



GEA LIMITED
(GEOTECHNICAL & ENV ASSOC)

Rear of 159-163 King's Cross Road, London WC1X 9BN
Wall Installation only Issue 4

Job No.	Sheet No.	Rev.
J16180		
Drg. Ref.		
Made by	Date	Checked
	07-Mar-2017	

Vertical Offset 1
 0.0 39.10000 23.20000 -0.50000 2.4332
 0.90247 39.03333 22.30000 -0.50000 2.2530
 1.8049 38.96667 21.40000 -0.50000 2.0728
 2.7074 38.90000 20.50000 -0.50000 1.8926

Structure: AN | Sub-structure: Sub #

Dist.	Coordinates			Displacements
	x	y	z	z
[m]	[m]	[m]	[m]	[mm]

Vertical Offset 1
 0.0 38.90000 20.50000 -0.50000 1.8926
 0.83442 38.07500 20.62500 -0.50000 1.8955
 1.6688 37.25000 20.75000 -0.50000 1.8983
 2.5032 36.42500 20.87500 -0.50000 1.9011
 3.3377 35.60000 21.00000 -0.50000 1.9037

Structure: AO | Sub-structure: Sub #

Dist.	Coordinates			Displacements
	x	y	z	z
[m]	[m]	[m]	[m]	[mm]

Vertical Offset 1
 0.0 35.60000 21.00000 -0.50000 1.9037
 0.83931 35.70000 21.83333 -0.50000 2.0715
 1.6786 35.80000 22.66667 -0.50000 2.2393
 2.5179 35.90000 23.50000 -0.50000 2.4070

Structure: AP | Sub-structure: Sub #

Dist.	Coordinates			Displacements
	x	y	z	z
[m]	[m]	[m]	[m]	[mm]

Vertical Offset 1
 0.0 35.90000 23.50000 -0.50000 2.4070
 0.89107 35.02000 23.64000 -0.50000 2.3904
 1.7821 34.14000 23.78000 -0.50000 2.3436
 2.6732 33.26000 23.92000 -0.50000 2.2703
 3.5643 32.38000 24.06000 -0.50000 2.1753
 4.4553 31.50000 24.20000 -0.50000 2.0631

Structure: AQ | Sub-structure: Sub #

Dist.	Coordinates			Displacements
	x	y	z	z
[m]	[m]	[m]	[m]	[mm]

Vertical Offset 1
 0.0 31.50000 24.20000 -0.50000 2.0631
 0.98995 31.36000 23.22000 -0.50000 1.9121
 1.9799 31.22000 22.24000 -0.50000 1.7510
 2.9698 31.08000 21.26000 -0.50000 1.5827
 3.9598 30.94000 20.28000 -0.50000 1.4089
 4.9497 30.80000 19.30000 -0.50000 1.2309

Structure: AR | Sub-structure: Sub #

Dist.	Coordinates			Displacements
	x	y	z	z
[m]	[m]	[m]	[m]	[mm]

Vertical Offset 1
 0.0 35.60000 12.40000 -0.50000 0.19920
 0.94130 35.72222 13.33333 -0.50000 0.38746
 1.8826 35.84444 14.26667 -0.50000 0.57572
 2.8239 35.96667 15.20000 -0.50000 0.76397
 3.7652 36.08889 16.13333 -0.50000 0.95223
 4.7065 36.21111 17.06667 -0.50000 1.1405
 5.6478 36.33333 18.00000 -0.50000 1.3288
 6.5891 36.45556 18.93333 -0.50000 1.5170
 7.5304 36.57778 19.86667 -0.50000 1.7053
 8.4717 36.70000 20.80000 -0.50000 1.8935

Structure: AS | Sub-structure: Sub #

Dist.	Coordinates			Displacements
	x	y	z	z
[m]	[m]	[m]	[m]	[mm]

Vertical Offset 1
 0.0 44.70000 9.30000 -0.50000 0.0
 0.90683 44.81111 10.20000 -0.50000 0.0083731
 1.8137 44.92222 11.10000 -0.50000 0.18973
 2.7205 45.03333 12.00000 -0.50000 0.37109
 3.6273 45.14444 12.90000 -0.50000 0.55244
 4.5342 45.25556 13.80000 -0.50000 0.73380
 5.4410 45.36667 14.70000 -0.50000 0.91515
 6.3478 45.47778 15.60000 -0.50000 1.0965
 7.2547 45.58889 16.50000 -0.50000 1.2779
 8.1615 45.70000 17.40000 -0.50000 1.4592

Structure: AT | Sub-structure: Sub #

Dist.	Coordinates			Displacements
	x	y	z	z
[m]	[m]	[m]	[m]	[mm]

Vertical Offset 1
 0.0 54.50000 10.00000 -0.50000 0.0
 1.8461 54.71667 11.83333 -0.50000 0.30570
 3.6922 54.93333 13.66667 -0.50000 0.63861
 5.5383 55.15000 15.50000 -0.50000 0.96105
 7.3844 55.36667 17.33333 -0.50000 1.2683
 9.2305 55.58333 19.16667 -0.50000 1.5526
 11.077 55.80000 21.00000 -0.50000 1.8019

Structure: AU | Sub-structure:

Dist.	Coordinates			Displacements
	x	y	z	z
[m]	[m]	[m]	[m]	[mm]

Vertical Offset 1
 0.0 33.10000 38.60000 -2.00000 2.4280
 0.88891 32.21250 38.65000 -2.00000 1.7165
 1.7778 31.32500 38.70000 -2.00000 1.1309



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Dist.	Coordinates			Displacements	
	x	y	z	x	z
[m]	[m]	[m]	[m]	[mm]	[mm]
2.6667	30.43750	38.75000	-2.00000	0.66622	
3.5556	29.55000	38.80000	-2.00000	0.35691	
4.4445	28.66250	38.85000	-2.00000	0.16454	
5.3334	27.77500	38.90000	-2.00000	0.066830	
6.2224	26.88750	38.95000	-2.00000	0.019805	
7.1113	26.00000	39.00000	-2.00000	0.0	

Structure: AV | Sub-structure:

Dist.	Coordinates			Displacements	
	x	y	z	x	z
[m]	[m]	[m]	[m]	[mm]	[mm]
Vertical Offset 1					
0.0	26.00000	39.00000	-2.00000	0.0	
0.92195	25.94000	38.08000	-2.00000	0.0	
1.8439	25.88000	37.16000	-2.00000	0.0	
2.7659	25.82000	36.24000	-2.00000	0.0	
3.6878	25.76000	35.32000	-2.00000	0.0	
4.6098	25.70000	34.40000	-2.00000	0.0	
5.5317	25.64000	33.48000	-2.00000	0.0	
6.4537	25.58000	32.56000	-2.00000	0.0	
7.3756	25.52000	31.64000	-2.00000	0.0	
8.2976	25.46000	30.72000	-2.00000	0.0	
9.2195	25.40000	29.80000	-2.00000	0.0	

Structure: AW | Sub-structure:

Dist.	Coordinates			Displacements	
	x	y	z	x	z
[m]	[m]	[m]	[m]	[mm]	[mm]
Vertical Offset 1					
0.0	25.40000	29.80000	-2.00000	0.0	
1.8869	27.28333	29.68333	-2.00000	0.025690	
3.7739	29.16667	29.56667	-2.00000	0.14409	
5.6608	31.05000	29.45000	-2.00000	0.43160	
7.5478	32.93333	29.33333	-2.00000	0.79708	
9.4347	34.81667	29.21667	-2.00000	1.5716	
11.322	36.70000	29.10000	-2.00000	2.7362	

Specific Building Damage Results - All Segments

Structure: A | Sub-structure:

Vertical Offset from Line for Vertical Movement Calculations	Segment	Start Length	Curvature	Deflection Ratio	Average Horizontal Strain	Max. Tensile Strain	Maximum Gradient of Horizontal Displacement Curve	Maximum Gradient of Vertical Displacement Curve	Min. Radius of Curvature	Damage Category
[m]		[m]	[m]	[%]	[%]	[%]			[m]	
0.0	All settlements are less than the Settlement Trough Limit Sensitivity.									
Tensile horizontal strains are +ve, compressive horizontal strains are -ve.										

Structure: B | Sub-structure:

Vertical Offset from Line for Vertical Movement Calculations	Segment	Start Length	Curvature	Deflection Ratio	Average Horizontal Strain	Max. Tensile Strain	Maximum Gradient of Horizontal Displacement Curve	Maximum Gradient of Vertical Displacement Curve	Min. Radius of Curvature	Damage Category
[m]		[m]	[m]	[%]	[%]	[%]			[m]	
0.0	All settlements are less than the Settlement Trough Limit Sensitivity.									
Tensile horizontal strains are +ve, compressive horizontal strains are -ve.										

Structure: C | Sub-structure:

Vertical Offset from Line for Vertical Movement Calculations	Segment	Start Length	Curvature	Deflection Ratio	Average Horizontal Strain	Max. Tensile Strain	Maximum Gradient of Horizontal Displacement Curve	Maximum Gradient of Vertical Displacement Curve	Min. Radius of Curvature	Damage Category
[m]		[m]	[m]	[%]	[%]	[%]			[m]	
0.0	1	3.6809	0.91922	Hogging	0.0	0.019322	0.019322	-254.49E-6	-198.32E-6	10232.
										(Negligible)
Tensile horizontal strains are +ve, compressive horizontal strains are -ve.										

Structure: D | Sub-structure:

Vertical Offset from Line for Vertical Movement Calculations	Segment	Start Length	Curvature	Deflection Ratio	Average Horizontal Strain	Max. Tensile Strain	Maximum Gradient of Horizontal Displacement Curve	Maximum Gradient of Vertical Displacement Curve	Min. Radius of Curvature	Damage Category
[m]		[m]	[m]	[%]	[%]	[%]			[m]	
0.0	1	0.0	1.8003	Hogging	966.79E-6	0.0064624	0.0065809	-201.53E-6	159.45E-6	21589.
										(Negligible)
Tensile horizontal strains are +ve, compressive horizontal strains are -ve.										

Structure: E | Sub-structure:

Vertical Offset from Line for Vertical Movement Calculations	Segment	Start Length	Curvature	Deflection Ratio	Average Horizontal Strain	Max. Tensile Strain	Maximum Gradient of Horizontal Displacement Curve	Maximum Gradient of Vertical Displacement Curve	Min. Radius of Curvature	Damage Category
[m]		[m]	[m]	[%]	[%]	[%]			[m]	
0.0	All settlements are less than the Settlement Trough Limit Sensitivity.									
Tensile horizontal strains are +ve, compressive horizontal strains are -ve.										

Structure: F | Sub-structure:

Vertical Offset from Line for Vertical Movement Calculations	Segment	Start Length	Curvature	Deflection Ratio	Average Horizontal Strain	Max. Tensile Strain	Maximum Gradient of Horizontal Displacement Curve	Maximum Gradient of Vertical Displacement Curve	Min. Radius of Curvature	Damage Category
[m]		[m]	[m]	[%]	[%]	[%]			[m]	
0.0	All settlements are less than the Settlement Trough Limit Sensitivity.									
Tensile horizontal strains are +ve, compressive horizontal strains are -ve.										

Structure: G | Sub-structure:

Vertical Offset from Line for Vertical Movement Calculations	Segment	Start Length	Curvature	Deflection Ratio	Average Horizontal Strain	Max. Tensile Strain	Maximum Gradient of Horizontal Displacement Curve	Maximum Gradient of Vertical Displacement Curve	Min. Radius of Curvature	Damage Category
[m]		[m]	[m]	[%]	[%]	[%]			[m]	
0.0	All settlements are less than the Settlement Trough Limit Sensitivity.									
Tensile horizontal strains are +ve, compressive horizontal strains are -ve.										



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[m] [m] [%] [%] [%] [m]
0.0 All settlements are less than the Settlement Trough Limit Sensitivity.
Tensile horizontal strains are +ve, compressive horizontal strains are -ve.

Structure: H | Sub-structure:

Vertical Offset from Line for Vertical Movement Calculations	Segment	Start Length	Curvature	Deflection Ratio	Average Horizontal Strain	Max. Tensile Strain	Maximum Gradient of Horizontal Displacement Curve	Maximum Gradient of Vertical Displacement Curve	Min. Radius of Curvature	Damage Category
[m]		[m]	[m]	[%]	[%]	[%]			[m]	
0.0										

0.0 All settlements are less than the Settlement Trough Limit Sensitivity.
Tensile horizontal strains are +ve, compressive horizontal strains are -ve.

Structure: I | Sub-structure:

Vertical Offset from Line for Vertical Movement Calculations	Segment	Start Length	Curvature	Deflection Ratio	Average Horizontal Strain	Max. Tensile Strain	Maximum Gradient of Horizontal Displacement Curve	Maximum Gradient of Vertical Displacement Curve	Min. Radius of Curvature	Damage Category
[m]		[m]	[m]	[%]	[%]	[%]			[m]	
0.0										

0.0 All settlements are less than the Settlement Trough Limit Sensitivity.
Tensile horizontal strains are +ve, compressive horizontal strains are -ve.

Structure: J | Sub-structure:

Vertical Offset from Line for Vertical Movement Calculations	Segment	Start Length	Curvature	Deflection Ratio	Average Horizontal Strain	Max. Tensile Strain	Maximum Gradient of Horizontal Displacement Curve	Maximum Gradient of Vertical Displacement Curve	Min. Radius of Curvature	Damage Category
[m]		[m]	[m]	[%]	[%]	[%]			[m]	
0.0										

0.0 All settlements are less than the Settlement Trough Limit Sensitivity.
Tensile horizontal strains are +ve, compressive horizontal strains are -ve.

Structure: K | Sub-structure:

Vertical Offset from Line for Vertical Movement Calculations	Segment	Start Length	Curvature	Deflection Ratio	Average Horizontal Strain	Max. Tensile Strain	Maximum Gradient of Horizontal Displacement Curve	Maximum Gradient of Vertical Displacement Curve	Min. Radius of Curvature	Damage Category
[m]		[m]	[m]	[%]	[%]	[%]			[m]	
0.0	1	2.9667	3.9556	Sagging	506.75E-6	-0.0048460	0.0010085	102.42E-6	-38.078E-6	65133.
	2	6.9222	1.9768	None	0.0	0.0	0.0	0.0	0.0	(Negligible)

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

Structure: L | Sub-structure:

Vertical Offset from Line for Vertical Movement Calculations	Segment	Start Length	Curvature	Deflection Ratio	Average Horizontal Strain	Max. Tensile Strain	Maximum Gradient of Horizontal Displacement Curve	Maximum Gradient of Vertical Displacement Curve	Min. Radius of Curvature	Damage Category
[m]		[m]	[m]	[%]	[%]	[%]			[m]	
0.0	1	7.1990	0.0	None	0.0	0.0	-333.22E-6	-96.121E-6	18500.	0 (Negligible)

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

Structure: M | Sub-structure:

Vertical Offset from Line for Vertical Movement Calculations	Segment	Start Length	Curvature	Deflection Ratio	Average Horizontal Strain	Max. Tensile Strain	Maximum Gradient of Horizontal Displacement Curve	Maximum Gradient of Vertical Displacement Curve	Min. Radius of Curvature	Damage Category
[m]		[m]	[m]	[%]	[%]	[%]			[m]	
0.0	1	7.2997	0.0	None	0.0	0.0	-333.16E-6	-95.636E-6	19090.	0 (Negligible)

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

Structure: N | Sub-structure:

Vertical Offset from Line for Vertical Movement Calculations	Segment	Start Length	Curvature	Deflection Ratio	Average Horizontal Strain	Max. Tensile Strain	Maximum Gradient of Horizontal Displacement Curve	Maximum Gradient of Vertical Displacement Curve	Min. Radius of Curvature	Damage Category
[m]		[m]	[m]	[%]	[%]	[%]			[m]	
0.0										

0.0 All settlements are less than the Settlement Trough Limit Sensitivity.
Tensile horizontal strains are +ve, compressive horizontal strains are -ve.

Structure: O | Sub-structure:

Vertical Offset from Line for Vertical Movement Calculations	Segment	Start Length	Curvature	Deflection Ratio	Average Horizontal Strain	Max. Tensile Strain	Maximum Gradient of Horizontal Displacement Curve	Maximum Gradient of Vertical Displacement Curve	Min. Radius of Curvature	Damage Category
[m]		[m]	[m]	[%]	[%]	[%]			[m]	
0.0	1	0.0	4.5990	Hogging	0.0082887	0.046211	0.053454	-649.98E-6	-728.35E-6	6422.2

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

Structure: P | Sub-structure: Sub #

Vertical Offset from Line for Vertical Movement Calculations	Segment	Start Length	Curvature	Deflection Ratio	Average Horizontal Strain	Max. Tensile Strain	Maximum Gradient of Horizontal Displacement Curve	Maximum Gradient of Vertical Displacement Curve	Min. Radius of Curvature	Damage Category
[m]		[m]	[m]	[%]	[%]	[%]			[m]	
0.0	1	0.95000	3.7521	Hogging	0.0066153	0.032175	0.035966	-332.60E-6	-571.89E-6	7133.8
	2	4.7021	0.99690	Sagging	201.27E-6	-0.12974	0.025948	0.0013797	-571.89E-6	11332.

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

Structure: Q | Sub-structure:

Vertical Offset from Line for Vertical Movement Calculations	Segment	Start Length	Curvature	Deflection Ratio	Average Horizontal Strain	Max. Tensile Strain	Maximum Gradient of Horizontal Displacement Curve	Maximum Gradient of Vertical Displacement Curve	Min. Radius of Curvature	Damage Category
[m]		[m]	[m]	[%]	[%]	[%]			[m]	



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Movement Calculations	[m]	[m]	[m]	[%]	[%]	[%]	Displacement Curve	Displacement Curve	[m]		
0.0	1	0.0	4.5990	Hogging	0.0072426	0.033397	0.039768	-336.39E-6	-648.98E-6	6821.8	0

(Negligible)

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

Structure: R | Sub-structure:

Vertical Offset from Line for Vertical Movement Calculations	Segment	Start	Length	Curvature	Deflection Ratio	Average Horizontal Strain	Max. Tensile Strain	Maximum Gradient of Horizontal Displacement Curve	Maximum Gradient of Vertical Displacement Curve	Min. Radius of Curvature	Damage Category
[m]		[m]	[m]		[%]	[%]	[%]			[m]	
0.0	1	0.92635	4.6368	Hogging	0.0060199	0.025960	0.031474	-313.88E-6	-477.91E-6	8142.8	0
	2	5.5632	1.8466	Sagging	0.0053293	-0.074843	0.015243	0.0014179	-477.91E-6	3287.4	0

(Negligible)

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

Structure: S | Sub-structure:

Vertical Offset from Line for Vertical Movement Calculations	Segment	Start	Length	Curvature	Deflection Ratio	Average Horizontal Strain	Max. Tensile Strain	Maximum Gradient of Horizontal Displacement Curve	Maximum Gradient of Vertical Displacement Curve	Min. Radius of Curvature	Damage Category
[m]		[m]	[m]		[%]	[%]	[%]			[m]	
0.0	All settlements are less than the Settlement Trough Limit Sensitivity.										

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

Structure: T | Sub-structure:

Vertical Offset from Line for Vertical Movement Calculations	Segment	Start	Length	Curvature	Deflection Ratio	Average Horizontal Strain	Max. Tensile Strain	Maximum Gradient of Horizontal Displacement Curve	Maximum Gradient of Vertical Displacement Curve	Min. Radius of Curvature	Damage Category
[m]		[m]	[m]		[%]	[%]	[%]			[m]	
0.0	1	1.9859	5.4076	Sagging	0.0027832	-0.012323	0.0028827	221.76E-6	-71.359E-6	33207.	0
	2	7.3935	11.303	Hogging	0.0050045	0.0015338	0.0061316	115.07E-6	-731.82E-6	10835.	0
	3	18.696	12.616	Sagging	0.0068274	750.65E-6	0.010713	115.07E-6	-731.82E-6	8765.1	0
	4	31.312	2.4485	Sagging	267.42E-6	0.0	261.82E-6	0.0	113.72E-6	55432.	0

(Negligible)

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

Structure: U | Sub-structure:

Vertical Offset from Line for Vertical Movement Calculations	Segment	Start	Length	Curvature	Deflection Ratio	Average Horizontal Strain	Max. Tensile Strain	Maximum Gradient of Horizontal Displacement Curve	Maximum Gradient of Vertical Displacement Curve	Min. Radius of Curvature	Damage Category
[m]		[m]	[m]		[%]	[%]	[%]			[m]	
0.0	All settlements are less than the Settlement Trough Limit Sensitivity.										

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

Structure: V | Sub-structure:

Vertical Offset from Line for Vertical Movement Calculations	Segment	Start	Length	Curvature	Deflection Ratio	Average Horizontal Strain	Max. Tensile Strain	Maximum Gradient of Horizontal Displacement Curve	Maximum Gradient of Vertical Displacement Curve	Min. Radius of Curvature	Damage Category
[m]		[m]	[m]		[%]	[%]	[%]			[m]	
0.0	1	3.6391	0.0	None	0.0	0.0	0.0	-282.82E-6	-95.931E-6	17084.	0

(Negligible)

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

Structure: W | Sub-structure:

Vertical Offset from Line for Vertical Movement Calculations	Segment	Start	Length	Curvature	Deflection Ratio	Average Horizontal Strain	Max. Tensile Strain	Maximum Gradient of Horizontal Displacement Curve	Maximum Gradient of Vertical Displacement Curve	Min. Radius of Curvature	Damage Category
[m]		[m]	[m]		[%]	[%]	[%]			[m]	
0.0	1	0.0	0.57009	Sagging	0.0	0.0053346	0.0053346	-53.344E-6	53.569E-6	59139.	0

(Negligible)

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

Structure: X | Sub-structure:

Vertical Offset from Line for Vertical Movement Calculations	Segment	Start	Length	Curvature	Deflection Ratio	Average Horizontal Strain	Max. Tensile Strain	Maximum Gradient of Horizontal Displacement Curve	Maximum Gradient of Vertical Displacement Curve	Min. Radius of Curvature	Damage Category
[m]		[m]	[m]		[%]	[%]	[%]			[m]	
0.0	1	6.8041	2.7064	Sagging	56.742E-6	0.013802	0.013829	-149.00E-6	-758.14E-6	6718.5	0
	2	9.5105	0.20859	None	0.0	0.014902	0.014902	-149.00E-6	-180.19E-6	4.4001E+6	0

(Negligible)

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

Structure: Y | Sub-structure:

Vertical Offset from Line for Vertical Movement Calculations	Segment	Start	Length	Curvature	Deflection Ratio	Average Horizontal Strain	Max. Tensile Strain	Maximum Gradient of Horizontal Displacement Curve	Maximum Gradient of Vertical Displacement Curve	Min. Radius of Curvature	Damage Category
[m]		[m]	[m]		[%]	[%]	[%]			[m]	
0.0	1	0.0	3.6391	Sagging	0.0	0.016684	0.016684	-182.02E-6	-179.35E-6	427.94E+6	0

(Negligible)

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

Structure: Z | Sub-structure:

Vertical Offset from Line for Vertical Movement Calculations	Segment	Start	Length	Curvature	Deflection Ratio	Average Horizontal Strain	Max. Tensile Strain	Maximum Gradient of Horizontal Displacement Curve	Maximum Gradient of Vertical Displacement Curve	Min. Radius of Curvature	Damage Category
[m]		[m]	[m]		[%]	[%]	[%]			[m]	



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[m]	[m]	[m]	[%]	[%]	[%]	[m]				
0.0	1	5.7481	1.9160	Hogging	0.0	0.0	0.0	-180.40E-6	18945.	0
	2	7.6641	1.9150	Sagging	0.0	0.0	0.0	-180.40E-6	169.34E+9	(Negligible)

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

Structure: AA | Sub-structure:

Vertical Offset from Line for Vertical Movement Calculations	Segment	Start	Length	Curvature	Deflection Ratio	Average Horizontal Strain	Max. Tensile Strain	Maximum Gradient of Horizontal Displacement Curve	Maximum Gradient of Vertical Displacement Curve	Min. Radius of Curvature	Damage Category
[m]		[m]	[m]	[%]	[%]	[%]				[m]	
0.0	1	0.0	3.6610	Sagging	0.0	0.015110	0.015110	-159.08E-6	-182.60E-6	761.45E+6	0

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

Structure: AB | Sub-structure:

Vertical Offset from Line for Vertical Movement Calculations	Segment	Start	Length	Curvature	Deflection Ratio	Average Horizontal Strain	Max. Tensile Strain	Maximum Gradient of Horizontal Displacement Curve	Maximum Gradient of Vertical Displacement Curve	Min. Radius of Curvature	Damage Category
[m]		[m]	[m]	[%]	[%]	[%]				[m]	
0.0	1	8.5163	0.44421	Sagging	0.0	0.0	0.0	0.0	-178.02E-6	23512.	0
	2	8.9605	0.50104	Sagging	0.0	0.0	0.0	0.0	-175.45E-6	20845.	(Negligible)

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

Structure: AC | Sub-structure:

Vertical Offset from Line for Vertical Movement Calculations	Segment	Start	Length	Curvature	Deflection Ratio	Average Horizontal Strain	Max. Tensile Strain	Maximum Gradient of Horizontal Displacement Curve	Maximum Gradient of Vertical Displacement Curve	Min. Radius of Curvature	Damage Category
[m]		[m]	[m]	[%]	[%]	[%]				[m]	
0.0	1	0.0	5.0794	Sagging	336.52E-6	0.0039947	0.0044826	-102.28E-6	-171.41E-6	134410.	0

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

Structure: AD | Sub-structure:

Vertical Offset from Line for Vertical Movement Calculations	Segment	Start	Length	Curvature	Deflection Ratio	Average Horizontal Strain	Max. Tensile Strain	Maximum Gradient of Horizontal Displacement Curve	Maximum Gradient of Vertical Displacement Curve	Min. Radius of Curvature	Damage Category
[m]		[m]	[m]	[%]	[%]	[%]				[m]	
0.0	1	0.0	7.8628	Sagging	0.0	0.023814	0.023815	-316.46E-6	-199.96E-6	130.44E+6	0

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

Structure: AE | Sub-structure:

Vertical Offset from Line for Vertical Movement Calculations	Segment	Start	Length	Curvature	Deflection Ratio	Average Horizontal Strain	Max. Tensile Strain	Maximum Gradient of Horizontal Displacement Curve	Maximum Gradient of Vertical Displacement Curve	Min. Radius of Curvature	Damage Category
[m]		[m]	[m]	[%]	[%]	[%]				[m]	
0.0	1	0.0	3.3051	Sagging	686.24E-6	-0.0010690	422.89E-6	22.100E-6	61.633E-6	56990.	0

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

Structure: AF | Sub-structure:

Vertical Offset from Line for Vertical Movement Calculations	Segment	Start	Length	Curvature	Deflection Ratio	Average Horizontal Strain	Max. Tensile Strain	Maximum Gradient of Horizontal Displacement Curve	Maximum Gradient of Vertical Displacement Curve	Min. Radius of Curvature	Damage Category
[m]		[m]	[m]	[%]	[%]	[%]				[m]	
0.0	1	0.0	3.2130	Sagging	515.01E-6	-0.029263	0.0058586	0.0021989	199.40E-6	24851.	0

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

Structure: AG | Sub-structure:

Vertical Offset from Line for Vertical Movement Calculations	Segment	Start	Length	Curvature	Deflection Ratio	Average Horizontal Strain	Max. Tensile Strain	Maximum Gradient of Horizontal Displacement Curve	Maximum Gradient of Vertical Displacement Curve	Min. Radius of Curvature	Damage Category
[m]		[m]	[m]	[%]	[%]	[%]				[m]	
0.0	1	0.0	11.652	Sagging	0.0017119	0.0011028	0.0033851	461.88E-6	193.59E-6	24828.	0
	2	11.652	3.5850	Sagging	37.502E-6	0.0023340	0.0023805	-49.792E-6	195.11E-6	31904.	(Negligible)

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

Structure: AH | Sub-structure:

Vertical Offset from Line for Vertical Movement Calculations	Segment	Start	Length	Curvature	Deflection Ratio	Average Horizontal Strain	Max. Tensile Strain	Maximum Gradient of Horizontal Displacement Curve	Maximum Gradient of Vertical Displacement Curve	Min. Radius of Curvature	Damage Category
[m]		[m]	[m]	[%]	[%]	[%]				[m]	
0.0	1	0.0	6.3378	Sagging	818.82E-6	0.0069390	0.0073579	-134.73E-6	-175.94E-6	50441.	0

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

Structure: AI | Sub-structure: Sub #

Vertical Offset from Line for Vertical Movement Calculations	Segment	Start	Length	Curvature	Deflection Ratio	Average Horizontal Strain	Max. Tensile Strain	Maximum Gradient of Horizontal Displacement Curve	Maximum Gradient of Vertical Displacement Curve	Min. Radius of Curvature	Damage Category
[m]		[m]	[m]	[%]	[%]	[%]				[m]	
0.0	1	0.0	4.8498	Sagging	293.53E-6	0.014941	0.015057	-162.98E-6	187.89E-6	121050.	0

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



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Vertical Offset from Line for Vertical Movement	Segment	Start Length	Curvature	Deflection Ratio	Average Horizontal Strain	Max. Tensile Strain	Maximum Gradient of Horizontal Displacement	Maximum Gradient of Vertical Displacement	Min. Radius of Curvature	Damage Category
Structure: AJ Sub-structure: Sub #										
Vertical Offset from Line for Vertical Movement Calculations	Segment	Start Length	Curvature	Deflection Ratio	Average Horizontal Strain	Max. Tensile Strain	Maximum Gradient of Horizontal Displacement	Maximum Gradient of Vertical Displacement	Min. Radius of Curvature	Damage Category
[m]		[m]		[%]	[%]	[%]			[m]	
0.0	1	0.0	5.9785	Sagging	904.77E-6	-0.0024738	736.61E-6	55.654E-6	-52.027E-6	51448.0
	2	5.9785	0.99641	None	0.0	2.1408E-6	2.1100E-6	0.0	2.1114E-6	(Negligible)
	3	6.9749	1.9918	Sagging	0.0	2.1389E-6	2.1100E-6	0.0	2.1114E-6	17.599E+12
										(Negligible)
Tensile horizontal strains are +ve, compressive horizontal strains are -ve.										
Structure: AK Sub-structure: Sub #										
Vertical Offset from Line for Vertical Movement Calculations	Segment	Start Length	Curvature	Deflection Ratio	Average Horizontal Strain	Max. Tensile Strain	Maximum Gradient of Horizontal Displacement	Maximum Gradient of Vertical Displacement	Min. Radius of Curvature	Damage Category
[m]		[m]		[%]	[%]	[%]			[m]	
0.0	1	0.0	4.9487	Sagging	0.0	0.023222	0.023222	-273.73E-6	-199.95E-6	196.80E+6
										(Negligible)
Tensile horizontal strains are +ve, compressive horizontal strains are -ve.										
Structure: AL Sub-structure: Sub #										
Vertical Offset from Line for Vertical Movement Calculations	Segment	Start Length	Curvature	Deflection Ratio	Average Horizontal Strain	Max. Tensile Strain	Maximum Gradient of Horizontal Displacement	Maximum Gradient of Vertical Displacement	Min. Radius of Curvature	Damage Category
[m]		[m]		[%]	[%]	[%]			[m]	
0.0	1	0.0	1.8953	Sagging	0.0	1.2333E-6	1.2517E-6	0.0	1.3112E-6	14.233E+12
	2	1.8953	0.0	None	0.0	0.0	0.0	0.0	1.3112E-6	(Negligible)
	3	1.8953	1.3050	Sagging	0.0	1.2320E-6	1.2517E-6	0.0	1.3112E-6	33.477E+12
	4	3.2002	1.5369	Sagging	0.0	1.2310E-6	1.2517E-6	0.0	1.3112E-6	3.7263E+12
										(Negligible)
Tensile horizontal strains are +ve, compressive horizontal strains are -ve.										
Structure: AM Sub-structure: Sub #										
Vertical Offset from Line for Vertical Movement Calculations	Segment	Start Length	Curvature	Deflection Ratio	Average Horizontal Strain	Max. Tensile Strain	Maximum Gradient of Horizontal Displacement	Maximum Gradient of Vertical Displacement	Min. Radius of Curvature	Damage Category
[m]		[m]		[%]	[%]	[%]			[m]	
0.0	1	0.0	2.7064	Sagging	0.0	0.025197	0.025197	-273.10E-6	199.60E-6	196.75E+6
										(Negligible)
Tensile horizontal strains are +ve, compressive horizontal strains are -ve.										
Structure: AN Sub-structure: Sub #										
Vertical Offset from Line for Vertical Movement Calculations	Segment	Start Length	Curvature	Deflection Ratio	Average Horizontal Strain	Max. Tensile Strain	Maximum Gradient of Horizontal Displacement	Maximum Gradient of Vertical Displacement	Min. Radius of Curvature	Damage Category
[m]		[m]		[%]	[%]	[%]			[m]	
0.0	1	0.0	0.83442	Hogging	0.0	6.3509E-6	6.3300E-6	0.0	-3.3683E-6	18.792E+12
	2	0.83442	2.5022	Sagging	3.9225E-6	-562.61E-6	112.55E-6	17.019E-6	-3.3683E-6	3.7769E+6
										(Negligible)
Tensile horizontal strains are +ve, compressive horizontal strains are -ve.										
Structure: AO Sub-structure: Sub #										
Vertical Offset from Line for Vertical Movement Calculations	Segment	Start Length	Curvature	Deflection Ratio	Average Horizontal Strain	Max. Tensile Strain	Maximum Gradient of Horizontal Displacement	Maximum Gradient of Vertical Displacement	Min. Radius of Curvature	Damage Category
[m]		[m]		[%]	[%]	[%]			[m]	
0.0	1	0.0	2.5169	Sagging	1.2784E-6	0.025126	0.025126	-270.60E-6	-199.86E-6	18.121E+6
										(Negligible)
Tensile horizontal strains are +ve, compressive horizontal strains are -ve.										
Structure: AP Sub-structure: Sub #										
Vertical Offset from Line for Vertical Movement Calculations	Segment	Start Length	Curvature	Deflection Ratio	Average Horizontal Strain	Max. Tensile Strain	Maximum Gradient of Horizontal Displacement	Maximum Gradient of Vertical Displacement	Min. Radius of Curvature	Damage Category
[m]		[m]		[%]	[%]	[%]			[m]	
0.0	1	0.0	4.4543	Sagging	0.0016623	-0.017895	0.0037032	321.92E-6	125.86E-6	25453.0
										(Negligible)
Tensile horizontal strains are +ve, compressive horizontal strains are -ve.										
Structure: AQ Sub-structure: Sub #										
Vertical Offset from Line for Vertical Movement Calculations	Segment	Start Length	Curvature	Deflection Ratio	Average Horizontal Strain	Max. Tensile Strain	Maximum Gradient of Horizontal Displacement	Maximum Gradient of Vertical Displacement	Min. Radius of Curvature	Damage Category
[m]		[m]		[%]	[%]	[%]			[m]	
0.0	1	0.0	4.9487	Sagging	418.97E-6	0.011494	0.011663	-142.20E-6	179.74E-6	92298.0
										(Negligible)
Tensile horizontal strains are +ve, compressive horizontal strains are -ve.										
Structure: AR Sub-structure: Sub #										
Vertical Offset from Line for Vertical Movement Calculations	Segment	Start Length	Curvature	Deflection Ratio	Average Horizontal Strain	Max. Tensile Strain	Maximum Gradient of Horizontal Displacement	Maximum Gradient of Vertical Displacement	Min. Radius of Curvature	Damage Category
[m]		[m]		[%]	[%]	[%]			[m]	
0.0	1	0.0	0.94198	None	0.0	0.0	0.0	0.0	-200.00E-6	89.267E+9
										0



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Vertical Offset from Line for Vertical Movement	Segment	Start	Length	Curvature	Deflection Ratio	Average Horizontal Strain	Max. Tensile Strain	Maximum Gradient of Horizontal Displacement	Maximum Gradient of Vertical Displacement	Min. Radius of Curvature	Damage Category
	2	0.94198	7.5287	Sagging	0.0	0.013329	0.013330	-215.70E-6	-200.00E-6	68.343E+6	(Negligible) 0

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

Structure: AS | Sub-structure: Sub #

Vertical Offset from Line for Vertical Movement	Segment	Start	Length	Curvature	Deflection Ratio	Average Horizontal Strain	Max. Tensile Strain	Maximum Gradient of Horizontal Displacement	Maximum Gradient of Vertical Displacement	Min. Radius of Curvature	Damage Category
Calculations		[m]	[m]		[%]	[%]	[%]	Curve	Curve	[m]	
0.0	1	1.8137	0.90683	None	0.0	0.0	0.0	0.0	-199.99E-6	19016.	(Negligible) 0
	2	2.7205	0.0	None	0.0	0.0	0.0	0.0	-199.99E-6	-	(Negligible) 0
	3	2.7205	5.4400	Sagging	0.0	0.010196	0.010196	-187.90E-6	-199.99E-6	62.262E+6	(Negligible) 0

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

Structure: AT | Sub-structure: Sub #

Vertical Offset from Line for Vertical Movement	Segment	Start	Length	Curvature	Deflection Ratio	Average Horizontal Strain	Max. Tensile Strain	Maximum Gradient of Horizontal Displacement	Maximum Gradient of Vertical Displacement	Min. Radius of Curvature	Damage Category
Calculations		[m]	[m]		[%]	[%]	[%]	Curve	Curve	[m]	
0.0	1	1.8461	1.6386	None	0.0	0.0	0.0	0.0	-180.33E-6	191570.	(Negligible) 0
	2	3.4847	7.5909	Sagging	661.94E-6	0.0072829	0.0076835	-117.56E-6	-180.33E-6	89349.	(Negligible) 0

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

Structure: AU | Sub-structure:

Vertical Offset from Line for Vertical Movement	Segment	Start	Length	Curvature	Deflection Ratio	Average Horizontal Strain	Max. Tensile Strain	Maximum Gradient of Horizontal Displacement	Maximum Gradient of Vertical Displacement	Min. Radius of Curvature	Damage Category
Calculations		[m]	[m]		[%]	[%]	[%]	Curve	Curve	[m]	
0.0	1	0.0	4.4445	Hogging	0.0090691	0.052345	0.058705	-666.16E-6	799.97E-6	5775.4	1 (Very Slight)

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

Structure: AV | Sub-structure:

Vertical Offset from Line for Vertical Movement	Segment	Start	Length	Curvature	Deflection Ratio	Average Horizontal Strain	Max. Tensile Strain	Maximum Gradient of Horizontal Displacement	Maximum Gradient of Vertical Displacement	Min. Radius of Curvature	Damage Category
Calculations		[m]	[m]		[%]	[%]	[%]	Curve	Curve	[m]	
0.0	All settlements are less than the Settlement Trough Limit Sensitivity.										

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

Structure: AW | Sub-structure:

Vertical Offset from Line for Vertical Movement	Segment	Start	Length	Curvature	Deflection Ratio	Average Horizontal Strain	Max. Tensile Strain	Maximum Gradient of Horizontal Displacement	Maximum Gradient of Vertical Displacement	Min. Radius of Curvature	Damage Category
Calculations		[m]	[m]		[%]	[%]	[%]	Curve	Curve	[m]	
0.0	1	3.7739	7.5468	Hogging	0.0084823	0.022198	0.031327	-334.33E-6	-617.02E-6	9027.7	(Negligible) 0

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

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

Structure: A | Sub-structure:

Vertical Offset from Line for Vertical Movement	Deflection Ratio	Average Horizontal Strain	Maximum Slope	Maximum Settlement	Max. Tensile Strain	Maximum Gradient of Horizontal Displacement	Maximum Gradient of Vertical Displacement	Min. Radius of Curvature (Hogging)	Min. Radius of Curvature (Sagging)	Damage Category
Calculations	[%]	[%]	[mm]	[mm]	[%]	Curve	Curve	[m]	[m]	

Structure: B | Sub-structure:

Vertical Offset from Line for Vertical Movement	Deflection Ratio	Average Horizontal Strain	Maximum Slope	Maximum Settlement	Max. Tensile Strain	Maximum Gradient of Horizontal Displacement	Maximum Gradient of Vertical Displacement	Min. Radius of Curvature (Hogging)	Min. Radius of Curvature (Sagging)	Damage Category
Calculations	[%]	[%]	[mm]	[mm]	[%]	Curve	Curve	[m]	[m]	

Structure: C | Sub-structure:

Vertical Offset from Line for Vertical Movement	Deflection Ratio	Average Horizontal Strain	Maximum Slope	Maximum Settlement	Max. Tensile Strain	Maximum Gradient of Horizontal Displacement	Maximum Gradient of Vertical Displacement	Min. Radius of Curvature (Hogging)	Min. Radius of Curvature (Sagging)	Damage Category
Calculations	[%]	[%]	[mm]	[mm]	[%]	Curve	Curve	[m]	[m]	
0.0	0.0	0.019322	-198.32E-6	0.36895	0.019322	-254.49E-6	-198.32E-6	10232.	-	0 (Negligible)

Structure: D | Sub-structure:

Vertical Offset from Line for Vertical Movement	Deflection Ratio	Average Horizontal Strain	Maximum Slope	Maximum Settlement	Max. Tensile Strain	Maximum Gradient of Horizontal Displacement	Maximum Gradient of Vertical Displacement	Min. Radius of Curvature (Hogging)	Min. Radius of Curvature (Sagging)	Damage Category
Calculations	[%]	[%]	[mm]	[mm]	[%]	Curve	Curve	[m]	[m]	
0.0	966.79E-6	0.0064624	159.45E-6	0.36915	0.0065809	-201.53E-6	159.45E-6	21589.	-	0 (Negligible)

Structure: E | Sub-structure:



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Vertical Offset from Line for Vertical	Deflection Ratio	Average Horizontal Strain	Maximum Slope	Maximum Settlement	Max. Tensile Strain	Maximum Gradient of Horizontal Displacement	Maximum Gradient of Vertical Displacement	Min. Radius of Curvature (Hogging)	Min. Radius of Curvature (Sagging)	Damage Category
Calculations [m]	[%]	[%]		[mm]	[%]			[m]	[m]	
Structure: F Sub-structure:										
Vertical Offset from Line for Vertical Movement Calculations [m]	Deflection Ratio [%]	Average Horizontal Strain [%]	Maximum Slope	Maximum Settlement [mm]	Max. Tensile Strain [%]	Maximum Gradient of Horizontal Displacement Curve	Maximum Gradient of Vertical Displacement Curve	Min. Radius of Curvature (Hogging) [m]	Min. Radius of Curvature (Sagging) [m]	Damage Category
Structure: G Sub-structure:										
Vertical Offset from Line for Vertical Movement Calculations [m]	Deflection Ratio [%]	Average Horizontal Strain [%]	Maximum Slope	Maximum Settlement [mm]	Max. Tensile Strain [%]	Maximum Gradient of Horizontal Displacement Curve	Maximum Gradient of Vertical Displacement Curve	Min. Radius of Curvature (Hogging) [m]	Min. Radius of Curvature (Sagging) [m]	Damage Category
Structure: H Sub-structure:										
Vertical Offset from Line for Vertical Movement Calculations [m]	Deflection Ratio [%]	Average Horizontal Strain [%]	Maximum Slope	Maximum Settlement [mm]	Max. Tensile Strain [%]	Maximum Gradient of Horizontal Displacement Curve	Maximum Gradient of Vertical Displacement Curve	Min. Radius of Curvature (Hogging) [m]	Min. Radius of Curvature (Sagging) [m]	Damage Category
Structure: I Sub-structure:										
Vertical Offset from Line for Vertical Movement Calculations [m]	Deflection Ratio [%]	Average Horizontal Strain [%]	Maximum Slope	Maximum Settlement [mm]	Max. Tensile Strain [%]	Maximum Gradient of Horizontal Displacement Curve	Maximum Gradient of Vertical Displacement Curve	Min. Radius of Curvature (Hogging) [m]	Min. Radius of Curvature (Sagging) [m]	Damage Category
Structure: J Sub-structure:										
Vertical Offset from Line for Vertical Movement Calculations [m]	Deflection Ratio [%]	Average Horizontal Strain [%]	Maximum Slope	Maximum Settlement [mm]	Max. Tensile Strain [%]	Maximum Gradient of Horizontal Displacement Curve	Maximum Gradient of Vertical Displacement Curve	Min. Radius of Curvature (Hogging) [m]	Min. Radius of Curvature (Sagging) [m]	Damage Category
Structure: K Sub-structure:										
Vertical Offset from Line for Vertical Movement Calculations [m]	Deflection Ratio [%]	Average Horizontal Strain [%]	Maximum Slope	Maximum Settlement [mm]	Max. Tensile Strain [%]	Maximum Gradient of Horizontal Displacement Curve	Maximum Gradient of Vertical Displacement Curve	Min. Radius of Curvature (Hogging) [m]	Min. Radius of Curvature (Sagging) [m]	Damage Category
0.0	506.75E-6	-0.0048460	-38.078E-6	0.14301	0.0010085	102.42E-6	-38.078E-6	-	65133.0	0 (Negligible)
Structure: L Sub-structure:										
Vertical Offset from Line for Vertical Movement Calculations [m]	Deflection Ratio [%]	Average Horizontal Strain [%]	Maximum Slope	Maximum Settlement [mm]	Max. Tensile Strain [%]	Maximum Gradient of Horizontal Displacement Curve	Maximum Gradient of Vertical Displacement Curve	Min. Radius of Curvature (Hogging) [m]	Min. Radius of Curvature (Sagging) [m]	Damage Category
0.0	0.0	0.0	-96.121E-6	0.14291	0.0	-333.22E-6	-96.121E-6	-	-	0 (Negligible)
Structure: M Sub-structure:										
Vertical Offset from Line for Vertical Movement Calculations [m]	Deflection Ratio [%]	Average Horizontal Strain [%]	Maximum Slope	Maximum Settlement [mm]	Max. Tensile Strain [%]	Maximum Gradient of Horizontal Displacement Curve	Maximum Gradient of Vertical Displacement Curve	Min. Radius of Curvature (Hogging) [m]	Min. Radius of Curvature (Sagging) [m]	Damage Category
0.0	0.0	0.0	-95.636E-6	0.14291	0.0	-333.16E-6	-95.636E-6	-	-	0 (Negligible)
Structure: N Sub-structure:										
Vertical Offset from Line for Vertical Movement Calculations [m]	Deflection Ratio [%]	Average Horizontal Strain [%]	Maximum Slope	Maximum Settlement [mm]	Max. Tensile Strain [%]	Maximum Gradient of Horizontal Displacement Curve	Maximum Gradient of Vertical Displacement Curve	Min. Radius of Curvature (Hogging) [m]	Min. Radius of Curvature (Sagging) [m]	Damage Category
Structure: O Sub-structure:										
Vertical Offset from Line for Vertical Movement Calculations [m]	Deflection Ratio [%]	Average Horizontal Strain [%]	Maximum Slope	Maximum Settlement [mm]	Max. Tensile Strain [%]	Maximum Gradient of Horizontal Displacement Curve	Maximum Gradient of Vertical Displacement Curve	Min. Radius of Curvature (Hogging) [m]	Min. Radius of Curvature (Sagging) [m]	Damage Category
0.0	0.0082887	0.046211	-728.35E-6	2.3194	0.053454	-649.98E-6	-728.35E-6	6422.2	-	- 1 (Very Slight)
Structure: P Sub-structure: Sub #										



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Vertical Offset from Line for Vertical Movement Calculations	Deflection Ratio	Average Horizontal Strain	Maximum Slope	Maximum Settlement	Max. Tensile Strain	Maximum Gradient of Horizontal Displacement Curve	Maximum Gradient of Vertical Displacement Curve	Min. Radius of Curvature (Hogging)	Min. Radius of Curvature (Sagging)	Damage Category
[m] 0.0	[%] 0.0066153	[%] -0.12974	[-571.89E-6]	[mm] 2.0716	[%] 0.035966	0.0013797	-571.89E-6	[m] 7133.8	[m] 11332.0	0 (Negligible)
Structure: Q Sub-structure:										
[m] 0.0	[%] 0.0072426	[%] 0.033397	[-648.98E-6]	[mm] 2.1998	[%] 0.029768	-336.39E-6	-648.98E-6	[m] 6821.8	[m]	- 0 (Negligible)
Structure: R Sub-structure:										
[m] 0.0	[%] 0.0060199	[%] -0.074843	[-477.91E-6]	[mm] 1.8007	[%] 0.031474	0.0014179	-477.91E-6	[m] 8142.8	[m] 3287.4	0 (Negligible)
Structure: S Sub-structure:										
[m] 0.0	[%]	[%]		[mm]	[%]			[m]	[m]	
Structure: T Sub-structure:										
[m] 0.0	[%] 0.0068274	[%] -0.012323	[-731.82E-6]	[mm] 1.4434	[%] 0.010713	221.76E-6	-731.82E-6	[m] 10835.	[m] 8765.1	0 (Negligible)
Structure: U Sub-structure:										
[m]	[%]	[%]		[mm]	[%]			[m]	[m]	
Structure: V Sub-structure:										
[m] 0.0	[%] 0.0	[%] 0.0	[-95.931E-6]	[mm] 0.15174	[%] 0.0	-282.82E-6	-95.931E-6	[m]	[m]	- 0 (Negligible)
Structure: W Sub-structure:										
[m] 0.0	[%] 0.0	[%] 0.0053346	53.569E-6	[mm] 0.15183	[%] 0.0053346	-53.344E-6	53.569E-6	[m]	[m]	- 59139.0 (Negligible)
Structure: X Sub-structure:										
[m] 0.0	[%] 56.742E-6	[%] 0.014902	[-758.14E-6]	[mm] 1.3475	[%] 0.014902	-149.00E-6	-758.14E-6	[m]	[m]	- 6718.5 0 (Negligible)
Structure: Y Sub-structure:										
[m] 0.0	[%] 0.0	[%] 0.016684	[-179.35E-6]	[mm] 2.0005	[%] 0.016684	-182.02E-6	-179.35E-6	[m]	[m]	- 427.94E+6 0 (Negligible)
Structure: Z Sub-structure:										
[m] 0.0	[%] 0.0	[%] 0.0	[-180.40E-6]	[mm] 0.84300	[%] 0.0	0.0	-180.40E-6	[m] 18945.	[m] 169.34E+9	0 (Negligible)



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Vertical Offset from Line for Vertical	Deflection Ratio	Average Horizontal Strain	Maximum Slope	Maximum Settlement	Max. Tensile Strain	Maximum Gradient of Horizontal Displacement	Maximum Gradient of Vertical Displacement	Min. Radius of Curvature (Hogging)	Min. Radius of Curvature (Sagging)	Damage Category
Structure: AA Sub-structure:										
Calculations	[m]	[%]	[%]	[mm]	[%]	[%]	[%]	[m]	[m]	
0.0	0.0	0.015110	-182.60E-6	1.5118	0.015110	-159.08E-6	-182.60E-6	-	761.45E+6	0 (Negligible)
Structure: AB Sub-structure:										
Calculations	[m]	[%]	[%]	[mm]	[%]	[%]	[%]	[m]	[m]	
0.0	0.0	0.0	-178.02E-6	0.34303	0.0	0.0	-178.02E-6	-	20845.0	0 (Negligible)
Structure: AC Sub-structure:										
Calculations	[m]	[%]	[%]	[mm]	[%]	[%]	[%]	[m]	[m]	
0.0	336.52E-6	0.0039947	-171.41E-6	1.1623	0.0044826	-102.28E-6	-171.41E-6	-	134410.0	0 (Negligible)
Structure: AD Sub-structure:										
Calculations	[m]	[%]	[%]	[mm]	[%]	[%]	[%]	[m]	[m]	
0.0	0.0	0.023814	-199.96E-6	2.7350	0.023815	-316.46E-6	-199.96E-6	-	130.44E+6	0 (Negligible)
Structure: AE Sub-structure:										
Calculations	[m]	[%]	[%]	[mm]	[%]	[%]	[%]	[m]	[m]	
0.0	686.24E-6	-0.0010690	61.633E-6	1.1624	422.89E-6	22.100E-6	61.633E-6	-	56990.0	0 (Negligible)
Structure: AF Sub-structure:										
Calculations	[m]	[%]	[%]	[mm]	[%]	[%]	[%]	[m]	[m]	
0.0	515.01E-6	-0.029263	199.40E-6	3.3553	0.0058586	0.0021989	199.40E-6	-	24851.0	0 (Negligible)
Structure: AG Sub-structure:										
Calculations	[m]	[%]	[%]	[mm]	[%]	[%]	[%]	[m]	[m]	
0.0	0.0017119	0.0023340	195.11E-6	2.7397	0.0033851	461.88E-6	195.11E-6	-	24828.0	0 (Negligible)
Structure: AH Sub-structure:										
Calculations	[m]	[%]	[%]	[mm]	[%]	[%]	[%]	[m]	[m]	
0.0	818.82E-6	0.0069390	-175.94E-6	2.2371	0.0073579	-134.73E-6	-175.94E-6	-	50441.0	0 (Negligible)
Structure: AI Sub-structure: Sub #										
Calculations	[m]	[%]	[%]	[mm]	[%]	[%]	[%]	[m]	[m]	
0.0	293.53E-6	0.014941	187.89E-6	2.2372	0.015057	-162.98E-6	187.89E-6	-	121050.0	0 (Negligible)
Structure: AJ Sub-structure: Sub #										
Calculations	[m]	[%]	[%]	[mm]	[%]	[%]	[%]	[m]	[m]	
0.0	904.77E-6	-0.0024738	-52.027E-6	1.4615	736.61E-6	55.654E-6	-52.027E-6	-	51448.0	0 (Negligible)
Structure: AK Sub-structure: Sub #										
Calculations	[m]	[%]	[%]	[mm]	[%]	[%]	[%]	[m]	[m]	



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Line for Vertical Movement Calculations	Strain	Strain	Horizontal Displacement Curve	Vertical Displacement Curve	Curvature (Hogging)	Curvature (Sagging)					
[m]	[%]	[%]	[mm]	[%]	[m]	[m]					
0.0	0.0	0.023222	-199.95E-6	2.4392	0.023222	-273.73E-6	-199.95E-6	[m]	-	196.80E+6	0 (Negligible)
Structure: AL Sub-structure: Sub #											
Vertical Offset from Line for Vertical Movement Calculations	Deflection Ratio	Average Horizontal Strain	Maximum Slope	Maximum Settlement	Max. Tensile Strain	Maximum Gradient of Horizontal Displacement Curve	Maximum Gradient of Vertical Displacement Curve	Min. Radius of Curvature (Hogging)	Min. Radius of Curvature (Sagging)	Damage Category	
[m]	[%]	[%]		[mm]	[%]			[m]	[m]		
0.0	0.0	1.2333E-6	1.3112E-6	2.4394	1.2517E-6	0.0	1.3112E-6	[m]	-	3.7263E+12	0 (Negligible)
Structure: AM Sub-structure: Sub #											
Vertical Offset from Line for Vertical Movement Calculations	Deflection Ratio	Average Horizontal Strain	Maximum Slope	Maximum Settlement	Max. Tensile Strain	Maximum Gradient of Horizontal Displacement Curve	Maximum Gradient of Vertical Displacement Curve	Min. Radius of Curvature (Hogging)	Min. Radius of Curvature (Sagging)	Damage Category	
[m]	[%]	[%]		[mm]	[%]			[m]	[m]		
0.0	0.0	0.025197	199.60E-6	2.4332	0.025197	-273.10E-6	199.60E-6	[m]	-	196.75E+6	0 (Negligible)
Structure: AN Sub-structure: Sub #											
Vertical Offset from Line for Vertical Movement Calculations	Deflection Ratio	Average Horizontal Strain	Maximum Slope	Maximum Settlement	Max. Tensile Strain	Maximum Gradient of Horizontal Displacement Curve	Maximum Gradient of Vertical Displacement Curve	Min. Radius of Curvature (Hogging)	Min. Radius of Curvature (Sagging)	Damage Category	
[m]	[%]	[%]		[mm]	[%]			[m]	[m]		
0.0	3.9225E-6	-562.61E-6	-3.3683E-6	1.9037	112.55E-6	17.019E-6	-3.3683E-6	18.792E+12	3.7765E+6	0 (Negligible)	
Structure: AO Sub-structure: Sub #											
Vertical Offset from Line for Vertical Movement Calculations	Deflection Ratio	Average Horizontal Strain	Maximum Slope	Maximum Settlement	Max. Tensile Strain	Maximum Gradient of Horizontal Displacement Curve	Maximum Gradient of Vertical Displacement Curve	Min. Radius of Curvature (Hogging)	Min. Radius of Curvature (Sagging)	Damage Category	
[m]	[%]	[%]		[mm]	[%]			[m]	[m]		
0.0	1.2784E-6	0.025126	-199.86E-6	2.4068	0.025126	-270.60E-6	-199.86E-6	[m]	-	18.121E+6	0 (Negligible)
Structure: AP Sub-structure: Sub #											
Vertical Offset from Line for Vertical Movement Calculations	Deflection Ratio	Average Horizontal Strain	Maximum Slope	Maximum Settlement	Max. Tensile Strain	Maximum Gradient of Horizontal Displacement Curve	Maximum Gradient of Vertical Displacement Curve	Min. Radius of Curvature (Hogging)	Min. Radius of Curvature (Sagging)	Damage Category	
[m]	[%]	[%]		[mm]	[%]			[m]	[m]		
0.0	0.0016623	-0.017895	125.86E-6	2.4070	0.0037032	321.92E-6	125.86E-6	[m]	-	25453.	0 (Negligible)
Structure: AQ Sub-structure: Sub #											
Vertical Offset from Line for Vertical Movement Calculations	Deflection Ratio	Average Horizontal Strain	Maximum Slope	Maximum Settlement	Max. Tensile Strain	Maximum Gradient of Horizontal Displacement Curve	Maximum Gradient of Vertical Displacement Curve	Min. Radius of Curvature (Hogging)	Min. Radius of Curvature (Sagging)	Damage Category	
[m]	[%]	[%]		[mm]	[%]			[m]	[m]		
0.0	418.97E-6	0.011494	179.74E-6	2.0631	0.011663	-142.20E-6	179.74E-6	[m]	-	92298.	0 (Negligible)
Structure: AR Sub-structure: Sub #											
Vertical Offset from Line for Vertical Movement Calculations	Deflection Ratio	Average Horizontal Strain	Maximum Slope	Maximum Settlement	Max. Tensile Strain	Maximum Gradient of Horizontal Displacement Curve	Maximum Gradient of Vertical Displacement Curve	Min. Radius of Curvature (Hogging)	Min. Radius of Curvature (Sagging)	Damage Category	
[m]	[%]	[%]		[mm]	[%]			[m]	[m]		
0.0	0.0	0.013329	-200.00E-6	1.8933	0.013330	-215.70E-6	-200.00E-6	[m]	-	68.343E+6	0 (Negligible)
Structure: AS Sub-structure: Sub #											
Vertical Offset from Line for Vertical Movement Calculations	Deflection Ratio	Average Horizontal Strain	Maximum Slope	Maximum Settlement	Max. Tensile Strain	Maximum Gradient of Horizontal Displacement Curve	Maximum Gradient of Vertical Displacement Curve	Min. Radius of Curvature (Hogging)	Min. Radius of Curvature (Sagging)	Damage Category	
[m]	[%]	[%]		[mm]	[%]			[m]	[m]		
0.0	0.0	0.010196	-199.99E-6	1.4590	0.010196	-187.90E-6	-199.99E-6	[m]	-	62.262E+6	0 (Negligible)
Structure: AT Sub-structure: Sub #											
Vertical Offset from Line for Vertical Movement Calculations	Deflection Ratio	Average Horizontal Strain	Maximum Slope	Maximum Settlement	Max. Tensile Strain	Maximum Gradient of Horizontal Displacement Curve	Maximum Gradient of Vertical Displacement Curve	Min. Radius of Curvature (Hogging)	Min. Radius of Curvature (Sagging)	Damage Category	
[m]	[%]	[%]		[mm]	[%]			[m]	[m]		
0.0	661.94E-6	0.0072829	-180.33E-6	1.8017	0.0076835	-117.56E-6	-180.33E-6	[m]	-	89349.	0 (Negligible)
Structure: AU Sub-structure:											
Vertical Offset from Line for Vertical Movement Calculations	Deflection Ratio	Average Horizontal Strain	Maximum Slope	Maximum Settlement	Max. Tensile Strain	Maximum Gradient of Horizontal Displacement Curve	Maximum Gradient of Vertical Displacement Curve	Min. Radius of Curvature (Hogging)	Min. Radius of Curvature (Sagging)	Damage Category	
[m]	[%]	[%]		[mm]	[%]			[m]	[m]		
0.0	0.0090691	0.052345	799.97E-6	2.4280	0.058705	-666.16E-6	799.97E-6	[m]	5775.4	-	1 (Very Slight)



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Vertical Offset from Line for Vertical	Deflection Ratio	Average Horizontal Strain	Maximum Slope	Maximum Settlement	Max. Tensile Strain	Maximum Gradient of Horizontal Displacement	Maximum Gradient of Vertical Displacement	Min. Radius of Curvature (Hogging)	Min. Radius of Curvature (Sagging)	Damage Category
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Structure: AV | Sub-structure:

Vertical Offset from Line for Vertical	Deflection Ratio	Average Horizontal Strain	Maximum Slope	Maximum Settlement	Max. Tensile Strain	Maximum Gradient of Horizontal Displacement	Maximum Gradient of Vertical Displacement	Min. Radius of Curvature (Hogging)	Min. Radius of Curvature (Sagging)	Damage Category
Calculations	[%]	[%]		[mm]	[%]			[m]	[m]	

Structure: AW | Sub-structure:

Vertical Offset from Line for Vertical	Deflection Ratio	Average Horizontal Strain	Maximum Slope	Maximum Settlement	Max. Tensile Strain	Maximum Gradient of Horizontal Displacement	Maximum Gradient of Vertical Displacement	Min. Radius of Curvature (Hogging)	Min. Radius of Curvature (Sagging)	Damage Category
Calculations	[%]	[%]		[mm]	[%]			[m]	[m]	
0.0	0.0084823	0.022198	-617.02E-6	2.7356	0.031327	-334.33E-6	-617.02E-6	9027.7		- 0 (Negligible)

Specific Building Damage Results - Critical Segments within Each Structure

Structure Name	Parameter	Critical Sub-Structure	Critical Segment	Start	End	Curvature	Maximum Slope	Maximum Settlement	Max. Tensile Strain	Min. Radius of Curvature (Hogging)	Min. Radius of Curvature (Sagging)	Damage Category
A	All settlements are less than the Settlement Trough Limit Sensitivity.			[m]	[m]			[mm]	[%]	[m]	[m]	
B	All settlements are less than the Settlement Trough Limit Sensitivity.											
C	Maximum Slope			1	3.6809	4.6001 Hogging	198.32E-6	0.36895	0.019322	10232.		- 0 (Negligible)
	Maximum Settlement			1	3.6809	4.6001 Hogging	198.32E-6	0.36895	0.019322	10232.		- 0 (Negligible)
	Max. Tensile Strain			1	3.6809	4.6001 Hogging	198.32E-6	0.36895	0.019322	10232.		- 0 (Negligible)
	Min. Radius of Curvature (Hogging)			1	3.6809	4.6001 Hogging	198.32E-6	0.36895	0.019322	10232.		- 0 (Negligible)
	Min. Radius of Curvature (Sagging)			-	-	-	-	-	-	-	-	-
D	Maximum Slope			1	0.0	1.8003 Hogging	159.45E-6	0.36915	0.0065809	21589.		- 0 (Negligible)
	Maximum Settlement			1	0.0	1.8003 Hogging	159.45E-6	0.36915	0.0065809	21589.		- 0 (Negligible)
	Max. Tensile Strain			1	0.0	1.8003 Hogging	159.45E-6	0.36915	0.0065809	21589.		- 0 (Negligible)
	Min. Radius of Curvature (Hogging)			1	0.0	1.8003 Hogging	159.45E-6	0.36915	0.0065809	21589.		- 0 (Negligible)
	Min. Radius of Curvature (Sagging)			-	-	-	-	-	-	-	-	-
E	All settlements are less than the Settlement Trough Limit Sensitivity.											
F	All settlements are less than the Settlement Trough Limit Sensitivity.											
G	All settlements are less than the Settlement Trough Limit Sensitivity.											
H	All settlements are less than the Settlement Trough Limit Sensitivity.											
I	All settlements are less than the Settlement Trough Limit Sensitivity.											
J	All settlements are less than the Settlement Trough Limit Sensitivity.											
K	Maximum Slope			1	2.9667	6.9222 Sagging	38.078E-6	0.14301	0.0010085	-	65133.0	(Negligible)
	Maximum Settlement			1	2.9667	6.9222 Sagging	38.078E-6	0.14301	0.0010085	-	65133.0	(Negligible)
	Max. Tensile Strain			1	2.9667	6.9222 Sagging	38.078E-6	0.14301	0.0010085	-	65133.0	(Negligible)
	Min. Radius of Curvature (Hogging)			-	-	-	-	-	-	-	-	-
	Min. Radius of Curvature (Sagging)			1	2.9667	6.9222 Sagging	38.078E-6	0.14301	0.0010085	-	65133.0	(Negligible)
L	Maximum Slope			1	7.1990	7.1990 Sagging	96.121E-6	0.14291	0.0	-	18500.0	(Negligible)
	Maximum Settlement			1	7.1990	7.1990 Sagging	96.121E-6	0.14291	0.0	-	18500.0	(Negligible)
	Max. Tensile Strain			1	7.1990	7.1990 Sagging	96.121E-6	0.14291	0.0	-	18500.0	(Negligible)
	Min. Radius of Curvature (Hogging)			-	-	-	-	-	-	-	-	-
	Min. Radius of Curvature (Sagging)			-	-	-	-	-	-	-	-	-
M	Maximum Slope			1	7.2997	7.2997 Sagging	95.636E-6	0.14291	0.0	-	19090.0	(Negligible)
	Maximum Settlement			1	7.2997	7.2997 Sagging	95.636E-6	0.14291	0.0	-	19090.0	(Negligible)
	Max. Tensile Strain			1	7.2997	7.2997 Sagging	95.636E-6	0.14291	0.0	-	19090.0	(Negligible)
	Min. Radius of Curvature (Hogging)			-	-	-	-	-	-	-	-	-
	Min. Radius of Curvature (Sagging)			-	-	-	-	-	-	-	-	-
N	All settlements are less than the Settlement Trough Limit Sensitivity.											



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Structure Name	Parameter	Critical Sub-Structure	Critical Segment	Start	End	Curvature	Maximum Slope	Maximum Settlement	Max. Tensile Strain	Min. Radius of Curvature (Hogging)	Min. Radius of Curvature (Sagging)	Damage Category
	All settlements are less than the Settlement Trough Limit Sensitivity.											
	All settlements are less than the Settlement Trough Limit Sensitivity.											
	All settlements are less than the Settlement Trough Limit Sensitivity.											
	All settlements are less than the Settlement Trough Limit Sensitivity.											
O	Maximum Slope			1	0.0	4.5990 Hogging	728.35E-6	2.3194	0.053454	6422.2		- 1 (Very Slight)
	Maximum Settlement			1	0.0	4.5990 Hogging	728.35E-6	2.3194	0.053454	6422.2		- 1 (Very Slight)
	Max. Tensile Strain			1	0.0	4.5990 Hogging	728.35E-6	2.3194	0.053454	6422.2		- 1 (Very Slight)
	Min. Radius of Curvature (Hogging)			1	0.0	4.5990 Hogging	728.35E-6	2.3194	0.053454	6422.2		- 1 (Very Slight)
	Min. Radius of Curvature (Sagging)			-	-	-	-	-	-	-	-	-
P	Maximum Slope	Sub #		1	0.95000	4.7021 Hogging	571.89E-6	1.5440	0.035966	7133.8		- 0 (Negligible)
	Maximum Settlement	Sub #		2	4.7021	5.6990 Sagging	571.89E-6	2.0716	0.025948		11332.0	0 (Negligible)
	Max. Tensile Strain	Sub #		1	0.95000	4.7021 Hogging	571.89E-6	1.5440	0.035966	7133.8		- 0 (Negligible)
	Min. Radius of Curvature (Hogging)	Sub #		1	0.95000	4.7021 Hogging	571.89E-6	1.5440	0.035966	7133.8		- 0 (Negligible)
	Min. Radius of Curvature (Sagging)	Sub #		2	4.7021	5.6990 Sagging	571.89E-6	2.0716	0.025948		11332.0	0 (Negligible)
Q	Maximum Slope			1	0.0	4.5990 Hogging	648.98E-6	2.1998	0.039768	6821.8		- 0 (Negligible)
	Maximum Settlement			1	0.0	4.5990 Hogging	648.98E-6	2.1998	0.039768	6821.8		- 0 (Negligible)
	Max. Tensile Strain			1	0.0	4.5990 Hogging	648.98E-6	2.1998	0.039768	6821.8		- 0 (Negligible)
	Min. Radius of Curvature (Hogging)			1	0.0	4.5990 Hogging	648.98E-6	2.1998	0.039768	6821.8		- 0 (Negligible)
	Min. Radius of Curvature (Sagging)			-	-	-	-	-	-	-	-	-
R	Maximum Slope			1	0.92635	5.5632 Hogging	477.91E-6	1.1175	0.031474	8142.8		- 0 (Negligible)
	Maximum Settlement			2	5.5632	7.4098 Sagging	477.91E-6	1.8007	0.015243		3287.4	0 (Negligible)
	Max. Tensile Strain			1	0.92635	5.5632 Hogging	477.91E-6	1.1175	0.031474	8142.8		- 0 (Negligible)
	Min. Radius of Curvature (Hogging)			1	0.92635	5.5632 Hogging	477.91E-6	1.1175	0.031474	8142.8		- 0 (Negligible)
	Min. Radius of Curvature (Sagging)			2	5.5632	7.4098 Sagging	477.91E-6	1.8007	0.015243		3287.4	0 (Negligible)
S	All settlements are less than the Settlement Trough Limit Sensitivity.											
	All settlements are less than the Settlement Trough Limit Sensitivity.											
	All settlements are less than the Settlement Trough Limit Sensitivity.											
	All settlements are less than the Settlement Trough Limit Sensitivity.											
T	Maximum Slope			2	7.3935	18.696 Hogging	731.82E-6	0.60227	0.0061316	10835.		- 0 (Negligible)
	Maximum Settlement			3	18.696	31.312 Sagging	731.82E-6	1.4434	0.010713		8765.1	0 (Negligible)
	Max. Tensile Strain			3	18.696	31.312 Sagging	731.82E-6	1.4434	0.010713		8765.1	0 (Negligible)
	Min. Radius of Curvature (Hogging)			2	7.3935	18.696 Hogging	731.82E-6	0.60227	0.0061316	10835.		- 0 (Negligible)
	Min. Radius of Curvature (Sagging)			3	18.696	31.312 Sagging	731.82E-6	1.4434	0.010713		8765.1	0 (Negligible)
U	All settlements are less than the Settlement Trough Limit Sensitivity.											
	All settlements are less than the Settlement Trough Limit Sensitivity.											
	All settlements are less than the Settlement Trough Limit Sensitivity.											
	All settlements are less than the Settlement Trough Limit Sensitivity.											
V	Maximum Slope			1	3.6391	3.6391 Sagging	95.931E-6	0.15174	0.0		17084.0	0 (Negligible)
	Maximum Settlement			1	3.6391	3.6391 Sagging	95.931E-6	0.15174	0.0		17084.0	0 (Negligible)
	Max. Tensile Strain			1	3.6391	3.6391 Sagging	95.931E-6	0.15174	0.0		17084.0	0 (Negligible)
	Min. Radius of Curvature (Hogging)			-	-	-	-	-	-	-	-	-
	Min. Radius of Curvature (Sagging)			-	-	-	-	-	-	-	-	-
W	Maximum Slope			1	0.0	0.57009 Sagging	53.569E-6	0.15183	0.0053346		59139.0	0 (Negligible)
	Maximum Settlement			1	0.0	0.57009 Sagging	53.569E-6	0.15183	0.0053346		59139.0	0 (Negligible)
	Max. Tensile Strain			1	0.0	0.57009 Sagging	53.569E-6	0.15183	0.0053346		59139.0	0 (Negligible)
	Min. Radius of Curvature (Hogging)			-	-	-	-	-	-	-	-	-
	Min. Radius of Curvature (Sagging)			1	0.0	0.57009 Sagging	53.569E-6	0.15183	0.0053346		59139.0	0 (Negligible)
X	Maximum Slope			1	6.8041	9.5105 Sagging	758.14E-6	1.3099	0.013829		6718.5	0 (Negligible)
	Maximum Settlement			2	9.5105	9.7191 Sagging	180.19E-6	1.3475	0.014902		4.4001E+6	0 (Negligible)
	Max. Tensile Strain			2	9.5105	9.7191 Sagging	180.19E-6	1.3475	0.014902		4.4001E+6	0 (Negligible)
	Min. Radius of Curvature (Hogging)			-	-	-	-	-	-	-	-	-
	Min. Radius of Curvature (Sagging)			1	6.8041	9.5105 Sagging	758.14E-6	1.3099	0.013829		6718.5	0 (Negligible)
Y	Maximum Slope			1	0.0	3.6391 Sagging	179.35E-6	2.0005	0.016684		427.94E+6	0 (Negligible)
	Maximum Settlement			1	0.0	3.6391 Sagging	179.35E-6	2.0005	0.016684		427.94E+6	0 (Negligible)
	Max. Tensile Strain			1	0.0	3.6391 Sagging	179.35E-6	2.0005	0.016684		427.94E+6	0 (Negligible)
	Min. Radius of Curvature (Hogging)			-	-	-	-	-	-	-	-	-
	Min. Radius of Curvature (Sagging)			1	0.0	3.6391 Sagging	179.35E-6	2.0005	0.016684		427.94E+6	0 (Negligible)
Z	Maximum Slope			1	5.7481	7.6641 Hogging	180.40E-6	0.49753	0.0	18945.		- 0 (Negligible)
	Maximum Settlement			2	7.6641	9.5792 Sagging	180.40E-6	0.84300	0.0		169.34E+9	0 (Negligible)
	Max. Tensile Strain			1	5.7481	7.6641 Hogging	180.40E-6	0.49753	0.0	18945.		- 0 (Negligible)
	Min. Radius of Curvature (Hogging)			1	5.7481	7.6641 Hogging	180.40E-6	0.49753	0.0	18945.		- 0 (Negligible)
	Min. Radius of Curvature (Sagging)			2	7.6641	9.5792 Sagging	180.40E-6	0.84300	0.0		169.34E+9	0 (Negligible)
AA	Maximum Slope			1	0.0	3.6610 Sagging	182.60E-6	1.5118	0.015110		761.45E+6	0 (Negligible)
	Maximum Settlement			1	0.0	3.6610 Sagging	182.60E-6	1.5118	0.015110		761.45E+6	0 (Negligible)



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Rear of 159-163 King's Cross Road, London WC1X 9BN
Wall Installation only Issue 4

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	07-Mar-2017	

Structure Name	Parameter	Critical Sub-Structure	Critical Segment	Start	End	Curvature	Maximum Slope	Maximum Settlement	Max. Tensile Strain	Min. Radius of Curvature (Hogging)	Min. Radius of Curvature (Sagging)	Damage Category
AB	Max. Tensile Strain		1	0.0	3.6610	Sagging	182.60E-6	1.5118	0.015110		- 761.45E+6 0	(Negligible)
	Min. Radius of Curvature (Hogging)		-	-	-	-	-	-	-	-	-	-
	Min. Radius of Curvature (Sagging)		1	0.0	3.6610	Sagging	182.60E-6	1.5118	0.015110		- 761.45E+6 0	(Negligible)
	Maximum Slope		1	8.5163	8.9605	Sagging	178.02E-6	0.25512	0.0		- 23512. 0	(Negligible)
	Maximum Settlement		2	8.9605	9.4616	Sagging	175.45E-6	0.34303	0.0		- 20845. 0	(Negligible)
	Max. Tensile Strain		1	8.5163	8.9605	Sagging	178.02E-6	0.25512	0.0		- 23512. 0	(Negligible)
AC	Min. Radius of Curvature (Hogging)		-	-	-	-	-	-	-	-	-	-
	Min. Radius of Curvature (Sagging)		2	8.9605	9.4616	Sagging	175.45E-6	0.34303	0.0		- 20845. 0	(Negligible)
	Maximum Slope		1	0.0	5.0794	Sagging	171.41E-6	1.1623	0.0044826		- 134410. 0	(Negligible)
	Maximum Settlement		1	0.0	5.0794	Sagging	171.41E-6	1.1623	0.0044826		- 134410. 0	(Negligible)
	Max. Tensile Strain		1	0.0	5.0794	Sagging	171.41E-6	1.1623	0.0044826		- 134410. 0	(Negligible)
	Min. Radius of Curvature (Hogging)		-	-	-	-	-	-	-	-	-	-
AD	Min. Radius of Curvature (Sagging)		1	0.0	5.0794	Sagging	171.41E-6	1.1623	0.0044826		- 134410. 0	(Negligible)
	Maximum Slope		1	0.0	7.8628	Sagging	199.96E-6	2.7350	0.023815		- 130.44E+6 0	(Negligible)
	Maximum Settlement		1	0.0	7.8628	Sagging	199.96E-6	2.7350	0.023815		- 130.44E+6 0	(Negligible)
	Max. Tensile Strain		1	0.0	7.8628	Sagging	199.96E-6	2.7350	0.023815		- 130.44E+6 0	(Negligible)
	Min. Radius of Curvature (Hogging)		-	-	-	-	-	-	-	-	-	-
	Min. Radius of Curvature (Sagging)		1	0.0	7.8628	Sagging	199.96E-6	2.7350	0.023815		- 130.44E+6 0	(Negligible)
AE	Maximum Slope		1	0.0	3.3051	Sagging	61.633E-6	1.1624	422.89E-6		- 56990. 0	(Negligible)
	Maximum Settlement		1	0.0	3.3051	Sagging	61.633E-6	1.1624	422.89E-6		- 56990. 0	(Negligible)
	Max. Tensile Strain		1	0.0	3.3051	Sagging	61.633E-6	1.1624	422.89E-6		- 56990. 0	(Negligible)
	Min. Radius of Curvature (Hogging)		-	-	-	-	-	-	-	-	-	-
	Min. Radius of Curvature (Sagging)		1	0.0	3.3051	Sagging	61.633E-6	1.1624	422.89E-6		- 56990. 0	(Negligible)
	Maximum Slope		1	0.0	3.2130	Sagging	199.40E-6	3.3553	0.0058586		- 24851. 0	(Negligible)
AF	Maximum Settlement		1	0.0	3.2130	Sagging	199.40E-6	3.3553	0.0058586		- 24851. 0	(Negligible)
	Max. Tensile Strain		1	0.0	3.2130	Sagging	199.40E-6	3.3553	0.0058586		- 24851. 0	(Negligible)
	Min. Radius of Curvature (Hogging)		-	-	-	-	-	-	-	-	-	-
	Min. Radius of Curvature (Sagging)		1	0.0	3.2130	Sagging	199.40E-6	3.3553	0.0058586		- 24851. 0	(Negligible)
	Maximum Slope		2	11.652	15.237	Sagging	195.11E-6	0.91601	0.0023805		- 31904. 0	(Negligible)
	Maximum Settlement		1	0.0	11.652	Sagging	193.59E-6	2.7397	0.0033851		- 24828. 0	(Negligible)
AG	Max. Tensile Strain		1	0.0	11.652	Sagging	193.59E-6	2.7397	0.0033851		- 24828. 0	(Negligible)
	Min. Radius of Curvature (Hogging)		-	-	-	-	-	-	-	-	-	-
	Min. Radius of Curvature (Sagging)		1	0.0	11.652	Sagging	193.59E-6	2.7397	0.0033851		- 24828. 0	(Negligible)
	Maximum Slope		1	0.0	6.3378	Sagging	175.94E-6	2.2371	0.0073579		- 50441. 0	(Negligible)
	Maximum Settlement		1	0.0	6.3378	Sagging	175.94E-6	2.2371	0.0073579		- 50441. 0	(Negligible)
	Max. Tensile Strain		1	0.0	6.3378	Sagging	175.94E-6	2.2371	0.0073579		- 50441. 0	(Negligible)
AH	Min. Radius of Curvature (Hogging)		-	-	-	-	-	-	-	-	-	-
	Min. Radius of Curvature (Sagging)		1	0.0	6.3378	Sagging	175.94E-6	2.2371	0.0073579		- 50441. 0	(Negligible)
	Maximum Slope		1	0.0	4.8498	Sagging	187.89E-6	2.2372	0.015057		- 121050. 0	(Negligible)
	Maximum Settlement		1	0.0	4.8498	Sagging	187.89E-6	2.2372	0.015057		- 121050. 0	(Negligible)
	Max. Tensile Strain		1	0.0	4.8498	Sagging	187.89E-6	2.2372	0.015057		- 121050. 0	(Negligible)
	Min. Radius of Curvature (Hogging)		-	-	-	-	-	-	-	-	-	-
AI	Min. Radius of Curvature (Sagging)		1	0.0	4.8498	Sagging	187.89E-6	2.2372	0.015057		- 121050. 0	(Negligible)
	Maximum Slope	Sub #	1	0.0	5.9785	Sagging	52.027E-6	1.4615	736.61E-6		- 51448. 0	(Negligible)
	Maximum Settlement	Sub #	1	0.0	5.9785	Sagging	52.027E-6	1.4615	736.61E-6		- 51448. 0	(Negligible)
	Max. Tensile Strain	Sub #	1	0.0	5.9785	Sagging	52.027E-6	1.4615	736.61E-6		- 51448. 0	(Negligible)
	Min. Radius of Curvature (Hogging)	Sub #	-	-	-	-	-	-	-	-	-	-
	Min. Radius of Curvature (Sagging)	Sub #	1	0.0	5.9785	Sagging	52.027E-6	1.4615	736.61E-6		- 51448. 0	(Negligible)
AJ	Maximum Slope	Sub #	1	0.0	4.9487	Sagging	199.95E-6	2.4392	0.023222		- 196.80E+6 0	(Negligible)
	Maximum Settlement	Sub #	1	0.0	4.9487	Sagging	199.95E-6	2.4392	0.023222		- 196.80E+6 0	(Negligible)
	Max. Tensile Strain	Sub #	1	0.0	4.9487	Sagging	199.95E-6	2.4392	0.023222		- 196.80E+6 0	(Negligible)
	Min. Radius of Curvature (Hogging)	Sub #	-	-	-	-	-	-	-	-	-	-
	Min. Radius of Curvature (Sagging)	Sub #	1	0.0	4.9487	Sagging	199.95E-6	2.4392	0.023222		- 196.80E+6 0	(Negligible)
	Maximum Slope	Sub #	4	3.2002	4.7371	Sagging	1.3112E-6	2.4352	1.2517E-6		- 3.7263E+12 0	(Negligible)
AK	Maximum Settlement	Sub #	1	0.0	1.8953	Sagging	1.3112E-6	2.4394	1.2517E-6		- 14.233E+12 0	(Negligible)
	Max. Tensile Strain	Sub #	1	0.0	1.8953	Sagging	1.3112E-6	2.4394	1.2517E-6		- 14.233E+12 0	(Negligible)
	Min. Radius of Curvature (Hogging)	Sub #	-	-	-	-	-	-	-	-	-	-
	Min. Radius of Curvature (Sagging)	Sub #	4	3.2002	4.7371	Sagging	1.3112E-6	2.4352	1.2517E-6		- 3.7263E+12 0	(Negligible)
	Maximum Slope	Sub #	1	0.0	4.9487	Sagging	199.95E-6	2.4392	0.023222		- 196.80E+6 0	(Negligible)
	Maximum Settlement	Sub #	1	0.0	4.9487	Sagging	199.95E-6	2.4392	0.023222		- 196.80E+6 0	(Negligible)
AL	Max. Tensile Strain	Sub #	1	0.0	4.9487	Sagging	199.95E-6	2.4392	0.023222		- 196.80E+6 0	(Negligible)
	Min. Radius of Curvature (Hogging)	Sub #	-	-	-	-	-	-	-	-	-	-
	Min. Radius of Curvature (Sagging)	Sub #	1	0.0	4.9487	Sagging	199.95E-6	2.4392	0.023222		- 196.80E+6 0	(Negligible)
	Maximum Slope	Sub #	4	3.2002	4.7371	Sagging	1.3112E-6	2.4352	1.2517E-6		- 3.7263E+12 0	(Negligible)
	Maximum Settlement	Sub #	1	0.0	1.8953	Sagging	1.3112E-6	2.4394	1.2517E-6		- 14.233E+12 0	(Negligible)
	Max. Tensile Strain	Sub #	1	0.0	1.8953	Sagging	1.3112E-6	2.4394	1.2517E-6		- 14.233E+12 0	(Negligible)
AM	Min. Radius of Curvature (Hogging)	Sub #	-	-	-	-	-	-	-	-	-	-
	Min. Radius of Curvature (Sagging)	Sub #	4	3.2002	4.7371	Sagging	1.3112E-6	2.4352	1.2517E-6		- 3.7263E+12 0	(Negligible)



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Structure Name	Parameter	Critical Sub-Structure	Critical Segment	Start	End	Curvature	Maximum Slope	Maximum Settlement	Max. Tensile Strain	Min. Radius of Curvature (Hogging)	Min. Radius of Curvature (Sagging)	Damage Category
AM	Curvature (Sagging)											
	Maximum Slope	Sub #	1	0.0	2.7064	Sagging	199.60E-6	2.4332	0.025197	-	196.75E+6	0 (Negligible)
	Maximum Settlement	Sub #	1	0.0	2.7064	Sagging	199.60E-6	2.4332	0.025197	-	196.75E+6	0 (Negligible)
	Max. Tensile Strain	Sub #	1	0.0	2.7064	Sagging	199.60E-6	2.4332	0.025197	-	196.75E+6	0 (Negligible)
	Min. Radius of Curvature (Hogging)	Sub #	1	0.0	2.7064	Sagging	199.60E-6	2.4332	0.025197	-	196.75E+6	0 (Negligible)
AN	Curvature (Sagging)											
	Maximum Slope	Sub #	1	0.0	0.83442	Hogging	3.3683E-6	1.8955	6.3300E-6	18.792E+12	-	0 (Negligible)
	Maximum Settlement	Sub #	2	0.83442	3.3367	Sagging	3.3683E-6	1.9037	112.55E-6	-	3.7769E+6	0 (Negligible)
	Max. Tensile Strain	Sub #	2	0.83442	3.3367	Sagging	3.3683E-6	1.9037	112.55E-6	-	3.7769E+6	0 (Negligible)
	Min. Radius of Curvature (Hogging)	Sub #	1	0.0	0.83442	Hogging	3.3683E-6	1.8955	6.3300E-6	18.792E+12	-	0 (Negligible)
AO	Curvature (Sagging)											
	Maximum Slope	Sub #	1	0.0	2.5169	Sagging	199.86E-6	2.4068	0.025126	-	18.121E+6	0 (Negligible)
	Maximum Settlement	Sub #	1	0.0	2.5169	Sagging	199.86E-6	2.4068	0.025126	-	18.121E+6	0 (Negligible)
	Max. Tensile Strain	Sub #	1	0.0	2.5169	Sagging	199.86E-6	2.4068	0.025126	-	18.121E+6	0 (Negligible)
	Min. Radius of Curvature (Hogging)	Sub #	1	0.0	2.5169	Sagging	199.86E-6	2.4068	0.025126	-	18.121E+6	0 (Negligible)
AP	Curvature (Sagging)											
	Maximum Slope	Sub #	1	0.0	4.4543	Sagging	125.86E-6	2.4070	0.0037032	-	25453.0	0 (Negligible)
	Maximum Settlement	Sub #	1	0.0	4.4543	Sagging	125.86E-6	2.4070	0.0037032	-	25453.0	0 (Negligible)
	Max. Tensile Strain	Sub #	1	0.0	4.4543	Sagging	125.86E-6	2.4070	0.0037032	-	25453.0	0 (Negligible)
	Min. Radius of Curvature (Hogging)	Sub #	1	0.0	4.4543	Sagging	125.86E-6	2.4070	0.0037032	-	25453.0	0 (Negligible)
AQ	Curvature (Sagging)											
	Maximum Slope	Sub #	1	0.0	4.9487	Sagging	179.74E-6	2.0631	0.011663	-	92298.0	0 (Negligible)
	Maximum Settlement	Sub #	1	0.0	4.9487	Sagging	179.74E-6	2.0631	0.011663	-	92298.0	0 (Negligible)
	Max. Tensile Strain	Sub #	1	0.0	4.9487	Sagging	179.74E-6	2.0631	0.011663	-	92298.0	0 (Negligible)
	Min. Radius of Curvature (Hogging)	Sub #	1	0.0	4.9487	Sagging	179.74E-6	2.0631	0.011663	-	92298.0	0 (Negligible)
AR	Curvature (Sagging)											
	Maximum Slope	Sub #	1	0.0	0.94198	Sagging	200.00E-6	0.38759	0.0	-	89.267E+9	0 (Negligible)
	Maximum Settlement	Sub #	2	0.94198	8.4707	Sagging	200.00E-6	1.8933	0.013330	-	68.343E+6	0 (Negligible)
	Max. Tensile Strain	Sub #	2	0.94198	8.4707	Sagging	200.00E-6	1.8933	0.013330	-	68.343E+6	0 (Negligible)
	Min. Radius of Curvature (Hogging)	Sub #	2	0.94198	8.4707	Sagging	200.00E-6	1.8933	0.013330	-	68.343E+6	0 (Negligible)
AS	Curvature (Sagging)											
	Maximum Slope	Sub #	1	1.8137	2.7205	Sagging	199.99E-6	0.37109	0.0	-	19016.0	0 (Negligible)
	Maximum Settlement	Sub #	3	2.7205	8.1605	Sagging	199.99E-6	1.4590	0.010196	-	62.262E+6	0 (Negligible)
	Max. Tensile Strain	Sub #	3	2.7205	8.1605	Sagging	199.99E-6	1.4590	0.010196	-	62.262E+6	0 (Negligible)
	Min. Radius of Curvature (Hogging)	Sub #	3	2.7205	8.1605	Sagging	199.99E-6	1.4590	0.010196	-	62.262E+6	0 (Negligible)
AT	Curvature (Sagging)											
	Maximum Slope	Sub #	1	1.8461	3.4847	Sagging	180.33E-6	0.60118	0.0	-	191570.0	0 (Negligible)
	Maximum Settlement	Sub #	2	3.4847	11.076	Sagging	180.33E-6	1.8017	0.0076835	-	89349.0	0 (Negligible)
	Max. Tensile Strain	Sub #	2	3.4847	11.076	Sagging	180.33E-6	1.8017	0.0076835	-	89349.0	0 (Negligible)
	Min. Radius of Curvature (Hogging)	Sub #	2	3.4847	11.076	Sagging	180.33E-6	1.8017	0.0076835	-	89349.0	0 (Negligible)
AU	Curvature (Sagging)											
	Maximum Slope	Sub #	1	0.0	4.4445	Hogging	799.97E-6	2.4280	0.058705	5775.4	-	1 (Very Slight)
	Maximum Settlement	Sub #	1	0.0	4.4445	Hogging	799.97E-6	2.4280	0.058705	5775.4	-	1 (Very Slight)
	Max. Tensile Strain	Sub #	1	0.0	4.4445	Hogging	799.97E-6	2.4280	0.058705	5775.4	-	1 (Very Slight)
	Min. Radius of Curvature (Hogging)	Sub #	1	0.0	4.4445	Hogging	799.97E-6	2.4280	0.058705	5775.4	-	1 (Very Slight)
AV	Curvature (Sagging)											
	All settlements are less than the Settlement Trough Limit Sensitivity.											
	All settlements are less than the Settlement Trough Limit Sensitivity.											
	All settlements are less than the Settlement Trough Limit Sensitivity.											
	All settlements are less than the Settlement Trough Limit Sensitivity.											
AW	Curvature (Sagging)											
	Maximum Slope	Sub #	1	3.7739	11.321	Hogging	617.02E-6	2.7356	0.031327	9027.7	-	0 (Negligible)
	Maximum Settlement	Sub #	1	3.7739	11.321	Hogging	617.02E-6	2.7356	0.031327	9027.7	-	0 (Negligible)
	Max. Tensile Strain	Sub #	1	3.7739	11.321	Hogging	617.02E-6	2.7356	0.031327	9027.7	-	0 (Negligible)
	Min. Radius of Curvature (Hogging)	Sub #	1	3.7739	11.321	Hogging	617.02E-6	2.7356	0.031327	9027.7	-	0 (Negligible)

Specific Building Damage Results - All Combined Segments

Structure: A | Sub-structure:

Vertical Offset from Line for	Combined Segment	Start	Length	Curvature	Deflection Ratio	Average Horizontal Strain	Max. Tensile Strain	Damage Category
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Made by	Date	Checked
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Vertical Movement Calculations	[m]	[m]	[m]	[%]	[%]	[%]		
No structures have segments combined.								
Structure: B Sub-structure:								
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]	[m]	[%]	[%]	[%]	[%]	
No structures have segments combined.								
Structure: C Sub-structure:								
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]	[m]	[%]	[%]	[%]	[%]	
No structures have segments combined.								
Structure: D Sub-structure:								
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]	[m]	[%]	[%]	[%]	[%]	
No structures have segments combined.								
Structure: E Sub-structure:								
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]	[m]	[%]	[%]	[%]	[%]	
No structures have segments combined.								
Structure: F Sub-structure:								
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]	[m]	[%]	[%]	[%]	[%]	
No structures have segments combined.								
Structure: G Sub-structure:								
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]	[m]	[%]	[%]	[%]	[%]	
No structures have segments combined.								
Structure: H Sub-structure:								
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]	[m]	[%]	[%]	[%]	[%]	
No structures have segments combined.								
Structure: I Sub-structure:								
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]	[m]	[%]	[%]	[%]	[%]	
No structures have segments combined.								
Structure: J Sub-structure:								
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]	[m]	[%]	[%]	[%]	[%]	
No structures have segments combined.								
Structure: K Sub-structure:								
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]	[m]	[%]	[%]	[%]	[%]	
No structures have segments combined.								



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Vertical Offset from Line for Vertical	Combined Segment	Start Length	Curvature	Deflection Ratio	Average Horizontal Strain	Max. Tensile Strain	Damage Category
Structure: L Sub-structure:							
Vertical Offset from Line for Vertical	Combined Segment	Start Length	Curvature	Deflection Ratio	Average Horizontal Strain	Max. Tensile Strain	Damage Category
Calculations		[m] [m]		[%]	[%]	[%]	
No structures have segments combined.							
Structure: M Sub-structure:							
Vertical Offset from Line for Vertical	Combined Segment	Start Length	Curvature	Deflection Ratio	Average Horizontal Strain	Max. Tensile Strain	Damage Category
Calculations		[m] [m]		[%]	[%]	[%]	
No structures have segments combined.							
Structure: N Sub-structure:							
Vertical Offset from Line for Vertical	Combined Segment	Start Length	Curvature	Deflection Ratio	Average Horizontal Strain	Max. Tensile Strain	Damage Category
Calculations		[m] [m]		[%]	[%]	[%]	
No structures have segments combined.							
Structure: O Sub-structure:							
Vertical Offset from Line for Vertical	Combined Segment	Start Length	Curvature	Deflection Ratio	Average Horizontal Strain	Max. Tensile Strain	Damage Category
Calculations		[m] [m]		[%]	[%]	[%]	
No structures have segments combined.							
Structure: P Sub-structure: Sub #							
Vertical Offset from Line for Vertical	Combined Segment	Start Length	Curvature	Deflection Ratio	Average Horizontal Strain	Max. Tensile Strain	Damage Category
Calculations		[m] [m]		[%]	[%]	[%]	
No structures have segments combined.							
Structure: Q Sub-structure:							
Vertical Offset from Line for Vertical	Combined Segment	Start Length	Curvature	Deflection Ratio	Average Horizontal Strain	Max. Tensile Strain	Damage Category
Calculations		[m] [m]		[%]	[%]	[%]	
No structures have segments combined.							
Structure: R Sub-structure:							
Vertical Offset from Line for Vertical	Combined Segment	Start Length	Curvature	Deflection Ratio	Average Horizontal Strain	Max. Tensile Strain	Damage Category
Calculations		[m] [m]		[%]	[%]	[%]	
No structures have segments combined.							
Structure: S Sub-structure:							
Vertical Offset from Line for Vertical	Combined Segment	Start Length	Curvature	Deflection Ratio	Average Horizontal Strain	Max. Tensile Strain	Damage Category
Calculations		[m] [m]		[%]	[%]	[%]	
No structures have segments combined.							
Structure: T Sub-structure:							
Vertical Offset from Line for Vertical	Combined Segment	Start Length	Curvature	Deflection Ratio	Average Horizontal Strain	Max. Tensile Strain	Damage Category
Calculations		[m] [m]		[%]	[%]	[%]	
No structures have segments combined.							
Structure: U Sub-structure:							
Vertical Offset from Line for Vertical	Combined Segment	Start Length	Curvature	Deflection Ratio	Average Horizontal Strain	Max. Tensile Strain	Damage Category
Calculations		[m] [m]		[%]	[%]	[%]	
No structures have segments combined.							
Structure: V Sub-structure:							
Vertical Offset from Line for Vertical	Combined Segment	Start Length	Curvature	Deflection Ratio	Average Horizontal Strain	Max. Tensile Strain	Damage Category



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Vertical Movement Calculations	[m]	[m]	[m]	[%]	[%]	[%]		
No structures have segments combined.								
Structure: W Sub-structure:								
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]	[m]	[m]	[%]	[%]	[%]	
No structures have segments combined.								
Structure: X Sub-structure:								
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]	[m]	[m]	[%]	[%]	[%]	
No structures have segments combined.								
Structure: Y Sub-structure:								
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]	[m]	[m]	[%]	[%]	[%]	
No structures have segments combined.								
Structure: Z Sub-structure:								
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]	[m]	[m]	[%]	[%]	[%]	
No structures have segments combined.								
Structure: AA Sub-structure:								
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]	[m]	[m]	[%]	[%]	[%]	
No structures have segments combined.								
Structure: AB Sub-structure:								
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]	[m]	[m]	[%]	[%]	[%]	
No structures have segments combined.								
Structure: AC Sub-structure:								
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]	[m]	[m]	[%]	[%]	[%]	
No structures have segments combined.								
Structure: AD Sub-structure:								
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]	[m]	[m]	[%]	[%]	[%]	
No structures have segments combined.								
Structure: AE Sub-structure:								
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]	[m]	[m]	[%]	[%]	[%]	
No structures have segments combined.								
Structure: AF Sub-structure:								
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]	[m]	[m]	[%]	[%]	[%]	
No structures have segments combined.								



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Vertical Offset from Line for Vertical	Combined Segment	Start Length	Curvature	Deflection Ratio	Average Horizontal Strain	Max. Tensile Strain	Damage Category
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Structure: AG | Sub-structure:

Vertical Offset from Line for Vertical	Combined Segment	Start Length	Curvature	Deflection Ratio	Average Horizontal Strain	Max. Tensile Strain	Damage Category
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Calculations

[m] [m] [m] [%] [%] [%]
No structures have segments combined.

Structure: AH | Sub-structure:

Vertical Offset from Line for Vertical	Combined Segment	Start Length	Curvature	Deflection Ratio	Average Horizontal Strain	Max. Tensile Strain	Damage Category
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Calculations

[m] [m] [m] [%] [%] [%]
No structures have segments combined.

Structure: AI | Sub-structure: Sub #

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

Calculations

[m] [m] [m] [%] [%] [%]
No structures have segments combined.

Structure: AJ | Sub-structure: Sub #

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

Calculations

[m] [m] [m] [%] [%] [%]
No structures have segments combined.

Structure: AK | Sub-structure: Sub #

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

Calculations

[m] [m] [m] [%] [%] [%]
No structures have segments combined.

Structure: AL | Sub-structure: Sub #

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

Calculations

[m] [m] [m] [%] [%] [%]
No structures have segments combined.

Structure: AM | Sub-structure: Sub #

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

Calculations

[m] [m] [m] [%] [%] [%]
No structures have segments combined.

Structure: AN | Sub-structure: Sub #

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

Calculations

[m] [m] [m] [%] [%] [%]
No structures have segments combined.

Structure: AO | Sub-structure: Sub #

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

Calculations

[m] [m] [m] [%] [%] [%]
No structures have segments combined.

Structure: AP | Sub-structure: Sub #

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

Calculations

[m] [m] [m] [%] [%] [%]
No structures have segments combined.

Structure: AQ | Sub-structure: Sub #

Vertical Offset from Line for Vertical	Combined Segment	Start Length	Curvature	Deflection Ratio	Average Horizontal Strain	Max. Tensile Strain	Damage Category
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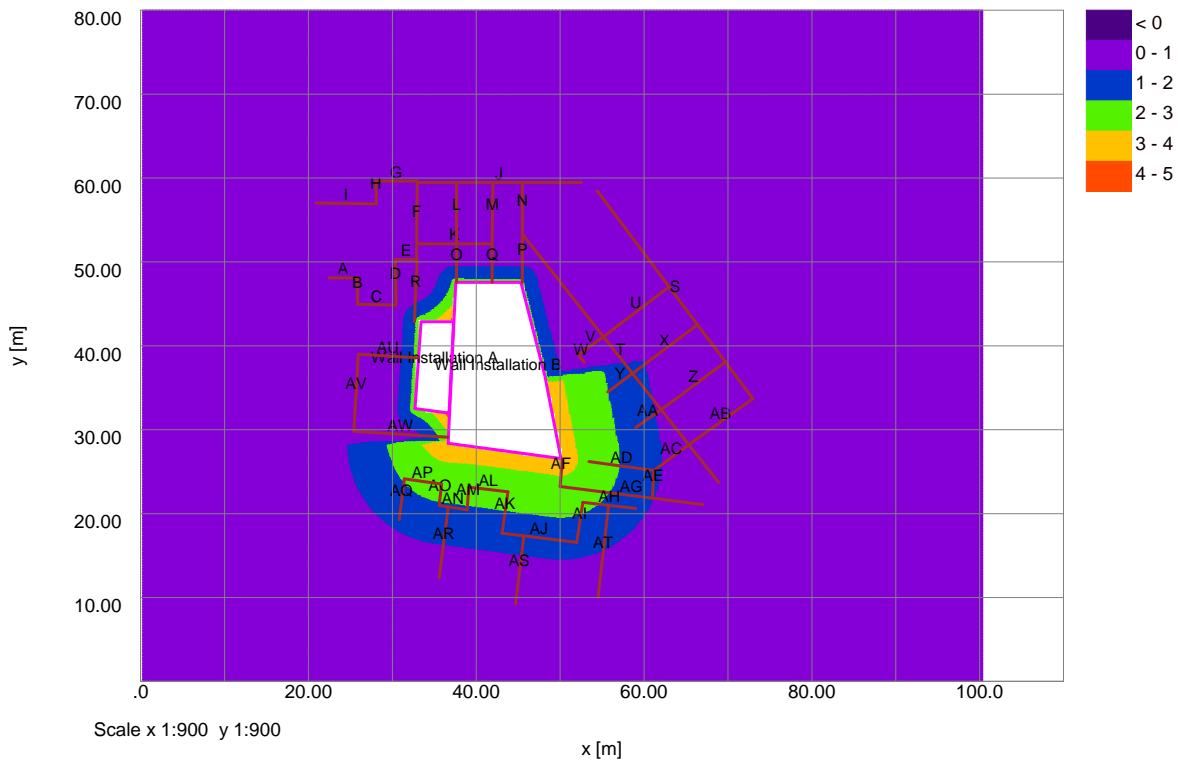
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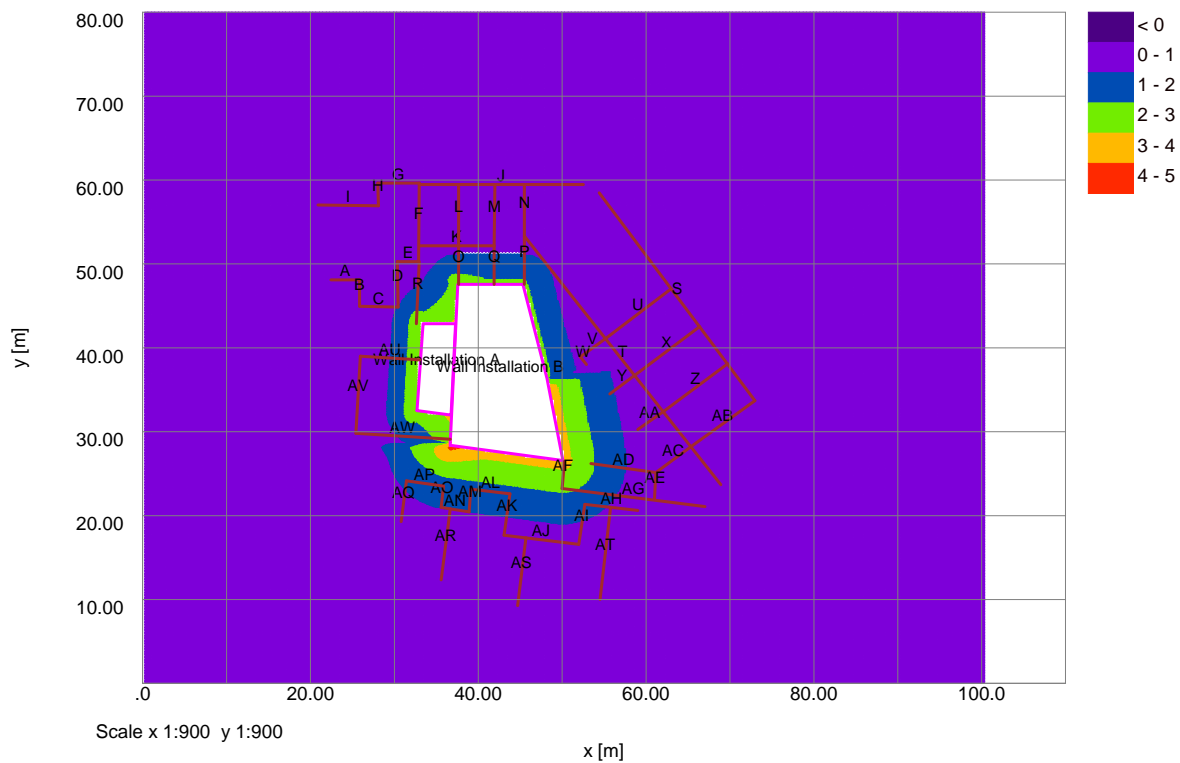
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Vertical Movement	Combined Start	Length	Curvature	Deflection Ratio	Average Horizontal Strain	Max. Tensile Strain	Damage Category
Calculations	[m]	[m]		[%]	[%]	[%]	
No structures have segments combined.							
Structure: AR Sub-structure: Sub #							
Vertical Movement	Combined Start	Length	Curvature	Deflection Ratio	Average Horizontal Strain	Max. Tensile Strain	Damage Category
Offset from Line for Vertical Movement	Segment						
Calculations	[m]	[m]		[%]	[%]	[%]	
No structures have segments combined.							
Structure: AS Sub-structure: Sub #							
Vertical Movement	Combined Start	Length	Curvature	Deflection Ratio	Average Horizontal Strain	Max. Tensile Strain	Damage Category
Offset from Line for Vertical Movement	Segment						
Calculations	[m]	[m]		[%]	[%]	[%]	
No structures have segments combined.							
Structure: AT Sub-structure: Sub #							
Vertical Movement	Combined Start	Length	Curvature	Deflection Ratio	Average Horizontal Strain	Max. Tensile Strain	Damage Category
Offset from Line for Vertical Movement	Segment						
Calculations	[m]	[m]		[%]	[%]	[%]	
No structures have segments combined.							
Structure: AU Sub-structure:							
Vertical Movement	Combined Start	Length	Curvature	Deflection Ratio	Average Horizontal Strain	Max. Tensile Strain	Damage Category
Offset from Line for Vertical Movement	Segment						
Calculations	[m]	[m]		[%]	[%]	[%]	
No structures have segments combined.							
Structure: AV Sub-structure:							
Vertical Movement	Combined Start	Length	Curvature	Deflection Ratio	Average Horizontal Strain	Max. Tensile Strain	Damage Category
Offset from Line for Vertical Movement	Segment						
Calculations	[m]	[m]		[%]	[%]	[%]	
No structures have segments combined.							
Structure: AW Sub-structure:							
Vertical Movement	Combined Start	Length	Curvature	Deflection Ratio	Average Horizontal Strain	Max. Tensile Strain	Damage Category
Offset from Line for Vertical Movement	Segment						
Calculations	[m]	[m]		[%]	[%]	[%]	
No structures have segments combined.							

Vertical Settlement Contours: Grid 1 (level 0.000m) (Interval 1mm)



Horizontal Displacement Contours: Grid 1 (level 0.000m) Interval 1mm





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Problem Type

Problem Type : Tunnelling and Embedded Wall Excavations

Displacement Data

Type	Name	Direction of extrusion	Point/Line/Line for extrusion			No. of intervals across extrusion/line	Extrusion depth [m]	No. of intervals along extrusion	Calculate Surface type for tunnels
			First point	Second point					
			X [m]	Y [m]	Z(level) [m]	X [m]	Y [m]	Z(level) [m]	
Grid	Grid 1	Global X	0.30000	0.00000	0.00000	-	80.00000	0.00000	250 No Surface
Line	A	-	22.50000	48.10000	-0.50000	25.90000	48.10000	-0.50000	4 Yes Surface
Line	B	-	25.90000	48.10000	-0.50000	25.90000	45.00000	-0.50000	4 Yes Surface
Line	C	-	25.90000	45.00000	-0.50000	32.60000	44.90000	-0.50000	5 Yes Surface
Line	D	-	30.50000	44.90000	-0.50000	30.40000	50.30000	-0.50000	6 Yes Surface
Line	E	-	30.40000	50.30000	-0.50000	32.90000	50.30000	-0.50000	3 Yes Surface
Line	F	-	32.90000	50.30000	-0.50000	33.00000	59.60000	-0.50000	10 Yes Surface
Line	G	-	33.00000	59.60000	-0.50000	28.00000	59.60000	-0.50000	5 Yes Surface
Line	H	-	28.00000	59.60000	-0.50000	28.10000	56.90000	-0.50000	3 Yes Surface
Line	I	-	28.10000	56.90000	-0.50000	20.90000	57.00000	-0.50000	8 Yes Surface
Line	J	-	33.00000	59.50000	-0.50000	52.50000	59.50000	-0.50000	10 Yes Surface
Line	K	-	33.00000	52.20000	-0.50000	41.90000	52.20000	-0.50000	9 Yes Surface
Line	L	-	37.70000	59.40000	-0.50000	37.70000	52.20000	-0.50000	8 Yes Surface
Line	M	-	42.00000	59.50000	-1.50000	41.90000	52.20000	-1.50000	8 Yes Surface
Line	N	-	45.50000	53.30000	-4.00000	45.50000	59.40000	-4.00000	7 Yes Surface
Line	O	-	37.70000	52.20000	-0.68000	37.70000	47.60000	-0.68000	5 Yes Surface
Line	P	-	45.50000	53.30000	-1.85000	45.50000	47.60000	-1.85000	6 Yes Surface
Line	Q	-	41.90000	52.20000	-0.65000	41.90000	47.60000	-0.65000	5 Yes Surface
Line	R	-	33.00000	50.30000	-0.50000	32.60000	42.90000	-0.50000	8 Yes Surface
Line	S	-	54.40000	58.50000	-0.50000	73.00000	33.70000	-0.50000	16 Yes Surface
Line	T	-	45.50000	53.30000	-0.50000	68.90000	23.70000	-0.50000	19 Yes Surface
Line	U	-	63.00000	47.00000	-0.50000	55.10000	41.10000	-0.50000	10 Yes Surface
Line	V	-	55.10000	41.10000	-0.50000	52.20000	38.90000	-0.50000	4 Yes Surface
Line	W	-	52.20000	38.90000	-1.70000	52.90000	38.00000	-1.70000	2 Yes Surface
Line	X	-	66.40000	42.50000	-0.50000	58.60000	36.70000	-0.50000	10 Yes Surface
Line	Y	-	58.60000	36.70000	-1.40000	55.70000	34.50000	-1.40000	4 Yes Surface
Line	Z	-	69.70000	38.10000	-0.50000	62.00000	32.40000	-0.50000	10 Yes Surface
Line	AA	-	62.00000	32.40000	-1.40000	59.00000	30.30000	-1.40000	4 Yes Surface
Line	AB	-	73.00000	23.70000	-0.50000	65.30000	28.20000	-0.50000	10 Yes Surface
Line	AC	-	65.30000	28.20000	-0.50000	61.20000	25.20000	-0.50000	6 Yes Surface
Line	AD	-	61.20000	25.20000	-1.46000	53.40000	26.20000	-1.46000	8 Yes Surface
Line	AE	-	61.20000	25.20000	-0.50000	61.00000	21.90000	-0.50000	4 Yes Surface
Line	AF	-	50.30000	26.50000	-1.46000	50.00000	23.30000	-1.46000	4 Yes Surface
Line	AG	-	50.00000	23.30000	-0.50000	67.00000	21.10000	-0.50000	9 Yes Surface
Line	AH	-	59.00000	20.70000	-0.50000	52.70000	21.40000	-0.50000	7 Yes Surface
Line	AI	-	52.70000	21.40000	-0.50000	52.00000	16.60000	-0.50000	5 Yes Surface
Line	AJ	-	52.00000	16.60000	-0.50000	43.10000	17.70000	-0.50000	9 Yes Surface
Line	AK	-	43.10000	17.70000	-0.50000	43.80000	22.60000	-0.50000	5 Yes Surface
Line	AL	-	43.80000	22.60000	-0.50000	39.10000	23.20000	-0.50000	8 Yes Surface
Line	AM	-	39.10000	23.20000	-0.50000	38.90000	20.50000	-0.50000	3 Yes Surface
Line	AN	-	38.90000	20.50000	-0.50000	35.60000	21.00000	-0.50000	4 Yes Surface
Line	AO	-	35.60000	21.00000	-0.50000	35.90000	23.50000	-0.50000	3 Yes Surface
Line	AP	-	35.90000	23.50000	-0.50000	31.50000	24.20000	-0.50000	5 Yes Surface
Line	AQ	-	31.50000	24.20000	-0.50000	30.00000	19.30000	-0.50000	8 Yes Surface
Line	AR	-	35.60000	12.40000	-0.50000	36.70000	20.80000	-0.50000	9 Yes Surface
Line	AS	-	44.70000	9.30000	-0.50000	45.70000	17.40000	-0.50000	9 Yes Surface
Line	AT	-	54.50000	10.00000	-0.50000	55.80000	21.00000	-0.50000	6 Yes Surface
Line	AU	-	33.10000	38.60000	-2.00000	26.00000	39.00000	-2.00000	8 Yes Surface
Line	AV	-	26.00000	39.00000	-2.00000	25.40000	29.80000	-2.00000	10 Yes Surface
Line	AW	-	25.40000	29.80000	-2.00000	36.70000	29.10000	-2.00000	6 Yes Surface

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)](%)
Curve Fitting:	Polynomial
Method:	
x Order:	1
y Order:	0
Polynomial: z =	0.0x + 0.0
Coeff. of	-2147483648.E+2147483647
Determination:	
Curve Name:	Installation of contiguous bored pile wall in stiff clay (CIRIA 580 Fig. 2.8(b))
Coordinates:	[Distance from wall / wall depth or max. excavation depth (x), Depth / wall depth or max. excavation depth (y), Settlement / wall depth or max. excavation depth (z)](%)
Curve Fitting:	Polynomial
Method:	
x Order:	1
y Order:	0
Polynomial: z =	-2.0E-2x + 4.0E-2
Coeff. of	1.0
Determination:	
Curve Name:	Installation of planar diaphragm wall in stiff clay (CIRIA 580 Fig. 2.9(b))
Coordinates:	[Distance from wall / wall depth or max. excavation depth (x), Depth / wall depth or max. excavation depth (y), Settlement / wall depth or max. excavation depth (z)](%)
Curve Fitting:	Polynomial
Method:	
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	1.0000
Determination:	
Curve Name:	Excavation in front of high stiffness wall in stiff clay (CIRIA 580 Fig. 2.11(b))
Coordinates:	[Distance from wall / wall depth or max. excavation depth (x), Depth / wall depth or max. excavation depth (y), Settlement / wall depth or max. excavation depth (z)](%)
Curve Fitting:	Polynomial
Method:	
x Order:	4
y Order:	0
Polynomial: 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][0.500,0.000,0.071][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]
Coeff. of	
Determination:	



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

[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 Polynomial
Method:
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 9.9991E-1
Determination:

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 Polynomial
Method:
x Order: 0
y Order: 0
Polynomial: $z = 0.0$
Coeff. of -2147483648.E+2147483647
Determination:

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

Curve Fitting Polynomial
Method:
x Order: 3
y Order: 0
Polynomial: $z = -4.2486E-3x^3 + 1.9096E-2x^2 - 4.6221E-2x + 4.0729E-2$
Coeff. of 1.0000
Determination:

Curve Name: Installation of planar diaphragm wall in stiff clay (CIRIA 580 Fig. 2.9(a))
Coordinates: [Distance from wall / wall depth or max. excavation depth (x), Depth / wall depth or max. excavation depth (y), Horizontal movement / wall depth or max. excavation depth (z)]
[0.000,0.000,0.050][1.500,0.000,0.000]

Curve Fitting Polynomial
Method:
x Order: 1
y Order: 0
Polynomial: $z = -3.33E-2x + 5.00E-2$
Coeff. of 1.00
Determination:

Curve Name: Excavation in front of high stiffness wall in stiff clay (CIRIA 580 Fig. 2.11(a))
Coordinates: [Distance from wall / wall depth or max. excavation depth (x), Depth / wall depth or max. excavation depth (y), Horizontal movement / wall depth or max. excavation depth (z)]
[0.000,0.000,0.150][4.000,0.000,0.000]

Curve Fitting Polynomial
Method:
x Order: 1
y Order: 0
Polynomial: $z = -3.75E-2x + 1.50E-1$
Coeff. of 1.00
Determination:

Polygonal Excavations

Excavation Name: Wall Installation A
Surface level [m]: 0.0
Contribution: Positive
Enabled: Yes
Surface movement curves which are selected are applied between surface and [m]: -4.4000

Corner	x	y	Base Level	Stiffened	Previous Side	Next Side
	[m]	[m]	[m]		d [m] p1 [%] p2* [%]	d [m] p1 [%] p2* [%]
1	32.700	32.500	-4.4000	No	- - -	- - -
2	36.800	32.000	-4.4000	No	- - -	- - -
3	37.300	42.900	-4.4000	No	- - -	- - -
4	33.400	42.900	-4.4000	No	- - -	- - -

Side	Corner 1		Corner 2		Vertical		Ground Movement Curve		Horizontal	
	x [m]	y [m]	x [m]	y [m]	d [m]	p1 [%]	p2* [%]	d [m]	p1 [%]	p2* [%]
1	32.700	32.500	36.800	32.000	Installation of planar diaphragm wall in stiff clay (CIRIA 580 Fig. 2.9(b))	Installation of planar diaphragm wall in stiff clay (CIRIA 580 Fig. 2.9(a))	Installation of planar diaphragm wall in stiff clay (CIRIA 580 Fig. 2.9(a))	Installation of planar diaphragm wall in stiff clay (CIRIA 580 Fig. 2.9(a))	Installation of planar diaphragm wall in stiff clay (CIRIA 580 Fig. 2.9(a))	Installation of planar diaphragm wall in stiff clay (CIRIA 580 Fig. 2.9(a))
2	36.800	32.000	37.300	42.900	No vertical ground movement	No horizontal ground movement	Installation of planar diaphragm wall in stiff clay (CIRIA 580 Fig. 2.9(b))	Installation of planar diaphragm wall in stiff clay (CIRIA 580 Fig. 2.9(a))	Installation of planar diaphragm wall in stiff clay (CIRIA 580 Fig. 2.9(a))	Installation of planar diaphragm wall in stiff clay (CIRIA 580 Fig. 2.9(a))
3	37.300	42.900	33.400	42.900	Installation of planar diaphragm wall in stiff clay (CIRIA 580 Fig. 2.9(b))	Installation of planar diaphragm wall in stiff clay (CIRIA 580 Fig. 2.9(a))	Installation of planar diaphragm wall in stiff clay (CIRIA 580 Fig. 2.9(b))	Installation of planar diaphragm wall in stiff clay (CIRIA 580 Fig. 2.9(a))	Installation of planar diaphragm wall in stiff clay (CIRIA 580 Fig. 2.9(a))	Installation of planar diaphragm wall in stiff clay (CIRIA 580 Fig. 2.9(a))
4	33.400	42.900	32.700	32.500	Installation of planar diaphragm wall in stiff clay (CIRIA 580 Fig. 2.9(b))	Installation of planar diaphragm wall in stiff clay (CIRIA 580 Fig. 2.9(a))	Installation of planar diaphragm wall in stiff clay (CIRIA 580 Fig. 2.9(b))	Installation of planar diaphragm wall in stiff clay (CIRIA 580 Fig. 2.9(a))	Installation of planar diaphragm wall in stiff clay (CIRIA 580 Fig. 2.9(a))	Installation of planar diaphragm wall in stiff clay (CIRIA 580 Fig. 2.9(a))

Excavation Name: Excavation A
Surface level [m]: 0.0
Contribution: Positive
Enabled: Yes
Surface movement curves which are selected are applied between surface and [m]: -4.4000

Corner	x	y	Base Level	Stiffened	Previous Side	Next Side
	[m]	[m]	[m]		d [m] p1 [%] p2* [%]	d [m] p1 [%] p2* [%]
1	32.700	32.500	-4.4000	Yes	0.0 67.000 25.000	0.0 67.000 25.000
2	36.800	32.000	-4.4000	Yes	0.0 67.000 25.000	0.0 67.000 25.000
3	37.300	42.900	-4.4000	Yes	0.0 67.000 25.000	0.0 67.000 25.000
4	33.400	42.900	-4.4000	Yes	0.0 67.000 25.000	0.0 67.000 25.000

Side	Corner 1		Corner 2		Vertical		Ground Movement Curve		Horizontal	
	x [m]	y [m]	x [m]	y [m]	d [m]	p1 [%]	p2* [%]	d [m]	p1 [%]	p2* [%]
1	32.700	32.500	36.800	32.000	Excavation in front of high stiffness wall in stiff clay	Excavation in front of high stiffness wall in stiff clay	Excavation in front of high stiffness wall in stiff clay	Excavation in front of high stiffness wall in stiff clay	Excavation in front of high stiffness wall in stiff clay	Excavation in front of high stiffness wall in stiff clay



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Side	Corner 1		Corner 2		Ground Movement Curve	
	x [m]	y [m]	x [m]	y [m]	Vertical	Horizontal
2	36.800	32.000	37.300	42.900	(CIRIA 580 Fig. 2.11(b)) No vertical ground movement	(CIRIA 580 Fig. 2.11(a)) No horizontal ground movement
3	37.300	42.900	33.400	42.900	Excavation in front of high stiffness wall in stiff clay (CIRIA 580 Fig. 2.11(b))	Excavation in front of high stiffness wall in stiff clay (CIRIA 580 Fig. 2.11(a))
4	33.400	42.900	32.700	32.500	Excavation in front of high stiffness wall in stiff clay (CIRIA 580 Fig. 2.11(b))	Excavation in front of high stiffness wall in stiff clay (CIRIA 580 Fig. 2.11(a))

Excavation Name: Wall Installation B
Surface level [m]: 0.0
Contribution: Positive
Enabled: Yes
Surface movement curves which are selected are applied between surface and [m]: -8.5000

Corner	x [m]	y [m]	Base Level [m]	Stiffened	Previous Side	Next Side
					d [m] pl [%] p2* [%]	d [m] pl [%] p2* [%]
1	36.700	28.400	-8.5000	No	-	-
2	50.100	26.600	-8.5000	No	-	-
3	48.400	35.400	-8.5000	No	-	-
4	48.166	36.351	-4.4000	No	-	-
5	45.300	47.600	-4.4000	No	-	-
6	37.600	47.600	-4.4000	No	-	-
7	36.700	28.800	-4.4000	No	-	-

Side	Corner 1		Corner 2		Ground Movement Curve	
	x [m]	y [m]	x [m]	y [m]	Vertical	Horizontal
1	36.700	28.400	50.100	26.600	Installation of contiguous bored pile wall in stiff clay (CIRIA 580 Fig. 2.8(b))	Installation of contiguous bored pile wall in stiff clay (CIRIA 580 Fig. 2.8(a))
2	50.100	26.600	48.400	35.400	Installation of contiguous bored pile wall in stiff clay (CIRIA 580 Fig. 2.8(b))	Installation of contiguous bored pile wall in stiff clay (CIRIA 580 Fig. 2.8(a))
3	48.400	35.400	48.166	36.351	Installation of contiguous bored pile wall in stiff clay (CIRIA 580 Fig. 2.8(b))	Installation of contiguous bored pile wall in stiff clay (CIRIA 580 Fig. 2.8(a))
4	48.166	36.351	45.300	47.600	Installation of planar diaphragm wall in stiff clay (CIRIA 580 Fig. 2.9(b))	Installation of planar diaphragm wall in stiff clay (CIRIA 580 Fig. 2.9(a))
5	45.300	47.600	37.600	47.600	Installation of planar diaphragm wall in stiff clay (CIRIA 580 Fig. 2.9(b))	Installation of planar diaphragm wall in stiff clay (CIRIA 580 Fig. 2.9(a))
6	37.600	47.600	36.700	28.800	Installation of planar diaphragm wall in stiff clay (CIRIA 580 Fig. 2.9(b))	Installation of planar diaphragm wall in stiff clay (CIRIA 580 Fig. 2.9(a))
7	36.700	28.800	36.700	28.400	Installation of contiguous bored pile wall in stiff clay (CIRIA 580 Fig. 2.8(b))	Installation of contiguous bored pile wall in stiff clay (CIRIA 580 Fig. 2.8(a))

Excavation Name: Excavation B
Surface level [m]: 0.0
Contribution: Positive
Enabled: Yes
Surface movement curves which are selected are applied between surface and [m]: -4.4000

Corner	x [m]	y [m]	Base Level [m]	Stiffened	Previous Side	Next Side
					d [m] pl [%] p2* [%]	d [m] pl [%] p2* [%]
1	36.700	28.400	-4.4000	Yes	0.0 67.000 25.000	0.0 67.000 25.000
2	50.100	26.600	-4.4000	Yes	0.0 67.000 25.000	0.0 67.000 25.000
3	48.400	35.400	-4.4000	Yes	0.0 67.000 25.000	0.0 67.000 25.000
4	48.166	36.351	-4.4000	Yes	0.0 67.000 25.000	0.0 67.000 25.000
5	45.300	47.600	-4.4000	Yes	0.0 67.000 25.000	0.0 67.000 25.000
6	37.600	47.600	-4.4000	Yes	0.0 67.000 25.000	0.0 67.000 25.000
7	36.700	28.800	-4.4000	Yes	0.0 67.000 25.000	0.0 67.000 25.000

Side	Corner 1		Corner 2		Ground Movement Curve	
	x [m]	y [m]	x [m]	y [m]	Vertical	Horizontal
1	36.700	28.400	50.100	26.600	Excavation in front of high stiffness wall in stiff clay (CIRIA 580 Fig. 2.11(b))	Excavation in front of high stiffness wall in stiff clay (CIRIA 580 Fig. 2.11(a))
2	50.100	26.600	48.400	35.400	Excavation in front of high stiffness wall in stiff clay (CIRIA 580 Fig. 2.11(b))	Excavation in front of high stiffness wall in stiff clay (CIRIA 580 Fig. 2.11(a))
3	48.400	35.400	48.166	36.351	Excavation in front of high stiffness wall in stiff clay (CIRIA 580 Fig. 2.11(b))	Excavation in front of high stiffness wall in stiff clay (CIRIA 580 Fig. 2.11(a))
4	48.166	36.351	45.300	47.600	Excavation in front of high stiffness wall in stiff clay (CIRIA 580 Fig. 2.11(b))	Excavation in front of high stiffness wall in stiff clay (CIRIA 580 Fig. 2.11(a))
5	45.300	47.600	37.600	47.600	Excavation in front of high stiffness wall in stiff clay (CIRIA 580 Fig. 2.11(b))	Excavation in front of high stiffness wall in stiff clay (CIRIA 580 Fig. 2.11(a))
6	37.600	47.600	36.700	28.800	Excavation in front of high stiffness wall in stiff clay (CIRIA 580 Fig. 2.11(b))	Excavation in front of high stiffness wall in stiff clay (CIRIA 580 Fig. 2.11(a))
7	36.700	28.800	36.700	28.400	Excavation in front of high stiffness wall in stiff clay (CIRIA 580 Fig. 2.11(b))	Excavation in front of high stiffness wall in stiff clay (CIRIA 580 Fig. 2.11(a))

Damage Category Strains

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

Specific Structures - Geometry

Structure Name	Sub-Structure Name	Displacement Line	Start Distance Along Line	End Distance Along Line	Vertical Offsets from Line for Vertical Movement Calculations	Vertical Displacement Limit Sensitivity	Damage Category Strains	Poisson's Ratio	E/G
			[m]	[m]	[m]	[m]			
A	A	A	0.00000	3.39900	0.0	0.10000	Burland Strain Limits	0.20000	2.6000
B	B	B	0.00000	3.09900	0.0	0.10000	Burland Strain Limits	0.20000	2.6000
C	C	C	0.00000	4.60009	0.0	0.10000	Burland Strain Limits	0.20000	2.6000
D	D	D	0.00000	5.39993	0.0	0.10000	Burland Strain Limits	0.20000	2.6000
E	E	E	0.00000	2.49900	0.0	0.10000	Burland Strain Limits	0.20000	2.6000
F	F	F	0.00000	9.29954	0.0	0.10000	Burland Strain Limits	0.20000	2.6000
G	G	G	0.00000	4.99900	0.0	0.10000	Burland Strain Limits	0.20000	2.6000
H	H	H	0.00000	2.70085	0.0	0.10000	Burland Strain Limits	0.20000	2.6000
I	I	I	0.00000	7.19969	0.0	0.10000	Burland Strain Limits	0.20000	2.6000
J	J	J	0.00000	19.49900	0.0	0.10000	Burland Strain Limits	0.20000	2.6000
K	K	K	0.00000	8.89900	0.0	0.10000	Burland Strain Limits	0.20000	2.6000
L	L	L	0.00000	7.19900	0.0	0.10000	Burland Strain Limits	0.20000	2.6000



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Structure Name	Sub-Structure Name	Displacement Line	Start Distance Along Line	End Distance Along Line	Vertical Offsets from Line for Vertical	Vertical Displacement Limit Sensitivity	Damage Category	Strains	Poisson's Ratio	E/G
M		M	0.00000	7.29968	0.0	0.10000	Burland Strain Limits	0.20000	2.6000	
N		N	0.00000	6.09900	0.0	0.10000	Burland Strain Limits	0.20000	2.6000	
O		O	0.00000	4.59900	0.0	0.10000	Burland Strain Limits	0.20000	2.6000	
P	Sub #	P	0.00000	5.69900	0.0	0.10000	Burland Strain Limits	0.20000	2.6000	
Q		Q	0.00000	4.59900	0.0	0.10000	Burland Strain Limits	0.20000	2.6000	
R		R	0.00000	7.40989	0.0	0.10000	Burland Strain Limits	0.20000	2.6000	
S		S	0.00000	30.99900	0.0	0.10000	Burland Strain Limits	0.20000	2.6000	
T		T	0.00000	37.73121	0.0	0.10000	Burland Strain Limits	0.20000	2.6000	
U		U	0.00000	9.85902	0.0	0.10000	Burland Strain Limits	0.20000	2.6000	
V		V	0.00000	3.63905	0.0	0.10000	Burland Strain Limits	0.20000	2.6000	
W		W	0.00000	1.13918	0.0	0.10000	Burland Strain Limits	0.20000	2.6000	
X		X	0.00000	9.71908	0.0	0.10000	Burland Strain Limits	0.20000	2.6000	
Y		Y	0.00000	3.63905	0.0	0.10000	Burland Strain Limits	0.20000	2.6000	
Z		Z	0.00000	9.57919	0.0	0.10000	Burland Strain Limits	0.20000	2.6000	
AA		AA	0.00000	3.66097	0.0	0.10000	Burland Strain Limits	0.20000	2.6000	
AB		AB	0.00000	9.46156	0.0	0.10000	Burland Strain Limits	0.20000	2.6000	
AC		AC	0.00000	5.07935	0.0	0.10000	Burland Strain Limits	0.20000	2.6000	
AD		AD	0.00000	7.86284	0.0	0.10000	Burland Strain Limits	0.20000	2.6000	
AE		AE	0.00000	3.30506	0.0	0.10000	Burland Strain Limits	0.20000	2.6000	
AF		AF	0.00000	3.21303	0.0	0.10000	Burland Strain Limits	0.20000	2.6000	
AG		AG	0.00000	17.14076	0.0	0.10000	Burland Strain Limits	0.20000	2.6000	
AH		AH	0.00000	6.33777	0.0	0.10000	Burland Strain Limits	0.20000	2.6000	
AI	Sub #	AI	0.00000	4.84977	0.0	0.10000	Burland Strain Limits	0.20000	2.6000	
AJ	Sub #	AJ	0.00000	8.96672	0.0	0.10000	Burland Strain Limits	0.20000	2.6000	
AK	Sub #	AK	0.00000	4.94875	0.0	0.10000	Burland Strain Limits	0.20000	2.6000	
AL	Sub #	AL	0.00000	4.73714	0.0	0.10000	Burland Strain Limits	0.20000	2.6000	
AM	Sub #	AM	0.00000	2.70640	0.0	0.10000	Burland Strain Limits	0.20000	2.6000	
AN	Sub #	AN	0.00000	3.33666	0.0	0.10000	Burland Strain Limits	0.20000	2.6000	
AO	Sub #	AO	0.00000	2.51694	0.0	0.10000	Burland Strain Limits	0.20000	2.6000	
AP	Sub #	AP	0.00000	4.45433	0.0	0.10000	Burland Strain Limits	0.20000	2.6000	
AQ	Sub #	AQ	0.00000	9.94875	0.0	0.10000	Burland Strain Limits	0.20000	2.6000	
AR	Sub #	AR	0.00000	8.47072	0.0	0.10000	Burland Strain Limits	0.20000	2.6000	
AS	Sub #	AS	0.00000	8.16049	0.0	0.10000	Burland Strain Limits	0.20000	2.6000	
AT	Sub #	AT	0.00000	11.07555	0.0	0.10000	Burland Strain Limits	0.20000	2.6000	
AU	Sub #	AU	0.00000	7.11026	0.0	0.10000	Burland Strain Limits	0.20000	2.6000	
AV	Sub #	AV	0.00000	9.21854	0.0	0.10000	Burland Strain Limits	0.20000	2.6000	
AW	Sub #	AW	0.00000	11.32066	0.0	0.10000	Burland Strain Limits	0.20000	2.6000	

Specific Structures - Bending Parameters

Structure Name	Sub-Structure Name	Height [m]	Default Properties	Hogging			Sagging		
				2nd Moment of Area (per unit width)	Distance of Bending from N.A.	Distance of Beam in Tension	2nd Moment of Area (per unit width)	Distance of Bending from N.A.	Distance of Beam in Tension
A		15.500	Yes	1241.3	15.500	15.500	310.32	7.7500	7.7500
B		15.500	Yes	1241.3	15.500	15.500	310.32	7.7500	7.7500
C		15.500	Yes	1241.3	15.500	15.500	310.32	7.7500	7.7500
D		15.500	Yes	1241.3	15.500	15.500	310.32	7.7500	7.7500
E		15.500	Yes	1241.3	15.500	15.500	310.32	7.7500	7.7500
F		15.500	Yes	1241.3	15.500	15.500	310.32	7.7500	7.7500
G		15.500	Yes	1241.3	15.500	15.500	310.32	7.7500	7.7500
H		15.500	Yes	1241.3	15.500	15.500	310.32	7.7500	7.7500
I		15.500	Yes	1241.3	15.500	15.500	310.32	7.7500	7.7500
J		8.500	Yes	204.71	8.500	8.500	51.177	4.2500	4.2500
K		8.500	Yes	204.71	8.500	8.500	51.177	4.2500	4.2500
L		8.500	Yes	204.71	8.500	8.500	51.177	4.2500	4.2500
M		9.500	Yes	285.79	9.500	9.500	71.448	4.7500	4.7500
N		12.000	Yes	576.00	12.000	12.000	144.00	6.0000	6.0000
O		3.680	Yes	16.612	3.680	3.680	4.1530	1.8400	1.8400
P	Sub #	4.850	Yes	38.028	4.850	4.850	9.5070	2.4250	2.4250
Q		3.650	Yes	16.209	3.650	3.650	4.0523	1.8250	1.8250
R		3.500	Yes	14.292	3.500	3.500	3.5729	1.7500	1.7500
S		8.500	Yes	204.71	8.500	8.500	51.177	4.2500	4.2500
T		8.500	Yes	204.71	8.500	8.500	51.177	4.2500	4.2500
U		8.500	Yes	204.71	8.500	8.500	51.177	4.2500	4.2500
V		6.500	Yes	91.542	6.500	6.500	22.885	3.2500	3.2500
W		7.700	Yes	152.18	7.700	7.700	38.044	3.8500	3.8500
X		8.500	Yes	204.71	8.500	8.500	51.177	4.2500	4.2500
Y		7.400	Yes	135.07	7.400	7.400	33.769	3.7000	3.7000
Z		8.500	Yes	204.71	8.500	8.500	51.177	4.2500	4.2500
AA		7.400	Yes	135.07	7.400	7.400	33.769	3.7000	3.7000
AB		8.500	Yes	204.71	8.500	8.500	51.177	4.2500	4.2500
AC		3.500	Yes	14.292	3.500	3.500	3.5729	1.7500	1.7500
AD		4.460	Yes	29.572	4.460	4.460	7.3930	2.2300	2.2300
AE		3.500	Yes	14.292	3.500	3.500	3.5729	1.7500	1.7500
AF		4.460	Yes	29.572	4.460	4.460	7.3930	2.2300	2.2300
AG		3.500	Yes	14.292	3.500	3.500	3.5729	1.7500	1.7500
AH		18.500	Yes	2110.5	18.500	18.500	527.64	9.2500	9.2500
AI	Sub #	18.500	Yes	2110.5	18.500	18.500	527.64	9.2500	9.2500
AJ	Sub #	18.500	Yes	2110.5	18.500	18.500	527.64	9.2500	9.2500
AK	Sub #	18.500	Yes	2110.5	18.500	18.500	527.64	9.2500	9.2500
AL	Sub #	18.500	Yes	2110.5	18.500	18.500	527.64	9.2500	9.2500
AM	Sub #	18.500	Yes	2110.5	18.500	18.500	527.64	9.2500	9.2500
AN	Sub #	18.500	Yes	2110.5	18.500	18.500	527.64	9.2500	9.2500
AO	Sub #	18.500	Yes	2110.5	18.500	18.500	527.64	9.2500	9.2500
AP	Sub #	18.500	Yes	2110.5	18.500	18.500	527.64	9.2500	9.2500
AQ	Sub #	18.500	Yes	2110.5	18.500	18.500	527.64	9.2500	9.2500
AR	Sub #	18.500	Yes	2110.5	18.500	18.500	527.64	9.2500	9.2500
AS	Sub #	18.500	Yes	2110.5	18.500	18.500	527.64	9.2500	9.2500
AT	Sub #	18.500	Yes	2110.5	18.500	18.500	527.64	9.2500	9.2500
AU	Sub #	4.600	Yes	32.445	4.600	4.600	8.1113	2.3000	2.3000
AV	Sub #	4.600	Yes	32.445	4.600	4.600	8.1113	2.3000	2.3000
AW	Sub #	4.600	Yes	32.445	4.600	4.600	8.1113	2.3000	2.3000

Building Segment Combinations

Structure Name	Sub-Structure Name	Vertical Offset from Line for Vertical Movement Calculations [m]	Segment Start [m]	Segment Length [m]	Segment Curvature [m]	Combined Segment
No structures have segments combined.						

Warnings

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

Displacement and Strain Results

Type/No.	Coordinates			Displacements			Angle of Line to x Axis
Name	Dist.	x	y	z	x	y	z
Horizontal displacement							
Horizontal displacement							



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Type/No.	Coordinates			Displacements			Angle of Line
Name	Dist.	x	y	z	x	y	to x Axis
					Horizontal displacement		Horizontal displacement
					along the Line	perpendicular to Line	
Structure: A Sub-structure:							
Dist.	Coordinates			Displacements			
	x	y	z	x	y	Horizontal displacement along the Line	Horizontal displacement perpendicular to Line
[m]	[m]	[m]	[m]	[mm]	[mm]	[mm]	[mm]
0.0	22.50000	48.10000	-0.50000	2.0599	-0.58186	2.0599	-0.58186
0.85000	23.35000	48.10000	-0.50000	2.4980	-0.70465	2.4980	-0.70465
1.70000	24.20000	48.10000	-0.50000	2.9183	-0.83724	2.9183	-0.83724
2.55000	25.05000	48.10000	-0.50000	3.3166	-0.98006	3.3166	-0.98006
3.40000	25.90000	48.10000	-0.50000	3.6878	-1.13300	3.6878	-1.13300
Structure: B Sub-structure:							
Dist.	Coordinates			Displacements			
	x	y	z	x	y	Horizontal displacement along the Line	Horizontal displacement perpendicular to Line
[m]	[m]	[m]	[m]	[mm]	[mm]	[mm]	[mm]
0.0	25.90000	48.10000	-0.50000	3.6878	-1.1330	1.1330	3.6878
0.77500	25.90000	47.32500	-0.50000	3.8950	-1.0946	1.0946	3.8950
1.55000	25.90000	46.55000	-0.50000	4.1090	-1.0195	1.0195	4.1090
2.32500	25.90000	45.77500	-0.50000	4.3229	-0.90311	0.90311	4.3229
3.10000	25.90000	45.00000	-0.50000	4.5276	-0.74276	0.74276	4.5276
Structure: C Sub-structure:							
Dist.	Coordinates			Displacements			
	x	y	z	x	y	Horizontal displacement along the Line	Horizontal displacement perpendicular to Line
[m]	[m]	[m]	[m]	[mm]	[mm]	[mm]	[mm]
0.0	25.90000	45.00000	-0.50000	4.5276	-0.74276	4.5276	-0.74276
0.92022	26.82000	44.98000	-0.50000	5.0254	-0.88952	5.0435	-0.78008
1.8404	27.74000	44.96000	-0.50000	5.6733	-1.1322	5.6966	-1.0086
2.7607	28.66000	44.94000	-0.50000	6.3528	-1.4737	6.3833	-1.3352
3.6809	29.58000	44.92000	-0.50000	6.9234	-1.9106	6.9633	-1.7596
4.6011	30.50000	44.90000	-0.50000	7.2971	-2.4754	7.3492	-2.3162
Structure: D Sub-structure:							
Dist.	Coordinates			Displacements			
	x	y	z	x	y	Horizontal displacement along the Line	Horizontal displacement perpendicular to Line
[m]	[m]	[m]	[m]	[mm]	[mm]	[mm]	[mm]
0.0	30.50000	44.90000	-0.50000	7.2971	-2.4754	-2.6100	-7.2500
0.90015	30.48333	45.80000	-0.50000	6.4482	-2.6616	-2.7806	-6.3978
1.8003	30.46667	46.70000	-0.50000	5.8954	-2.7221	-2.8308	-5.8440
2.7005	30.45000	47.60000	-0.50000	5.4556	-2.6384	-2.7389	-5.4058
3.6006	30.43333	48.50000	-0.50000	3.7464	-2.5587	-2.6276	-3.6984
4.5008	30.41667	49.40000	-0.50000	3.3290	-2.6966	-2.7577	-3.2785
5.4009	30.40000	50.30000	-0.50000	2.9460	-2.8070	-2.8610	-2.8936
Structure: E Sub-structure:							
Dist.	Coordinates			Displacements			
	x	y	z	x	y	Horizontal displacement along the Line	Horizontal displacement perpendicular to Line
[m]	[m]	[m]	[m]	[mm]	[mm]	[mm]	[mm]
0.0	30.40000	50.30000	-0.50000	2.9460	-2.8070	2.9460	-2.8070
0.83333	31.23333	50.30000	-0.50000	2.8751	-3.1596	2.8751	-3.1596
1.6667	32.06667	50.30000	-0.50000	2.8491	-3.5807	2.8491	-3.5807
2.5000	32.90000	50.30000	-0.50000	2.8006	-4.0607	2.8006	-4.0607
Structure: F Sub-structure:							
Dist.	Coordinates			Displacements			
	x	y	z	x	y	Horizontal displacement along the Line	Horizontal displacement perpendicular to Line
[m]	[m]	[m]	[m]	[mm]	[mm]	[mm]	[mm]
0.0	32.90000	50.30000	-0.50000	2.8006	-4.0607	-4.0303	-2.8441
0.93005	32.91000	51.23000	-0.50000	2.2091	-3.9302	-3.9062	-2.2512
1.8601	32.92000	52.16000	-0.50000	1.6795	-3.6291	-3.6108	-1.7385
2.7902	32.93000	53.09000	-0.50000	1.4181	-3.4344	-3.4189	-1.4550
3.7202	32.94000	54.02000	-0.50000	1.2265	-3.2332	-3.2199	-1.2612
4.6503	32.95000	54.95000	-0.50000	1.0483	-2.9780	-2.9666	-1.0803
5.5803	32.96000	55.88000	-0.50000	0.88619	-2.6806	-2.6709	-0.91496
6.5104	32.97000	56.81000	-0.50000	0.74029	-2.3503	-2.3422	-0.76552
7.4404	32.98000	57.74000	-0.50000	0.60964	-1.9945	-1.9878	-0.63105
8.3705	32.99000	58.67000	-0.50000	0.49285	-1.6186	-1.6132	-0.51023
9.3005	33.00000	59.60000	-0.50000	0.38840	-1.2268	-1.2226	-0.40157
Structure: G Sub-structure:							
Dist.	Coordinates			Displacements			
	x	y	z	x	y	Horizontal displacement along the Line	Horizontal displacement perpendicular to Line
[m]	[m]	[m]	[m]	[mm]	[mm]	[mm]	[mm]
0.0	33.00000	59.60000	-0.50000	0.38840	-1.2268	-0.38840	1.2268
1.0000	32.00000	59.60000	-0.50000	0.42219	-1.0765	-0.42219	1.0765
2.0000	31.00000	59.60000	-0.50000	0.42846	-0.90950	-0.42846	0.90950
3.0000	30.00000	59.60000	-0.50000	0.40680	-0.73136	-0.40680	0.73136
4.0000	29.00000	59.60000	-0.50000	0.35779	-0.54681	-0.35779	0.54681
5.0000	28.00000	59.60000	-0.50000	0.28274	-0.35979	-0.28274	0.35979
Structure: H Sub-structure:							
Dist.	Coordinates			Displacements			
	x	y	z	x	y	Horizontal displacement along the Line	Horizontal displacement perpendicular to Line
[m]	[m]	[m]	[m]	[mm]	[mm]	[mm]	[mm]
0.0	28.00000	59.60000	-0.50000	0.28274	-0.35979	0.37001	0.26923
0.90652	28.03333	58.70000	-0.50000	0.44702	-0.63919	0.65529	0.42306
1.8012	28.06667	57.80000	-0.50000	0.61872	-0.89765	0.91994	0.58077
2.7019	28.10000	56.90000	-0.50000	0.81465	-1.1492	1.1786	0.77156



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Dist. Coordinates Displacements
 x y z x y Horizontal Horizontal
 displacement displacement
 along the perpendicular
 Line to Line

Structure: I | Sub-structure:

Dist.	Coordinates			Displacements		Horizontal displacement along the Line	Horizontal displacement perpendicular to Line
x	y	z	x	y	Horizontal displacement along the Line	Horizontal displacement perpendicular to Line	
[m]	[m]	[m]	[mm]	[mm]	[mm]	[mm]	
0.0	28.10000	56.90000	-0.50000	0.81465	-1.1492	-0.83053	1.1378
0.90009	27.20000	56.91250	-0.50000	0.74655	-0.94854	-0.75965	0.93808
1.80018	26.30000	56.92500	-0.50000	0.64710	-0.74742	-0.65742	0.73836
2.70027	25.40000	56.93750	-0.50000	0.51893	-0.54878	-0.52650	0.54152
3.60036	24.50000	56.95000	-0.50000	0.36479	-0.35480	-0.36968	0.34970
4.50045	23.60000	56.96250	-0.50000	0.18740	-0.16703	-0.18970	0.16441
5.40054	22.70000	56.97500	-0.50000	0.0	0.0	0.0	0.0
6.30063	21.80000	56.98750	-0.50000	0.0	0.0	0.0	0.0
7.20072	20.90000	57.00000	-0.50000	0.0	0.0	0.0	0.0

Structure: J | Sub-structure:

Dist.	Coordinates			Displacements		Horizontal displacement along the Line	Horizontal displacement perpendicular to Line
x	y	z	x	y	Horizontal displacement along the Line	Horizontal displacement perpendicular to Line	
[m]	[m]	[m]	[mm]	[mm]	[mm]	[mm]	
0.0	33.00000	59.50000	-0.50000	0.39904	-1.2698	0.39904	-1.2698
1.9500	34.95000	59.50000	-0.50000	0.27890	-1.6274	0.27890	-1.6274
3.9000	36.90000	59.50000	-0.50000	0.083460	-1.7938	0.083460	-1.7938
5.8500	38.85000	59.50000	-0.50000	-0.019520	-2.3466	-0.019520	-2.3466
7.8000	40.80000	59.50000	-0.50000	-0.026807	-2.2646	-0.026807	-2.2646
9.7500	42.75000	59.50000	-0.50000	-0.0073567	-2.1589	-0.0073567	-2.1589
11.700	44.70000	59.50000	-0.50000	0.0	-2.1375	0.0	-2.1375
13.650	46.65000	59.50000	-0.50000	-0.16592	-1.4625	-0.16592	-1.4625
15.600	48.60000	59.50000	-0.50000	-0.34932	-1.2597	-0.34932	-1.2597
17.550	50.55000	59.50000	-0.50000	-0.43975	-0.99676	-0.43975	-0.99676
19.500	52.50000	59.50000	-0.50000	-0.43327	-0.71610	-0.43327	-0.71610

Structure: K | Sub-structure:

Dist.	Coordinates			Displacements		Horizontal displacement along the Line	Horizontal displacement perpendicular to Line
x	y	z	x	y	Horizontal displacement along the Line	Horizontal displacement perpendicular to Line	
[m]	[m]	[m]	[mm]	[mm]	[mm]	[mm]	
0.0	33.00000	52.20000	-0.50000	1.6434	-3.6495	1.6434	-3.6495
0.98889	33.98889	52.20000	-0.50000	1.6133	-5.1676	1.6133	-5.1676
1.9778	34.97778	52.20000	-0.50000	1.5132	-5.7671	1.5132	-5.7671
2.9667	35.96667	52.20000	-0.50000	1.1591	-6.3770	1.1591	-6.3770
3.9556	36.95556	52.20000	-0.50000	0.52848	-6.8848	0.52848	-6.8848
4.9444	37.94444	52.20000	-0.50000	-0.13209	-7.4478	-0.13209	-7.4478
5.9333	38.93333	52.20000	-0.50000	-0.29779	-7.2372	-0.29779	-7.2372
6.9222	39.92222	52.20000	-0.50000	-0.41343	-7.0079	-0.41343	-7.0079
7.9111	40.91111	52.20000	-0.50000	-0.47975	-6.7772	-0.47975	-6.7772
8.9000	41.90000	52.20000	-0.50000	-0.50297	-6.5585	-0.50297	-6.5585

Structure: L | Sub-structure:

Dist.	Coordinates			Displacements		Horizontal displacement along the Line	Horizontal displacement perpendicular to Line
x	y	z	x	y	Horizontal displacement along the Line	Horizontal displacement perpendicular to Line	
[m]	[m]	[m]	[mm]	[mm]	[mm]	[mm]	
0.0	37.70000	59.40000	-0.50000	-0.0063522	-2.4370	2.4370	-0.0063522
0.90000	37.70000	58.50000	-0.50000	-0.012224	-2.9893	2.9893	-0.012224
1.80000	37.70000	57.60000	-0.50000	-0.018800	-3.5409	3.5409	-0.018800
2.70000	37.70000	56.70000	-0.50000	-0.026212	-4.0918	4.0918	-0.026212
3.60000	37.70000	55.80000	-0.50000	-0.034631	-4.6418	4.6418	-0.034631
4.50000	37.70000	54.90000	-0.50000	-0.044277	-5.1908	5.1908	-0.044277
5.40000	37.70000	54.00000	-0.50000	-0.054440	-5.8051	5.8051	-0.054440
6.30000	37.70000	53.10000	-0.50000	-0.068507	-6.6511	6.6511	-0.068507
7.20000	37.70000	52.20000	-0.50000	-0.084009	-7.4949	7.4949	-0.084009

Structure: M | Sub-structure:

Dist.	Coordinates			Displacements		Horizontal displacement along the Line	Horizontal displacement perpendicular to Line
x	y	z	x	y	Horizontal displacement along the Line	Horizontal displacement perpendicular to Line	
[m]	[m]	[m]	[mm]	[mm]	[mm]	[mm]	
0.0	42.00000	59.50000	-1.50000	-0.018148	-2.2016	2.2016	0.012009
0.91259	41.98750	58.58750	-1.50000	-0.066399	-2.7019	2.7026	-0.029383
1.8252	41.97500	57.67500	-1.50000	-0.11797	-3.1947	3.1960	-0.074201
2.7378	41.96250	56.76250	-1.50000	-0.17309	-3.6787	3.6807	-0.12269
3.6503	41.95000	55.85000	-1.50000	-0.23194	-4.1522	4.1550	-0.17504
4.5629	41.93750	54.93750	-1.50000	-0.29461	-4.6131	4.6167	-0.23139
5.4755	41.92500	54.02500	-1.50000	-0.36101	-5.1173	5.1218	-0.29088
6.3881	41.91250	53.11250	-1.50000	-0.43077	-5.8491	5.8544	-0.35061
7.3007	41.90000	52.20000	-1.50000	-0.50297	-6.5585	6.5648	-0.41309

Structure: N | Sub-structure:

Dist.	Coordinates			Displacements		Horizontal displacement along the Line	Horizontal displacement perpendicular to Line
x	y	z	x	y	Horizontal displacement along the Line	Horizontal displacement perpendicular to Line	
[m]	[m]	[m]	[mm]	[mm]	[mm]	[mm]	
0.0	45.50000	53.30000	-4.00000	-0.43954	-3.8880	-3.8880	0.43954
0.87143	45.50000	54.17143	-4.00000	-0.35942	-3.3367	-3.3367	0.35942
1.74286	45.50000	55.04286	-4.00000	-0.29034	-3.0492	-3.0492	0.29034
2.61429	45.50000	55.91429	-4.00000	-0.22268	-2.7542	-2.7542	0.22268
3.4857	45.50000	56.78571	-4.00000	-0.15646	-2.4450	-2.4450	0.15646
4.3571	45.50000	57.65714	-4.00000	-0.091957	-2.1231	-2.1231	0.091957
5.2286	45.50000	58.52857	-4.00000	-0.032879	-1.7966	-1.7966	0.032879
6.1000	45.50000	59.40000	-4.00000	-0.026484	-1.5626	-1.5626	0.026484

Structure: O | Sub-structure:

Dist.	Coordinates			Displacements		Horizontal displacement along the Line	Horizontal displacement perpendicular to Line
x	y	z	x	y	Horizontal displacement along the Line	Horizontal displacement perpendicular to Line	
[m]	[m]	[m]	[mm]	[mm]	[mm]	[mm]	
0.0	37.70000	52.20000	-0.68000	-0.084009	-7.4949	7.4949	-0.084009
0.92000	37.70000	51.28000	-0.68000	-0.10315	-8.3544	8.3544	-0.10315
1.84000	37.70000	50.36000	-0.68000	-0.12679	-9.2097	9.2097	-0.12679



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Dist.	Coordinates			Displacements		
	x	y	z	x	y	z
2.7600	37.70000	49.44000	-0.68000	-0.15765	-10.074	10.074
3.6800	37.70000	48.52000	-0.68000	-0.21764	-11.206	11.206
4.6000	37.70000	47.60000	-0.68000	-0.29936	-12.317	12.317

Structure: P | Sub-structure: Sub #

Dist.	Coordinates			Displacements		
	x	y	z	x	y	z
[m]	[m]	[m]	[m]	[mm]	[mm]	[mm]
0.0	45.50000	53.30000	-1.85000	-0.43954	-3.8880	3.8880
0.95000	45.50000	52.35000	-1.85000	-0.53301	-4.4656	4.4656
1.9000	45.50000	51.40000	-1.85000	-0.63920	-5.0148	5.0148
2.8500	45.50000	50.45000	-1.85000	-0.78337	-5.5339	5.5339
3.8000	45.50000	49.50000	-1.85000	-1.0435	-6.0101	6.0101
4.7500	45.50000	48.55000	-1.85000	-1.7169	-6.2873	6.2873
5.7000	45.50000	47.60000	-1.85000	-2.3971	-6.8453	6.8453

Structure: Q | Sub-structure:

Dist.	Coordinates			Displacements		
	x	y	z	x	y	z
[m]	[m]	[m]	[m]	[mm]	[mm]	[mm]
0.0	41.90000	52.20000	-0.65000	-0.50297	-6.5585	6.5585
0.92000	41.90000	51.28000	-0.65000	-0.57631	-7.2432	7.2432
1.8400	41.90000	50.36000	-0.65000	-0.64645	-7.8934	7.8934
2.7600	41.90000	49.44000	-0.65000	-0.70706	-8.5019	8.5019
3.6800	41.90000	48.52000	-0.65000	-0.74752	-9.0616	9.0616
4.6000	41.90000	47.60000	-0.65000	-0.75374	-9.5701	9.5701

Structure: R | Sub-structure:

Dist.	Coordinates			Displacements		
	x	y	z	x	y	z
[m]	[m]	[m]	[m]	[mm]	[mm]	[mm]
0.0	33.00000	50.30000	-0.50000	2.7857	-4.1193	3.9629
0.92635	32.95000	49.37500	-0.50000	3.4053	-4.0423	3.8526
1.8527	32.90000	48.45000	-0.50000	3.9818	-3.9928	3.7721
2.7791	32.85000	47.52500	-0.50000	5.8894	-4.0768	3.7529
3.7054	32.80000	46.60000	-0.50000	6.1236	-4.5276	4.1905
4.6318	32.75000	45.67500	-0.50000	6.5127	-4.8929	4.5343
5.5581	32.70000	44.75000	-0.50000	7.2247	-5.0200	4.6227
6.4845	32.65000	43.82500	-0.50000	8.6347	-4.2250	3.7528
7.4108	32.60000	42.90000	-0.50000	13.631	-0.81225	0.075306

Structure: S | Sub-structure:

Dist.	Coordinates			Displacements		
	x	y	z	x	y	z
[m]	[m]	[m]	[m]	[mm]	[mm]	[mm]
0.0	54.40000	58.50000	-0.50000	-0.47973	-0.57462	0.17186
1.9375	55.56250	56.95000	-0.50000	-0.63517	-0.57869	0.081852
3.8750	56.72500	55.40000	-0.50000	-0.75440	-0.51504	-0.040609
5.8125	57.88750	53.85000	-0.50000	-0.80597	-0.40018	-0.16343
7.7500	59.05000	52.30000	-0.50000	-0.76786	-0.26247	-0.25074
9.6875	60.21250	50.75000	-0.50000	-0.86176	-0.24141	-0.22114
11.625	61.37500	49.20000	-0.50000	-0.59146	-0.15069	-0.23432
13.562	62.53750	47.65000	-0.50000	-0.32116	-0.081825	-0.12724
15.500	63.70000	46.10000	-0.50000	-0.050858	-0.012958	-0.020149
17.438	64.86250	44.55000	-0.50000	0.0	0.0	0.0
19.375	66.02500	43.00000	-0.50000	0.0	0.0	0.0
21.313	67.18750	41.45000	-0.50000	0.0	0.0	0.0
23.250	68.35000	39.90000	-0.50000	0.0	0.0	0.0
25.188	69.51250	38.35000	-0.50000	0.0	0.0	0.0
27.125	70.67500	36.80000	-0.50000	0.0	0.0	0.0
29.063	71.83750	35.25000	-0.50000	0.0	0.0	0.0
31.000	73.00000	33.70000	-0.50000	0.0	0.0	0.0

Structure: T | Sub-structure:

Dist.	Coordinates			Displacements		
	x	y	z	x	y	z
[m]	[m]	[m]	[m]	[mm]	[mm]	[mm]
0.0	45.50000	53.30000	-0.50000	-0.43954	-3.8880	2.7774
1.9859	46.73158	51.74211	-0.50000	-1.6011	-4.0329	2.1708
3.9718	47.96316	50.18421	-0.50000	-3.2511	-3.0740	0.39526
5.9577	49.19474	48.62632	-0.50000	-4.5965	-1.2593	-1.8627
7.9436	50.42632	47.06842	-0.50000	-5.3530	-1.3730	-2.2427
9.9295	51.65789	45.51053	-0.50000	-4.7279	-1.1991	-1.9914
11.915	52.88947	43.95263	-0.50000	-4.1226	-1.0457	-1.7364
13.901	54.12105	42.39474	-0.50000	-3.7578	-0.95702	-1.5797
15.887	55.35263	40.83684	-0.50000	-3.4625	-0.88218	-1.4553
17.873	56.58421	39.27895	-0.50000	-3.1686	-0.80730	-1.3317
19.859	57.81579	37.72105	-0.50000	-3.4125	-0.83957	-1.4577
21.845	59.04737	36.16316	-0.50000	-2.9574	-0.57131	-1.3859
23.831	60.27895	34.60526	-0.50000	-2.4584	-0.47491	-1.1520
25.817	61.51053	33.04737	-0.50000	-1.9629	-0.37920	-0.91984
27.803	62.74211	31.48947	-0.50000	-1.5685	-0.30300	-0.73502
29.789	63.97368	29.93158	-0.50000	-1.2321	-0.23801	-0.57736
31.774	65.20526	28.37368	-0.50000	-0.84606	-0.05490	-0.24504
33.760	66.43684	26.81579	-0.50000	-0.23956	-0.0031644	-0.14609
35.746	67.66842	25.25789	-0.50000	0.0	0.0	0.0
37.732	68.90000	23.70000	-0.50000	0.0	0.0	0.0

Structure: U | Sub-structure:

Dist.	Coordinates			Displacements		
	x	y	z	x	y	z
[m]	[m]	[m]	[m]	[mm]	[mm]	[mm]
0.0	63.00000	47.00000	-0.50000	-0.21661	-0.055188	0.20657
0.98600	62.21000	46.41000	-0.50000	-0.44774	-0.13955	0.52326
1.9720	61.42000	45.82000	-0.50000	-0.87886	-0.22392	0.83814
2.9580	60.63000	45.23000	-0.50000	-1.2100	-0.30828	1.1539
3.9440	59.84000	44.64000	-0.50000	-1.5411	-0.39265	1.4697
4.9300	59.05000	44.05000	-0.50000	-1.8722	-0.47701	1.7855



GEA LIMITED (GEOTECHNICAL & ENV ASSOC)

Rear of 159-163 King's Cross Road, London WC1X 9BN
Wall Installation and Excavation Combined Issue 4

Job No.	Sheet No.	Rev.
J16180		
Drg. Ref.		
Made by	Date	Checked
	07-Mar-2017	

Dist.	Coordinates			Displacements			Horizontal displacement along the Line	Horizontal displacement perpendicular to Line
	x	y	z	x	y	y		
5.9160	58.26000	43.46000	-0.50000	-2.2024	-0.56137	2.1013	-0.86866	
6.9020	57.47000	42.87000	-0.50000	-2.5345	-0.64574	2.4171	-0.99920	
7.8880	56.68000	42.28000	-0.50000	-2.8656	-0.73010	2.7329	-1.1297	
8.8740	55.89000	41.69000	-0.50000	-3.1967	-0.81447	3.0486	-1.2603	
9.8600	55.10000	41.10000	-0.50000	-3.5279	-0.89883	3.3644	-1.3908	

Structure: V | Sub-structure:

Dist.	Coordinates			Displacements			Horizontal displacement along the Line	Horizontal displacement perpendicular to Line
	x	y	z	x	y	y		
	[m]	[m]	[m]	[mm]	[mm]	[mm]	[mm]	
0.0	55.10000	41.10000	-0.50000	-3.5279	-0.89883	3.3539	-1.4161	
0.91001	54.37500	40.55000	-0.50000	-3.8325	-0.97645	3.6435	-1.5384	
1.8200	53.65000	40.00000	-0.50000	-4.2615	-1.0857	4.0513	-1.7106	
2.7300	52.92500	39.45000	-0.50000	-4.8369	-1.2324	4.5984	-1.9416	
3.6401	52.20000	38.90000	-0.50000	-5.4124	-1.3790	5.1454	-2.1726	

Structure: W | Sub-structure:

Dist.	Coordinates			Displacements			Horizontal displacement along the Line	Horizontal displacement perpendicular to Line
	x	y	z	x	y	y		
	[m]	[m]	[m]	[mm]	[mm]	[mm]	[mm]	
0.0	52.20000	38.90000	-1.70000	-5.4124	-1.3790	-2.2344	-5.1189	
0.57009	52.55000	38.45000	-1.70000	-5.2558	-1.3391	-2.1698	-4.9708	
1.1402	52.90000	38.00000	-1.70000	-5.0993	-1.2992	-2.1051	-4.8228	

Structure: X | Sub-structure:

Dist.	Coordinates			Displacements			Horizontal displacement along the Line	Horizontal displacement perpendicular to Line
	x	y	z	x	y	y		
	[m]	[m]	[m]	[mm]	[mm]	[mm]	[mm]	
0.0	66.40000	42.50000	-0.50000	0.0	0.0	0.0	0.0	
0.97201	65.62000	41.92000	-0.50000	0.0	0.0	0.0	0.0	
1.9440	64.84000	41.34000	-0.50000	-0.076477	-0.019485	0.072997	-0.029998	
2.9160	64.06000	40.76000	-0.50000	-0.40318	-0.10272	0.38484	-0.15815	
3.8880	63.28000	40.18000	-0.50000	-0.72866	-0.18462	0.69488	-0.28665	
4.8600	62.50000	39.60000	-0.50000	-1.0578	-0.26025	1.0041	-0.42235	
5.8320	61.72000	39.02000	-0.50000	-1.3841	-0.34052	1.3138	-0.55262	
6.8041	60.94000	38.44000	-0.50000	-1.6923	-0.41026	1.6028	-0.68060	
7.7761	60.16000	37.86000	-0.50000	-2.1506	-0.44987	1.9942	-0.92227	
8.7481	59.38000	37.28000	-0.50000	-2.6627	-0.51439	2.4437	-1.1761	
9.7201	58.60000	36.70000	-0.50000	-3.1431	-0.60718	2.8845	-1.3882	

Structure: Y | Sub-structure:

Dist.	Coordinates			Displacements			Horizontal displacement along the Line	Horizontal displacement perpendicular to Line
	x	y	z	x	y	y		
	[m]	[m]	[m]	[mm]	[mm]	[mm]	[mm]	
0.0	58.60000	36.70000	-1.40000	-3.1431	-0.60718	2.8710	-1.4159	
0.91001	57.87500	36.15000	-1.40000	-3.5965	-0.69478	3.22852	-1.6202	
1.8200	57.15000	35.60000	-1.40000	-4.0576	-0.78384	3.7064	-1.8278	
2.7300	56.42500	35.05000	-1.40000	-4.5281	-0.87474	4.1362	-2.0398	
3.6401	55.70000	34.50000	-1.40000	-5.0099	-0.96783	4.5763	-2.2569	

Structure: Z | Sub-structure:

Dist.	Coordinates			Displacements			Horizontal displacement along the Line	Horizontal displacement perpendicular to Line
	x	y	z	x	y	y		
	[m]	[m]	[m]	[mm]	[mm]	[mm]	[mm]	
0.0	69.70000	38.10000	-0.50000	0.0	0.0	0.0	0.0	
0.95802	68.93000	37.53000	-0.50000	0.0	0.0	0.0	0.0	
1.9160	68.16000	36.96000	-0.50000	0.0	0.0	0.0	0.0	
2.8741	67.39000	36.39000	-0.50000	0.0	0.0	0.0	0.0	
3.8321	66.62000	35.82000	-0.50000	0.0	0.0	0.0	0.0	
4.7901	65.85000	35.25000	-0.50000	-0.18234	-0.035224	0.16751	-0.080175	
5.7481	65.08000	34.68000	-0.50000	-0.50051	-0.096689	0.45981	-0.22008	
6.7061	64.31000	34.11000	-0.50000	-0.81867	-0.15815	0.75210	-0.35998	
7.6642	63.54000	33.54000	-0.50000	-1.1368	-0.21962	1.0444	-0.49988	
8.6222	62.77000	32.97000	-0.50000	-1.4550	-0.28108	1.3367	-0.63978	
9.5802	62.00000	32.40000	-0.50000	-1.7732	-0.34255	1.6290	-0.77968	

Structure: AA | Sub-structure:

Dist.	Coordinates			Displacements			Horizontal displacement along the Line	Horizontal displacement perpendicular to Line
	x	y	z	x	y	y		
	[m]	[m]	[m]	[mm]	[mm]	[mm]	[mm]	
0.0	62.00000	32.40000	-1.40000	-1.7732	-0.34255	1.6491	-0.73623	
0.91549	61.25000	31.87500	-1.40000	-2.2219	-0.42923	2.0664	-0.92254	
1.8310	60.50000	31.35000	-1.40000	-2.6764	-0.51704	2.4891	-1.1113	
2.7465	59.75000	30.82500	-1.40000	-3.1349	-0.60561	2.9155	-1.3061	
3.6620	59.00000	30.30000	-1.40000	-3.5993	-0.69532	3.3474	-1.4944	

Structure: AB | Sub-structure:

Dist.	Coordinates			Displacements			Horizontal displacement along the Line	Horizontal displacement perpendicular to Line
	x	y	z	x	y	y		
	[m]	[m]	[m]	[mm]	[mm]	[mm]	[mm]	
0.0	73.00000	33.70000	-0.50000	0.0	0.0	0.0	0.0	
0.94626	72.23000	33.15000	-0.50000	0.0	0.0	0.0	0.0	
1.8925	71.46000	32.60000	-0.50000	0.0	0.0	0.0	0.0	
2.8388	70.69000	32.05000	-0.50000	0.0	0.0	0.0	0.0	
3.7850	69.92000	31.50000	-0.50000	0.0	0.0	0.0	0.0	
4.7313	69.15000	30.95000	-0.50000	0.0	0.0	0.0	0.0	
5.6775	68.38000	30.40000	-0.50000	0.0	0.0	0.0	0.0	
6.6238	67.61000	29.85000	-0.50000	0.0	0.0	0.0	0.0	
7.5700	66.84000	29.30000	-0.50000	-0.12564	-0.020264	0.11401	-0.056536	
8.5163	66.07000	28.75000	-0.50000	-0.24922	-0.038923	0.25789	-0.10637	
9.4626	65.30000	28.20000	-0.50000	-0.44864	-0.047225	0.39252	-0.22234	



GEA LIMITED (GEOTECHNICAL & ENV ASSOC)

Rear of 159-163 King's Cross Road, London WC1X 9BN
Wall Installation and Excavation Combined Issue 4

Job No.	Sheet No.	Rev.
J16180		
Drg. Ref.		
Made by	Date	Checked
	07-Mar-2017	

Dist.	Coordinates			Displacements				
	x	y	z	x	y	Horizontal displacement along the Line	Horizontal displacement perpendicular to Line	
Structure: AC Sub-structure:								
Dist.	Coordinates			Displacements				
	x	y	z	x	y	Horizontal displacement along the Line	Horizontal displacement perpendicular to Line	
[m]	[m]	[m]	[m]	[mm]	[mm]	[mm]	[mm]	[mm]
0.0	65.30000	28.20000	-0.50000	-0.44864	-0.047225	0.38995	-0.22681	
0.84673	64.61667	27.70000	-0.50000	-0.58604	-0.044407	0.49917	-0.31022	
1.6935	63.93333	27.20000	-0.50000	-0.71813	-0.031148	0.59795	-0.39893	
2.5402	63.25000	26.70000	-0.50000	-0.84357	-0.0064149	0.68457	-0.49296	
3.3859	62.56667	26.20000	-0.50000	-1.0114	0.032452	0.79708	-0.62344	
4.2336	61.88333	25.70000	-0.50000	-1.2335	0.094211	0.93981	-0.80440	
5.0804	61.20000	25.20000	-0.50000	-1.4380	0.18137	1.0534	-0.99553	
Structure: AD Sub-structure:								
Dist.	Coordinates			Displacements				
	x	y	z	x	y	Horizontal displacement along the Line	Horizontal displacement perpendicular to Line	
[m]	[m]	[m]	[m]	[mm]	[mm]	[mm]	[mm]	[mm]
0.0	61.20000	25.20000	-1.46000	-1.4380	0.18137	1.4494	0.0029653	
0.98298	60.22500	25.32500	-1.46000	-1.7951	0.22605	1.8093	0.0040583	
1.9660	59.25000	25.45000	-1.46000	-2.1609	0.27159	2.1779	0.0054057	
2.9489	58.27500	25.57500	-1.46000	-2.5386	0.31830	2.5585	0.0071080	
3.9319	57.30000	25.70000	-1.46000	-2.9317	0.36646	2.9545	0.0093202	
4.9149	56.32500	25.82500	-1.46000	-3.3435	0.41626	3.3693	0.012294	
5.8979	55.35000	25.95000	-1.46000	-3.7775	0.46769	3.8063	0.016469	
6.8809	54.37500	26.07500	-1.46000	-4.2372	0.52035	4.2689	0.022687	
7.8638	53.40000	26.20000	-1.46000	-4.7268	0.57305	4.7613	0.032679	
Structure: AE Sub-structure:								
Dist.	Coordinates			Displacements				
	x	y	z	x	y	Horizontal displacement along the Line	Horizontal displacement perpendicular to Line	
[m]	[m]	[m]	[m]	[mm]	[mm]	[mm]	[mm]	[mm]
0.0	61.20000	25.20000	-0.50000	-1.4380	0.18137	-0.094046	-1.4463	
0.82651	61.15000	24.37500	-0.50000	-1.3668	0.27522	-0.19203	-1.3810	
1.6530	61.10000	23.55000	-0.50000	-1.2713	0.35250	-0.27494	-1.2903	
2.4795	61.05000	22.72500	-0.50000	-1.1559	0.40906	-0.33838	-1.1786	
3.3061	61.00000	21.90000	-0.50000	-1.0255	0.44221	-0.37936	-1.0504	
Structure: AF Sub-structure:								
Dist.	Coordinates			Displacements				
	x	y	z	x	y	Horizontal displacement along the Line	Horizontal displacement perpendicular to Line	
[m]	[m]	[m]	[m]	[mm]	[mm]	[mm]	[mm]	[mm]
0.0	50.30000	26.50000	-1.46000	-5.6641	2.8224	-2.2814	-5.9028	
0.80351	50.22500	25.70000	-1.46000	-0.95231	6.1375	-6.0219	-1.5210	
1.6070	50.15000	24.90000	-1.46000	-0.27474	5.8229	-5.7718	-0.81705	
2.4105	50.07500	24.10000	-1.46000	-0.044963	5.4068	-5.3790	-0.54944	
3.2140	50.00000	23.30000	-1.46000	0.062335	4.9866	-4.9707	-0.40339	
Structure: AG Sub-structure:								
Dist.	Coordinates			Displacements				
	x	y	z	x	y	Horizontal displacement along the Line	Horizontal displacement perpendicular to Line	
[m]	[m]	[m]	[m]	[mm]	[mm]	[mm]	[mm]	[mm]
0.0	50.00000	23.30000	-0.50000	0.062335	4.9866	-0.57817	4.9534	
1.9046	51.88889	23.05556	-0.50000	-1.9060	3.7728	-2.3745	3.4969	
3.8093	53.77778	22.81111	-0.50000	-2.3846	2.4560	-2.6794	2.1529	
5.7139	55.66667	22.56667	-0.50000	-2.2879	1.6577	-2.4817	1.3503	
7.6186	57.55556	22.32222	-0.50000	-1.9329	1.1090	-2.0592	0.85179	
9.5232	59.44444	22.07778	-0.50000	-1.4572	0.70519	-1.5356	0.51235	
11.428	61.33333	21.83333	-0.50000	-0.92414	0.39214	-0.96682	0.27029	
13.332	63.22222	21.58889	-0.50000	-0.56337	0.21514	-0.58633	0.14106	
15.237	65.11111	21.34444	-0.50000	-0.27396	0.095917	-0.28401	0.059963	
17.142	67.00000	21.10000	-0.50000	0.0	0.0	0.0	0.0	
Structure: AH Sub-structure:								
Dist.	Coordinates			Displacements				
	x	y	z	x	y	Horizontal displacement along the Line	Horizontal displacement perpendicular to Line	
[m]	[m]	[m]	[m]	[mm]	[mm]	[mm]	[mm]	[mm]
0.0	59.00000	20.70000	-0.50000	-1.2213	0.80960	1.3032	-0.66978	
0.90554	58.10000	20.80000	-0.50000	-1.3947	1.0111	1.4978	-0.85094	
1.8111	57.20000	20.90000	-0.50000	-1.5381	1.2348	1.6650	-1.0574	
2.7166	56.30000	21.00000	-0.50000	-1.6415	1.4827	1.7952	-1.2923	
3.6222	55.40000	21.10000	-0.50000	-1.7260	1.7911	1.9132	-1.5896	
4.5277	54.50000	21.20000	-0.50000	-1.7623	2.1628	1.9903	-1.9550	
5.4332	53.60000	21.30000	-0.50000	-1.7049	2.5817	1.9796	-2.3776	
6.3388	52.70000	21.40000	-0.50000	-1.5172	3.0344	1.8430	-2.8483	
Structure: AI Sub-structure: Sub #								
Dist.	Coordinates			Displacements				
	x	y	z	x	y	Horizontal displacement along the Line	Horizontal displacement perpendicular to Line	
[m]	[m]	[m]	[m]	[mm]	[mm]	[mm]	[mm]	[mm]
0.0	52.70000	21.40000	-0.50000	-1.5172	3.0344	-2.7837	-1.9392	
0.97015	52.56000	20.44000	-0.50000	-1.1492	2.8778	-2.6818	-1.5525	
1.9403	52.42000	19.48000	-0.50000	-0.86356	2.6502	-2.4979	-1.2370	
2.9105	52.28000	18.52000	-0.50000	-0.64269	2.3821	-2.2644	-0.97971	
3.8806	52.14000	17.56000	-0.50000	-0.47174	2.0905	-2.0005	-0.76848	
4.8508	52.00000	16.60000	-0.50000	-0.33914	1.7850	-1.7173	-0.59318	
Structure: AJ Sub-structure: Sub #								
Dist.	Coordinates			Displacements				
	x	y	z	x	y	Horizontal displacement along the Line	Horizontal displacement perpendicular to Line	
[m]	[m]	[m]	[m]	[mm]	[mm]	[mm]	[mm]	[mm]



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Dist.	Coordinates			Displacements	
	x	y	z	Horizontal displacement along the line	Horizontal displacement perpendicular to Line
0.0	52.00000	16.60000	-0.50000	-0.33914	1.7950
0.99641	51.01111	16.72222	-0.50000	-0.17932	1.9441
1.9928	50.02222	16.84444	-0.50000	0.016393	2.0561
2.9892	49.03333	16.96667	-0.50000	0.23374	2.1110
3.9857	48.04444	17.08889	-0.50000	0.46837	3.4867
4.9821	47.05556	17.21111	-0.50000	0.46757	3.4808
5.9785	46.06667	17.33333	-0.50000	0.45143	3.4992
6.9749	45.07778	17.45556	-0.50000	0.41344	3.5613
7.9713	44.08889	17.57778	-0.50000	0.37953	3.6326
8.9677	43.10000	17.70000	-0.50000	0.35181	3.7127

Structure: AK | Sub-structure: Sub #

Dist.	Coordinates			Displacements	
	x	y	z	Horizontal displacement along the Line	Horizontal displacement perpendicular to Line
[m]	[m]	[m]	[m]	[mm]	[mm]
0.0	43.10000	17.70000	-0.50000	0.35181	3.7127
0.98995	43.24000	18.60000	-0.50000	0.37498	4.3600
1.9799	43.38000	19.60000	-0.50000	0.39968	5.0022
2.9698	43.52000	20.64000	-0.50000	0.42833	5.6404
3.9598	43.66000	21.62000	-0.50000	0.46421	6.2758
4.9497	43.80000	22.60000	-0.50000	0.51166	6.9099

Structure: AL | Sub-structure: Sub #

Dist.	Coordinates			Displacements	
	x	y	z	Horizontal displacement along the Line	Horizontal displacement perpendicular to Line
[m]	[m]	[m]	[m]	[mm]	[mm]
0.0	43.80000	22.60000	-0.50000	0.51166	6.9099
0.94763	42.86000	22.72000	-0.50000	0.46600	7.0414
1.8953	41.92000	22.84000	-0.50000	0.43271	7.1895
2.8429	40.98000	22.96000	-0.50000	0.41980	7.3821
3.7905	40.04000	23.08000	-0.50000	0.43705	7.5906
4.7381	39.10000	23.20000	-0.50000	0.49513	7.8186

Structure: AM | Sub-structure: Sub #

Dist.	Coordinates			Displacements	
	x	y	z	Horizontal displacement along the Line	Horizontal displacement perpendicular to Line
[m]	[m]	[m]	[m]	[mm]	[mm]
0.0	39.10000	23.20000	-0.50000	0.49513	7.8186
0.90247	39.03333	22.30000	-0.50000	0.48226	7.1464
1.8049	38.96667	21.40000	-0.50000	0.46387	6.4745
2.7074	38.90000	20.50000	-0.50000	0.44038	5.8046

Structure: AN | Sub-structure: Sub #

Dist.	Coordinates			Displacements	
	x	y	z	Horizontal displacement along the Line	Horizontal displacement perpendicular to Line
[m]	[m]	[m]	[m]	[mm]	[mm]
0.0	38.90000	20.50000	-0.50000	0.44038	5.8046
0.83442	38.07500	20.62500	-0.50000	0.50216	5.9454
1.6688	37.25000	20.75000	-0.50000	0.58497	6.0798
2.5032	36.42500	20.87500	-0.50000	0.68791	6.2020
3.3377	35.60000	21.00000	-0.50000	0.70488	5.1514

Structure: AO | Sub-structure: Sub #

Dist.	Coordinates			Displacements	
	x	y	z	Horizontal displacement along the Line	Horizontal displacement perpendicular to Line
[m]	[m]	[m]	[m]	[mm]	[mm]
0.0	35.60000	21.00000	-0.50000	0.70488	5.1514
0.83931	35.70000	21.83333	-0.50000	0.79949	5.7524
1.6786	35.80000	22.66667	-0.50000	0.90292	6.3651
2.5179	35.90000	23.50000	-0.50000	1.0192	6.9901

Structure: AP | Sub-structure: Sub #

Dist.	Coordinates			Displacements	
	x	y	z	Horizontal displacement along the Line	Horizontal displacement perpendicular to Line
[m]	[m]	[m]	[m]	[mm]	[mm]
0.0	35.90000	23.50000	-0.50000	1.0192	6.9901
0.89107	35.02000	23.64000	-0.50000	1.9773	7.8159
1.7821	34.14000	23.78000	-0.50000	2.5527	7.2541
2.6732	33.26000	23.92000	-0.50000	2.9032	6.6463
3.5643	32.38000	24.06000	-0.50000	3.0540	6.0677
4.4553	31.50000	24.20000	-0.50000	3.0230	4.4851

Structure: AQ | Sub-structure: Sub #

Dist.	Coordinates			Displacements	
	x	y	z	Horizontal displacement along the Line	Horizontal displacement perpendicular to Line
[m]	[m]	[m]	[m]	[mm]	[mm]
0.0	31.50000	24.20000	-0.50000	3.0230	4.4851
0.98995	31.36000	23.22000	-0.50000	2.5478	4.2473
1.9799	31.22000	22.24000	-0.50000	2.1543	3.9437
2.9698	31.08000	21.26000	-0.50000	1.7944	3.5638
3.9598	30.94000	20.28000	-0.50000	1.4675	3.1204
4.9497	30.80000	19.30000	-0.50000	1.1701	2.6379

Structure: AR | Sub-structure: Sub #

Dist.	Coordinates			Displacements	
	x	y	z	Horizontal displacement along the Line	Horizontal displacement perpendicular to Line
[m]	[m]	[m]	[m]	[mm]	[mm]
0.0	35.60000	12.40000	-0.50000	0.079679	0.59317
				[mm]	[mm]
				0.59849	-0.0019856



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Dist.	Coordinates			Displacements		
	x	y	z	x	y	z
0.94130	35.72222	13.33333	-0.50000	0.12667	0.94301	0.95147
1.8826	35.84444	14.26667	-0.50000	0.17367	1.2929	1.3045
2.8239	35.96667	15.20000	-0.50000	0.22939	1.8187	1.8331
3.7652	36.08889	16.13333	-0.50000	0.29724	2.4703	2.4879
4.7065	36.21111	17.06667	-0.50000	0.37267	3.1946	3.2159
5.6478	36.33333	18.00000	-0.50000	0.44880	3.9210	3.9457
6.5891	36.45556	18.93333	-0.50000	0.51645	4.6520	4.6797
7.5304	36.57778	19.86667	-0.50000	0.58428	5.3897	5.4199
8.4717	36.70000	20.80000	-0.50000	0.64875	6.1361	6.1683

Structure: AS | Sub-structure: Sub #

Dist.	Coordinates			Displacements		
	x	y	z	x	y	z
[m]	[m]	[m]	[m]	[mm]	[mm]	[mm]
0.0	44.70000	9.30000	-0.50000	0.0	0.0	0.0
0.90683	44.81111	10.20000	-0.50000	0.032045	0.23856	0.24069
1.8137	44.92222	11.10000	-0.50000	0.077316	0.57557	0.58071
2.7205	45.03333	12.00000	-0.50000	0.12259	0.91259	0.92073
3.6273	45.14444	12.90000	-0.50000	0.16786	1.2496	1.2608
4.5342	45.25556	13.80000	-0.50000	0.21313	1.5866	1.6008
5.4410	45.36667	14.70000	-0.50000	0.26631	1.9825	2.0002
6.3478	45.47778	15.60000	-0.50000	0.33298	2.4788	2.5010
7.2547	45.58889	16.50000	-0.50000	0.40012	2.9787	3.0053
8.1615	45.70000	17.40000	-0.50000	0.43747	3.5348	3.5618

Structure: AT | Sub-structure: Sub #

Dist.	Coordinates			Displacements		
	x	y	z	x	y	z
[m]	[m]	[m]	[m]	[mm]	[mm]	[mm]
0.0	54.50000	10.00000	-0.50000	-0.019508	0.073597	0.070799
1.8461	54.71667	11.83333	-0.50000	-0.11182	0.35767	0.34208
3.6922	54.93333	13.66667	-0.50000	-0.22991	0.61520	0.58396
5.5383	55.15000	15.50000	-0.50000	-0.42065	0.92660	0.86884
7.3844	55.36667	17.33333	-0.50000	-0.75030	1.3201	1.2230
9.2305	55.58333	19.16667	-0.50000	-1.1694	1.5852	1.4370
11.077	55.80000	21.00000	-0.50000	-1.6713	1.6419	1.4344

Structure: AU | Sub-structure:

Dist.	Coordinates			Displacements		
	x	y	z	x	y	z
[m]	[m]	[m]	[m]	[mm]	[mm]	[mm]
0.0	33.10000	38.60000	-2.00000	14.687	-0.87360	-14.713
0.88991	32.21250	38.65000	-2.00000	13.430	-0.80121	-13.454
1.7778	31.32500	38.70000	-2.00000	12.173	-0.72882	-12.194
2.6667	30.43750	38.75000	-2.00000	10.959	-0.65852	-10.979
3.5556	29.55000	38.80000	-2.00000	9.9982	-0.60030	-10.016
4.4445	28.66250	38.85000	-2.00000	9.0370	-0.54208	-9.0532
5.3334	27.77500	38.90000	-2.00000	8.0759	-0.48386	-8.0903
6.2224	26.88750	38.95000	-2.00000	7.1148	-0.42564	-7.1274
7.1113	26.00000	39.00000	-2.00000	6.3270	-0.37909	-6.3383

Structure: AV | Sub-structure:

Dist.	Coordinates			Displacements		
	x	y	z	x	y	z
[m]	[m]	[m]	[m]	[mm]	[mm]	[mm]
0.0	26.00000	39.00000	-2.00000	6.3270	-0.37909	-0.033473
0.92195	25.94000	38.08000	-2.00000	6.3218	-0.37885	-0.033368
1.8439	25.88000	37.16000	-2.00000	6.3165	-0.37861	-0.033264
2.7659	25.82000	36.24000	-2.00000	6.3113	-0.37838	-0.033159
3.6878	25.76000	35.32000	-2.00000	6.3060	-0.37814	-0.033054
4.6098	25.70000	34.40000	-2.00000	6.3008	-0.37790	-0.032949
5.5317	25.64000	33.48000	-2.00000	6.2955	-0.37766	-0.032844
6.4537	25.58000	32.56000	-2.00000	4.9923	-0.13534	-0.18984
7.3756	25.52000	31.64000	-2.00000	4.8334	0.18351	-0.49767
8.2976	25.46000	30.72000	-2.00000	4.6233	0.44561	-0.74555
9.2195	25.40000	29.80000	-2.00000	4.3843	0.64128	-0.92525

Structure: AW | Sub-structure:

Dist.	Coordinates			Displacements		
	x	y	z	x	y	z
[m]	[m]	[m]	[m]	[mm]	[mm]	[mm]
0.0	25.40000	29.80000	-2.00000	4.3843	0.64128	4.3363
1.8869	27.28333	29.68333	-2.00000	5.3530	1.0496	5.2779
3.7739	29.16667	29.56667	-2.00000	6.2178	1.8603	6.0909
5.6608	31.05000	29.45000	-2.00000	6.7856	3.4879	6.5569
7.5478	32.93333	29.33333	-2.00000	6.9081	6.2525	6.5083
9.4347	34.81667	29.21667	-2.00000	8.2526	6.2674	7.8493
11.322	36.70000	29.10000	-2.00000	8.9332	4.0276	8.6671

Specific Building Damage Results - Vertical Displacements

Structure: A | Sub-structure:

Dist.	Coordinates			Displacements		
	x	y	z	x	y	z
[m]	[m]	[m]	[m]	[mm]		
Vertical Offset 1						
0.0	22.50000	48.10000	-0.50000	0.41210		
0.85000	23.35000	48.10000	-0.50000	0.56935		
1.7000	24.20000	48.10000	-0.50000	0.77482		
2.5500	25.05000	48.10000	-0.50000	1.03225		
3.4000	25.90000	48.10000	-0.50000	1.3410		

Structure: B | Sub-structure:

Dist.	Coordinates			Displacements		
	x	y	z	x	y	z
[m]	[m]	[m]	[m]	[mm]		



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Dist. Coordinates Displacements
[m] x [m] y [m] z [m] z [mm]

Vertical Offset 1
0.0 25.90000 48.10000 -0.50000 1.3410
0.77500 25.90000 47.32500 -0.50000 1.4657
1.5500 25.90000 46.55000 -0.50000 1.5888
2.3250 25.90000 45.77500 -0.50000 1.7067
3.1000 25.90000 45.00000 -0.50000 1.8157

Structure: C | Sub-structure:

Dist. Coordinates Displacements
[m] x [m] y [m] z [m] z [mm]

Vertical Offset 1
0.0 25.90000 45.00000 -0.50000 1.8157
0.92022 26.82000 44.98000 -0.50000 2.2813
1.8404 27.74000 44.96000 -0.50000 2.8020
2.7607 28.66000 44.94000 -0.50000 3.3397
3.6809 29.58000 44.92000 -0.50000 3.8877
4.6011 30.50000 44.90000 -0.50000 4.4256

Structure: D | Sub-structure:

Dist. Coordinates Displacements
[m] x [m] y [m] z [m] z [mm]

Vertical Offset 1
0.0 30.50000 44.90000 -0.50000 4.4256
0.90015 30.48333 45.80000 -0.50000 4.0592
1.8003 30.46667 46.70000 -0.50000 3.9274
2.7005 30.45000 47.60000 -0.50000 3.7775
3.6006 30.43333 48.50000 -0.50000 2.8681
4.5008 30.41667 49.40000 -0.50000 2.5902
5.4009 30.40000 50.30000 -0.50000 2.2848

Structure: E | Sub-structure:

Dist. Coordinates Displacements
[m] x [m] y [m] z [m] z [mm]

Vertical Offset 1
0.0 30.40000 50.30000 -0.50000 2.2848
0.83333 31.23333 50.30000 -0.50000 2.5668
1.6667 32.06667 50.30000 -0.50000 2.8341
2.5000 32.90000 50.30000 -0.50000 3.0594

Structure: F | Sub-structure:

Dist. Coordinates Displacements
[m] x [m] y [m] z [m] z [mm]

Vertical Offset 1
0.0 32.90000 50.30000 -0.50000 3.0594
0.93005 32.91000 51.23000 -0.50000 2.6028
1.8601 32.92000 52.16000 -0.50000 2.1494
2.7902 32.93000 53.09000 -0.50000 1.7951
3.7202 32.94000 54.02000 -0.50000 1.4824
4.6503 32.95000 54.95000 -0.50000 1.1859
5.5803 32.96000 55.88000 -0.50000 0.91948
6.5104 32.97000 56.81000 -0.50000 0.69208
7.4404 32.98000 57.74000 -0.50000 0.50681
8.3705 32.99000 58.67000 -0.50000 0.36048
9.3005 33.00000 59.60000 -0.50000 0.24315

Structure: G | Sub-structure:

Dist. Coordinates Displacements
[m] x [m] y [m] z [m] z [mm]

Vertical Offset 1
0.0 33.00000 59.60000 -0.50000 0.24315
1.0000 32.00000 59.60000 -0.50000 0.20215
2.0000 31.00000 59.60000 -0.50000 0.16254
3.0000 30.00000 59.60000 -0.50000 0.12613
4.0000 29.00000 59.60000 -0.50000 0.093314
5.0000 28.00000 59.60000 -0.50000 0.062742

Structure: H | Sub-structure:

Dist. Coordinates Displacements
[m] x [m] y [m] z [m] z [mm]

Vertical Offset 1
0.0 28.00000 59.60000 -0.50000 0.062742
0.90062 28.03333 58.70000 -0.50000 0.11228
1.8012 28.06667 57.80000 -0.50000 0.15947
2.7019 28.10000 56.90000 -0.50000 0.22261

Structure: I | Sub-structure:

Dist. Coordinates Displacements
[m] x [m] y [m] z [m] z [mm]

Vertical Offset 1
0.0 28.10000 56.90000 -0.50000 0.22261
0.90009 27.20000 56.91250 -0.50000 0.17339
1.8002 26.30000 56.92500 -0.50000 0.13460
2.7003 25.40000 56.93750 -0.50000 0.10436
3.6003 24.50000 56.95000 -0.50000 0.077895
4.5004 23.60000 56.96250 -0.50000 0.047151
5.4005 22.70000 56.97500 -0.50000 0.0
6.3006 21.80000 56.98750 -0.50000 0.0
7.2007 20.90000 57.00000 -0.50000 0.0

Structure: J | Sub-structure:

Dist. Coordinates Displacements
[m] x [m] y [m] z [m] z [mm]

Vertical Offset 1
0.0 33.00000 59.50000 -0.50000 0.25487
1.9500 34.95000 59.50000 -0.50000 0.35139
3.9000 36.90000 59.50000 -0.50000 0.40527
5.8500 38.85000 59.50000 -0.50000 0.55572



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Structure: K | Sub-structure:

Dist.	Coordinates			Displacements	
	x	y	z	x	z
[m]	[m]	[m]	[m]	[mm]	[mm]
7.8000	40.80000	59.50000	-0.50000	0.54495	
9.7500	42.75000	59.50000	-0.50000	0.52756	
11.7000	44.70000	59.50000	-0.50000	0.52099	
13.6500	46.65000	59.50000	-0.50000	0.35204	
15.6000	48.60000	59.50000	-0.50000	0.28467	
17.5500	50.55000	59.50000	-0.50000	0.20078	
19.5000	52.50000	59.50000	-0.50000	0.12519	

Structure: K | Sub-structure:

Dist.	Coordinates			Displacements	
	x	y	z	x	z
[m]	[m]	[m]	[m]	[mm]	[mm]
Vertical Offset 1					
0.0	33.00000	52.20000	-0.50000	2.1435	
0.98889	33.98889	52.20000	-0.50000	2.7704	
1.9778	34.97778	52.20000	-0.50000	2.9924	
2.9667	35.96667	52.20000	-0.50000	3.2113	
3.9556	36.95556	52.20000	-0.50000	3.4085	
4.9444	37.94444	52.20000	-0.50000	3.9783	
5.9333	38.93333	52.20000	-0.50000	3.8850	
6.9222	39.92222	52.20000	-0.50000	3.7806	
7.9111	40.91111	52.20000	-0.50000	3.6735	
8.9000	41.90000	52.20000	-0.50000	3.5709	

Structure: L | Sub-structure:

Dist.	Coordinates			Displacements	
	x	y	z	x	z
[m]	[m]	[m]	[m]	[mm]	[mm]
Vertical Offset 1					
0.0	37.70000	59.40000	-0.50000	0.58450	
0.90000	37.70000	58.50000	-0.50000	0.83698	
1.8000	37.70000	57.60000	-0.50000	1.11468	
2.7000	37.70000	56.70000	-0.50000	1.5177	
3.6000	37.70000	55.80000	-0.50000	1.9455	
4.5000	37.70000	54.90000	-0.50000	2.4177	
5.4000	37.70000	54.00000	-0.50000	2.9254	
6.3000	37.70000	53.10000	-0.50000	3.4618	
7.2000	37.70000	52.20000	-0.50000	3.9987	

Structure: M | Sub-structure:

Dist.	Coordinates			Displacements	
	x	y	z	x	z
[m]	[m]	[m]	[m]	[mm]	[mm]
Vertical Offset 1					
0.0	42.00000	59.50000	-1.50000	0.53526	
0.91259	41.98750	58.58750	-1.50000	0.78440	
1.8252	41.97500	57.67500	-1.50000	1.0812	
2.7378	41.96250	56.76250	-1.50000	1.4283	
3.6503	41.95000	55.85000	-1.50000	1.8200	
4.5629	41.93750	54.93750	-1.50000	2.2420	
5.4755	41.92500	54.02500	-1.50000	2.6826	
6.3881	41.91250	53.11250	-1.50000	3.1361	
7.3007	41.90000	52.20000	-1.50000	3.5709	

Structure: N | Sub-structure:

Dist.	Coordinates			Displacements	
	x	y	z	x	z
[m]	[m]	[m]	[m]	[mm]	[mm]
Vertical Offset 1					
0.0	45.50000	53.30000	-4.00000	2.0749	
0.87143	45.50000	54.17143	-4.00000	1.7832	
1.7429	45.50000	55.04286	-4.00000	1.5254	
2.6143	45.50000	55.91429	-4.00000	1.2497	
3.4857	45.50000	56.78571	-4.00000	0.99634	
4.3571	45.50000	57.65714	-4.00000	0.76244	
5.2286	45.50000	58.52857	-4.00000	0.54987	
6.1000	45.50000	59.40000	-4.00000	0.39024	

Structure: O | Sub-structure:

Dist.	Coordinates			Displacements	
	x	y	z	x	z
[m]	[m]	[m]	[m]	[mm]	[mm]
Vertical Offset 1					
0.0	37.70000	52.20000	-0.68000	3.9987	
0.92000	37.70000	51.28000	-0.68000	4.5526	
1.8400	37.70000	50.36000	-0.68000	5.0834	
2.7600	37.70000	49.44000	-0.68000	5.5319	
3.6800	37.70000	48.52000	-0.68000	5.8388	
4.6000	37.70000	47.60000	-0.68000	5.8644	

Structure: P | Sub-structure: Sub #

Dist.	Coordinates			Displacements	
	x	y	z	x	z
[m]	[m]	[m]	[m]	[mm]	[mm]
Vertical Offset 1					
0.0	45.50000	53.30000	-1.85000	2.0749	
0.95000	45.50000	52.35000	-1.85000	2.3786	
1.9000	45.50000	51.40000	-1.85000	2.6946	
2.8500	45.50000	50.45000	-1.85000	3.0196	
3.8000	45.50000	49.50000	-1.85000	3.3190	
4.7500	45.50000	48.55000	-1.85000	3.5004	
5.7000	45.50000	47.60000	-1.85000	4.1963	

Structure: Q | Sub-structure:

Dist.	Coordinates			Displacements	
	x	y	z	x	z
[m]	[m]	[m]	[m]	[mm]	[mm]
Vertical Offset 1					
0.0	41.90000	52.20000	-0.65000	3.5709	
0.92000	41.90000	51.28000	-0.65000	3.9945	
1.8400	41.90000	50.36000	-0.65000	4.3773	
2.7600	41.90000	49.44000	-0.65000	4.6605	
3.6800	41.90000	48.52000	-0.65000	4.7536	
4.6000	41.90000	47.60000	-0.65000	4.5373	

Structure: R | Sub-structure:



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Dist. Coordinates Displacements
[m] [m] [m] [m] [mm]

Vertical Offset 1

0.0	33.00000	50.30000	-0.50000	3.0831
0.92635	32.95000	49.37500	-0.50000	3.5267
1.8527	32.90000	48.45000	-0.50000	3.9581
2.7791	32.85000	47.52500	-0.50000	5.2546
3.7054	32.80000	46.60000	-0.50000	5.5003
4.6318	32.75000	45.67500	-0.50000	5.7456
5.5581	32.70000	44.75000	-0.50000	5.9451
6.4845	32.65000	43.82500	-0.50000	5.9910
7.4108	32.60000	42.90000	-0.50000	7.2185

Structure: S | Sub-structure:

Dist. Coordinates Displacements
[m] [m] [m] [m] [mm]

Vertical Offset 1

0.0	54.40000	58.50000	-0.50000	0.10607
1.9375	55.56250	56.95000	-0.50000	0.12919
3.8750	56.72500	55.40000	-0.50000	0.13874
5.8125	57.88750	53.85000	-0.50000	0.13086
7.7500	59.05000	52.30000	-0.50000	0.10952
9.6875	60.21250	50.75000	-0.50000	0.11516
11.625	61.37500	49.20000	-0.50000	0.084683
13.562	62.53750	47.65000	-0.50000	0.055634
15.500	63.70000	46.10000	-0.50000	0.014224
17.438	64.86250	44.55000	0.00000	0.0
19.375	66.02500	43.00000	-0.50000	0.0
21.313	67.18750	41.45000	-0.50000	0.0
23.250	68.35000	39.90000	-0.50000	0.0
25.188	69.51250	38.35000	-0.50000	0.0
27.125	70.67500	36.80000	-0.50000	0.0
29.063	71.83750	35.25000	-0.50000	0.0
31.000	73.00000	33.70000	-0.50000	0.0

Structure: T | Sub-structure:

Dist. Coordinates Displacements
[m] [m] [m] [m] [mm]

Vertical Offset 1

0.0	45.50000	53.30000	-0.50000	2.0749
1.9859	46.73158	51.74211	-0.50000	2.2614
3.9718	47.96316	50.18421	-0.50000	2.3241
5.9577	49.19474	48.62632	-0.50000	2.5541
7.9436	50.42632	47.06842	-0.50000	3.1159
9.9295	51.65789	45.51053	-0.50000	2.7934
11.915	52.88947	43.95263	-0.50000	2.4523
13.901	54.12105	42.39474	-0.50000	2.1176
15.887	55.35263	40.83684	-0.50000	1.7864
17.873	56.58421	39.27895	-0.50000	1.4638
19.859	57.81579	37.72105	-0.50000	2.6131
21.845	59.04737	36.16316	-0.50000	2.1430
23.831	60.27895	34.60526	-0.50000	1.7087
25.817	61.51053	33.04737	-0.50000	1.3290
27.803	62.74211	31.48947	-0.50000	1.0032
29.789	63.97368	29.93158	-0.50000	0.72546
31.774	65.20526	28.37368	-0.50000	0.41869
33.760	66.43684	26.81579	-0.50000	0.16831
35.746	67.66842	25.25789	-0.50000	0.0
37.732	68.90000	23.70000	-0.50000	0.0

Structure: U | Sub-structure:

Dist. Coordinates Displacements
[m] [m] [m] [m] [mm]

Vertical Offset 1

0.0	63.00000	47.00000	-0.50000	0.041913
0.98600	62.21000	46.41000	-0.50000	0.080222
1.9720	61.42000	45.82000	-0.50000	0.11742
2.9580	60.63000	45.23000	-0.50000	0.17487
3.9440	59.84000	44.64000	-0.50000	0.26881
4.9300	59.05000	44.05000	-0.50000	0.41031
5.9160	58.26000	43.46000	-0.50000	0.60534
6.9020	57.47000	42.87000	-0.50000	0.85470
7.8880	56.68000	42.28000	-0.50000	1.1541
8.8740	55.89000	41.69000	-0.50000	1.4940
9.8600	55.10000	41.10000	-0.50000	1.8598

Structure: V | Sub-structure:

Dist. Coordinates Displacements
[m] [m] [m] [m] [mm]

Vertical Offset 1

0.0	55.10000	41.10000	-0.50000	1.8598
0.91001	54.37500	40.55000	-0.50000	2.2024
1.8200	53.65000	40.00000	-0.50000	2.5518
2.7300	52.92500	39.45000	-0.50000	2.8876
3.6401	52.20000	38.90000	-0.50000	3.2034

Structure: W | Sub-structure:

Dist. Coordinates Displacements
[m] [m] [m] [m] [mm]

Vertical Offset 1

0.0	52.20000	38.90000	-1.70000	3.2034
0.57009	52.55000	38.45000	-1.70000	3.1186
1.1402	52.90000	38.00000	-1.70000	3.0331

Structure: X | Sub-structure:

Dist. Coordinates Displacements
[m] [m] [m] [m] [mm]

Vertical Offset 1

0.0	66.40000	42.50000	-0.50000	0.0
0.97201	65.62000	41.92000	-0.50000	0.0
1.9440	64.84000	41.34000	-0.50000	0.019100
2.9160	64.06000	40.76000	-0.50000	0.065078
3.8880	63.28000	40.18000	-0.50000	0.099136



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Made by	Date	Checked
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Dist. Coordinates Displacements

Dist.	x	y	z	z
[m]	[m]	[m]	[m]	[mm]
4.8600	62.50000	39.60000	-0.50000	0.14441
5.8320	61.72000	39.02000	-0.50000	0.30050
6.8041	60.94000	38.44000	-0.50000	1.1487
7.7761	60.16000	37.86000	-0.50000	1.4864
8.7481	59.38000	37.28000	-0.50000	1.8806
9.7201	58.60000	36.70000	-0.50000	2.3164

Structure: Y | Sub-structure:

Dist. Coordinates Displacements

Dist.	x	y	z	z
[m]	[m]	[m]	[m]	[mm]
Vertical Offset 1				
0.0	58.60000	36.70000	-1.40000	2.3164
0.91001	57.87500	36.15000	-1.40000	2.7617
1.8200	57.15000	35.60000	-1.40000	3.2365
2.7300	56.42500	35.05000	-1.40000	3.7295
3.6401	55.70000	34.50000	-1.40000	4.2260

Structure: Z | Sub-structure:

Dist. Coordinates Displacements

Dist.	x	y	z	z
[m]	[m]	[m]	[m]	[mm]
Vertical Offset 1				
0.0	69.70000	38.10000	-0.50000	0.0
0.95802	68.93000	37.53000	-0.50000	0.0
1.9160	68.16000	36.96000	-0.50000	0.0
2.8741	67.39000	36.39000	-0.50000	0.0
3.8321	66.62000	35.82000	-0.50000	0.0
4.7901	65.85000	35.25000	-0.50000	0.036508
5.7481	65.08000	34.68000	-0.50000	0.22659
6.7061	64.31000	34.11000	-0.50000	0.43310
7.6642	63.54000	33.54000	-0.50000	0.65415
8.6222	62.77000	32.97000	-0.50000	0.90462
9.5802	62.00000	32.40000	-0.50000	1.1953

Structure: AA | Sub-structure:

Dist. Coordinates Displacements

Dist.	x	y	z	z
[m]	[m]	[m]	[m]	[mm]
Vertical Offset 1				
0.0	62.00000	32.40000	-1.40000	1.1953
0.91549	61.25000	31.87500	-1.40000	1.5208
1.8310	60.50000	31.35000	-1.40000	1.8925
2.7465	59.75000	30.82500	-1.40000	2.3087
3.6620	59.00000	30.30000	-1.40000	2.7645

Structure: AB | Sub-structure:

Dist. Coordinates Displacements

Dist.	x	y	z	z
[m]	[m]	[m]	[m]	[mm]
Vertical Offset 1				
0.0	73.00000	33.70000	-0.50000	0.0
0.94626	72.23000	33.15000	-0.50000	0.0
1.8925	71.46000	32.60000	-0.50000	0.0
2.8388	70.69000	32.05000	-0.50000	0.0
3.7850	69.92000	31.50000	-0.50000	0.0
4.7313	69.15000	30.95000	-0.50000	0.0
5.6775	68.38000	30.40000	-0.50000	0.0
6.6238	67.61000	29.85000	-0.50000	0.0
7.5700	66.84000	29.30000	-0.50000	0.032112
8.5163	66.07000	28.75000	-0.50000	0.21877
9.4626	65.30000	28.20000	-0.50000	0.40168

Structure: AC | Sub-structure:

Dist. Coordinates Displacements

Dist.	x	y	z	z
[m]	[m]	[m]	[m]	[mm]
Vertical Offset 1				
0.0	65.30000	28.20000	-0.50000	0.40168
0.84673	64.61667	27.70000	-0.50000	0.56740
1.6935	63.93333	27.20000	-0.50000	0.73963
2.5402	63.25000	26.70000	-0.50000	0.91993
3.3869	62.56667	26.20000	-0.50000	1.1082
4.2336	61.88333	25.70000	-0.50000	1.3027
5.0804	61.20000	25.20000	-0.50000	1.5004

Structure: AD | Sub-structure:

Dist. Coordinates Displacements

Dist.	x	y	z	z
[m]	[m]	[m]	[m]	[mm]
Vertical Offset 1				
0.0	61.20000	25.20000	-1.46000	1.5004
0.98298	60.22500	25.32500	-1.46000	1.8394
1.9660	59.25000	25.45000	-1.46000	2.2046
2.9489	58.27500	25.57500	-1.46000	2.5886
3.9319	57.30000	25.70000	-1.46000	2.9808
4.9149	56.32500	25.82500	-1.46000	3.3671
5.8979	55.35000	25.95000	-1.46000	3.7298
6.8809	54.37500	26.07500	-1.46000	4.0483
7.8638	53.40000	26.20000	-1.46000	4.2987

Structure: AE | Sub-structure:

Dist. Coordinates Displacements

Dist.	x	y	z	z
[m]	[m]	[m]	[m]	[mm]
Vertical Offset 1				
0.0	61.20000	25.20000	-0.50000	1.5004
0.82651	61.15000	24.37500	-0.50000	1.4658
1.6530	61.10000	23.55000	-0.50000	1.4131
2.4795	61.05000	22.72500	-0.50000	1.3443
3.3061	61.00000	21.90000	-0.50000	1.2616

Structure: AF | Sub-structure:

Dist. Coordinates Displacements

Dist.	x	y	z	z
[m]	[m]	[m]	[m]	[mm]