00000	12.40000	91.30000	-2.9305	0.42056	2.8822
				65.60000	12.40000	91.30000	-2.6533	0.33716	2.1646
				67.20000	12.40000	91.30000	-2.3504	0.26788	1.5452
				68.80000	12.40000	91.30000	-2.0277	0.20947	1.0475
				70.40000	12.40000	91.30000	-1.6895	0.15957	0.67929
				72.00000	12.40000	91.30000	-1.3390	0.11646	0.43200
				73.60000	12.40000	91.30000	-0.97846	0.078959	0.28103
				75.20000	12.40000	91.30000	-0.60972	0.045779	0.18550
				76.80000	12.40000	91.30000	-0.23416	0.016455	0.088187
				78.40000	12.40000	91.30000	0.0	0.0	0.0
				80.00000	12.40000	91.30000	0.0	0.0	0.0
				0.00000	14.00000	91.30000	0.0	0.0	0.0
				1.60000	14.00000	91.30000	0.0	0.0	0.0
				3.20000	14.00000	91.30000	0.0	0.0	0.0
				4.80000	14.00000	91.30000	0.0	0.0	0.0
				6.40000	14.00000	91.30000	0.0	0.0	0.0
				8.00000	14.00000	91.30000	0.0	0.0	0.0
				9.60000	14.00000	91.30000	0.0	0.0	0.0
				11.20000	14.00000	91.30000	0.0	0.0	0.0
				12.80000	14.00000	91.30000	0.0	0.0	0.0
				14.40000	14.00000	91.30000	0.48000	0.0028209	0.14489
				16.00000	14.00000	91.30000	1.12000	0.018637	0.31176
				17.60000	14.00000	91.30000	1.76000	0.036445	0.68012
				19.20000	14.00000	91.30000	2.40000	0.056645	1.4000
				20.80000	14.00000	91.30000	3.04000	0.079754	2.4977
				22.40000	14.00000	91.30000	3.68000	0.10645	3.8760
				24.00000	14.00000	91.30000	4.32000	0.13762	5.3142
				25.60000	14.00000	91.30000	4.96000	0.17450	6.4680
				27.20000	14.00000	91.30000	5.60000	0.21881	6.8696
				28.80000	14.00000	91.30000	6.24000	0.27302	5.9282
				30.40000	14.00000	91.30000	Point lies within an excavation.		
				32.00000	14.00000	91.30000	Point lies within an excavation.		
				33.60000	14.00000	91.30000	Point lies within an excavation.		
				35.20000	14.00000	91.30000	Point lies within an excavation.		
				36.80000	14.00000	91.30000	-6.6400	0.94601	5.2198
				38.40000	14.00000	91.30000	-6.0000	1.3339	7.8558
				40.00000	14.00000	91.30000	-5.3600	2.0399	8.9061
				41.60000	14.00000	91.30000	-4.7200	4.0673	9.8894
				43.20000	14.00000	91.30000	-4.0800	10.692	14.458
				44.80000	14.00000	91.30000	-3.4400	10.692	13.034
				46.40000	14.00000	91.30000	-2.8000	10.692	11.757
				48.00000	14.00000	91.30000	-2.1600	10.692	10.805
				49.60000	14.00000	91.30000	-2.1371	6.1177	6.6630
				51.20000	14.00000	91.30000	-3.4002	2.7168	5.5569
				52.80000	14.00000	91.30000	-4.0843	1.6463	6.3749
				54.40000	14.00000	91.30000	-4.3350	1.1241	6.7554
				56.00000	14.00000	91.30000	-4.4424	0.81913	6.7242
				57.60000	14.00000	91.30000	-4.3603	0.62186	6.3229
				59.20000	14.00000	91.30000	-4.1728	0.48454	5.6686
				60.80000	14.00000	91.30000	-3.9212	0.38370	4.8650
				62.40000	14.00000	91.30000	-3.6277	0.30662	4.0006
				64.00000	14.00000	91.30000	-3.3057	0.24584	3.1479
				65.60000	14.00000	91.30000	-2.9632	0.19670	2.3636
				67.20000	14.00000	91.30000	-2.6056	0.15618	1.6877
				68.80000	14.00000	91.30000	-2.2364	0.12219	1.1442
				70.40000	14.00000	91.30000	-1.8584	0.093270	0.74073
				72.00000	14.00000	91.30000	-1.4733	0.068377	0.46829
				73.60000	14.00000	91.30000	-1.0826	0.046722	0.30164
				75.20000	14.00000	91.30000	-0.68713	0.027714	0.19907
				76.80000	14.00000	91.30000	-0.28786	0.010897	0.10244
				78.40000	14.00000	91.30000	0.0	0.0	0.0
				80.00000	14.00000	91.30000	0.0	0.0	0.0
				0.00000	15.60000	91.30000	0.0	0.0	0.0
				1.60000	15.60000	91.30000	0.0	0.0	0.0
				3.20000	15.60000	91.30000	0.0	0.0	0.0
				4.80000	15.60000	91.30000	0.0	0.0	0.0
				6.40000	15.60000	91.30000	0.0	0.0	0.0
				8.00000	15.60000	91.30000	0.0	0.0	0.0
				9.60000	15.60000	91.30000	0.0	0.0	0.0
				11.20000	15.60000	91.30000	0.0	0.0	0.0
				12.80000	15.60000	91.30000	0.0	0.0	0.0
				14.40000	15.60000	91.30000	0.48000	791.89E-5	0.14414
				16.00000	15.60000	91.30000	1.12000	0.0044082	0.30739
				17.60000	15.60000	91.30000	1.76000	0.0084833	0.67266
				19.20000	15.60000	91.30000	2.40000	0.013110	1.3878
				20.80000	15.60000	91.30000	3.04000	0.018409	2.4772
				22.40000	15.60000	91.30000	3.68000	0.024538	3.8412
				24.00000	15.60000	91.30000	4.32000	0.031708	5.2570
				25.60000	15.60000	91.30000	4.96000	0.040210	6.3777
				27.20000	15.60000	91.30000	5.60000	0.050452	6.7332
				28.80000	15.60000	91.30000	6.24000	0.063029	5.7295
				30.40000	15.60000	91.30000	Point lies within an excavation.		
				32.00000	15.60000	91.30000	Point lies within an excavation.		
				33.60000	15.60000	91.30000	Point lies within an excavation.		
				35.20000	15.60000	91.30000	Point lies within an excavation.		
				36.80000	15.60000	91.30000	-6.6400	0.22581	4.3064
				38.40000	15.60000	91.30000	-6.0000	0.32851	6.6395
				40.00000	15.60000	91.30000	-5.3600	0.54547	7.2428
				41.60000	15.60000	91.30000	-4.7200	1.2872	7.0112
				43.20000	15.60000	91.30000	-4.0800	11.332	11.886
				44.80000	15.60000	91.30000	-3.4400	11.332	10.461
				46.40000	15.60000	91.30000	-2.8000	11.332	9.1841
				48.00000	15.60000	91.30000	-2.1600	11.332	8.2322
				49.60000	15.60000	91.30000	-3.9609	3.4558	4.3827
				51.20000	15.60000	91.30000	-6.7187	0.79423	6.2376
				52.80000	15.60000	91.30000	-6.2874	0.41866	7.1850
				54.40000	15.60000	91.30000	-5.8677	0.27189	7.4830
				56.00000	15.60000	91.30000	-5.5712	0.19390	7.3460
				57.60000	15.60000	91.30000	-5.2245	0.14557	6.8385
				59.20000	15.60000	91.30000	-4.8515	0.11270	6.0858
				60.80000	15.60000	91.30000	-4.4631	0.088890	5.1947
				62.40000	15.60000	91.30000	-4.0649	0.070853	4.2545
				64.00000	15.60000	91.30000	-3.6601	0.056716	3.3379
				65.60000	15.60000	91.30000	-3.2506	0.045338	2.5010
				67.20000	15.60000	91.30000	-2.8377	0.035983	1.7832
				68.80000	15.60000	91.30000	-2.4221	0.028156	1.2075
				70.40000	15.60000	91.30000	-2.0046	0.021511	0.78032
				72.00000	15.60000	91.30000	-1.5855	0.015799	0.49166
				73.60000	15.60000	91.30000	-1.1651	0.010837	0.31505
				75.20000	15.60000	91.30000	-0.74373	0.0064851	0.20758
				76.80000	15.60000	91.30000	-0.32145	0.0026382	0.10984



GEOTECHNICAL AND ENVIRONMENTAL ASSOCIATES LTD

J20269

7 Greenaway Gardens
Underpinning Sensitivity Analysis

Job No.	Sheet No.	Rev.
Drg. Ref.		
Made by ML	Date 18-Jul-2021	Checked Date

Stage: Ref.	Stage: Name	Disp. Grid: Ref.	Disp. Grid: Name	x	y	z	δx	δy	δz
				[m]	[m]	[m]	[mm]	[mm]	[mm]
				78.40000	15.60000	91.30000	0.0	0.0	0.0
				80.00000	15.60000	91.30000	0.0	0.0	0.0
				0.00000	17.20000	91.30000	0.0	0.0	0.0
				1.60000	17.20000	91.30000	0.0	0.0	0.0
				3.20000	17.20000	91.30000	0.0	0.0	0.0
				4.80000	17.20000	91.30000	0.0	0.0	0.0
				6.40000	17.20000	91.30000	0.0	0.0	0.0
				8.00000	17.20000	91.30000	0.0	0.0	0.0
				9.60000	17.20000	91.30000	0.0	0.0	0.0
				11.20000	17.20000	91.30000	0.0	0.0	0.0
				12.80000	17.20000	91.30000	0.0	0.0	0.0
				14.40000	17.20000	91.30000	0.48000	0.0	0.14384
				16.00000	17.20000	91.30000	1.1200	0.0	0.30605
				17.60000	17.20000	91.30000	1.7600	0.0	0.67040
				19.20000	17.20000	91.30000	2.4000	0.0	1.3842
				20.80000	17.20000	91.30000	3.0400	0.0	2.4709
				22.40000	17.20000	91.30000	3.6800	0.0	3.8306
				24.00000	17.20000	91.30000	4.3200	0.0	5.2395
				25.60000	17.20000	91.30000	4.9600	0.0	6.3501
				27.20000	17.20000	91.30000	5.6000	0.0	6.6915
				28.80000	17.20000	91.30000	6.2400	0.0	5.6688
				30.40000	17.20000	91.30000	Point lies within an excavation.		
				32.00000	17.20000	91.30000	Point lies within an excavation.		
				33.60000	17.20000	91.30000	Point lies within an excavation.		
				35.20000	17.20000	91.30000	Point lies within an excavation.		
				36.80000	17.20000	91.30000	-6.6400	0.0	4.0229
				38.40000	17.20000	91.30000	-6.0000	0.0	6.2551
				40.00000	17.20000	91.30000	-5.3600	0.0	6.6887
				41.60000	17.20000	91.30000	-4.7200	0.0	5.9958
				43.20000	17.20000	91.30000	Point lies within an excavation.		
				44.80000	17.20000	91.30000	Point lies within an excavation.		
				46.40000	17.20000	91.30000	Point lies within an excavation.		
				48.00000	17.20000	91.30000	Point lies within an excavation.		
				49.60000	17.20000	91.30000	-12.888	0.0	7.4727
				51.20000	17.20000	91.30000	-11.608	0.0	9.8567
				52.80000	17.20000	91.30000	-10.328	0.0	11.132
				54.40000	17.20000	91.30000	-9.4480	0.0	11.504
				56.00000	17.20000	91.30000	-8.8080	0.0	11.221
				57.60000	17.20000	91.30000	-8.1680	0.0	10.403
				59.20000	17.20000	91.30000	-7.5280	0.0	9.2325
				60.80000	17.20000	91.30000	-6.8880	0.0	7.8646
				62.40000	17.20000	91.30000	-6.2480	0.0	6.4314
				64.00000	17.20000	91.30000	-5.6080	0.0	5.0399
				65.60000	17.20000	91.30000	-4.9680	0.0	3.7728
				67.20000	17.20000	91.30000	-4.3280	0.0	2.6880
				68.80000	17.20000	91.30000	-3.6880	0.0	1.8190
				70.40000	17.20000	91.30000	-3.0480	0.0	1.1748
				72.00000	17.20000	91.30000	-2.4080	0.0	0.73978
				73.60000	17.20000	91.30000	-1.7680	0.0	0.47374
				75.20000	17.20000	91.30000	-1.1280	0.0	0.31200
				76.80000	17.20000	91.30000	-0.48800	0.0	0.16529
				78.40000	17.20000	91.30000	0.0	0.0	0.0
				80.00000	17.20000	91.30000	0.0	0.0	0.0
				0.00000	18.80000	91.30000	0.0	0.0	0.0
				1.60000	18.80000	91.30000	0.0	0.0	0.0
				3.20000	18.80000	91.30000	0.0	0.0	0.0
				4.80000	18.80000	91.30000	0.0	0.0	0.0
				6.40000	18.80000	91.30000	0.0	0.0	0.0
				8.00000	18.80000	91.30000	0.0	0.0	0.0
				9.60000	18.80000	91.30000	0.0	0.0	0.0
				11.20000	18.80000	91.30000	0.0	0.0	0.0
				12.80000	18.80000	91.30000	0.0	0.0	0.0
				14.40000	18.80000	91.30000	0.45000	0.0	0.067623
				16.00000	18.80000	91.30000	1.0500	0.0	0.13959
				17.60000	18.80000	91.30000	1.6500	0.0	0.30533
				19.20000	18.80000	91.30000	2.2500	0.0	0.63120
				20.80000	18.80000	91.30000	2.8500	0.0	1.1274
				22.40000	18.80000	91.30000	3.4500	0.0	1.7479
				24.00000	18.80000	91.30000	4.1500	0.0	2.4072
				25.60000	18.80000	91.30000	5.2833	0.0	3.0326
				27.20000	18.80000	91.30000	6.4167	0.0	3.5925
				28.80000	18.80000	91.30000	7.5500	0.0	3.9212
				30.40000	18.80000	91.30000	Point lies within an excavation.		
				32.00000	18.80000	91.30000	Point lies within an excavation.		
				33.60000	18.80000	91.30000	0.0	0.0	0.0
				35.20000	18.80000	91.30000	0.0	0.0	0.0
				36.80000	18.80000	91.30000	-0.90470	0.0	0.75012
				38.40000	18.80000	91.30000	-4.2052	0.0	4.5437
				40.00000	18.80000	91.30000	-4.4582	0.0	5.5944
				41.60000	18.80000	91.30000	-4.1692	0.0	5.2848
				43.20000	18.80000	91.30000	Point lies within an excavation.		
				44.80000	18.80000	91.30000	Point lies within an excavation.		
				46.40000	18.80000	91.30000	Point lies within an excavation.		
				48.00000	18.80000	91.30000	Point lies within an excavation.		
				49.60000	18.80000	91.30000	-12.811	0.0	7.4442
				51.20000	18.80000	91.30000	-11.564	0.0	9.8452
				52.80000	18.80000	91.30000	-10.310	0.0	11.127
				54.40000	18.80000	91.30000	-9.4480	0.0	11.504
				56.00000	18.80000	91.30000	-8.8080	0.0	11.221
				57.60000	18.80000	91.30000	-8.1680	0.0	10.403
				59.20000	18.80000	91.30000	-7.5280	0.0	9.2325
				60.80000	18.80000	91.30000	-6.8880	0.0	7.8646
				62.40000	18.80000	91.30000	-6.2480	0.0	6.4314
				64.00000	18.80000	91.30000	-5.6080	0.0	5.0399
				65.60000	18.80000	91.30000	-4.9680	0.0	3.7728
				67.20000	18.80000	91.30000	-4.3280	0.0	2.6880
				68.80000	18.80000	91.30000	-3.6880	0.0	1.8190
				70.40000	18.80000	91.30000	-3.0480	0.0	1.1748
				72.00000	18.80000	91.30000	-2.4080	0.0	0.73978
				73.60000	18.80000	91.30000	-1.7680	0.0	0.47374
				75.20000	18.80000	91.30000	-1.1280	0.0	0.31200
				76.80000	18.80000	91.30000	-0.48800	0.0	0.16529
				78.40000	18.80000	91.30000	0.0	0.0	0.0
				80.00000	18.80000	91.30000	0.0	0.0	0.0
				0.00000	20.40000	91.30000	0.0	0.0	0.0
				1.60000	20.40000	91.30000	0.0	0.0	0.0
				3.20000	20.40000	91.30000	0.0	0.0	0.0
				4.80000	20.40000	91.30000	0.0	0.0	0.0
				6.40000	20.40000	91.30000	0.0	0.0	0.0
				8.00000	20.40000	91.30000	0.0	0.0	0.0
				9.60000	20.40000	91.30000	0.0	0.0	0.0
				11.20000	20.40000	91.30000	0.0	0.0	0.0
				12.80000	20.40000	91.30000	0.0	0.0	0.0
				14.40000	20.40000	91.30000	0.45000	0.0	0.067623
				16.00000	20.40000	91.30000	1.0500	0.0	0.13959
				17.60000	20.40000	91.30000	1.6500	0.0	0.30533
				19.20000	20.40000	91.30000	2.2500	0.0	0.63120
				20.80000	20.40000	91.30000	2.8500	0.0	1.1274
				22.40000	20.40000	91.30000	3.4500	0.0	1.7479
				24.00000	20.40000	91.30000	4.1500	0.0	2.4072
				25.60000	20.40000	91.30000	5.2833	0.0	3.0326
				27.20000	20.40000	91.30000	6.4167	0.0	3.5925
				28.80000	20.40000	91.30000	7.5500	0.0	3.9212
				30.40000	20.40000	91.30000	Point lies within an excavation.		
				32.00000	20.40000	91.30000	Point lies within an excavation.		
				33.60000	20.40000	91.30000	0.0	0.0	0.0
				35.20000	20.40000	91.30000	0.0	0.0	0.0
				36.80000	20.40000	91.30000	-0.29328	0.0	0.33913
				38.40000	20.40000	91.30000	-2.1960	0.0	2.6826
				40.00000	20.40000	91.30000	-3.0160	0.0	3.8576



GEOTECHNICAL AND ENVIRONMENTAL ASSOCIATES LTD

7 Greenaway Gardens
Underpinning Sensitivity Analysis

Job No.	Sheet No.	Rev.
Drg. Ref.		
Made by ML	Date 18-Jul-2021	Checked Date

Stage: Ref.	Stage: Name	Disp. Grid: Ref.	Disp. Grid: Name	x	y	z	δx	δy	δz
				[m]	[m]	[m]	[mm]	[mm]	[mm]
				41.60000	20.40000	91.30000	-3.1721	0.0	3.9415
				43.20000	20.40000	91.30000	Point lies within an excavation.		
				44.80000	20.40000	91.30000	Point lies within an excavation.		
				46.40000	20.40000	91.30000	Point lies within an excavation.		
				48.00000	20.40000	91.30000	Point lies within an excavation.		
				49.60000	20.40000	91.30000	-12.623	0.0	7.3647
				51.20000	20.40000	91.30000	-11.439	0.0	9.8134
				52.80000	20.40000	91.30000	-10.237	0.0	11.103
				54.40000	20.40000	91.30000	-9.4480	0.0	11.504
				56.00000	20.40000	91.30000	-8.8080	0.0	11.221
				57.60000	20.40000	91.30000	-8.1680	0.0	10.403
				59.20000	20.40000	91.30000	-7.5280	0.0	9.2325
				60.80000	20.40000	91.30000	-6.8880	0.0	7.8646
				62.40000	20.40000	91.30000	-6.2480	0.0	6.4314
				64.00000	20.40000	91.30000	-5.6080	0.0	5.0399
				65.60000	20.40000	91.30000	-4.9680	0.0	3.7728
				67.20000	20.40000	91.30000	-4.3280	0.0	2.6880
				68.80000	20.40000	91.30000	-3.6880	0.0	1.8190
				70.40000	20.40000	91.30000	-3.0480	0.0	1.1748
				72.00000	20.40000	91.30000	-2.4080	0.0	0.73978
				73.60000	20.40000	91.30000	-1.7680	0.0	0.47374
				75.20000	20.40000	91.30000	-1.1280	0.0	0.31200
				76.80000	20.40000	91.30000	-0.48800	0.0	0.16529
				78.40000	20.40000	91.30000	0.0	0.0	0.0
				80.00000	20.40000	91.30000	0.0	0.0	0.0
				0.00000	22.00000	91.30000	0.0	0.0	0.0
				1.60000	22.00000	91.30000	0.0	0.0	0.0
				3.20000	22.00000	91.30000	0.0	0.0	0.0
				4.80000	22.00000	91.30000	0.0	0.0	0.0
				6.40000	22.00000	91.30000	0.0	0.0	0.0
				8.00000	22.00000	91.30000	0.0	0.0	0.0
				9.60000	22.00000	91.30000	0.0	0.0	0.0
				11.20000	22.00000	91.30000	0.0	0.0	0.0
				12.80000	22.00000	91.30000	0.0	0.0	0.0
				14.40000	22.00000	91.30000	0.45000	0.0	0.067623
				16.00000	22.00000	91.30000	1.0500	0.0	0.13959
				17.60000	22.00000	91.30000	1.6500	0.0	0.30533
				19.20000	22.00000	91.30000	2.2500	0.0	0.63120
				20.80000	22.00000	91.30000	2.8500	0.0	1.1274
				22.40000	22.00000	91.30000	3.4500	0.0	1.7479
				24.00000	22.00000	91.30000	4.1500	0.0	2.4072
				25.60000	22.00000	91.30000	5.2833	0.0	3.0326
				27.20000	22.00000	91.30000	6.4167	0.0	3.5925
				28.80000	22.00000	91.30000	7.5500	0.0	3.9212
				30.40000	22.00000	91.30000	Point lies within an excavation.		
				32.00000	22.00000	91.30000	Point lies within an excavation.		
				33.60000	22.00000	91.30000	0.0	0.0	0.0
				35.20000	22.00000	91.30000	0.0	0.0	0.0
				36.80000	22.00000	91.30000	-0.15859	0.0	0.20253
				38.40000	22.00000	91.30000	-1.3057	0.0	1.6715
				40.00000	22.00000	91.30000	-2.0326	0.0	2.5560
				41.60000	22.00000	91.30000	-2.3354	0.0	2.7385
				43.20000	22.00000	91.30000	Point lies within an excavation.		
				44.80000	22.00000	91.30000	Point lies within an excavation.		
				46.40000	22.00000	91.30000	Point lies within an excavation.		
				48.00000	22.00000	91.30000	Point lies within an excavation.		
				49.60000	22.00000	91.30000	-12.392	0.0	7.2696
				51.20000	22.00000	91.30000	-11.270	0.0	9.7735
				52.80000	22.00000	91.30000	-10.120	0.0	11.059
				54.40000	22.00000	91.30000	-9.4480	0.0	11.504
				56.00000	22.00000	91.30000	-8.8080	0.0	11.221
				57.60000	22.00000	91.30000	-8.1680	0.0	10.403
				59.20000	22.00000	91.30000	-7.5280	0.0	9.2325
				60.80000	22.00000	91.30000	-6.8880	0.0	7.8646
				62.40000	22.00000	91.30000	-6.2480	0.0	6.4314
				64.00000	22.00000	91.30000	-5.6080	0.0	5.0399
				65.60000	22.00000	91.30000	-4.9680	0.0	3.7728
				67.20000	22.00000	91.30000	-4.3280	0.0	2.6880
				68.80000	22.00000	91.30000	-3.6880	0.0	1.8190
				70.40000	22.00000	91.30000	-3.0480	0.0	1.1748
				72.00000	22.00000	91.30000	-2.4080	0.0	0.73978
				73.60000	22.00000	91.30000	-1.7680	0.0	0.47374
				75.20000	22.00000	91.30000	-1.1280	0.0	0.31200
				76.80000	22.00000	91.30000	-0.48800	0.0	0.16529
				78.40000	22.00000	91.30000	0.0	0.0	0.0
				80.00000	22.00000	91.30000	0.0	0.0	0.0
				0.00000	23.60000	91.30000	0.0	0.0	0.0
				1.60000	23.60000	91.30000	0.0	0.0	0.0
				3.20000	23.60000	91.30000	0.0	0.0	0.0
				4.80000	23.60000	91.30000	0.0	0.0	0.0
				6.40000	23.60000	91.30000	0.0	0.0	0.0
				8.00000	23.60000	91.30000	0.0	0.0	0.0
				9.60000	23.60000	91.30000	0.0	0.0	0.0
				11.20000	23.60000	91.30000	0.0	0.0	0.0
				12.80000	23.60000	91.30000	0.0	0.0	0.0
				14.40000	23.60000	91.30000	0.45000	0.0	0.067623
				16.00000	23.60000	91.30000	1.0500	0.0	0.13959
				17.60000	23.60000	91.30000	1.6500	0.0	0.30533
				19.20000	23.60000	91.30000	2.2500	0.0	0.63120
				20.80000	23.60000	91.30000	2.8500	0.0	1.1274
				22.40000	23.60000	91.30000	3.4500	0.0	1.7479
				24.00000	23.60000	91.30000	4.1500	0.0	2.4072
				25.60000	23.60000	91.30000	5.2833	0.0	3.0326
				27.20000	23.60000	91.30000	6.4167	0.0	3.5925
				28.80000	23.60000	91.30000	7.5500	0.0	3.9212
				30.40000	23.60000	91.30000	Point lies within an excavation.		
				32.00000	23.60000	91.30000	Point lies within an excavation.		
				33.60000	23.60000	91.30000	0.0	0.0	0.0
				35.20000	23.60000	91.30000	0.0	0.0	0.0
				36.80000	23.60000	91.30000	-0.099634	0.0	0.12315
				38.40000	23.60000	91.30000	-0.84726	0.0	1.0304
				40.00000	23.60000	91.30000	-1.3983	0.0	1.6164
				41.60000	23.60000	91.30000	-1.6971	0.0	1.7737
				43.20000	23.60000	91.30000	Point lies within an excavation.		
				44.80000	23.60000	91.30000	Point lies within an excavation.		
				46.40000	23.60000	91.30000	Point lies within an excavation.		
				48.00000	23.60000	91.30000	Point lies within an excavation.		
				49.60000	23.60000	91.30000	-12.139	0.0	7.1818
				51.20000	23.60000	91.30000	-11.074	0.0	9.7287
				52.80000	23.60000	91.30000	-10.088	0.0	11.048
				54.40000	23.60000	91.30000	-9.4480	0.0	11.504
				56.00000	23.60000	91.30000	-8.8080	0.0	11.221
				57.60000	23.60000	91.30000	-8.1680	0.0	10.403
				59.20000	23.60000	91.30000	-7.5280	0.0	9.2325
				60.80000	23.60000	91.30000	-6.8880	0.0	7.8646
				62.40000	23.60000	91.30000	-6.2480	0.0	6.4314
				64.00000	23.60000	91.30000	-5.6080	0.0	5.0399
				65.60000	23.60000	91.30000	-4.9680	0.0	3.7728
				67.20000	23.60000	91.30000	-4.3280	0.0	2.6880
				68.80000	23.60000	91.30000	-3.6880	0.0	1.8190
				70.40000	23.60000	91.30000	-3.0480	0.0	1.1748
				72.00000	23.60000	91.30000	-2.4080	0.0	0.73978
				73.60000	23.60000	91.30000	-1.7680	0.0	0.47374
				75.20000	23.60000	91.30000	-1.1280	0.0	0.31200
				76.80000	23.60000	91.30000	-0.48800	0.0	0.16529
				78.40000	23.60000	91.30000	0.0	0.0	0.0
				80.00000	23.60000	91.30000	0.0	0.0	0.0
				0.00000	25.20000	91.30000	0.0	0.0	0.0
				1.60000	25.20000	91.30000	0.0	0.0	0.0
				3.20000	25.20000	91.30000	0.0	0.0	0.0



GEOTECHNICAL AND ENVIRONMENTAL ASSOCIATES LTD

7 Greenaway Gardens
Underpinning Sensitivity Analysis

Job No.	Sheet No.	Rev.
DJ20269		
Drg. Ref.		
Made by ML	Date 18-Jul-2021	Checked Date

Stage: Ref.	Stage: Name	Disp. Grid: Ref.	Disp. Grid: Name	x	y	z	δx	δy	δz
				[m]	[m]	[m]	[mm]	[mm]	[mm]
				4.80000	25.20000	91.30000	0.0	0.0	0.0
				6.40000	25.20000	91.30000	0.0	0.0	0.0
				8.00000	25.20000	91.30000	0.0	0.0	0.0
				9.60000	25.20000	91.30000	0.0	0.0	0.0
				11.20000	25.20000	91.30000	0.0	0.0	0.0
				12.80000	25.20000	91.30000	0.0	0.0	0.0
				14.40000	25.20000	91.30000	0.45000	0.0	0.067623
				16.00000	25.20000	91.30000	1.0500	0.0	0.13959
				17.60000	25.20000	91.30000	1.6500	0.0	0.30533
				19.20000	25.20000	91.30000	2.2500	0.0	0.63120
				20.80000	25.20000	91.30000	2.8500	0.0	1.1274
				22.40000	25.20000	91.30000	3.4500	0.0	1.7479
				24.00000	25.20000	91.30000	4.1500	0.0	2.4072
				25.60000	25.20000	91.30000	5.2833	0.0	3.0326
				27.20000	25.20000	91.30000	6.4167	0.0	3.5925
				28.80000	25.20000	91.30000	7.5500	0.0	3.9212
				30.40000	25.20000	91.30000	Point lies within an excavation.		
				32.00000	25.20000	91.30000	Point lies within an excavation.		
				33.60000	25.20000	91.30000	0.0	0.0	0.0
				35.20000	25.20000	91.30000	0.0	0.0	0.0
				36.80000	25.20000	91.30000	-0.066564	0.0	0.071957
				38.40000	25.20000	91.30000	-0.57409	0.0	0.60504
				40.00000	25.20000	91.30000	-0.97524	0.0	0.95814
				41.60000	25.20000	91.30000	-1.2212	0.0	1.0597
				43.20000	25.20000	91.30000	Point lies within an excavation.		
				44.80000	25.20000	91.30000	Point lies within an excavation.		
				46.40000	25.20000	91.30000	Point lies within an excavation.		
				48.00000	25.20000	91.30000	Point lies within an excavation.		
				49.60000	25.20000	91.30000	-11.881	0.0	7.1127
				51.20000	25.20000	91.30000	-10.865	0.0	9.6726
				52.80000	25.20000	91.30000	-10.088	0.0	11.048
				54.40000	25.20000	91.30000	-9.4480	0.0	11.504
				56.00000	25.20000	91.30000	-8.8080	0.0	11.221
				57.60000	25.20000	91.30000	-8.1680	0.0	10.403
				59.20000	25.20000	91.30000	-7.5280	0.0	9.2325
				60.80000	25.20000	91.30000	-6.8880	0.0	7.8646
				62.40000	25.20000	91.30000	-6.2480	0.0	6.4314
				64.00000	25.20000	91.30000	-5.6080	0.0	5.0399
				65.60000	25.20000	91.30000	-4.9680	0.0	3.7728
				67.20000	25.20000	91.30000	-4.3280	0.0	2.6880
				68.80000	25.20000	91.30000	-3.6880	0.0	1.8190
				70.40000	25.20000	91.30000	-3.0480	0.0	1.1748
				72.00000	25.20000	91.30000	-2.4080	0.0	0.73978
				73.60000	25.20000	91.30000	-1.7680	0.0	0.47374
				75.20000	25.20000	91.30000	-1.1280	0.0	0.31200
				76.80000	25.20000	91.30000	-0.48800	0.0	0.16529
				78.40000	25.20000	91.30000	0.0	0.0	0.0
				80.00000	25.20000	91.30000	0.0	0.0	0.0
				0.00000	26.80000	91.30000	0.0	0.0	0.0
				1.60000	26.80000	91.30000	0.0	0.0	0.0
				3.20000	26.80000	91.30000	0.0	0.0	0.0
				4.80000	26.80000	91.30000	0.0	0.0	0.0
				6.40000	26.80000	91.30000	0.0	0.0	0.0
				8.00000	26.80000	91.30000	0.0	0.0	0.0
				9.60000	26.80000	91.30000	0.0	0.0	0.0
				11.20000	26.80000	91.30000	0.0	0.0	0.0
				12.80000	26.80000	91.30000	0.24000	0.0	0.084530
				14.40000	26.80000	91.30000	0.88000	0.0	0.23419
				16.00000	26.80000	91.30000	1.5200	0.0	0.47451
				17.60000	26.80000	91.30000	2.1600	0.0	0.98959
				19.20000	26.80000	91.30000	2.8000	0.0	1.8595
				20.80000	26.80000	91.30000	3.4400	0.0	3.0605
				22.40000	26.80000	91.30000	4.0800	0.0	4.4647
				24.00000	26.80000	91.30000	4.7200	0.0	5.8403
				25.60000	26.80000	91.30000	5.3600	0.0	6.8516
				27.20000	26.80000	91.30000	6.0000	0.0	7.0587
				28.80000	26.80000	91.30000	6.6400	0.0	5.9180
				30.40000	26.80000	91.30000	Point lies within an excavation.		
				32.00000	26.80000	91.30000	Point lies within an excavation.		
				33.60000	26.80000	91.30000	Point lies within an excavation.		
				35.20000	26.80000	91.30000	Point lies within an excavation.		
				36.80000	26.80000	91.30000	Point lies within an excavation.		
				38.40000	26.80000	91.30000	Point lies within an excavation.		
				40.00000	26.80000	91.30000	Point lies within an excavation.		
				41.60000	26.80000	91.30000	Point lies within an excavation.		
				43.20000	26.80000	91.30000	Point lies within an excavation.		
				44.80000	26.80000	91.30000	Point lies within an excavation.		
				46.40000	26.80000	91.30000	Point lies within an excavation.		
				48.00000	26.80000	91.30000	Point lies within an excavation.		
				49.60000	26.80000	91.30000	-11.629	0.0	7.0556
				51.20000	26.80000	91.30000	-10.728	0.0	9.6234
				52.80000	26.80000	91.30000	-10.088	0.0	11.048
				54.40000	26.80000	91.30000	-9.4480	0.0	11.504
				56.00000	26.80000	91.30000	-8.8080	0.0	11.221
				57.60000	26.80000	91.30000	-8.1680	0.0	10.403
				59.20000	26.80000	91.30000	-7.5280	0.0	9.2325
				60.80000	26.80000	91.30000	-6.8880	0.0	7.8646
				62.40000	26.80000	91.30000	-6.2480	0.0	6.4314
				64.00000	26.80000	91.30000	-5.6080	0.0	5.0399
				65.60000	26.80000	91.30000	-4.9680	0.0	3.7728
				67.20000	26.80000	91.30000	-4.3280	0.0	2.6880
				68.80000	26.80000	91.30000	-3.6880	0.0	1.8190
				70.40000	26.80000	91.30000	-3.0480	0.0	1.1748
				72.00000	26.80000	91.30000	-2.4080	0.0	0.73978
				73.60000	26.80000	91.30000	-1.7680	0.0	0.47374
				75.20000	26.80000	91.30000	-1.1280	0.0	0.31200
				76.80000	26.80000	91.30000	-0.48800	0.0	0.16529
				78.40000	26.80000	91.30000	0.0	0.0	0.0
				80.00000	26.80000	91.30000	0.0	0.0	0.0
				0.00000	28.40000	91.30000	0.0	0.0	0.0
				1.60000	28.40000	91.30000	0.0	0.0	0.0
				3.20000	28.40000	91.30000	0.0	0.0	0.0
				4.80000	28.40000	91.30000	0.0	0.0	0.0
				6.40000	28.40000	91.30000	0.0	0.0	0.0
				8.00000	28.40000	91.30000	0.0	0.0	0.0
				9.60000	28.40000	91.30000	0.0	0.0	0.0
				11.20000	28.40000	91.30000	0.0	0.0	0.0
				12.80000	28.40000	91.30000	0.24000	0.0	0.084530
				14.40000	28.40000	91.30000	0.88000	0.0	0.23419
				16.00000	28.40000	91.30000	1.5200	0.0	0.47451
				17.60000	28.40000	91.30000	2.1600	0.0	0.98959
				19.20000	28.40000	91.30000	2.8000	0.0	1.8595
				20.80000	28.40000	91.30000	3.4400	0.0	3.0605
				22.40000	28.40000	91.30000	4.0800	0.0	4.4647
				24.00000	28.40000	91.30000	4.7200	0.0	5.8403
				25.60000	28.40000	91.30000	5.3600	0.0	6.8516
				27.20000	28.40000	91.30000	6.0000	0.0	7.0587
				28.80000	28.40000	91.30000	6.6400	0.0	5.9180
				30.40000	28.40000	91.30000	Point lies within an excavation.		
				32.00000	28.40000	91.30000	Point lies within an excavation.		
				33.60000	28.40000	91.30000	Point lies within an excavation.		
				35.20000	28.40000	91.30000	Point lies within an excavation.		
				36.80000	28.40000	91.30000	Point lies within an excavation.		
				38.40000	28.40000	91.30000	Point lies within an excavation.		
				40.00000	28.40000	91.30000	Point lies within an excavation.		
				41.60000	28.40000	91.30000	Point lies within an excavation.		
				43.20000	28.40000	91.30000	Point lies within an excavation.		
				44.80000	28.40000	91.30000	Point lies within an excavation.		
				46.40000	28.40000	91.30000	Point lies within an excavation.		
				48.00000	28.40000	91.30000	Point lies within an excavation.		



GEOTECHNICAL AND ENVIRONMENTAL ASSOCIATES LTD

7 Greenaway Gardens
Underpinning Sensitivity Analysis

Job No.	Sheet No.	Rev.
DJ20269		
Drg. Ref.		
Made by ML	Date 18-Jul-2021	Checked Date

Stage: Ref.	Stage: Name	Disp. Grid: Ref.	Disp. Grid: Name	x	y	z	δx	δy	δz
				[m]	[m]	[m]	[mm]	[mm]	[mm]
				49.60000	28.40000	91.30000	-11.391	0.0	6.9827
				51.20000	28.40000	91.30000	-10.728	0.0	9.6234
				52.80000	28.40000	91.30000	-10.088	0.0	11.048
				54.40000	28.40000	91.30000	-9.4480	0.0	11.504
				56.00000	28.40000	91.30000	-8.8080	0.0	11.221
				57.60000	28.40000	91.30000	-8.1680	0.0	10.403
				59.20000	28.40000	91.30000	-7.5280	0.0	9.2325
				60.80000	28.40000	91.30000	-6.8880	0.0	7.8646
				62.40000	28.40000	91.30000	-6.2480	0.0	6.4314
				64.00000	28.40000	91.30000	-5.6080	0.0	5.0399
				65.60000	28.40000	91.30000	-4.9680	0.0	3.7728
				67.20000	28.40000	91.30000	-4.3280	0.0	2.6880
				68.80000	28.40000	91.30000	-3.6880	0.0	1.8190
				70.40000	28.40000	91.30000	-3.0480	0.0	1.1748
				72.00000	28.40000	91.30000	-2.4080	0.0	0.73978
				73.60000	28.40000	91.30000	-1.7680	0.0	0.47374
				75.20000	28.40000	91.30000	-1.1280	0.0	0.31200
				76.80000	28.40000	91.30000	-0.48800	0.0	0.16529
				78.40000	28.40000	91.30000	0.0	0.0	0.0
				80.00000	28.40000	91.30000	0.0	0.0	0.0
				0.00000	30.00000	91.30000	0.0	0.0	0.0
				1.60000	30.00000	91.30000	0.0	0.0	0.0
				3.20000	30.00000	91.30000	0.0	0.0	0.0
				4.80000	30.00000	91.30000	0.0	0.0	0.0
				6.40000	30.00000	91.30000	0.0	0.0	0.0
				8.00000	30.00000	91.30000	0.0	0.0	0.0
				9.60000	30.00000	91.30000	0.0	0.0	0.0
				11.20000	30.00000	91.30000	0.0	0.0	0.0
				12.80000	30.00000	91.30000	0.24000	0.0	0.084530
				14.40000	30.00000	91.30000	0.88000	0.0	0.23419
				16.00000	30.00000	91.30000	1.52000	0.0	0.47451
				17.60000	30.00000	91.30000	2.16000	0.0	0.98959
				19.20000	30.00000	91.30000	2.80000	0.0	1.8595
				20.80000	30.00000	91.30000	3.44000	0.0	3.0605
				22.40000	30.00000	91.30000	4.08000	0.0	4.4647
				24.00000	30.00000	91.30000	4.72000	0.0	5.8403
				25.60000	30.00000	91.30000	5.36000	0.0	6.8516
				27.20000	30.00000	91.30000	6.00000	0.0	7.0587
				28.80000	30.00000	91.30000	6.64000	0.0	5.9180
				30.40000	30.00000	91.30000	Point lies within an excavation.		
				32.00000	30.00000	91.30000	Point lies within an excavation.		
				33.60000	30.00000	91.30000	Point lies within an excavation.		
				35.20000	30.00000	91.30000	Point lies within an excavation.		
				36.80000	30.00000	91.30000	Point lies within an excavation.		
				38.40000	30.00000	91.30000	Point lies within an excavation.		
				40.00000	30.00000	91.30000	Point lies within an excavation.		
				41.60000	30.00000	91.30000	Point lies within an excavation.		
				43.20000	30.00000	91.30000	Point lies within an excavation.		
				44.80000	30.00000	91.30000	Point lies within an excavation.		
				46.40000	30.00000	91.30000	Point lies within an excavation.		
				48.00000	30.00000	91.30000	Point lies within an excavation.		
				49.60000	30.00000	91.30000	-11.368	0.0	6.9746
				51.20000	30.00000	91.30000	-10.728	0.0	9.6234
				52.80000	30.00000	91.30000	-10.088	0.0	11.048
				54.40000	30.00000	91.30000	-9.4480	0.0	11.504
				56.00000	30.00000	91.30000	-8.8080	0.0	11.221
				57.60000	30.00000	91.30000	-8.1680	0.0	10.403
				59.20000	30.00000	91.30000	-7.5280	0.0	9.2325
				60.80000	30.00000	91.30000	-6.8880	0.0	7.8646
				62.40000	30.00000	91.30000	-6.2480	0.0	6.4314
				64.00000	30.00000	91.30000	-5.6080	0.0	5.0399
				65.60000	30.00000	91.30000	-4.9680	0.0	3.7728
				67.20000	30.00000	91.30000	-4.3280	0.0	2.6880
				68.80000	30.00000	91.30000	-3.6880	0.0	1.8190
				70.40000	30.00000	91.30000	-3.0480	0.0	1.1748
				72.00000	30.00000	91.30000	-2.4080	0.0	0.73978
				73.60000	30.00000	91.30000	-1.7680	0.0	0.47374
				75.20000	30.00000	91.30000	-1.1280	0.0	0.31200
				76.80000	30.00000	91.30000	-0.48800	0.0	0.16529
				78.40000	30.00000	91.30000	0.0	0.0	0.0
				80.00000	30.00000	91.30000	0.0	0.0	0.0
				0.00000	31.60000	91.30000	0.0	0.0	0.0
				1.60000	31.60000	91.30000	0.0	0.0	0.0
				3.20000	31.60000	91.30000	0.0	0.0	0.0
				4.80000	31.60000	91.30000	0.0	0.0	0.0
				6.40000	31.60000	91.30000	0.0	0.0	0.0
				8.00000	31.60000	91.30000	0.0	0.0	0.0
				9.60000	31.60000	91.30000	0.0	0.0	0.0
				11.20000	31.60000	91.30000	0.0	0.0	0.0
				12.80000	31.60000	91.30000	0.24000	0.0	0.084530
				14.40000	31.60000	91.30000	0.88000	0.0	0.23419
				16.00000	31.60000	91.30000	1.52000	0.0	0.47451
				17.60000	31.60000	91.30000	2.16000	0.0	0.98959
				19.20000	31.60000	91.30000	2.80000	0.0	1.8595
				20.80000	31.60000	91.30000	3.44000	0.0	3.0605
				22.40000	31.60000	91.30000	4.08000	0.0	4.4647
				24.00000	31.60000	91.30000	4.72000	0.0	5.8403
				25.60000	31.60000	91.30000	5.36000	0.0	6.8516
				27.20000	31.60000	91.30000	6.00000	0.0	7.0587
				28.80000	31.60000	91.30000	6.64000	0.0	5.9180
				30.40000	31.60000	91.30000	Point lies within an excavation.		
				32.00000	31.60000	91.30000	Point lies within an excavation.		
				33.60000	31.60000	91.30000	Point lies within an excavation.		
				35.20000	31.60000	91.30000	Point lies within an excavation.		
				36.80000	31.60000	91.30000	Point lies within an excavation.		
				38.40000	31.60000	91.30000	Point lies within an excavation.		
				40.00000	31.60000	91.30000	Point lies within an excavation.		
				41.60000	31.60000	91.30000	Point lies within an excavation.		
				43.20000	31.60000	91.30000	Point lies within an excavation.		
				44.80000	31.60000	91.30000	Point lies within an excavation.		
				46.40000	31.60000	91.30000	Point lies within an excavation.		
				48.00000	31.60000	91.30000	Point lies within an excavation.		
				49.60000	31.60000	91.30000	-11.368	0.0	6.9746
				51.20000	31.60000	91.30000	-10.728	0.0	9.6234
				52.80000	31.60000	91.30000	-10.088	0.0	11.048
				54.40000	31.60000	91.30000	-9.4480	0.0	11.504
				56.00000	31.60000	91.30000	-8.8080	0.0	11.221
				57.60000	31.60000	91.30000	-8.1680	0.0	10.403
				59.20000	31.60000	91.30000	-7.5280	0.0	9.2325
				60.80000	31.60000	91.30000	-6.8880	0.0	7.8646
				62.40000	31.60000	91.30000	-6.2480	0.0	6.4314
				64.00000	31.60000	91.30000	-5.6080	0.0	5.0399
				65.60000	31.60000	91.30000	-4.9680	0.0	3.7728
				67.20000	31.60000	91.30000	-4.3280	0.0	2.6880
				68.80000	31.60000	91.30000	-3.6880	0.0	1.8190
				70.40000	31.60000	91.30000	-3.0480	0.0	1.1748
				72.00000	31.60000	91.30000	-2.4080	0.0	0.73978
				73.60000	31.60000	91.30000	-1.7680	0.0	0.47374
				75.20000	31.60000	91.30000	-1.1280	0.0	0.31200
				76.80000	31.60000	91.30000	-0.48800	0.0	0.16529
				78.40000	31.60000	91.30000	0.0	0.0	0.0
				80.00000	31.60000	91.30000	0.0	0.0	0.0
				0.00000	33.20000	91.30000	0.0	0.0	0.0
				1.60000	33.20000	91.30000	0.0	0.0	0.0
				3.20000	33.20000	91.30000	0.0	0.0	0.0
				4.80000	33.20000	91.30000	0.0	0.0	0.0
				6.40000	33.20000	91.30000	0.0	0.0	0.0
				8.00000	33.20000	91.30000	0.0	0.0	0.0
				9.60000	33.20000	91.30000	0.0	0.0	0.0
				11.20000	33.20000	91.30000	0.0	0.0	0.0



GEOTECHNICAL AND ENVIRONMENTAL ASSOCIATES LTD

7 Greenaway Gardens
Underpinning Sensitivity Analysis

Job No.	Sheet No.	Rev.
DJ20269		
Drg. Ref.		
Made by ML	Date 18-Jul-2021	Checked Date

Stage: Ref.	Stage: Name	Disp. Grid: Ref.	Disp. Grid: Name	x	y	z	δx	δy	δz
				[m]	[m]	[m]	[mm]	[mm]	[mm]
				12.80000	33.20000	91.30000	0.24000	0.0	0.084530
				14.40000	33.20000	91.30000	0.88000	0.0	0.23419
				16.00000	33.20000	91.30000	1.52000	0.0	0.47451
				17.60000	33.20000	91.30000	2.16000	0.0	0.98959
				19.20000	33.20000	91.30000	2.80000	0.0	1.85959
				20.80000	33.20000	91.30000	3.44000	0.0	3.0605
				22.40000	33.20000	91.30000	4.08000	0.0	4.4647
				24.00000	33.20000	91.30000	4.72000	0.0	5.8403
				25.60000	33.20000	91.30000	5.36000	0.0	6.8516
				27.20000	33.20000	91.30000	6.00000	0.0	7.0587
				28.80000	33.20000	91.30000	6.64000	0.0	5.9180
				30.40000	33.20000	91.30000	Point lies within an excavation.		
				32.00000	33.20000	91.30000	Point lies within an excavation.		
				33.60000	33.20000	91.30000	Point lies within an excavation.		
				35.20000	33.20000	91.30000	Point lies within an excavation.		
				36.80000	33.20000	91.30000	Point lies within an excavation.		
				38.40000	33.20000	91.30000	Point lies within an excavation.		
				40.00000	33.20000	91.30000	Point lies within an excavation.		
				41.60000	33.20000	91.30000	Point lies within an excavation.		
				43.20000	33.20000	91.30000	Point lies within an excavation.		
				44.80000	33.20000	91.30000	Point lies within an excavation.		
				46.40000	33.20000	91.30000	Point lies within an excavation.		
				48.00000	33.20000	91.30000	Point lies within an excavation.		
				49.60000	33.20000	91.30000	-11.368	0.0	6.9746
				51.20000	33.20000	91.30000	-10.728	0.0	9.6234
				52.80000	33.20000	91.30000	-10.088	0.0	11.048
				54.40000	33.20000	91.30000	-9.4480	0.0	11.504
				56.00000	33.20000	91.30000	-8.8080	0.0	11.221
				57.60000	33.20000	91.30000	-8.1680	0.0	10.403
				59.20000	33.20000	91.30000	-7.5280	0.0	9.2325
				60.80000	33.20000	91.30000	-6.8880	0.0	7.8646
				62.40000	33.20000	91.30000	-6.2480	0.0	6.4314
				64.00000	33.20000	91.30000	-5.6080	0.0	5.0399
				65.60000	33.20000	91.30000	-4.9680	0.0	3.7728
				67.20000	33.20000	91.30000	-4.3280	0.0	2.6880
				68.80000	33.20000	91.30000	-3.6880	0.0	1.8190
				70.40000	33.20000	91.30000	-3.0480	0.0	1.1748
				72.00000	33.20000	91.30000	-2.4080	0.0	0.73978
				73.60000	33.20000	91.30000	-1.7680	0.0	0.47374
				75.20000	33.20000	91.30000	-1.1280	0.0	0.31200
				76.80000	33.20000	91.30000	-0.48800	0.0	0.16529
				78.40000	33.20000	91.30000	0.0	0.0	0.0
				80.00000	33.20000	91.30000	0.0	0.0	0.0
				0.00000	34.80000	91.30000	0.0	0.0	0.0
				1.60000	34.80000	91.30000	0.0	0.0	0.0
				3.20000	34.80000	91.30000	0.0	0.0	0.0
				4.80000	34.80000	91.30000	0.0	0.0	0.0
				6.40000	34.80000	91.30000	0.0	0.0	0.0
				8.00000	34.80000	91.30000	0.0	0.0	0.0
				9.60000	34.80000	91.30000	0.0	0.0	0.0
				11.20000	34.80000	91.30000	0.0	0.0	0.0
				12.80000	34.80000	91.30000	0.24000	0.0	0.084530
				14.40000	34.80000	91.30000	0.88000	0.0	0.23419
				16.00000	34.80000	91.30000	1.52000	0.0	0.47451
				17.60000	34.80000	91.30000	2.16000	0.0	0.98959
				19.20000	34.80000	91.30000	2.80000	0.0	1.85959
				20.80000	34.80000	91.30000	3.44000	0.0	3.0605
				22.40000	34.80000	91.30000	4.08000	0.0	4.4647
				24.00000	34.80000	91.30000	4.72000	0.0	5.8403
				25.60000	34.80000	91.30000	5.36000	0.0	6.8516
				27.20000	34.80000	91.30000	6.00000	0.0	7.0587
				28.80000	34.80000	91.30000	6.64000	0.0	5.9180
				30.40000	34.80000	91.30000	Point lies within an excavation.		
				32.00000	34.80000	91.30000	Point lies within an excavation.		
				33.60000	34.80000	91.30000	Point lies within an excavation.		
				35.20000	34.80000	91.30000	Point lies within an excavation.		
				36.80000	34.80000	91.30000	Point lies within an excavation.		
				38.40000	34.80000	91.30000	Point lies within an excavation.		
				40.00000	34.80000	91.30000	Point lies within an excavation.		
				41.60000	34.80000	91.30000	Point lies within an excavation.		
				43.20000	34.80000	91.30000	Point lies within an excavation.		
				44.80000	34.80000	91.30000	Point lies within an excavation.		
				46.40000	34.80000	91.30000	Point lies within an excavation.		
				48.00000	34.80000	91.30000	Point lies within an excavation.		
				49.60000	34.80000	91.30000	-11.368	0.0	6.9746
				51.20000	34.80000	91.30000	-10.728	0.0	9.6234
				52.80000	34.80000	91.30000	-10.088	0.0	11.048
				54.40000	34.80000	91.30000	-9.4480	0.0	11.504
				56.00000	34.80000	91.30000	-8.8080	0.0	11.221
				57.60000	34.80000	91.30000	-8.1680	0.0	10.403
				59.20000	34.80000	91.30000	-7.5280	0.0	9.2325
				60.80000	34.80000	91.30000	-6.8880	0.0	7.8646
				62.40000	34.80000	91.30000	-6.2480	0.0	6.4314
				64.00000	34.80000	91.30000	-5.6080	0.0	5.0399
				65.60000	34.80000	91.30000	-4.9680	0.0	3.7728
				67.20000	34.80000	91.30000	-4.3280	0.0	2.6880
				68.80000	34.80000	91.30000	-3.6880	0.0	1.8190
				70.40000	34.80000	91.30000	-3.0480	0.0	1.1748
				72.00000	34.80000	91.30000	-2.4080	0.0	0.73978
				73.60000	34.80000	91.30000	-1.7680	0.0	0.47374
				75.20000	34.80000	91.30000	-1.1280	0.0	0.31200
				76.80000	34.80000	91.30000	-0.48800	0.0	0.16529
				78.40000	34.80000	91.30000	0.0	0.0	0.0
				80.00000	34.80000	91.30000	0.0	0.0	0.0
				0.00000	36.40000	91.30000	0.0	0.0	0.0
				1.60000	36.40000	91.30000	0.0	0.0	0.0
				3.20000	36.40000	91.30000	0.0	0.0	0.0
				4.80000	36.40000	91.30000	0.0	0.0	0.0
				6.40000	36.40000	91.30000	0.0	0.0	0.0
				8.00000	36.40000	91.30000	0.0	0.0	0.0
				9.60000	36.40000	91.30000	0.0	0.0	0.0
				11.20000	36.40000	91.30000	0.0	0.0	0.0
				12.80000	36.40000	91.30000	0.24000	0.0	0.084530
				14.40000	36.40000	91.30000	0.88000	0.0	0.23419
				16.00000	36.40000	91.30000	1.52000	0.0	0.47451
				17.60000	36.40000	91.30000	2.16000	0.0	0.98959
				19.20000	36.40000	91.30000	2.80000	0.0	1.85959
				20.80000	36.40000	91.30000	3.44000	0.0	3.0605
				22.40000	36.40000	91.30000	4.08000	0.0	4.4647
				24.00000	36.40000	91.30000	4.72000	0.0	5.8403
				25.60000	36.40000	91.30000	5.36000	0.0	6.8516
				27.20000	36.40000	91.30000	6.00000	0.0	7.0587
				28.80000	36.40000	91.30000	6.64000	0.0	5.9180
				30.40000	36.40000	91.30000	Point lies within an excavation.		
				32.00000	36.40000	91.30000	Point lies within an excavation.		
				33.60000	36.40000	91.30000	Point lies within an excavation.		
				35.20000	36.40000	91.30000	Point lies within an excavation.		
				36.80000	36.40000	91.30000	Point lies within an excavation.		
				38.40000	36.40000	91.30000	Point lies within an excavation.		
				40.00000	36.40000	91.30000	Point lies within an excavation.		
				41.60000	36.40000	91.30000	Point lies within an excavation.		
				43.20000	36.40000	91.30000	Point lies within an excavation.		
				44.80000	36.40000	91.30000	Point lies within an excavation.		
				46.40000	36.40000	91.30000	Point lies within an excavation.		
				48.00000	36.40000	91.30000	Point lies within an excavation.		
				49.60000	36.40000	91.30000	-6.9680	0.0	4.6048
				51.20000	36.40000	91.30000	-6.3280	0.0	6.6808
				52.80000	36.40000	91.30000	-5.6880	0.0	7.0900
				54.40000	36.40000	91.30000	-5.0480	0.0	6.4294
				56.00000	36.40000	91.30000	-4.4080	0.0	5.1920



GEOTECHNICAL AND ENVIRONMENTAL ASSOCIATES LTD

7 Greenaway Gardens
Underpinning Sensitivity Analysis

Job No.	Sheet No.	Rev.
DJ20269		
Drg. Ref.		
Made by ML	Date 18-Jul-2021	Checked Date

Stage: Ref.	Stage: Name	Disp. Grid: Ref.	Disp. Grid: Name	x	y	z	δx	δy	δz
				[m]	[m]	[m]	[mm]	[mm]	[mm]
				57.60000	36.40000	91.30000	-3.7680	0.0	3.7670
				59.20000	36.40000	91.30000	-3.1280	0.0	2.4393
				60.80000	36.40000	91.30000	-2.4880	0.0	1.3902
				62.40000	36.40000	91.30000	-1.8480	0.0	0.69668
				64.00000	36.40000	91.30000	-1.2080	0.0	0.33200
				65.60000	36.40000	91.30000	-0.56800	0.0	0.16531
				67.20000	36.40000	91.30000	0.0	0.0	0.0
				68.80000	36.40000	91.30000	0.0	0.0	0.0
				70.40000	36.40000	91.30000	0.0	0.0	0.0
				72.00000	36.40000	91.30000	0.0	0.0	0.0
				73.60000	36.40000	91.30000	0.0	0.0	0.0
				75.20000	36.40000	91.30000	0.0	0.0	0.0
				76.80000	36.40000	91.30000	0.0	0.0	0.0
				78.40000	36.40000	91.30000	0.0	0.0	0.0
				80.00000	36.40000	91.30000	0.0	0.0	0.0
				0.00000	38.00000	91.30000	0.0	0.0	0.0
				1.60000	38.00000	91.30000	0.0	0.0	0.0
				3.20000	38.00000	91.30000	0.0	0.0	0.0
				4.80000	38.00000	91.30000	0.0	0.0	0.0
				6.40000	38.00000	91.30000	0.0	0.0	0.0
				8.00000	38.00000	91.30000	0.0	0.0	0.0
				9.60000	38.00000	91.30000	0.0	0.0	0.0
				11.20000	38.00000	91.30000	0.0	0.0	0.0
				12.80000	38.00000	91.30000	0.0	0.0	0.0
				14.40000	38.00000	91.30000	0.0	0.0	0.0
				16.00000	38.00000	91.30000	0.0	0.0	0.0
				17.60000	38.00000	91.30000	0.0	0.0	0.0
				19.20000	38.00000	91.30000	0.0	0.0	0.0
				20.80000	38.00000	91.30000	0.30000	0.0	0.088566
				22.40000	38.00000	91.30000	1.1000	0.0	0.11168
				24.00000	38.00000	91.30000	1.9000	0.0	-0.0093348
				25.60000	38.00000	91.30000	2.7000	0.0	0.47873
				27.20000	38.00000	91.30000	3.5000	0.0	1.3843
				28.80000	38.00000	91.30000	4.3000	0.0	1.5712
				30.40000	38.00000	91.30000	Point lies within an excavation.		
				32.00000	38.00000	91.30000	Point lies within an excavation.		
				33.60000	38.00000	91.30000	Point lies within an excavation.		
				35.20000	38.00000	91.30000	Point lies within an excavation.		
				36.80000	38.00000	91.30000	Point lies within an excavation.		
				38.40000	38.00000	91.30000	Point lies within an excavation.		
				40.00000	38.00000	91.30000	Point lies within an excavation.		
				41.60000	38.00000	91.30000	Point lies within an excavation.		
				43.20000	38.00000	91.30000	Point lies within an excavation.		
				44.80000	38.00000	91.30000	Point lies within an excavation.		
				46.40000	38.00000	91.30000	Point lies within an excavation.		
				48.00000	38.00000	91.30000	Point lies within an excavation.		
				49.60000	38.00000	91.30000	-6.9680	0.0	4.6048
				51.20000	38.00000	91.30000	-6.3280	0.0	6.6808
				52.80000	38.00000	91.30000	-5.6880	0.0	7.0900
				54.40000	38.00000	91.30000	-5.0480	0.0	6.4294
				56.00000	38.00000	91.30000	-4.4080	0.0	5.1920
				57.60000	38.00000	91.30000	-3.7680	0.0	3.7670
				59.20000	38.00000	91.30000	-3.1280	0.0	2.4393
				60.80000	38.00000	91.30000	-2.4880	0.0	1.3902
				62.40000	38.00000	91.30000	-1.8480	0.0	0.69668
				64.00000	38.00000	91.30000	-1.2080	0.0	0.33200
				65.60000	38.00000	91.30000	-0.56800	0.0	0.16531
				67.20000	38.00000	91.30000	0.0	0.0	0.0
				68.80000	38.00000	91.30000	0.0	0.0	0.0
				70.40000	38.00000	91.30000	0.0	0.0	0.0
				72.00000	38.00000	91.30000	0.0	0.0	0.0
				73.60000	38.00000	91.30000	0.0	0.0	0.0
				75.20000	38.00000	91.30000	0.0	0.0	0.0
				76.80000	38.00000	91.30000	0.0	0.0	0.0
				78.40000	38.00000	91.30000	0.0	0.0	0.0
				80.00000	38.00000	91.30000	0.0	0.0	0.0
				0.00000	39.60000	91.30000	0.0	0.0	0.0
				1.60000	39.60000	91.30000	0.0	0.0	0.0
				3.20000	39.60000	91.30000	0.0	0.0	0.0
				4.80000	39.60000	91.30000	0.0	0.0	0.0
				6.40000	39.60000	91.30000	0.0	0.0	0.0
				8.00000	39.60000	91.30000	0.0	0.0	0.0
				9.60000	39.60000	91.30000	0.0	0.0	0.0
				11.20000	39.60000	91.30000	0.0	0.0	0.0
				12.80000	39.60000	91.30000	0.0	0.0	0.0
				14.40000	39.60000	91.30000	0.0	0.0	0.0
				16.00000	39.60000	91.30000	0.0	0.0	0.0
				17.60000	39.60000	91.30000	0.0	0.0	0.0
				19.20000	39.60000	91.30000	0.0	0.0	0.0
				20.80000	39.60000	91.30000	0.30000	0.0	0.088566
				22.40000	39.60000	91.30000	1.1000	0.0	0.11168
				24.00000	39.60000	91.30000	1.9000	0.0	-0.0093348
				25.60000	39.60000	91.30000	2.7000	0.0	0.47873
				27.20000	39.60000	91.30000	3.5000	0.0	1.3843
				28.80000	39.60000	91.30000	4.3000	0.0	1.5712
				30.40000	39.60000	91.30000	Point lies within an excavation.		
				32.00000	39.60000	91.30000	Point lies within an excavation.		
				33.60000	39.60000	91.30000	Point lies within an excavation.		
				35.20000	39.60000	91.30000	Point lies within an excavation.		
				36.80000	39.60000	91.30000	Point lies within an excavation.		
				38.40000	39.60000	91.30000	Point lies within an excavation.		
				40.00000	39.60000	91.30000	Point lies within an excavation.		
				41.60000	39.60000	91.30000	Point lies within an excavation.		
				43.20000	39.60000	91.30000	Point lies within an excavation.		
				44.80000	39.60000	91.30000	Point lies within an excavation.		
				46.40000	39.60000	91.30000	Point lies within an excavation.		
				48.00000	39.60000	91.30000	Point lies within an excavation.		
				49.60000	39.60000	91.30000	-6.9680	0.0	4.6048
				51.20000	39.60000	91.30000	-6.3280	0.0	6.6808
				52.80000	39.60000	91.30000	-5.6880	0.0	7.0900
				54.40000	39.60000	91.30000	-5.0480	0.0	6.4294
				56.00000	39.60000	91.30000	-4.4080	0.0	5.1920
				57.60000	39.60000	91.30000	-3.7680	0.0	3.7670
				59.20000	39.60000	91.30000	-3.1280	0.0	2.4393
				60.80000	39.60000	91.30000	-2.4880	0.0	1.3902
				62.40000	39.60000	91.30000	-1.8480	0.0	0.69668
				64.00000	39.60000	91.30000	-1.2080	0.0	0.33200
				65.60000	39.60000	91.30000	-0.56800	0.0	0.16531
				67.20000	39.60000	91.30000	0.0	0.0	0.0
				68.80000	39.60000	91.30000	0.0	0.0	0.0
				70.40000	39.60000	91.30000	0.0	0.0	0.0
				72.00000	39.60000	91.30000	0.0	0.0	0.0
				73.60000	39.60000	91.30000	0.0	0.0	0.0
				75.20000	39.60000	91.30000	0.0	0.0	0.0
				76.80000	39.60000	91.30000	0.0	0.0	0.0
				78.40000	39.60000	91.30000	0.0	0.0	0.0
				80.00000	39.60000	91.30000	0.0	0.0	0.0
				0.00000	41.20000	91.30000	0.0	0.0	0.0
				1.60000	41.20000	91.30000	0.0	0.0	0.0
				3.20000	41.20000	91.30000	0.0	0.0	0.0
				4.80000	41.20000	91.30000	0.0	0.0	0.0
				6.40000	41.20000	91.30000	0.0	0.0	0.0
				8.00000	41.20000	91.30000	0.0	0.0	0.0
				9.60000	41.20000	91.30000	0.0	0.0	0.0
				11.20000	41.20000	91.30000	0.0	0.0	0.0
				12.80000	41.20000	91.30000	0.0	0.0	0.0
				14.40000	41.20000	91.30000	0.0	0.0	0.0
				16.00000	41.20000	91.30000	0.0	0.0	0.0
				17.60000	41.20000	91.30000	0.0	0.0	0.0
				19.20000	41.20000	91.30000	0.0	0.0	0.0



GEOTECHNICAL AND ENVIRONMENTAL ASSOCIATES LTD

7 Greenaway Gardens
Underpinning Sensitivity Analysis

Job No.	Sheet No.	Rev.
DJ20269		
Drg. Ref.		
Made by ML	Date 18-Jul-2021	Checked Date

Stage: Ref.	Stage: Name	Disp. Grid: Ref.	Disp. Grid: Name	x	y	z	δx	δy	δz
				[m]	[m]	[m]	[mm]	[mm]	[mm]
				20.80000	41.20000	91.30000	0.30000	0.0	0.088566
				22.40000	41.20000	91.30000	1.1000	0.0	0.11168
				24.00000	41.20000	91.30000	1.9000	0.0	-0.0093348
				25.60000	41.20000	91.30000	2.7000	0.0	0.47873
				27.20000	41.20000	91.30000	3.5000	0.0	1.3843
				28.80000	41.20000	91.30000	4.3000	0.0	1.5712
				30.40000	41.20000	91.30000	Point lies within an excavation.		
				32.00000	41.20000	91.30000	Point lies within an excavation.		
				33.60000	41.20000	91.30000	Point lies within an excavation.		
				35.20000	41.20000	91.30000	Point lies within an excavation.		
				36.80000	41.20000	91.30000	Point lies within an excavation.		
				38.40000	41.20000	91.30000	Point lies within an excavation.		
				40.00000	41.20000	91.30000	Point lies within an excavation.		
				41.60000	41.20000	91.30000	Point lies within an excavation.		
				43.20000	41.20000	91.30000	Point lies within an excavation.		
				44.80000	41.20000	91.30000	Point lies within an excavation.		
				46.40000	41.20000	91.30000	Point lies within an excavation.		
				48.00000	41.20000	91.30000	Point lies within an excavation.		
				49.60000	41.20000	91.30000	-6.9680	0.0	4.6048
				51.20000	41.20000	91.30000	-6.3280	0.0	6.6808
				52.80000	41.20000	91.30000	-5.6880	0.0	7.0900
				54.40000	41.20000	91.30000	-5.0480	0.0	6.4294
				56.00000	41.20000	91.30000	-4.4080	0.0	5.1920
				57.60000	41.20000	91.30000	-3.7680	0.0	3.7670
				59.20000	41.20000	91.30000	-3.1280	0.0	2.4393
				60.80000	41.20000	91.30000	-2.4880	0.0	1.3902
				62.40000	41.20000	91.30000	-1.8480	0.0	0.69668
				64.00000	41.20000	91.30000	-1.2080	0.0	0.33200
				65.60000	41.20000	91.30000	-0.56800	0.0	0.16531
				67.20000	41.20000	91.30000	0.0	0.0	0.0
				68.80000	41.20000	91.30000	0.0	0.0	0.0
				70.40000	41.20000	91.30000	0.0	0.0	0.0
				72.00000	41.20000	91.30000	0.0	0.0	0.0
				73.60000	41.20000	91.30000	0.0	0.0	0.0
				75.20000	41.20000	91.30000	0.0	0.0	0.0
				76.80000	41.20000	91.30000	0.0	0.0	0.0
				78.40000	41.20000	91.30000	0.0	0.0	0.0
				80.00000	41.20000	91.30000	0.0	0.0	0.0
				0.00000	42.80000	91.30000	0.0	0.0	0.0
				1.60000	42.80000	91.30000	0.0	0.0	0.0
				3.20000	42.80000	91.30000	0.0	0.0	0.0
				4.80000	42.80000	91.30000	0.0	0.0	0.0
				6.40000	42.80000	91.30000	0.0	0.0	0.0
				8.00000	42.80000	91.30000	0.0	0.0	0.0
				9.60000	42.80000	91.30000	0.0	0.0	0.0
				11.20000	42.80000	91.30000	0.0	0.0	0.0
				12.80000	42.80000	91.30000	0.0	0.0	0.0
				14.40000	42.80000	91.30000	0.0	0.0	0.0
				16.00000	42.80000	91.30000	0.0	0.0	0.0
				17.60000	42.80000	91.30000	0.0	0.0	0.0
				19.20000	42.80000	91.30000	0.0	0.0	0.0
				20.80000	42.80000	91.30000	0.30000	0.0	0.088566
				22.40000	42.80000	91.30000	1.1000	0.0	0.11168
				24.00000	42.80000	91.30000	1.9000	0.0	-0.0093348
				25.60000	42.80000	91.30000	2.7000	0.0	0.47873
				27.20000	42.80000	91.30000	3.5000	0.0	1.3843
				28.80000	42.80000	91.30000	4.3000	0.0	1.5712
				30.40000	42.80000	91.30000	Point lies within an excavation.		
				32.00000	42.80000	91.30000	Point lies within an excavation.		
				33.60000	42.80000	91.30000	Point lies within an excavation.		
				35.20000	42.80000	91.30000	Point lies within an excavation.		
				36.80000	42.80000	91.30000	Point lies within an excavation.		
				38.40000	42.80000	91.30000	Point lies within an excavation.		
				40.00000	42.80000	91.30000	Point lies within an excavation.		
				41.60000	42.80000	91.30000	Point lies within an excavation.		
				43.20000	42.80000	91.30000	Point lies within an excavation.		
				44.80000	42.80000	91.30000	Point lies within an excavation.		
				46.40000	42.80000	91.30000	Point lies within an excavation.		
				48.00000	42.80000	91.30000	Point lies within an excavation.		
				49.60000	42.80000	91.30000	-6.9680	0.0	4.6048
				51.20000	42.80000	91.30000	-6.3280	0.0	6.6808
				52.80000	42.80000	91.30000	-5.6880	0.0	7.0900
				54.40000	42.80000	91.30000	-5.0480	0.0	6.4294
				56.00000	42.80000	91.30000	-4.4080	0.0	5.1920
				57.60000	42.80000	91.30000	-3.7680	0.0	3.7670
				59.20000	42.80000	91.30000	-3.1280	0.0	2.4393
				60.80000	42.80000	91.30000	-2.4880	0.0	1.3902
				62.40000	42.80000	91.30000	-1.8480	0.0	0.69668
				64.00000	42.80000	91.30000	-1.2080	0.0	0.33200
				65.60000	42.80000	91.30000	-0.56800	0.0	0.16531
				67.20000	42.80000	91.30000	0.0	0.0	0.0
				68.80000	42.80000	91.30000	0.0	0.0	0.0
				70.40000	42.80000	91.30000	0.0	0.0	0.0
				72.00000	42.80000	91.30000	0.0	0.0	0.0
				73.60000	42.80000	91.30000	0.0	0.0	0.0
				75.20000	42.80000	91.30000	0.0	0.0	0.0
				76.80000	42.80000	91.30000	0.0	0.0	0.0
				78.40000	42.80000	91.30000	0.0	0.0	0.0
				80.00000	42.80000	91.30000	0.0	0.0	0.0
				0.00000	44.40000	91.30000	0.0	0.0	0.0
				1.60000	44.40000	91.30000	0.0	0.0	0.0
				3.20000	44.40000	91.30000	0.0	0.0	0.0
				4.80000	44.40000	91.30000	0.0	0.0	0.0
				6.40000	44.40000	91.30000	0.0	0.0	0.0
				8.00000	44.40000	91.30000	0.0	0.0	0.0
				9.60000	44.40000	91.30000	0.0	0.0	0.0
				11.20000	44.40000	91.30000	0.0	0.0	0.0
				12.80000	44.40000	91.30000	0.24000	0.0	0.084530
				14.40000	44.40000	91.30000	0.88000	0.0	0.23419
				16.00000	44.40000	91.30000	1.5200	0.0	0.47451
				17.60000	44.40000	91.30000	2.1600	0.0	0.98959
				19.20000	44.40000	91.30000	2.8000	0.0	1.8595
				20.80000	44.40000	91.30000	3.4400	0.0	3.0605
				22.40000	44.40000	91.30000	4.0800	0.0	4.4647
				24.00000	44.40000	91.30000	4.7200	0.0	5.8403
				25.60000	44.40000	91.30000	5.3600	0.0	6.8516
				27.20000	44.40000	91.30000	6.0000	0.0	7.0587
				28.80000	44.40000	91.30000	6.6400	0.0	5.9180
				30.40000	44.40000	91.30000	Point lies within an excavation.		
				32.00000	44.40000	91.30000	Point lies within an excavation.		
				33.60000	44.40000	91.30000	Point lies within an excavation.		
				35.20000	44.40000	91.30000	Point lies within an excavation.		
				36.80000	44.40000	91.30000	Point lies within an excavation.		
				38.40000	44.40000	91.30000	Point lies within an excavation.		
				40.00000	44.40000	91.30000	Point lies within an excavation.		
				41.60000	44.40000	91.30000	Point lies within an excavation.		
				43.20000	44.40000	91.30000	Point lies within an excavation.		
				44.80000	44.40000	91.30000	Point lies within an excavation.		
				46.40000	44.40000	91.30000	Point lies within an excavation.		
				48.00000	44.40000	91.30000	Point lies within an excavation.		
				49.60000	44.40000	91.30000	-6.9680	0.0	4.6048
				51.20000	44.40000	91.30000	-6.3280	0.0	6.6808
				52.80000	44.40000	91.30000	-5.6880	0.0	7.0900
				54.40000	44.40000	91.30000	-5.0480	0.0	6.4294
				56.00000	44.40000	91.30000	-4.4080	0.0	5.1920
				57.60000	44.40000	91.30000	-3.7680	0.0	3.7670
				59.20000	44.40000	91.30000	-3.1280	0.0	2.4393
				60.80000	44.40000	91.30000	-2.4880	0.0	1.3902
				62.40000	44.40000	91.30000	-1.8480	0.0	0.69668
				64.00000	44.40000	91.30000	-1.2080	0.0	0.33200



GEOTECHNICAL AND ENVIRONMENTAL ASSOCIATES LTD

7 Greenaway Gardens
Underpinning Sensitivity Analysis

Job No.	Sheet No.	Rev.
DJ20269		
Drg. Ref.		
Made by ML	Date 18-Jul-2021	Checked Date

Stage: Ref.	Stage: Name	Disp. Grid: Ref.	Disp. Grid: Name	x	y	z	δx	δy	δz
				[m]	[m]	[m]	[mm]	[mm]	[mm]
				65.60000	44.40000	91.30000	-0.56800	0.0	0.16531
				67.20000	44.40000	91.30000	0.0	0.0	0.0
				68.80000	44.40000	91.30000	0.0	0.0	0.0
				70.40000	44.40000	91.30000	0.0	0.0	0.0
				72.00000	44.40000	91.30000	0.0	0.0	0.0
				73.60000	44.40000	91.30000	0.0	0.0	0.0
				75.20000	44.40000	91.30000	0.0	0.0	0.0
				76.80000	44.40000	91.30000	0.0	0.0	0.0
				78.40000	44.40000	91.30000	0.0	0.0	0.0
				80.00000	44.40000	91.30000	0.0	0.0	0.0
				0.00000	46.00000	91.30000	0.0	0.0	0.0
				1.60000	46.00000	91.30000	0.0	0.0	0.0
				3.20000	46.00000	91.30000	0.0	0.0	0.0
				4.80000	46.00000	91.30000	0.0	0.0	0.0
				6.40000	46.00000	91.30000	0.0	0.0	0.0
				8.00000	46.00000	91.30000	0.0	0.0	0.0
				9.60000	46.00000	91.30000	0.0	0.0	0.0
				11.20000	46.00000	91.30000	0.0	0.0	0.0
				12.80000	46.00000	91.30000	0.24000	0.0	0.084530
				14.40000	46.00000	91.30000	0.88000	0.0	0.23419
				16.00000	46.00000	91.30000	1.52000	0.0	0.47451
				17.60000	46.00000	91.30000	2.16000	0.0	0.98959
				19.20000	46.00000	91.30000	2.80000	0.0	1.8595
				20.80000	46.00000	91.30000	3.44000	0.0	3.0605
				22.40000	46.00000	91.30000	4.08000	0.0	4.4647
				24.00000	46.00000	91.30000	4.72000	0.0	5.8403
				25.60000	46.00000	91.30000	5.36000	0.0	6.8516
				27.20000	46.00000	91.30000	6.00000	0.0	7.0587
				28.80000	46.00000	91.30000	6.64000	0.0	5.9180
				30.40000	46.00000	91.30000	Point lies within an excavation.		
				32.00000	46.00000	91.30000	Point lies within an excavation.		
				33.60000	46.00000	91.30000	Point lies within an excavation.		
				35.20000	46.00000	91.30000	Point lies within an excavation.		
				36.80000	46.00000	91.30000	Point lies within an excavation.		
				38.40000	46.00000	91.30000	Point lies within an excavation.		
				40.00000	46.00000	91.30000	Point lies within an excavation.		
				41.60000	46.00000	91.30000	Point lies within an excavation.		
				43.20000	46.00000	91.30000	Point lies within an excavation.		
				44.80000	46.00000	91.30000	Point lies within an excavation.		
				46.40000	46.00000	91.30000	Point lies within an excavation.		
				48.00000	46.00000	91.30000	Point lies within an excavation.		
				49.60000	46.00000	91.30000	-6.9680	0.0	4.6048
				51.20000	46.00000	91.30000	-6.3280	0.0	6.6808
				52.80000	46.00000	91.30000	-5.6880	0.0	7.0900
				54.40000	46.00000	91.30000	-5.0480	0.0	6.4294
				56.00000	46.00000	91.30000	-4.4080	0.0	5.1920
				57.60000	46.00000	91.30000	-3.7680	0.0	3.7670
				59.20000	46.00000	91.30000	-3.1280	0.0	2.4393
				60.80000	46.00000	91.30000	-2.4880	0.0	1.3902
				62.40000	46.00000	91.30000	-1.8480	0.0	0.69668
				64.00000	46.00000	91.30000	-1.2080	0.0	0.33200
				65.60000	46.00000	91.30000	-0.56800	0.0	0.16531
				67.20000	46.00000	91.30000	0.0	0.0	0.0
				68.80000	46.00000	91.30000	0.0	0.0	0.0
				70.40000	46.00000	91.30000	0.0	0.0	0.0
				72.00000	46.00000	91.30000	0.0	0.0	0.0
				73.60000	46.00000	91.30000	0.0	0.0	0.0
				75.20000	46.00000	91.30000	0.0	0.0	0.0
				76.80000	46.00000	91.30000	0.0	0.0	0.0
				78.40000	46.00000	91.30000	0.0	0.0	0.0
				80.00000	46.00000	91.30000	0.0	0.0	0.0
				0.00000	47.60000	91.30000	0.0	0.0	0.0
				1.60000	47.60000	91.30000	0.0	0.0	0.0
				3.20000	47.60000	91.30000	0.0	0.0	0.0
				4.80000	47.60000	91.30000	0.0	0.0	0.0
				6.40000	47.60000	91.30000	0.0	0.0	0.0
				8.00000	47.60000	91.30000	0.0	0.0	0.0
				9.60000	47.60000	91.30000	0.0	0.0	0.0
				11.20000	47.60000	91.30000	0.0	0.0	0.0
				12.80000	47.60000	91.30000	0.24000	0.0	0.084530
				14.40000	47.60000	91.30000	0.88000	0.0	0.23419
				16.00000	47.60000	91.30000	1.52000	0.0	0.47451
				17.60000	47.60000	91.30000	2.16000	0.0	0.98959
				19.20000	47.60000	91.30000	2.80000	0.0	1.8595
				20.80000	47.60000	91.30000	3.44000	0.0	3.0605
				22.40000	47.60000	91.30000	4.08000	0.0	4.4647
				24.00000	47.60000	91.30000	4.72000	0.0	5.8403
				25.60000	47.60000	91.30000	5.36000	0.0	6.8516
				27.20000	47.60000	91.30000	6.00000	0.0	7.0587
				28.80000	47.60000	91.30000	6.64000	0.0	5.9180
				30.40000	47.60000	91.30000	Point lies within an excavation.		
				32.00000	47.60000	91.30000	Point lies within an excavation.		
				33.60000	47.60000	91.30000	Point lies within an excavation.		
				35.20000	47.60000	91.30000	Point lies within an excavation.		
				36.80000	47.60000	91.30000	Point lies within an excavation.		
				38.40000	47.60000	91.30000	Point lies within an excavation.		
				40.00000	47.60000	91.30000	Point lies within an excavation.		
				41.60000	47.60000	91.30000	Point lies within an excavation.		
				43.20000	47.60000	91.30000	Point lies within an excavation.		
				44.80000	47.60000	91.30000	Point lies within an excavation.		
				46.40000	47.60000	91.30000	Point lies within an excavation.		
				48.00000	47.60000	91.30000	Point lies within an excavation.		
				49.60000	47.60000	91.30000	-6.9680	0.0	4.6048
				51.20000	47.60000	91.30000	-6.3280	0.0	6.6808
				52.80000	47.60000	91.30000	-5.6880	0.0	7.0900
				54.40000	47.60000	91.30000	-5.0480	0.0	6.4294
				56.00000	47.60000	91.30000	-4.4080	0.0	5.1920
				57.60000	47.60000	91.30000	-3.7680	0.0	3.7670
				59.20000	47.60000	91.30000	-3.1280	0.0	2.4393
				60.80000	47.60000	91.30000	-2.4880	0.0	1.3902
				62.40000	47.60000	91.30000	-1.8480	0.0	0.69668
				64.00000	47.60000	91.30000	-1.2080	0.0	0.33200
				65.60000	47.60000	91.30000	-0.56800	0.0	0.16531
				67.20000	47.60000	91.30000	0.0	0.0	0.0
				68.80000	47.60000	91.30000	0.0	0.0	0.0
				70.40000	47.60000	91.30000	0.0	0.0	0.0
				72.00000	47.60000	91.30000	0.0	0.0	0.0
				73.60000	47.60000	91.30000	0.0	0.0	0.0
				75.20000	47.60000	91.30000	0.0	0.0	0.0
				76.80000	47.60000	91.30000	0.0	0.0	0.0
				78.40000	47.60000	91.30000	0.0	0.0	0.0
				80.00000	47.60000	91.30000	0.0	0.0	0.0
				0.00000	49.20000	91.30000	0.0	0.0	0.0
				1.60000	49.20000	91.30000	0.0	0.0	0.0
				3.20000	49.20000	91.30000	0.0	0.0	0.0
				4.80000	49.20000	91.30000	0.0	0.0	0.0
				6.40000	49.20000	91.30000	0.0	0.0	0.0
				8.00000	49.20000	91.30000	0.0	0.0	0.0
				9.60000	49.20000	91.30000	0.0	0.0	0.0
				11.20000	49.20000	91.30000	0.0	0.0	0.0
				12.80000	49.20000	91.30000	0.24000	0.0	0.084530
				14.40000	49.20000	91.30000	0.88000	0.0	0.23419
				16.00000	49.20000	91.30000	1.52000	0.0	0.47451
				17.60000	49.20000	91.30000	2.16000	0.0	0.98959
				19.20000	49.20000	91.30000	2.80000	0.0	1.8595
				20.80000	49.20000	91.30000	3.44000	0.0	3.0605
				22.40000	49.20000	91.30000	4.08000	0.0	4.4647
				24.00000	49.20000	91.30000	4.72000	0.0	5.8403
				25.60000	49.20000	91.30000	5.36000	0.0	6.8516
				27.20000	49.20000	91.30000	6.00000	0.0	7.0587



GEOTECHNICAL AND ENVIRONMENTAL ASSOCIATES LTD

7 Greenaway Gardens
Underpinning Sensitivity Analysis

Job No.	Sheet No.	Rev.
DJ20269		
Drg. Ref.		
Made by ML	Date 18-Jul-2021	Checked Date

Stage: Ref.	Stage: Name	Disp. Grid: Ref.	Disp. Grid: Name	x	y	z	δx	δy	δz
				[m]	[m]	[m]	[mm]	[mm]	[mm]
				28.80000	49.20000	91.30000	6.6400	0.0	5.9180
				30.40000	49.20000	91.30000	Point lies within an excavation.		
				32.00000	49.20000	91.30000	Point lies within an excavation.		
				33.60000	49.20000	91.30000	Point lies within an excavation.		
				35.20000	49.20000	91.30000	Point lies within an excavation.		
				36.80000	49.20000	91.30000	Point lies within an excavation.		
				38.40000	49.20000	91.30000	Point lies within an excavation.		
				40.00000	49.20000	91.30000	Point lies within an excavation.		
				41.60000	49.20000	91.30000	Point lies within an excavation.		
				43.20000	49.20000	91.30000	Point lies within an excavation.		
				44.80000	49.20000	91.30000	Point lies within an excavation.		
				46.40000	49.20000	91.30000	Point lies within an excavation.		
				48.00000	49.20000	91.30000	Point lies within an excavation.		
				49.60000	49.20000	91.30000	-6.9680	0.0	4.6048
				51.20000	49.20000	91.30000	-6.3280	0.0	6.6808
				52.80000	49.20000	91.30000	-5.6880	0.0	7.0900
				54.40000	49.20000	91.30000	-5.0480	0.0	6.4294
				56.00000	49.20000	91.30000	-4.4080	0.0	5.1920
				57.60000	49.20000	91.30000	-3.7680	0.0	3.7670
				59.20000	49.20000	91.30000	-3.1280	0.0	2.4393
				60.80000	49.20000	91.30000	-2.4880	0.0	1.3902
				62.40000	49.20000	91.30000	-1.8480	0.0	0.6968
				64.00000	49.20000	91.30000	-1.2080	0.0	0.33200
				65.60000	49.20000	91.30000	-0.56800	0.0	0.16531
				67.20000	49.20000	91.30000	0.0	0.0	0.0
				68.80000	49.20000	91.30000	0.0	0.0	0.0
				70.40000	49.20000	91.30000	0.0	0.0	0.0
				72.00000	49.20000	91.30000	0.0	0.0	0.0
				73.60000	49.20000	91.30000	0.0	0.0	0.0
				75.20000	49.20000	91.30000	0.0	0.0	0.0
				76.80000	49.20000	91.30000	0.0	0.0	0.0
				78.40000	49.20000	91.30000	0.0	0.0	0.0
				80.00000	49.20000	91.30000	0.0	0.0	0.0
				0.00000	50.80000	91.30000	0.0	0.0	0.0
				1.60000	50.80000	91.30000	0.0	0.0	0.0
				3.20000	50.80000	91.30000	0.0	0.0	0.0
				4.80000	50.80000	91.30000	0.0	0.0	0.0
				6.40000	50.80000	91.30000	0.0	0.0	0.0
				8.00000	50.80000	91.30000	0.0	0.0	0.0
				9.60000	50.80000	91.30000	0.0	0.0	0.0
				11.20000	50.80000	91.30000	0.0	0.0	0.0
				12.80000	50.80000	91.30000	0.15004	-0.0064512	0.054310
				14.40000	50.80000	91.30000	0.56022	-0.026660	0.15269
				16.00000	50.80000	91.30000	0.96616	-0.051472	0.30798
				17.60000	50.80000	91.30000	1.3662	-0.082660	0.64020
				19.20000	50.80000	91.30000	1.7578	-0.12304	1.1997
				20.80000	50.80000	91.30000	2.1366	-0.17736	1.9670
				22.40000	50.80000	91.30000	2.4945	-0.25433	2.8695
				24.00000	50.80000	91.30000	2.8151	-0.38110	3.7452
				25.60000	50.80000	91.30000	3.0591	-0.61940	4.3709
				27.20000	50.80000	91.30000	3.1037	-1.1269	4.4752
				28.80000	50.80000	91.30000	2.3265	-2.7562	3.8233
				30.40000	50.80000	91.30000	0.0	-7.8846	4.1037
				32.00000	50.80000	91.30000	0.0	-8.0470	4.2652
				33.60000	50.80000	91.30000	0.0	-8.2097	4.4267
				35.20000	50.80000	91.30000	0.0	-8.3727	4.5882
				36.80000	50.80000	91.30000	0.0	-8.5358	4.7497
				38.40000	50.80000	91.30000	0.0	-8.6991	4.9112
				40.00000	50.80000	91.30000	0.0	-8.8625	5.0727
				41.60000	50.80000	91.30000	0.0	-9.0260	5.2342
				43.20000	50.80000	91.30000	0.0	-9.1896	5.3957
				44.80000	50.80000	91.30000	0.0	-9.3533	5.5572
				46.40000	50.80000	91.30000	0.0	-9.5171	5.7187
				48.00000	50.80000	91.30000	0.0	-9.6809	5.8802
				49.60000	50.80000	91.30000	-0.95501	-5.1816	4.4002
				51.20000	50.80000	91.30000	-2.9115	-1.4243	4.3353
				52.80000	50.80000	91.30000	-3.1227	-0.69897	4.5532
				54.40000	50.80000	91.30000	-2.9541	-0.41100	4.1603
				56.00000	50.80000	91.30000	-2.6651	-0.26098	3.3917
				57.60000	50.80000	91.30000	-2.3233	-0.17075	2.4863
				59.20000	50.80000	91.30000	-1.9539	0.11130	1.6304
				60.80000	50.80000	91.30000	-1.5682	-0.069467	0.94579
				62.40000	50.80000	91.30000	-1.1721	-0.038418	0.48693
				64.00000	50.80000	91.30000	-0.76888	-0.019353	0.23954
				65.60000	50.80000	91.30000	-0.36073	-0.0081581	0.12023
				67.20000	50.80000	91.30000	0.0	0.0	0.0034094
				68.80000	50.80000	91.30000	0.0	0.0	0.0
				70.40000	50.80000	91.30000	0.0	0.0	0.0
				72.00000	50.80000	91.30000	0.0	0.0	0.0
				73.60000	50.80000	91.30000	0.0	0.0	0.0
				75.20000	50.80000	91.30000	0.0	0.0	0.0
				76.80000	50.80000	91.30000	0.0	0.0	0.0
				78.40000	50.80000	91.30000	0.0	0.0	0.0
				80.00000	50.80000	91.30000	0.0	0.0	0.0
				0.00000	52.40000	91.30000	0.0	0.0	0.0
				1.60000	52.40000	91.30000	0.0	0.0	0.0
				3.20000	52.40000	91.30000	0.0	0.0	0.0
				4.80000	52.40000	91.30000	0.0	0.0	0.0
				6.40000	52.40000	91.30000	0.0	0.0	0.0
				8.00000	52.40000	91.30000	0.0	0.0	0.0
				9.60000	52.40000	91.30000	0.0	0.0	0.0
				11.20000	52.40000	91.30000	0.0	0.0	0.0
				12.80000	52.40000	91.30000	0.10329	-0.014343	0.040746
				14.40000	52.40000	91.30000	0.47457	-0.073485	0.13734
				16.00000	52.40000	91.30000	0.83308	-0.14574	0.27108
				17.60000	52.40000	91.30000	1.1741	0.23596	0.55741
				19.20000	52.40000	91.30000	1.4903	-0.35167	1.0430
				20.80000	52.40000	91.30000	1.7697	-0.50516	1.7065
				22.40000	52.40000	91.30000	1.9913	-0.71782	2.4962
				24.00000	52.40000	91.30000	2.1157	-1.0393	3.2709
				25.60000	52.40000	91.30000	2.0613	-1.6210	3.8277
				27.20000	52.40000	91.30000	1.6430	-2.6508	3.9848
				28.80000	52.40000	91.30000	0.89239	-4.5874	4.1743
				30.40000	52.40000	91.30000	0.0	-6.7326	4.5001
				32.00000	52.40000	91.30000	0.0	-6.8818	4.6616
				33.60000	52.40000	91.30000	0.0	-7.0329	4.8231
				35.20000	52.40000	91.30000	0.0	-7.1858	4.9846
				36.80000	52.40000	91.30000	0.0	-7.3399	5.1461
				38.40000	52.40000	91.30000	0.0	-7.4953	5.3076
				40.00000	52.40000	91.30000	0.0	-7.6515	5.4691
				41.60000	52.40000	91.30000	0.0	-7.8086	5.6306
				43.20000	52.40000	91.30000	0.0	-7.9664	5.7921
				44.80000	52.40000	91.30000	0.0	-8.1248	5.9536
				46.40000	52.40000	91.30000	0.0	-8.2838	6.1151
				48.00000	52.40000	91.30000	0.0	-8.4431	6.2766
				49.60000	52.40000	91.30000	-0.30730	-5.8788	5.1126
				51.20000	52.40000	91.30000	-1.2901	-3.0797	4.2739
				52.80000	52.40000	91.30000	-1.9112	-1.7547	4.1055
				54.40000	52.40000	91.30000	-2.1183	-1.1032	3.7496
				56.00000	52.40000	91.30000	-2.0709	-0.72163	3.0899
				57.60000	52.40000	91.30000	-1.8923	-0.47885	2.2998
				59.20000	52.40000	91.30000	-1.6391	-0.31377	1.5389
				60.80000	52.40000	91.30000	-1.3399	-0.19528	0.92003
				62.40000	52.40000	91.30000	-1.0104	-0.10611	0.49711
				64.00000	52.40000	91.30000	-0.68015	-0.054310	0.25955
				65.60000	52.40000	91.30000	-0.29494	-0.021623	0.13003
				67.20000	52.40000	91.30000	0.0	0.0	0.0077809
				68.80000	52.40000	91.30000	0.0	0.0	0.0
				70.40000	52.40000	91.30000	0.0	0.0	0.0
				72.00000	52.40000	91.30000	0.0	0.0	0.0



GEOTECHNICAL AND ENVIRONMENTAL ASSOCIATES LTD

7 Greenaway Gardens
Underpinning Sensitivity Analysis

Job No.	Sheet No.	Rev.
DJ20269		
Drg. Ref.		
Made by ML	Date 18-Jul-2021	Checked Date

Stage: Ref.	Stage: Name	Disp. Grid: Ref.	Disp. Grid: Name	x	y	z	δx	δy	δz
				[m]	[m]	[m]	[mm]	[mm]	[mm]
				73.60000	52.40000	91.30000	0.0	0.0	0.0
				75.20000	52.40000	91.30000	0.0	0.0	0.0
				76.80000	52.40000	91.30000	0.0	0.0	0.0
				78.40000	52.40000	91.30000	0.0	0.0	0.0
				80.00000	52.40000	91.30000	0.0	0.0	0.0
				0.00000	54.00000	91.30000	0.0	0.0	0.0
				1.60000	54.00000	91.30000	0.0	0.0	0.0
				3.20000	54.00000	91.30000	0.0	0.0	0.0
				4.80000	54.00000	91.30000	0.0	0.0	0.0
				6.40000	54.00000	91.30000	0.0	0.0	0.0
				8.00000	54.00000	91.30000	0.0	0.0	0.0
				9.60000	54.00000	91.30000	0.0	0.0	0.0
				11.20000	54.00000	91.30000	0.0	0.0	0.0
				12.80000	54.00000	91.30000	0.030898	-0.0076919	0.013266
				14.40000	54.00000	91.30000	0.36333	-0.10159	0.11511
				16.00000	54.00000	91.30000	0.67540	-0.21525	0.22050
				17.60000	54.00000	91.30000	0.96014	-0.35540	0.44332
				19.20000	54.00000	91.30000	1.2071	-0.53205	0.83116
				20.80000	54.00000	91.30000	1.4004	-0.76058	1.3676
				22.40000	54.00000	91.30000	1.5141	-1.0654	1.9962
				24.00000	54.00000	91.30000	1.5060	-1.4864	2.6597
				25.60000	54.00000	91.30000	1.3060	-2.1490	3.1584
				27.20000	54.00000	91.30000	1.0045	-3.1617	3.6190
				28.80000	54.00000	91.30000	0.50557	-4.5473	3.9924
				30.40000	54.00000	91.30000	0.0	-5.7198	4.2135
				32.00000	54.00000	91.30000	0.0	-5.8500	4.3750
				33.60000	54.00000	91.30000	0.0	-5.9841	4.5365
				35.20000	54.00000	91.30000	0.0	-6.1214	4.6980
				36.80000	54.00000	91.30000	0.0	-6.2615	4.8595
				38.40000	54.00000	91.30000	0.0	-6.4040	5.0210
				40.00000	54.00000	91.30000	0.0	-6.5486	5.1825
				41.60000	54.00000	91.30000	0.0	-6.6950	5.3440
				43.20000	54.00000	91.30000	0.0	-6.8430	5.5055
				44.80000	54.00000	91.30000	0.0	-6.9924	5.6670
				46.40000	54.00000	91.30000	0.0	-7.1430	5.8285
				48.00000	54.00000	91.30000	0.0	-7.2947	5.9900
				49.60000	54.00000	91.30000	-0.16621	-5.2967	4.9275
				51.20000	54.00000	91.30000	-0.78051	-3.6001	4.3191
				52.80000	54.00000	91.30000	-1.1556	-2.2789	3.6861
				54.40000	54.00000	91.30000	-1.4333	-1.5133	3.2417
				56.00000	54.00000	91.30000	-1.5288	-1.0328	2.6795
				57.60000	54.00000	91.30000	-1.4707	-0.70012	2.0125
				59.20000	54.00000	91.30000	-1.3142	-0.46178	1.3672
				60.80000	54.00000	91.30000	-1.0923	-0.28459	0.83899
				62.40000	54.00000	91.30000	-0.82530	-0.14786	0.47403
				64.00000	54.00000	91.30000	-0.52618	-0.078503	0.26043
				65.60000	54.00000	91.30000	-0.20347	-0.026836	0.12325
				67.20000	54.00000	91.30000	0.0	0.0	0.0050290
				68.80000	54.00000	91.30000	0.0	0.0	0.0
				70.40000	54.00000	91.30000	0.0	0.0	0.0
				72.00000	54.00000	91.30000	0.0	0.0	0.0
				73.60000	54.00000	91.30000	0.0	0.0	0.0
				75.20000	54.00000	91.30000	0.0	0.0	0.0
				76.80000	54.00000	91.30000	0.0	0.0	0.0
				78.40000	54.00000	91.30000	0.0	0.0	0.0
				80.00000	54.00000	91.30000	0.0	0.0	0.0
				0.00000	55.60000	91.30000	0.0	0.0	0.0
				1.60000	55.60000	91.30000	0.0	0.0	0.0
				3.20000	55.60000	91.30000	0.0	0.0	0.0
				4.80000	55.60000	91.30000	0.0	0.0	0.0
				6.40000	55.60000	91.30000	0.0	0.0	0.0
				8.00000	55.60000	91.30000	0.0	0.0	0.0
				9.60000	55.60000	91.30000	0.0	0.0	0.0
				11.20000	55.60000	91.30000	0.0	0.0	0.0
				12.80000	55.60000	91.30000	0.0	0.0	0.0
				14.40000	55.60000	91.30000	0.23805	-0.10082	0.087367
				16.00000	55.60000	91.30000	0.50786	-0.24722	0.16825
				17.60000	55.60000	91.30000	0.74346	-0.42473	0.32327
				19.20000	55.60000	91.30000	0.93351	-0.64345	0.60515
				20.80000	55.60000	91.30000	1.0618	-0.91763	1.0079
				22.40000	55.60000	91.30000	1.1049	-1.2673	1.4740
				24.00000	55.60000	91.30000	1.0300	-1.7197	1.9737
				25.60000	55.60000	91.30000	0.90545	-2.3066	2.5278
				27.20000	55.60000	91.30000	0.68119	-3.1021	3.0138
				28.80000	55.60000	91.30000	0.32449	-4.0659	3.3450
				30.40000	55.60000	91.30000	0.0	-4.7958	3.5031
				32.00000	55.60000	91.30000	0.0	-4.9093	3.6646
				33.60000	55.60000	91.30000	0.0	-5.0268	3.8261
				35.20000	55.60000	91.30000	0.0	-5.1480	3.9876
				36.80000	55.60000	91.30000	0.0	-5.2729	4.1491
				38.40000	55.60000	91.30000	0.0	-5.4010	4.3106
				40.00000	55.60000	91.30000	0.0	-5.5321	4.4721
				41.60000	55.60000	91.30000	0.0	-5.6659	4.6336
				43.20000	55.60000	91.30000	0.0	-5.8021	4.7951
				44.80000	55.60000	91.30000	0.0	-5.9404	4.9566
				46.40000	55.60000	91.30000	0.0	-6.0807	5.1181
				48.00000	55.60000	91.30000	0.0	-6.2227	5.2796
				49.60000	55.60000	91.30000	-0.10513	-4.5743	4.3913
				51.20000	55.60000	91.30000	-0.51321	-3.4755	3.9327
				52.80000	55.60000	91.30000	-0.80776	-2.4732	3.3717
				54.40000	55.60000	91.30000	-0.96673	-1.6831	2.7548
				56.00000	55.60000	91.30000	-1.0837	-1.1716	2.2278
				57.60000	55.60000	91.30000	-1.0963	-0.81000	1.6810
				59.20000	55.60000	91.30000	-1.0082	-0.53484	1.1561
				60.80000	55.60000	91.30000	-0.84744	-0.32115	0.72736
				62.40000	55.60000	91.30000	-0.63350	-0.16689	0.42880
				64.00000	55.60000	91.30000	-0.38004	-0.086233	0.24267
				65.60000	55.60000	91.30000	-0.096631	-0.019236	0.092831
				67.20000	55.60000	91.30000	0.0	0.0	0.0
				68.80000	55.60000	91.30000	0.0	0.0	0.0
				70.40000	55.60000	91.30000	0.0	0.0	0.0
				72.00000	55.60000	91.30000	0.0	0.0	0.0
				73.60000	55.60000	91.30000	0.0	0.0	0.0
				75.20000	55.60000	91.30000	0.0	0.0	0.0
				76.80000	55.60000	91.30000	0.0	0.0	0.0
				78.40000	55.60000	91.30000	0.0	0.0	0.0
				80.00000	55.60000	91.30000	0.0	0.0	0.0
				0.00000	57.20000	91.30000	0.0	0.0	0.0
				1.60000	57.20000	91.30000	0.0	0.0	0.0
				3.20000	57.20000	91.30000	0.0	0.0	0.0
				4.80000	57.20000	91.30000	0.0	0.0	0.0
				6.40000	57.20000	91.30000	0.0	0.0	0.0
				8.00000	57.20000	91.30000	0.0	0.0	0.0
				9.60000	57.20000	91.30000	0.0	0.0	0.0
				11.20000	57.20000	91.30000	0.0	0.0	0.0
				12.80000	57.20000	91.30000	0.0	0.0	0.0
				14.40000	57.20000	91.30000	0.10857	-0.063859	0.049955
				16.00000	57.20000	91.30000	0.34228	-0.23327	0.12248
				17.60000	57.20000	91.30000	0.53813	-0.43469	0.21937
				19.20000	57.20000	91.30000	0.68552	-0.67661	0.40183
				20.80000	57.20000	91.30000	0.77055	-0.96981	0.67763
				22.40000	57.20000	91.30000	0.77547	-1.3273	1.0099
				24.00000	57.20000	91.30000	0.74549	-1.7626	1.3880
				25.60000	57.20000	91.30000	0.65387	-2.2847	1.8123
				27.20000	57.20000	91.30000	0.47576	-2.8860	2.2103
				28.80000	57.20000	91.30000	0.22080	-3.5238	2.4680
				30.40000	57.20000	91.30000	0.0	-3.9750	2.5809
				32.00000	57.20000	91.30000	0.0	-4.0171	2.7424
				33.60000	57.20000	91.30000	0.0	-4.1246	2.9039
				35.20000	57.20000	91.30000	0.0	-4.2343	3.0654



GEOTECHNICAL AND ENVIRONMENTAL ASSOCIATES LTD

7 Greenaway Gardens
Underpinning Sensitivity Analysis

Job No.	Sheet No.	Rev.
DJ20269		
Drg. Ref.		
Made by ML	Date 18-Jul-2021	Checked Date

Stage: Ref.	Stage: Name	Disp. Grid: Ref.	Disp. Grid: Name	x	y	z	δx	δy	δz
				[m]	[m]	[m]	[mm]	[mm]	[mm]
				36.80000	57.20000	91.30000	0.0	-4.3468	3.2269
				38.40000	57.20000	91.30000	0.0	-4.4622	3.3884
				40.00000	57.20000	91.30000	0.0	-4.5807	3.5499
				41.60000	57.20000	91.30000	0.0	-4.7022	3.7114
				43.20000	57.20000	91.30000	0.0	-4.8265	3.8729
				44.80000	57.20000	91.30000	0.0	-4.9534	4.0344
				46.40000	57.20000	91.30000	0.0	-5.0827	4.1959
				48.00000	57.20000	91.30000	0.0	-5.2142	4.3574
				49.60000	57.20000	91.30000	-0.071097	-3.8423	3.6920
				51.20000	57.20000	91.30000	-0.35306	-3.0986	3.3389
				52.80000	57.20000	91.30000	-0.57335	-2.3565	2.8749
				54.40000	57.20000	91.30000	-0.70912	-1.7061	2.3492
				56.00000	57.20000	91.30000	-0.76077	-1.1784	1.8118
				57.60000	57.20000	91.30000	-0.78435	-0.80931	1.3518
				59.20000	57.20000	91.30000	-0.73792	-0.52676	0.94032
				60.80000	57.20000	91.30000	-0.62051	-0.29688	0.60674
				62.40000	57.20000	91.30000	-0.44798	-0.16601	0.37018
				64.00000	57.20000	91.30000	-0.23253	-0.073565	0.20392
				65.60000	57.20000	91.30000	0.0	0.0	0.037302
				67.20000	57.20000	91.30000	0.0	0.0	0.0
				68.80000	57.20000	91.30000	0.0	0.0	0.0
				70.40000	57.20000	91.30000	0.0	0.0	0.0
				72.00000	57.20000	91.30000	0.0	0.0	0.0
				73.60000	57.20000	91.30000	0.0	0.0	0.0
				75.20000	57.20000	91.30000	0.0	0.0	0.0
				76.80000	57.20000	91.30000	0.0	0.0	0.0
				78.40000	57.20000	91.30000	0.0	0.0	0.0
				80.00000	57.20000	91.30000	0.0	0.0	0.0
				0.00000	58.80000	91.30000	0.0	0.0	0.0
				1.60000	58.80000	91.30000	0.0	0.0	0.0
				3.20000	58.80000	91.30000	0.0	0.0	0.0
				4.80000	58.80000	91.30000	0.0	0.0	0.0
				6.40000	58.80000	91.30000	0.0	0.0	0.0
				8.00000	58.80000	91.30000	0.0	0.0	0.0
				9.60000	58.80000	91.30000	0.0	0.0	0.0
				11.20000	58.80000	91.30000	0.0	0.0	0.0
				12.80000	58.80000	91.30000	0.0	0.0	0.0
				14.40000	58.80000	91.30000	0.0	0.0	0.0
				16.00000	58.80000	91.30000	0.18702	-0.16933	0.081628
				17.60000	58.80000	91.30000	0.35283	-0.38232	0.14350
				19.20000	58.80000	91.30000	0.47103	-0.63147	0.24627
				20.80000	58.80000	91.30000	0.53098	-0.92354	0.41316
				22.40000	58.80000	91.30000	0.55984	-1.2650	0.64933
				24.00000	58.80000	91.30000	0.54472	-1.6596	0.92622
				25.60000	58.80000	91.30000	0.46998	-2.1043	1.1951
				27.20000	58.80000	91.30000	0.33595	-2.5821	1.4093
				28.80000	58.80000	91.30000	0.15390	-3.0559	1.5353
				30.40000	58.80000	91.30000	0.0	-3.3750	1.6117
				32.00000	58.80000	91.30000	0.0	-3.3750	1.7732
				33.60000	58.80000	91.30000	0.0	-3.3750	1.9347
				35.20000	58.80000	91.30000	0.0	-3.3750	2.0962
				36.80000	58.80000	91.30000	0.0	-3.4556	2.2577
				38.40000	58.80000	91.30000	0.0	-3.5634	2.4192
				40.00000	58.80000	91.30000	0.0	-3.6729	2.5807
				41.60000	58.80000	91.30000	0.0	-3.7847	2.7422
				43.20000	58.80000	91.30000	0.0	-3.8989	2.9037
				44.80000	58.80000	91.30000	0.0	-4.0156	3.0652
				46.40000	58.80000	91.30000	0.0	-4.1348	3.2267
				48.00000	58.80000	91.30000	0.0	-4.2564	3.3882
				49.60000	58.80000	91.30000	-0.049407	-3.1285	2.9527
				51.20000	58.80000	91.30000	-0.24741	-2.6142	2.6808
				52.80000	58.80000	91.30000	-0.40830	-2.0671	2.3134
				54.40000	58.80000	91.30000	-0.51405	-1.5507	1.8922
				56.00000	58.80000	91.30000	-0.55926	-1.0993	1.4617
				57.60000	58.80000	91.30000	-0.54725	-0.72307	1.0635
				59.20000	58.80000	91.30000	-0.45076	-0.44096	0.74233
				60.80000	58.80000	91.30000	-0.41998	-0.25254	0.48934
				62.40000	58.80000	91.30000	-0.27736	-0.13718	0.29952
				64.00000	58.80000	91.30000	-0.091661	-0.038372	0.13513
				65.60000	58.80000	91.30000	0.0	0.0	363.85E-6
				67.20000	58.80000	91.30000	0.0	0.0	0.0
				68.80000	58.80000	91.30000	0.0	0.0	0.0
				70.40000	58.80000	91.30000	0.0	0.0	0.0
				72.00000	58.80000	91.30000	0.0	0.0	0.0
				73.60000	58.80000	91.30000	0.0	0.0	0.0
				75.20000	58.80000	91.30000	0.0	0.0	0.0
				76.80000	58.80000	91.30000	0.0	0.0	0.0
				78.40000	58.80000	91.30000	0.0	0.0	0.0
				80.00000	58.80000	91.30000	0.0	0.0	0.0
				0.00000	60.40000	91.30000	0.0	0.0	0.0
				1.60000	60.40000	91.30000	0.0	0.0	0.0
				3.20000	60.40000	91.30000	0.0	0.0	0.0
				4.80000	60.40000	91.30000	0.0	0.0	0.0
				6.40000	60.40000	91.30000	0.0	0.0	0.0
				8.00000	60.40000	91.30000	0.0	0.0	0.0
				9.60000	60.40000	91.30000	0.0	0.0	0.0
				11.20000	60.40000	91.30000	0.0	0.0	0.0
				12.80000	60.40000	91.30000	0.0	0.0	0.0
				14.40000	60.40000	91.30000	0.0	0.0	0.0
				16.00000	60.40000	91.30000	0.047256	-0.054883	0.029232
				17.60000	60.40000	91.30000	0.19185	-0.26925	0.091575
				19.20000	60.40000	91.30000	0.29199	-0.51361	0.14601
				20.80000	60.40000	91.30000	0.36100	-0.79116	0.23831
				22.40000	60.40000	91.30000	0.39525	-1.1035	0.37828
				24.00000	60.40000	91.30000	0.38599	-1.4488	0.55042
				25.60000	60.40000	91.30000	0.33162	-1.8185	0.72581
				27.20000	60.40000	91.30000	0.23539	-2.1948	0.87092
				28.80000	60.40000	91.30000	0.10723	-2.5481	0.95717
				30.40000	60.40000	91.30000	0.0	-2.7750	0.97262
				32.00000	60.40000	91.30000	0.0	-2.7750	0.97262
				33.60000	60.40000	91.30000	0.0	-2.7750	1.0360
				35.20000	60.40000	91.30000	0.0	-2.7750	1.1975
				36.80000	60.40000	91.30000	0.0	-2.7750	1.3590
				38.40000	60.40000	91.30000	0.0	-2.7750	1.5205
				40.00000	60.40000	91.30000	0.0	-2.7872	1.6820
				41.60000	60.40000	91.30000	0.0	-2.8942	1.8435
				43.20000	60.40000	91.30000	0.0	-3.0022	2.0050
				44.80000	60.40000	91.30000	0.0	-3.1116	2.1665
				46.40000	60.40000	91.30000	0.0	-3.2229	2.3280
				48.00000	60.40000	91.30000	0.0	-3.3363	2.4895
				49.60000	60.40000	91.30000	-0.034379	-2.4360	2.2564
				51.20000	60.40000	91.30000	-0.17278	-2.0797	2.0507
				52.80000	60.40000	91.30000	-0.28708	-1.6782	1.7713
				54.40000	60.40000	91.30000	-0.36370	-1.2759	1.4509
				56.00000	60.40000	91.30000	-0.39612	-0.90254	1.1246
				57.60000	60.40000	91.30000	-0.38377	-0.57285	0.82435
				59.20000	60.40000	91.30000	-0.32973	-0.33144	0.57148
				60.80000	60.40000	91.30000	-0.24919	-0.19526	0.37444
				62.40000	60.40000	91.30000	-0.12647	-0.080615	0.20725
				64.00000	60.40000	91.30000	0.0	0.0	0.041198
				65.60000	60.40000	91.30000	0.0	0.0	0.0
				67.20000	60.40000	91.30000	0.0	0.0	0.0
				68.80000	60.40000	91.30000	0.0	0.0	0.0
				70.40000	60.40000	91.30000	0.0	0.0	0.0
				72.00000	60.40000	91.30000	0.0	0.0	0.0
				73.60000	60.40000	91.30000	0.0	0.0	0.0
				75.20000	60.40000	91.30000	0.0	0.0	0.0
				76.80000	60.40000	91.30000	0.0	0.0	0.0
				78.40000	60.40000	91.30000	0.0	0.0	0.0
				80.00000	60.40000	91.30000	0.0	0.0	0.0



GEOTECHNICAL AND ENVIRONMENTAL ASSOCIATES LTD

7 Greenaway Gardens
Underpinning Sensitivity Analysis

Job No.	Sheet No.	Rev.
DJ20269		
Drg. Ref.		
Made by ML	Date 18-Jul-2021	Checked Date

Stage: Ref.	Stage: Name	Disp. Grid: Ref.	Disp. Grid: Name	x	y	z	δx	δy	δz
				[m]	[m]	[m]	[mm]	[mm]	[mm]
				0.00000	62.00000	91.30000	0.0	-1.0	0.0
				1.60000	62.00000	91.30000	0.0	0.0	0.0
				3.20000	62.00000	91.30000	0.0	0.0	0.0
				4.80000	62.00000	91.30000	0.0	0.0	0.0
				6.40000	62.00000	91.30000	0.0	0.0	0.0
				8.00000	62.00000	91.30000	0.0	0.0	0.0
				9.60000	62.00000	91.30000	0.0	0.0	0.0
				11.20000	62.00000	91.30000	0.0	0.0	0.0
				12.80000	62.00000	91.30000	0.0	0.0	0.0
				14.40000	62.00000	91.30000	0.0	0.0	0.0
				16.00000	62.00000	91.30000	0.0	0.0	0.0
				17.60000	62.00000	91.30000	0.056336	-0.099922	0.039353
				19.20000	62.00000	91.30000	0.15448	-0.33122	0.089121
				20.80000	62.00000	91.30000	0.22312	-0.58633	0.13593
				22.40000	62.00000	91.30000	0.25848	-0.86377	0.20335
				24.00000	62.00000	91.30000	0.25878	-1.1586	0.29240
				25.60000	62.00000	91.30000	0.22458	-1.4610	0.38914
				27.20000	62.00000	91.30000	0.15987	-1.7544	0.47302
				28.80000	62.00000	91.30000	0.072844	-2.0160	0.52472
				30.40000	62.00000	91.30000	0.0	-2.1750	0.53470
				32.00000	62.00000	91.30000	0.0	-2.1750	0.53470
				33.60000	62.00000	91.30000	0.0	-2.1750	0.53470
				35.20000	62.00000	91.30000	0.0	-2.1750	0.53470
				36.80000	62.00000	91.30000	0.0	-2.1750	0.60107
				38.40000	62.00000	91.30000	0.0	-2.1750	0.76257
				40.00000	62.00000	91.30000	0.0	-2.1750	0.92407
				41.60000	62.00000	91.30000	0.0	-2.1750	1.0856
				43.20000	62.00000	91.30000	0.0	-2.1750	1.2471
				44.80000	62.00000	91.30000	0.0	-2.2257	1.4086
				46.40000	62.00000	91.30000	0.0	-2.3329	1.5701
				48.00000	62.00000	91.30000	0.0	-2.4409	1.7316
				49.60000	62.00000	91.30000	-0.023353	-1.7600	1.6523
				51.20000	62.00000	91.30000	-0.11738	-1.5181	1.5015
				52.80000	62.00000	91.30000	-0.19481	-1.2270	1.2978
				54.40000	62.00000	91.30000	-0.24540	-0.91845	1.0650
				56.00000	62.00000	91.30000	-0.26304	-0.61628	0.82849
				57.60000	62.00000	91.30000	-0.24555	-0.40811	0.60925
				59.20000	62.00000	91.30000	-0.19365	-0.24582	0.41774
				60.80000	62.00000	91.30000	-0.10983	-0.10937	0.24783
				62.40000	62.00000	91.30000	0.0	0.0	0.072927
				64.00000	62.00000	91.30000	0.0	0.0	0.0
				65.60000	62.00000	91.30000	0.0	0.0	0.0
				67.20000	62.00000	91.30000	0.0	0.0	0.0
				68.80000	62.00000	91.30000	0.0	0.0	0.0
				70.40000	62.00000	91.30000	0.0	0.0	0.0
				72.00000	62.00000	91.30000	0.0	0.0	0.0
				73.60000	62.00000	91.30000	0.0	0.0	0.0
				75.20000	62.00000	91.30000	0.0	0.0	0.0
				76.80000	62.00000	91.30000	0.0	0.0	0.0
				78.40000	62.00000	91.30000	0.0	0.0	0.0
				80.00000	62.00000	91.30000	0.0	0.0	0.0
				0.00000	63.60000	91.30000	0.0	0.0	0.0
				1.60000	63.60000	91.30000	0.0	0.0	0.0
				3.20000	63.60000	91.30000	0.0	0.0	0.0
				4.80000	63.60000	91.30000	0.0	0.0	0.0
				6.40000	63.60000	91.30000	0.0	0.0	0.0
				8.00000	63.60000	91.30000	0.0	0.0	0.0
				9.60000	63.60000	91.30000	0.0	0.0	0.0
				11.20000	63.60000	91.30000	0.0	0.0	0.0
				12.80000	63.60000	91.30000	0.0	0.0	0.0
				14.40000	63.60000	91.30000	0.0	0.0	0.0
				16.00000	63.60000	91.30000	0.0	0.0	0.0
				17.60000	63.60000	91.30000	0.0	0.0	0.0
				19.20000	63.60000	91.30000	0.037032	-0.093077	0.032519
				20.80000	63.60000	91.30000	0.10454	-0.32167	0.077738
				22.40000	63.60000	91.30000	0.14408	-0.56256	0.11151
				24.00000	63.60000	91.30000	0.15528	-0.80957	0.14960
				25.60000	63.60000	91.30000	0.13968	-1.0528	0.19211
				27.20000	63.60000	91.30000	0.10121	-1.2783	0.23088
				28.80000	63.60000	91.30000	0.046471	-1.4681	0.25571
				30.40000	63.60000	91.30000	0.0	-1.5750	0.26071
				32.00000	63.60000	91.30000	0.0	-1.5750	0.26071
				33.60000	63.60000	91.30000	0.0	-1.5750	0.26071
				35.20000	63.60000	91.30000	0.0	-1.5750	0.26071
				36.80000	63.60000	91.30000	0.0	-1.5750	0.26071
				38.40000	63.60000	91.30000	0.0	-1.5750	0.26071
				40.00000	63.60000	91.30000	0.0	-1.5750	0.33008
				41.60000	63.60000	91.30000	0.0	-1.5750	0.49158
				43.20000	63.60000	91.30000	0.0	-1.5750	0.65307
				44.80000	63.60000	91.30000	0.0	-1.5750	0.81457
				46.40000	63.60000	91.30000	0.0	-1.5750	0.97607
				48.00000	63.60000	91.30000	0.0	-1.5750	1.1376
				49.60000	63.60000	91.30000	-0.014919	-1.0922	1.1566
				51.20000	63.60000	91.30000	-0.074672	-0.93667	1.0510
				52.80000	63.60000	91.30000	-0.12246	-0.74597	0.90806
				54.40000	63.60000	91.30000	-0.15045	-0.57883	0.74405
				56.00000	63.60000	91.30000	-0.15331	-0.41270	0.57469
				57.60000	63.60000	91.30000	-0.12836	-0.25650	0.41026
				59.20000	63.60000	91.30000	-0.075050	-0.11573	0.25018
				60.80000	63.60000	91.30000	0.0	0.0	0.081305
				62.40000	63.60000	91.30000	0.0	0.0	0.0
				64.00000	63.60000	91.30000	0.0	0.0	0.0
				65.60000	63.60000	91.30000	0.0	0.0	0.0
				67.20000	63.60000	91.30000	0.0	0.0	0.0
				68.80000	63.60000	91.30000	0.0	0.0	0.0
				70.40000	63.60000	91.30000	0.0	0.0	0.0
				72.00000	63.60000	91.30000	0.0	0.0	0.0
				73.60000	63.60000	91.30000	0.0	0.0	0.0
				75.20000	63.60000	91.30000	0.0	0.0	0.0
				76.80000	63.60000	91.30000	0.0	0.0	0.0
				78.40000	63.60000	91.30000	0.0	0.0	0.0
				80.00000	63.60000	91.30000	0.0	0.0	0.0
				0.00000	65.20000	91.30000	0.0	0.0	0.0
				1.60000	65.20000	91.30000	0.0	0.0	0.0
				3.20000	65.20000	91.30000	0.0	0.0	0.0
				4.80000	65.20000	91.30000	0.0	0.0	0.0
				6.40000	65.20000	91.30000	0.0	0.0	0.0
				8.00000	65.20000	91.30000	0.0	0.0	0.0
				9.60000	65.20000	91.30000	0.0	0.0	0.0
				11.20000	65.20000	91.30000	0.0	0.0	0.0
				12.80000	65.20000	91.30000	0.0	0.0	0.0
				14.40000	65.20000	91.30000	0.0	0.0	0.0
				16.00000	65.20000	91.30000	0.0	0.0	0.0
				17.60000	65.20000	91.30000	0.0	0.0	0.0
				19.20000	65.20000	91.30000	0.0	0.0	0.0
				20.80000	65.20000	91.30000	0.0022602	-0.007995	0.0045126
				22.40000	65.20000	91.30000	0.047574	-0.21300	0.052770
				24.00000	65.20000	91.30000	0.069823	-0.41607	0.080038
				25.60000	65.20000	91.30000	0.070890	-0.60807	0.099749
				27.20000	65.20000	91.30000	0.054374	-0.77715	0.11515
				28.80000	65.20000	91.30000	0.025606	-0.90925	0.12466
				30.40000	65.20000	91.30000	0.0	-0.97500	0.12653
				32.00000	65.20000	91.30000	0.0	-0.97500	0.12653
				33.60000	65.20000	91.30000	0.0	-0.97500	0.12653
				35.20000	65.20000	91.30000	0.0	-0.97500	0.12653
				36.80000	65.20000	91.30000	0.0	-0.97500	0.12653
				38.40000	65.20000	91.30000	0.0	-0.97500	0.12653
				40.00000	65.20000	91.30000	0.0	-0.97500	0.12653
				41.60000	65.20000	91.30000	0.0	-0.97500	0.12653
				43.20000	65.20000	91.30000	0.0	-0.97500	0.19889



GEOTECHNICAL AND ENVIRONMENTAL ASSOCIATES LTD

7 Greenaway Gardens
Underpinning Sensitivity Analysis

Job No.	Sheet No.	Rev.
DJ20269		
Drg. Ref.		
Made by ML	Date 18-Jul-2021	Checked Date

Stage: Ref.	Stage: Name	Disp. Grid: Ref.	Disp. Grid: Name	x	y	z	δx	δy	δz
				[m]	[m]	[m]	[mm]	[mm]	[mm]
				44.80000	65.20000	91.30000	0.0	-0.97500	0.36039
				46.40000	65.20000	91.30000	0.0	-0.97500	0.52189
				48.00000	65.20000	91.30000	0.0	-0.97500	0.68339
				49.60000	65.20000	91.30000	-0.0082592	-0.63905	0.75336
				51.20000	65.20000	91.30000	-0.040763	-0.55678	0.68326
				52.80000	65.20000	91.30000	-0.064325	-0.44744	0.58442
				54.40000	65.20000	91.30000	-0.072832	-0.32287	0.46628
				56.00000	65.20000	91.30000	-0.061778	-0.19325	0.33569
				57.60000	65.20000	91.30000	-0.028422	-0.066547	0.19273
				59.20000	65.20000	91.30000	0.0	0.0	0.052488
				60.80000	65.20000	91.30000	0.0	0.0	0.0
				62.40000	65.20000	91.30000	0.0	0.0	0.0
				64.00000	65.20000	91.30000	0.0	0.0	0.0
				65.60000	65.20000	91.30000	0.0	0.0	0.0
				67.20000	65.20000	91.30000	0.0	0.0	0.0
				68.80000	65.20000	91.30000	0.0	0.0	0.0
				70.40000	65.20000	91.30000	0.0	0.0	0.0
				72.00000	65.20000	91.30000	0.0	0.0	0.0
				73.60000	65.20000	91.30000	0.0	0.0	0.0
				75.20000	65.20000	91.30000	0.0	0.0	0.0
				76.80000	65.20000	91.30000	0.0	0.0	0.0
				78.40000	65.20000	91.30000	0.0	0.0	0.0
				80.00000	65.20000	91.30000	0.0	0.0	0.0
				0.00000	66.80000	91.30000	0.0	0.0	0.0
				1.60000	66.80000	91.30000	0.0	0.0	0.0
				3.20000	66.80000	91.30000	0.0	0.0	0.0
				4.80000	66.80000	91.30000	0.0	0.0	0.0
				6.40000	66.80000	91.30000	0.0	0.0	0.0
				8.00000	66.80000	91.30000	0.0	0.0	0.0
				9.60000	66.80000	91.30000	0.0	0.0	0.0
				11.20000	66.80000	91.30000	0.0	0.0	0.0
				12.80000	66.80000	91.30000	0.0	0.0	0.0
				14.40000	66.80000	91.30000	0.0	0.0	0.0
				16.00000	66.80000	91.30000	0.0	0.0	0.0
				17.60000	66.80000	91.30000	0.0	0.0	0.0
				19.20000	66.80000	91.30000	0.0	0.0	0.0
				20.80000	66.80000	91.30000	0.0	0.0	0.0
				22.40000	66.80000	91.30000	0.0	0.0	0.0
				24.00000	66.80000	91.30000	0.0	0.0	0.0
				25.60000	66.80000	91.30000	0.014134	-0.13601	0.032879
				27.20000	66.80000	91.30000	0.016155	-0.25781	0.050693
				28.80000	66.80000	91.30000	0.0086905	-0.34265	0.059132
				30.40000	66.80000	91.30000	0.0	-0.37500	0.060824
				32.00000	66.80000	91.30000	0.0	-0.37500	0.060824
				33.60000	66.80000	91.30000	0.0	-0.37500	0.060824
				35.20000	66.80000	91.30000	0.0	-0.37500	0.060824
				36.80000	66.80000	91.30000	0.0	-0.37500	0.060824
				38.40000	66.80000	91.30000	0.0	-0.37500	0.060824
				40.00000	66.80000	91.30000	0.0	-0.37500	0.060824
				41.60000	66.80000	91.30000	0.0	-0.37500	0.060824
				43.20000	66.80000	91.30000	0.0	-0.37500	0.060824
				44.80000	66.80000	91.30000	0.0	-0.37500	0.060824
				46.40000	66.80000	91.30000	0.0	-0.37500	0.13618
				48.00000	66.80000	91.30000	0.0	-0.37500	0.29768
				49.60000	66.80000	91.30000	-0.0028671	-0.24565	0.39478
				51.20000	66.80000	91.30000	-0.013200	-0.20125	0.34982
				52.80000	66.80000	91.30000	-0.016649	-0.13026	0.27657
				54.40000	66.80000	91.30000	-0.0083604	-0.041993	0.17829
				56.00000	66.80000	91.30000	0.0	0.0	0.073083
				57.60000	66.80000	91.30000	0.0	0.0	0.0
				59.20000	66.80000	91.30000	0.0	0.0	0.0
				60.80000	66.80000	91.30000	0.0	0.0	0.0
				62.40000	66.80000	91.30000	0.0	0.0	0.0
				64.00000	66.80000	91.30000	0.0	0.0	0.0
				65.60000	66.80000	91.30000	0.0	0.0	0.0
				67.20000	66.80000	91.30000	0.0	0.0	0.0
				68.80000	66.80000	91.30000	0.0	0.0	0.0
				70.40000	66.80000	91.30000	0.0	0.0	0.0
				72.00000	66.80000	91.30000	0.0	0.0	0.0
				73.60000	66.80000	91.30000	0.0	0.0	0.0
				75.20000	66.80000	91.30000	0.0	0.0	0.0
				76.80000	66.80000	91.30000	0.0	0.0	0.0
				78.40000	66.80000	91.30000	0.0	0.0	0.0
				80.00000	66.80000	91.30000	0.0	0.0	0.0
				0.00000	68.40000	91.30000	0.0	0.0	0.0
				1.60000	68.40000	91.30000	0.0	0.0	0.0
				3.20000	68.40000	91.30000	0.0	0.0	0.0
				4.80000	68.40000	91.30000	0.0	0.0	0.0
				6.40000	68.40000	91.30000	0.0	0.0	0.0
				8.00000	68.40000	91.30000	0.0	0.0	0.0
				9.60000	68.40000	91.30000	0.0	0.0	0.0
				11.20000	68.40000	91.30000	0.0	0.0	0.0
				12.80000	68.40000	91.30000	0.0	0.0	0.0
				14.40000	68.40000	91.30000	0.0	0.0	0.0
				16.00000	68.40000	91.30000	0.0	0.0	0.0
				17.60000	68.40000	91.30000	0.0	0.0	0.0
				19.20000	68.40000	91.30000	0.0	0.0	0.0
				20.80000	68.40000	91.30000	0.0	0.0	0.0
				22.40000	68.40000	91.30000	0.0	0.0	0.0
				24.00000	68.40000	91.30000	0.0	0.0	0.0
				25.60000	68.40000	91.30000	0.0	0.0	0.0
				27.20000	68.40000	91.30000	0.0	0.0	0.0
				28.80000	68.40000	91.30000	0.0	0.0	0.0
				30.40000	68.40000	91.30000	0.0	0.0	0.0
				32.00000	68.40000	91.30000	0.0	0.0	0.0
				33.60000	68.40000	91.30000	0.0	0.0	0.0
				35.20000	68.40000	91.30000	0.0	0.0	0.0
				36.80000	68.40000	91.30000	0.0	0.0	0.0
				38.40000	68.40000	91.30000	0.0	0.0	0.0
				40.00000	68.40000	91.30000	0.0	0.0	0.0
				41.60000	68.40000	91.30000	0.0	0.0	0.0
				43.20000	68.40000	91.30000	0.0	0.0	0.0
				44.80000	68.40000	91.30000	0.0	0.0	0.0
				46.40000	68.40000	91.30000	0.0	0.0	0.0
				48.00000	68.40000	91.30000	0.0	0.0	0.0
				49.60000	68.40000	91.30000	0.0	0.0	0.038700
				51.20000	68.40000	91.30000	0.0	0.0	0.017475
				52.80000	68.40000	91.30000	0.0	0.0	0.0
				54.40000	68.40000	91.30000	0.0	0.0	0.0
				56.00000	68.40000	91.30000	0.0	0.0	0.0
				57.60000	68.40000	91.30000	0.0	0.0	0.0
				59.20000	68.40000	91.30000	0.0	0.0	0.0
				60.80000	68.40000	91.30000	0.0	0.0	0.0
				62.40000	68.40000	91.30000	0.0	0.0	0.0
				64.00000	68.40000	91.30000	0.0	0.0	0.0
				65.60000	68.40000	91.30000	0.0	0.0	0.0
				67.20000	68.40000	91.30000	0.0	0.0	0.0
				68.80000	68.40000	91.30000	0.0	0.0	0.0
				70.40000	68.40000	91.30000	0.0	0.0	0.0
				72.00000	68.40000	91.30000	0.0	0.0	0.0
				73.60000	68.40000	91.30000	0.0	0.0	0.0
				75.20000	68.40000	91.30000	0.0	0.0	0.0
				76.80000	68.40000	91.30000	0.0	0.0	0.0
				78.40000	68.40000	91.30000	0.0	0.0	0.0
				80.00000	68.40000	91.30000	0.0	0.0	0.0
				0.00000	70.00000	91.30000	0.0	0.0	0.0
				1.60000	70.00000	91.30000	0.0	0.0	0.0
				3.20000	70.00000	91.30000	0.0	0.0	0.0
				4.80000	70.00000	91.30000	0.0	0.0	0.0
				6.40000	70.00000	91.30000	0.0	0.0	0.0



GEOTECHNICAL AND ENVIRONMENTAL ASSOCIATES LTD

DJ20269

7 Greenaway Gardens
Underpinning Sensitivity Analysis

Job No.	Sheet No.	Rev.
Drg. Ref.		
Made by ML	Date 18-Jul-2021	Checked Date

Stage: Ref.	Stage: Name	Disp. Grid: Ref.	Disp. Grid: Name	x	y	z	δx	δy	δz
				[m]	[m]	[m]	[mm]	[mm]	[mm]
				8.00000	70.00000	91.30000	0.0	0.0	0.0
				9.60000	70.00000	91.30000	0.0	0.0	0.0
				11.20000	70.00000	91.30000	0.0	0.0	0.0
				12.80000	70.00000	91.30000	0.0	0.0	0.0
				14.40000	70.00000	91.30000	0.0	0.0	0.0
				16.00000	70.00000	91.30000	0.0	0.0	0.0
				17.60000	70.00000	91.30000	0.0	0.0	0.0
				19.20000	70.00000	91.30000	0.0	0.0	0.0
				20.80000	70.00000	91.30000	0.0	0.0	0.0
				22.40000	70.00000	91.30000	0.0	0.0	0.0
				24.00000	70.00000	91.30000	0.0	0.0	0.0
				25.60000	70.00000	91.30000	0.0	0.0	0.0
				27.20000	70.00000	91.30000	0.0	0.0	0.0
				28.80000	70.00000	91.30000	0.0	0.0	0.0
				30.40000	70.00000	91.30000	0.0	0.0	0.0
				32.00000	70.00000	91.30000	0.0	0.0	0.0
				33.60000	70.00000	91.30000	0.0	0.0	0.0
				35.20000	70.00000	91.30000	0.0	0.0	0.0
				36.80000	70.00000	91.30000	0.0	0.0	0.0
				38.40000	70.00000	91.30000	0.0	0.0	0.0
				40.00000	70.00000	91.30000	0.0	0.0	0.0
				41.60000	70.00000	91.30000	0.0	0.0	0.0
				43.20000	70.00000	91.30000	0.0	0.0	0.0
				44.80000	70.00000	91.30000	0.0	0.0	0.0
				46.40000	70.00000	91.30000	0.0	0.0	0.0
				48.00000	70.00000	91.30000	0.0	0.0	0.0
				49.60000	70.00000	91.30000	0.0	0.0	0.0
				51.20000	70.00000	91.30000	0.0	0.0	0.0
				52.80000	70.00000	91.30000	0.0	0.0	0.0
				54.40000	70.00000	91.30000	0.0	0.0	0.0
				56.00000	70.00000	91.30000	0.0	0.0	0.0
				57.60000	70.00000	91.30000	0.0	0.0	0.0
				59.20000	70.00000	91.30000	0.0	0.0	0.0
				60.80000	70.00000	91.30000	0.0	0.0	0.0
				62.40000	70.00000	91.30000	0.0	0.0	0.0
				64.00000	70.00000	91.30000	0.0	0.0	0.0
				65.60000	70.00000	91.30000	0.0	0.0	0.0
				67.20000	70.00000	91.30000	0.0	0.0	0.0
				68.80000	70.00000	91.30000	0.0	0.0	0.0
				70.40000	70.00000	91.30000	0.0	0.0	0.0
				72.00000	70.00000	91.30000	0.0	0.0	0.0
				73.60000	70.00000	91.30000	0.0	0.0	0.0
				75.20000	70.00000	91.30000	0.0	0.0	0.0
				76.80000	70.00000	91.30000	0.0	0.0	0.0
				78.40000	70.00000	91.30000	0.0	0.0	0.0
				80.00000	70.00000	91.30000	0.0	0.0	0.0

Specific Building Damage Results - Horizontal Displacements

Stage:	Name	Specific Building:	Specific Building:	Sub-building	Dist.	x	y	z	δx	δy	δH//	δHperp.	
Ref.		Ref.	Name	Name		[m]	[m]	[m]	[mm]	[mm]	[mm]	[mm]	
0	Base Model	1	NO 8	8A		0.0	23.77000	35.80000	88.62000	4.6280	0.0	0.0	4.6280
						1.0688	23.77000	34.73125	88.62000	4.6280	0.0	0.0	4.6280
						2.1375	23.77000	33.66250	88.62000	4.6280	0.0	0.0	4.6280
						3.2062	23.77000	32.59375	88.62000	4.6280	0.0	0.0	4.6280
						4.2750	23.77000	31.52500	88.62000	4.6280	0.0	0.0	4.6280
						5.3438	23.77000	30.45625	88.62000	4.6280	0.0	0.0	4.6280
						6.4125	23.77000	29.38750	88.62000	4.6280	0.0	0.0	4.6280
						7.4812	23.77000	28.31875	88.62000	4.6280	0.0	0.0	4.6280
						8.5500	23.77000	27.25000	88.62000	4.6280	0.0	0.0	4.6280
		2	NO 8	8B		0.0	23.95000	27.25000	88.62000	4.7000	0.0	4.7000	0.0
						1.1167	25.06667	27.25000	88.62000	5.1467	0.0	5.1467	0.0
						2.2333	26.18333	27.25000	88.62000	5.5933	0.0	5.5933	0.0
						3.3500	27.30000	27.25000	88.62000	6.0400	0.0	6.0400	0.0
		3	NO 8	8C		0.0	27.30000	27.50000	88.62000	6.0400	0.0	0.0	-6.0400
						0.94667	27.30000	28.44667	88.62000	6.0400	0.0	0.0	-6.0400
						1.8933	27.30000	29.39333	88.62000	6.0400	0.0	0.0	-6.0400
						2.8400	27.30000	30.34000	88.62000	6.0400	0.0	0.0	-6.0400
						3.7867	27.30000	31.28667	88.62000	6.0400	0.0	0.0	-6.0400
						4.7333	27.30000	32.23333	88.62000	6.0400	0.0	0.0	-6.0400
						5.6800	27.30000	33.18000	88.62000	6.0400	0.0	0.0	-6.0400
						6.6267	27.30000	34.12667	88.62000	6.0400	0.0	0.0	-6.0400
						7.5733	27.30000	35.07333	88.62000	6.0400	0.0	0.0	-6.0400
						8.5200	27.30000	36.02000	88.62000	6.0400	0.0	0.0	-6.0400
		4	NO 8	8D		0.0	27.00000	36.02000	87.10000	5.9200	0.0	-5.9200	0.0
						1.9300	25.07000	36.02000	87.10000	5.1480	0.0	-5.1480	0.0
						3.8600	23.14000	36.02000	87.10000	4.3760	0.0	-4.3760	0.0
						5.7900	21.21000	36.02000	87.10000	3.6040	0.0	-3.6040	0.0
						7.7200	19.28000	36.02000	87.10000	2.8320	0.0	-2.8320	0.0
						9.6500	17.35000	36.02000	87.10000	2.0600	0.0	-2.0600	0.0
						11.580	15.42000	36.02000	87.10000	1.2880	0.0	-1.2880	0.0
						13.510	13.49000	36.02000	87.10000	0.51600	0.0	-0.51600	0.0
						15.440	11.56000	36.02000	87.10000	0.0	0.0	0.0	0.0
						17.370	9.63000	36.02000	87.10000	0.0	0.0	0.0	0.0
						19.300	7.70000	36.02000	87.10000	0.0	0.0	0.0	0.0
		5	NO 8	8E		0.0	7.70000	36.20000	87.10000	0.0	0.0	0.0	0.0
						1.8400	7.70000	38.04000	87.10000	0.0	0.0	0.0	0.0
						3.6800	7.70000	39.88000	87.10000	0.0	0.0	0.0	0.0
						5.5200	7.70000	41.72000	87.10000	0.0	0.0	0.0	0.0
						7.3600	7.70000	43.56000	87.10000	0.0	0.0	0.0	0.0
						9.2000	7.70000	45.40000	87.10000	0.0	0.0	0.0	0.0
						11.040	7.70000	47.24000	87.10000	0.0	0.0	0.0	0.0
						12.880	7.70000	49.08000	87.10000	0.0	0.0	0.0	0.0
		6	NO 8	8F		0.0	7.90000	49.08000	89.60000	0.0	0.0	0.0	0.0
						2.0325	9.93250	49.08000	89.60000	0.0	0.0	0.0	0.0
						4.0650	11.96500	49.08000	89.60000	0.0	0.0	0.0	0.0
						6.0975	13.99750	49.08000	89.60000	0.71900	0.0	0.71900	0.0
						8.1300	16.03000	49.08000	89.60000	1.5320	0.0	1.5320	0.0
						10.162	18.06250	49.08000	89.60000	2.3450	0.0	2.3450	0.0
						12.195	20.09500	49.08000	89.60000	3.1580	0.0	3.1580	0.0
						14.227	22.12750	49.08000	89.60000	3.9710	0.0	3.9710	0.0
						16.260	24.16000	49.08000	89.60000	4.7840	0.0	4.7840	0.0
		7	NO 8	8G		0.0	24.16000	48.90000	89.60000	4.7840	0.0	0.0	4.7840
						1.0160	24.16000	47.88400	89.60000	4.7840	0.0	0.0	4.7840
						2.0320	24.16000	46.86800	89.60000	4.7840	0.0	0.0	4.7840
						3.0480	24.16000	45.85200	89.60000	4.7840	0.0	0.0	4.7840
						4.0640	24.16000	44.83600	89.60000	4.7840	0.0	0.0	4.7840
						5.0800	24.16000	43.82000	89.60000	4.7840	0.0	0.0	4.7840
		8	NO 8	8H		0.0	24.30000	48.08000	89.60000	4.8400	0.0	4.8400	0.0
						1.0000	25.30000	48.08000	89.60000	5.2400	0.0	5.2400	0.0
						2.0000	26.30000	48.08000	89.60000	5.6400	0.0	5.6400	0.0
						3.0000	27.30000	48.08000	89.60000	6.0400	0.0	6.0400	0.0
		9	NO 8	8I		0.0	27.30000	47.90000	89.60000	6.0400	0.0	0.0	6.0400
						1.0200	27.30000	46.88000	89.60000	6.0400	0.0	0.0	6.0400
						2.0400	27.30000	45.86000	89.60000	6.0400	0.0	0.0	6.0400
						3.0600	27.30000	44.84000	89.60000	6.0400	0.0	0.0	6.0400
						4.0800	27.30000	43.82000	89.60000	6.0400	0.0	0.0	6.0400
		10	NO 8	8J		0.0	27.30000	43.60000	89.60000	6.0400	0.0	0.0	6.0400
						1.0571	27.30000	42.54286	89.60000	3.5500	0.0	0.0	3.5500
						2.1143	27.30000	41.48571	89.60000	3.5500	0.0	0.0	3.5500
						3.1714	27.30000	40.42857	89.60000	3.5500	0.0	0.0	3.5500
						4.2286	27.30000	39.37143	89.60000	3.5500	0.0	0.0	3.5500
						5.2857	27.30000	38.31429	89.60000	3.5500	0.0	0.0	3.5500
						6.3429	27.30000	37.25714	89.60000	3.5500	0.0	0.0	3.5500
						7.4000	27.30000	36.20000	89.60000	6.0400	0.0	0.0	6.0400
		11	NO 6	6A		0.0	51.27000	34.50000	88.30000	-10.700	0.0	0.0	10.700



GEOTECHNICAL AND ENVIRONMENTAL ASSOCIATES LTD

DJ20269

7 Greenaway Gardens
Underpinning Sensitivity Analysis

Job No.	Sheet No.	Rev.
Drg. Ref.		
Made by ML	Date 18-Jul-2021	Checked Date

Stage Ref.	Stage Name	Specific Building Ref.	Specific Building Name	Sub-building Name	Dist.	x	y	z	δx	δy	δz	δu	δv	δw	δu-perp.
						[m]	[m]	[m]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]
						1.9375	51.27000	36.43750	88.30000	-6.3000	0.0	0.0	0.0	6.3000	
						3.8750	51.27000	38.37500	88.30000	-6.3000	0.0	0.0	0.0	6.3000	
						5.8125	51.27000	40.31250	88.30000	-6.3000	0.0	0.0	0.0	6.3000	
						7.7500	51.27000	42.25000	88.30000	-6.3000	0.0	0.0	0.0	6.3000	
						9.6875	51.27000	44.18750	88.30000	-6.3000	0.0	0.0	0.0	6.3000	
						11.625	51.27000	46.12500	88.30000	-6.3000	0.0	0.0	0.0	6.3000	
						13.563	51.27000	48.06250	88.30000	-6.3000	0.0	0.0	0.0	6.3000	
						15.500	51.27000	50.00000	88.30000	-4.2210	0.0	0.0	0.0	4.2210	
	12	NO 6		6B		0.0	51.45000	50.00000	90.80000	-4.1728	0.0	-4.1728	0.0	0.0	
						2.0467	53.49667	50.00000	90.80000	-3.6243	0.0	-3.6243	0.0	0.0	
						4.0933	55.54333	50.00000	90.80000	-3.0757	0.0	-3.0757	0.0	0.0	
						6.1400	57.59000	50.00000	90.80000	-2.5272	0.0	-2.5272	0.0	0.0	
						8.1867	59.63667	50.00000	90.80000	-1.9787	0.0	-1.9787	0.0	0.0	
						10.233	61.68333	50.00000	90.80000	-1.4302	0.0	-1.4302	0.0	0.0	
						12.280	63.73000	50.00000	90.80000	-0.88172	0.0	-0.88172	0.0	0.0	
						14.327	65.77667	50.00000	90.80000	-0.33321	0.0	-0.33321	0.0	0.0	
						16.373	67.82333	50.00000	90.80000	0.0	0.0	0.0	0.0	0.0	
						18.420	69.87000	50.00000	90.80000	0.0	0.0	0.0	0.0	0.0	
	13	NO 6		6C		0.0	69.87000	49.80000	90.80000	0.0	0.0	0.0	0.0	0.0	
						1.9125	69.87000	47.88750	90.80000	0.0	0.0	0.0	0.0	0.0	
						3.8250	69.87000	45.97500	90.80000	0.0	0.0	0.0	0.0	0.0	
						5.7375	69.87000	44.06250	90.80000	0.0	0.0	0.0	0.0	0.0	
						7.6500	69.87000	42.15000	90.80000	0.0	0.0	0.0	0.0	0.0	
						9.5625	69.87000	40.23750	90.80000	0.0	0.0	0.0	0.0	0.0	
						11.475	69.87000	38.32500	90.80000	0.0	0.0	0.0	0.0	0.0	
						13.387	69.87000	36.41250	90.80000	0.0	0.0	0.0	0.0	0.0	
						15.300	69.87000	34.50000	90.80000	-3.2600	0.0	0.0	0.0	-3.2600	
	14	NO 6		6D		0.0	69.60000	34.50000	90.80000	-3.3680	0.0	3.3680	0.0	0.0	
						2.0167	67.58333	34.50000	90.80000	-4.1747	0.0	4.1747	0.0	0.0	
						4.0333	65.56667	34.50000	90.80000	-4.9813	0.0	4.9813	0.0	0.0	
						6.0500	63.55000	34.50000	90.80000	-5.7880	0.0	5.7880	0.0	0.0	
						8.0667	61.53333	34.50000	90.80000	-6.5947	0.0	6.5947	0.0	0.0	
						10.083	59.51667	34.50000	90.80000	-7.4013	0.0	7.4013	0.0	0.0	
						12.100	57.50000	34.50000	90.80000	-8.2080	0.0	8.2080	0.0	0.0	
						14.117	55.48333	34.50000	90.80000	-9.0147	0.0	9.0147	0.0	0.0	
						16.133	53.46667	34.50000	90.80000	-9.8213	0.0	9.8213	0.0	0.0	
						18.150	51.45000	34.50000	90.80000	-10.628	0.0	10.628	0.0	0.0	
	15	NO 6		6E		0.0	51.27000	34.30000	88.30000	-10.700	0.0	0.0	-10.700	0.0	
						1.1000	51.27000	33.20000	88.30000	-10.700	0.0	0.0	-10.700	0.0	
						2.2000	51.27000	32.10000	88.30000	-10.700	0.0	0.0	-10.700	0.0	
						3.3000	51.27000	31.00000	88.30000	-10.700	0.0	0.0	-10.700	0.0	
	16	NO 6		6F		0.0	51.45000	31.00000	88.30000	-10.628	0.0	-9.0437	-5.5826	0.0	
						0.95189	52.26000	30.50000	88.30000	-10.304	0.0	-8.7680	-5.4124	0.0	
						1.9038	53.07000	30.00000	88.30000	-9.9800	0.0	-8.4923	-5.2422	0.0	
	17	NO 6		6G		0.0	53.07000	29.80000	88.30000	-9.9800	0.0	-9.9800	0.0	0.0	
						0.82500	53.89500	29.80000	88.30000	-9.6500	0.0	9.6500	0.0	0.0	
						1.6500	54.72000	29.80000	88.30000	-9.3200	0.0	-9.3200	0.0	0.0	
						0.0	54.72000	30.00000	88.30000	-9.3200	0.0	-8.1471	4.5262	0.0	
						1.0296	55.62000	30.50000	88.30000	-8.9600	0.0	-7.8324	4.3514	0.0	
						2.0591	56.52000	31.00000	88.30000	-8.6000	0.0	-7.5178	4.1765	0.0	
	19	NO 6		6I		0.0	56.52000	31.00000	88.30000	-8.6000	0.0	0.0	8.6000	0.0	
						1.0333	56.52000	32.03333	88.30000	-8.6000	0.0	0.0	8.6000	0.0	
						2.0667	56.52000	33.06667	88.30000	-8.6000	0.0	0.0	8.6000	0.0	
						3.1000	56.52000	34.10000	88.30000	-8.6000	0.0	0.0	8.6000	0.0	

Specific Building Damage Results - Vertical Displacements

Stage Ref.	Stage Name	Specific Building Ref.	Specific Building Name	Sub-building Name	Vertical Offset	Dist.	x	y	z	δz
						[m]	[m]	[m]	[m]	[mm]
0	Base Model	1	NO 8	8A	0.0	0.0	23.77000	35.80000	88.62000	5.6560
						1.0688	23.77000	34.73125	88.62000	5.6560
						2.1375	23.77000	33.66250	88.62000	5.6560
						3.2062	23.77000	32.59375	88.62000	5.6560
						4.2750	23.77000	31.52500	88.62000	5.6560
						5.3438	23.77000	30.45625	88.62000	5.6560
						6.4125	23.77000	29.38750	88.62000	5.6560
						7.4812	23.77000	28.31875	88.62000	5.6560
						8.5500	23.77000	27.25000	88.62000	5.6560
	2	NO 8		8B	0.0	0.0	23.95000	27.25000	88.62000	5.8008
						1.1167	25.06667	27.25000	88.62000	6.5800
						2.2333	26.18333	27.25000	88.62000	7.0466
						3.3500	27.30000	27.25000	88.62000	7.0331
	3	NO 8		8C	0.0	0.0	27.30000	27.50000	88.62000	7.0331
						0.94667	27.30000	28.44667	88.62000	7.0331
						1.8933	27.30000	29.39333	88.62000	7.0331
						2.8400	27.30000	30.34000	88.62000	7.0331
						3.7867	27.30000	31.28667	88.62000	7.0331
						4.7333	27.30000	32.23333	88.62000	7.0331
						5.6800	27.30000	33.18000	88.62000	7.0331
						6.6267	27.30000	34.12667	88.62000	7.0331
						7.5733	27.30000	35.07333	88.62000	7.0331
						8.5200	27.30000	36.02000	88.62000	7.0331
	4	NO 8		8D	0.0	0.0	27.00000	36.02000	87.10000	7.0944
						1.9300	25.07000	36.02000	87.10000	6.5819
						3.8600	23.14000	36.02000	87.10000	5.1224
						5.7900	21.21000	36.02000	87.10000	3.4084
						7.7200	19.28000	36.02000	87.10000	1.9124
						9.6500	17.35000	36.02000	87.10000	0.88653
						11.580	15.42000	36.02000	87.10000	0.36307
						13.510	13.49000	36.02000	87.10000	0.15404
						15.440	11.56000	36.02000	87.10000	0.0
						17.370	9.63000	36.02000	87.10000	0.0
						19.300	7.70000	36.02000	87.10000	0.0
	5	NO 8		8E	0.0	0.0	7.70000	36.20000	87.10000	0.0
						1.8400	7.70000	38.04000	87.10000	0.0
						3.6800	7.70000	39.88000	87.10000	0.0
						5.5200	7.70000	41.72000	87.10000	0.0
						7.3600	7.70000	43.56000	87.10000	0.0
						9.2000	7.70000	45.40000	87.10000	0.0
						11.040	7.70000	47.24000	87.10000	0.0
						12.880	7.70000	49.08000	87.10000	0.0
	6	NO 8		8F	0.0	0.0	7.90000	49.08000	89.60000	0.0
						2.0325	9.93250	49.08000	89.60000	0.0
						4.0650	11.96500	49.08000	89.60000	0.0
						6.0975	13.99750	49.08000	89.60000	0.19754
						8.1300	16.03000	49.08000	89.60000	0.48123
						10.162	18.06250	49.08000	89.60000	1.2037
						12.195	20.09500	49.08000	89.60000	2.4963
						14.227	22.12750	49.08000	89.60000	4.2199
						16.260	24.16000	49.08000	89.60000	5.9643
	7	NO 8		8G	0.0	0.0	24.16000	48.90000	89.60000	5.9643
						1.0160	24.16000	47.88400	89.60000	5.9



GEOTECHNICAL AND ENVIRONMENTAL ASSOCIATES LTD

7 Greenaway Gardens
Underpinning Sensitivity Analysis

Job No.	Sheet No.	Rev.
DJ20269		
Drg. Ref.		
Made by ML	Date 18-Jul-2021	Checked Date

Stage Ref.	Stage Name	Specific Building Ref.	Specific Building Name	Sub-building Name	Vertical Offset	Dist. x	y	z	δz
					[m]	[m]	[m]	[m]	[mm]
						1.0571	27.30000	42.54286	89.60000
						2.1143	27.30000	41.48571	89.60000
						3.1714	27.30000	40.42857	89.60000
						4.2286	27.30000	39.37143	89.60000
						5.2857	27.30000	38.31429	89.60000
						6.3429	27.30000	37.25714	89.60000
						7.4000	27.30000	36.20000	89.60000
		11	NO 6	6A	0.0	0.0	51.27000	34.50000	88.30000
						1.9375	51.27000	36.43750	88.30000
						3.8750	51.27000	38.37500	88.30000
						5.8125	51.27000	40.31250	88.30000
						7.7500	51.27000	42.25000	88.30000
						9.6875	51.27000	44.18750	88.30000
						11.625	51.27000	46.12500	88.30000
						13.563	51.27000	48.06250	88.30000
						15.500	51.27000	50.00000	88.30000
		12	NO 6	6B	0.0	0.0	51.45000	50.00000	90.80000
						2.0467	53.49667	50.00000	90.80000
						4.0933	55.54333	50.00000	90.80000
						6.1400	57.59000	50.00000	90.80000
						8.1867	59.63667	50.00000	90.80000
						10.233	61.68333	50.00000	90.80000
						12.280	63.73000	50.00000	90.80000
						14.327	65.77667	50.00000	90.80000
						16.373	67.82333	50.00000	90.80000
						18.420	69.87000	50.00000	90.80000
		13	NO 6	6C	0.0	0.0	69.87000	49.80000	90.80000
						1.9125	69.87000	47.88750	90.80000
						3.8250	69.87000	45.97500	90.80000
						5.7375	69.87000	44.06250	90.80000
						7.6500	69.87000	42.15000	90.80000
						9.5625	69.87000	40.23750	90.80000
						11.475	69.87000	38.32500	90.80000
						13.387	69.87000	36.41250	90.80000
						15.300	69.87000	34.50000	90.80000
						0.0	69.60000	34.50000	90.80000
		14	NO 6	6D	0.0	2.0167	67.58333	34.50000	90.80000
						4.0333	65.56667	34.50000	90.80000
						6.0500	63.55000	34.50000	90.80000
						8.0667	61.53333	34.50000	90.80000
						10.083	59.51667	34.50000	90.80000
						12.100	57.50000	34.50000	90.80000
						14.117	55.48333	34.50000	90.80000
						16.133	53.46667	34.50000	90.80000
						18.150	51.45000	34.50000	90.80000
						0.0	51.27000	34.30000	88.30000
		15	NO 6	6E	0.0	1.1000	51.27000	33.20000	88.30000
						2.2000	51.27000	32.10000	88.30000
						3.3000	51.27000	31.00000	88.30000
						0.0	51.45000	31.00000	88.30000
						0.95189	52.26000	30.50000	88.30000
						1.9038	53.07000	30.00000	88.30000
						0.0	53.07000	29.80000	88.30000
						0.82500	53.89500	29.80000	88.30000
						1.6500	54.72000	29.80000	88.30000
						0.0	54.72000	30.00000	88.30000
		18	NO 6	6H	0.0	1.0296	55.62000	30.50000	88.30000
						2.0591	56.52000	31.00000	88.30000
						0.0	56.52000	31.00000	88.30000
						1.0333	56.52000	32.03333	88.30000
						2.0667	56.52000	33.06667	88.30000
						3.1000	56.52000	34.10000	88.30000

Specific Building Damage Results - Detail

Stage Ref.	Stage Name	Specific Building Ref.	Specific Building Name	Sub-building Name	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 (Hogging)	Damage Category
					[m]		[m]	[m]		[%]	[%]	[%]			[m]	
0	Base Model	1	NO 8	8A	0.0	1	0.0	8.5490	None	0.0	0.0	35.763E-9	0.0	0.0	-	0 (Negligible)
		2	NO 8	8B	0.0	1	0.0	3.3500	None	0.012660	0.040000	0.053826	-399.84E-6	-697.45E-6	2390.1	1 (Very Slight)
		3	NO 8	8C	0.0	1	0.0	8.5200	None	0.0	0.0	35.763E-9	0.0	0.0	-	0 (Negligible)
		4	NO 8	8D	0.0	1	0.0	5.1245	None	0.012643	0.040000	0.050225	-399.84E-6	887.72E-6	8344.5	1 (Very Slight)
		5	NO 8	8E	0.0	2	5.1245	8.3855	Hogging	0.012338	0.040000	0.048376	-399.84E-6	887.72E-6	8344.5	0 (Negligible)
		6	NO 8	8F	0.0	1	6.0975	9.3523	Hogging	0.012800	0.040000	0.051805	-399.84E-6	-857.91E-6	8230.1	1 (Very Slight)
						2	15.450	0.80916	None	0.0	0.040000	0.040000	-399.84E-6	-857.91E-6	50639.0	0 (Negligible)
		7	NO 8	8G	0.0	1	0.0	5.0790	None	0.0	0.0	35.763E-9	0.0	0.0	-	0 (Negligible)
		8	NO 8	8H	0.0	1	0.0	3.0000	None	0.011958	0.040000	0.054643	-399.84E-6	-638.75E-6	2323.3	1 (Very Slight)
		9	NO 8	8I	0.0	1	0.0	4.0790	None	0.0	0.0	35.763E-9	0.0	0.0	-	0 (Negligible)
		10	NO 8	8J	0.0	1	0.0	3.1714	Hogging	0.11770	0.0	0.11617	0.0	0.0052965	159.67	2 (Slight)
						2	3.1714	1.0571	None	0.0	0.0	35.763E-9	0.0	0.0	-	0 (Negligible)
						3	4.2286	3.1704	Hogging	0.11763	0.0	0.11610	0.0	-0.0052965	159.61	2 (Slight)
		11	NO 6	6A	0.0	1	0.0	5.8125	Hogging	0.034185	0.0	0.033460	0.0	0.0015393	1007.6	0 (Negligible)
						2	5.8125	3.8750	None	0.0	0.0	35.763E-9	0.0	0.0	-	0 (Negligible)
						3	9.6875	5.8125	Sagging	0.025468	0.0	0.023438	0.0	0.001461	1352.4	0 (Negligible)
		12	NO 6	6B	0.0	1	0.0	5.8848	None	0.011900	0.026800	0.039830	-267.93E-6	590.26E-6	3875.7	0 (Negligible)
						2	5.8848	8.4419	None	0.0083662	0.026800	0.038106	-267.93E-6	590.26E-6	12509.0	0 (Negligible)
		13	NO 6	6C	0.0	1	15.299	0.0	None	0.0	0.0	35.763E-9	0.0	-713.08E-6	2145.2	0 (Negligible)
		14	NO 6	6D	0.0	1	0.0	7.6491	None	0.0065668	0.040000	0.048452	-399.84E-6	-885.76E-6	11202.0	0 (Negligible)
						2	7.6491	10.500	Sagging	0.025156	0.040000	0.076813	-399.84E-6	-885.76E-6	2725.2	2 (Slight)
		15	NO 6	6E	0.0	1	0.0	3.2990	None	0.0	0.0	35.763E-9	0.0	0.0	-	0 (Negligible)
		16	NO 6	6F	0.0	1	0.0	1.9030	None	0.0070025	0.028964	0.031490	-289.55E-6	-806.65E-6	3365.1	0 (Negligible)
		17	NO 6	6G	0.0	1	0.0	1.6490	None	0.0064434	0.040000	0.042021	-399.84E-6	-319.77E-6	3169.9	0 (Negligible)
		18	NO 6	6H	0.0	1	0.0	0.0590	None	0.0044038	0.030566	0.032281	-305.57E-6	329.48E-6	5787.4	0 (Negligible)
		19	NO 6	6I	0.0	1	0.0	3.1000	None	0.0	0.0	35.763E-9	0.0	0.0	-	0 (Negligible)

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

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

Stage Ref.	Stage Name	Specific Building Ref.	Specific Building Name	Sub-building Name	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]	[mm]	[%]			[m]	[m]	
0	Base Model	1	NO 8	8A	0.0	0.0	0.0	0.0	5.6560	35.763E-9	0.0	0.0	-	-	0 (Negligible)
		2	NO 8	8B	0.0	0.012660	0.040000	-697.45E-6	7.0466	0.053826	-399.84E-6	-697.45E-6	-	-	1 (Very Slight)
		3	NO 8	8C	0.0	0.0	0.0	0.0	7.0331	35.763E-9	0.0	0.0	-	-	0 (Negligible)
		4	NO 8	8D	0.0	0.012643	0.040000	887.72E-6	7.0844	0.050225	-399.84E-6	887.72E-6	8344.5	-	1 (Very Slight)
		6	NO 8	8F	0.0	0.012800	0.040000	-857.91E-6	5.9634	0.051805	-399.84E-6	-857.91E-6	8230.1	-	1 (Very Slight)
		7	NO 8	8G	0.0	0.0	0.0	0.0	5.9643	35.763E-9	0.0	0.0	-	-	0 (Negligible)
		8	NO 8	8H	0.0	0.011958	0.040000	-638.75E-6	7.0708	0.054643	-399.84E-6	-638.75E-6	-	-	1 (Very Slight)
		9	NO 8	8I	0.0	0.0	0.0	0.0	7.0331	35.763E-9	0.0	0.0	-	-	0 (Negligible)
		10	NO 8	8J	0.0	0.11770	0.0	0.0052965	7.0331	0.11617	0.0	0.0052965	159.67	2 (Slight)	0 (Negligible)
		11	NO 6	6A	0.0	0.034185	0.0	0.0015393	9.7094	0.033460	0.0	0.0015393	1007.6	1352.4	0 (Negligible)
		12	NO 6	6B	0.0	0.011900	0.026800	590.26E-6	4.6241	0.039830	-267.93E-6	590.26E-6	-	-	0 (Negligible)
		13	NO 6	6C	0.0	0.0	0.0	-713.08E-6	1.3631	35.763E-9	0.0	-713.08E-6	-	-	0 (Negligible)
		14	NO 6	6D	0.0	0.025156	0.040000	-885.76E-6	11.380	0.076813	-399.84E-6	-885.76E-6	-	2725.2	2 (Slight)
		15	NO 6	6E	0.0	0.0	0.0	0.0	9.7094	35.763E-9	0.0	0.0	-	-	0 (Negligible)
		16	NO 6	6F	0.0	0.0070025	0.028964	-806.65E-6	11.186	0.031490	-289.55E-6	-806.65E-6	-	-	0 (Negligible)
		17	NO 6	6G	0.0	0.0064434	0.040000	-319.77E-6	11.500	0.042021	-399.84E-6	-319.77E-6	-	-	0 (Negligible)



GEOTECHNICAL AND ENVIRONMENTAL ASSOCIATES LTD

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7 Greenaway Gardens
Underpinning Sensitivity Analysis

Job No.	Sheet No.	Rev.
Drg. Ref.		
Made by ML	Date 18-Jul-2021	Checked Date

Stage Ref.	Stage Name	Specific Building Ref.	Specific Building Name	Sub-building Name	Vertical Offset from Line for Vertical	Deflection Ratio	Average Horizontal Strain	Max Slope	Max Settlement	Max Tensile Strain	Max Gradient of Horizontal Displacement Curvature	Max Gradient of Vertical Displacement Curvature	Min Radius of Curvature (Hogging)	Min Radius of Curvature (Sagging)	Damage Category
18		NO 6	6H		0.0	0.0044039	0.030566	329.48E-6	11.500	0.032281	-305.57E-6	329.48E-6	-	-	0 (Negligible)
19		NO 6	6I		0.0	0.0	0.0	0.0	11.004	35.763E-9	0.0	0.0	-	-	0 (Negligible)

Specific Building Damage Results - Critical Segments within Each Building

Stage Ref.	Stage Name	Specific Building Ref.	Specific Building Name	Parameter	Critical Sub-Building	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]	
0	Base Model	0	NO 8	Max Slope	8J	1	0.0	3.1714	Hogging	0.0052965	7.0331	0.11617	159.67	-	2 (Slight)
				Max Settlement	8D	1	0.0	5.1245	None	887.72E-6	7.0944	0.050225	-	-	1 (Very Slight)
				Max Tensile Strain	8J	1	0.0	3.1714	Hogging	0.0052965	7.0331	0.11617	159.67	-	2 (Slight)
				Min Radius of Curvature (Hogging)	8J	3	4.2286	7.3990	Hogging	0.0052965	7.0278	0.11610	159.61	-	2 (Slight)
				Min Radius of Curvature (Sagging)		-	-	-	-	-	-	-	-	-	-
		0	NO 6	Max Slope	6A	1	0.0	5.8125	Hogging	0.0015383	9.7094	0.033460	1007.6	-	0 (Negligible)
				Max Settlement	6H	1	0.0	2.0590	None	329.48E-6	11.500	0.032281	-	-	0 (Negligible)
				Max Tensile Strain	6D	2	7.6491	18.149	Sagging	885.76E-6	11.380	0.076813	-	2725.2	2 (Slight)
				Min Radius of Curvature (Hogging)	6A	1	0.0	5.8125	Hogging	0.0015383	9.7094	0.033460	1007.6	-	0 (Negligible)
				Min Radius of Curvature (Sagging)	6A	3	9.6875	15.500	Sagging	0.0011461	6.7289	0.023438	-	1352.4	0 (Negligible)

Specific Building Damage Results - All Combined Segments

Stage Ref.	Stage Name	Specific Building Ref.	Specific Building Name	Sub-building Name	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	Base Model	1	NO 8	8A	0.0	No combined segments for this stage, specific building and offset.							
		2	NO 8	8B	0.0	No combined segments for this stage, specific building and offset.							
		3	NO 8	8C	0.0	No combined segments for this stage, specific building and offset.							
		4	NO 8	8D	0.0	1 0.0 13.510 None 0.0092393 0.040000 0.053524 1 (Very Slight)							
		5	NO 8	8E	0.0	No combined segments for this stage, specific building and offset.							
		6	NO 8	8F	0.0	1 6.0975 10.162 Hogging 0.012765 0.040000 0.052558 1 (Very Slight)							
		7	NO 8	8G	0.0	No combined segments for this stage, specific building and offset.							
		8	NO 8	8H	0.0	No combined segments for this stage, specific building and offset.							
		9	NO 8	8I	0.0	No combined segments for this stage, specific building and offset.							
		10	NO 8	8J	0.0	1 0.0 7.3990 Hogging 0.075664 0.0 0.070607 1 (Negligible)							
		11	NO 6	6A	0.0	1 0.0 15.500 None 0.014823 0.0 0.021873 0 (Negligible)							
		12	NO 6	6B	0.0	1 0.0 14.327 None 0.0050998 0.026800 0.034542 0 (Negligible)							
		13	NO 6	6C	0.0	No combined segments for this stage, specific building and offset.							
		14	NO 6	6D	0.0	1 0.0 18.149 Sagging 0.018520 0.040000 0.067122 1 (Very Slight)							
		15	NO 6	6E	0.0	No combined segments for this stage, specific building and offset.							
		16	NO 6	6F	0.0	No combined segments for this stage, specific building and offset.							
		17	NO 6	6G	0.0	No combined segments for this stage, specific building and offset.							
		18	NO 6	6H	0.0	No combined segments for this stage, specific building and offset.							
		19	NO 6	6I	0.0	No combined segments for this stage, specific building and offset.							

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