



GEA LIMITED (GEOTECHNICAL & ENV ASSOC)

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

Job No.	Sheet No.	Rev.
J16180		
Drg. Ref.		
Made by	Date	Checked
	01-Nov-2016	

Problem Type

Problem Type : Tunnelling and Embedded Wall Excavations

Displacement Data

Type	Name	Direction of extrusion	Point/Line/Line for extrusion						No. of intervals across extrusion/Line	Extrusion depth	No. of intervals along extrusion	Calculate	Surface type for tunnels
			First point			Second point							
			X [m]	Y [m]	Z (level) [m]	X [m]	Y [m]	Z (level) [m]					
Grid	Grid 1	Global X	0.40000	2.00000	0.00000	-	80.00000	0.00000	350	100.00000	350	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	44.90000	-0.50000	30.50000	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	47.70000	-1.85000	6	-	-	Yes	Surface
Line	Q	-	41.90000	52.20000	-0.65000	41.90000	47.70000	-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	33.70000	-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	5	-	-	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	30.80000	19.30000	-0.50000	5	-	-	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	38.00000	-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	36.90000	29.10000	-2.00000	6	-	-	Yes	Surface

Vertical Ground Movement Curves

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

Horizontal Ground Movement Curves

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:

Polygonal Excavations

Excavation Name: Wall Installation
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	p1 p2*	d p1 p2*
				[m]	[%] [%]	[m] [%] [%]
1	37.400	28.200	-4.4000	No	- - -	- - -
2	50.100	26.600	-4.4000	No	- - -	- - -
3	45.500	47.600	-4.4000	No	- - -	- - -
4	37.800	47.600	-4.4000	No	- - -	- - -
Side	Corner 1		Corner 2		Ground Movement Curve	
	x	y	x	y	Vertical	Horizontal
	[m]	[m]	[m]	[m]		



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Side	Corner 1		Corner 2		Ground Movement Curve	
	x [m]	y [m]	x [m]	y [m]	Vertical	Horizontal
1	37.400	28.200	50.100	26.600	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))
2	50.100	26.600	45.500	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))
3	45.500	47.600	37.800	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))
4	37.800	47.600	37.400	28.200	Installation of planar diaphragm wall in stiff clay (CIRIA 580 Fig. 2.9(b))	Installation of planar diaphragm wall in stiff clay (CIRIA 580 Fig. 2.9(a))

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]		[mm]			
A		A	0.00000	3.39900	0.0	0.10000	Burland Strain Limits	0.20000	2.6000
B		B	0.00000	3.09900	0.0	0.10000	Burland Strain Limits	0.20000	2.6000
C		C	0.00000	4.60000	0.0	0.10000	Burland Strain Limits	0.20000	2.6000
D		D	0.00000	5.39900	0.0	0.10000	Burland Strain Limits	0.20000	2.6000
E		E	0.00000	2.49900	0.0	0.10000	Burland Strain Limits	0.20000	2.6000
F		F	0.00000	9.29954	0.0	0.10000	Burland Strain Limits	0.20000	2.6000
G		G	0.00000	4.99900	0.0	0.10000	Burland Strain Limits	0.20000	2.6000
H		H	0.00000	2.70005	0.0	0.10000	Burland Strain Limits	0.20000	2.6000
I		I	0.00000	7.19969	0.0	0.10000	Burland Strain Limits	0.20000	2.6000
J		J	0.00000	19.49900	0.0	0.10000	Burland Strain Limits	0.20000	2.6000
K		K	0.00000	8.89900	0.0	0.10000	Burland Strain Limits	0.20000	2.6000
L		L	0.00000	7.19900	0.0	0.10000	Burland Strain Limits	0.20000	2.6000
M		M	0.00000	7.29900	0.0	0.10000	Burland Strain Limits	0.20000	2.6000
N		N	0.00000	0.99900	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		P	0.00000	5.59900	0.0	0.10000	Burland Strain Limits	0.20000	2.6000
Q	Sub #	Q	0.00000	4.49900	0.0	0.10000	Burland Strain Limits	0.20000	2.6000
R		R	0.00000	7.40900	0.0	0.10000	Burland Strain Limits	0.20000	2.6000
S		S	0.00000	39.99900	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	3.21393	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		AI	0.00000	4.84977	0.0	0.10000	Burland Strain Limits	0.20000	2.6000
AJ		AJ	0.00000	8.96672	0.0	0.10000	Burland Strain Limits	0.20000	2.6000
AK		AK	0.00000	4.94875	0.0	0.10000	Burland Strain Limits	0.20000	2.6000
AL		AL	0.00000	4.73714	0.0	0.10000	Burland Strain Limits	0.20000	2.6000
AM		AM	0.00000	2.70640	0.0	0.10000	Burland Strain Limits	0.20000	2.6000
AN		AN	0.00000	3.33666	0.0	0.10000	Burland Strain Limits	0.20000	2.6000
AO		AO	0.00000	2.51694	0.0	0.10000	Burland Strain Limits	0.20000	2.6000
AP		AP	0.00000	4.45433	0.0	0.10000	Burland Strain Limits	0.20000	2.6000
AQ		AQ	0.00000	0.94875	0.0	0.10000	Burland Strain Limits	0.20000	2.6000
AR		AR	0.00000	8.47072	0.0	0.10000	Burland Strain Limits	0.20000	2.6000
AS		AS	0.00000	8.16049	0.0	0.10000	Burland Strain Limits	0.20000	2.6000
AT		AT	0.00000	11.07555	0.0	0.10000	Burland Strain Limits	0.20000	2.6000
AU		AU	0.00000	7.11026	0.0	0.10000	Burland Strain Limits	0.20000	2.6000
AV		AV	0.00000	9.21854	0.0	0.10000	Burland Strain Limits	0.20000	2.6000
AW		AW	0.00000	11.52028	0.0	0.10000	Burland Strain Limits	0.20000	2.6000

Specific Structures - Bending Parameters

Structure Name	Sub-Structure Name	Height	Default Properties	Hogging			Sagging		
				2nd Moment of Area (per unit width)	Distance of Bending Strain from N.A.	Distance of N.A. from Edge of Beam in Tension	2nd Moment of Area (per unit width)	Distance of Bending Strain from N.A.	Distance of N.A. from Edge of Beam in Tension
				[m ³]	[m]		[m ³]	[m]	
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		8.5000	Yes	204.71	8.5000	8.5000	51.177	4.2500	4.2500
K		8.5000	Yes	204.71	8.5000	8.5000	51.177	4.2500	4.2500
L		8.5000	Yes	204.71	8.5000	8.5000	51.177	4.2500	4.2500
M		9.5000	Yes	285.79	9.5000	9.5000	71.448	4.7500	4.7500
N		12.000	Yes	576.00	12.000	12.000	144.00	6.0000	6.0000
O		3.6500	Yes	16.612	3.6500	3.6500	4.1530	1.8400	1.8400
P	Sub #	4.8500	Yes	38.028	4.8500	4.8500	9.5070	2.4250	2.4250
Q		3.6500	Yes	16.209	3.6500	3.6500	4.0523	1.8250	1.8250
R		3.5000	Yes	14.292	3.5000	3.5000	3.5729	1.7500	1.7500
S		8.5000	Yes	204.71	8.5000	8.5000	51.177	4.2500	4.2500
T		8.5000	Yes	204.71	8.5000	8.5000	51.177	4.2500	4.2500
U		8.5000	Yes	204.71	8.5000	8.5000	51.177	4.2500	4.2500
V		6.5000	Yes	91.542	6.5000	6.5000	22.885	3.2500	3.2500
W		7.7000	Yes	152.18	7.7000	7.7000	38.044	3.8500	3.8500
X		8.5000	Yes	204.71	8.5000	8.5000	51.177	4.2500	4.2500
Y		7.4000	Yes	135.07	7.4000	7.4000	33.769	3.7000	3.7000
Z		8.5000	Yes	204.71	8.5000	8.5000	51.177	4.2500	4.2500
AA		7.4000	Yes	135.07	7.4000	7.4000	33.769	3.7000	3.7000
AB		8.5000	Yes	204.71	8.5000	8.5000	51.177	4.2500	4.2500
AC		3.5000	Yes	14.292	3.5000	3.5000	3.5729	1.7500	1.7500
AD		4.4600	Yes	29.572	4.4600	4.4600	7.3930	2.2300	2.2300
AE		3.5000	Yes	14.292	3.5000	3.5000	3.5729	1.7500	1.7500
AF		4.4600	Yes	29.572	4.4600	4.4600	7.3930	2.2300	2.2300
AG		3.5000	Yes	14.292	3.5000	3.5000	3.5729	1.7500	1.7500
AH		15.500	Yes	1241.3	15.500	15.500	310.32	7.7500	7.7500
AI		15.500	Yes	1241.3	15.500	15.500	310.32	7.7500	7.7500
AJ		15.500	Yes	1241.3	15.500	15.500	310.32	7.7500	7.7500
AK		15.500	Yes	1241.3	15.500	15.500	310.32	7.7500	7.7500



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Structure Name	Sub-Structure Name	Height	Default Properties	Hogging			Sagging		
				2nd Moment of Area	Distance of Bending	Distance of N.A.	2nd Moment of Area	Distance of Bending	Distance of N.A.
AL		15.500	Yes	1241.3	15.500	15.500	310.32	7.7500	7.7500
AM		15.500	Yes	1241.3	15.500	15.500	310.32	7.7500	7.7500
AN		15.500	Yes	1241.3	15.500	15.500	310.32	7.7500	7.7500
AO		15.500	Yes	1241.3	15.500	15.500	310.32	7.7500	7.7500
AP		15.500	Yes	1241.3	15.500	15.500	310.32	7.7500	7.7500
AQ		15.500	Yes	1241.3	15.500	15.500	310.32	7.7500	7.7500
AR		15.500	Yes	1241.3	15.500	15.500	310.32	7.7500	7.7500
AS		15.500	Yes	1241.3	15.500	15.500	310.32	7.7500	7.7500
AT		15.500	Yes	1241.3	15.500	15.500	310.32	7.7500	7.7500
AU		4.6000	Yes	32.445	4.6000	4.6000	8.1113	2.3000	2.3000
AV		4.6000	Yes	32.445	4.6000	4.6000	8.1113	2.3000	2.3000
AW		4.6000	Yes	32.445	4.6000	4.6000	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	Length	Curvature	Combined Segment
No structures have segments combined.						

Displacement and Strain Results

Type/No.		Coordinates			Displacements			Angle of Line to x Axis	
Name	Dist.	x	y	z	x	y	z	Horizontal displacement along the Line [mm]	Horizontal displacement perpendicular to Line [mm]
		[m]	[m]	[m]	[mm]	[mm]	[mm]		[°]
A	Line 1	22.50000	48.10000	-0.50000	0.0	0.0	0.0	0.0	0.0
	0.85000	23.35000	48.10000	-0.50000	0.0	0.0	0.0	0.0	0.0
	1.7000	24.20000	48.10000	-0.50000	0.0	0.0	0.0	0.0	0.0
	2.5500	25.05000	48.10000	-0.50000	0.0	0.0	0.0	0.0	0.0
	3.4000	25.90000	48.10000	-0.50000	0.0	0.0	0.0	0.0	0.0
B	Line 2	25.90000	48.10000	-0.50000	0.0	0.0	0.0	0.0	270.00
	0.77500	25.90000	47.32500	-0.50000	0.0	0.0	0.0	0.0	270.00
	1.5500	25.90000	46.55000	-0.50000	0.0	0.0	0.0	0.0	270.00
	2.3250	25.90000	45.77500	-0.50000	0.0	0.0	0.0	0.0	270.00
	3.1000	25.90000	45.00000	-0.50000	0.0	0.0	0.0	0.0	270.00
C	Line 3	25.90000	45.00000	-0.50000	0.0	0.0	0.0	0.0	358.75
	0.92022	26.82000	44.98000	-0.50000	0.0	0.0	0.0	0.0	358.75
	1.8404	27.74000	44.96000	-0.50000	0.0	0.0	0.0	0.0	358.75
	2.7607	28.66000	44.94000	-0.50000	0.0	0.0	0.0	0.0	358.75
	3.6809	29.58000	44.92000	-0.50000	0.0	0.0	0.0	0.0	358.75
D	Line 4	30.50000	44.90000	-0.50000	0.0	0.0	0.0	0.0	91.061
	0.90015	30.48333	45.80000	-0.50000	0.0	0.0	0.0	0.0	91.061
	1.8003	30.46667	46.70000	-0.50000	0.0	0.0	0.0	0.0	91.061
	2.7005	30.45000	47.60000	-0.50000	0.0	0.0	0.0	0.0	91.061
	3.6006	30.43333	48.50000	-0.50000	0.0	0.0	0.0	0.0	91.061
E	Line 5	30.40000	50.30000	-0.50000	0.0	0.0	0.0	0.0	91.061
	0.83333	32.23333	50.30000	-0.50000	0.0	0.0	0.0	0.0	91.061
	1.6667	32.06667	50.30000	-0.50000	0.079228	-0.037311	0.014768	0.079228	0.0
	2.5000	32.90000	50.30000	-0.50000	0.29351	-0.16173	0.050860	0.29351	0.0
	3.3333	32.73333	50.30000	-0.50000	0.29351	-0.16173	0.050860	-0.15857	89.384
F	Line 6	32.90000	50.30000	-0.50000	0.29351	-0.16173	0.050860	0.29351	0.0
	0.93005	32.91000	51.23000	-0.50000	0.13648	-0.16131	0.026383	-0.099841	89.384
	1.8601	32.92000	52.16000	-0.50000	0.0	0.0	0.0	0.0	89.384
	2.7902	32.93000	53.09000	-0.50000	0.0	0.0	0.0	0.0	89.384
	3.7202	32.94000	54.02000	-0.50000	0.0	0.0	0.0	0.0	89.384
G	Line 7	33.00000	59.60000	-0.50000	0.0	0.0	0.0	0.0	180.00
	0.10000	32.90000	59.60000	-0.50000	0.0	0.0	0.0	0.0	180.00
	2.0000	31.00000	59.60000	-0.50000	0.0	0.0	0.0	0.0	180.00
	3.0000	30.00000	59.60000	-0.50000	0.0	0.0	0.0	0.0	180.00
	4.0000	29.00000	59.60000	-0.50000	0.0	0.0	0.0	0.0	180.00
H	Line 8	28.00000	59.60000	-0.50000	0.0	0.0	0.0	0.0	180.00
	0.90062	28.03333	58.70000	-0.50000	0.0	0.0	0.0	0.0	272.12
	1.8012	28.06667	57.80000	-0.50000	0.0	0.0	0.0	0.0	272.12
	2.7019	28.10000	56.90000	-0.50000	0.0	0.0	0.0	0.0	272.12
	3.6026	28.13333	56.00000	-0.50000	0.0	0.0	0.0	0.0	272.12
I	Line 9	28.10000	56.90000	-0.50000	0.0	0.0	0.0	0.0	179.20
	0.90009	27.20000	56.91250	-0.50000	0.0	0.0	0.0	0.0	179.20
	1.8002	26.30000	56.92500	-0.50000	0.0	0.0	0.0	0.0	179.20
	2.7003	25.40000	56.93750	-0.50000	0.0	0.0	0.0	0.0	179.20
	3.6003	24.50000	56.95000	-0.50000	0.0	0.0	0.0	0.0	179.20
J	Line 10	33.00000	59.50000	-0.50000	0.0	0.0	0.0	0.0	179.20
	0.90009	32.10000	59.51250	-0.50000	0.0	0.0	0.0	0.0	179.20
	1.8002	26.30000	56.92500	-0.50000	0.0	0.0	0.0	0.0	179.20
	2.7003	25.40000	56.93750	-0.50000	0.0	0.0	0.0	0.0	179.20
	3.6003	24.50000	56.95000	-0.50000	0.0	0.0	0.0	0.0	179.20
K	Line 11	33.00000	52.20000	-0.50000	0.0	0.0	0.0	0.0	0.0
	0.90009	32.10000	52.21250	-0.50000	0.13320	-0.16677	0.031721	0.13320	0.0
	1.8002	34.77778	52.20000	-0.50000	0.20975	-0.34187	0.063146	0.20975	0.0
	2.7003	35.96667	52.20000	-0.50000	0.20339	-0.51034	0.10055	0.20339	0.0
	3.6003	36.95556	52.20000	-0.50000	0.11575	-0.63051	0.13260	0.11575	0.0
L	Line 12	37.70000	59.40000	-0.50000	0.0	0.0	0.0	0.0	270.00
	0.90009	37.70000	58.50000	-0.50000	0.0	0.0	0.0	0.0	270.00
	1.8000	37.70000	57.60000	-0.50000	0.0	0.0	0.0	0.0	270.00
	2.7000	37.70000	56.70000	-0.50000	0.0	0.0	0.0	0.0	270.00
	3.6000	37.70000	55.80000	-0.50000	0.0	0.0	0.0	0.0	270.00
M	Line 13	42.00000	59.50000	-1.50000	0.0	0.0	0.0	0.0	269.22
	0.91259	41.98750	58.58750	-1.50000	0.0	0.0	0.0	0.0	269.22
	1.8252	41.97500	57.67500	-1.50000	0.0	0.0	0.0	0.0	269.22
	2.7378	41.96250	56.76250	-1.50000	0.0	0.0	0.0	0.0	269.22
	3.6503	41.95000	55.85000	-1.50000	0.0	0.0	0.0	0.0	269.22



GEA LIMITED (GEOTECHNICAL & ENV ASSOC)

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

Job No.	Sheet No.	Rev.
J16180		
Drg. Ref.		
Made by	Date 01-Nov-2016	Checked

Type/No.	Coordinates				Displacements			Angle of Line			
Name	Dist.	x	y	z	x	y	z	Horizontal displacement	Horizontal displacement	to x Axis	
N	Line 14	6.3881	41.91250	53.11250	-1.50000	0.0	-0.36250	0.055705	0.36247	0.0049553	269.22
		7.3007	41.90000	52.20000	-1.50000	0.0	-0.66667	0.14301	0.66660	0.0091316	269.22
		0.87143	45.50000	54.17143	-4.00000	0.0	-0.30000	0.045091	-0.30000	0.0	90.000
		1.7429	45.50000	55.04286	-4.00000	0.0	0.0	0.0	0.0	0.0	90.000
		2.6143	45.50000	55.91429	-4.00000	0.0	0.0	0.0	0.0	0.0	90.000
		3.4857	45.50000	56.78571	-4.00000	0.0	0.0	0.0	0.0	0.0	90.000
		4.3571	45.50000	57.65714	-4.00000	0.0	0.0	0.0	0.0	0.0	90.000
		5.2286	45.50000	58.52857	-4.00000	0.0	0.0	0.0	0.0	0.0	90.000
		6.1000	45.50000	59.40000	-4.00000	0.0	0.0	0.0	0.0	0.0	90.000
		0	Line 15	0.92000	37.70000	52.20000	-0.68000	0.014481	-0.66615	0.14286	0.66615
1.8400	37.70000	51.28000		-0.68000	0.026427	-0.97252	0.32559	0.97252	0.026427	270.00	
2.7600	37.70000	49.44000		-0.68000	0.086056	-1.5834	1.0638	1.5834	0.086056	270.00	
3.6800	37.70000	48.52000		-0.68000	0.20440	-1.8805	1.5997	1.8805	0.20440	270.00	
4.6000	37.70000	47.60000		-0.68000	2.1662	-0.044654	2.1338	0.044654	2.1662	270.00	
5.5200	37.70000	46.68000		-0.68000	0.30000	-0.945091	0.0	0.30000	0.0	270.00	
6.4400	37.70000	45.76000		-0.68000	0.0	-0.61111	0.12127	0.61111	0.0	270.00	
7.3600	37.70000	44.84000		-0.68000	0.0	-0.92222	0.28734	0.92222	0.0	270.00	
8.2800	37.70000	43.92000		-0.68000	0.0	-1.2333	0.57728	1.2333	0.0	270.00	
9.2000	37.70000	43.00000		-0.68000	0.0	-1.5444	0.99863	1.5444	0.0	270.00	
P	Line 16	4.6667	45.50000	48.63333	-1.85000	0.0	-1.8556	1.5325	1.8556	0.0	270.00
		5.6000	45.50000	47.70000	-1.85000	0.0	-2.1667	2.1338	2.1667	0.0	270.00
		6.5333	45.50000	46.76667	-1.85000	0.0	-0.66667	0.14301	0.66667	0.0	270.00
		7.4667	45.50000	45.83333	-1.85000	0.0	-0.96667	0.32072	0.96667	0.0	270.00
		8.4000	45.50000	44.90000	-1.85000	0.0	-1.2667	0.51983	1.2667	0.0	270.00
		9.3333	45.50000	43.96667	-1.85000	0.0	-1.5667	0.71188	1.5667	0.0	270.00
		1.8667	45.50000	51.43333	-1.85000	0.0	-0.92222	0.28734	0.92222	0.0	270.00
		2.8000	45.50000	50.50000	-1.85000	0.0	-1.2333	0.57728	1.2333	0.0	270.00
		3.7333	45.50000	49.56667	-1.85000	0.0	-1.5444	0.99863	1.5444	0.0	270.00
		4.6667	45.50000	48.63333	-1.85000	0.0	-1.8556	1.5325	1.8556	0.0	270.00
Q	Line 17	5.6000	45.50000	47.70000	-1.85000	0.0	-2.1667	2.1338	2.1667	0.0	270.00
		6.5333	45.50000	46.76667	-1.85000	0.0	-0.66667	0.14301	0.66667	0.0	270.00
		7.4667	45.50000	45.83333	-1.85000	0.0	-0.96667	0.32072	0.96667	0.0	270.00
		8.4000	45.50000	44.90000	-1.85000	0.0	-1.2667	0.51983	1.2667	0.0	270.00
		9.3333	45.50000	43.96667	-1.85000	0.0	-1.5667	0.71188	1.5667	0.0	270.00
		1.8667	45.50000	51.43333	-1.85000	0.0	-0.92222	0.28734	0.92222	0.0	270.00
		2.8000	45.50000	50.50000	-1.85000	0.0	-1.2333	0.57728	1.2333	0.0	270.00
		3.7333	45.50000	49.56667	-1.85000	0.0	-1.5444	0.99863	1.5444	0.0	270.00
		4.6667	45.50000	48.63333	-1.85000	0.0	-1.8556	1.5325	1.8556	0.0	270.00
		5.6000	45.50000	47.70000	-1.85000	0.0	-2.1667	2.1338	2.1667	0.0	270.00
R	Line 18	6.5333	45.50000	46.76667	-1.85000	0.0	-0.66667	0.14301	0.66667	0.0	270.00
		7.4667	45.50000	45.83333	-1.85000	0.0	-0.96667	0.32072	0.96667	0.0	270.00
		8.4000	45.50000	44.90000	-1.85000	0.0	-1.2667	0.51983	1.2667	0.0	270.00
		9.3333	45.50000	43.96667	-1.85000	0.0	-1.5667	0.71188	1.5667	0.0	270.00
		1.8667	45.50000	51.43333	-1.85000	0.0	-0.92222	0.28734	0.92222	0.0	270.00
		2.8000	45.50000	50.50000	-1.85000	0.0	-1.2333	0.57728	1.2333	0.0	270.00
		3.7333	45.50000	49.56667	-1.85000	0.0	-1.5444	0.99863	1.5444	0.0	270.00
		4.6667	45.50000	48.63333	-1.85000	0.0	-1.8556	1.5325	1.8556	0.0	270.00
		5.6000	45.50000	47.70000	-1.85000	0.0	-2.1667	2.1338	2.1667	0.0	270.00
		6.5333	45.50000	46.76667	-1.85000	0.0	-0.66667	0.14301	0.66667	0.0	270.00
S	Line 19	0.90000	41.90000	51.30000	-0.65000	0.0	-0.31747	0.056025	0.31747	0.02664	266.91
		1.8000	41.90000	50.40000	-0.65000	0.0	-0.63492	0.11205	0.63492	0.04575	266.91
		2.7000	41.90000	49.50000	-0.65000	0.0	-0.95241	0.16763	0.95241	0.07546	266.91
		3.6000	41.90000	48.60000	-0.65000	0.0	-1.26988	0.22322	1.26988	0.10517	266.91
		4.5000	41.90000	47.70000	-0.65000	0.0	-1.58735	0.27881	1.58735	0.13488	266.91
		5.4000	41.90000	46.80000	-0.65000	0.0	-1.90482	0.33440	1.90482	0.16459	266.91
		6.3000	41.90000	45.90000	-0.65000	0.0	-2.22229	0.38999	2.22229	0.19430	266.91
		7.2000	41.90000	45.00000	-0.65000	0.0	-2.53976	0.44558	2.53976	0.22401	266.91
		8.1000	41.90000	44.10000	-0.65000	0.0	-2.85723	0.50117	2.85723	0.25372	266.91
		9.0000	41.90000	43.20000	-0.65000	0.0	-3.17470	0.55676	3.17470	0.28343	266.91
T	Line 20	0.92835	32.95000	50.90000	-0.50000	0.31747	-0.17857	0.056025	0.16118	0.32664	266.91
		1.8567	32.95000	49.80000	-0.50000	0.63492	-0.35714	0.11205	0.32237	0.64575	266.91
		2.7851	32.95000	48.70000	-0.50000	0.95241	-0.53681	0.16763	0.48354	0.96688	266.91
		3.7135	32.95000	47.60000	-0.50000	1.26988	-0.71648	0.22322	0.64465	1.28201	266.91
		4.6419	32.95000	46.50000	-0.50000	1.58735	-0.89615	0.27881	0.80583	1.59414	266.91
		5.5703	32.95000	45.40000	-0.50000	1.90482	-1.07582	0.33440	1.01694	1.90627	266.91
		6.4987	32.95000	44.30000	-0.50000	2.22229	-1.25549	0.38999	1.22805	2.21840	266.91
		7.4271	32.95000	43.20000	-0.50000	2.53976	-1.43516	0.44558	1.43916	2.53059	266.91
		8.3555	32.95000	42.10000	-0.50000	2.85723	-1.61483	0.50117	1.64386	2.84172	266.91
		9.2839	32.95000	41.00000	-0.50000	3.17470	-1.79450	0.55676	1.81339	3.15445	266.91
U	Line 21	1.9859	46.73158	51.74211	-0.50000	-0.21647	-0.72806	0.18660	0.43690	-0.62133	308.33
		3.9718	47.96316	50.18421	-0.50000	-0.69684	-0.73108	0.35577	0.14137	-1.00000	308.33
		5.9577	49.19474	48.62632	-0.50000	-0.88816	-0.24671	0.28793	-0.35726	-0.84974	308.33
		7.9436	50.42632	47.06842	-0.50000	-0.61916	-0.13563	0.12980	-0.27758	-0.56983	308.33
		9.9295	51.65789	45.51053	-0.50000	-0.33597	-0.073594	0.052385	-0.15062	-0.30920	308.33
		11.915	52.88947	43.95263	-0.50000	-0.052787	-0.011563	0.0096393	-0.023665	-0.048581	308.33
		13.901	54.12185	42.39474	-0.50000	0.0	0.0	0.0	0.0	0.0	308.33
		15.887	55.35263	40.83684	-0.50000	0.0	0.0	0.0	0.0	0.0	308.33
		17.873	56.58421	39.27895	-0.50000	0.0	0.0	0.0	0.0	0.0	308.33
		19.859	57.81579	37.72105	-0.50000	0.0	0.0	0.0	0.0	0.0	308.33
V	Line 22	21.845	59.04737	36.16316	-0.50000	0.0	0.0	0.0	0.0	0.0	308.33
		23.831	60.27895	34.60526	-0.50000	0.0	0.0	0.0	0.0	0.0	308.33
		25.817	61.51053	33.04737	-0.50000	0.0	0.0	0.0	0.0	0.0	308.33
		27.803	62.74211	31.48947	-0.50000	0.0	0.0	0.0	0.0	0.0	308.33
		29.789	63.97368	29.93158	-0.50000	0.0	0.0	0.0	0.0	0.0	308.33
		31.774	65.20526	28.37368	-0.50000	0.0	0.0	0.0	0.0	0.0	308.33
		33.760	66.43684	26.81579	-0.50000	0.0	0.0	0.0	0.0	0.0	308.33
		35.746	67.66842	25.25789	-0.50000	0.0	0.0	0.0	0.0	0.0	308.33
		37.732	68.90000	23.70000	-0.50000	0.0	0.0	0.0	0.0	0.0	308.33
		39.719	70.13158	22.14211	-0.50000	0.0	0.0	0.0	0.0	0.0	308.33
W	Line 23	0.98600	62.21000	46.41000	-0.50000	0.0	0.0	0.0	0.0	0.0	216.75
		1.9720	61.42000	45.82000	-0.50000	0.0	0.0	0.0	0.0	0.0	216.75
		2.9580	60.63000	45.23000	-0.50000	0.0	0.0	0.0	0.0	0.0	216.75
		3.9440	59.84000	44.64000	-0.50000	0.0	0.0	0.0	0.0	0.0	216.75
		4.9300	59.05000	44.05000	-0.50000	0.0	0.0	0.0	0.0	0.0	216.75
		5.9160	58.26000	43.46000	-0.50000	0.0	0.0	0.0	0.0	0.0	216.75
		6.9020	57.47000	42.87000	-0.50000	0.0	0.0	0.0	0.0	0.0	216.75
		7.8880	56.68000	42.28000	-0.50000	0.0	0.0	0.0	0.0	0.0	216.75
		8.8740	55.89000	41.69000	-0.50000	0.0	0.0	0.0	0.0	0.0	216.75
		9.8600	55.10000	41.10000	-0.50000	0.0	0.0	0.0	0.0	0.0	216.75
X	Line 24	0.91001	54.37500	4							



GEA LIMITED (GEOTECHNICAL & ENV ASSOC)

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

Job No.	Sheet No.	Rev.
J16180		
Drg. Ref.		
Made by	Date 01-Nov-2016	Checked

Type/No.	Coordinates			Displacements			Angle of Line to X Axis	
Name	Dist.	x	y	z	x	y	z	
							Horizontal displacement	Horizontal displacement
	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	0.0	0.0	0.0	0.0
	8.5163	66.07000	28.75000	-0.50000	0.0	0.0	0.0	0.0
	9.4626	65.30000	28.20000	-0.50000	0.0	0.0	0.0	0.0
AC	Line 29	65.30000	28.20000	-0.50000	0.0	0.0	0.0	0.0
	0.84673	64.61667	27.70000	-0.50000	0.0	0.0	0.0	0.0
	1.6935	63.93333	27.20000	-0.50000	0.0	0.0	0.0	0.0
	2.5402	63.25000	26.70000	-0.50000	0.0	0.0	0.0	0.0
	3.3869	62.56667	26.20000	-0.50000	0.0	0.0	0.0	0.0
	4.2336	61.88333	25.70000	-0.50000	0.0	0.0	0.0	0.0
	5.0804	61.20000	25.20000	-0.50000	0.0	0.0	0.0	0.0
AD	Line 30	61.20000	25.20000	-1.46000	0.0	0.0	0.0	0.0
	0.90298	60.52500	25.32500	-1.46000	0.0	0.0	0.0	0.0
	1.9660	59.25000	25.45000	-1.46000	0.0	0.0	0.0	0.0
	2.9489	58.27500	25.57500	-1.46000	0.0	0.0	0.0	0.0
	3.9319	57.30000	25.70000	-1.46000	0.0	0.0	0.0	0.0
	4.9149	56.32500	25.82500	-1.46000	-0.10815	0.013464	0.017885	0.10898
	5.8979	55.35000	25.95000	-0.43333	0.053650	0.018909	0.070739	0.0018893
	6.8809	54.37500	26.07500	-1.46000	-0.75860	0.093161	0.18908	0.76428
	7.8638	53.40000	26.20000	-1.46000	-1.0840	0.13140	0.42907	1.0919
AE	Line 31	61.20000	25.20000	-0.50000	0.0	0.0	0.0	0.0
	0.82651	61.15000	24.37500	-0.50000	0.0	0.0	0.0	0.0
	1.6530	61.10000	23.55000	-0.50000	0.0	0.0	0.0	0.0
	2.4795	61.05000	22.72500	-0.50000	0.0	0.0	0.0	0.0
	3.3061	61.00000	21.90000	-0.50000	0.0	0.0	0.0	0.0
AF	Line 32	50.30000	26.50000	-1.46000	-1.9011	0.95054	2.0526	-0.76894
	0.80351	50.22500	25.70000	-1.46000	-0.26098	1.8791	1.6103	-1.8465
	1.6070	50.15000	24.90000	-0.50000	-0.048911	1.6322	1.1408	-1.6208
	2.4105	50.07500	24.10000	-1.46000	0.013666	1.3666	0.74220	-1.3619
	3.2140	50.00000	23.30000	-1.46000	0.033303	1.0990	0.43628	-1.0973
AG	Line 33	50.00000	23.30000	-0.50000	0.033303	1.0990	0.43628	-1.09802
	1.9046	51.88889	23.05556	-0.50000	-0.39485	0.78255	0.25574	-0.49212
	3.8093	53.77778	22.81111	-0.50000	-0.30639	0.31565	0.071473	-0.34437
	5.7139	55.66667	22.56667	-0.50000	0.0	0.0	0.0	0.0
	7.6186	57.55556	22.32222	-0.50000	0.0	0.0	0.0	0.0
	9.5232	59.44444	22.07778	-0.50000	0.0	0.0	0.0	0.0
	11.428	61.33333	21.83333	-0.50000	0.0	0.0	0.0	0.0
	13.332	63.22222	21.58889	-0.50000	0.0	0.0	0.0	0.0
	15.237	65.11111	21.34444	-0.50000	0.0	0.0	0.0	0.0
AH	Line 34	59.00000	20.70000	-0.50000	0.0	0.0	0.0	0.0
	0.90554	58.10000	20.80000	-0.50000	0.0	0.0	0.0	0.0
	1.8111	57.20000	20.90000	-0.50000	0.0	0.0	0.0	0.0
	2.7166	56.30000	21.00000	-0.50000	0.0	0.0	0.0	0.0
	3.6222	55.40000	21.10000	-0.50000	0.0	0.0	0.0	0.0
	4.5277	54.50000	21.20000	-0.50000	0.0	0.0	0.0	0.0
	5.4332	53.60000	21.30000	-0.50000	-0.045669	0.069155	0.014076	0.053026
AI	Line 35	52.70000	21.40000	-0.50000	-0.11720	0.23441	0.039310	-0.14237
	0.97015	52.56000	20.44000	-0.50000	0.0	0.0	0.0	0.0
	1.9403	52.42000	19.48000	-0.50000	0.0	0.0	0.0	0.0
	2.9105	52.28000	18.52000	-0.50000	0.0	0.0	0.0	0.0
	3.8806	52.14000	17.56000	-0.50000	0.0	0.0	0.0	0.0
	4.8508	52.00000	16.60000	-0.50000	0.0	0.0	0.0	0.0
AJ	Line 36	52.00000	16.60000	-0.50000	0.0	0.0	0.0	0.0
	0.99641	51.01111	16.72222	-0.50000	0.0	0.0	0.0	0.0
	1.9928	50.02222	16.84444	-0.50000	0.0	0.0	0.0	0.0
	2.9892	49.03333	16.96667	-0.50000	0.0	0.0	0.0	0.0
	3.9857	48.04444	17.08889	-0.50000	0.0	0.0	0.0	0.0
	4.9821	47.05556	17.21111	-0.50000	0.0	0.0	0.0	0.0
	5.9785	46.06667	17.33333	-0.50000	0.0	0.0	0.0	0.0
	6.9749	45.07778	17.45556	-0.50000	0.0	0.0	0.0	0.0
	7.9713	44.08889	17.57778	-0.50000	0.0	0.0	0.0	0.0
	8.9677	43.10000	17.70000	-0.50000	0.0	0.0	0.0	0.0
AK	Line 37	43.10000	17.70000	-0.50000	0.0	0.0	0.0	0.0
	0.98995	43.24000	18.68000	-0.50000	0.0	0.0	0.0	0.0
	1.9799	43.38000	19.66000	-0.50000	0.0	0.0	0.0	0.0
	2.9698	43.52000	20.64000	-0.50000	0.0	0.0	0.0	0.0
	3.9598	43.66000	21.62000	-0.50000	0.035586	0.28246	0.042709	0.28465
AL	Line 38	43.80000	22.60000	-0.50000	0.076827	0.60981	0.12256	0.61455
	0.94763	42.86000	22.72000	-0.50000	0.076827	0.60981	0.12256	0.0018134
	1.8953	41.92000	22.84000	-0.50000	0.076892	0.61033	0.12275	-0.61515
	2.8429	40.98000	22.96000	-0.50000	0.077022	0.61136	0.12314	-0.61619
	3.7905	40.04000	23.08000	-0.50000	0.077087	0.61188	0.12333	-0.61671
	4.7381	39.10000	23.20000	-0.50000	0.077152	0.61239	0.12352	-0.61723
AM	Line 39	39.10000	23.20000	-0.50000	0.077152	0.61239	0.12352	-0.61642
	0.90247	38.93333	22.30000	-0.50000	0.039600	0.31433	0.047795	-0.31639
	1.8049	38.96667	21.40000	-0.50000	0.0820482	0.016258	0.0033936	-0.016364
AN	Line 40	38.90000	20.50000	-0.50000	0.0	0.0	0.0	0.0
	0.83442	38.97500	20.62500	-0.50000	0.0	0.0	0.0	0.0
	1.6686	37.25000	20.75000	-0.50000	0.0	0.0	0.0	0.0
	2.5032	36.42500	20.87500	-0.50000	0.0	0.0	0.0	0.0
	3.3377	35.60000	21.00000	-0.50000	0.0	0.0	0.0	0.0
AO	Line 41	35.60000	21.00000	-0.50000	0.0	0.0	0.0	0.0
	0.83931	35.78000	21.83333	-0.50000	883.78E-6	0.0033098	0.0010953	0.0033915
	1.6786	35.90000	22.66667	-0.50000	0.077776	0.26657	0.041992	-0.0017633
	2.5179	35.90000	23.50000	-0.50000	0.16889	0.52918	0.10245	-0.54554
AP	Line 42	35.90000	23.50000	-0.50000	0.16889	0.52918	0.10245	-0.083648
	0.89107	35.02000	23.64000	-0.50000	0.22460	0.43033	0.082481	-0.15420
	1.7821	34.14000	23.78000	-0.50000	0.21919	0.29719	0.056957	-0.16978
	2.6732	33.26000	23.92000	-0.50000	0.19042	0.14952	0.032681	-0.12341
	3.5643	32.38000	24.06000	-0.50000	0.023937	0.019741	0.0058934	-0.020538
AQ	Line 43	31.50000	24.20000	-0.50000	0.0	0.0	0.0	0.0
	0.98995	31.36000	23.22000	-0.50000	0.0	0.0	0.0	0.0
	1.9799	31.22000	22.24000	-0.50000	0.0	0.0	0.0	0.0
	2.9698	31.08000	21.26000	-0.50000	0.0	0.0	0.0	0.0
	3.9598	30.94000	20.28000	-0.50000	0.0	0.0	0.0	0.0
AR	Line 44	30.80000	19.30000	-0.50000	0.0	0.0	0.0	0.0
	0.94130	35.72222	13.33333	-0.50000	0.0	0.0	0.0	0.0
	1.8826	35.84444	14.26667	-0.50000	0.0	0.0	0.0	0.0
	2.8239	35.96667	15.20000	-0.50000	0.0	0.0	0.0	0.0
	3.7652	36.08889	16.13333	-0.50000	0.0	0.0	0.0	0.0
	4.7065	36.21111	17.06667	-0.50000	0.0	0.0	0.0	0.0
	5.6478	36.33333	18.00000	-0.50000	0.0	0.0	0.0	0.0
	6.5891	36.45556	18.93333	-0.50000	0.0	0.0	0.0	0.0
	7.5304	36.57778	19.86667	-0.50000	0.0	0.0	0.0	0.0
	8.4717	36.70000	20.80000	-0.50000	0.0	0.0	0.0	0.0
AS	Line 45	44.70000	9.30000	-0.50000	0.0	0.0	0.0	0.0
	0.90683	44.81111	10.20000	-0.50000	0.0	0.0	0.0	0.0
	1.8137	44.92222	11.10000	-0.50000	0.0	0.0	0.0	0.0
	2.7205	45.03333	12.00000	-0.50000	0.0	0.0	0.0	0.0
	3.6273	45.14444	12.90000	-0.50000	0.0	0.0	0.0	0.0
	4.5342	45.25556	13.80000	-0.50000	0.0	0.0	0.0	0.0
	5.4410	45.36667	14.70000	-0.50000	0.0	0.0	0.0	0.0
	6.3478	45.47778	15.60000	-0.50000	0.0	0.0	0.0	0.0
	7.2547	45.58889	16.50000	-0.50000	0.0	0.0	0.0	0.0
	8.1615	45.70000	17.40000	-0.50000	0.0	0.0	0.0	0.0
AT	Line 46	54.50000	10.00000	-0.50000	0.0	0.0	0.0	0.0
	0.18461	54.71667	11.83333	-0.50000	0.0	0.0	0.0	0.0
	3.6922	54.93333	13.66667	-0.50000	0.0	0.0	0.0	0.0
	5.5383	55.15000	15.50000	-0.50000	0.0	0.0	0.0	0.0
	7.3844	55.36667	17.33333	-0.50000	0.0	0.0	0.0	0.0
	9.2305	55.58333	19.16667	-0.50000	0.0	0.0	0.0	0.0



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Made by	Date 01-Nov-2016	Checked

Type/No.		Coordinates			Displacements			Angle of	
Name	Dist.	x	y	z	x	y	z	Horizontal displacement	Horizontal displacement
AU	Line 47	11.077	55.80000	21.00000	-0.50000	0.0	0.0	0.0	0.0
		33.10000	38.60000	-2.00000	0.69536	-0.014337	0.15554	-0.69507	-0.024799
	0.88891	32.21250	38.65000	-2.00000	0.39931	-0.0082332	0.062804	-0.39914	-0.014241
	1.7778	31.32500	38.70000	-2.00000	0.10326	-0.0021290	0.017065	-0.10322	-0.0036825
	2.6667	30.43750	38.75000	-2.00000	0.0	0.0	0.0	0.0	0.0
	3.5556	29.55000	38.80000	-2.00000	0.0	0.0	0.0	0.0	0.0
	4.4445	28.66250	38.85000	-2.00000	0.0	0.0	0.0	0.0	0.0
	5.3334	27.77500	38.90000	-2.00000	0.0	0.0	0.0	0.0	0.0
	6.2224	26.88750	38.95000	-2.00000	0.0	0.0	0.0	0.0	0.0
	7.1113	26.00000	39.00000	-2.00000	0.0	0.0	0.0	0.0	0.0
AV	Line 48	26.00000	39.00000	-2.00000	0.0	0.0	0.0	0.0	0.0
	0.92195	25.94000	38.08000	-2.00000	0.0	0.0	0.0	0.0	0.0
	1.8439	25.88000	37.16000	-2.00000	0.0	0.0	0.0	0.0	0.0
	2.7659	25.82000	36.24000	-2.00000	0.0	0.0	0.0	0.0	0.0
	3.6878	25.76000	35.32000	-2.00000	0.0	0.0	0.0	0.0	0.0
	4.6098	25.70000	34.40000	-2.00000	0.0	0.0	0.0	0.0	0.0
	5.5317	25.64000	33.48000	-2.00000	0.0	0.0	0.0	0.0	0.0
	6.4537	25.58000	32.56000	-2.00000	0.0	0.0	0.0	0.0	0.0
	7.3756	25.52000	31.64000	-2.00000	0.0	0.0	0.0	0.0	0.0
	8.2976	25.46000	30.72000	-2.00000	0.0	0.0	0.0	0.0	0.0
AW	Line 49	25.40000	29.80000	-2.00000	0.0	0.0	0.0	0.0	0.0
	1.9202	27.31667	29.68333	-2.00000	0.0	0.0	0.0	0.0	0.0
	3.8404	29.23333	29.56667	-2.00000	0.0	0.0	0.0	0.0	0.0
	5.7606	31.15000	29.45000	-2.00000	0.18050	-0.0022371	0.017819	0.18843	0.0043590
	7.6809	33.06667	29.33333	-2.00000	0.74792	-0.015421	0.18069	0.74747	0.030049
	9.6011	34.98333	29.21667	-2.00000	1.3873	-0.028605	0.77038	1.3865	0.055738
	11.521	36.90000	29.10000	-2.00000	2.0268	-0.041789	1.8599	2.0255	0.081428



GEA LIMITED (GEOTECHNICAL & ENV ASSOC)

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

Job No.	Sheet No.	Rev.
J16180		
Drg. Ref.		
Made by	Date	Checked
	01-Nov-2016	

Problem Type

Problem Type : Tunnelling and Embedded Wall Excavations

Displacement Data

Type	Name	Direction of extrusion	Point/Line/Line for extrusion			No. of intervals across extrusion/line	Extrusion depth	No. of intervals along extrusion	Calculate	Surface type for tunnels
			First point			Second point				
			X [m]	Y [m]	Z(level) [m]	X [m]	Y [m]	Z(level) [m]		
Grid	Grid 1	Global X	0.40000	2.00000	0.00000	-	80.00000	0.00000	350	100.00000
Line	A	-	22.50000	48.10000	-0.50000	25.90000	48.10000	-0.50000	4	-
Line	B	-	25.90000	48.10000	-0.50000	25.90000	45.00000	-0.50000	4	-
Line	C	-	25.90000	45.00000	-0.50000	30.50000	44.90000	-0.50000	5	-
Line	D	-	30.50000	44.90000	-0.50000	30.40000	50.30000	-0.50000	6	-
Line	E	-	30.40000	50.30000	-0.50000	32.90000	50.30000	-0.50000	3	-
Line	F	-	32.90000	50.30000	-0.50000	33.00000	59.60000	-0.50000	10	-
Line	G	-	33.00000	59.60000	-0.50000	28.00000	59.60000	-0.50000	5	-
Line	H	-	28.00000	59.60000	-0.50000	28.10000	56.90000	-0.50000	3	-
Line	I	-	28.10000	56.90000	-0.50000	20.90000	57.00000	-0.50000	8	-
Line	J	-	33.00000	59.50000	-0.50000	52.50000	59.50000	-0.50000	10	-
Line	K	-	33.00000	52.20000	-0.50000	41.90000	52.20000	-0.50000	9	-
Line	L	-	37.70000	59.40000	-0.50000	37.70000	52.20000	-0.50000	8	-
Line	M	-	42.00000	59.50000	-1.50000	41.90000	52.20000	-1.50000	8	-
Line	N	-	45.50000	53.30000	-4.00000	45.50000	59.40000	-4.00000	7	-
Line	O	-	37.70000	52.20000	-0.68000	37.70000	47.60000	-0.68000	5	-
Line	P	-	45.50000	53.30000	-1.85000	45.50000	47.70000	-1.85000	6	-
Line	Q	-	41.90000	52.20000	-0.65000	41.90000	47.70000	-0.65000	5	-
Line	R	-	33.00000	50.30000	-0.50000	32.60000	42.90000	-0.50000	8	-
Line	S	-	54.40000	58.50000	-0.50000	73.00000	33.70000	-0.50000	16	-
Line	T	-	45.50000	53.30000	-0.50000	68.90000	23.70000	-0.50000	19	-
Line	U	-	63.00000	47.00000	-0.50000	55.10000	41.10000	-0.50000	10	-
Line	V	-	55.10000	41.10000	-0.50000	52.20000	38.90000	-0.50000	4	-
Line	W	-	52.20000	38.90000	-1.70000	52.90000	38.00000	-1.70000	2	-
Line	X	-	66.40000	42.50000	-0.50000	58.60000	36.70000	-0.50000	10	-
Line	Y	-	58.60000	36.70000	-1.40000	55.70000	34.50000	-1.40000	4	-
Line	Z	-	69.70000	38.10000	-0.50000	62.00000	32.40000	-0.50000	10	-
Line	AA	-	62.00000	32.40000	-1.40000	59.00000	30.30000	-1.40000	4	-
Line	AB	-	73.00000	33.70000	-0.50000	65.30000	28.20000	-0.50000	9	-
Line	AC	-	65.30000	28.20000	-0.50000	61.20000	25.20000	-0.50000	6	-
Line	AD	-	61.20000	25.20000	-1.46000	53.40000	26.20000	-1.46000	8	-
Line	AE	-	61.20000	25.20000	-0.50000	61.00000	21.90000	-0.50000	4	-
Line	AF	-	50.30000	26.50000	-1.46000	50.00000	23.30000	-1.46000	4	-
Line	AG	-	50.00000	23.30000	-0.50000	67.00000	21.10000	-0.50000	9	-
Line	AH	-	59.00000	20.70000	-0.50000	52.70000	21.40000	-0.50000	7	-
Line	AI	-	52.70000	21.40000	-0.50000	52.00000	16.60000	-0.50000	5	-
Line	AJ	-	52.00000	16.60000	-0.50000	43.10000	17.70000	-0.50000	9	-
Line	AK	-	43.10000	17.70000	-0.50000	43.80000	22.60000	-0.50000	5	-
Line	AL	-	43.80000	22.60000	-0.50000	39.10000	23.20000	-0.50000	5	-
Line	AM	-	39.10000	23.20000	-0.50000	38.90000	20.50000	-0.50000	3	-
Line	AN	-	38.90000	20.50000	-0.50000	35.60000	21.00000	-0.50000	4	-
Line	AO	-	35.60000	21.00000	-0.50000	35.90000	23.50000	-0.50000	3	-
Line	AP	-	35.90000	23.50000	-0.50000	31.50000	24.20000	-0.50000	5	-
Line	AQ	-	31.50000	24.20000	-0.50000	30.80000	19.30000	-0.50000	5	-
Line	AR	-	35.60000	12.40000	-0.50000	36.70000	20.80000	-0.50000	9	-
Line	AS	-	44.70000	9.30000	-0.50000	45.70000	17.40000	-0.50000	9	-
Line	AT	-	54.50000	10.00000	-0.50000	55.80000	21.00000	-0.50000	6	-
Line	AU	-	33.10000	38.00000	-2.00000	26.00000	39.00000	-2.00000	8	-
Line	AV	-	26.00000	39.00000	-2.00000	25.40000	29.80000	-2.00000	10	-
Line	AW	-	25.40000	29.80000	-2.00000	36.90000	29.10000	-2.00000	6	-

Vertical Ground Movement Curves

Curve Name: Installation of planar diaphragm wall in stiff clay (CIRIA 500 Fig. 2.9(b))
Coordinates: [Distance from wall / wall depth or max. excavation depth (x), Depth / wall depth or max. excavation depth (y), Settlement / wall depth or max. excavation depth (z) (%)]
[0.000,0.000,0.050][0.050,0.000,0.047][0.100,0.000,0.043][0.150,0.000,0.040]
[0.200,0.000,0.037][0.250,0.000,0.034][0.300,0.000,0.031][0.350,0.000,0.028]
[0.400,0.000,0.025][0.450,0.000,0.022][0.500,0.000,0.020][0.550,0.000,0.018]
[0.600,0.000,0.016][0.650,0.000,0.014][0.700,0.000,0.012][0.750,0.000,0.010]
[0.800,0.000,0.008][0.850,0.000,0.007][0.900,0.000,0.006][0.950,0.000,0.005]
[1.000,0.000,0.004][1.050,0.000,0.003][1.100,0.000,0.003][1.150,0.000,0.002]
[1.200,0.000,0.002][1.250,0.000,0.001][1.300,0.000,0.001][1.350,0.000,0.001]
[1.400,0.000,0.001][1.450,0.000,0.000][1.500,0.000,0.000]
Curve Fitting 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:

Horizontal Ground Movement Curves

Curve Name: Installation of planar diaphragm wall in stiff clay (CIRIA 500 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:

Polygonal Excavations

Excavation Name: Wall Installation
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	p1 p2*	d p1 p2*
				[m]	[%] [%]	[m] [%] [%]
1	37.400	28.200	-4.4000	No	- -	- -
2	50.100	26.600	-4.4000	No	- -	- -
3	45.500	47.600	-4.4000	No	- -	- -
4	37.800	47.600	-4.4000	No	- -	- -
Side	Corner 1		Corner 2		Ground Movement Curve	
	x	y	x	y	Vertical	Horizontal
	[m]	[m]	[m]	[m]		



GEA LIMITED (GEOTECHNICAL & ENV ASSOC)

Rear of 159-163 King's Cross Road, London WC1X 9BN
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Job No.	Sheet No.	Rev.
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Made by	Date	Checked
	01-Nov-2016	

Side	Corner 1		Corner 2		Ground Movement Curve	
	X [m]	Y [m]	X [m]	Y [m]	Vertical	Horizontal
1	37.400	28.200	50.100	26.600	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))
2	50.100	26.600	45.500	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))
3	45.500	47.600	37.800	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))
4	37.800	47.600	37.400	28.200	Installation of planar diaphragm wall in stiff clay (CIRIA 580 Fig. 2.9(b))	Installation of planar diaphragm wall in stiff clay (CIRIA 580 Fig. 2.9(a))

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]		[mm]			
A		A	0.00000	3.39900	0.0	0.10000	Burland Strain Limits	0.20000	2.6000
B		B	0.00000	3.09900	0.0	0.10000	Burland Strain Limits	0.20000	2.6000
C		C	0.00000	4.60000	0.0	0.10000	Burland Strain Limits	0.20000	2.6000
D		D	0.00000	5.39900	0.0	0.10000	Burland Strain Limits	0.20000	2.6000
E		E	0.00000	2.49900	0.0	0.10000	Burland Strain Limits	0.20000	2.6000
F		F	0.00000	9.29954	0.0	0.10000	Burland Strain Limits	0.20000	2.6000
G		G	0.00000	4.99900	0.0	0.10000	Burland Strain Limits	0.20000	2.6000
H		H	0.00000	2.70005	0.0	0.10000	Burland Strain Limits	0.20000	2.6000
I		I	0.00000	7.19969	0.0	0.10000	Burland Strain Limits	0.20000	2.6000
J		J	0.00000	19.49900	0.0	0.10000	Burland Strain Limits	0.20000	2.6000
K		K	0.00000	8.89900	0.0	0.10000	Burland Strain Limits	0.20000	2.6000
L		L	0.00000	7.19900	0.0	0.10000	Burland Strain Limits	0.20000	2.6000
M		M	0.00000	7.29900	0.0	0.10000	Burland Strain Limits	0.20000	2.6000
N		N	0.00000	0.99900	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		P	0.00000	5.59900	0.0	0.10000	Burland Strain Limits	0.20000	2.6000
Q	Sub #	Q	0.00000	4.49900	0.0	0.10000	Burland Strain Limits	0.20000	2.6000
R		R	0.00000	7.40000	0.0	0.10000	Burland Strain Limits	0.20000	2.6000
S		S	0.00000	39.99900	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	9.71900	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	5.87935	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	3.21393	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		AI	0.00000	4.84977	0.0	0.10000	Burland Strain Limits	0.20000	2.6000
AJ		AJ	0.00000	8.96672	0.0	0.10000	Burland Strain Limits	0.20000	2.6000
AK		AK	0.00000	4.94875	0.0	0.10000	Burland Strain Limits	0.20000	2.6000
AL		AL	0.00000	4.73714	0.0	0.10000	Burland Strain Limits	0.20000	2.6000
AM		AM	0.00000	2.70640	0.0	0.10000	Burland Strain Limits	0.20000	2.6000
AN		AN	0.00000	3.33666	0.0	0.10000	Burland Strain Limits	0.20000	2.6000
AO		AO	0.00000	2.51694	0.0	0.10000	Burland Strain Limits	0.20000	2.6000
AP		AP	0.00000	4.45433	0.0	0.10000	Burland Strain Limits	0.20000	2.6000
AQ		AQ	0.00000	8.94875	0.0	0.10000	Burland Strain Limits	0.20000	2.6000
AR		AR	0.00000	8.47072	0.0	0.10000	Burland Strain Limits	0.20000	2.6000
AS		AS	0.00000	8.16049	0.0	0.10000	Burland Strain Limits	0.20000	2.6000
AT		AT	0.00000	11.07555	0.0	0.10000	Burland Strain Limits	0.20000	2.6000
AU		AU	0.00000	7.11026	0.0	0.10000	Burland Strain Limits	0.20000	2.6000
AV		AV	0.00000	9.21854	0.0	0.10000	Burland Strain Limits	0.20000	2.6000
AW		AW	0.00000	11.52028	0.0	0.10000	Burland Strain Limits	0.20000	2.6000

Specific Structures - Bending Parameters

Structure Name	Sub-Structure Name	Height	Default Properties	Hogging			Sagging		
				2nd Moment of Area (per unit width)	Distance of Bending Strain from N.A.	Distance of N.A. from Edge of Beam in Tension	2nd Moment of Area (per unit width)	Distance of Bending Strain from N.A.	Distance of N.A. from Edge of Beam in Tension
				[m ³]	[m]		[m ³]	[m]	
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		8.5000	Yes	204.71	8.5000	8.5000	51.177	4.2500	4.2500
K		8.5000	Yes	204.71	8.5000	8.5000	51.177	4.2500	4.2500
L		8.5000	Yes	204.71	8.5000	8.5000	51.177	4.2500	4.2500
M		9.5000	Yes	285.79	9.5000	9.5000	71.448	4.7500	4.7500
N		12.000	Yes	576.00	12.000	12.000	144.00	6.0000	6.0000
O		3.6500	Yes	16.612	3.6500	3.6500	4.1530	1.8400	1.8400
P	Sub #	4.8500	Yes	38.028	4.8500	4.8500	9.5070	2.4250	2.4250
Q		3.6500	Yes	16.209	3.6500	3.6500	4.0523	1.8250	1.8250
R		3.5000	Yes	14.292	3.5000	3.5000	3.5729	1.7500	1.7500
S		8.5000	Yes	204.71	8.5000	8.5000	51.177	4.2500	4.2500
T		8.5000	Yes	204.71	8.5000	8.5000	51.177	4.2500	4.2500
U		8.5000	Yes	204.71	8.5000	8.5000	51.177	4.2500	4.2500
V		6.5000	Yes	91.542	6.5000	6.5000	22.885	3.2500	3.2500
W		7.7000	Yes	152.18	7.7000	7.7000	38.044	3.8500	3.8500
X		8.5000	Yes	204.71	8.5000	8.5000	51.177	4.2500	4.2500
Y		7.4000	Yes	135.07	7.4000	7.4000	33.769	3.7000	3.7000
Z		8.5000	Yes	204.71	8.5000	8.5000	51.177	4.2500	4.2500
AA		7.4000	Yes	135.07	7.4000	7.4000	33.769	3.7000	3.7000
AB		8.5000	Yes	204.71	8.5000	8.5000	51.177	4.2500	4.2500
AC		3.5000	Yes	14.292	3.5000	3.5000	3.5729	1.7500	1.7500
AD		4.4600	Yes	29.572	4.4600	4.4600	7.3930	2.2300	2.2300
AE		3.5000	Yes	14.292	3.5000	3.5000	3.5729	1.7500	1.7500
AF		4.4600	Yes	29.572	4.4600	4.4600	7.3930	2.2300	2.2300
AG		3.5000	Yes	14.292	3.5000	3.5000	3.5729	1.7500	1.7500
AH		15.500	Yes	1241.3	15.500	15.500	310.32	7.7500	7.7500
AI		15.500	Yes	1241.3	15.500	15.500	310.32	7.7500	7.7500
AJ		15.500	Yes	1241.3	15.500	15.500	310.32	7.7500	7.7500
AK		15.500	Yes	1241.3	15.500	15.500	310.32	7.7500	7.7500



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Made by	Date 01-Nov-2016	Checked

Structure Name	Sub-Structure Name	Height	Default Properties	Hogging			Sagging		
				2nd Moment of Area	Distance of Bending	Distance of N.A.	2nd Moment of Area	Distance of Bending	Distance of N.A.
AL		15.500	Yes	1241.3	15.500	15.500	310.32	7.7500	7.7500
AM		15.500	Yes	1241.3	15.500	15.500	310.32	7.7500	7.7500
AN		15.500	Yes	1241.3	15.500	15.500	310.32	7.7500	7.7500
AO		15.500	Yes	1241.3	15.500	15.500	310.32	7.7500	7.7500
AP		15.500	Yes	1241.3	15.500	15.500	310.32	7.7500	7.7500
AQ		15.500	Yes	1241.3	15.500	15.500	310.32	7.7500	7.7500
AR		15.500	Yes	1241.3	15.500	15.500	310.32	7.7500	7.7500
AS		15.500	Yes	1241.3	15.500	15.500	310.32	7.7500	7.7500
AT		15.500	Yes	1241.3	15.500	15.500	310.32	7.7500	7.7500
AU		4.6000	Yes	32.445	4.6000	4.6000	8.1113	2.3000	2.3000
AV		4.6000	Yes	32.445	4.6000	4.6000	8.1113	2.3000	2.3000
AW		4.6000	Yes	32.445	4.6000	4.6000	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	Length	Curvature	Combined Segment
No structures have segments combined.						

Specific Building Damage Results - Horizontal Displacements

Structure: A | Sub-structure:

Dist.	Coordinates			Displacements	
	x	y	z	Horizontal displacement along the Line	Horizontal displacement perpendicular to Line
	[m]	[m]	[m]	[mm]	[mm]
0.0	22.50000	48.10000	-0.50000	0.0	0.0
0.85000	23.35000	48.10000	-0.50000	0.0	0.0
1.7000	24.20000	48.10000	-0.50000	0.0	0.0
2.5500	25.05000	48.10000	-0.50000	0.0	0.0
3.4000	25.90000	48.10000	-0.50000	0.0	0.0

Structure: B | Sub-structure:

Dist.	Coordinates			Displacements	
	x	y	z	Horizontal displacement along the Line	Horizontal displacement perpendicular to Line
	[m]	[m]	[m]	[mm]	[mm]
0.0	25.90000	48.10000	-0.50000	0.0	0.0
0.77500	25.90000	47.32500	-0.50000	0.0	0.0
1.5500	25.90000	46.55000	-0.50000	0.0	0.0
2.3250	25.90000	45.77500	-0.50000	0.0	0.0
3.1000	25.90000	45.00000	-0.50000	0.0	0.0

Structure: C | Sub-structure:

Dist.	Coordinates			Displacements	
	x	y	z	Horizontal displacement along the Line	Horizontal displacement perpendicular to Line
	[m]	[m]	[m]	[mm]	[mm]
0.0	25.90000	45.00000	-0.50000	0.0	0.0
0.92022	26.82000	44.98000	-0.50000	0.0	0.0
1.8404	27.74000	44.96000	-0.50000	0.0	0.0
2.7607	28.66000	44.94000	-0.50000	0.0	0.0
3.6809	29.58000	44.92000	-0.50000	0.0	0.0
4.6011	30.50000	44.90000	-0.50000	0.0	0.0

Structure: D | Sub-structure:

Dist.	Coordinates			Displacements	
	x	y	z	Horizontal displacement along the Line	Horizontal displacement perpendicular to Line
	[m]	[m]	[m]	[mm]	[mm]
0.0	30.50000	44.90000	-0.50000	0.0	0.0
0.90015	30.48333	45.80000	-0.50000	0.0	0.0
1.8003	30.46667	46.70000	-0.50000	0.0	0.0
2.7005	30.45000	47.60000	-0.50000	0.0	0.0
3.6006	30.43333	48.50000	-0.50000	0.0	0.0
4.5008	30.41667	49.40000	-0.50000	0.0	0.0
5.4009	30.40000	50.30000	-0.50000	0.0	0.0

Structure: E | Sub-structure:

Dist.	Coordinates			Displacements	
	x	y	z	Horizontal displacement along the Line	Horizontal displacement perpendicular to Line
	[m]	[m]	[m]	[mm]	[mm]
0.0	30.40000	50.30000	-0.50000	0.0	0.0
0.83333	31.23333	50.30000	-0.50000	0.0	0.0
1.6667	32.06667	50.30000	-0.50000	0.079228	-0.037311
2.5000	32.90000	50.30000	-0.50000	0.29351	-0.16173

Structure: F | Sub-structure:

Dist.	Coordinates			Displacements	
	x	y	z	Horizontal displacement along the Line	Horizontal displacement perpendicular to Line
	[m]	[m]	[m]	[mm]	[mm]
0.0	32.90000	50.30000	-0.50000	0.29351	-0.16173
0.93005	32.91000	51.23000	-0.50000	0.13648	-0.10131
1.8601	32.92000	52.16000	-0.50000	0.0	0.0
2.7902	32.93000	53.09000	-0.50000	0.0	0.0
3.7202	32.94000	54.02000	-0.50000	0.0	0.0
4.6503	32.95000	54.95000	-0.50000	0.0	0.0
5.5803	32.96000	55.88000	-0.50000	0.0	0.0
6.5104	32.97000	56.81000	-0.50000	0.0	0.0
7.4404	32.98000	57.74000	-0.50000	0.0	0.0
8.3705	32.99000	58.67000	-0.50000	0.0	0.0
9.3005	33.00000	59.60000	-0.50000	0.0	0.0

Structure: G | Sub-structure:



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Drg. Ref.		
Made by	Date 01-Nov-2016	Checked

Dist.	Coordinates			Displacements		
	x	y	z	x	y	Horizontal displacement along the line
						Horizontal displacement perpendicular to line
Dist.	x	y	z	x	y	Horizontal displacement along the line
						Horizontal displacement perpendicular to line
[m]	[m]	[m]	[m]	[mm]	[mm]	[mm]
0.0	33.00000	59.60000	-0.50000	0.0	0.0	0.0
1.0000	32.00000	59.60000	-0.50000	0.0	0.0	0.0
2.0000	31.00000	59.60000	-0.50000	0.0	0.0	0.0
3.0000	30.00000	59.60000	-0.50000	0.0	0.0	0.0
4.0000	29.00000	59.60000	-0.50000	0.0	0.0	0.0
5.0000	28.00000	59.60000	-0.50000	0.0	0.0	0.0

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]
0.0	28.00000	59.60000	-0.50000	0.0	0.0	0.0
0.90062	28.03333	58.70000	-0.50000	0.0	0.0	0.0
1.8012	28.06667	57.80000	-0.50000	0.0	0.0	0.0
2.7019	28.10000	56.90000	-0.50000	0.0	0.0	0.0

Structure: I | 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]
0.0	28.10000	56.90000	-0.50000	0.0	0.0	0.0
0.90009	27.20000	56.91250	-0.50000	0.0	0.0	0.0
1.8002	26.30000	56.92500	-0.50000	0.0	0.0	0.0
2.7003	25.40000	56.93750	-0.50000	0.0	0.0	0.0
3.6003	24.50000	56.95000	-0.50000	0.0	0.0	0.0
4.5004	23.60000	56.96250	-0.50000	0.0	0.0	0.0
5.4005	22.70000	56.97500	-0.50000	0.0	0.0	0.0
6.3006	21.80000	56.98750	-0.50000	0.0	0.0	0.0
7.2007	20.90000	57.00000	-0.50000	0.0	0.0	0.0

Structure: J | 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]
0.0	33.00000	59.50000	-0.50000	0.0	0.0	0.0
1.9500	34.95000	59.50000	-0.50000	0.0	0.0	0.0
3.9000	36.90000	59.50000	-0.50000	0.0	0.0	0.0
5.8500	38.85000	59.50000	-0.50000	0.0	0.0	0.0
7.8000	40.80000	59.50000	-0.50000	0.0	0.0	0.0
9.7500	42.75000	59.50000	-0.50000	0.0	0.0	0.0
11.700	44.70000	59.50000	-0.50000	0.0	0.0	0.0
13.650	46.65000	59.50000	-0.50000	0.0	0.0	0.0
15.600	48.60000	59.50000	-0.50000	0.0	0.0	0.0
17.550	50.55000	59.50000	-0.50000	0.0	0.0	0.0
19.500	52.50000	59.50000	-0.50000	0.0	0.0	0.0

Structure: K | 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]
0.0	33.00000	52.20000	-0.50000	0.0	0.0	0.0
0.98889	33.98889	52.20000	-0.50000	0.13320	-0.16077	0.13320
1.9778	34.97778	52.20000	-0.50000	0.20975	-0.34187	0.20975
2.9667	35.96667	52.20000	-0.50000	0.28339	-0.51034	0.28339
3.9556	36.95556	52.20000	-0.50000	0.11575	-0.63051	0.11575
4.9444	37.94444	52.20000	-0.50000	0.0	-0.66667	0.0
5.9333	38.93333	52.20000	-0.50000	0.0	-0.66667	0.0
6.9222	39.92222	52.20000	-0.50000	0.0	-0.66667	0.0
7.9111	40.91111	52.20000	-0.50000	0.0	-0.66667	0.0
8.9000	41.90000	52.20000	-0.50000	0.0	-0.66667	0.0

Structure: L | 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]
0.0	37.70000	59.40000	-0.50000	0.0	0.0	0.0
0.90000	37.70000	58.50000	-0.50000	0.0	0.0	0.0
1.8000	37.70000	57.60000	-0.50000	0.0	0.0	0.0
2.7000	37.70000	56.70000	-0.50000	0.0	0.0	0.0
3.6000	37.70000	55.80000	-0.50000	0.0	0.0	0.0
4.5000	37.70000	54.90000	-0.50000	0.0	0.0	0.0
5.4000	37.70000	54.00000	-0.50000	0.0010375	-0.066398	0.066398
6.3000	37.70000	53.10000	-0.50000	0.0066601	-0.36630	0.36630
7.2000	37.70000	52.20000	-0.50000	0.014481	-0.66615	0.66615

Structure: M | 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]
0.0	42.00000	59.50000	-1.50000	0.0	0.0	0.0
0.91259	41.98750	58.58750	-1.50000	0.0	0.0	0.0
1.8252	41.97500	57.67500	-1.50000	0.0	0.0	0.0
2.7378	41.96250	56.76250	-1.50000	0.0	0.0	0.0
3.6503	41.95000	55.85000	-1.50000	0.0	0.0	0.0
4.5629	41.93750	54.93750	-1.50000	0.0	0.0	0.0
5.4755	41.92500	54.02500	-1.50000	0.0	-0.058333	0.058328
6.3881	41.91250	53.11250	-1.50000	0.0	-0.36247	0.36247
7.3007	41.90000	52.20000	-1.50000	0.0	-0.66667	0.66666

Structure: N | Sub-structure:



GEA LIMITED (GEOTECHNICAL & ENV ASSOC)

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

Job No.	Sheet No.	Rev.
J16180		
Drg. Ref.		
Made by	Date 01-Nov-2016	Checked

Dist.	Coordinates			Displacements		
	x	y	z	x	y	
						Horizontal displacement along the line
						Horizontal displacement perpendicular to Line
	[m]	[m]	[m]	[mm]	[mm]	[mm]
0.0	45.50000	53.30000	-4.00000	0.0	-0.30000	-0.30000
0.87143	45.50000	54.17143	-4.00000	0.0	-0.0095238	-0.0095238
1.7429	45.50000	55.04286	-4.00000	0.0	0.0	0.0
2.6143	45.50000	55.91429	-4.00000	0.0	0.0	0.0
3.4857	45.50000	56.78571	-4.00000	0.0	0.0	0.0
4.3571	45.50000	57.65714	-4.00000	0.0	0.0	0.0
5.2286	45.50000	58.52857	-4.00000	0.0	0.0	0.0
6.1000	45.50000	59.40000	-4.00000	0.0	0.0	0.0

Structure: 0 | Sub-structure:

Dist.	Coordinates			Displacements		
	x	y	z	x	y	
						Horizontal displacement along the line
						Horizontal displacement perpendicular to Line
	[m]	[m]	[m]	[mm]	[mm]	[mm]
0.0	37.70000	52.20000	-0.68000	0.014481	-0.66615	0.66615
0.92000	37.70000	51.28000	-0.68000	0.026427	-0.97252	0.97252
1.6400	37.70000	51.36000	-0.68000	0.046325	-1.2706	1.2706
2.7600	37.70000	49.44000	-0.68000	0.086056	-1.5834	1.5834
3.6800	37.70000	48.52000	-0.68000	0.20440	-1.8805	1.8805
4.6000	37.70000	47.60000	-0.68000	2.1662	-0.044664	0.044664

Structure: P | Sub-structure: Sub #

Dist.	Coordinates			Displacements		
	x	y	z	x	y	
						Horizontal displacement along the line
						Horizontal displacement perpendicular to Line
	[m]	[m]	[m]	[mm]	[mm]	[mm]
0.0	45.50000	53.30000	-1.85000	0.0	-0.30000	0.30000
0.93333	45.50000	52.36667	-1.85000	0.0	-0.61111	0.61111
1.8667	45.50000	51.43333	-1.85000	0.0	-0.92222	0.92222
2.8000	45.50000	50.50000	-1.85000	0.0	-1.2333	1.2333
3.7333	45.50000	49.56667	-1.85000	0.0	-1.5444	1.5444
4.6667	45.50000	48.63333	-1.85000	0.0	-1.8556	1.8556
5.6000	45.50000	47.70000	-1.85000	0.0	-2.1667	2.1667

Structure: Q | Sub-structure:

Dist.	Coordinates			Displacements		
	x	y	z	x	y	
						Horizontal displacement along the line
						Horizontal displacement perpendicular to Line
	[m]	[m]	[m]	[mm]	[mm]	[mm]
0.0	41.90000	52.20000	-0.65000	0.0	-0.66667	0.66667
0.90000	41.90000	51.30000	-0.65000	0.0	-0.96667	0.96667
1.8000	41.90000	50.40000	-0.65000	0.0	-1.2667	1.2667
2.7000	41.90000	49.50000	-0.65000	0.0	-1.5667	1.5667
3.6000	41.90000	48.60000	-0.65000	0.0	-1.8667	1.8667
4.5000	41.90000	47.70000	-0.65000	0.0	-2.1667	2.1667

Structure: R | Sub-structure:

Dist.	Coordinates			Displacements		
	x	y	z	x	y	
						Horizontal displacement along the line
						Horizontal displacement perpendicular to Line
	[m]	[m]	[m]	[mm]	[mm]	[mm]
0.0	33.00000	50.30000	-0.50000	0.31747	-0.17857	0.16118
0.92635	32.95000	49.37500	-0.50000	0.44932	-0.16444	0.13995
1.8527	32.90000	48.45000	-0.50000	0.53429	-0.09264	0.063719
2.7791	32.85000	47.52500	-0.50000	0.55075	-0.011356	-0.018388
3.7054	32.80000	46.60000	-0.50000	0.54044	-0.011143	-0.018044
4.6318	32.75000	45.67500	-0.50000	0.53014	-0.010931	-0.017700
5.5581	32.70000	44.75000	-0.50000	0.51983	-0.010718	-0.017356
6.4845	32.65000	43.82500	-0.50000	0.50953	-0.010506	-0.017012
7.4108	32.60000	42.90000	-0.50000	0.49922	-0.010293	-0.016667

Structure: S | Sub-structure:

Dist.	Coordinates			Displacements		
	x	y	z	x	y	
						Horizontal displacement along the line
						Horizontal displacement perpendicular to Line
	[m]	[m]	[m]	[mm]	[mm]	[mm]
0.0	54.40000	58.50000	-0.50000	0.0	0.0	0.0
1.9375	55.56250	56.95000	-0.50000	0.0	0.0	0.0
3.8750	56.72500	55.40000	-0.50000	0.0	0.0	0.0
5.8125	57.88750	53.85000	-0.50000	0.0	0.0	0.0
7.7500	59.05000	52.30000	-0.50000	0.0	0.0	0.0
9.6875	60.21250	50.75000	-0.50000	0.0	0.0	0.0
11.625	61.37500	49.20000	-0.50000	0.0	0.0	0.0
13.562	62.53750	47.65000	-0.50000	0.0	0.0	0.0
15.500	63.70000	46.10000	-0.50000	0.0	0.0	0.0
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	
						Horizontal displacement along the line
						Horizontal displacement perpendicular to Line
	[m]	[m]	[m]	[mm]	[mm]	[mm]
0.0	45.50000	53.30000	-0.50000	0.0	-0.30000	0.23534
1.9859	46.73158	51.74211	-0.50000	-0.21647	-0.72806	0.43690
3.9718	47.96316	50.18421	-0.50000	-0.69684	-0.73198	0.14137
5.9577	49.19474	48.62632	-0.50000	-0.60816	-0.24671	-0.35726
7.9436	50.42632	47.06842	-0.50000	-0.61916	-0.13563	-0.27758
9.9295	51.65789	45.51053	-0.50000	-0.33597	-0.073594	-0.15062
11.915	52.88947	43.95263	-0.50000	-0.052787	-0.011563	-0.023665
13.901	54.12105	42.39474	-0.50000	0.0	0.0	0.0



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Job No.	Sheet No.	Rev.
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Made by	Date 01-Nov-2016	Checked

Dist.	Coordinates			x	y	Displacements	
	x	y	z			Horizontal displacement along the	Horizontal displacement perpendicular
15.887	55.35263	40.83684	-0.50000	0.0	0.0	0.0	0.0
17.873	56.58421	39.27895	-0.50000	0.0	0.0	0.0	0.0
19.859	57.81579	37.72105	-0.50000	0.0	0.0	0.0	0.0
21.845	59.04737	36.16316	-0.50000	0.0	0.0	0.0	0.0
23.831	60.27895	34.60526	-0.50000	0.0	0.0	0.0	0.0
25.817	61.51053	33.04737	-0.50000	0.0	0.0	0.0	0.0
27.803	62.74211	31.48947	-0.50000	0.0	0.0	0.0	0.0
29.789	63.97368	29.93158	-0.50000	0.0	0.0	0.0	0.0
31.774	65.20526	28.37368	-0.50000	0.0	0.0	0.0	0.0
33.760	66.43684	26.81579	-0.50000	0.0	0.0	0.0	0.0
35.746	67.66842	25.25789	-0.50000	0.0	0.0	0.0	0.0
37.732	68.90000	23.70000	-0.50000	0.0	0.0	0.0	0.0

Structure: U | Sub-structure:

Dist.	Coordinates			x	y	Displacements	
	x	y	z			Horizontal displacement along the Line	Horizontal displacement perpendicular to Line
[m]	[m]	[m]	[m]	[mm]	[mm]	[mm]	[mm]
0.0	63.00000	47.00000	-0.50000	0.0	0.0	0.0	0.0
0.98600	62.21000	46.41000	-0.50000	0.0	0.0	0.0	0.0
1.9720	61.42000	45.82000	-0.50000	0.0	0.0	0.0	0.0
2.9580	60.63000	45.23000	-0.50000	0.0	0.0	0.0	0.0
3.9440	59.84000	44.64000	-0.50000	0.0	0.0	0.0	0.0
4.9300	59.05000	44.05000	-0.50000	0.0	0.0	0.0	0.0
5.9160	58.26000	43.46000	-0.50000	0.0	0.0	0.0	0.0
6.9020	57.47000	42.87000	-0.50000	0.0	0.0	0.0	0.0
7.8880	56.68000	42.28000	-0.50000	0.0	0.0	0.0	0.0
8.8740	55.89000	41.69000	-0.50000	0.0	0.0	0.0	0.0
9.8600	55.10000	41.10000	-0.50000	0.0	0.0	0.0	0.0

Structure: V | Sub-structure:

Dist.	Coordinates			x	y	Displacements	
	x	y	z			Horizontal displacement along the Line	Horizontal displacement perpendicular to Line
[m]	[m]	[m]	[m]	[mm]	[mm]	[mm]	[mm]
0.0	55.10000	41.10000	-0.50000	0.0	0.0	0.0	0.0
0.91001	54.37500	40.55000	-0.50000	0.0	0.0	0.0	0.0
1.8200	53.65000	40.00000	-0.50000	-0.086276	-0.018899	0.080157	-0.037088
2.7300	52.92500	39.45000	-0.50000	-0.35520	-0.077805	0.33001	-0.15269
3.6401	52.20000	38.90000	-0.50000	-0.62412	-0.13671	0.57986	-0.26829

Structure: W | Sub-structure:

Dist.	Coordinates			x	y	Displacements	
	x	y	z			Horizontal displacement along the Line	Horizontal displacement perpendicular to Line
[m]	[m]	[m]	[m]	[mm]	[mm]	[mm]	[mm]
0.0	52.20000	38.90000	-1.70000	-0.62412	-0.13671	-0.27526	-0.57658
0.57009	52.55000	38.45000	-1.70000	-0.54415	-0.11919	-0.23999	-0.50270
1.1402	52.90000	38.00000	-1.70000	-0.46418	-0.10168	-0.20472	-0.42882

Structure: X | Sub-structure:

Dist.	Coordinates			x	y	Displacements	
	x	y	z			Horizontal displacement along the Line	Horizontal displacement perpendicular to Line
[m]	[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	0.0	0.0	0.0	0.0
2.9160	64.06000	40.76000	-0.50000	0.0	0.0	0.0	0.0
3.8880	63.28000	40.18000	-0.50000	0.0	0.0	0.0	0.0
4.8600	62.50000	39.60000	-0.50000	0.0	0.0	0.0	0.0
5.8320	61.72000	39.02000	-0.50000	0.0	0.0	0.0	0.0
6.8041	60.94000	38.44000	-0.50000	0.0	0.0	0.0	0.0
7.7761	60.16000	37.86000	-0.50000	0.0	0.0	0.0	0.0
8.7481	59.38000	37.28000	-0.50000	0.0	0.0	0.0	0.0
9.7201	58.60000	36.70000	-0.50000	0.0	0.0	0.0	0.0

Structure: Y | Sub-structure:

Dist.	Coordinates			x	y	Displacements	
	x	y	z			Horizontal displacement along the Line	Horizontal displacement perpendicular to Line
[m]	[m]	[m]	[m]	[mm]	[mm]	[mm]	[mm]
0.0	58.60000	36.70000	-1.40000	0.0	0.0	0.0	0.0
0.91001	57.87500	36.15000	-1.40000	0.0	0.0	0.0	0.0
1.8200	57.15000	35.60000	-1.40000	0.0	0.0	0.0	0.0
2.7300	56.42500	35.05000	-1.40000	0.0	0.0	0.0	0.0
3.6401	55.70000	34.50000	-1.40000	0.0	0.0	0.0	0.0

Structure: Z | Sub-structure:

Dist.	Coordinates			x	y	Displacements	
	x	y	z			Horizontal displacement along the Line	Horizontal displacement perpendicular to Line
[m]	[m]	[m]	[m]	[mm]	[mm]	[mm]	[mm]
0.0	60.70000	38.10000	-0.50000	0.0	0.0	0.0	0.0
0.95802	60.93000	37.53000	-0.50000	0.0	0.0	0.0	0.0
1.9160	60.16000	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	0.0	0.0	0.0	0.0
5.7481	65.08000	34.68000	-0.50000	0.0	0.0	0.0	0.0
6.7061	64.31000	34.11000	-0.50000	0.0	0.0	0.0	0.0
7.6642	63.54000	33.54000	-0.50000	0.0	0.0	0.0	0.0
8.6222	62.77000	32.97000	-0.50000	0.0	0.0	0.0	0.0
9.5802	62.00000	32.40000	-0.50000	0.0	0.0	0.0	0.0

Structure: AA | Sub-structure:

Dist.	Coordinates			x	y	Displacements	
	x	y	z			Horizontal displacement along the Line	Horizontal displacement perpendicular to Line
[m]	[m]	[m]	[m]	[mm]	[mm]	[mm]	[mm]



GEA LIMITED (GEOTECHNICAL & ENV ASSOC)

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

Job No.	Sheet No.	Rev.
J16180		
Drg. Ref.		
Made by	Date	Checked
	01-Nov-2016	

Dist.	Coordinates			Displacements	
	x	y	z	x	y
				Horizontal displacement along the	Horizontal displacement perpendicular
0.0	62.00000	32.40000	-1.40000	0.0	0.0
0.91549	61.25000	31.87500	-1.40000	0.0	0.0
1.8310	60.50000	31.35000	-1.40000	0.0	0.0
2.7465	59.75000	30.82500	-1.40000	0.0	0.0
3.6620	59.00000	30.30000	-1.40000	0.0	0.0

Structure: AB | Sub-structure:

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

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]	[mm]	[mm]
0.0	65.30000	28.20000	-0.50000	0.0	0.0
0.84673	64.61667	27.70000	-0.50000	0.0	0.0
1.6935	63.93333	27.20000	-0.50000	0.0	0.0
2.5402	63.25000	26.70000	-0.50000	0.0	0.0
3.3869	62.56667	26.20000	-0.50000	0.0	0.0
4.2336	61.88333	25.70000	-0.50000	0.0	0.0
5.0804	61.20000	25.20000	-0.50000	0.0	0.0

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]	[mm]	[mm]
0.0	61.20000	25.20000	-1.46000	0.0	0.0
0.98298	60.22500	25.32500	-1.46000	0.0	0.0
1.9660	59.25000	25.45000	-1.46000	0.0	0.0
2.9489	58.27500	25.57500	-1.46000	0.0	0.0
3.9319	57.30000	25.70000	-1.46000	0.0	0.0
4.9149	56.32500	25.82500	-1.46000	-0.10815	0.013464
5.8979	55.35000	25.95000	-1.46000	-0.43333	0.053650
6.8809	54.37500	26.07500	-1.46000	-0.75860	0.093161
7.8638	53.40000	26.20000	-1.46000	-1.0840	0.13140

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]	[mm]	[mm]
0.0	61.20000	25.20000	-0.50000	0.0	0.0
0.82651	61.15000	24.37500	-0.50000	0.0	0.0
1.6530	61.10000	23.55000	-0.50000	0.0	0.0
2.4795	61.05000	22.72500	-0.50000	0.0	0.0
3.3061	61.00000	21.90000	-0.50000	0.0	0.0

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]	[mm]	[mm]
0.0	50.30000	26.50000	-1.46000	-1.9011	0.95054
0.80351	50.22500	25.70000	-1.46000	-0.26098	1.8791
1.6070	50.15000	24.90000	-1.46000	-0.048011	1.6324
2.4105	50.07500	24.10000	-1.46000	0.013666	1.3666
3.2140	50.00000	23.30000	-1.46000	0.033303	1.0990

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]	[mm]	[mm]
0.0	50.00000	23.30000	-0.50000	0.033303	1.0990
1.9046	51.88889	23.05556	-0.50000	-0.39495	0.78255
3.8093	53.77778	22.81111	-0.50000	-0.30639	0.31565
5.7139	55.66667	22.56667	-0.50000	0.0	0.0
7.6186	57.55556	22.32222	-0.50000	0.0	0.0
9.5232	59.44444	22.07778	-0.50000	0.0	0.0
11.428	61.33333	21.83333	-0.50000	0.0	0.0
13.332	63.22222	21.58889	-0.50000	0.0	0.0
15.237	65.11111	21.34444	-0.50000	0.0	0.0
17.142	67.00000	21.10000	-0.50000	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]	[mm]	[mm]
0.0	59.00000	20.70000	-0.50000	0.0	0.0
0.90554	58.10000	20.00000	-0.50000	0.0	0.0
1.8111	57.20000	20.90000	-0.50000	0.0	0.0
2.7166	56.30000	21.00000	-0.50000	0.0	0.0
3.6222	55.40000	21.10000	-0.50000	0.0	0.0
4.5277	54.50000	21.20000	-0.50000	0.0	0.0



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Dist.	Coordinates			Displacements		
	x	y	z	x	y	Horizontal displacement along the line Horizontal displacement perpendicular to line
5.4332	53.60000	21.30000	-0.50000	-0.045669	0.069155	0.053026 -0.063689
6.3388	52.70000	21.40000	-0.50000	-0.11720	0.23441	0.14237 -0.22083

Structure: AI | Sub-structure:

Dist.	Coordinates			Displacements		
	x	y	z	x	y	Horizontal displacement along the line Horizontal displacement perpendicular to line
	[m]	[m]	[m]	[mm]	[mm]	[mm]
0.0	52.70000	21.40000	-0.50000	-0.11720	0.23441	-0.21504 -0.14980
0.97015	52.56000	20.44000	-0.50000	0.0	0.0	0.0 0.0
1.9403	52.42000	19.48000	-0.50000	0.0	0.0	0.0 0.0
2.9105	52.28000	18.52000	-0.50000	0.0	0.0	0.0 0.0
3.8806	52.14000	17.56000	-0.50000	0.0	0.0	0.0 0.0
4.8508	52.00000	16.60000	-0.50000	0.0	0.0	0.0 0.0

Structure: AJ | Sub-structure:

Dist.	Coordinates			Displacements		
	x	y	z	x	y	Horizontal displacement along the line Horizontal displacement perpendicular to line
	[m]	[m]	[m]	[mm]	[mm]	[mm]
0.0	52.00000	16.60000	-0.50000	0.0	0.0	0.0 0.0
0.99641	51.01111	16.72222	-0.50000	0.0	0.0	0.0 0.0
1.9928	50.02222	16.84444	-0.50000	0.0	0.0	0.0 0.0
2.9892	49.03333	16.96667	-0.50000	0.0	0.0	0.0 0.0
3.9857	48.04444	17.08889	-0.50000	0.0	0.0	0.0 0.0
4.9821	47.05556	17.21111	-0.50000	0.0	0.0	0.0 0.0
5.9785	46.06667	17.33333	-0.50000	0.0	0.0	0.0 0.0
6.9749	45.07778	17.45556	-0.50000	0.0	0.0	0.0 0.0
7.9713	44.08889	17.57778	-0.50000	0.0	0.0	0.0 0.0
8.9677	43.10000	17.70000	-0.50000	0.0	0.0	0.0 0.0

Structure: AK | Sub-structure:

Dist.	Coordinates			Displacements		
	x	y	z	x	y	Horizontal displacement along the line Horizontal displacement perpendicular to line
	[m]	[m]	[m]	[mm]	[mm]	[mm]
0.0	43.10000	17.70000	-0.50000	0.0	0.0	0.0 0.0
0.98995	43.24000	18.68000	-0.50000	0.0	0.0	0.0 0.0
1.9799	43.38000	19.66000	-0.50000	0.0	0.0	0.0 0.0
2.9698	43.52000	20.64000	-0.50000	0.0	0.0	0.0 0.0
3.9598	43.66000	21.62000	-0.50000	0.035586	0.28246	0.28465 0.0047188
4.9497	43.80000	22.60000	-0.50000	0.076827	0.60981	0.61455 0.010186

Structure: AL | Sub-structure:

Dist.	Coordinates			Displacements		
	x	y	z	x	y	Horizontal displacement along the line Horizontal displacement perpendicular to line
	[m]	[m]	[m]	[mm]	[mm]	[mm]
0.0	43.80000	22.60000	-0.50000	0.076827	0.60981	0.0010134 -0.61463
0.94763	42.85000	22.72000	-0.50000	0.076892	0.61033	0.0010143 -0.61515
1.8953	41.92000	22.84000	-0.50000	0.076957	0.61084	0.0010151 -0.61567
2.8429	40.98000	22.96000	-0.50000	0.077022	0.61136	0.0010160 -0.61619
3.7905	40.04000	23.08000	-0.50000	0.077087	0.61188	0.0010168 -0.61671
4.7381	39.10000	23.20000	-0.50000	0.077152	0.61239	0.0010177 -0.61723

Structure: AM | Sub-structure:

Dist.	Coordinates			Displacements		
	x	y	z	x	y	Horizontal displacement along the line Horizontal displacement perpendicular to line
	[m]	[m]	[m]	[mm]	[mm]	[mm]
0.0	39.10000	23.20000	-0.50000	0.077152	0.61239	-0.61642 0.031703
0.90247	39.03333	22.30000	-0.50000	0.039600	0.31433	0.31639 0.616272
1.8049	38.96667	21.40000	-0.50000	0.0020482	0.016258	-0.016364 841.63E-6
2.7074	38.90000	20.50000	-0.50000	0.0	0.0	0.0 0.0

Structure: AN | Sub-structure:

Dist.	Coordinates			Displacements		
	x	y	z	x	y	Horizontal displacement along the line Horizontal displacement perpendicular to line
	[m]	[m]	[m]	[mm]	[mm]	[mm]
0.0	38.90000	20.50000	-0.50000	0.0	0.0	0.0 0.0
0.83442	38.07500	20.62500	-0.50000	0.0	0.0	0.0 0.0
1.6688	37.25000	20.75000	-0.50000	0.0	0.0	0.0 0.0
2.5032	36.42500	20.87500	-0.50000	0.0	0.0	0.0 0.0
3.3377	35.60000	21.00000	-0.50000	0.0	0.0	0.0 0.0

Structure: AO | Sub-structure:

Dist.	Coordinates			Displacements		
	x	y	z	x	y	Horizontal displacement along the line Horizontal displacement perpendicular to line
	[m]	[m]	[m]	[mm]	[mm]	[mm]
0.0	35.60000	21.00000	-0.50000	0.0	0.0	0.0 0.0
0.83931	35.70000	21.83333	-0.50000	883.78E-6	0.0033098	0.0033915 -483.13E-6
1.6786	35.80000	22.66667	-0.50000	0.077776	0.26898	0.27633 -0.045175
2.5179	35.90000	23.50000	-0.50000	0.16889	0.52918	0.54554 -0.10464

Structure: AP | Sub-structure:

Dist.	Coordinates			Displacements		
	x	y	z	x	y	Horizontal displacement along the line Horizontal displacement perpendicular to line
	[m]	[m]	[m]	[mm]	[mm]	[mm]
0.0	35.90000	23.50000	-0.50000	0.16889	0.52918	-0.083648 -0.54915
0.89197	35.02000	23.64000	-0.50000	0.22460	0.43033	-0.15420 -0.40028
1.7821	34.14000	23.78000	-0.50000	0.21919	0.29719	-0.16978 -0.32793
2.6732	33.26000	23.92000	-0.50000	0.14956	0.15462	-0.12341 -0.17619
3.5643	32.38000	24.06000	-0.50000	0.023937	0.019741	-0.020538 -0.023256



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Made by	Date 01-Nov-2016	Checked

Dist.	Coordinates			Displacements		
	x	y	z	x	y	
						Horizontal displacement along the line
						Horizontal displacement perpendicular to line
4.4553	31.50000	24.20000	-0.50000	0.0	0.0	0.0

Structure: AQ | 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]
0.0	31.50000	24.20000	-0.50000	0.0	0.0	0.0
0.98995	31.36000	23.22000	-0.50000	0.0	0.0	0.0
1.9799	31.22000	22.24000	-0.50000	0.0	0.0	0.0
2.9698	31.08000	21.26000	-0.50000	0.0	0.0	0.0
3.9598	30.94000	20.28000	-0.50000	0.0	0.0	0.0
4.9497	30.80000	19.30000	-0.50000	0.0	0.0	0.0

Structure: AR | 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]
0.0	35.60000	12.40000	-0.50000	0.0	0.0	0.0
0.94130	35.72222	13.33333	-0.50000	0.0	0.0	0.0
1.8826	35.84444	14.26667	-0.50000	0.0	0.0	0.0
2.8239	35.96667	15.20000	-0.50000	0.0	0.0	0.0
3.7652	36.08889	16.13333	-0.50000	0.0	0.0	0.0
4.7065	36.21111	17.06667	-0.50000	0.0	0.0	0.0
5.6478	36.33333	18.00000	-0.50000	0.0	0.0	0.0
6.5891	36.45556	18.93333	-0.50000	0.0	0.0	0.0
7.5304	36.57778	19.86667	-0.50000	0.0	0.0	0.0
8.4717	36.70000	20.80000	-0.50000	0.0	0.0	0.0

Structure: AS | 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]
0.0	44.70000	9.30000	-0.50000	0.0	0.0	0.0
0.90683	44.81111	10.20000	-0.50000	0.0	0.0	0.0
1.8137	44.92222	11.10000	-0.50000	0.0	0.0	0.0
2.7205	45.03333	12.00000	-0.50000	0.0	0.0	0.0
3.6273	45.14444	12.90000	-0.50000	0.0	0.0	0.0
4.5342	45.25556	13.80000	-0.50000	0.0	0.0	0.0
5.4410	45.36667	14.70000	-0.50000	0.0	0.0	0.0
6.3478	45.47778	15.60000	-0.50000	0.0	0.0	0.0
7.2547	45.58889	16.50000	-0.50000	0.0	0.0	0.0
8.1615	45.70000	17.40000	-0.50000	0.0	0.0	0.0

Structure: AT | 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]
0.0	54.50000	10.00000	-0.50000	0.0	0.0	0.0
1.8461	54.71667	11.83333	-0.50000	0.0	0.0	0.0
3.6922	54.93333	13.66667	-0.50000	0.0	0.0	0.0
5.5383	55.15000	15.50000	-0.50000	0.0	0.0	0.0
7.3844	55.36667	17.33333	-0.50000	0.0	0.0	0.0
9.2305	55.58333	19.16667	-0.50000	0.0	0.0	0.0
11.077	55.80000	21.00000	-0.50000	0.0	0.0	0.0

Structure: AU | 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]
0.0	33.10000	38.60000	-2.00000	0.69536	-0.014337	-0.69507
0.88891	32.21250	38.65000	-2.00000	0.39931	-0.0082332	-0.39914
1.7778	31.32500	38.70000	-2.00000	0.10326	-0.0021290	-0.10322
2.6667	30.43750	38.75000	-2.00000	0.0	0.0	0.0
3.5556	29.55000	38.80000	-2.00000	0.0	0.0	0.0
4.4445	28.66250	38.85000	-2.00000	0.0	0.0	0.0
5.3334	27.77500	38.90000	-2.00000	0.0	0.0	0.0
6.2224	26.88750	38.95000	-2.00000	0.0	0.0	0.0
7.1113	26.00000	39.00000	-2.00000	0.0	0.0	0.0

Structure: AV | 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]
0.0	26.00000	39.00000	-2.00000	0.0	0.0	0.0
0.92195	25.94000	38.08000	-2.00000	0.0	0.0	0.0
1.8439	25.88000	37.16000	-2.00000	0.0	0.0	0.0
2.7659	25.82000	36.24000	-2.00000	0.0	0.0	0.0
3.6878	25.76000	35.32000	-2.00000	0.0	0.0	0.0
4.6098	25.70000	34.40000	-2.00000	0.0	0.0	0.0
5.5317	25.64000	33.48000	-2.00000	0.0	0.0	0.0
6.4537	25.58000	32.56000	-2.00000	0.0	0.0	0.0
7.3756	25.52000	31.64000	-2.00000	0.0	0.0	0.0
8.2976	25.46000	30.72000	-2.00000	0.0	0.0	0.0
9.2195	25.40000	29.80000	-2.00000	0.0	0.0	0.0

Structure: AW | 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]
0.0	25.40000	29.80000	-2.00000	0.0	0.0	0.0
1.9202	27.31667	29.68333	-2.00000	0.0	0.0	0.0
3.8404	29.23333	29.56667	-2.00000	0.0	0.0	0.0
5.7606	31.15000	29.45000	-2.00000	0.10850	-0.0022371	0.10843



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Dist.	Coordinates			Displacements		
	x	y	z	x	y	z
7.6809	33.06667	29.33333	-2.00000	0.74792	-0.015421	0.74747
9.6011	34.98333	29.21667	-2.00000	1.3873	-0.028605	1.3865
11.521	36.90000	29.10000	-2.00000	2.0268	-0.041789	2.0255

Specific Building Damage Results - Vertical Displacements

Structure: A | Sub-structure:

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

Vertical Offset 1

0.0	22.50000	48.10000	-0.50000	0.0
0.85000	23.35000	48.10000	-0.50000	0.0
1.7000	24.20000	48.10000	-0.50000	0.0
2.5500	25.05000	48.10000	-0.50000	0.0
3.4000	25.90000	48.10000	-0.50000	0.0

Structure: B | Sub-structure:

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

Vertical Offset 1

0.0	25.90000	48.10000	-0.50000	0.0
0.77500	25.90000	47.32500	-0.50000	0.0
1.5500	25.90000	46.55000	-0.50000	0.0
2.3250	25.90000	45.77500	-0.50000	0.0
3.1000	25.90000	45.00000	-0.50000	0.0

Structure: C | Sub-structure:

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

Vertical Offset 1

0.0	25.90000	45.00000	-0.50000	0.0
0.92022	26.82000	44.98000	-0.50000	0.0
1.8404	27.74000	44.96000	-0.50000	0.0
2.7607	28.66000	44.94000	-0.50000	0.0
3.6809	29.58000	44.92000	-0.50000	0.0
4.6011	30.50000	44.90000	-0.50000	0.0

Structure: D | Sub-structure:

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

Vertical Offset 1

0.0	30.50000	44.90000	-0.50000	0.0
0.90015	30.48333	45.80000	-0.50000	0.0
1.8003	30.46667	46.70000	-0.50000	0.0
2.7005	30.45000	47.60000	-0.50000	0.0
3.6006	30.43333	48.50000	-0.50000	0.0
4.5008	30.41667	49.40000	-0.50000	0.0
5.4009	30.40000	50.30000	-0.50000	0.0

Structure: E | Sub-structure:

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

Vertical Offset 1

0.0	30.40000	50.30000	-0.50000	0.0
0.83333	31.23333	50.30000	-0.50000	0.0
1.6667	32.06667	50.30000	-0.50000	0.014768
2.5000	32.90000	50.30000	-0.50000	0.050860

Structure: F | Sub-structure:

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

Vertical Offset 1

0.0	32.90000	50.30000	-0.50000	0.050860
0.93005	32.91000	51.23000	-0.50000	0.026383
1.8601	32.92000	52.16000	-0.50000	0.0
2.7902	32.93000	53.09000	-0.50000	0.0
3.7202	32.94000	54.02000	-0.50000	0.0
4.6503	32.95000	54.95000	-0.50000	0.0
5.5803	32.96000	55.88000	-0.50000	0.0
6.5104	32.97000	56.81000	-0.50000	0.0
7.4404	32.98000	57.74000	-0.50000	0.0
8.3705	32.99000	58.67000	-0.50000	0.0
9.3005	33.00000	59.60000	-0.50000	0.0

Structure: G | Sub-structure:

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

Vertical Offset 1

0.0	33.00000	59.60000	-0.50000	0.0
1.0000	32.00000	59.60000	-0.50000	0.0
2.0000	31.00000	59.60000	-0.50000	0.0
3.0000	30.00000	59.60000	-0.50000	0.0
4.0000	29.00000	59.60000	-0.50000	0.0
5.0000	28.00000	59.60000	-0.50000	0.0

Structure: H | Sub-structure:

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

Vertical Offset 1

0.0	28.00000	59.60000	-0.50000	0.0
0.90062	28.03333	58.70000	-0.50000	0.0
1.8012	28.06667	57.80000	-0.50000	0.0
2.7019	28.10000	56.90000	-0.50000	0.0

Structure: I | Sub-structure:



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

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

Vertical Offset 1

0.0	28.10000	56.90000	-0.50000	0.0
0.90000	27.20000	56.91250	-0.50000	0.0
1.80002	26.30000	56.92500	-0.50000	0.0
2.70003	25.40000	56.93750	-0.50000	0.0
3.60003	24.50000	56.95000	-0.50000	0.0
4.50004	23.60000	56.96250	-0.50000	0.0
5.40005	22.70000	56.97500	-0.50000	0.0
6.30006	21.80000	56.98750	-0.50000	0.0
7.20007	20.90000	57.00000	-0.50000	0.0

Structure: J | Sub-structure:

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

Vertical Offset 1

0.0	33.00000	59.50000	-0.50000	0.0
1.95000	34.95000	59.50000	-0.50000	0.0
3.90000	36.90000	59.50000	-0.50000	0.0
5.85000	38.85000	59.50000	-0.50000	0.0
7.80000	40.80000	59.50000	-0.50000	0.0
9.75000	42.75000	59.50000	-0.50000	0.0
11.700	44.70000	59.50000	-0.50000	0.0
13.650	46.65000	59.50000	-0.50000	0.0
15.600	48.60000	59.50000	-0.50000	0.0
17.550	50.55000	59.50000	-0.50000	0.0
19.500	52.50000	59.50000	-0.50000	0.0

Structure: K | Sub-structure:

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

Vertical Offset 1

0.0	33.00000	52.20000	-0.50000	0.0
0.98889	33.98889	52.20000	-0.50000	0.031721
1.9778	34.97778	52.20000	-0.50000	0.063146
2.9667	35.96667	52.20000	-0.50000	0.10055
3.9556	36.95556	52.20000	-0.50000	0.13260
4.9444	37.94444	52.20000	-0.50000	0.14301
5.9333	38.93333	52.20000	-0.50000	0.14301
6.9222	39.92222	52.20000	-0.50000	0.14301
7.9111	40.91111	52.20000	-0.50000	0.14301
8.9000	41.90000	52.20000	-0.50000	0.14301

Structure: L | Sub-structure:

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

Vertical Offset 1

0.0	37.70000	59.40000	-0.50000	0.0
0.90000	37.70000	58.50000	-0.50000	0.0
1.80000	37.70000	57.60000	-0.50000	0.0
2.70000	37.70000	56.70000	-0.50000	0.0
3.60000	37.70000	55.80000	-0.50000	0.0
4.50000	37.70000	54.90000	-0.50000	0.0
5.40000	37.70000	54.00000	-0.50000	0.011572
6.30000	37.70000	53.10000	-0.50000	0.056416
7.20000	37.70000	52.20000	-0.50000	0.14286

Structure: M | Sub-structure:

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

Vertical Offset 1

0.0	42.00000	59.50000	-1.50000	0.0
0.91259	41.98750	58.58750	-1.50000	0.0
1.8252	41.97500	57.67500	-1.50000	0.0
2.7378	41.96250	56.76250	-1.50000	0.0
3.6503	41.95000	55.85000	-1.50000	0.0
4.5629	41.93750	54.93750	-1.50000	0.0
5.4755	41.92500	54.02500	-1.50000	0.010316
6.3881	41.91250	53.11250	-1.50000	0.055705
7.3007	41.90000	52.20000	-1.50000	0.14301

Structure: N | Sub-structure:

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

Vertical Offset 1

0.0	45.50000	53.30000	-4.00000	0.045091
0.87143	45.50000	54.17143	-4.00000	0.0021871
1.7429	45.50000	55.04286	-4.00000	0.0
2.6143	45.50000	55.91429	-4.00000	0.0
3.4857	45.50000	56.78571	-4.00000	0.0
4.3571	45.50000	57.65714	-4.00000	0.0
5.2286	45.50000	58.52857	-4.00000	0.0
6.1000	45.50000	59.40000	-4.00000	0.0

Structure: O | Sub-structure:

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

Vertical Offset 1

0.0	37.70000	52.20000	-0.68000	0.14286
0.92000	37.70000	51.28000	-0.68000	0.32559
1.84000	37.70000	50.36000	-0.68000	0.63153
2.76000	37.70000	49.44000	-0.68000	1.0638
3.68000	37.70000	48.52000	-0.68000	1.5997
4.60000	37.70000	47.60000	-0.68000	2.1338

Structure: P | Sub-structure: Sub #

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

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Vertical Offset 1
0.0 45.50000 53.30000 -1.85000 0.045091
0.93333 45.50000 52.36667 -1.85000 0.12127
1.8667 45.50000 51.43333 -1.85000 0.28734
2.8000 45.50000 50.50000 -1.85000 0.57728
3.7333 45.50000 49.56667 -1.85000 0.90863
4.6667 45.50000 48.63333 -1.85000 1.5325
5.6000 45.50000 47.70000 -1.85000 2.1338

Structure: Q | Sub-structure:

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

Vertical Offset 1
0.0 41.90000 52.20000 -0.65000 0.14301
0.90000 41.90000 51.30000 -0.65000 0.32072
1.8000 41.90000 50.40000 -0.65000 0.61625
2.7000 41.90000 49.50000 -0.65000 1.0334
3.6000 41.90000 48.60000 -0.65000 1.5532
4.5000 41.90000 47.70000 -0.65000 2.1338

Structure: R | Sub-structure:

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

Vertical Offset 1
0.0 33.00000 50.30000 -0.50000 0.056025
0.92635 32.95000 49.37500 -0.50000 0.080706
1.8527 32.90000 48.45000 -0.50000 0.098379
2.7791 32.85000 47.52500 -0.50000 0.10101
3.7054 32.80000 46.60000 -0.50000 0.097860
4.6318 32.75000 45.67500 -0.50000 0.094802
5.5581 32.70000 44.75000 -0.50000 0.091830
6.4845 32.65000 43.82500 -0.50000 0.088943
7.4108 32.60000 42.90000 -0.50000 0.086138

Structure: S | Sub-structure:

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

Vertical Offset 1
0.0 54.40000 58.50000 -0.50000 0.0
1.9375 55.56250 56.95000 -0.50000 0.0
3.8750 56.72500 55.40000 -0.50000 0.0
5.8125 57.88750 53.85000 -0.50000 0.0
7.7500 59.05000 52.30000 -0.50000 0.0
9.6875 60.21250 50.75000 -0.50000 0.0
11.625 61.37500 49.20000 -0.50000 0.0
13.562 62.53750 47.65000 -0.50000 0.0
15.500 63.70000 46.10000 -0.50000 0.0
17.438 64.86250 44.55000 -0.50000 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
	x	y	z	
[m]	[m]	[m]	[m]	[mm]

Vertical Offset 1
0.0 45.50000 53.30000 -0.50000 0.045091
1.9859 46.73158 51.74211 -0.50000 0.18660
3.9718 47.96316 50.18421 -0.50000 0.35577
5.9577 49.19474 48.62632 -0.50000 0.28703
7.9436 50.42632 47.06842 -0.50000 0.12980
9.9295 51.65789 45.51053 -0.50000 0.052385
11.915 52.88947 43.95263 -0.50000 0.0096393
13.901 54.12105 42.39474 -0.50000 0.0
15.887 55.35263 40.83684 -0.50000 0.0
17.873 56.58421 39.27895 -0.50000 0.0
19.859 57.81579 37.72105 -0.50000 0.0
21.845 59.04737 36.16316 -0.50000 0.0
23.831 60.27895 34.60526 -0.50000 0.0
25.817 61.51053 33.04737 -0.50000 0.0
27.803 62.74211 31.48947 -0.50000 0.0
29.789 63.97368 29.93158 -0.50000 0.0
31.774 65.20526 28.37368 -0.50000 0.0
33.760 66.43684 26.81579 -0.50000 0.0
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
	x	y	z	
[m]	[m]	[m]	[m]	[mm]

Vertical Offset 1
0.0 63.00000 47.00000 -0.50000 0.0
0.98600 62.21000 46.41000 -0.50000 0.0
1.9720 61.42000 45.82000 -0.50000 0.0
2.9580 60.63000 45.23000 -0.50000 0.0
3.9440 59.84000 44.64000 -0.50000 0.0
4.9300 59.05000 44.05000 -0.50000 0.0
5.9160 58.26000 43.46000 -0.50000 0.0
6.9020 57.47000 42.87000 -0.50000 0.0
7.8880 56.68000 42.28000 -0.50000 0.0
8.8740 55.89000 41.69000 -0.50000 0.0
9.8600 55.10000 41.10000 -0.50000 0.0

Structure: V | Sub-structure:

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

Vertical Offset 1
0.0 55.10000 41.10000 -0.50000 0.0
0.91001 54.37500 40.55000 -0.50000 0.0
1.8200 53.65000 40.00000 -0.50000 0.014879



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Dist.	Coordinates			Displacements
	x	y	z	z
[m]	[m]	[m]	[m]	[mm]
2.7300	52.92500	39.45000	-0.50000	0.055910
3.6401	52.20000	38.90000	-0.50000	0.13177

Structure: W | Sub-structure:

Dist.	Coordinates			Displacements
	x	y	z	z
[m]	[m]	[m]	[m]	[mm]
Vertical Offset 1				
0.0	52.20000	38.90000	-1.70000	0.13177
0.57000	52.55000	38.45000	-1.70000	0.10294
1.1402	52.90000	38.00000	-1.70000	0.079879

Structure: X | Sub-structure:

Dist.	Coordinates			Displacements
	x	y	z	z
[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	0.0
2.9160	64.06000	40.76000	-0.50000	0.0
3.8880	63.28000	40.18000	-0.50000	0.0
4.8600	62.50000	39.60000	-0.50000	0.0
5.8320	61.72000	39.02000	-0.50000	0.0
6.8041	60.94000	38.44000	-0.50000	0.0
7.7761	60.16000	37.86000	-0.50000	0.0
8.7481	59.38000	37.28000	-0.50000	0.0
9.7201	58.60000	36.70000	-0.50000	0.0

Structure: Y | Sub-structure:

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

Structure: Z | Sub-structure:

Dist.	Coordinates			Displacements
	x	y	z	z
[m]	[m]	[m]	[m]	[mm]
Vertical Offset 1				
0.0	69.70000	39.10000	-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	0.0
5.7481	65.08000	34.68000	-0.50000	0.0
6.7061	64.31000	34.11000	-0.50000	0.0
7.6642	63.54000	33.54000	-0.50000	0.0
8.6222	62.77000	32.97000	-0.50000	0.0
9.5802	62.00000	32.40000	-0.50000	0.0

Structure: AA | Sub-structure:

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

Structure: AB | Sub-structure:

Dist.	Coordinates			Displacements
	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
2.8380	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	0.0
8.5163	66.07000	28.75000	-0.50000	0.0
9.4626	65.30000	28.20000	-0.50000	0.0

Structure: AC | Sub-structure:

Dist.	Coordinates			Displacements
	x	y	z	z
[m]	[m]	[m]	[m]	[mm]
Vertical Offset 1				
0.0	65.30000	28.20000	-0.50000	0.0
0.84673	64.61667	27.70000	-0.50000	0.0
1.6935	63.93333	27.20000	-0.50000	0.0
2.5402	63.25000	26.70000	-0.50000	0.0
3.3869	62.56667	26.20000	-0.50000	0.0
4.2336	61.88333	25.70000	-0.50000	0.0
5.0804	61.20000	25.20000	-0.50000	0.0

Structure: AD | Sub-structure:

Dist.	Coordinates			Displacements
	x	y	z	z
[m]	[m]	[m]	[m]	[mm]
Vertical Offset 1				
0.0	61.20000	25.20000	-1.46000	0.0
0.98298	60.22500	25.32500	-1.46000	0.0



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Dist.	Coordinates			Displacements
[m]	x [m]	y [m]	z [m]	z [mm]
1.9660	59.25000	25.45000	-1.46000	0.0
2.9489	58.27500	25.57500	-1.46000	0.0
3.9319	57.30000	25.70000	-1.46000	0.0
4.9149	56.32500	25.82500	-1.46000	0.017885
5.8979	55.35000	25.95000	-1.46000	0.070739
6.8809	54.37500	26.07500	-1.46000	0.18908
7.8638	53.40000	26.20000	-1.46000	0.42907

Structure: AE | Sub-structure:

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

Structure: AF | Sub-structure:

Dist.	Coordinates			Displacements
[m]	x [m]	y [m]	z [m]	z [mm]
Vertical Offset 1				
0.0	50.30000	26.50000	-1.46000	2.0526
0.88351	50.22500	25.70000	-1.46000	1.6183
1.6970	50.15000	24.90000	-1.46000	1.1408
2.4105	50.07500	24.10000	-1.46000	0.74220
3.2140	50.00000	23.30000	-1.46000	0.43628

Structure: AG | Sub-structure:

Dist.	Coordinates			Displacements
[m]	x [m]	y [m]	z [m]	z [mm]
Vertical Offset 1				
0.0	50.00000	23.30000	-0.50000	0.43628
1.9046	51.88889	23.05556	-0.50000	0.25574
3.8993	53.77778	22.81111	-0.50000	0.071473
5.7139	55.66667	22.56667	-0.50000	0.0
7.6186	57.55556	22.32222	-0.50000	0.0
9.5232	59.44444	22.07778	-0.50000	0.0
11.428	61.33333	21.83333	-0.50000	0.0
13.332	63.22222	21.58889	-0.50000	0.0
15.237	65.11111	21.34444	-0.50000	0.0
17.142	67.00000	21.10000	-0.50000	0.0

Structure: AH | Sub-structure:

Dist.	Coordinates			Displacements
[m]	x [m]	y [m]	z [m]	z [mm]
Vertical Offset 1				
0.0	59.00000	20.70000	-0.50000	0.0
0.90554	58.10000	20.80000	-0.50000	0.0
1.8111	57.20000	20.90000	-0.50000	0.0
2.7166	56.30000	21.00000	-0.50000	0.0
3.6222	55.40000	21.10000	-0.50000	0.0
4.5277	54.50000	21.20000	-0.50000	0.0
5.4332	53.60000	21.30000	-0.50000	0.014070
6.3388	52.70000	21.40000	-0.50000	0.039310

Structure: AI | Sub-structure:

Dist.	Coordinates			Displacements
[m]	x [m]	y [m]	z [m]	z [mm]
Vertical Offset 1				
0.0	52.70000	21.40000	-0.50000	0.039310
0.97015	52.56000	20.44000	-0.50000	0.0
1.9403	52.42000	19.48000	-0.50000	0.0
2.9105	52.28000	18.52000	-0.50000	0.0
3.8806	52.14000	17.56000	-0.50000	0.0
4.8508	52.00000	16.60000	-0.50000	0.0

Structure: AJ | Sub-structure:

Dist.	Coordinates			Displacements
[m]	x [m]	y [m]	z [m]	z [mm]
Vertical Offset 1				
0.0	52.00000	16.60000	-0.50000	0.0
0.99641	51.01111	16.72222	-0.50000	0.0
1.9928	50.02222	16.84444	-0.50000	0.0
2.9892	49.03333	16.96667	-0.50000	0.0
3.9857	48.04444	17.08889	-0.50000	0.0
4.9821	47.05556	17.21111	-0.50000	0.0
5.9785	46.06667	17.33333	-0.50000	0.0
6.9749	45.07778	17.45556	-0.50000	0.0
7.9713	44.08889	17.57778	-0.50000	0.0
8.9677	43.10000	17.70000	-0.50000	0.0

Structure: AK | Sub-structure:

Dist.	Coordinates			Displacements
[m]	x [m]	y [m]	z [m]	z [mm]
Vertical Offset 1				
0.0	43.10000	17.70000	-0.50000	0.0
0.98995	43.24000	18.60000	-0.50000	0.0
1.9799	43.38000	19.66000	-0.50000	0.0
2.9698	43.52000	20.64000	-0.50000	0.0
3.9598	43.66000	21.62000	-0.50000	0.042709
4.9497	43.80000	22.60000	-0.50000	0.12256

Structure: AL | Sub-structure:

Dist.	Coordinates			Displacements
[m]	x [m]	y [m]	z [m]	z [mm]
Vertical Offset 1				



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Dist.	Coordinates			Displacements
	x	y	z	
[m]	[m]	[m]	[m]	[mm]
0.0	43.80000	22.60000	-0.50000	0.12256
0.94763	42.86000	22.72000	-0.50000	0.12275
1.8953	41.92000	22.84000	-0.50000	0.12294
2.8429	40.98000	22.96000	-0.50000	0.12314
3.7905	40.04000	23.08000	-0.50000	0.12333
4.7381	39.10000	23.20000	-0.50000	0.12352

Structure: AM | Sub-structure:

Dist.	Coordinates			Displacements
	x	y	z	
[m]	[m]	[m]	[m]	[mm]
Vertical Offset 1				
0.0	39.10000	23.20000	-0.50000	0.12352
0.90247	39.03333	22.30000	-0.50000	0.047795
1.8049	38.96667	21.40000	-0.50000	0.0039396
2.7074	38.90000	20.50000	-0.50000	0.0

Structure: AN | Sub-structure:

Dist.	Coordinates			Displacements
	x	y	z	
[m]	[m]	[m]	[m]	[mm]
Vertical Offset 1				
0.0	38.90000	20.50000	-0.50000	0.0
0.83442	38.07500	20.62500	-0.50000	0.0
1.6688	37.25000	20.75000	-0.50000	0.0
2.5032	36.42500	20.87500	-0.50000	0.0
3.3377	35.60000	21.00000	-0.50000	0.0

Structure: AO | Sub-structure:

Dist.	Coordinates			Displacements
	x	y	z	
[m]	[m]	[m]	[m]	[mm]
Vertical Offset 1				
0.0	35.60000	21.00000	-0.50000	0.0
0.83931	35.70000	21.83333	-0.50000	0.0010953
1.6786	35.80000	22.66667	-0.50000	0.041992
2.5179	35.90000	23.50000	-0.50000	0.10245

Structure: AP | Sub-structure:

Dist.	Coordinates			Displacements
	x	y	z	
[m]	[m]	[m]	[m]	[mm]
Vertical Offset 1				
0.0	35.90000	23.50000	-0.50000	0.10245
0.89107	35.02000	23.64000	-0.50000	0.082481
1.7821	34.14000	23.78000	-0.50000	0.056957
2.6732	33.26000	23.92000	-0.50000	0.032601
3.5643	32.38000	24.06000	-0.50000	0.0058934
4.4553	31.50000	24.20000	-0.50000	0.0

Structure: AQ | Sub-structure:

Dist.	Coordinates			Displacements
	x	y	z	
[m]	[m]	[m]	[m]	[mm]
Vertical Offset 1				
0.0	31.50000	24.20000	-0.50000	0.0
0.90995	31.36000	23.22000	-0.50000	0.0
1.9799	31.22000	22.24000	-0.50000	0.0
2.9698	31.08000	21.26000	-0.50000	0.0
3.9598	30.94000	20.28000	-0.50000	0.0
4.9497	30.80000	19.30000	-0.50000	0.0

Structure: AR | Sub-structure:

Dist.	Coordinates			Displacements
	x	y	z	
[m]	[m]	[m]	[m]	[mm]
Vertical Offset 1				
0.0	35.60000	12.40000	-0.50000	0.0
0.94130	35.72222	13.33333	-0.50000	0.0
1.8826	35.84444	14.26667	-0.50000	0.0
2.8239	35.96667	15.20000	-0.50000	0.0
3.7652	36.08889	16.13333	-0.50000	0.0
4.7065	36.21111	17.06667	-0.50000	0.0
5.6478	36.33333	18.00000	-0.50000	0.0
6.5891	36.45556	18.93333	-0.50000	0.0
7.5304	36.57778	19.86667	-0.50000	0.0
8.4717	36.70000	20.80000	-0.50000	0.0

Structure: AS | Sub-structure:

Dist.	Coordinates			Displacements
	x	y	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	0.0
1.8137	44.92222	11.10000	-0.50000	0.0
2.7205	45.03333	12.00000	-0.50000	0.0
3.6273	45.14444	12.90000	-0.50000	0.0
4.5342	45.25556	13.80000	-0.50000	0.0
5.4410	45.36667	14.70000	-0.50000	0.0
6.3478	45.47778	15.60000	-0.50000	0.0
7.2547	45.58889	16.50000	-0.50000	0.0
8.1615	45.70000	17.40000	-0.50000	0.0

Structure: AT | Sub-structure:

Dist.	Coordinates			Displacements
	x	y	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	0.0
3.6922	54.93333	13.66667	-0.50000	0.0
5.5383	55.15000	15.50000	-0.50000	0.0
7.3844	55.36667	17.33333	-0.50000	0.0
9.2305	55.58333	19.16667	-0.50000	0.0



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Dist.	Coordinates			Displacements
[m]	x [m]	y [m]	z [m]	z [mm]
11.077	55.80000	21.00000	-0.50000	0.0

Structure: AU | Sub-structure:

Dist.	Coordinates			Displacements
[m]	x [m]	y [m]	z [m]	z [mm]
Vertical Offset 1				
0.0	33.10000	38.60000	-2.00000	0.15554
0.88891	32.21250	38.65000	-2.00000	0.062804
1.7778	31.32500	38.70000	-2.00000	0.017065
2.6667	30.43750	38.75000	-2.00000	0.0
3.5556	29.55000	38.80000	-2.00000	0.0
4.4445	28.66250	38.85000	-2.00000	0.0
5.3334	27.77500	38.90000	-2.00000	0.0
6.2224	26.88750	38.95000	-2.00000	0.0
7.1113	26.00000	39.00000	-2.00000	0.0

Structure: AV | Sub-structure:

Dist.	Coordinates			Displacements
[m]	x [m]	y [m]	z [m]	z [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
[m]	x [m]	y [m]	z [m]	z [mm]
Vertical Offset 1				
0.0	25.40000	29.80000	-2.00000	0.0
1.9202	27.31667	29.68333	-2.00000	0.0
3.8404	29.23333	29.56667	-2.00000	0.0
5.7606	31.15000	29.45000	-2.00000	0.017819
7.6809	33.06667	29.33333	-2.00000	0.18069
9.6011	34.98333	29.21667	-2.00000	0.77038
11.521	36.90000	29.10000	-2.00000	1.8599

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	All settlements are less than the Settlement Trough Limit Sensitivity.										
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	All settlements are less than the Settlement Trough Limit Sensitivity.										
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]	



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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	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
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	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
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	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
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	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
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	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
0.0											
All settlements are less than the Settlement Trough Limit Sensitivity.											
Tensile horizontal strains are +ve, compressive horizontal strains are -ve.											
Structure: L 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
0.0											
All settlements are less than the Settlement Trough Limit Sensitivity.											
Tensile horizontal strains are +ve, compressive horizontal strains are -ve.											
Structure: M 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
0.0											
All settlements are less than the Settlement Trough Limit Sensitivity.											
Tensile horizontal strains are +ve, compressive horizontal strains are -ve.											
Structure: N 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
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	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
0.0											
All settlements are less than the Settlement Trough Limit Sensitivity.											
Tensile horizontal strains are +ve, compressive horizontal strains are -ve.											
Structure: P 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
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] 0.0 1 0.93333 4.6657 Hogging 0.0074676 0.033333 0.038550 -333.22E-6 -643.94E-6 [m] 6996.8 0
(Negligible)

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] 0.0	1	[m] 0.0	[m] 4.4990	Hogging	[m] 0.0071681	[m] 0.033333	[m] 0.039527	-333.22E-6	-644.84E-6	[m] 6825.6	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] 0.0	1	[m] 2.7791	[m] 0.0	None	[m] 0.0	[m] 0.0	[m] 0.0	88.633E-6	3.3972E-6	[m] 129470.	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] 0.0		[m]	[m]		[m]	[m]	[m]			[m]	
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] 0.0	1	[m] 1.9859	[m] 5.4812	Sagging	[m] 0.0032088	[m] -0.013384	[m] 0.0031842	251.15E-6	-85.199E-6	[m] 29429.	0 (Negligible)
	2	[m] 7.4671	[m] 0.47649	None	[m] 0.0	[m] 0.0040122	[m] 0.0040122	-63.926E-6	79.172E-6	[m] 149090.	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] 0.0		[m]	[m]		[m]	[m]	[m]			[m]	
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] 0.0	1	[m] 3.6391	[m] 0.0	None	[m] 0.0	[m] 0.0	[m] 0.0	-274.48E-6	-83.337E-6	[m] 22382.	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] 0.0	1	[m] 0.0	[m] 0.57009	Hogging	[m] 0.0	[m] 0.0061869	[m] 0.0061869	-61.865E-6	50.569E-6	[m] 56272.	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] 0.0		[m]	[m]		[m]	[m]	[m]			[m]	
All settlements are less than the Settlement Trough Limit Sensitivity.											

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] 0.0		[m]	[m]		[m]	[m]	[m]			[m]	
All settlements are less than the Settlement Trough Limit Sensitivity.											

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

Structure: Z | 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
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	01-Nov-2016	

Calculations
[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.

Curve Curve [m]

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										
All settlements are less than the Settlement Trough Limit Sensitivity. 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										
All settlements are less than the Settlement Trough Limit Sensitivity. 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										
All settlements are less than the Settlement Trough Limit Sensitivity. 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	6.8809	0.98198	Hogging	0.0	0.033331	0.033331	-333.21E-6	-244.06E-6	7121.9
(Negligible)										
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										
All settlements are less than the Settlement Trough Limit Sensitivity. 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	0.83563	Sagging	121.78E-6	-0.12787	0.025575	0.0013429	584.15E-6	12702.
(Negligible)										
	2	0.83563	2.3774	Hogging	0.0035382	0.031121	0.032546	-329.15E-6	584.15E-6	6583.2
(Negligible)										
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	1.0727	Hogging	0.0	-0.020167	0.0040334	201.71E-6	94.807E-6	110640.
(Negligible)										
	2	1.0727	0.83198	Sagging	0.0	-0.020167	0.0040334	201.71E-6	96.739E-6	142650.
(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										
All settlements are less than the Settlement Trough Limit Sensitivity. Tensile horizontal strains are +ve, compressive horizontal strains are -ve.										

Structure: AI | 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: AJ | 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



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

Structure: AK | 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] 0.0		1	4.9487	[m] 0.0	None	[%] 0.0	[%] 0.0	[%] 0.0	-333.13E-6	-80.635E-6	[m] 27415.
(Negligible)											0

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

Structure: AL | 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] 0.0		1	[m] 0.0	4.7371	Hogging	[%] 0.0	[%] 0.0	[%] 0.0	0.0	0.0	[m] 3.4450E+9
(Negligible)											0

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

Structure: AM | 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] 0.0		1	[m] 0.0	[m] 0.0	None	[%] 0.0	[%] 0.0	[%] 0.0	-332.34E-6	83.880E-6	[m] 28206.
(Negligible)											0

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

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

Structure: AO | 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] 0.0		1	[m] 2.5169	[m] 0.0	None	[%] 0.0	[%] 0.0	[%] 0.0	-320.65E-6	-72.005E-6	[m] 48569.
(Negligible)											0

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

Structure: AP | 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] 0.0		1	[m] 0.0	[m] 0.0	None	[%] 0.0	[%] 0.0	[%] 0.0	79.186E-6	22.407E-6	[m] 109630.
(Negligible)											0

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

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

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

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

Structure: AT | 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] 0.0			[m] 0.0	[m] 0.0		[%] 0.0	[%] 0.0	[%] 0.0		[m] 0.0	



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

Structure: AU | 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] 0.0		[m] 1	[m] 0.0	[m] 0.0	None	[%] 0.0	[%] 0.0	[%] 0.0	-332.80E-6	104.29E-6	[m] 15331.0
(Negligible)											
Tensile horizontal strains are +ve, compressive horizontal strains are -ve.											

Structure: AV | 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] 0.0		[m]	[m]		[%]	[%]	[%]			[m]	
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 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] 0.0		[m] 1	[m] 7.6809	[m] 3.8394	Hogging	[%] 0.0064408	[%] 0.033280	[%] 0.037238	-332.68E-6	-567.19E-6	[m] 7120.2
(Negligible)											
Tensile horizontal strains are +ve, compressive horizontal strains are -ve.											

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

Structure: A | 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]	

Structure: B | 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]	

Structure: C | 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]	

Structure: D | 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]	

Structure: E | 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]	

Structure: F | 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]	

Structure: G | 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]	

Structure: H | Sub-structure:

Vertical	Deflection Ratio	Average	Maximum	Maximum	Max.	Maximum	Maximum	Min.	Min.	Damage Category
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Offset from Line for Vertical Movement Calculations [m]	Ratio [%]	Horizontal Strain [%]	Slope	Settlement [mm]	Tensile Strain [%]	Gradient of Horizontal Displacement Curve	Gradient of Vertical Displacement Curve	Radius of Curvature (Hogging) [m]	Radius of Curvature (Sagging) [m]	
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	542.03E-6	-0.0051420	-37.820E-6	0.14301	0.0010708	117.06E-6	-37.820E-6		66424.0	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	-96.015E-6	0.14276	0.0	-333.05E-6	-96.015E-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	0.0066925	-0.19954	-582.39E-6	2.1332	0.039908	0.0019994	-582.39E-6	6831.7		0 (Negligible)
Structure: P Sub-structure: Sub #										
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	0.0074676	0.033333	-643.94E-6	2.1331	0.038550	-333.22E-6	-643.94E-6	6996.8		0 (Negligible)
Structure: Q 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	0.0071681	0.033333	-644.84E-6	2.1331	0.039527	-333.22E-6	-644.84E-6	6825.6		0 (Negligible)
Structure: R 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	3.3972E-6	0.10101	0.0	88.633E-6	3.3972E-6			0 (Negligible)
Structure: S Sub-structure:										



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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: T 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	0.0032088	-0.013384	-85.199E-6	0.35552	0.0040122	251.15E-6	-85.199E-6	[m]	- 29429. 0	(Negligible)
Structure: U 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	-83.337E-6	0.13169	0.0	-274.48E-6	-83.337E-6	[m]	- 0	(Negligible)
Structure: V 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	0.0061869	50.569E-6	0.13177	0.0061869	-61.865E-6	50.569E-6	[m]	56272.	- 0 (Negligible)
Structure: W 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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 (Negligible)
Structure: X 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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 (Negligible)
Structure: Y 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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 (Negligible)
Structure: Z 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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 (Negligible)
Structure: AA 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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 (Negligible)
Structure: AB 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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 (Negligible)
Structure: AC 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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 (Negligible)
Structure: AD 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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 (Negligible)



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Offset from Line for Vertical Movement Calculations	Ratio	Horizontal Strain	Slope	Settlement	Tensile Strain	Gradient of Horizontal Displacement Curve	Gradient of Vertical Displacement Curve	Radius of Curvature (Hogging)	Radius of Curvature (Sagging)	
[m] 0.0	[%] 0.0	[%] 0.033331	-244.06E-6	[mm] 0.42882	[%] 0.033331	-333.21E-6	-244.06E-6	[m] 7121.9	[m] -	0 (Negligible)
Structure: AE 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] 0.0	[%] 0.0	[%] 0.033331		[mm] 0.42882	[%] 0.033331			[m] 7121.9	[m] -	
Structure: AF 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] 0.0	[%] 0.0035382	[%] -0.12787	584.15E-6	[mm] 2.0526	[%] 0.032546	0.0013429	584.15E-6	[m] 6583.2	[m] 12702.0	0 (Negligible)
Structure: AG 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] 0.0	[%] 0.0	[%] -0.020167	96.739E-6	[mm] 0.43628	[%] 0.0040334	201.71E-6	96.739E-6	[m] 110640.	[m] 142650.0	0 (Negligible)
Structure: AH 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] 0.0	[%] 0.0	[%] 0.0		[mm] 0.43628	[%] 0.0040334			[m] 110640.	[m] 142650.0	
Structure: AI 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] 0.0	[%] 0.0	[%] 0.0		[mm] 0.43628	[%] 0.0040334			[m] 110640.	[m] 142650.0	
Structure: AJ 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] 0.0	[%] 0.0	[%] 0.0		[mm] 0.43628	[%] 0.0040334			[m] 110640.	[m] 142650.0	
Structure: AK 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] 0.0	[%] 0.0	[%] 0.0	-80.635E-6	[mm] 0.12248	[%] 0.0	-333.13E-6	-80.635E-6	[m] -	[m] -	0 (Negligible)
Structure: AL 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] 0.0	[%] 0.0	[%] 0.0	0.0	[mm] 0.12352	[%] 0.0	0.0	0.0	[m] 3.4450E+9	[m] -	0 (Negligible)
Structure: AM 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] 0.0	[%] 0.0	[%] 0.0	83.880E-6	[mm] 0.12352	[%] 0.0	-332.34E-6	83.880E-6	[m] -	[m] -	0 (Negligible)
Structure: AN 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] 0.0	[%] 0.0	[%] 0.0		[mm] 0.43628	[%] 0.0040334			[m] 110640.	[m] 142650.0	
Structure: AO Sub-structure:										



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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	[%] 0.0	[%] 0.0	-72.005E-6	[mm] 0.10237	[%] 0.0	-320.65E-6	-72.005E-6	[m] -	[m] -	- 0 (Negligible)

Structure: AP | 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] 0.0	[%] 0.0	[%] 0.0	22.407E-6	[mm] 0.10245	[%] 0.0	79.186E-6	22.407E-6	[m] -	[m] -	- 0 (Negligible)

Structure: AQ | 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]	

Structure: AR | 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]	

Structure: AS | 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]	

Structure: AT | 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]	

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] 0.0	[%] 0.0	[%] 0.0	104.29E-6	[mm] 0.15554	[%] 0.0	-332.80E-6	104.29E-6	[m] -	[m] -	- 0 (Negligible)

Structure: AV | 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]	

Structure: AW | 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] 0.0	[%] 0.0064408	[%] 0.033280	-567.19E-6	[mm] 1.8593	[%] 0.037238	-332.68E-6	-567.19E-6	[m] 7120.2	[m] -	- 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]				[%]	[m]	[m]	
B	All settlements are less than the Settlement Trough Limit Sensitivity.											
C	All settlements are less than the Settlement Trough Limit Sensitivity.											
D	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
E	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.											
	All settlements are less than the Settlement Trough Limit Sensitivity.											
F	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.											
	All settlements are less than the Settlement Trough Limit Sensitivity.											
G	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.											
	All settlements are less than the Settlement Trough Limit Sensitivity.											
H	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.											
	All settlements are less than the Settlement Trough Limit Sensitivity.											
I	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.											
	All settlements are less than the Settlement Trough Limit Sensitivity.											
J	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.											
	All settlements are less than the Settlement Trough Limit Sensitivity.											
K	All settlements are less than the Settlement Trough Limit Sensitivity.											
	Maximum Slope			1	2.9667	6.9222 Sagging	37.820E-6	0.14301	0.0010708	-	66424.0	0 (Negligible)
	Maximum Settlement			1	2.9667	6.9222 Sagging	37.820E-6	0.14301	0.0010708	-	66424.0	0 (Negligible)
	Max. Tensile Strain			1	2.9667	6.9222 Sagging	37.820E-6	0.14301	0.0010708	-	66424.0	0 (Negligible)
	Min. Radius of Curvature (Hogging)			-	-	-	-	-	-	-	-	-
L	Min. Radius of Curvature (Sagging)			1	2.9667	6.9222 Sagging	37.820E-6	0.14301	0.0010708	-	66424.0	0 (Negligible)
	Maximum Slope			1	7.1990	7.1990 Sagging	96.015E-6	0.14276	0.0	-	18545.0	0 (Negligible)
	Maximum Settlement			1	7.1990	7.1990 Sagging	96.015E-6	0.14276	0.0	-	18545.0	0 (Negligible)
	Max. Tensile Strain			1	7.1990	7.1990 Sagging	96.015E-6	0.14276	0.0	-	18545.0	0 (Negligible)
	Min. Radius of Curvature (Hogging)			-	-	-	-	-	-	-	-	-
M	Min. Radius of Curvature (Sagging)			-	-	-	-	-	-	-	-	-
	Maximum Slope			1	7.2997	7.2997 Sagging	95.636E-6	0.14291	0.0	-	19090.0	0 (Negligible)
	Maximum Settlement			1	7.2997	7.2997 Sagging	95.636E-6	0.14291	0.0	-	19090.0	0 (Negligible)
	Max. Tensile Strain			1	7.2997	7.2997 Sagging	95.636E-6	0.14291	0.0	-	19090.0	0 (Negligible)
	Min. Radius of Curvature (Hogging)			-	-	-	-	-	-	-	-	-
N	Min. Radius of 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.											
O	All settlements are less than the Settlement Trough Limit Sensitivity.											
	Maximum Slope			1	0.0	4.1270 Hogging	582.39E-6	1.8592	0.013155	6831.7	-	0 (Negligible)
	Maximum Settlement			2	4.1270	4.5990 Sagging	581.62E-6	2.1332	0.039908	-	31627.0	0 (Negligible)
	Max. Tensile Strain			2	4.1270	4.5990 Sagging	581.62E-6	2.1332	0.039908	-	31627.0	0 (Negligible)
	Min. Radius of Curvature (Hogging)			1	0.0	4.1270 Hogging	582.39E-6	1.8592	0.013155	6831.7	-	0 (Negligible)
P	Min. Radius of Curvature (Sagging)			-	-	-	-	-	-	-	-	-
	Maximum Slope	Sub #		1	0.93333	5.5990 Hogging	643.94E-6	2.1331	0.038550	6996.8	-	0 (Negligible)
	Maximum Settlement	Sub #		1	0.93333	5.5990 Hogging	643.94E-6	2.1331	0.038550	6996.8	-	0 (Negligible)
	Max. Tensile Strain	Sub #		1	0.93333	5.5990 Hogging	643.94E-6	2.1331	0.038550	6996.8	-	0 (Negligible)
	Min. Radius of Curvature (Hogging)	Sub #		1	0.93333	5.5990 Hogging	643.94E-6	2.1331	0.038550	6996.8	-	0 (Negligible)
Q	Min. Radius of Curvature (Sagging)			-	-	-	-	-	-	-	-	-
	Maximum Slope			1	0.0	4.4990 Hogging	644.84E-6	2.1331	0.039527	6825.6	-	0 (Negligible)
	Maximum Settlement			1	0.0	4.4990 Hogging	644.84E-6	2.1331	0.039527	6825.6	-	0 (Negligible)
	Max. Tensile Strain			1	0.0	4.4990 Hogging	644.84E-6	2.1331	0.039527	6825.6	-	0 (Negligible)
	Min. Radius of Curvature (Hogging)			1	0.0	4.4990 Hogging	644.84E-6	2.1331	0.039527	6825.6	-	0 (Negligible)
R	Min. Radius of Curvature (Sagging)			-	-	-	-	-	-	-	-	-
	Maximum Slope			1	2.7791	2.7791 Sagging	3.3972E-6	0.10101	0.0	-	129470.0	0 (Negligible)
	Maximum Settlement			1	2.7791	2.7791 Sagging	3.3972E-6	0.10101	0.0	-	129470.0	0 (Negligible)
	Max. Tensile Strain			1	2.7791	2.7791 Sagging	3.3972E-6	0.10101	0.0	-	129470.0	0 (Negligible)
	Min. Radius of Curvature (Hogging)			-	-	-	-	-	-	-	-	-
S	Min. Radius of 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.											
T	All settlements are less than the Settlement Trough Limit Sensitivity.											
	Maximum Slope			1	1.9859	7.4671 Sagging	85.199E-6	0.35552	0.0031842	-	29429.0	0 (Negligible)
	Maximum Settlement			1	1.9859	7.4671 Sagging	85.199E-6	0.35552	0.0031842	-	29429.0	0 (Negligible)
	Max. Tensile Strain			2	7.4671	7.9436 Sagging	79.172E-6	0.16752	0.0040122	-	149090.0	0 (Negligible)
	Min. Radius of Curvature (Hogging)			-	-	-	-	-	-	-	-	-
	Min. Radius of Curvature (Sagging)			1	1.9859	7.4671 Sagging	85.199E-6	0.35552	0.0031842	-	29429.0	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
U	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.											
V	All settlements are less than the Settlement Trough Limit Sensitivity.											
	Maximum Slope	1	3.6391	3.6391	Sagging	83.337E-6	0.13169	0.0	-	22382.0	0 (Negligible)	
	Maximum Settlement	1	3.6391	3.6391	Sagging	83.337E-6	0.13169	0.0	-	22382.0	0 (Negligible)	
	Max. Tensile Strain	1	3.6391	3.6391	Sagging	83.337E-6	0.13169	0.0	-	22382.0	0 (Negligible)	
W	Min. Radius of Curvature (Hogging)	-	-	-	-	-	-	-	-	-	-	
	Min. Radius of Curvature (Sagging)	-	-	-	-	-	-	-	-	-	-	
	Maximum Slope	1	0.0	0.57009	Hogging	50.569E-6	0.13177	0.0061869	56272.	-	0 (Negligible)	
	Maximum Settlement	1	0.0	0.57009	Hogging	50.569E-6	0.13177	0.0061869	56272.	-	0 (Negligible)	
X	Max. Tensile Strain	1	0.0	0.57009	Hogging	50.569E-6	0.13177	0.0061869	56272.	-	0 (Negligible)	
	Min. Radius of Curvature (Hogging)	1	0.0	0.57009	Hogging	50.569E-6	0.13177	0.0061869	56272.	-	0 (Negligible)	
	Min. Radius of Curvature (Sagging)	-	-	-	-	-	-	-	-	-	-	
	All settlements are less than the Settlement Trough Limit Sensitivity.											
Y	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.											
Z	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.											
AA	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.											
AB	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.											
AC	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.											
AD	All settlements are less than the Settlement Trough Limit Sensitivity.											
	Maximum Slope	1	6.8809	7.8628	Hogging	244.06E-6	0.42882	0.033331	7121.9	-	0 (Negligible)	
	Maximum Settlement	1	6.8809	7.8628	Hogging	244.06E-6	0.42882	0.033331	7121.9	-	0 (Negligible)	
	Max. Tensile Strain	1	6.8809	7.8628	Hogging	244.06E-6	0.42882	0.033331	7121.9	-	0 (Negligible)	
AE	Min. Radius of Curvature (Hogging)	1	6.8809	7.8628	Hogging	244.06E-6	0.42882	0.033331	7121.9	-	0 (Negligible)	
	Min. Radius of Curvature (Sagging)	-	-	-	-	-	-	-	-	-	-	
	All settlements are less than the Settlement Trough Limit Sensitivity.											
	All settlements are less than the Settlement Trough Limit Sensitivity.											
AF	All settlements are less than the Settlement Trough Limit Sensitivity.											
	Maximum Slope	1	0.0	0.83563	Sagging	584.15E-6	2.0526	0.025575	-	12702.0	0 (Negligible)	
	Maximum Settlement	1	0.0	0.83563	Sagging	584.15E-6	2.0526	0.025575	-	12702.0	0 (Negligible)	
	Max. Tensile Strain	2	0.83563	3.2130	Hogging	584.15E-6	1.5915	0.032546	6583.2	-	0 (Negligible)	
AG	Min. Radius of Curvature (Hogging)	2	0.83563	3.2130	Hogging	584.15E-6	1.5915	0.032546	6583.2	-	0 (Negligible)	
	Min. Radius of Curvature (Sagging)	1	0.0	0.83563	Sagging	584.15E-6	2.0526	0.025575	-	12702.0	0 (Negligible)	
	Maximum Slope	2	1.0727	1.9046	Sagging	96.739E-6	0.33460	0.0040334	110640.	-	142650.0	0 (Negligible)
	Maximum Settlement	1	0.0	1.0727	Hogging	94.807E-6	0.43628	0.0040334	110640.	-	0 (Negligible)	
AH	Max. Tensile Strain	1	0.0	1.0727	Hogging	94.807E-6	0.43628	0.0040334	110640.	-	0 (Negligible)	
	Min. Radius of Curvature (Hogging)	1	0.0	1.0727	Hogging	94.807E-6	0.43628	0.0040334	110640.	-	0 (Negligible)	
	Min. Radius of Curvature (Sagging)	2	1.0727	1.9046	Sagging	96.739E-6	0.33460	0.0040334	-	142650.0	0 (Negligible)	
	All settlements are less than the Settlement Trough Limit Sensitivity.											
AI	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.											
AJ	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.											
AK	All settlements are less than the Settlement Trough Limit Sensitivity.											
	Maximum Slope	1	4.9487	4.9487	Sagging	80.635E-6	0.12248	0.0	-	27415.0	0 (Negligible)	
	Maximum Settlement	1	4.9487	4.9487	Sagging	80.635E-6	0.12248	0.0	-	27415.0	0 (Negligible)	
	Max. Tensile Strain	1	4.9487	4.9487	Sagging	80.635E-6	0.12248	0.0	-	27415.0	0 (Negligible)	
AL	Min. Radius of Curvature (Hogging)	-	-	-	-	-	-	-	-	-	-	
	Min. Radius of Curvature (Sagging)	-	-	-	-	-	-	-	-	-	-	
	Maximum Slope	1	0.0	4.7371	Hogging	0.0	0.12352	0.0	3.4450E+9	-	0 (Negligible)	
	Maximum Settlement	1	0.0	4.7371	Hogging	0.0	0.12352	0.0	3.4450E+9	-	0 (Negligible)	
AL	Max. Tensile Strain	1	0.0	4.7371	Hogging	0.0	0.12352	0.0	3.4450E+9	-	0 (Negligible)	
	Max. Tensile Strain	1	0.0	4.7371	Hogging	0.0	0.12352	0.0	3.4450E+9	-	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	Min. Radius of Curvature (Hogging)		1	0.0	4.7371	Hogging	0.0	0.12352	0.0	3.4450E+9	- 0 (Negligible)	
	Min. Radius of Curvature (Sagging)		-	-	-	-	-	-	-	-	-	
	Maximum Slope		1	0.0	0.0	Sagging	83.880E-6	0.12352	0.0	-	28206. 0 (Negligible)	
	Maximum Settlement		1	0.0	0.0	Sagging	83.880E-6	0.12352	0.0	-	28206. 0 (Negligible)	
	Max. Tensile Strain		1	0.0	0.0	Sagging	83.880E-6	0.12352	0.0	-	28206. 0 (Negligible)	
	Min. Radius of Curvature (Hogging)		-	-	-	-	-	-	-	-	-	
	Min. Radius of Curvature (Sagging)		-	-	-	-	-	-	-	-	-	
AN	All settlements are less than the Settlement Trough Limit Sensitivity.											
AO	Maximum Slope		1	2.5169	2.5169	Sagging	72.005E-6	0.10237	0.0	-	48569. 0 (Negligible)	
	Maximum Settlement		1	2.5169	2.5169	Sagging	72.005E-6	0.10237	0.0	-	48569. 0 (Negligible)	
	Max. Tensile Strain		1	2.5169	2.5169	Sagging	72.005E-6	0.10237	0.0	-	48569. 0 (Negligible)	
	Min. Radius of Curvature (Hogging)		-	-	-	-	-	-	-	-	-	
	Min. Radius of Curvature (Sagging)		-	-	-	-	-	-	-	-	-	
AP	Maximum Slope		1	0.0	0.0	Sagging	22.407E-6	0.10245	0.0	-	109630. 0 (Negligible)	
	Maximum Settlement		1	0.0	0.0	Sagging	22.407E-6	0.10245	0.0	-	109630. 0 (Negligible)	
	Max. Tensile Strain		1	0.0	0.0	Sagging	22.407E-6	0.10245	0.0	-	109630. 0 (Negligible)	
	Min. Radius of Curvature (Hogging)		-	-	-	-	-	-	-	-	-	
	Min. Radius of Curvature (Sagging)		-	-	-	-	-	-	-	-	-	
AQ	All settlements are less than the Settlement Trough Limit Sensitivity.											
AR	Maximum Slope		1	0.0	0.0	Sagging	104.29E-6	0.15554	0.0	-	15331. 0 (Negligible)	
	Maximum Settlement		1	0.0	0.0	Sagging	104.29E-6	0.15554	0.0	-	15331. 0 (Negligible)	
	Max. Tensile Strain		1	0.0	0.0	Sagging	104.29E-6	0.15554	0.0	-	15331. 0 (Negligible)	
	Min. Radius of Curvature (Hogging)		-	-	-	-	-	-	-	-	-	
	Min. Radius of Curvature (Sagging)		-	-	-	-	-	-	-	-	-	
AS	All settlements are less than the Settlement Trough Limit Sensitivity.											
AT	Maximum Slope		1	0.0	0.0	Sagging	567.19E-6	1.8593	0.037238	7120.2	- 0 (Negligible)	
	Maximum Settlement		1	0.0	0.0	Sagging	567.19E-6	1.8593	0.037238	7120.2	- 0 (Negligible)	
	Max. Tensile Strain		1	0.0	0.0	Sagging	567.19E-6	1.8593	0.037238	7120.2	- 0 (Negligible)	
	Min. Radius of Curvature (Hogging)		-	-	-	-	-	-	-	-	-	
	Min. Radius of Curvature (Sagging)		-	-	-	-	-	-	-	-	-	
AV	All settlements are less than the Settlement Trough Limit Sensitivity.											
AW	Maximum Slope		1	7.6809	11.520	Hogging	567.19E-6	1.8593	0.037238	7120.2	- 0 (Negligible)	
	Maximum Settlement		1	7.6809	11.520	Hogging	567.19E-6	1.8593	0.037238	7120.2	- 0 (Negligible)	
	Max. Tensile Strain		1	7.6809	11.520	Hogging	567.19E-6	1.8593	0.037238	7120.2	- 0 (Negligible)	
	Min. Radius of Curvature (Hogging)		-	-	-	-	-	-	-	-	-	
	Min. Radius of Curvature (Sagging)		-	-	-	-	-	-	-	-	-	

Specific Building Damage Results - All Combined Segments

Structure: A | 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]			[%]	[%]	[%]	
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]			[%]	[%]	[%]	
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]			[%]	[%]	[%]	
No structures have segments combined.								



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[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] [%] [%] [%] 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] [%] [%] [%] 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] [%] [%] [%] 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] [%] [%] [%] 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] [%] [%] [%] 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] [%] [%] [%] 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] [%] [%] [%] 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] [%] [%] [%] No structures have segments combined.									
Structure: L 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] [%] [%] [%] No structures have segments combined.									
Structure: M 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] [%] [%] [%] No structures have segments combined.									
Structure: N Sub-structure:									



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Vertical Offset from Line for Vertical Movement Calculations	Combined Segment	Start	Length	Curvature	Deflection Ratio	Average Horizontal Strain	Max. Tensile Strain	Damage	Category
[m]		[m]	[m]		[%]	[%]	[%]		
No structures have segments combined.									
Structure: 0 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]		[%]	[%]	[%]		
No structures have segments combined.									
Structure: P Sub-structure: Sub #									
Vertical Offset from Line for Vertical Movement Calculations	Combined Segment	Start	Length	Curvature	Deflection Ratio	Average Horizontal Strain	Max. Tensile Strain	Damage	Category
[m]		[m]	[m]		[%]	[%]	[%]		
No structures have segments combined.									
Structure: Q 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]		[%]	[%]	[%]		
No structures have segments combined.									
Structure: R 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]		[%]	[%]	[%]		
No structures have segments combined.									
Structure: S 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]		[%]	[%]	[%]		
No structures have segments combined.									
Structure: T 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]		[%]	[%]	[%]		
No structures have segments combined.									
Structure: U 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]		[%]	[%]	[%]		
No structures have segments combined.									
Structure: V 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]		[%]	[%]	[%]		
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]		[%]	[%]	[%]		
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



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

Structure: AG | 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]	[%]	[%]	[%]		
No structures have segments combined.								

Structure: AH | 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]	[%]	[%]	[%]		
No structures have segments combined.								

Structure: AI | Sub-structure:



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Vertical Offset from Line for Vertical Movement Calculations	Combined Segment	Start	Length	Curvature	Deflection Ratio	Average Horizontal Strain	Max. Tensile Strain	Damage	Category
[m]		[m]	[m]		[%]	[%]	[%]		
No structures have segments combined.									
Structure: AJ 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]		[%]	[%]	[%]		
No structures have segments combined.									
Structure: AK 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]		[%]	[%]	[%]		
No structures have segments combined.									
Structure: AL 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]		[%]	[%]	[%]		
No structures have segments combined.									
Structure: AM 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]		[%]	[%]	[%]		
No structures have segments combined.									
Structure: AN 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]		[%]	[%]	[%]		
No structures have segments combined.									
Structure: AO 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]		[%]	[%]	[%]		
No structures have segments combined.									
Structure: AP 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]		[%]	[%]	[%]		
No structures have segments combined.									
Structure: AQ 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]		[%]	[%]	[%]		
No structures have segments combined.									
Structure: AR 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]		[%]	[%]	[%]		
No structures have segments combined.									
Structure: AS 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



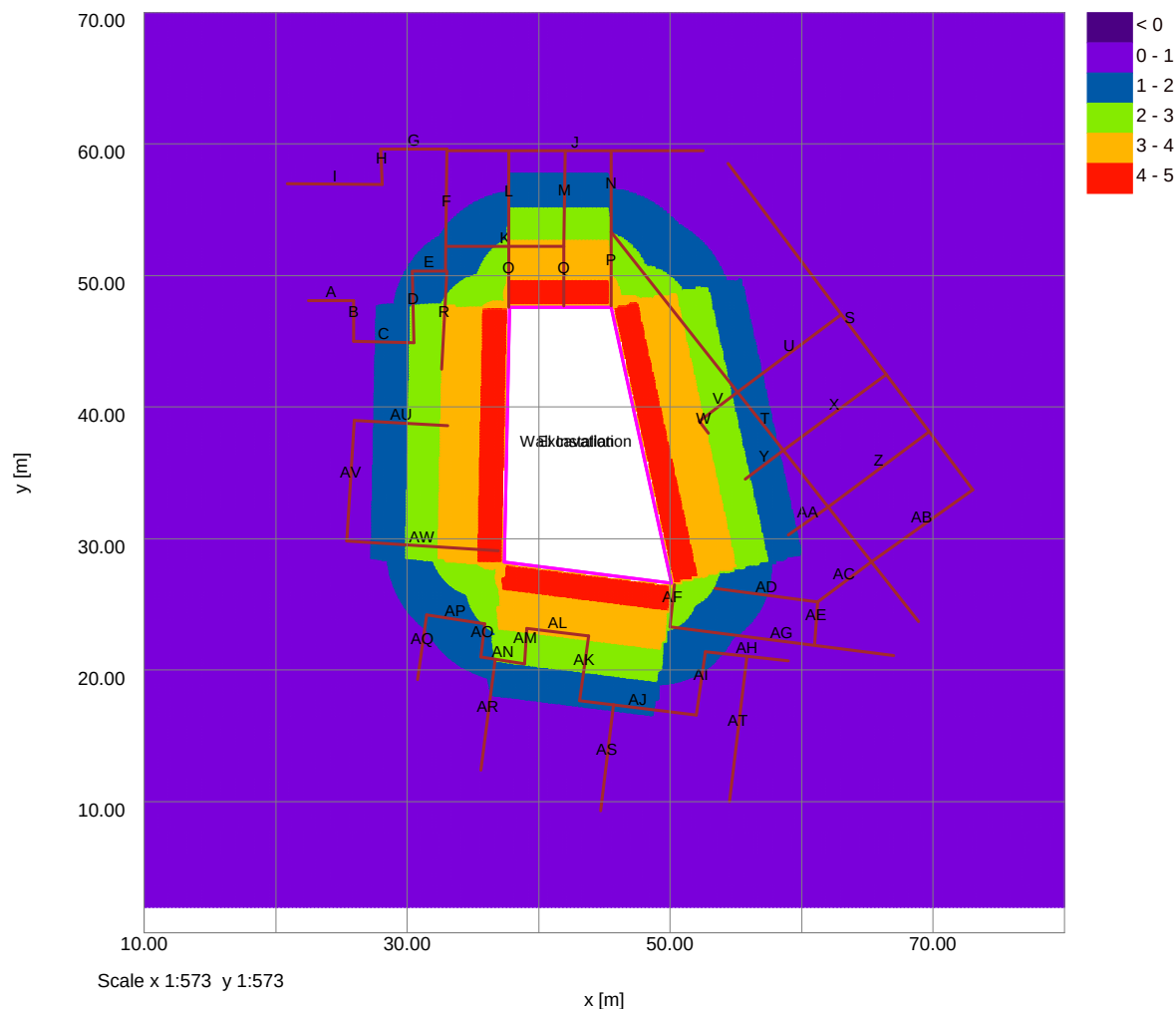
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[m] [m] [m] [%] [%] [%] No structures have segments combined.									
Structure: AT Sub-structure:									
Vertical Offset from Line for Vertical Movement Calculations	Combined Segment	Start	Length	Curvature	Deflection Ratio	Average Horizontal Strain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

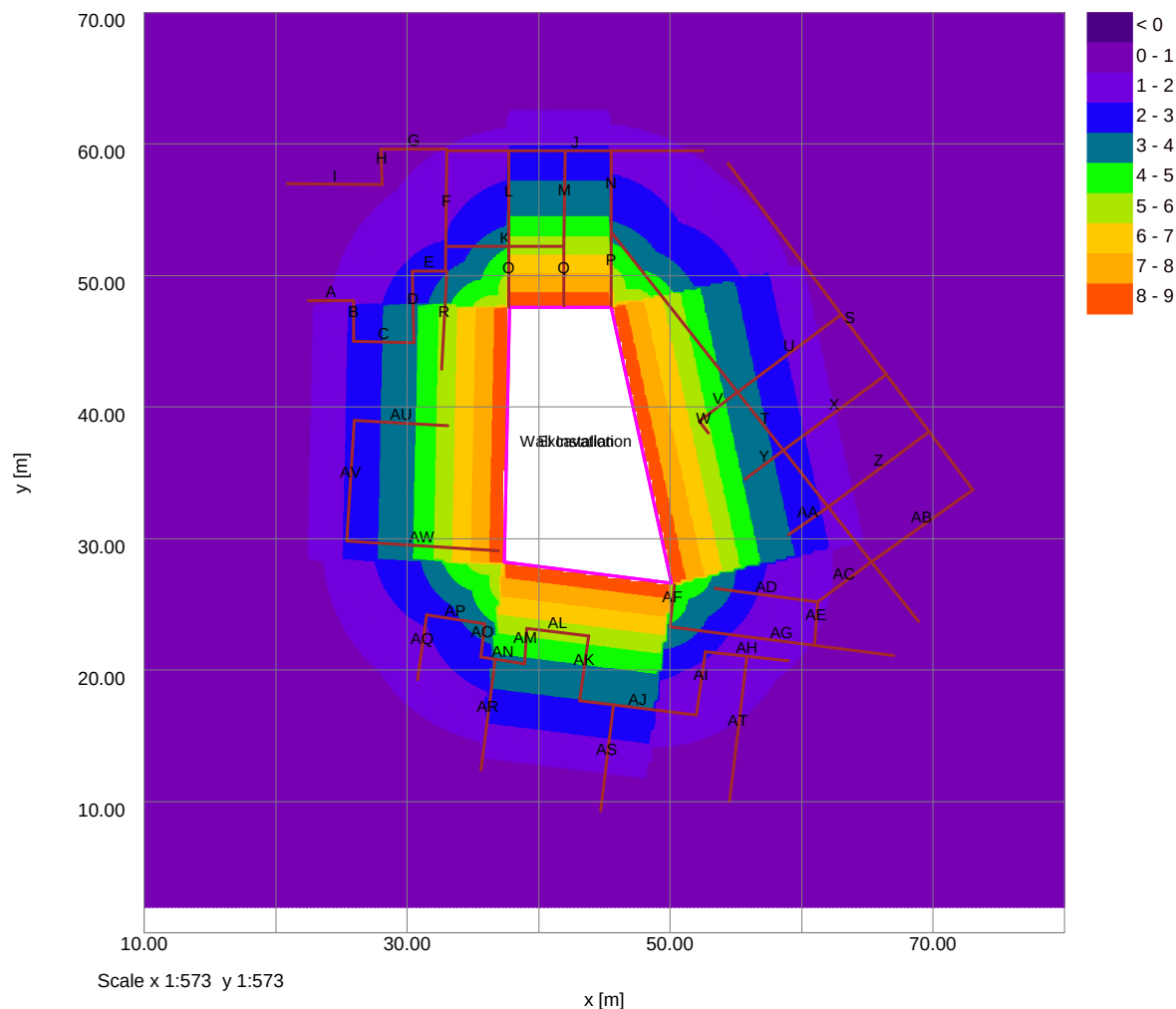
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Vertical Settlement Contours: Grid 1 (level 0.000m) (Interval 1mm)



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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	No. of intervals along extrusion	Calculate	Surface type for tunnels
			First point			Second point							
			X	Y	Z(level)	X	Y	Z(level)					
			[m]	[m]	[m]	[m]	[m]	[m]					
Grid	Grid 1	Global X	0.46000	2.00000	0.00000	-	80.00000	0.00000	350	100.00000	350	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	30.50000	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	47.70000	-1.85000	6	-	-	Yes	Surface
Line	Q	-	41.90000	52.20000	-0.65000	41.90000	47.70000	-0.65000	5	-	-	Yes	Surface
Line	R	-	33.60000	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	-1.46000	59.00000	30.30000	-1.46000	4	-	-	Yes	Surface
Line	AB	-	73.00000	33.70000	-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	5	-	-	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	30.80000	19.30000	-0.50000	5	-	-	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	38.00000	-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	36.90000	29.10000	-2.00000	6	-	-	Yes	Surface

Vertical Ground Movement Curves

Curve Name: Installation of planar diaphragm wall in stiff clay (CIRIA 500 Fig. 2.9(b))
Coordinates: [Distance from wall / wall depth or max. excavation depth (x), Depth / wall depth or max. excavation depth (y), Settlement / wall depth or max. excavation depth (z)(%)]
[0.000,0.000,0.050][0.050,0.000,0.047][0.100,0.000,0.043][0.150,0.000,0.040]
[0.200,0.000,0.037][0.250,0.000,0.034][0.300,0.000,0.031][0.350,0.000,0.028]
[0.400,0.000,0.025][0.450,0.000,0.022][0.500,0.000,0.020][0.550,0.000,0.018]
[0.600,0.000,0.016][0.650,0.000,0.014][0.700,0.000,0.012][0.750,0.000,0.010]
[0.800,0.000,0.008][0.850,0.000,0.007][0.900,0.000,0.006][0.950,0.000,0.005]
[1.000,0.000,0.004][1.050,0.000,0.003][1.100,0.000,0.003][1.150,0.000,0.002]
[1.200,0.000,0.002][1.250,0.000,0.001][1.300,0.000,0.001][1.350,0.000,0.001]
[1.400,0.000,0.001][1.450,0.000,0.000][1.500,0.000,0.000]
Curve Fitting Method: Polynomial
x Order: 4
y Order: 0
Polynomial: z = -1.2355E-2x⁴ + 3.4814E-2x³ - 2.8885E-3x² - 6.5618E-2x + 4.9987E-2
Coeff. of 1.0000
Determination:

Curve Name: Excavation in front of high stiffness wall in stiff clay (CIRIA 500 Fig. 2.11(b))
Coordinates: [Distance from wall / wall depth or max. excavation depth (x), Depth / wall depth or max. excavation depth (y), Settlement / wall depth or max. excavation depth (z)(%)]
[0.000,0.000,0.039][0.100,0.000,0.049][0.200,0.000,0.056][0.300,0.000,0.062]
[0.400,0.000,0.067][0.500,0.000,0.070][0.600,0.000,0.072][0.700,0.000,0.073]
[0.800,0.000,0.073][0.900,0.000,0.072][1.000,0.000,0.070][1.100,0.000,0.068]
[1.200,0.000,0.065][1.300,0.000,0.061][1.400,0.000,0.058][1.500,0.000,0.054]
[1.600,0.000,0.050][1.700,0.000,0.046][1.800,0.000,0.042][1.900,0.000,0.038]
[2.000,0.000,0.034][2.100,0.000,0.030][2.200,0.000,0.027][2.300,0.000,0.023]
[2.400,0.000,0.020][2.500,0.000,0.017][2.600,0.000,0.014][2.700,0.000,0.012]
[2.800,0.000,0.010][2.900,0.000,0.008][3.000,0.000,0.007][3.100,0.000,0.005]
[3.200,0.000,0.004][3.300,0.000,0.004][3.400,0.000,0.003][3.500,0.000,0.002]
[3.600,0.000,0.002][3.700,0.000,0.002][3.800,0.000,0.001][3.900,0.000,0.001]
[4.000,0.000,0.000]
Curve Fitting Method: Polynomial
x Order: 4
y Order: 0
Polynomial: z = -2.6455E-3x⁴ + 2.8495E-2x³ - 1.0051E-1x² + 1.0569E-1x + 3.8990E-2
Coeff. of 9.9991E-1
Determination:

Horizontal Ground Movement Curves

Curve Name: Installation of planar diaphragm wall in stiff clay (CIRIA 500 Fig. 2.9(a))
Coordinates: [Distance from wall / wall depth or max. excavation depth (x), Depth / wall depth or max. excavation depth (y), Horizontal movement / wall depth or max. excavation depth (z)(%)]
[0.000,0.000,0.050][1.500,0.000,0.000]
Curve Fitting Method: Polynomial
x Order: 1
y Order: 0
Polynomial: z = -3.33E-2x + 5.00E-2
Coeff. of 1.00
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
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)(%)]							
Curve Fitting Method:	Polynomial							
x Order:	1							
y Order:	0							
Polynomial: z =	-3.75E-2x + 1.50E-1							
Coeff. of Determination:	1.00							
Polygonal Excavations								
Excavation Name:	Wall Installation							
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 p1 p2* d p1 p2*			
					[m] [%] [%] [m] [%] [%]			
1	37.400	28.200	-4.4000	No	- - -	- - -		
2	50.100	26.600	-4.4000	No	- - -	- - -		
3	45.500	47.600	-4.4000	No	- - -	- - -		
4	37.800	47.600	-4.4000	No	- - -	- - -		
Side	Corner 1	Corner 2	Ground Movement Curve					
	x	y	x	y				
	[m]	[m]	[m]	[m]				
1	37.400	28.200	50.100	26.600	Installation of planar diaphragm wall in stiff clay (CIRIA 580 Fig. 2.9(b))			
2	50.100	26.600	45.500	47.600	Installation of planar diaphragm wall in stiff clay (CIRIA 580 Fig. 2.9(b))			
3	45.500	47.600	37.800	47.600	Installation of planar diaphragm wall in stiff clay (CIRIA 580 Fig. 2.9(b))			
4	37.800	47.600	37.400	28.200	Installation of planar diaphragm wall in stiff clay (CIRIA 580 Fig. 2.9(b))			
Excavation Name: Excavation								
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 p1 p2* d p1 p2*			
					[m] [%] [%] [m] [%] [%]			
1	37.400	28.200	-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	45.500	47.600	-4.4000	Yes	0.0 67.000 25.000	0.0 67.000 25.000		
4	37.800	47.600	-4.4000	Yes	0.0 67.000 25.000	0.0 67.000 25.000		
Side	Corner 1	Corner 2	Ground Movement Curve					
	x	y	x	y				
	[m]	[m]	[m]	[m]				
1	37.400	28.200	50.100	26.600	Excavation in front of high stiffness wall in stiff clay (CIRIA 580 Fig. 2.11(b))			
2	50.100	26.600	45.500	47.600	Excavation in front of high stiffness wall in stiff clay (CIRIA 580 Fig. 2.11(b))			
3	45.500	47.600	37.800	47.600	Excavation in front of high stiffness wall in stiff clay (CIRIA 580 Fig. 2.11(b))			
4	37.800	47.600	37.400	28.200	Excavation in front of high stiffness wall in stiff clay (CIRIA 580 Fig. 2.11(b))			
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
A		A	[m]	[m]	[m]	[mm]		
B		B	0.00000	3.39900	0.0	0.10000	Burland Strain Limits	0.20000 2.6000
C		C	0.00000	3.09900	0.0	0.10000	Burland Strain Limits	0.20000 2.6000
D		D	0.00000	4.60000	0.0	0.10000	Burland Strain Limits	0.20000 2.6000
E		E	0.00000	5.39900	0.0	0.10000	Burland Strain Limits	0.20000 2.6000
F		F	0.00000	2.49000	0.0	0.10000	Burland Strain Limits	0.20000 2.6000
G		G	0.00000	9.29954	0.0	0.10000	Burland Strain Limits	0.20000 2.6000
H		H	0.00000	4.99900	0.0	0.10000	Burland Strain Limits	0.20000 2.6000
I		I	0.00000	2.70085	0.0	0.10000	Burland Strain Limits	0.20000 2.6000
J		J	0.00000	7.19969	0.0	0.10000	Burland Strain Limits	0.20000 2.6000
K		K	0.00000	19.49900	0.0	0.10000	Burland Strain Limits	0.20000 2.6000
L		L	0.00000	8.89900	0.0	0.10000	Burland Strain Limits	0.20000 2.6000
M		M	0.00000	7.19900	0.0	0.10000	Burland Strain Limits	0.20000 2.6000
N		N	0.00000	7.29968	0.0	0.10000	Burland Strain Limits	0.20000 2.6000
O		O	0.00000	6.09900	0.0	0.10000	Burland Strain Limits	0.20000 2.6000
P	Sub #	P	0.00000	4.59900	0.0	0.10000	Burland Strain Limits	0.20000 2.6000
Q		Q	0.00000	5.59900	0.0	0.10000	Burland Strain Limits	0.20000 2.6000
R		R	0.00000	4.49900	0.0	0.10000	Burland Strain Limits	0.20000 2.6000
S		S	0.00000	7.40980	0.0	0.10000	Burland Strain Limits	0.20000 2.6000
T		T	0.00000	30.99900	0.0	0.10000	Burland Strain Limits	0.20000 2.6000
U		U	0.00000	37.73121	0.0	0.10000	Burland Strain Limits	0.20000 2.6000
V		V	0.00000	9.85902	0.0	0.10000	Burland Strain Limits	0.20000 2.6000
W		W	0.00000	3.63905	0.0	0.10000	Burland Strain Limits	0.20000 2.6000
X		X	0.00000	1.13918	0.0	0.10000	Burland Strain Limits	0.20000 2.6000
Y		Y	0.00000	9.71908	0.0	0.10000	Burland Strain Limits	0.20000 2.6000
Z		Z	0.00000	3.63905	0.0	0.10000	Burland Strain Limits	0.20000 2.6000
AA		AA	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



GEA LIMITED (GEOTECHNICAL & ENV ASSOC)

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

Job No.	Sheet No.	Rev.
J16180		
Drg. Ref.		
Made by	Date 01-Nov-2016	Checked

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
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	3.21393	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	AI		0.00000	4.84977	0.0	0.10000	Burland Strain Limits		0.20000	2.6000
AJ	AJ		0.00000	8.96672	0.0	0.10000	Burland Strain Limits		0.20000	2.6000
AK	AK		0.00000	4.94875	0.0	0.10000	Burland Strain Limits		0.20000	2.6000
AL	AL		0.00000	7.73714	0.0	0.10000	Burland Strain Limits		0.20000	2.6000
AM	AM		0.00000	2.70640	0.0	0.10000	Burland Strain Limits		0.20000	2.6000
AN	AN		0.00000	3.33666	0.0	0.10000	Burland Strain Limits		0.20000	2.6000
AO	AO		0.00000	2.51694	0.0	0.10000	Burland Strain Limits		0.20000	2.6000
AP	AP		0.00000	4.45433	0.0	0.10000	Burland Strain Limits		0.20000	2.6000
AQ	AQ		0.00000	4.94875	0.0	0.10000	Burland Strain Limits		0.20000	2.6000
AR	AR		0.00000	8.47072	0.0	0.10000	Burland Strain Limits		0.20000	2.6000
AS	AS		0.00000	8.16049	0.0	0.10000	Burland Strain Limits		0.20000	2.6000
AT	AT		0.00000	11.07555	0.0	0.10000	Burland Strain Limits		0.20000	2.6000
AU	AU		0.00000	7.11026	0.0	0.10000	Burland Strain Limits		0.20000	2.6000
AV	AV		0.00000	9.21854	0.0	0.10000	Burland Strain Limits		0.20000	2.6000
AW	AW		0.00000	11.52028	0.0	0.10000	Burland Strain Limits		0.20000	2.6000

Specific Structures - Bending Parameters

Structure Name	Sub-Structure Name	Height	Default Properties	Hogging			Sagging		
				2nd Moment of Area (per unit width)	Distance of Bending Strain from N.A.	Distance of N.A. from Edge of Beam in Tension	2nd Moment of Area (per unit width)	Distance of Bending Strain from N.A.	Distance of N.A. from Edge of Beam in Tension
		[m]		[m ³]	[m]	[m]	[m ³]	[m]	[m]
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
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
J		15.500	Yes	1241.3	15.500	15.500	310.32	7.7500	7.7500
K		8.5000	Yes	204.71	8.5000	8.5000	51.177	4.2500	4.2500
L		8.5000	Yes	204.71	8.5000	8.5000	51.177	4.2500	4.2500
M		9.5000	Yes	285.79	9.5000	9.5000	71.448	4.7500	4.7500
O		12.000	Yes	576.00	12.000	12.000	144.00	6.0000	6.0000
P		3.6800	Yes	16.612	3.6800	3.6800	4.1530	1.8400	1.8400
Q	Sub #	4.8500	Yes	38.028	4.8500	4.8500	9.5070	2.4250	2.4250
R		3.6500	Yes	16.209	3.6500	3.6500	4.0523	1.8250	1.8250
S		3.5000	Yes	14.292	3.5000	3.5000	3.5729	1.7500	1.7500
T		8.5000	Yes	204.71	8.5000	8.5000	51.177	4.2500	4.2500
U		8.5000	Yes	204.71	8.5000	8.5000	51.177	4.2500	4.2500
V		6.5000	Yes	91.542	6.5000	6.5000	22.885	3.2500	3.2500
W		7.7000	Yes	152.18	7.7000	7.7000	38.044	3.8500	3.8500
X		8.5000	Yes	204.71	8.5000	8.5000	51.177	4.2500	4.2500
Y		7.4000	Yes	135.07	7.4000	7.4000	33.769	3.7000	3.7000
Z		8.5000	Yes	204.71	8.5000	8.5000	51.177	4.2500	4.2500
AA		7.4000	Yes	135.07	7.4000	7.4000	33.769	3.7000	3.7000
AB		8.5000	Yes	204.71	8.5000	8.5000	51.177	4.2500	4.2500
AC		3.5000	Yes	14.292	3.5000	3.5000	3.5729	1.7500	1.7500
AD		4.4600	Yes	29.572	4.4600	4.4600	7.3930	2.2300	2.2300
AE		3.5000	Yes	14.292	3.5000	3.5000	3.5729	1.7500	1.7500
AF		4.4600	Yes	29.572	4.4600	4.4600	7.3930	2.2300	2.2300
AG		3.5000	Yes	14.292	3.5000	3.5000	3.5729	1.7500	1.7500
AH		15.500	Yes	1241.3	15.500	15.500	310.32	7.7500	7.7500
AI		15.500	Yes	1241.3	15.500	15.500	310.32	7.7500	7.7500
AJ		15.500	Yes	1241.3	15.500	15.500	310.32	7.7500	7.7500
AK		15.500	Yes	1241.3	15.500	15.500	310.32	7.7500	7.7500
AL		15.500	Yes	1241.3	15.500	15.500	310.32	7.7500	7.7500
AM		15.500	Yes	1241.3	15.500	15.500	310.32	7.7500	7.7500
AN		15.500	Yes	1241.3	15.500	15.500	310.32	7.7500	7.7500
AO		15.500	Yes	1241.3	15.500	15.500	310.32	7.7500	7.7500
AP		15.500	Yes	1241.3	15.500	15.500	310.32	7.7500	7.7500
AQ		15.500	Yes	1241.3	15.500	15.500	310.32	7.7500	7.7500
AR		15.500	Yes	1241.3	15.500	15.500	310.32	7.7500	7.7500
AS		15.500	Yes	1241.3	15.500	15.500	310.32	7.7500	7.7500
AT		15.500	Yes	1241.3	15.500	15.500	310.32	7.7500	7.7500
AU		4.6000	Yes	32.445	4.6000	4.6000	8.1113	2.3000	2.3000
AV		4.6000	Yes	32.445	4.6000	4.6000	8.1113	2.3000	2.3000
AW		4.6000	Yes	32.445	4.6000	4.6000	8.1113	2.3000	2.3000

Building Segment Combinations

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

Displacement and Strain Results

Type/No.	Coordinates				Displacements				Angle of Line to x Axis
Name	Dist.	x	y	z	x	y	z	Horizontal displacement along the Line	Horizontal displacement perpendicular to Line
		[m]	[m]	[m]	[mm]	[mm]	[mm]	[mm]	[mm]
A	Line 1	22.50000	48.10000	-0.50000	0.57700	-0.018056	0.074975	0.57700	-0.018056
	0.85000	23.35000	48.10000	-0.50000	0.70933	-0.027347	0.10772	0.70933	-0.027347
	1.7000	24.20000	48.10000	-0.50000	1.0033	-0.036895	0.16010	1.0033	-0.036895
	2.5500	25.05000	48.10000	-0.50000	1.2157	-0.047676	0.23866	1.2157	-0.047676
	3.4000	25.90000	48.10000	-0.50000	1.4276	-0.059983	0.34736	1.4276	-0.059983
B	Line 2	25.90000	48.10000	-0.50000	1.4276	-0.059983	0.34736	0.059983	1.4276
	0.77500	25.90000	47.32500	-0.50000	2.1401	-0.044126	0.52200	0.044126	2.1401
	1.5500	25.90000	46.55000	-0.50000	2.1461	-0.044250	0.52633	0.044250	2.1461
	2.3250	25.90000	45.77500	-0.50000	2.1521	-0.044373	0.52988	0.044373	2.1521
	3.1000	25.90000	45.00000	-0.50000	2.1581	-0.044497	0.53345	0.044497	2.1581
C	Line 3	25.90000	45.00000	-0.50000	2.1581	-0.044497	0.53345	2.1585	0.0024177
	0.92022	26.82000	44.90000	-0.50000	2.5031	-0.051610	0.76727	2.5036	0.0020042
	1.8404	27.74000	44.90000	-0.50000	2.8481	-0.058724	1.0541	2.8487	0.0031908
	2.7607	28.66000	44.94000	-0.50000	3.1931	-0.065837	1.3859	3.1938	0.0035773
	3.6809	29.58000	44.92000	-0.50000	3.5381	-0.072951	1.7493	3.5389	0.0039638
D	Line 4	30.50000	44.90000	-0.50000	3.8831	-0.080064	2.1255	3.8840	0.0043503
	0.9015	30.48333	45.80000	-0.50000	3.8699	-0.079792	2.1112	-0.15143	-3.8678
	1.8003	30.46667	46.70000	-0.50000	3.8567	-0.079520	2.0968	-0.15091	-3.8546
	2.7005	30.45000	47.60000	-0.50000	3.8435	-0.079248	2.0824	-0.15040	-3.8414
	3.6006	30.43333	48.50000	-0.50000	2.4721	-0.302602	1.3392	-0.34774	-2.4661



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Rear of 159-163 King's Cross Road, London WC1X 9BN
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Job No.	Sheet No.	Rev.
J16180		
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Made by	Date 01-Nov-2016	Checked

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

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

Job No.	Sheet No.	Rev.
J16180		
Drg. Ref.		
Made by	Date	Checked
	01-Nov-2016	

Type/No.	Coordinates			Displacements			Angle of Line			
Name	Dist.	x	y	z	x	y	z	Horizontal displacement	Horizontal displacement	to x Axis
	7.9436	50.42632	47.06842	-0.50000	-5.3452	-1.1708	3.1440	-2.3964	-4.9193	308.33
	9.9295	51.65789	45.51053	-0.50000	-4.7434	-1.0399	2.8133	-2.1266	-4.3655	308.33
	11.915	52.88947	43.95263	-0.50000	-4.1416	-0.90722	2.4560	-1.8568	-3.8116	308.33
	13.901	54.12105	42.38474	-0.50000	-3.7703	-0.82587	2.0991	-1.6903	-3.4690	308.33
	15.887	55.35263	40.81735	-0.50000	-3.4517	-0.75668	1.7435	-1.5476	-3.1766	308.33
	17.873	56.58421	39.27895	-0.50000	-3.1331	-0.68630	1.3997	-1.4046	-2.8834	308.33
	19.859	57.81579	37.72105	-0.50000	-2.8145	-0.61651	1.0836	-1.2618	-2.5902	308.33
	21.845	59.04737	36.16316	-0.50000	-2.4959	-0.54672	0.80682	-1.1190	-2.2970	308.33
	23.831	60.27895	34.59526	-0.50000	-2.1773	-0.47694	0.57664	-0.97615	-2.0038	308.33
	25.817	61.51053	33.02737	-0.50000	-1.8587	-0.40715	0.39617	-0.83332	-1.7186	308.33
	27.803	62.74211	31.48947	-0.50000	-1.5402	-0.33737	0.26419	-0.69049	-1.4174	308.33
	29.789	63.97368	29.93158	-0.50000	-1.2216	-0.26758	0.17528	-0.54766	-1.1242	308.33
	31.774	65.20526	28.37368	-0.50000	-0.95488	-0.053412	0.059302	-0.24020	-0.38996	308.33
	33.760	66.43684	26.81579	-0.50000	-0.23480	-0.0031020	0.035252	-0.14321	-0.18621	308.33
	35.746	67.66842	25.25789	-0.50000	0.0	0.0	0.0	0.0	0.0	308.33
	37.732	68.90000	23.70000	-0.50000	0.0	0.0	0.0	0.0	0.0	308.33
U	Line 21	63.00000	47.00000	-0.50000	-0.23213	-0.050848	0.043842	0.21641	-0.098162	216.75
	0.98600	62.21000	46.41000	-0.50000	-0.56106	-0.12290	0.081124	0.52307	-0.23726	216.75
	1.9720	61.42000	45.82000	-0.50000	-0.89090	-0.19495	0.11796	0.82973	-0.37635	216.75
	2.9580	60.63000	45.23000	-0.50000	-1.2189	-0.26700	0.17478	1.1364	-0.51545	216.75
	3.9440	59.84000	44.64000	-0.50000	-1.5479	-0.33995	0.26684	1.4431	-0.65455	216.75
	4.9300	59.05000	44.05000	-0.50000	-1.8768	-0.41111	0.40506	1.7497	-0.79364	216.75
	5.9160	58.26000	43.46000	-0.50000	-2.2057	-0.48316	0.59515	2.0564	-0.93274	216.75
	6.9020	57.47000	42.87000	-0.50000	-2.5347	-0.55520	0.83809	2.2630	-1.0718	216.75
	7.8880	56.68000	42.28000	-0.50000	-2.8636	-0.62726	1.1308	2.5697	-1.2189	216.75
	8.8740	55.89000	41.69000	-0.50000	-3.1925	-0.69931	1.4622	2.9763	-1.3500	216.75
	9.8600	55.10000	41.10000	-0.50000	-3.5214	-0.77136	1.8210	3.2830	-1.4891	216.75
V	Line 22	55.00000	41.00000	-0.50000	-3.5214	-0.77136	1.8210	3.2717	-1.5138	217.18
	0.91001	53.75000	40.41000	-0.50000	-3.8504	-0.83763	2.1589	3.5528	-1.6438	217.18
	1.8200	53.68000	40.00000	-0.50000	-4.2128	-0.92280	2.5097	3.9140	-1.8110	217.18
	2.7300	52.92500	39.45000	-0.50000	-4.7843	-1.0480	2.8364	4.4450	-2.0566	217.18
	3.6401	52.20000	38.90000	-0.50000	-5.3557	-1.1732	3.1496	4.9759	-2.3023	217.18
W	Line 23	52.20000	38.90000	-1.70000	-5.3557	-1.1732	3.1496	-2.3621	-4.9478	307.87
	0.57099	52.15000	38.85000	-1.70000	-5.1858	-1.1359	3.0578	-2.2871	-4.7908	307.87
	1.1402	52.09000	38.80000	-1.70000	-5.0158	-1.0987	2.9649	-2.2122	-4.6338	307.87
X	Line 24	66.40000	42.50000	-0.50000	0.0	0.0	0.0	0.0	0.0	216.63
	0.97201	65.62000	41.92000	-0.50000	0.0	0.0	0.0	0.0	0.0	216.63
	1.9440	64.84000	41.34000	-0.50000	-0.017366	-0.0038040	0.0074358	0.016205	-0.0073098	216.63
	2.9160	64.06000	40.76000	-0.50000	-0.25347	-0.074909	0.057793	-0.31908	-0.074909	216.63
	3.8880	63.28000	40.18000	-0.50000	-0.66650	-0.14600	0.091907	0.62196	-0.28055	216.63
	4.8600	62.50000	39.60000	-0.50000	-0.99107	-0.21709	0.13246	0.92484	-0.41717	216.63
	5.8320	61.72000	39.02000	-0.50000	-1.3156	-0.28819	0.19755	1.2277	-0.55379	216.63
	6.8041	60.94000	38.44000	-0.50000	-1.6402	-0.35928	0.30866	1.5306	-0.69041	216.63
	7.7761	60.16000	37.86000	-0.50000	-1.9648	-0.43036	0.45070	1.8335	-0.96305	216.63
	8.7481	59.38000	37.28000	-0.50000	-2.2894	-0.50148	0.65198	2.1364	-0.96305	216.63
	9.7201	58.60000	36.70000	-0.50000	-2.6139	-0.57257	0.90421	2.4392	-1.1003	216.63
Y	Line 25	58.60000	36.70000	-1.40000	-2.6139	-0.57257	0.90421	2.4285	-1.1237	217.18
	0.91001	57.87500	36.15000	-1.40000	-2.9165	-0.63884	1.1810	2.7096	-1.2537	217.18
	1.8200	57.15000	35.57000	-1.40000	-3.2190	-0.70511	1.4903	3.0907	-1.3807	217.18
	2.7300	56.42500	35.05000	-1.40000	-3.5215	-0.77138	1.8211	3.2718	-1.5138	217.18
	3.6401	55.70000	34.50000	-1.40000	-3.8241	-0.83765	2.1590	3.5529	-1.6439	217.18
Z	Line 26	69.70000	38.10000	-0.50000	0.0	0.0	0.0	0.0	0.0	216.51
	0.95802	68.93000	37.53000	-0.50000	0.0	0.0	0.0	0.0	0.0	216.51
	1.9160	68.16000	36.95000	-0.50000	0.0	0.0	0.0	0.0	0.0	216.51
	2.8741	67.39000	36.39000	-0.50000	0.0	0.0	0.0	0.0	0.0	216.51
	3.8321	66.62000	35.82000	-0.50000	0.0	0.0	0.0	0.0	0.0	216.51
	4.7901	65.85000	35.25000	-0.50000	-0.13330	-0.029200	0.028905	0.12451	-0.055843	216.51
	5.7481	65.08000	34.68000	-0.50000	-0.45351	-0.099340	0.078111	0.42361	-0.18998	216.51
	6.7061	64.31000	34.10000	-0.50000	-0.77372	-0.16048	0.16061	0.82271	-0.32413	216.51
	7.6642	63.54000	33.54000	-0.50000	-1.0939	-0.23962	0.14979	1.0218	-0.45827	216.51
	8.6222	62.77000	32.97000	-0.50000	-1.4141	-0.30976	0.22432	1.3209	-0.59241	216.51
	9.5802	62.00000	32.40000	-0.50000	-1.7343	-0.37990	0.33906	1.6200	-0.72655	216.51
AA	Line 27	62.00000	32.40000	-1.40000	-1.7343	-0.37990	0.33906	1.6387	-0.68335	214.99
	0.91549	61.25000	31.85000	-1.40000	-2.0431	-0.44771	0.40495	1.90515	-0.85141	214.99
	1.8310	60.50000	31.35000	-1.40000	-2.3534	-0.51550	0.69780	2.2236	-0.92726	214.99
	2.7465	59.75000	30.82500	-1.40000	-2.6629	-0.58330	0.94647	2.5160	-1.0492	214.99
	3.6620	59.00000	30.30000	-1.40000	-2.9724	-0.65110	1.2360	2.8085	-1.1712	214.99
AB	Line 28	73.00000	33.70000	-0.50000	0.0	0.0	0.0	0.0	0.0	215.54
	0.94626	72.23000	33.13000	-0.50000	0.0	0.0	0.0	0.0	0.0	215.54
	1.8925	71.46000	32.60000	-0.50000	0.0	0.0	0.0	0.0	0.0	215.54
	2.8388	70.69000	32.05000	-0.50000	0.0	0.0	0.0	0.0	0.0	215.54
	3.7850	69.92000	31.50000	-0.50000	0.0	0.0	0.0	0.0	0.0	215.54
	4.7313	69.15000	30.95000	-0.50000	0.0	0.0	0.0	0.0	0.0	215.54
	5.6775	68.38000	30.40000	-0.50000	0.0	0.0	0.0	0.0	0.0	215.54
	6.6238	67.61000	29.85000	-0.50000	0.0	0.0	0.0	0.0	0.0	215.54
	7.5700	66.84000	29.30000	-0.50000	-0.12315	-0.019863	0.022918	0.11176	-0.055417	215.54
	8.5163	66.07000	28.75000	-0.50000	-0.28339	-0.038153	0.040761	0.25278	-0.13367	215.54
	9.4626	65.30000	28.20000	-0.50000	-0.43977	-0.046291	0.057317	0.38476	-0.21794	215.54
AC	Line 29	65.30000	28.20000	-0.50000	-0.43977	-0.046291	0.057317	0.38476	-0.21794	215.54
	0.84673	64.61667	27.70000	-0.50000	-0.57446	-0.043530	0.077497	0.48931	-0.30409	216.19
	1.6935	63.93333	27.20000	-0.50000	-0.70396	-0.036533	0.10674	0.58615	-0.39105	216.19
	2.5402	63.25000	26.70000	-0.50000	-0.82694	-0.0062885	0.14705	0.67108	-0.48324	216.19
	3.3869	62.56667	26.20000	-0.50000	-0.94173	0.030216	0.19882	0.74216	-0.58048	216.19
	4.2336	61.88333	25.70000	-0.50000	-1.0463	0.07991	0.25100	0.81916	-0.67108	216.19
	5.0804	61.20000	25.20000	-0.50000	-1.1381	0.14355	0.33131	0.83372	-0.78791	216.19
AD	Line 30	61.20000	25.20000	-1.40000	-1.1381	0.14355	0.33131	1.1471	0.0023469	172.69
	0.98298	60.22500	25.32500	-1.40000	-1.3127	0.16530	0.47093	1.3231	0.0029676	172.69
	1.9660	59.25000	25.45000	-1.40000	-1.4873	0.18693	0.63624	1.4990	0.0037287	172.69
	2.9490	58.27500	25.57500	-1.40000	-1.6609	0.20831	0.82092	1.6750	0.0046516	172.69
	3.9319	57.30000	25.70000	-1.40000	-1.8369	0.22961	1.0118	1.8511	0.0058396	172.69
	4.9149	56.32500	25.82500	-1.40000	-2.1200	0.26393	1.2156	2.1363	0.0077952	172.69
	5.8979	55.35000	25.95000	-1.40000	-2.6204	0.32443	1.4313	2.6403	0.011425	172.69
	6.8899	54.37500	26.07500	-1.40000	-3.1212	0.38331	1.6692	3.1446	0.016712	172.69
	7.8638	53.40000	26.20000	-1.40000	-3.6230	0.43915	1.9615	3.6490	0.021500	172.69
AE	Line 31	61.20000	25.20000	-0.50000	-1.1381	0.14355	0.33131	-0.074432	-1.1447	266.53
	0.82651	61.15000	24.37500	-0.50000	-1.0861	0.21870	0.31389	-0.15259	-1.0974	266.53
	1.6530	61.10000	23.55000	-0.50000	-1.0211	0.28314	0.29036	-0.22084	-1.0364	266.53
	2.4795	61.05000	22.72500	-0.50000	-0.94607	0.33480	0.26219	-0.27695	-0.96460	266.53
	3.3061	61.00000	21.90000	-0.50000	-0.8630	0.37252	0.23181	-0.31995	-0.86408	266.53
AF	Line 32	50.30000	26.50000	-1.40000						



GEA LIMITED (GEOTECHNICAL & ENV ASSOC)

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

Job No.	Sheet No.	Rev.
J16180		
Drg. Ref.		
Made by	Date 01-Nov-2016	Checked

Type/No.	Coordinates			Displacements			Angle of Line			
Name	Dist.	x	y	z	x	y	z	to x Axis		
							Horizontal displacement	Horizontal displacement		
	1.9928	59.02222	16.84444	-0.50000	0.011919	1.4949	0.57908	0.17154	-1.4851	172.95
	2.9892	49.83333	16.96667	-0.50000	0.17051	1.5399	0.60703	0.019668	-1.5492	172.95
	3.9857	48.04444	17.08889	-0.50000	0.37061	2.9417	1.1614	-0.0069739	-2.9649	172.95
	4.9821	47.05556	17.21111	-0.50000	0.37050	2.9408	1.1606	-0.0069718	-2.9641	172.95
	5.9785	46.06667	17.33333	-0.50000	0.37039	2.9400	1.1598	-0.0069698	-2.9632	172.95
	6.9749	45.07778	17.45556	-0.50000	0.37028	2.9391	1.1589	-0.0069677	-2.9623	172.95
	7.9713	44.08889	17.57778	-0.50000	0.37017	2.9382	1.1581	-0.0069656	-2.9614	172.95
	8.9677	43.10000	17.70000	-0.50000	0.37006	2.9373	1.1573	-0.0069636	-2.9606	172.95
AK	Line 37	43.10000	17.70000	-0.50000	0.37006	2.9373	1.1573	2.9602	0.049063	81.870
	0.98995	43.24000	18.08000	-0.50000	0.41645	3.3056	1.5283	3.3313	0.055215	81.870
	1.9799	43.38000	19.66000	-0.50000	0.46285	3.6739	1.9279	3.7024	0.061366	81.870
	2.9698	43.52000	20.64000	-0.50000	0.50925	4.0421	2.3298	4.0735	0.067517	81.870
	3.9598	43.66000	21.62000	-0.50000	0.59123	4.6929	2.7434	4.7293	0.078387	81.870
	4.9497	43.80000	22.60000	-0.50000	0.67887	5.3885	3.1225	5.4303	0.090060	81.870
AL	Line 38	43.80000	22.60000	-0.50000	0.67887	5.3885	3.1225	0.0089548	-5.4311	172.72
	0.94763	42.86000	22.72000	-0.50000	0.67900	5.3896	3.1231	0.0089566	-5.4322	172.72
	1.8953	41.92000	22.84000	-0.50000	0.67914	5.3907	3.1236	0.0089584	-5.4333	172.72
	2.8429	40.98000	22.96000	-0.50000	0.67928	5.3918	3.1242	0.0089603	-5.4344	172.72
	3.7905	40.04000	23.08000	-0.50000	0.67942	5.3929	3.1248	0.0089621	-5.4355	172.72
	4.7381	39.10000	23.20000	-0.50000	0.67956	5.3940	3.1254	0.0089639	-5.4366	172.72
AM	Line 39	39.10000	23.20000	-0.50000	0.67956	5.3940	3.1254	-5.4295	0.27924	265.76
	0.90247	39.03333	22.30000	-0.50000	0.59976	4.7666	2.7814	-4.7919	0.24645	265.76
	1.8049	38.96667	21.40000	-0.50000	0.51996	4.1272	2.4060	-4.1543	0.21366	265.76
	2.7074	38.90000	20.50000	-0.50000	0.47567	3.7756	2.0400	-3.8004	0.19546	265.76
AN	Line 40	38.90000	20.50000	-0.50000	0.47567	3.7756	2.0400	0.095307	-3.8043	171.38
	0.83442	38.07500	20.62500	-0.50000	0.47665	3.7834	2.0485	0.095503	-3.8121	171.38
	1.6688	37.25000	20.75000	-0.50000	0.47763	3.7912	2.0571	0.095700	-3.8199	171.38
	2.5032	36.42500	20.87500	-0.50000	0.34883	2.6207	1.4262	0.047700	-2.6434	171.38
	3.3377	35.60000	21.00000	-0.50000	0.61663	2.4665	1.3672	-0.24017	-2.5311	171.38
AO	Line 41	35.60000	21.00000	-0.50000	0.61663	2.4665	1.3672	2.5224	-0.31836	83.157
	0.83011	35.70000	21.03333	-0.50000	0.70678	2.6467	1.5031	2.7120	-0.38633	83.157
	1.6786	35.80000	22.66667	-0.50000	0.88955	3.0764	1.8163	3.1604	-0.51668	83.157
	2.5179	35.90000	23.50000	-0.50000	1.1109	3.4807	2.0289	3.5882	-0.68823	83.157
AP	Line 42	35.90000	23.50000	-0.50000	1.1109	3.4807	2.0289	-0.55019	-3.6120	170.96
	0.89187	35.02000	23.64000	-0.50000	1.5538	2.9771	1.8624	-1.0668	-3.1842	170.96
	1.7821	34.14000	23.76000	-0.50000	1.7866	2.4223	1.3838	-2.6729	-3.3838	170.96
	2.6732	33.26000	23.92000	-0.50000	1.8277	1.8895	1.4846	-1.5081	-2.1532	170.96
	3.5643	32.38000	24.06000	-0.50000	1.7514	1.4444	1.3083	-1.5027	-1.7016	170.96
	4.4553	31.50000	24.20000	-0.50000	1.8156	1.2309	1.2133	-1.5996	-1.5009	170.96
AQ	Line 43	31.50000	24.20000	-0.50000	1.8156	1.2309	1.2133	-1.4753	1.6233	261.87
	0.90995	31.36000	23.22000	-0.50000	1.5219	1.2548	1.0151	-1.4574	1.3292	261.87
	1.9799	31.22000	22.24000	-0.50000	1.3266	1.2794	0.86117	-1.4541	1.1323	261.87
	2.9698	31.08000	21.26000	-0.50000	1.1598	1.2735	0.71152	-1.4248	0.96801	261.87
	3.9598	30.94000	20.28000	-0.50000	0.99880	1.2245	0.56076	-1.3535	0.81558	261.87
	4.9497	30.80000	19.30000	-0.50000	0.84615	1.1410	0.42043	-1.2492	0.67628	261.87
AR	Line 44	30.80000	19.30000	-0.50000	0.879635	0.93210	0.007344	0.63709	0.003139	82.539
	0.94130	35.72222	13.33333	-0.50000	0.12376	0.98232	0.12883	0.99007	0.0048390	82.539
	1.8826	35.84444	14.26667	-0.50000	0.16788	1.3325	0.19662	1.3430	0.0065641	82.539
	2.8239	35.96667	15.20000	-0.50000	0.21200	1.6827	0.30712	1.6960	0.0082893	82.539
	3.7652	36.08889	16.13333	-0.50000	0.25612	2.0330	0.47091	2.0490	0.010015	82.539
	4.7065	36.21111	17.06667	-0.50000	0.30024	2.3832	0.60269	2.3982	0.011740	82.539
	5.6478	36.33333	18.00000	-0.50000	0.34436	2.7334	0.97133	2.7550	0.013465	82.539
	6.5891	36.45556	18.93333	-0.50000	0.38849	3.0836	1.2998	3.1079	0.015190	82.539
	7.5304	36.57778	19.86667	-0.50000	0.43261	3.4338	1.6654	3.4609	0.016915	82.539
	8.4717	36.70000	20.80000	-0.50000	0.47673	3.7840	2.0493	3.8139	0.018040	82.539
AS	Line 45	44.70000	9.30000	-0.50000	0.0.0	0.0.0	0.0.0	0.0.0	0.0.0	82.962
	0.90683	44.81111	10.20000	-0.50000	0.031290	0.24836	0.045539	0.25032	-622.99E-6	82.962
	1.8137	44.92222	11.10000	-0.50000	0.073796	0.58575	0.082707	0.59038	-0.0014693	82.962
	2.7205	45.03333	12.00000	-0.50000	0.11630	0.92315	0.12051	0.93044	-0.0023156	82.962
	3.6273	45.14444	12.90000	-0.50000	0.15881	1.2605	0.17965	1.2705	-0.0031620	82.962
	4.5342	45.25556	13.80000	-0.50000	0.20131	1.5979	0.27577	1.6106	-0.0040083	82.962
	5.4410	45.36667	14.70000	-0.50000	0.24382	1.9353	0.41951	1.9506	-0.0048546	82.962
	6.3478	45.47778	15.60000	-0.50000	0.28633	2.2727	0.61643	2.2907	-0.0057009	82.962
	7.2547	45.58889	16.50000	-0.50000	0.32883	2.6101	0.86708	2.6307	-0.0065473	82.962
	8.1615	45.70000	17.40000	-0.50000	0.37134	2.9475	1.1669	2.9708	-0.0073936	82.962
AT	Line 46	54.50000	10.00000	-0.50000	-0.019314	0.072867	0.015370	0.070097	0.027733	83.260
	1.8461	54.71667	11.83333	-0.50000	-0.11073	0.35419	0.048491	0.33874	0.15154	83.260
	3.6922	54.93333	13.66667	-0.50000	-0.22771	0.60932	0.099356	0.57839	0.29765	83.260
	5.5383	55.15000	15.50000	-0.50000	-0.37576	0.82594	0.20547	0.77613	0.47010	83.260
	7.3844	55.36667	17.33333	-0.50000	-0.55968	0.98476	0.36756	0.91226	0.67139	83.260
	9.2305	55.58333	19.16667	-0.50000	-0.77935	1.0565	0.55506	0.95773	0.89796	83.260
	11.077	55.80000	21.00000	-0.50000	-1.0193	1.0014	0.72146	0.87484	1.1298	83.260
AU	Line 47	33.10000	38.60000	-2.00000	5.6018	-0.11550	3.2126	-5.5994	-0.19978	176.78
	0.88891	32.21250	38.65000	-2.00000	4.9727	-0.10253	2.8779	-4.9706	-0.17734	176.78
	1.7778	31.32500	38.70000	-2.00000	4.3435	-0.089558	2.5199	-4.3417	-0.15490	176.78
	2.6667	30.43750	38.75000	-2.00000	3.9072	-0.080561	2.1517	-3.9056	-0.13934	176.78
	3.5556	29.55000	38.80000	-2.00000	3.5742	-0.073694	1.7884	-3.5727	-0.12747	176.78
	4.4445	28.66250	38.85000	-2.00000	3.2411	-0.066827	1.4350	-3.2397	-0.11559	176.78
	5.3334	27.77500	38.90000	-2.00000	2.9081	-0.059960	1.1088	-2.9068	-0.10371	176.78
	6.2224	26.88750	38.95000	-2.00000	2.5750	-0.053093	0.82287	-2.5739	-0.091832	176.78
AV	Line 48	26.80000	39.00000	-2.00000	2.2419	-0.046226	0.58517	-0.099776	-0.079954	176.78
	0.92195	25.94000	38.08000	-2.00000	2.2266	-0.045909	0.57543	-0.099092	2.2248	266.27
	1.8439	25.88000	37.16000	-2.00000	2.21112					



GEA LIMITED (GEOTECHNICAL & ENV ASSOC)

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

Job No.	Sheet No.	Rev.
J16180		
Drg. Ref.		
Made by	Date	Checked
	01-Nov-2016	

Problem Type

Problem Type : Tunnelling and Embedded Wall Excavations

Displacement Data

Type	Name	Direction of extrusion	Point/Line/Line for extrusion						No. of intervals across extrusion/Line	Extrusion depth	No. of intervals along extrusion	Calculate	Surface type for tunnels
			First point			Second point							
			X [m]	Y [m]	Z (level) [m]	X [m]	Y [m]	Z (level) [m]					
Grid	Grid 1	Global X	0.46000	2.00000	0.00000	-	80.00000	0.00000	350	100.00000	350	Yes	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	30.50000	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	47.70000	-1.85000	6	-	-	Yes	Surface
Line	Q	-	41.90000	52.20000	-0.65000	41.90000	47.70000	-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	33.70000	-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	5	-	-	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	30.80000	19.30000	-0.50000	5	-	-	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	38.00000	-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	36.90000	29.10000	-2.00000	6	-	-	Yes	Surface

Vertical Ground Movement Curves

Curve Name: Installation of planar diaphragm wall in stiff clay (CIRIA 500 Fig. 2.9(b))
Coordinates: [Distance from wall / wall depth or max. excavation depth (x), Depth / wall depth or max. excavation depth (y), Settlement / wall depth or max. excavation depth (z)(%)]
[0.000,0.000,0.050][0.050,0.000,0.047][0.100,0.000,0.043][0.150,0.000,0.040]
[0.200,0.000,0.037][0.250,0.000,0.034][0.300,0.000,0.031][0.350,0.000,0.028]
[0.400,0.000,0.025][0.450,0.000,0.022][0.500,0.000,0.020][0.550,0.000,0.018]
[0.600,0.000,0.016][0.650,0.000,0.014][0.700,0.000,0.012][0.750,0.000,0.010]
[0.800,0.000,0.008][0.850,0.000,0.007][0.900,0.000,0.006][0.950,0.000,0.005]
[1.000,0.000,0.004][1.050,0.000,0.003][1.100,0.000,0.003][1.150,0.000,0.002]
[1.200,0.000,0.002][1.250,0.000,0.001][1.300,0.000,0.001][1.350,0.000,0.001]
[1.400,0.000,0.001][1.450,0.000,0.000][1.500,0.000,0.000]
Curve Fitting Method: Polynomial
x Order: 4
y Order: 0
Polynomial: z = -1.2355E-2x⁴ + 3.4814E-2x³ - 2.8885E-3x² - 6.5618E-2x + 4.9987E-2
Coeff. of 1.0000
Determination:

Curve Name: Excavation in front of high stiffness wall in stiff clay (CIRIA 500 Fig. 2.11(b))
Coordinates: [Distance from wall / wall depth or max. excavation depth (x), Depth / wall depth or max. excavation depth (y), Settlement / wall depth or max. excavation depth (z)(%)]
[0.000,0.000,0.039][0.100,0.000,0.049][0.200,0.000,0.056][0.300,0.000,0.062]
[0.400,0.000,0.067][0.500,0.000,0.070][0.600,0.000,0.072][0.700,0.000,0.073]
[0.800,0.000,0.073][0.900,0.000,0.072][1.000,0.000,0.070][1.100,0.000,0.068]
[1.200,0.000,0.065][1.300,0.000,0.061][1.400,0.000,0.058][1.500,0.000,0.054]
[1.600,0.000,0.050][1.700,0.000,0.046][1.800,0.000,0.042][1.900,0.000,0.038]
[2.000,0.000,0.034][2.100,0.000,0.030][2.200,0.000,0.027][2.300,0.000,0.023]
[2.400,0.000,0.020][2.500,0.000,0.017][2.600,0.000,0.014][2.700,0.000,0.012]
[2.800,0.000,0.010][2.900,0.000,0.008][3.000,0.000,0.007][3.100,0.000,0.005]
[3.200,0.000,0.004][3.300,0.000,0.004][3.400,0.000,0.003][3.500,0.000,0.002]
[3.600,0.000,0.002][3.700,0.000,0.002][3.800,0.000,0.001][3.900,0.000,0.001]
[4.000,0.000,0.000]
Curve Fitting Method: Polynomial
x Order: 4
y Order: 0
Polynomial: z = -2.6455E-3x⁴ + 2.8495E-2x³ - 1.0051E-1x² + 1.0569E-1x + 3.8990E-2
Coeff. of 9.9991E-1
Determination:

Horizontal Ground Movement Curves

Curve Name: Installation of planar diaphragm wall in stiff clay (CIRIA 500 Fig. 2.9(a))
Coordinates: [Distance from wall / wall depth or max. excavation depth (x), Depth / wall depth or max. excavation depth (y), Horizontal movement / wall depth or max. excavation depth (z)(%)]
[0.000,0.000,0.050][1.500,0.000,0.000]
Curve Fitting Method: Polynomial
x Order: 1
y Order: 0
Polynomial: z = -3.33E-2x + 5.00E-2
Coeff. of 1.00
Determination:



GEA LIMITED (GEOTECHNICAL & ENV ASSOC)

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

Job No.	Sheet No.	Rev.
J16180		
Drg. Ref.		
Made by	Date	Checked
	01-Nov-2016	

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
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)(%)]								
Coeff. of [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								
Surface level [m]: 0.0								
Contribution: Positive								
Enabled: Yes								
Surface movement curves which are selected are applied between -4.4000 surface and [m]:								
Corner	x	y	Base Level	Stiffened	Previous Side	Next Side		
	[m]	[m]	[m]		d p1 p2* d p1 p2*			
					[m] [%] [%] [m] [%] [%]			
1	37.400	28.200	-4.4000	No	- - -	- - -		
2	50.100	26.600	-4.4000	No	- - -	- - -		
3	45.500	47.600	-4.4000	No	- - -	- - -		
4	37.800	47.600	-4.4000	No	- - -	- - -		
Side	Corner 1	Corner 2	Ground Movement Curve					
	x y x y		Vertical Horizontal					
	[m] [m] [m] [m]							
1	37.400 28.200	50.100 26.600	Installation of planar diaphragm wall in stiff clay (CIRIA 580 Fig. 2.9(b))					
2	50.100 26.600	45.500 47.600	Installation of planar diaphragm wall in stiff clay (CIRIA 580 Fig. 2.9(b))					
3	45.500 47.600	37.800 47.600	Installation of planar diaphragm wall in stiff clay (CIRIA 580 Fig. 2.9(b))					
4	37.800 47.600	37.400 28.200	Installation of planar diaphragm wall in stiff clay (CIRIA 580 Fig. 2.9(b))					
Excavation Name: Excavation								
Surface level [m]: 0.0								
Contribution: Positive								
Enabled: Yes								
Surface movement curves which are selected are applied between -4.4000 surface and [m]:								
Corner	x	y	Base Level	Stiffened	Previous Side	Next Side		
	[m]	[m]	[m]		d p1 p2* d p1 p2*			
					[m] [%] [%] [m] [%] [%]			
1	37.400	28.200	-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	45.500	47.600	-4.4000	Yes	0.0 67.000 25.000	0.0 67.000 25.000		
4	37.800	47.600	-4.4000	Yes	0.0 67.000 25.000	0.0 67.000 25.000		
Side	Corner 1	Corner 2	Ground Movement Curve					
	x y x y		Vertical Horizontal					
	[m] [m] [m] [m]							
1	37.400 28.200	50.100 26.600	Excavation in front of high stiffness wall in stiff clay (CIRIA 580 Fig. 2.11(b))					
2	50.100 26.600	45.500 47.600	Excavation in front of high stiffness wall in stiff clay (CIRIA 580 Fig. 2.11(b))					
3	45.500 47.600	37.800 47.600	Excavation in front of high stiffness wall in stiff clay (CIRIA 580 Fig. 2.11(b))					
4	37.800 47.600	37.400 28.200	Excavation in front of high stiffness wall in stiff clay (CIRIA 580 Fig. 2.11(b))					
Damage Category Strains								
Name								
0 (Negligible) 1 (Very Slight) 2 (Slight) 3 (Moderate)								
to to to to								
1 (Very Slight) 2 (Slight) 3 (Moderate) 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]			
A		A	0.00000	3.39900	0.0	0.10000	Burland Strain Limits	0.20000 2.6000
B		B	0.00000	3.09900	0.0	0.10000	Burland Strain Limits	0.20000 2.6000
C		C	0.00000	4.60000	0.0	0.10000	Burland Strain Limits	0.20000 2.6000
D		D	0.00000	5.39900	0.0	0.10000	Burland Strain Limits	0.20000 2.6000
E		E	0.00000	2.49000	0.0	0.10000	Burland Strain Limits	0.20000 2.6000
F		F	0.00000	9.29954	0.0	0.10000	Burland Strain Limits	0.20000 2.6000
G		G	0.00000	4.99900	0.0	0.10000	Burland Strain Limits	0.20000 2.6000
H		H	0.00000	2.70085	0.0	0.10000	Burland Strain Limits	0.20000 2.6000
I		I	0.00000	7.19969	0.0	0.10000	Burland Strain Limits	0.20000 2.6000
J		J	0.00000	19.49900	0.0	0.10000	Burland Strain Limits	0.20000 2.6000
K		K	0.00000	8.89900	0.0	0.10000	Burland Strain Limits	0.20000 2.6000
L		L	0.00000	7.19900	0.0	0.10000	Burland Strain Limits	0.20000 2.6000
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	5.59900	0.0	0.10000	Burland Strain Limits	0.20000 2.6000
Q		Q	0.00000	4.49900	0.0	0.10000	Burland Strain Limits	0.20000 2.6000
R		R	0.00000	7.40980	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

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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 Line Sensitivity	Damage Category Strains	Poisson's Ratio	E/G
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	3.21393	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	AI		0.00000	4.84977	0.0	0.10000	Burland Strain Limits	0.20000	2.6000
AJ	AJ		0.00000	8.96672	0.0	0.10000	Burland Strain Limits	0.20000	2.6000
AK	AK		0.00000	4.94875	0.0	0.10000	Burland Strain Limits	0.20000	2.6000
AL	AL		0.00000	4.73714	0.0	0.10000	Burland Strain Limits	0.20000	2.6000
AM	AM		0.00000	2.70640	0.0	0.10000	Burland Strain Limits	0.20000	2.6000
AN	AN		0.00000	3.33666	0.0	0.10000	Burland Strain Limits	0.20000	2.6000
AO	AO		0.00000	2.51694	0.0	0.10000	Burland Strain Limits	0.20000	2.6000
AP	AP		0.00000	4.45433	0.0	0.10000	Burland Strain Limits	0.20000	2.6000
AQ	AQ		0.00000	4.94875	0.0	0.10000	Burland Strain Limits	0.20000	2.6000
AR	AR		0.00000	8.47072	0.0	0.10000	Burland Strain Limits	0.20000	2.6000
AS	AS		0.00000	8.16049	0.0	0.10000	Burland Strain Limits	0.20000	2.6000
AT	AT		0.00000	11.07555	0.0	0.10000	Burland Strain Limits	0.20000	2.6000
AU	AU		0.00000	7.11026	0.0	0.10000	Burland Strain Limits	0.20000	2.6000
AV	AV		0.00000	9.21854	0.0	0.10000	Burland Strain Limits	0.20000	2.6000
AW	AW		0.00000	11.52028	0.0	0.10000	Burland Strain Limits	0.20000	2.6000

Specific Structures - Bending Parameters

Structure Name	Sub-Structure Name	Height	Default Properties	Hogging			Sagging		
				2nd Moment of Area (per unit width)	Distance of Bending Strain from N.A.	Distance of N.A. from Edge of Beam in Tension	2nd Moment of Area (per unit width)	Distance of Bending Strain from N.A.	Distance of N.A. from Edge of Beam in Tension
		[m]		[m ³]	[m]	[m]	[m ³]	[m]	[m]
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
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
J		8.5000	Yes	204.71	8.5000	8.5000	51.177	4.2500	4.2500
K		8.5000	Yes	204.71	8.5000	8.5000	51.177	4.2500	4.2500
L		8.5000	Yes	204.71	8.5000	8.5000	51.177	4.2500	4.2500
M		9.5000	Yes	285.79	9.5000	9.5000	71.448	4.7500	4.7500
N		12.000	Yes	576.00	12.000	12.000	144.00	6.0000	6.0000
O		3.6800	Yes	16.612	3.6800	3.6800	4.1530	1.8400	1.8400
P	Sub #	4.8500	Yes	38.028	4.8500	4.8500	9.5070	2.4250	2.4250
Q		3.6500	Yes	16.209	3.6500	3.6500	4.0523	1.8250	1.8250
R		3.5000	Yes	14.292	3.5000	3.5000	3.5729	1.7500	1.7500
S		8.5000	Yes	204.71	8.5000	8.5000	51.177	4.2500	4.2500
T		8.5000	Yes	204.71	8.5000	8.5000	51.177	4.2500	4.2500
U		8.5000	Yes	204.71	8.5000	8.5000	51.177	4.2500	4.2500
V		6.5000	Yes	91.542	6.5000	6.5000	22.885	3.2500	3.2500
W		7.7000	Yes	152.18	7.7000	7.7000	38.044	3.8500	3.8500
X		8.5000	Yes	204.71	8.5000	8.5000	51.177	4.2500	4.2500
Y		7.4000	Yes	135.07	7.4000	7.4000	33.769	3.7000	3.7000
Z		8.5000	Yes	204.71	8.5000	8.5000	51.177	4.2500	4.2500
AA		7.4000	Yes	135.07	7.4000	7.4000	33.769	3.7000	3.7000
AB		8.5000	Yes	204.71	8.5000	8.5000	51.177	4.2500	4.2500
AC		3.5000	Yes	14.292	3.5000	3.5000	3.5729	1.7500	1.7500
AD		4.4600	Yes	29.572	4.4600	4.4600	7.3930	2.2300	2.2300
AE		3.5000	Yes	14.292	3.5000	3.5000	3.5729	1.7500	1.7500
AF		4.4600	Yes	29.572	4.4600	4.4600	7.3930	2.2300	2.2300
AG		3.5000	Yes	14.292	3.5000	3.5000	3.5729	1.7500	1.7500
AH		15.500	Yes	1241.3	15.500	15.500	310.32	7.7500	7.7500
AI		15.500	Yes	1241.3	15.500	15.500	310.32	7.7500	7.7500
AJ		15.500	Yes	1241.3	15.500	15.500	310.32	7.7500	7.7500
AK		15.500	Yes	1241.3	15.500	15.500	310.32	7.7500	7.7500
AL		15.500	Yes	1241.3	15.500	15.500	310.32	7.7500	7.7500
AM		15.500	Yes	1241.3	15.500	15.500	310.32	7.7500	7.7500
AN		15.500	Yes	1241.3	15.500	15.500	310.32	7.7500	7.7500
AO		15.500	Yes	1241.3	15.500	15.500	310.32	7.7500	7.7500
AP		15.500	Yes	1241.3	15.500	15.500	310.32	7.7500	7.7500
AQ		15.500	Yes	1241.3	15.500	15.500	310.32	7.7500	7.7500
AR		15.500	Yes	1241.3	15.500	15.500	310.32	7.7500	7.7500
AS		15.500	Yes	1241.3	15.500	15.500	310.32	7.7500	7.7500
AT		15.500	Yes	1241.3	15.500	15.500	310.32	7.7500	7.7500
AU		4.6000	Yes	32.445	4.6000	4.6000	8.1113	2.3000	2.3000
AV		4.6000	Yes	32.445	4.6000	4.6000	8.1113	2.3000	2.3000
AW		4.6000	Yes	32.445	4.6000	4.6000	8.1113	2.3000	2.3000

Building Segment Combinations

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

Specific Building Damage Results - Horizontal Displacements

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]	[mm]	[mm]	[mm]
	0.0	22.50000	48.10000	-0.50000	0.57700	-0.018856
	0.85000	23.35000	48.10000	-0.50000	0.79033	-0.027347
	1.7000	24.20000	48.10000	-0.50000	1.0033	-0.036885
	2.5500	25.05000	48.10000	-0.50000	1.2157	-0.047676
	3.4000	25.90000	48.10000	-0.50000	1.4276	-0.059983

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]	[mm]	[mm]	[mm]
	0.0	25.90000	49.10000	-0.50000	1.4276	-0.059983
	0.77500	25.90000	47.32500	-0.50000	2.1401	-0.044126
	1.5500	25.90000	46.55000	-0.50000	2.1461	-0.044250
	2.3250	25.90000	45.77500	-0.50000	2.1521	-0.044373
	3.1000	25.90000	45.00000	-0.50000	2.1581	-0.044497



GEA LIMITED (GEOTECHNICAL & ENV ASSOC)

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

Job No.	Sheet No.	Rev.
J16180		
Drg. Ref.		
Made by	Date 01-Nov-2016	Checked

Dist.	x	y	z	x	y	Displacements Horizontal displacement along the	Horizontal displacement perpendicular
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Structure: C | Sub-structure:

Dist.	x	y	z	x	y	Displacements 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	2.1581	-0.044497	2.1585	0.0024177
0.92022	26.82000	45.00000	-0.50000	2.5031	-0.051610	2.5036	0.0028042
1.8404	27.74000	44.96000	-0.50000	2.8481	-0.058724	2.8487	0.0031908
2.7607	28.66000	44.94000	-0.50000	3.1931	-0.065837	3.1938	0.0035773
3.6809	29.58000	44.92000	-0.50000	3.5381	-0.072951	3.5389	0.0039638
4.6011	30.50000	44.90000	-0.50000	3.8831	-0.080064	3.8840	0.0043503

Structure: D | Sub-structure:

Dist.	x	y	z	x	y	Displacements 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	3.8831	-0.080064	-0.15195	-3.8810
0.90015	30.48333	45.00000	-0.50000	3.0899	-0.079792	-0.15143	-3.8878
1.8003	30.46667	46.70000	-0.50000	3.8567	-0.079520	-0.15091	-3.8546
2.7005	30.45000	47.60000	-0.50000	3.8435	-0.079248	-0.15040	-3.8414
3.6006	30.43333	48.50000	-0.50000	2.4721	-0.30202	-0.34774	-2.4661
4.5008	30.41667	49.40000	-0.50000	2.2846	-0.55696	-0.59016	-2.2739
5.4009	30.40000	50.30000	-0.50000	2.0656	-0.75367	-0.79179	-2.0513

Structure: E | Sub-structure:

Dist.	x	y	z	x	y	Displacements 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	2.0656	-0.75367	-0.75367	-0.75367
0.83333	31.23333	50.30000	-0.50000	2.1644	-0.88995	-2.1644	-0.88995
1.6667	32.06667	50.30000	-0.50000	2.3089	-1.0873	2.3089	-1.0873
2.5000	32.90000	50.30000	-0.50000	2.5402	-1.3997	2.5402	-1.3997

Structure: F | Sub-structure:

Dist.	x	y	z	x	y	Displacements 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	2.5402	-1.3997	-1.3723	-2.5551
0.93005	32.91000	51.23000	-0.50000	2.0099	-1.4920	-1.4703	-2.0259
1.8601	32.92000	52.16000	-0.50000	1.5444	-1.4432	-1.4265	-1.5599
2.7902	32.93000	53.09000	-0.50000	1.3200	-1.4800	-1.4747	-1.3368
3.7202	32.94000	54.02000	-0.50000	1.1542	-1.5247	-1.5122	-1.1705
4.6503	32.95000	54.95000	-0.50000	0.99547	-1.5086	-1.4978	-1.0116
5.5803	32.96000	55.88000	-0.50000	0.84853	-1.4516	-1.4424	-0.86409
6.5104	32.97000	56.81000	-0.50000	0.71453	-1.3625	-1.3547	-0.72914
7.4404	32.98000	57.74000	-0.50000	0.59329	-1.2481	-1.2417	-0.60606
8.3705	32.99000	58.67000	-0.50000	0.48397	-1.1138	-1.1086	-0.49592
9.3005	33.00000	59.60000	-0.50000	0.38548	-0.96370	-0.95950	-0.39582

Structure: G | Sub-structure:

Dist.	x	y	z	x	y	Displacements 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	0.38548	-0.96370	-0.38548	0.96370
1.0000	32.00000	59.60000	-0.50000	0.40215	-0.83203	-0.40215	0.83203
2.0000	31.00000	59.60000	-0.50000	0.39010	-0.69901	-0.39010	0.69901
3.0000	30.00000	59.60000	-0.50000	0.36927	-0.56811	-0.36927	0.56811
4.0000	29.00000	59.60000	-0.50000	0.32404	-0.44187	-0.32404	0.44187
5.0000	28.00000	59.60000	-0.50000	0.26291	-0.32193	-0.26291	0.32193

Structure: H | Sub-structure:

Dist.	x	y	z	x	y	Displacements 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	0.26291	-0.32193	0.33144	0.25081
0.90062	28.03333	58.70000	-0.50000	0.36131	-0.41063	0.42372	0.34506
1.8012	28.06667	57.80000	-0.50000	0.46172	-0.48385	0.50061	0.44349
2.7019	28.10000	56.90000	-0.50000	0.57034	-0.55449	0.57552	0.55742

Structure: I | Sub-structure:

Dist.	x	y	z	x	y	Displacements Horizontal displacement along the Line	Horizontal displacement perpendicular to Line
[m]	[m]	[m]	[m]	[mm]	[mm]	[mm]	[mm]
0.0	20.10000	56.90000	-0.50000	0.57034	-0.55449	-0.50598	0.54641
0.90009	27.20000	56.91250	-0.50000	0.51404	-0.45160	-0.52026	0.44442
1.8002	26.30000	56.92500	-0.50000	0.43246	-0.35067	-0.43729	0.34463
2.7003	25.40000	56.93750	-0.50000	0.33549	-0.25264	-0.33897	0.24795
3.6003	24.50000	56.95000	-0.50000	0.22491	-0.15811	-0.22708	0.15497
4.5004	23.60000	56.96250	-0.50000	0.10230	-0.06749	-0.10323	0.066022
5.4005	22.70000	56.97500	-0.50000	0.0	0.0	0.0	0.0
6.3006	21.80000	56.98750	-0.50000	0.0	0.0	0.0	0.0
7.2007	20.90000	57.00000	-0.50000	0.0	0.0	0.0	0.0

Structure: J | Sub-structure:

Dist.	x	y	z	x	y	Displacements Horizontal displacement along the Line	Horizontal displacement perpendicular to Line
[m]	[m]	[m]	[m]	[mm]	[mm]	[mm]	[mm]
0.0	33.00000	59.50000	-0.50000	0.39555	-0.98064	0.39555	-0.98064



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Dist.	Coordinates			Displacements			
	x	y	z	x	y		
						Horizontal displacement along the line	
						Horizontal displacement perpendicular	
1.9500	34.95000	59.50000	-0.50000	0.29206	-1.2195	0.29206	-1.2195
3.9000	36.90000	59.50000	-0.50000	0.10544	-1.3941	0.10544	-1.3941
5.8500	38.85000	59.50000	-0.50000	0.0	-2.1375	0.0	-2.1375
7.8000	40.80000	59.50000	-0.50000	0.0	-2.1375	0.0	-2.1375
9.7500	42.75000	59.50000	-0.50000	0.0	-2.1375	0.0	-2.1375
11.7000	44.70000	59.50000	-0.50000	0.0	-2.1375	0.0	-2.1375
13.6500	46.65000	59.50000	-0.50000	-0.14140	-1.4631	-0.14140	-1.4631
15.6000	48.60000	59.50000	-0.50000	-0.33093	-1.2703	-0.33093	-1.2703
17.5500	50.55000	59.50000	-0.50000	-0.43018	-1.0137	-0.43018	-1.0137
19.5000	52.50000	59.50000	-0.50000	-0.43295	-0.73602	-0.43295	-0.73602

Structure: K | Sub-structure:

Dist.	Coordinates			Displacements			
	x	y	z	x	y	Horizontal displacement along the Line	Horizontal displacement perpendicular to Line
	[m]	[m]	[m]	[mm]	[mm]	[mm]	[mm]
0	33.00000	52.20000	-0.50000	1.5223	-1.4589	1.5223	-1.4589
0.90889	33.90889	52.20000	-0.50000	1.5923	-1.9219	1.5923	-1.9219
1.9778	34.97778	52.20000	-0.50000	1.5384	-2.5076	1.5384	-2.5076
2.9667	35.96667	52.20000	-0.50000	1.2434	-3.1198	1.2434	-3.1198
3.9556	36.95556	52.20000	-0.50000	0.67141	-3.6574	0.67141	-3.6574
4.9444	37.94444	52.20000	-0.50000	0.0	-5.5417	0.0	-5.5417
5.9333	38.93333	52.20000	-0.50000	0.0	-5.5417	0.0	-5.5417
6.9222	39.92222	52.20000	-0.50000	0.0	-5.5417	0.0	-5.5417
7.9111	40.91111	52.20000	-0.50000	0.0	-5.5417	0.0	-5.5417
8.9000	41.90000	52.20000	-0.50000	0.0	-5.5417	0.0	-5.5417

Structure: L | Sub-structure:

Dist.	Coordinates			Displacements			
	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	0.012394	-1.4625	1.4625	0.012394
0.90000	37.70000	58.50000	-0.50000	0.015496	-1.6891	1.6891	0.015496
1.80000	37.70000	57.60000	-0.50000	0.019155	-1.9155	1.9155	0.019155
2.70000	37.70000	56.70000	-0.50000	0.023534	-2.1416	2.1416	0.023534
3.60000	37.70000	55.80000	-0.50000	0.028871	-2.3674	2.3674	0.028871
4.50000	37.70000	54.90000	-0.50000	0.035517	-2.5927	2.5927	0.035517
5.40000	37.70000	54.00000	-0.50000	0.045060	-2.8838	2.8838	0.045060
6.30000	37.70000	53.10000	-0.50000	0.061954	-3.4075	3.4075	0.061954
7.20000	37.70000	52.20000	-0.50000	0.085425	-3.9295	3.9295	0.085425

Structure: M | Sub-structure:

Dist.	Coordinates			Displacements			
	x	y	z	x	y		
						Horizontal displacement along the line	
						Horizontal displacement perpendicular to line	
	[m]	[m]	[m]	[mm]	[mm]	Line [mm]	
0.0	42.00000	59.50000	-1.50000	0.0	-2.1375	2.1373	0.029278
0.91259	41.98750	58.58750	-1.50000	0.0	-2.4797	2.4795	0.033965
1.8252	41.97500	57.67500	-1.50000	0.0	-2.8219	2.8216	0.038652
2.7378	41.96250	56.76250	-1.50000	0.0	-3.1641	3.1638	0.043339
3.6503	41.95000	55.85000	-1.50000	0.0	-3.5063	3.5059	0.048026
4.5629	41.93750	54.93750	-1.50000	0.0	-3.8484	3.8481	0.052713
5.4755	41.92500	54.02500	-1.50000	0.0	-4.2490	4.2486	0.058199
6.3881	41.91250	53.11250	-1.50000	0.0	-4.8953	4.8949	0.067053
7.3007	41.90000	52.20000	-1.50000	0.0	-5.5417	5.5411	0.075906

Structure: N | Sub-structure:

Dist.	Coordinates			Displacements		
	x	y	z	x	y	
						Horizontal displacement along the line
						Horizontal displacement perpendicular to line
	[m]	[m]	[m]	[mm]	[mm]	[mm]
0.	45.50000	53.30000	-4.00000	0.0	-3.4920	-3.4920
0.87143	45.50000	54.17143	-4.00000	0.0	-2.9678	-2.9678
1.7429	45.50000	55.04286	-4.00000	0.0	-2.7245	-2.7245
2.6143	45.50000	55.91429	-4.00000	0.0	-2.4908	-2.4908
3.4857	45.50000	56.78571	-4.00000	0.0	-2.2570	-2.2570
4.3571	45.50000	57.65714	-4.00000	0.0	-2.0233	-2.0233
5.2286	45.50000	58.52857	-4.00000	0.0	-1.7895	-1.7895
6.1000	45.50000	59.40000	-4.00000	0.0	-1.5558	-1.5558

Structure: O | 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	37.70000	52.20000	-0.60000	0.085425	-3.9295	3.9295	0.085425
0.92000	37.70000	51.28000	-0.60000	0.12120	-4.4602	4.4602	0.12120
1.8400	37.70000	50.36000	-0.60000	0.18061	-4.9847	4.9847	0.18061
2.7600	37.70000	49.44000	-0.60000	0.29852	-5.4928	5.4928	0.29852
3.6800	37.70000	48.52000	-0.60000	0.64420	-5.9266	5.9266	0.64420
4.6000	37.70000	47.60000	-0.60000	8.7273	-0.17994	0.17994	8.7273

Structure: P | Sub-structure: Sub #

Dist.	Coordinates			Displacements		
	x	y	z	x	y	
						Horizontal displacement along the line
						Horizontal displacement perpendicular to line
	[m]	[m]	[m]	[mm]	[mm]	[mm]
0.0	45.50000	53.30000	-1.85000	0.0	-3.4920	3.4920
0.93333	45.50000	52.36667	-1.85000	0.0	-4.0535	4.0535
1.8667	45.50000	51.43333	-1.85000	0.0	-4.6150	4.6150
2.8000	45.50000	50.50000	-1.85000	0.0	-5.1764	5.1764
3.7333	45.50000	49.56667	-1.85000	0.0	-5.7379	5.7379
4.6667	45.50000	48.63333	-1.85000	0.0	-6.2994	6.2994
5.6000	45.50000	47.70000	-1.85000	0.0	-6.8608	6.8608

Structure: Q | Sub-structure:

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



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[m]	[m]	[m]	[m]	[mm]	[mm]	[mm]	[mm]	
0.0	41.90000	52.20000	-0.65000	0.0	-5.5417	5.5417	0.0	0.0
0.90000	41.90000	51.30000	-0.65000	0.0	-6.1792	6.1792	0.0	0.0
1.8000	41.90000	50.40000	-0.65000	0.0	-6.8167	6.8167	0.0	0.0
2.7000	41.90000	49.50000	-0.65000	0.0	-7.4542	7.4542	0.0	0.0
3.6000	41.90000	48.60000	-0.65000	0.0	-8.0917	8.0917	0.0	0.0
4.5000	41.90000	47.70000	-0.65000	0.0	-8.7292	8.7292	0.0	0.0

Structure: R | Sub-structure:

Dist.	Coordinates			Displacements		Horizontal displacement along the Line	Horizontal displacement perpendicular to Line
	x	y	z	x	y		
[m]	[m]	[m]	[m]	[mm]	[mm]	[mm]	[mm]
0.0	33.00000	50.30000	-0.50000	2.5620	-1.4411	1.3007	2.6360
0.92635	32.95000	49.37500	-0.50000	3.0893	-1.1306	0.96224	3.1459
1.8527	32.90000	48.45000	-0.50000	3.5277	-0.61194	0.42064	3.5556
2.7791	32.85000	47.52500	-0.50000	5.2945	-0.10916	-0.17677	5.2926
3.7054	32.80000	46.60000	-0.50000	5.2726	-0.10871	-0.17603	5.2707
4.6318	32.75000	45.67500	-0.50000	5.2507	-0.10826	-0.17530	5.2489
5.5581	32.70000	44.75000	-0.50000	5.2288	-0.10781	-0.17457	5.2270
6.4845	32.65000	43.82500	-0.50000	5.2069	-0.10736	-0.17384	5.2051
7.4108	32.60000	42.90000	-0.50000	5.1850	-0.10691	-0.17311	5.1832

Structure: S | Sub-structure:

Dist.	Coordinates			Displacements		Horizontal displacement along the Line	Horizontal displacement perpendicular to Line
	x	y	z	x	y		
[m]	[m]	[m]	[m]	[mm]	[mm]	[mm]	[mm]
0.0	54.40000	58.50000	-0.50000	-0.47711	-0.58433	0.18119	-0.73228
1.9375	55.56250	56.95000	-0.50000	-0.63682	-0.59172	0.091290	-0.96449
3.8750	56.72500	55.40000	-0.50000	-0.76330	-0.53040	-0.033660	-0.92888
5.8125	57.88750	53.85000	-0.50000	-0.82417	-0.41583	-0.16184	-0.90884
7.7500	59.05000	52.30000	-0.50000	-0.79613	-0.27615	-0.25676	-0.80259
9.6875	60.21250	50.75000	-0.50000	-0.93565	-0.20495	-0.39743	-0.87149
11.625	61.37500	49.20000	-0.50000	-0.64117	-0.14045	-0.27234	-0.59720
13.562	62.53750	47.65000	-0.50000	-0.34668	-0.075940	-0.14726	-0.32291
15.500	63.70000	46.10000	-0.50000	-0.052195	-0.011433	-0.022170	-0.048616
17.438	64.86250	44.55000	-0.50000	0.0	0.0	0.0	0.0
19.375	66.02500	43.00000	-0.50000	0.0	0.0	0.0	0.0
21.313	67.18750	41.45000	-0.50000	0.0	0.0	0.0	0.0
23.250	68.35000	39.90000	-0.50000	0.0	0.0	0.0	0.0
25.188	69.51250	38.35000	-0.50000	0.0	0.0	0.0	0.0
27.125	70.67500	36.80000	-0.50000	0.0	0.0	0.0	0.0
29.063	71.83750	35.25000	-0.50000	0.0	0.0	0.0	0.0
31.000	73.00000	33.70000	-0.50000	0.0	0.0	0.0	0.0

Structure: T | Sub-structure:

Dist.	Coordinates			Displacements		Horizontal displacement along the Line	Horizontal displacement perpendicular to Line
	x	y	z	x	y		
[m]	[m]	[m]	[m]	[mm]	[mm]	[mm]	[mm]
0.0	45.50000	53.30000	-0.50000	0.0	-3.4920	2.7394	-2.1656
1.9859	46.73158	51.74211	-0.50000	-1.1428	-3.8436	2.3065	-3.2802
3.9718	47.96316	50.18421	-0.50000	-2.8269	-2.9658	0.57348	-4.0569
5.9577	49.19474	48.62632	-0.50000	-4.3863	-1.2184	-1.7644	-4.1966
7.9436	50.42632	47.06842	-0.50000	-5.3452	-1.1708	-2.3964	-4.9193
9.9295	51.65789	45.51053	-0.50000	-4.7434	-1.0390	-2.1206	-4.3655
11.915	52.88947	43.95263	-0.50000	-4.1416	-0.90722	-1.8568	-3.8116
13.901	54.12105	42.39474	-0.50000	-3.7703	-0.82587	-1.6903	-3.4698
15.887	55.35263	40.83684	-0.50000	-3.4517	-0.75608	-1.5475	-3.1766
17.873	56.58421	39.27895	-0.50000	-3.1331	-0.68630	-1.4046	-2.8834
19.859	57.81579	37.72105	-0.50000	-2.8145	-0.61051	-1.2618	-2.5902
21.845	59.04737	36.16316	-0.50000	-2.4959	-0.54672	-1.1190	-2.2970
23.831	60.27895	34.60526	-0.50000	-2.1773	-0.47694	-0.97615	-2.0038
25.817	61.51053	33.04737	-0.50000	-1.8587	-0.40715	-0.83332	-1.7106
27.803	62.74211	31.48947	-0.50000	-1.5402	-0.33737	-0.69049	-1.4174
29.789	63.97368	29.93105	-0.50000	-1.2216	-0.26758	-0.54706	-1.1242
31.774	65.20526	28.37368	-0.50000	-0.95488	-0.053412	-0.24020	-0.38996
33.760	66.43684	26.81579	-0.50000	-0.23484	-0.0031020	-0.14321	-0.18615
35.746	67.66842	25.25789	-0.50000	0.0	0.0	0.0	0.0
37.732	68.90000	23.70000	-0.50000	0.0	0.0	0.0	0.0

Structure: U | Sub-structure:

Dist.	Coordinates			Displacements		Horizontal displacement along the Line	Horizontal displacement perpendicular to Line
	x	y	z	x	y		
[m]	[m]	[m]	[m]	[mm]	[mm]	[mm]	[mm]
0.0	63.00000	47.00000	-0.50000	-0.23213	-0.050848	0.21641	-0.098162
0.90600	62.21000	46.41000	-0.50000	-0.56106	-0.12290	0.52307	-0.23726
1.9720	61.42000	45.82000	-0.50000	-0.89000	-0.19495	0.82973	-0.37635
2.9500	60.63000	45.23000	-0.50000	-1.2189	-0.26700	1.1364	-0.51545
3.9440	59.84000	44.64000	-0.50000	-1.5479	-0.33905	1.4431	-0.65455
4.9300	59.05000	44.05000	-0.50000	-1.8768	-0.41111	1.7497	-0.79364
5.9160	58.26000	43.46000	-0.50000	-2.2057	-0.48316	2.0564	-0.93274
6.9020	57.47000	42.87000	-0.50000	-2.5347	-0.55521	2.3630	-1.0718
7.8880	56.68000	42.28000	-0.50000	-2.8636	-0.62726	2.6697	-1.2100
8.8740	55.89000	41.69000	-0.50000	-3.1925	-0.69931	2.9763	-1.3500
9.8600	55.10000	41.10000	-0.50000	-3.5214	-0.77136	3.2830	-1.4891

Structure: V | Sub-structure:

Dist.	Coordinates			Displacements		Horizontal displacement along the Line	Horizontal displacement perpendicular to Line
	x	y	z	x	y		
[m]	[m]	[m]	[m]	[mm]	[mm]	[mm]	[mm]
0.0	55.10000	41.10000	-0.50000	-3.5214	-0.77136	3.2717	-1.5138
0.91001	54.37500	40.55000	-0.50000	-3.8240	-0.83763	3.5528	-1.6438
1.8200	53.65000	40.00000	-0.50000	-4.2128	-0.92280	3.9140	-1.7765
2.7300	52.92500	39.45000	-0.50000	-4.7843	-1.0480	4.4450	-2.0566
3.6401	52.20000	38.90000	-0.50000	-5.3557	-1.1732	4.9759	-2.3023

Structure: W | Sub-structure:

Dist.	Coordinates			Displacements		Horizontal displacement along the Line	Horizontal displacement perpendicular to Line
	x	y	z	x	y		
[m]	[m]	[m]	[m]	[mm]	[mm]	[mm]	[mm]



GEA LIMITED (GEOTECHNICAL & ENV ASSOC)

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

Job No.	Sheet No.	Rev.
J16180		
Drg. Ref.		
Made by	Date	Checked
	01-Nov-2016	

[m]	[m]	[m]	[m]	[mm]	[mm]	[mm]	[mm]
0.0	52.20000	38.90000	-1.70000	-5.3557	-1.1732	-2.3621	-4.9478
0.57009	52.55000	38.45000	-1.70000	-5.1858	-1.1359	-2.2871	-4.7908
1.1402	52.90000	38.00000	-1.70000	-5.0158	-1.0987	-2.2122	-4.6338

Structure: X | Sub-structure:

Dist.	Coordinates			Displacements			
	x	y	z	x	y	Horizontal displacement along the Line	Horizontal displacement perpendicular to Line
	[m]	[m]	[m]	[mm]	[mm]	[mm]	[mm]
0.0	66.40000	42.50000	-0.50000	0.0	0.0	0.0	0.0
0.97291	65.62000	41.92000	-0.50000	0.0	0.0	0.0	0.0
1.9440	64.84000	41.34000	-0.50000	-0.017365	-0.0038040	0.016205	-0.0073098
2.9160	64.06000	40.76000	-0.50000	-0.34194	-0.074900	0.31908	-0.14393
3.8880	63.28000	40.18000	-0.50000	-0.66650	-0.14600	0.62196	-0.28055
4.8600	62.50000	39.60000	-0.50000	-0.99107	-0.21709	0.92484	-0.41717
5.8320	61.72000	39.02000	-0.50000	-1.3156	-0.28819	1.2277	-0.55379
6.8041	60.94000	38.44000	-0.50000	-1.6402	-0.35928	1.5306	-0.69041
7.7761	60.16000	37.86000	-0.50000	-1.9648	-0.43038	1.8335	-0.82793
8.7481	59.38000	37.28000	-0.50000	-2.2894	-0.50148	2.1364	-0.96365
9.7201	58.60000	36.70000	-0.50000	-2.6139	-0.57257	2.4392	-1.1003

Structure: Y | Sub-structure:

Dist.	Coordinates			Displacements			
	x	y	z	x	y	Horizontal displacement along the Line	Horizontal displacement perpendicular to Line
	[m]	[m]	[m]	[mm]	[mm]	[mm]	[mm]
0.0	58.60000	36.70000	-1.40000	-2.6139	-0.57257	2.4285	-1.1237
0.91001	57.87500	36.15000	-1.40000	-2.9165	-0.63884	2.7096	-1.2537
1.8200	57.15000	35.60000	-1.40000	-3.2190	-0.70511	2.9907	-1.3838
2.7300	56.42500	35.05000	-1.40000	-3.5215	-0.77138	3.2718	-1.5138
3.6401	55.70000	34.50000	-1.40000	-3.8241	-0.83765	3.5529	-1.6439

Structure: Z | Sub-structure:

Dist.	Coordinates			Displacements			
	x	y	z	x	y	Horizontal displacement along the Line	Horizontal displacement perpendicular to Line
	[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	-0.13330	-0.029200	0.12451	-0.055043
5.7481	65.08000	34.68000	-0.50000	-0.43531	-0.099340	0.42361	-0.18998
6.7061	64.31000	34.11000	-0.50000	-0.77372	-0.16948	0.72271	-0.32413
7.6642	63.54000	33.54000	-0.50000	-1.0939	-0.23962	1.0218	-0.45627
8.6222	62.77000	32.97000	-0.50000	-1.4141	-0.30976	1.3209	-0.59241
9.5802	62.00000	32.40000	-0.50000	-1.7343	-0.37990	1.6200	-0.72655

Structure: AA | Sub-structure:

Dist.	Coordinates			Displacements			
	x	y	z	x	y	Horizontal displacement along the Line	Horizontal displacement perpendicular to Line
	[m]	[m]	[m]	[mm]	[mm]	[mm]	[mm]
0.0	62.00000	32.40000	-1.40000	-1.7343	-0.37990	1.6387	-0.68335
0.91549	61.25000	31.87500	-1.40000	-2.0439	-0.44770	1.9311	-0.80531
1.8310	60.50000	31.35000	-1.40000	-2.3534	-0.51550	2.2236	-0.92726
2.7465	59.75000	30.82500	-1.40000	-2.6629	-0.58330	2.5160	-1.0492
3.6620	59.00000	30.30000	-1.40000	-2.9724	-0.65110	2.8085	-1.1712

Structure: AB | Sub-structure:

Dist.	Coordinates			Displacements			
	x	y	z	x	y	Horizontal displacement along the Line	Horizontal displacement perpendicular to Line
	[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	-0.12315	-0.019863	0.11176	-0.055417
8.5163	66.07000	28.75000	-0.50000	-0.28339	-0.038153	0.25278	-0.13367
9.4626	65.30000	28.20000	-0.50000	-0.43977	-0.046291	0.38476	-0.21794

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]	[mm]	[mm]	[mm]	[mm]
0.0	65.30000	26.20000	-0.50000	-0.43977	-0.046291	0.38224	-0.22233
0.84673	64.61667	27.70000	-0.50000	-0.57446	-0.043530	0.48931	-0.30409
1.6935	63.93333	27.20000	-0.50000	-0.70396	-0.030533	0.58615	-0.39105
2.5402	63.25000	26.70000	-0.50000	-0.82694	-0.0062885	0.67108	-0.48324
3.3869	62.56667	26.20000	-0.50000	-0.94173	0.0380216	0.74216	-0.58048
4.2336	61.88333	25.70000	-0.50000	-1.0463	0.079914	0.79719	-0.68234
5.0804	61.20000	25.20000	-0.50000	-1.1381	0.14355	0.83372	-0.78791

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]	[mm]	[mm]	[mm]	[mm]
0.0	61.20000	25.20000	-1.46000	-1.1381	0.14355	1.1471	0.0023469
0.98298	60.22500	25.32500	-1.46000	-1.3127	0.16530	1.3231	0.0029676
1.9660	59.25000	25.45000	-1.46000	-1.4873	0.18693	1.4990	0.0037207
2.9489	58.27500	25.57500	-1.46000	-1.6620	0.20839	1.6750	0.0046536

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

Dist.	Coordinates			Displacements			
	x	y	z	x	Horizontal displacement along the	Horizontal displacement perpendicular	
3.9319	57.30000	25.70000	-1.46000	-1.8369	0.22961	1.8511	0.0058396
4.9149	56.32500	25.82500	-1.46000	-2.1200	0.26393	2.1363	0.0077952
5.8979	55.35000	25.95000	-1.46000	-2.6204	0.32443	2.6403	0.0112425
6.8809	54.37500	26.07500	-1.46000	-3.1212	0.38136	3.1436	0.016712
7.8639	53.40000	26.20000	-1.46000	-3.6230	0.43915	3.6494	0.025130

Structure: AE | Sub-structure:

Dist.	Coordinates			z	x	y	Displacements	
	x	y					Horizontal displacement along the line	Horizontal displacement perpendicular to line
	[m]	[m]	[m]	[m]	[mm]	[mm]	[mm]	[mm]
0.0	0.128000	25.25000	-0.50000	-1.1381	0.14355	-0.073432	-1.10474	
0.82411	0.115000	24.0000	-0.50000	-0.0861	0.218179	-0.075529	-1.09776	
1.6530	0.110000	23.55000	-0.50000	-0.9211	0.28314	-0.22084	-1.93646	
2.4795	0.105000	22.72500	-0.50000	-0.94607	0.33480	-0.27695	-0.96406	
3.311	0.100000	0.00000	-0.50000	-0.9661	0.38000	-0.33480	-0.88488	

Structure: AF | Sub-structure:

Dist.	Coordinates			Displacements	
	x	y	z	Horizontal displacement along the Line	Horizontal displacement perpendicular to Line
	[m]	[m]	[m]	[mm]	[mm]
0.0	50.30000	25.50000	1.46000	4.4071	2.2035
0.80351	50.22500	25.70000	1.46000	-0.68110	4.9039
1.6070	50.15000	24.90000	1.46000	-0.13618	4.6302
2.4085	50.07500	24.10000	1.46000	0.94050	4.2282
3.2140	50.00000	23.30000	1.46000	0.13618	3.8395

Structure: AG | Sub-structure:

Dist.	Coordinates			Displacements		
	x	y	z	x	Horizontal displacement along the Line	Horizontal displacement perpendicular to the Line
[m]	[m]	[m]	[m]	[mm]	[mm]	[mm]
0.0	50.00000	23.30000	0.50000	0.11635	3.6395	-0.37738
1.9065	51.88889	23.05516	0.50000	-1.4129	2.1895	2.5950
3.893	53.77778	22.81111	0.50000	-1.5929	1.6436	1.8227
5.7139	55.66667	22.56667	0.50000	-1.3264	0.96103	-1.4388
7.6186	57.55556	22.32222	0.50000	-1.2360	0.70916	-1.3168
9.5232	59.44444	22.07778	0.50000	-1.0521	0.50917	-1.1888
11.428	61.33333	21.83333	0.50000	-0.81729	0.34680	-0.85504
13.332	63.22222	21.58889	0.50000	-0.55241	0.21895	-0.5782
15.237	65.11111	21.34444	0.50000	-0.26863	0.09449	-0.27847
17.142	67.00000	21.10000	0.50000	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 the Line
[m]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]
0	59.090554	20.890900	-0.500000	-0.80359	0.50238	0.95354	-0.49006
0.90554	58.109054	20.890900	-0.500000	-0.95423	0.69181	0.9248	-0.58222
1.8111	57.209054	20.890900	-0.500000	-0.99453	0.79842	1.0766	-0.68373
2.7166	56.300000	21.000000	-0.500000	-1.0092	0.91155	1.1037	-0.79453
3.6222	55.400000	21.100000	-0.500000	-1.0377	1.0769	1.1593	-0.95572
4.5277	54.500000	21.200000	-0.500000	-1.0376	1.2735	1.1719	-1.15111
5.4332	53.600000	21.300000	-0.500000	-1.0356	1.5681	1.1924	-1.3442
6.3388	52.700000	21.400000	-0.500000	-0.99136	1.9839	1.2059	-1.8632

Structure: AI | Sub-structure:

Dist.	Coordinates			Displacements		
	x	y	z	x	y	
				Horizontal displacement along the	Horizontal displacement perpendicular to the	
[m]	[m]	[m]	[m]	Line [mm]	to Line [mm]	
0.0	52.70800	21.48000	-0.50800	-0.99196	1.9839	-1.8280
0.97815	52.56600	20.44000	-0.50800	-0.69278	1.7348	-1.6166
1.9403	52.42000	19.48000	-0.50800	-0.54421	1.6702	-1.5741
2.9185	52.28800	18.52000	-0.50800	-0.42419	1.5722	-1.4945
3.8806	52.14800	17.56000	-0.50800	-0.32756	1.4515	-1.3890
4.8508	52.00800	16.60000	-0.50800	-0.24985	1.3150	-1.2652

Structure: AJ | Sub-structure:

Dist.	Coordinates			Displacements		
	x	y	z	x	y	
					Horizontal displacement along the Line	Horizontal displacement perpendicular to Line
	[m]	[m]	[m]	[mm]	[mm]	[mm]
0	52.080000	16.680000	-0.508000	-0.24985	1.31500	-0.48926
0.99641	51.911111	16.722222	-0.508000	-0.13876	1.44765	-0.39367
1.9928	50.722222	16.844444	-0.508000	0.01919	1.49459	-0.39484
2.9892	49.833333	16.96667	-0.508000	0.17051	1.5399	-0.019668
3.9857	48.844444	17.08889	-0.508000	0.37061	2.9417	-0.0669739
4.9821	47.855556	17.21111	-0.508000	0.37050	2.9408	-0.0669718
5.9785	46.866667	17.333333	-0.508000	0.37039	2.9400	-0.0669698
6.9749	45.877778	17.45556	-0.508000	0.37028	2.9402	-0.0669677
7.9713	44.888889	17.57778	-0.508000	0.01917	2.9382	-0.296969
8.9677	43.890000	17.70000	-0.508000	0.37006	2.9733	-0.0669636

Structure: AK | Sub-structure:

Dist.	Coordinates			Displacements		
	x	y	z	x	Horizontal displacement along the line	Horizontal displacement perpendicular to line
[m]	[m]	[m]	[m]	[mm]	[mm]	[mm]
0.0	43.10800	17.70800	-0.50800	3.70706	2.9373	2.9602
0.98895	43.24000	18.68800	-0.50800	0.41645	3.3656	3.3313
1.9799	43.38000	19.66000	-0.50800	0.46285	3.6739	3.7024
2.9698	43.52000	20.64000	-0.50800	0.50925	4.0421	4.0735
3.9598	43.66000	21.62000	-0.50800	0.50123	4.5929	4.6787
4.9497	43.80000	22.60000	-0.50800	0.67887	5.3885	5.4393

Structure: AL | Sub-structure:

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

Dist.	Coordinates			Displacements			
	x	y	z	x	y	Horizontal displacement along the	Horizontal displacement perpendicular
Dist.	Coordinates			Displacements			
	x	y	z	x	y	Horizontal displacement along the	Horizontal displacement perpendicular
						Line	to Line
	[m]	[m]	[m]	[mm]	[mm]		[mm]
0.0	43.80000	22.60000	-0.50000	0.67887	5.3885	0.0089548	-5.4311
0.94763	42.86000	22.72000	-0.50000	0.67900	5.3896	0.0089566	-5.4322
1.8953	41.92000	22.84000	-0.50000	0.67914	5.3907	0.0089584	-5.4333
2.8429	40.98000	22.96000	-0.50000	0.67928	5.3918	0.0089603	-5.4344
3.7905	40.04000	23.08000	-0.50000	0.67942	5.3929	0.0089621	-5.4355
4.7381	39.10000	23.20000	-0.50000	0.67956	5.3940	0.0089639	-5.4366

Structure: AM | Sub-structure:

Dist.	Coordinates			Displacements		
	x	y	z	y	Horizontal displacement along the line	Horizontal displacement perpendicular to line
	[m]	[m]	[m]	[mm]	[mm]	[mm]
0.0	39.10600	23.26000	-0.50000	6.79565	5.3940	-5.4295
0.90247	39.03333	22.30000	-0.50000	6.59976	4.7696	-4.7919
1.8099	38.96667	20.50000	-0.50000	6.0906	4.1272	-4.2543
2.7274	38.90000	20.50000	-0.50000	4.7563	3.7756	-3.8894
						-0.19546

Structure: AN | Sub-structure:

Dist.	Coordinates			Displacements		
	x	y	z	x	y	z
				Horizontal displacement along the line	Horizontal displacement perpendicular to the line	
				Line	mm	mm
	0.0	38.99000	20.50000	-0.50000	4.75657	3.77556
0.8346	38.07600	20.62500	-0.50000	-0.47663	3.78364	0.095367
1.6688	37.25000	20.75000	-0.50000	-0.47673	3.7912	0.095700
2.5032	36.42500	20.87500	-0.50000	-0.34868	2.6267	0.047700
3.3377	35.60000	21.00000	-0.50000	-0.31663	2.0000	0.000000

Structure: A0 | Sub-structure:

Dist.	Coordinates		Displacements			
	x	y	z	Horizontal displacement along the line	Horizontal displacement perpendicular to line	
	[m]	[m]	[m]	[mm]	[mm]	
	0.0	35.60900	21.00000	0.50000	0.61663	2.4665
						2.5224
0.83931	35.78000	21.83333	-0.50000	0.70670	2.6467	2.7120
1.6785	35.80000	22.66667	-0.50000	0.9055	3.0764	3.0764
2.5179	35.90000	23.50000	-0.50000	1.1109	3.4807	3.5882
						-0.6823
						-0.31836
						-0.36633
						-0.51680
						-0.6823

Structure: AP | Sub-structure:

Dist.	Coordinates		Displacements		Horizontal displacement	Horizontal displacement
x	y	z	x	y	along the	perpendicular
					Line	to Line
[m]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]
0.0	35.9600	23.5000	-0.5000	1.1109	3.4867	-3.6120
0.89197	35.0200	23.6400	-0.5000	1.5538	2.9771	-3.1842
1.7821	34.1400	23.7800	-0.5000	1.7866	2.4223	-2.6729
2.6732	33.2600	23.9200	-0.5000	1.8277	1.8895	-2.1532
3.5643	32.3800	24.0600	-0.5000	1.7514	1.4444	-1.7027
4.4553	31.5000	24.2000	-0.5000	1.8156	1.2309	-1.5096

Structure: A0 | Sub-structure:

Dist.	Coordinates		z	x	y	Displacements	
	x	y				Horizontal displacement along the line	Horizontal displacement perpendicular to line
	[m]	[m]	[m]			[mm]	[mm]
0.0	31.50000	24.20000	-0.50000	1.8156	1.2369	-1.4753	1.6233
0.9895	31.36000	23.22000	-0.50000	1.5219	1.2548	-1.4574	1.3292
1.9799	31.22000	22.24000	-0.50000	1.3266	1.2794	-1.4541	1.1323
2.9698	31.08000	21.26000	-0.50000	1.1599	1.2735	-1.4248	0.96801
3.9590	30.94000	20.28000	-0.50000	0.9980	1.2245	-1.4155	0.81515
4.9497	30.80000	19.30000	-0.50000	0.84615	1.1410	-1.2492	0.67628

Structure: AR | 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]
0.8	35.69888	12.48888	-0.58888	0.079635	0.63218	0.63789
0.9418	35.72222	13.00000	-0.58888	0.12376	0.98232	0.984838
1.8825	35.84444	14.26667	-0.58888	0.16788	1.3325	1.3438
2.8239	35.96667	15.20000	-0.58888	0.21280	1.6827	1.6960
3.7652	36.08889	16.13333	-0.58888	0.25612	2.0338	2.0498
4.7065	36.21111	17.06667	-0.58888	0.30624	2.3832	2.4828
5.6478	36.33333	18.00000	-0.58888	0.34436	2.7334	2.7558
6.5891	36.45556	18.93333	-0.58888	0.38248	3.0836	3.1078
7.5304	36.57778	19.86667	-0.58888	0.43261	3.4338	3.4609
8.4717	36.70000	20.80000	-0.58888	0.47673	3.7848	3.8139

Structure: AS | Sub-structure:

Dist.	Coordinates				Displacements		
	x	y	z	x	y	Horizontal displacement along the line	Horizontal displacement perpendicular to line
	[m]	[m]	[m]	[mm]	[mm]	[mm]	[mm]
0	9.44	70.980	9.38000	-0.59000	0.0	0.0	0.0
9.9678	4.81110	0.0	-0.59000	0.931290	0.24336	0.25632	-622.906
1.8137	44.92222	11.1000	-0.59000	0.973796	0.5875	0.59038	-0.0014963
2.7205	45.03333	12.0000	-0.59000	0.11630	0.92315	0.93044	-0.0023156
3.6273	45.14444	12.9000	-0.59000	0.15881	1.2695	1.2795	-0.0031620
4.5342	45.25556	13.8000	-0.59000	0.20131	1.5979	1.6106	-0.0040983
5.4410	45.36667	14.7000	-0.59000	0.24382	1.9373	1.9506	-0.0048546
6.3478	45.47778	15.6000	-0.59000	0.28633	2.2727	2.2867	-0.0056173
7.2547	45.58889	16.5000	-0.59000	0.32883	2.6101	2.6307	-0.0065473
8.1615	45.69999	17.4000	-0.59000	0.37134	2.9475	2.9708	-0.0073936



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Dist.	x	Coordinates	y	z	x	y	Displacements	Horizontal displacement along the	Horizontal displacement perpendicular
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Structure: AT | Sub-structure:

Dist.	x	Coordinates	y	z	x	y	Displacements	Horizontal displacement along the	Horizontal displacement perpendicular
							Line	to Line	
[m]	[m]	[m]	[m]	[m]	[mm]	[mm]	[mm]	[mm]	[mm]
0.0	54.50000	10.00000	-0.50000	-0.019314	0.072867	0.070097	0.027733		
1.8461	54.71667	11.33333	-0.50000	-0.11073	0.35419	0.33874	0.15154		
3.6922	54.93333	13.66667	-0.50000	-0.22771	0.60932	0.57839	0.29765		
5.5383	55.15000	15.50000	-0.50000	-0.37576	0.82594	0.77613	0.47010		
7.3844	55.36667	17.33333	-0.50000	-0.55968	0.98476	0.91226	0.67139		
9.2305	55.58333	19.16667	-0.50000	-0.77935	1.0565	0.95773	0.89796		
11.077	55.80000	21.00000	-0.50000	-1.0193	1.0014	0.87484	1.1298		

Structure: AU | Sub-structure:

Dist.	x	Coordinates	y	z	x	y	Displacements	Horizontal displacement along the	Horizontal displacement perpendicular
							Line	to Line	
[m]	[m]	[m]	[m]	[m]	[mm]	[mm]	[mm]	[mm]	[mm]
0.0	33.10000	30.00000	-2.00000	5.6010	-0.11550	-5.5994	-0.19978		
0.8891	32.21250	30.65000	-2.00000	4.9727	-0.10253	-4.9706	-0.17734		
1.7778	31.32500	30.70000	-2.00000	4.3435	-0.089558	-4.3417	-0.15490		
2.6667	30.43750	30.75000	-2.00000	3.9072	-0.080561	-3.9056	-0.13934		
3.5556	29.55000	30.80000	-2.00000	3.5742	-0.073694	-3.5727	-0.12747		
4.4445	28.66250	30.85000	-2.00000	3.2411	-0.066827	-3.2397	-0.11559		
5.3334	27.77500	30.90000	-2.00000	2.9081	-0.059960	-2.9068	-0.10371		
6.2224	26.88750	30.95000	-2.00000	2.5750	-0.053093	-2.5739	-0.091832		
7.1113	26.00000	30.00000	-2.00000	2.2419	-0.046226	-2.2410	-0.079954		

Structure: AV | Sub-structure:

Dist.	x	Coordinates	y	z	x	y	Displacements	Horizontal displacement along the	Horizontal displacement perpendicular
							Line	to Line	
[m]	[m]	[m]	[m]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]
0.0	26.00000	39.00000	-2.00000	2.2419	-0.046226	-0.099776	2.2402		
0.92195	25.94000	38.00000	-2.00000	2.2266	-0.045909	-0.099092	2.2248		
1.8439	25.88000	37.10000	-2.00000	2.2112	-0.045591	-0.098407	2.2095		
2.7659	25.82000	36.24000	-2.00000	2.1958	-0.045274	-0.097723	2.1941		
3.6878	25.76000	35.32000	-2.00000	2.1804	-0.044957	-0.097038	2.1787		
4.6098	25.70000	34.40000	-2.00000	2.1650	-0.044640	-0.096354	2.1634		
5.5317	25.64000	33.48000	-2.00000	2.1497	-0.044323	-0.095669	2.1480		
6.4537	25.58000	32.56000	-2.00000	2.1343	-0.044006	-0.094985	2.1326		
7.3756	25.52000	31.64000	-2.00000	2.1189	-0.043689	-0.094300	2.1173		
8.2976	25.46000	30.72000	-2.00000	2.1035	-0.043372	-0.093616	2.1019		
9.2195	25.40000	29.80000	-2.00000	2.0881	-0.043055	-0.092931	2.0865		

Structure: AW | Sub-structure:

Dist.	x	Coordinates	y	z	x	y	Displacements	Horizontal displacement along the	Horizontal displacement perpendicular
							Line	to Line	
[m]	[m]	[m]	[m]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]
0.0	25.40000	29.80000	-2.00000	2.0881	-0.043055	2.0869	0.083895		
1.9202	27.31667	29.68333	-2.00000	2.8075	-0.057886	2.8058	0.11280		
3.8404	29.23333	29.56667	-2.00000	3.5268	-0.072718	3.5247	0.14170		
5.7605	31.15000	29.45000	-2.00000	4.3547	-0.089787	4.3521	0.17496		
7.6809	33.06667	29.33333	-2.00000	5.1734	-0.11780	5.1700	0.22955		
9.6011	34.98333	29.21667	-2.00000	7.0722	-0.14582	7.0680	0.28414		
11.521	36.90000	29.10000	-2.00000	8.4310	-0.17383	8.4260	0.33873		

Specific Building Damage Results - Vertical Displacements

Structure: A | Sub-structure:

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

Vertical Offset 1

0.0	22.50000	48.10000	-0.50000	0.074875
0.85000	23.35000	48.10000	-0.50000	0.10772
1.7000	24.20000	48.10000	-0.50000	0.16010
2.5500	25.05000	48.10000	-0.50000	0.23866
3.4000	25.90000	48.10000	-0.50000	0.34736

Structure: B | Sub-structure:

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

Vertical Offset 1

0.0	25.90000	48.10000	-0.50000	0.34736
0.77500	25.90000	47.32500	-0.50000	0.52280
1.5500	25.90000	46.55000	-0.50000	0.52633
2.3250	25.90000	45.77500	-0.50000	0.52988
3.1000	25.90000	45.00000	-0.50000	0.53345

Structure: C | Sub-structure:

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

Vertical Offset 1

0.0	25.90000	45.00000	-0.50000	0.53345
0.92022	26.82000	44.98000	-0.50000	0.76727
1.8404	27.74000	44.96000	-0.50000	1.0541
2.7607	28.66000	44.94000	-0.50000	1.3859
3.6809	29.58000	44.92000	-0.50000	1.7493
4.6011	30.50000	44.90000	-0.50000	2.1255

Structure: D | Sub-structure:

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



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

Vertical Offset 1
0.0 30.50000 44.90000 -0.50000 2.1255
0.90015 30.48333 45.80000 -0.50000 2.1112
1.8003 30.46667 46.70000 -0.50000 2.0968
2.7005 30.45000 47.60000 -0.50000 2.0824
3.6006 30.43333 48.50000 -0.50000 1.3392
4.5008 30.41667 49.40000 -0.50000 1.2412
5.4009 30.40000 50.30000 -0.50000 1.1252

Structure: E | Sub-structure:

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

Vertical Offset 1
0.0 30.40000 50.30000 -0.50000 1.1252
0.83333 31.23333 50.30000 -0.50000 1.2978
1.6667 32.06667 50.30000 -0.50000 1.4648
2.5000 32.90000 50.30000 -0.50000 1.6190

Structure: F | Sub-structure:

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

Vertical Offset 1
0.0 32.90000 50.30000 -0.50000 1.6190
0.93085 32.91000 51.23000 -0.50000 1.4198
1.8601 32.92000 52.16000 -0.50000 1.2141
2.7902 32.93000 53.09000 -0.50000 1.0792
3.7202 32.94000 54.02000 -0.50000 0.95835
4.6503 32.95000 54.95000 -0.50000 0.81819
5.5803 32.96000 55.88000 -0.50000 0.67068
6.5104 32.97000 56.81000 -0.50000 0.52676
7.4404 32.98000 57.74000 -0.50000 0.39556
8.3705 32.99000 58.67000 -0.50000 0.28376
9.3005 33.00000 59.60000 -0.50000 0.19529

Structure: G | Sub-structure:

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

Vertical Offset 1
0.0 33.00000 59.60000 -0.50000 0.19529
1.0000 32.00000 59.60000 -0.50000 0.15736
2.0000 31.00000 59.60000 -0.50000 0.12309
3.0000 30.00000 59.60000 -0.50000 0.094269
4.0000 29.00000 59.60000 -0.50000 0.071597
5.0000 28.00000 59.60000 -0.50000 0.054390

Structure: H | Sub-structure:

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

Vertical Offset 1
0.0 28.00000 59.60000 -0.50000 0.054390
0.90062 28.03333 58.70000 -0.50000 0.071946
1.8012 28.06667 57.80000 -0.50000 0.096456
2.7019 28.10000 56.90000 -0.50000 0.13291

Structure: I | Sub-structure:

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

Vertical Offset 1
0.0 28.10000 56.90000 -0.50000 0.13291
0.90009 27.20000 56.91250 -0.50000 0.098489
1.8002 26.30000 56.92500 -0.50000 0.073122
2.7003 25.40000 56.93750 -0.50000 0.055073
3.6003 24.50000 56.95000 -0.50000 0.040456
4.5004 23.60000 56.96250 -0.50000 0.023025
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
	x	y	z	
[m]	[m]	[m]	[m]	[mm]

Vertical Offset 1
0.0 33.00000 59.50000 -0.50000 0.20367
1.9500 34.95000 59.50000 -0.50000 0.28097
3.9000 36.90000 59.50000 -0.50000 0.33791
5.8500 38.85000 59.50000 -0.50000 0.52099
7.8000 40.80000 59.50000 -0.50000 0.52099
9.7500 42.75000 59.50000 -0.50000 0.52099
11.700 44.70000 59.50000 -0.50000 0.52099
13.650 46.65000 59.50000 -0.50000 0.35340
15.600 48.60000 59.50000 -0.50000 0.28906
17.550 50.55000 59.50000 -0.50000 0.20704
19.500 52.50000 59.50000 -0.50000 0.13045

Structure: K | Sub-structure:

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

Vertical Offset 1
0.0 33.00000 52.20000 -0.50000 1.2139
0.98889 33.98889 52.20000 -0.50000 1.4062
1.9778 34.97778 52.20000 -0.50000 1.6270
2.9667 35.96667 52.20000 -0.50000 1.8468
3.9556 36.95556 52.20000 -0.50000 2.0500
4.9444 37.94444 52.20000 -0.50000 3.1806
5.9333 38.93333 52.20000 -0.50000 3.1806
6.9222 39.92222 52.20000 -0.50000 3.1806
7.9111 40.91111 52.20000 -0.50000 3.1806
8.9000 41.90000 52.20000 -0.50000 3.1806

Structure: L | Sub-structure:



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

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

Vertical Offset 1

0.0	37.70000	59.40000	-0.50000	0.36532
0.90000	37.70000	58.50000	-0.50000	0.52031
1.8000	37.70000	57.60000	-0.50000	0.70920
2.7000	37.70000	56.70000	-0.50000	0.92684
3.6000	37.70000	55.80000	-0.50000	1.1647
4.5000	37.70000	54.90000	-0.50000	1.4112
5.4000	37.70000	54.00000	-0.50000	1.6626
6.3000	37.70000	53.10000	-0.50000	1.9222
7.2000	37.70000	52.20000	-0.50000	2.1767

Structure: M | Sub-structure:

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

Vertical Offset 1

0.0	42.00000	59.50000	-1.50000	0.52099
0.91259	41.98750	58.58750	-1.50000	0.74928
1.8252	41.97500	57.67500	-1.50000	1.0301
2.7378	41.96250	56.76250	-1.50000	1.3559
3.6503	41.95000	55.85000	-1.50000	1.7141
4.5629	41.93750	54.93750	-1.50000	2.0869
5.4755	41.92500	54.02500	-1.50000	2.4617
6.3881	41.91250	53.11250	-1.50000	2.8350
7.3007	41.90000	52.20000	-1.50000	3.1806

Structure: N | Sub-structure:

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

Vertical Offset 1

0.0	45.50000	53.30000	-4.00000	1.9882
0.87143	45.50000	54.17143	-4.00000	1.7150
1.7429	45.50000	55.04286	-4.00000	1.4619
2.6143	45.50000	55.91429	-4.00000	1.2075
3.4857	45.50000	56.78571	-4.00000	0.96359
4.3571	45.50000	57.65714	-4.00000	0.74107
5.2286	45.50000	58.52857	-4.00000	0.54783
6.1000	45.50000	59.40000	-4.00000	0.38865

Structure: O | Sub-structure:

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

Vertical Offset 1

0.0	37.70000	52.20000	-0.68000	2.1767
0.92000	37.70000	51.28000	-0.68000	2.4567
1.8400	37.70000	50.36000	-0.68000	2.7538
2.7600	37.70000	49.44000	-0.68000	3.0356
3.6800	37.70000	48.52000	-0.68000	3.232
4.6000	37.70000	47.60000	-0.68000	3.9527

Structure: P | Sub-structure: Sub #

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

Vertical Offset 1

0.0	45.50000	53.30000	-1.85000	1.9882
0.93333	45.50000	52.36667	-1.85000	2.2652
1.8667	45.50000	51.43333	-1.85000	2.5567
2.8000	45.50000	50.50000	-1.85000	2.8638
3.7333	45.50000	49.56667	-1.85000	3.1574
4.6667	45.50000	48.63333	-1.85000	3.3778
5.6000	45.50000	47.70000	-1.85000	3.4349

Structure: Q | Sub-structure:

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

Vertical Offset 1

0.0	41.90000	52.20000	-0.65000	3.1806
0.90000	41.90000	51.30000	-0.65000	3.5071
1.8000	41.90000	50.40000	-0.65000	3.8044
2.7000	41.90000	49.50000	-0.65000	4.0294
3.6000	41.90000	48.60000	-0.65000	4.1117
4.5000	41.90000	47.70000	-0.65000	3.9527

Structure: R | Sub-structure:

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

Vertical Offset 1

0.0	33.00000	50.30000	-0.50000	1.6353
0.92635	32.95000	49.37500	-0.50000	1.8217
1.8527	32.90000	48.45000	-0.50000	1.9865
2.7791	32.85000	47.52500	-0.50000	3.0508
3.7054	32.80000	46.60000	-0.50000	3.0392
4.6318	32.75000	45.67500	-0.50000	3.0275
5.5581	32.70000	44.75000	-0.50000	3.0158
6.4845	32.65000	43.82500	-0.50000	3.0042
7.4108	32.60000	42.90000	-0.50000	2.9925

Structure: S | Sub-structure:

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

Vertical Offset 1

0.0	54.40000	58.50000	-0.50000	0.10933
1.9375	55.56250	56.95000	-0.50000	0.13480
3.8750	56.72500	55.40000	-0.50000	0.14627
5.8125	57.88750	53.85000	-0.50000	0.13903
7.7500	59.05000	52.30000	-0.50000	0.11670
9.6875	60.21250	50.75000	-0.50000	0.12424



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

11.625	61.37500	49.20000	-0.50000	0.089277
13.562	62.53750	47.65000	-0.50000	0.058348
15.500	63.70000	46.10000	-0.50000	0.014403
17.438	64.86250	44.55000	-0.50000	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	
	x	y	z	z
[m]	[m]	[m]	[m]	[mm]

Vertical Offset 1

0.0	45.50000	53.30000	-0.50000	1.9882
1.9859	46.73158	51.74211	-0.50000	2.2080
3.9718	47.96316	50.18421	-0.50000	2.2316
5.9577	49.19474	48.62632	-0.50000	2.5183
7.9436	50.42632	47.06842	-0.50000	3.1440
9.9295	51.65789	45.51053	-0.50000	2.8133
11.915	52.88947	43.95263	-0.50000	2.4560
13.901	54.12105	42.39474	-0.50000	2.0991
15.887	55.35263	40.83684	-0.50000	1.7435
17.873	56.58421	39.27895	-0.50000	1.3997
19.859	57.81579	37.72105	-0.50000	1.0636
21.845	59.04737	36.16316	-0.50000	0.80682
23.831	60.27895	34.60526	-0.50000	0.57664
25.817	61.51053	33.04737	-0.50000	0.39616
27.803	62.74211	31.48947	-0.50000	0.26419
29.789	63.97368	29.93158	-0.50000	0.17528
31.774	65.20526	28.37368	-0.50000	0.050362
33.760	66.43684	26.81579	-0.50000	0.035252
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	
	x	y	z	z
[m]	[m]	[m]	[m]	[mm]

Vertical Offset 1

0.0	63.00000	47.00000	-0.50000	0.043842
0.98600	62.21000	46.41000	-0.50000	0.081124
1.9720	61.42000	45.82000	-0.50000	0.11796
2.9580	60.63000	45.23000	-0.50000	0.17470
3.9440	59.84000	44.64000	-0.50000	0.26684
4.9300	59.05000	44.05000	-0.50000	0.40506
5.9160	58.26000	43.46000	-0.50000	0.59515
6.9020	57.47000	42.87000	-0.50000	0.83809
7.8880	56.68000	42.28000	-0.50000	1.1390
8.8740	55.89000	41.69000	-0.50000	1.4622
9.8600	55.10000	41.10000	-0.50000	1.8210

Structure: V | Sub-structure:

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

Vertical Offset 1

0.0	55.10000	41.10000	-0.50000	1.8210
0.91001	54.37500	40.55000	-0.50000	2.1589
1.8200	53.65000	40.00000	-0.50000	2.5807
2.7300	52.92500	39.45000	-0.50000	2.8364
3.6401	52.20000	38.90000	-0.50000	3.1496

Structure: W | Sub-structure:

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

Vertical Offset 1

0.0	52.20000	38.90000	-1.70000	3.1496
0.57009	52.55000	38.45000	-1.70000	3.0578
1.1402	52.90000	38.00000	-1.70000	2.9649

Structure: X | Sub-structure:

Dist.	Coordinates		Displacements	
	x	y	z	z
[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	0.0074358
2.9160	64.06000	40.76000	-0.50000	0.057793
3.8880	63.28000	40.18000	-0.50000	0.091907
4.8600	62.50000	39.60000	-0.50000	0.13246
5.8320	61.72000	39.02000	-0.50000	0.19755
6.8041	60.94000	38.44000	-0.50000	0.30066
7.7761	60.16000	37.86000	-0.50000	0.45070
8.7481	59.38000	37.28000	-0.50000	0.65198
9.7201	58.60000	36.70000	-0.50000	0.90421

Structure: Y | Sub-structure:

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

Vertical Offset 1

0.0	58.60000	36.70000	-1.40000	0.90421
0.91001	57.87500	36.15000	-1.40000	1.1810
1.8200	57.15000	35.60000	-1.40000	1.4903
2.7300	56.42500	35.05000	-1.40000	1.8211
3.6401	55.70000	34.50000	-1.40000	2.1590

Structure: Z | Sub-structure:

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

Vertical Offset 1



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Dist.	Coordinates			Displacements
[m]	x [m]	y [m]	z [m]	z [mm]
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	0.028905
5.7481	65.08000	34.68000	-0.50000	0.070111
6.7061	64.31000	34.11000	-0.50000	0.10361
7.6642	63.54000	33.54000	-0.50000	0.14970
8.6222	62.77000	32.97000	-0.50000	0.22432
9.5802	62.00000	32.40000	-0.50000	0.33906

Structure: AA | Sub-structure:

Dist.	Coordinates			Displacements
[m]	x [m]	y [m]	z [m]	z [mm]
Vertical Offset 1				
0.0	62.00000	32.40000	-1.40000	0.33906
0.91549	61.25000	31.87500	-1.40000	0.49495
1.8310	60.50000	31.35000	-1.40000	0.69780
2.7465	59.75000	30.82500	-1.40000	0.94647
3.6620	59.00000	30.30000	-1.40000	1.2360

Structure: AB | Sub-structure:

Dist.	Coordinates			Displacements
[m]	x [m]	y [m]	z [m]	z [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	0.022918
8.5163	66.07000	28.75000	-0.50000	0.040761
9.4626	65.30000	28.20000	-0.50000	0.057317

Structure: AC | Sub-structure:

Dist.	Coordinates			Displacements
[m]	x [m]	y [m]	z [m]	z [mm]
Vertical Offset 1				
0.0	65.30000	28.20000	-0.50000	0.057317
0.84673	64.61667	27.70000	-0.50000	0.077497
1.6935	63.93333	27.20000	-0.50000	0.10674
2.5402	63.25000	26.70000	-0.50000	0.14705
3.3869	62.56667	26.20000	-0.50000	0.19882
4.2336	61.88333	25.70000	-0.50000	0.26100
5.0804	61.20000	25.20000	-0.50000	0.33131

Structure: AD | Sub-structure:

Dist.	Coordinates			Displacements
[m]	x [m]	y [m]	z [m]	z [mm]
Vertical Offset 1				
0.0	61.20000	25.20000	-1.46000	0.33131
0.98298	60.22500	25.32500	-1.46000	0.47093
1.9660	59.25000	25.45000	-1.46000	0.63624
2.9489	58.27500	25.57500	-1.46000	0.82902
3.9319	57.30000	25.70000	-1.46000	1.0118
4.9149	56.32500	25.82500	-1.46000	1.2156
5.8979	55.35000	25.95000	-1.46000	1.4313
6.8809	54.37500	26.07500	-1.46000	1.6692
7.8638	53.40000	26.20000	-1.46000	1.9615

Structure: AE | Sub-structure:

Dist.	Coordinates			Displacements
[m]	x [m]	y [m]	z [m]	z [mm]
Vertical Offset 1				
0.0	61.20000	25.20000	-0.50000	0.33131
0.82651	61.15000	24.37500	-0.50000	0.31389
1.6530	61.10000	23.55000	-0.50000	0.29036
2.4795	61.05000	22.72500	-0.50000	0.26219
3.3061	61.00000	21.90000	-0.50000	0.23101

Structure: AF | Sub-structure:

Dist.	Coordinates			Displacements
[m]	x [m]	y [m]	z [m]	z [mm]
Vertical Offset 1				
0.0	50.30000	26.50000	-1.46000	2.8870
0.80351	50.22500	25.70000	-1.46000	2.8291
1.6070	50.15000	24.90000	-1.46000	2.6187
2.4105	50.07500	24.10000	-1.46000	2.3430
3.2140	50.00000	23.30000	-1.46000	2.0766

Structure: AG | Sub-structure:

Dist.	Coordinates			Displacements
[m]	x [m]	y [m]	z [m]	z [mm]
Vertical Offset 1				
0.0	50.00000	23.30000	-0.50000	2.0766
1.9046	51.88889	23.05556	-0.50000	1.6504
3.8093	53.77778	22.81111	-0.50000	1.2122
5.7139	55.66667	22.56667	-0.50000	0.92629
7.6186	57.55556	22.32222	-0.50000	0.66491
9.5232	59.44444	22.07778	-0.50000	0.40170
11.428	61.33333	21.83333	-0.50000	0.20063
13.332	63.22222	21.58889	-0.50000	0.086109
15.237	65.11111	21.34444	-0.50000	0.039041
17.142	67.00000	21.10000	-0.50000	0.0

Structure: AH | Sub-structure:



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

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

Vertical Offset 1

0.0	59.00000	20.70000	-0.50000	0.34648
0.90554	58.10000	20.80000	-0.50000	0.44620
1.8111	57.20000	20.90000	-0.50000	0.55154
2.7166	56.30000	21.00000	-0.50000	0.65579
3.6222	55.40000	21.10000	-0.50000	0.76117
4.5277	54.50000	21.20000	-0.50000	0.92182
5.4332	53.60000	21.30000	-0.50000	1.0700
6.3388	52.70000	21.40000	-0.50000	1.2240

Structure: AI | Sub-structure:

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

Vertical Offset 1

0.0	52.70000	21.40000	-0.50000	1.2240
0.97015	52.56000	20.44000	-0.50000	1.0766
1.9403	52.42000	19.48000	-0.50000	0.93814
2.9105	52.28000	18.52000	-0.50000	0.78378
3.8806	52.14000	17.56000	-0.50000	0.62953
4.8508	52.00000	16.60000	-0.50000	0.47887

Structure: AJ | Sub-structure:

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

Vertical Offset 1

0.0	52.00000	16.60000	-0.50000	0.47887
0.99641	51.01111	16.72222	-0.50000	0.53514
1.9928	50.02222	16.84444	-0.50000	0.57908
2.9892	49.03333	16.96667	-0.50000	0.60703
3.9857	48.04444	17.08889	-0.50000	1.1614
4.9821	47.05556	17.21111	-0.50000	1.1606
5.9785	46.06667	17.33333	-0.50000	1.1598
6.9749	45.07778	17.45556	-0.50000	1.1589
7.9713	44.08889	17.57778	-0.50000	1.1581
8.9677	43.10000	17.70000	-0.50000	1.1573

Structure: AK | Sub-structure:

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

Vertical Offset 1

0.0	43.10000	17.70000	-0.50000	1.1573
0.98995	43.24000	18.60000	-0.50000	1.5283
1.9799	43.38000	19.60000	-0.50000	1.9279
2.9698	43.52000	20.64000	-0.50000	2.3298
3.9598	43.66000	21.62000	-0.50000	2.7434
4.9497	43.80000	22.60000	-0.50000	3.1225

Structure: AL | Sub-structure:

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

Vertical Offset 1

0.0	43.80000	22.60000	-0.50000	3.1225
0.94763	42.86000	22.72000	-0.50000	3.1231
1.8953	41.92000	22.84000	-0.50000	3.1236
2.8429	40.98000	22.96000	-0.50000	3.1242
3.7905	40.04000	23.08000	-0.50000	3.1248
4.7381	39.10000	23.20000	-0.50000	3.1254

Structure: AM | Sub-structure:

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

Vertical Offset 1

0.0	39.10000	23.20000	-0.50000	3.1254
0.90247	39.03333	22.30000	-0.50000	2.7814
1.8049	38.96667	21.40000	-0.50000	2.4060
2.7074	38.90000	20.50000	-0.50000	2.0400

Structure: AN | Sub-structure:

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

Vertical Offset 1

0.0	38.90000	20.50000	-0.50000	2.0400
0.83442	38.07500	20.62500	-0.50000	2.0485
1.6688	37.25000	20.75000	-0.50000	2.0571
2.5032	36.42500	20.87500	-0.50000	1.4262
3.3377	35.60000	21.00000	-0.50000	1.3672

Structure: AO | Sub-structure:

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

Vertical Offset 1

0.0	35.60000	21.00000	-0.50000	1.3672
0.83931	35.70000	21.83333	-0.50000	1.5831
1.6786	35.80000	22.66667	-0.50000	1.8163
2.5179	35.90000	23.50000	-0.50000	2.0289

Structure: AP | Sub-structure:

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

Vertical Offset 1

0.0	35.90000	23.50000	-0.50000	2.0289
0.89107	35.02000	23.64000	-0.50000	1.8624

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Dist.	Coordinates			Displacements
	x	y	z	
[m]	[m]	[m]	[m]	[mm]
1.7821	34.14000	23.78000	-0.50000	1.6772
2.6732	33.26000	23.92000	-0.50000	1.4846
3.5643	32.38000	24.06000	-0.50000	1.3083
4.4553	31.50000	24.20000	-0.50000	1.2133

Structure: AQ | Sub-structure:

Dist.	Coordinates			Displacements
	x	y	z	
[m]	[m]	[m]	[m]	[mm]
Vertical Offset 1				
0.0	31.50000	24.20000	-0.50000	1.2133
0.98995	31.36000	23.22000	-0.50000	1.0151
1.9799	31.22000	22.24000	-0.50000	0.86117
2.9698	31.08000	21.26000	-0.50000	0.71152
3.9598	30.94000	20.28000	-0.50000	0.56076
4.9497	30.80000	19.30000	-0.50000	0.42043

Structure: AR | Sub-structure:

Dist.	Coordinates			Displacements
	x	y	z	
[m]	[m]	[m]	[m]	[mm]
Vertical Offset 1				
0.0	35.60000	12.40000	-0.50000	0.087344
0.94130	35.72222	13.33333	-0.50000	0.12883
1.8826	35.84444	14.26667	-0.50000	0.19662
2.8239	35.96667	15.20000	-0.50000	0.30712
3.7652	36.08889	16.13333	-0.50000	0.47091
4.7065	36.21111	17.06667	-0.50000	0.69269
5.6478	36.33333	18.00000	-0.50000	0.97133
6.5891	36.45556	18.93333	-0.50000	1.2998
7.5304	36.57778	19.86667	-0.50000	1.6654
8.4717	36.70000	20.80000	-0.50000	2.0493

Structure: AS | Sub-structure:

Dist.	Coordinates			Displacements
	x	y	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	0.045539
1.8137	44.92222	11.10000	-0.50000	0.082707
2.7205	45.03333	12.00000	-0.50000	0.12051
3.6273	45.14444	12.90000	-0.50000	0.17905
4.5342	45.25556	13.80000	-0.50000	0.27577
5.4410	45.36667	14.70000	-0.50000	0.41951
6.3478	45.47778	15.60000	-0.50000	0.61643
7.2547	45.58889	16.50000	-0.50000	0.86708
8.1615	45.70000	17.40000	-0.50000	1.1669

Structure: AT | Sub-structure:

Dist.	Coordinates			Displacements
	x	y	z	
[m]	[m]	[m]	[m]	[mm]
Vertical Offset 1				
0.0	54.50000	10.00000	-0.50000	0.015370
1.8461	54.71667	11.83333	-0.50000	0.048491
3.6922	54.93333	13.66667	-0.50000	0.099356
5.5383	55.15000	15.50000	-0.50000	0.20547
7.3844	55.36667	17.33333	-0.50000	0.36756
9.2305	55.58333	19.16667	-0.50000	0.55586
11.077	55.80000	21.00000	-0.50000	0.72146

Structure: AU | Sub-structure:

Dist.	Coordinates			Displacements
	x	y	z	
[m]	[m]	[m]	[m]	[mm]
Vertical Offset 1				
0.0	33.10000	38.60000	-2.00000	3.2126
0.8881	32.21250	38.65000	-2.00000	2.8779
1.7778	31.32500	38.70000	-2.00000	2.5199
2.6667	30.43750	38.75000	-2.00000	2.1517
3.5556	29.55000	38.80000	-2.00000	1.7884
4.4445	28.66250	38.85000	-2.00000	1.4350
5.3334	27.77500	38.90000	-2.00000	1.1088
6.2224	26.88750	38.95000	-2.00000	0.82267
7.1113	26.00000	39.00000	-2.00000	0.58517

Structure: AV | Sub-structure:

Dist.	Coordinates			Displacements
	x	y	z	
[m]	[m]	[m]	[m]	[mm]
Vertical Offset 1				
0.0	26.00000	39.00000	-2.00000	0.58517
0.92195	25.94000	38.08000	-2.00000	0.57543
1.8439	25.88000	37.16000	-2.00000	0.56581
2.7659	25.82000	36.24000	-2.00000	0.55630
3.6878	25.76000	35.32000	-2.00000	0.54680
4.6098	25.70000	34.40000	-2.00000	0.53781
5.5317	25.64000	33.48000	-2.00000	0.52843
6.4537	25.58000	32.56000	-2.00000	0.51937
7.3756	25.52000	31.64000	-2.00000	0.51042
8.2976	25.46000	30.72000	-2.00000	0.50157
9.2195	25.40000	29.80000	-2.00000	0.49284

Structure: AW | Sub-structure:

Dist.	Coordinates			Displacements
	x	y	z	
[m]	[m]	[m]	[m]	[mm]
Vertical Offset 1				
0.0	25.40000	29.80000	-2.00000	0.49284
1.9202	27.31667	29.68333	-2.00000	1.0178
3.8404	29.23333	29.56667	-2.00000	1.7371
5.7606	31.15000	29.45000	-2.00000	2.5266
7.6809	33.06667	29.33333	-2.00000	3.2707
9.6011	34.98333	29.21667	-2.00000	3.9072
11.521	36.90000	29.10000	-2.00000	4.0640



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Dist.	Coordinates			Displacements								
	x [m]	y [m]	z [m]	z [mm]								
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] 0.0			[m] 1 0.85000	[m] 2.5490	Hogging	[%] 0.0011297	[%] 0.024991	[%] 0.025133	-250.92E-6	-127.86E-6	[m] 23188.	0 (Negligible)
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] 0.0			[m] 1 0.0	[m] 2.3247	Sagging	[%] 0.0049286	[%] -671.48E-6	[%] 0.0046483	20.461E-6	-226.37E-6	[m] 2795.1	0 (Negligible)
			2 2.3247	0.77431	Hogging	0.0	15.935E-6	15.914E-6	0.0	-4.6031E-6	35.457E+6	0 (Negligible)
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] 0.0			[m] 1 0.0	[m] 4.6001	Hogging	[%] 0.0025183	[%] 0.037500	[%] 0.038072	-374.86E-6	-408.71E-6	[m] 15401.	0 (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] 0.0			[m] 1 0.0	[m] 3.2397	Sagging	[%] 0.011162	[%] -0.0036011	[%] 0.0098075	219.28E-6	825.78E-6	[m] 3996.8	0 (Negligible)
			2 3.2397	1.6617	Hogging	0.012004	-0.025051	0.0092098	279.39E-6	825.78E-6	5485.6	0 (Negligible)
			3 4.9014	0.49854	None	0.0	-0.021399	0.0042798	214.04E-6	128.94E-6	4407.3	0 (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] 0.0			[m] 1 0.0	[m] 2.4990	Sagging	[%] 417.06E-6	[%] 0.018979	[%] 0.019082	-277.46E-6	-207.11E-6	[m] 47418.	0 (Negligible)
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] 0.0			[m] 1 0.0	[m] 0.62051	Hogging	[%] 0.0	[%] -0.010542	[%] 0.0021084	105.43E-6	214.21E-6	[m] 33560.	0 (Negligible)
			2 0.62051	2.8334	Hogging	0.0019703	-0.0022491	0.0014850	105.43E-6	221.15E-6	23344.	0 (Negligible)
			3 3.4539	1.8543	Sagging	295.04E-6	0.0023091	0.0023632	-59.561E-6	158.59E-6	108520.	0 (Negligible)
			4 5.3082	3.9914	Hogging	0.0010340	0.012501	0.012705	-160.26E-6	158.59E-6	35598.	0 (Negligible)
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] 0.0			[m] 1 0.0	[m] 2.0000	Hogging	[%] 90.361E-6	[%] -531.25E-6	[%] 118.77E-6	-26.831E-6	37.925E-6	[m] 193140.	0 (Negligible)
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] 0.0			1 2.7009	[m] 0.0	None	[%] 0.0	[%] 0.0	[%] 0.0	-83.163E-6	-40.476E-6	[m] 61441.	0 (Negligible)
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]	



GEA LIMITED
(GEOTECHNICAL & ENV ASSOC)

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

Job No.	Sheet No.	Rev.
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Drg. Ref.		
Made by	Date 01-Nov-2016	Checked

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
0.0	1	0.0	0.0	None	0.0	0.0	0.0	-73.011E-6	38.241E-6	85376.	0 (Negligible)
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] 0.0	1	[m] 0.0	[m] 1.5168	None	[%] 0.0	[%] -0.0053075	[%] 0.0010615	53.078E-6	-39.641E-6	[m] 66733.	0 (Negligible)
	2	1.5168	2.7130	Hogging	668.58E-6	-0.0083835	0.0017204	95.712E-6	-93.892E-6	233820.	0 (Negligible)
	3	4.2298	9.2562	Sagging	0.0016553	-0.0023455	956.98E-6	72.516E-6	-93.892E-6	63854.	0 (Negligible)
	4	13.486	4.0432	Sagging	187.80E-6	-0.0074105	0.0014856	97.206E-6	85.951E-6	211920.	0 (Negligible)
	5	17.529	0.051281	Hogging	74.233E-6	-0.0021512	432.41E-6	50.903E-6	42.372E-6	19.632E+6	0 (Negligible)
	6	17.580	1.9185	None	0.0	-0.141.92E-6	28.360E-6	1.4192E-6	39.278E-6	310100.	0 (Negligible)
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] 0.0	1	[m] 0.0	[m] 4.2986	Hogging	[%] 0.0068375	[%] -0.025213	[%] 0.0064709	679.41E-6	-0.0011440	[m] 4399.2	0 (Negligible)
	2	4.2986	2.6236	Sagging	0.021039	-0.016713	0.016170	679.41E-6	-0.0011440	2938.8	0 (Negligible)
	3	6.9222	1.9768	None	0.0	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] 0.0	1	[m] 0.0	[m] 6.0203	Hogging	[%] 0.0016676	[%] 0.029604	[%] 0.030484	-581.49E-6	-288.35E-6	[m] 23024.	0 (Negligible)
	2	6.0203	1.1707	Sagging	103.15E-6	0.058047	0.058069	-581.49E-6	-288.35E-6	95259.1	1 (Very Slight)
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] 0.0	1	[m] 0.0	[m] 4.9006	Hogging	[%] 0.0025645	[%] 0.037933	[%] 0.038934	-438.65E-6	-410.50E-6	[m] 15334.	0 (Negligible)
	2	4.9006	2.3991	Sagging	729.45E-6	0.064365	0.064644	-707.70E-6	-410.50E-6	24200.1	1 (Very Slight)
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] 0.0	1	[m] 0.0	[m] 6.0990	Hogging	[%] 0.0018003	[%] 0.031743	[%] 0.032438	-601.21E-6	313.31E-6	[m] 21541.	0 (Negligible)
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] 0.0	1	[m] 0.0	[m] 1.1692	Hogging	[%] 312.04E-6	[%] 0.057539	[%] 0.057615	-576.49E-6	-322.81E-6	[m] 33438.	1 (Very Slight)
	2	1.1692	0.87382	Sagging	296.82E-6	0.056597	0.056704	-569.78E-6	-322.81E-6	34679.1	1 (Very Slight)
	3	2.0430	2.5560	Hogging	0.012105	-0.19212	0.039021	0.0062857	-787.07E-6	1242.7	0 (Negligible)
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] 0.0	1	[m] 0.0	[m] 2.1242	Hogging	[%] 467.37E-6	[%] 0.060157	[%] 0.060313	-601.21E-6	-328.87E-6	[m] 59221.	1 (Very Slight)
	2	2.1242	3.4748	Sagging	0.0044795	0.060157	0.064520	-601.21E-6	-328.87E-6	4690.2	1 (Very Slight)
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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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
0.0	1	0.0	4.4990	Sagging	0.0085266	0.070833	0.082469	-707.83E-6	-362.57E-6	3050.3	2 (Slight)
Tensile horizontal strains are +ve, compressive horizontal strains are -ve.											
Structure: R 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] 0.0		[m] 0.0	[m] 0.50663	None	[%] 0.0	[%] -0.036540	[%] 0.0073080			[m] 3401.8	0 (Negligible)
	2	0.50663	1.6789	Hogging	0.015255	-0.054179	0.014144	645.32E-6	-0.0011497	4109.2	0 (Negligible)
	3	2.1856	5.2242	Sagging	0.011597	-0.0072562	0.0096919	645.32E-6	-0.0011497	2756.2	0 (Negligible)
Tensile horizontal strains are +ve, compressive horizontal strains are -ve.											
Structure: S 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] 0.0		[m] 0.0	[m] 7.5540	Sagging	[%] 422.45E-6	[%] -0.0056705	[%] 0.0011522			[m] 226400.	0 (Negligible)
	2	7.5540	0.27387	Hogging	311.97E-6	-0.0055704	0.0011286	72.610E-6	11.522E-6	7.0547E+6	0 (Negligible)
	3	7.8279	1.8596	None	0.0	-0.0072605	0.0014521	72.610E-6	18.045E-6	293850.	0 (Negligible)
Tensile horizontal strains are +ve, compressive horizontal strains are -ve.											
Structure: T 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] 0.0		[m] 0.0	[m] 2.6346	Sagging	[%] 0.0018176	[%] -0.037920	[%] 0.0076531			[m] 12667.	0 (Negligible)
	2	2.6346	3.2820	Hogging	0.0031752	-0.10531	0.021141	0.0011786	-144.53E-6	23740.	0 (Negligible)
	3	5.9167	7.2378	Sagging	0.0097691	-508.71E-6	0.010283	0.0011786	-315.16E-6	9894.2	0 (Negligible)
	4	13.154	16.634	Hogging	0.0021095	0.0072456	0.0097952	-154.80E-6	179.71E-6	81180.	0 (Negligible)
Tensile horizontal strains are +ve, compressive horizontal strains are -ve.											
Structure: U 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] 0.0		[m] 1.9720	[m] 7.8870	Hogging	[%] 0.0047319	[%] 0.031101	[%] 0.034302			[m] 18854.	0 (Negligible)
Tensile horizontal strains are +ve, compressive horizontal strains are -ve.											
Structure: V 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] 0.0		[m] 0.0	[m] 1.0497	Hogging	[%] 49.492E-6	[%] 0.032060	[%] 0.032066			[m] 127750.	0 (Negligible)
	2	1.0497	2.5894	Sagging	629.72E-6	0.052796	0.053166	-583.09E-6	-375.48E-6	31375.	1 (Very Slight)
Tensile horizontal strains are +ve, compressive horizontal strains are -ve.											
Structure: W 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] 0.0		[m] 0.0	[m] 1.1392	Sagging	[%] 43.180E-6	[%] 0.013147	[%] 0.013157			[m] 326770.	0 (Negligible)
Tensile horizontal strains are +ve, compressive horizontal strains are -ve.											
Structure: X 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] 0.0		[m] 1.48600	[m] 4.8590	Hogging	[%] 0.0029763	[%] 0.031160	[%] 0.032442			[m] 18523.	0 (Negligible)
Tensile horizontal strains are +ve, compressive horizontal strains are -ve.											
Structure: Y 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] 0.0		[m] 0.0	[m] 3.6391	Hogging	[%] 0.0011318	[%] 0.030888	[%] 0.031309			[m] 23485.	0 (Negligible)
Tensile horizontal strains are +ve, compressive horizontal strains are -ve.											
Structure: Z Sub-structure:											
Vertical Offset	Segment	Start	Length	Curvature	Deflection	Average	Max.	Maximum	Maximum	Min.	Damage



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From Line for Vertical Movement Calculations		Ratio	Horizontal Strain	Tensile Strain	Gradient of Horizontal Displacement Curve	Gradient of Vertical Displacement Curve	Radius of Curvature	Category
[m] 0.0	[m] 1 6.7061 2.8731 Hogging	[%] 0.0012607	[%] 0.031220	[%] 0.031546	-312.11E-6	-119.73E-6	[m] 21335.	0 (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] 0.0										[m]	
	1	0.0	3.6610	Hogging	0.0024377	0.031945	0.032858	-319.35E-6	-316.20E-6	17756.	0
(Negligible)											
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] 0.0										[m]	
	1	0.0	3.6610	Hogging	0.0024377	0.031945	0.032858	-319.35E-6	-316.20E-6	17756.	0
(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] 0.0										[m]	
	1	1.6935	3.3859	Hogging	593.95E-6	0.0073107	0.0077277	-114.35E-6	-83.036E-6	64668.	0
(Negligible)											
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] 0.0										[m]	
	1	0.0	7.8628	Hogging	0.0017093	0.031818	0.033751	-513.28E-6	-297.22E-6	15442.	0
(Negligible)											
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] 0.0										[m]	
	1	0.0	3.3051	Sagging	277.22E-6	-0.0074156	0.0014888	94.576E-6	37.723E-6	105640.	0
(Negligible)											
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] 0.0										[m]	
	1	0.0	2.7715	Sagging	0.0048249	-0.001904	0.016577	0.0037932	332.97E-6	3428.1	0
	2	2.7715	0.44149	None	0.0	0.049492	0.049492	-494.68E-6	331.40E-6	46571.	0
(Negligible)											
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] 0.0										[m]	
	1	0.0	1.2243	Hogging	0.0	-0.072620	0.014524	726.73E-6	223.93E-6	68834.	0
	2	1.2243	10.204	Hogging	0.0018044	0.0040324	0.0066518	726.73E-6	230.00E-6	45828.	0
(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] 0.0										[m]	
	1	0.0	6.3378	Hogging	0.0010505	0.0039673	0.0042942	-78.668E-6	-170.12E-6	58422.	0
(Negligible)											
Tensile horizontal strains are +ve, compressive horizontal strains are -ve.											

Structure: AI | 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] 0.0										[m]	
	1	0.0	1.2592	Hogging	160.99E-6	0.017157	0.017167	-209.58E-6	151.90E-6	62570.	0
(Negligible)											



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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	1.2592	1.9761	Sagging	382.11E-6	0.0073247	0.0073994	-108.70E-6	161.66E-6	149270.	0 (Negligible)
	3	3.2352	1.6145	Hogging	215.72E-6	0.012013	0.012030	-127.72E-6	161.66E-6	81106.	0 (Negligible)

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

Structure: AJ | 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] 0.0	1	[m] 0.0	[m] 1.0951	Sagging	[%] 101.36E-6	[%] -0.010837	[%] 0.0021682	132.62E-6	-56.480E-6	[m] 74958.	0 (Negligible)
	2	1.0951	2.3446	Hogging	0.0080736	-0.012069	0.0060089	152.44E-6	-556.39E-6	8236.4	0 (Negligible)
	3	3.4397	2.5388	Sagging	0.0093201	-574.84E-6	0.0090329	26.738E-6	-556.39E-6	6806.7	0 (Negligible)
	4	5.9785	2.9882	Hogging	0.0	0.0	0.0	0.0	0.0	3.6743E+9	0 (Negligible)

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

Structure: AK | 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] 0.0	1	[m] 0.0	[m] 2.8027	Hogging	[%] 682.30E-6	[%] 0.037490	[%] 0.037584	-374.76E-6	-405.84E-6	[m] 27946.	0 (Negligible)
	2	2.8027	2.1461	Sagging	816.23E-6	0.066110	0.066283	-707.64E-6	-417.48E-6	21342.	1 (Very Slight)

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

Structure: AL | 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] 0.0	1	[m] 0.0	[m] 4.7371	Sagging	[%] 0.0	[%] 0.0	[%] 0.0	0.0	0.0	[m] 24.863E+9	0 (Negligible)

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

Structure: AM | 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] 0.0	1	[m] 0.0	[m] 1.8411	Sagging	[%] 854.34E-6	[%] 0.070028	[%] 0.070184	-705.97E-6	415.77E-6	[m] 19525.	1 (Very Slight)
	2	1.8411	0.86526	Hogging	0.0	0.039214	0.039214	-391.99E-6	405.36E-6	41537.	0 (Negligible)

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

Structure: AN | 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] 0.0	1	[m] 0.0	[m] 0.41720	None	[%] 0.0	[%] 23.522E-6	[%] 23.496E-6	0.0	-10.255E-6	[m] 4355.3	0 (Negligible)
	2	0.41720	1.5820	Sagging	0.012608	-0.0011827	0.012122	57.527E-6	756.09E-6	3943.4	0 (Negligible)
	3	1.9992	1.3375	Hogging	0.015957	-0.023666	0.011888	345.12E-6	756.09E-6	795.76	0 (Negligible)

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

Structure: AO | 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] 0.0	1	[m] 0.0	[m] 1.1837	Hogging	[%] 423.60E-6	[%] 0.031561	[%] 0.031586	-533.98E-6	-277.78E-6	[m] 26325.	0 (Negligible)
	2	1.1837	1.3333	Sagging	572.66E-6	0.051882	0.051958	-533.98E-6	-277.78E-6	23360.	1 (Very Slight)

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

Structure: AP | 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] 0.0	1	[m] 0.0	[m] 1.9048	Sagging	[%] 541.40E-6	[%] -0.044662	[%] 0.0089378	580.08E-6	216.21E-6	[m] 37071.	0 (Negligible)
	2	1.9048	2.5495	Hogging	0.0022543	-0.0077901	0.0020716	139.56E-6	216.21E-6	8141.4	0 (Negligible)

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

Structure: AQ | 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] 0.0	1	[m] 0.0	[m] 4.9487	Hogging	[%] 799.94E-6	[%] 0.0045662	[%] 0.0047614	-105.30E-6	200.22E-6	[m] 18068.	0 (Negligible)

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: AR 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	Maximum Gradient of Vertical Displacement	Min. Radius of Curvature	Damage Category
[m] 0.0		[m] 1 0.94130	[m] 7.5294	Hogging	[%] 0.0052512	[%] 0.037499	[%] 0.039432	-374.85E-6	-407.67E-6	[m] 15698.	0 (Negligible)
Tensile horizontal strains are +ve, compressive horizontal strains are -ve.											
Structure: AS 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	Maximum Gradient of Vertical Displacement	Min. Radius of Curvature	Damage Category
[m] 0.0		[m] 1 2.7205	[m] 5.4400	Hogging	[%] 0.0041065	[%] 0.037500	[%] 0.038600	-374.86E-6	-330.55E-6	[m] 15684.	0 (Negligible)
Tensile horizontal strains are +ve, compressive horizontal strains are -ve.											
Structure: AT 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	Maximum Gradient of Vertical Displacement	Min. Radius of Curvature	Damage Category
[m] 0.0		[m] 1 5.5383	[m] 3.0859	Hogging	[%] 340.14E-6	[%] 0.0054011	[%] 0.0054530	-107.10E-6	-102.00E-6	[m] 79488.	0 (Negligible)
		[m] 2 8.6241	[m] 2.4514	Sagging	[%] 227.36E-6	[%] -0.0027703	[%] 569.31E-6	44.901E-6	-102.00E-6	[m] 97545.	0 (Negligible)
Tensile horizontal strains are +ve, compressive horizontal strains are -ve.											
Structure: AU 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	Maximum Gradient of Vertical Displacement	Min. Radius of Curvature	Damage Category
[m] 0.0		[m] 1 0.0	[m] 2.4963	Sagging	[%] 714.28E-6	[%] 0.064504	[%] 0.065058	-706.93E-6	414.02E-6	[m] 29841.	1 (Very Slight)
		[m] 2 2.4963	[m] 4.6140	Hogging	[%] 0.0023127	[%] 0.037881	[%] 0.039558	-490.40E-6	414.02E-6	[m] 15704.	0 (Negligible)
Tensile horizontal strains are +ve, compressive horizontal strains are -ve.											
Structure: AV 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	Maximum Gradient of Vertical Displacement	Min. Radius of Curvature	Damage Category
[m] 0.0		[m] 1 0.0	[m] 9.2185	Hogging	[%] 15.093E-6	[%] 74.242E-6	[%] 92.733E-6	0.0	10.558E-6	[m] 7.6173E+6	0 (Negligible)
Tensile horizontal strains are +ve, compressive horizontal strains are -ve.											
Structure: AW 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	Maximum Gradient of Vertical Displacement	Min. Radius of Curvature	Damage Category
[m] 0.0		[m] 1 0.0	[m] 5.1693	Hogging	[%] 0.0027046	[%] 0.038891	[%] 0.041054	-430.68E-6	-410.99E-6	[m] 16373.	0 (Negligible)
		[m] 2 5.1693	[m] 6.3510	Sagging	[%] 0.0059950	[%] 0.068146	[%] 0.076699	-706.69E-6	-410.99E-6	[m] 6447.3	2 (Slight)
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 Calculations	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	
[m] 0.0	[%] 0.0011297	[%] 0.024991	-127.86E-6	[mm] 0.34724	[%] 0.025133	-250.92E-6	-127.86E-6	[m] 23188.	[m] -	0 (Negligible)	
Structure: B 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	Maximum Gradient of Vertical Displacement	Min. Radius of Curvature (Hogging)	Min. Radius of Curvature (Sagging)	Damage Category	
[m] 0.0	[%] 0.0049286	[%] -671.48E-6	-226.37E-6	[mm] 0.53344	[%] 0.0046483	20.461E-6	-226.37E-6	[m] 35.457E+6	[m] 2795.1	0 (Negligible)	
Structure: C 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	Maximum Gradient of Vertical Displacement	Min. Radius of Curvature (Hogging)	Min. Radius of Curvature (Sagging)	Damage Category	
[m] 0.0	[%] 0.0025183	[%] 0.037500	-408.71E-6	[mm] 2.1251	[%] 0.038072	-374.86E-6	-408.71E-6	[m] 15401.	[m] -	0 (Negligible)	
Structure: D Sub-structure:											
Vertical	Deflection	Average	Maximum	Maximum	Max.	Maximum	Maximum	Min.	Min.	Damage Category	



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Offset from Line for Vertical Movement Calculations	Ratio	Horizontal Strain	Slope	Settlement	Tensile Strain	Gradient of Horizontal Displacement Curve	Gradient of Vertical Displacement Curve	Radius of Curvature (Hogging)	Radius of Curvature (Sagging)	
[m] 0.0	[%] 0.012004	[%] -0.025051	825.78E-6	[mm] 2.1255	[%] 0.0098075	279.39E-6	825.78E-6	[m] 5485.6	[m] 3996.8	0 (Negligible)
Structure: E 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] 0.0	[%] 417.06E-6	[%] 0.018979	-207.11E-6	[mm] 1.6188	[%] 0.019082	-277.46E-6	-207.11E-6	[m] -	[m] 47418.0	0 (Negligible)
Structure: F 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] 0.0	[%] 0.0019703	[%] 0.012501	221.15E-6	[mm] 1.6190	[%] 0.012705	-160.26E-6	221.15E-6	[m] 23344.	[m] 108520.	0 (Negligible)
Structure: G 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] 0.0	[%] 90.361E-6	[%] -531.25E-6	37.925E-6	[mm] 0.19529	[%] 118.77E-6	-26.831E-6	37.925E-6	[m] 193140.	[m] -	0 (Negligible)
Structure: H 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] 0.0	[%] 0.0	[%] 0.0	-40.476E-6	[mm] 0.13287	[%] 0.0	-83.163E-6	-40.476E-6	[m] -	[m] -	0 (Negligible)
Structure: I 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] 0.0	[%] 0.0	[%] 0.0	38.241E-6	[mm] 0.13291	[%] 0.0	-73.011E-6	38.241E-6	[m] -	[m] -	0 (Negligible)
Structure: J 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] 0.0	[%] 0.0016553	[%] -0.0083835	-93.892E-6	[mm] 0.52099	[%] 0.0017204	97.206E-6	-93.892E-6	[m] 233820.	[m] 63854.	0 (Negligible)
Structure: K 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] 0.0	[%] 0.021039	[%] -0.025213	-0.0011440	[mm] 3.1806	[%] 0.016170	679.41E-6	-0.0011440	[m] 4399.2	[m] 2938.8	0 (Negligible)
Structure: L 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] 0.0	[%] 0.0016676	[%] 0.058047	-288.35E-6	[mm] 2.1764	[%] 0.058069	-581.49E-6	-288.35E-6	[m] 23024.	[m] 95259.	1 (Very Slight)
Structure: M 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] 0.0	[%] 0.0025645	[%] 0.064365	-410.50E-6	[mm] 3.1802	[%] 0.064644	-707.70E-6	-410.50E-6	[m] 15334.	[m] 24200.	1 (Very Slight)
Structure: N 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] 0.0	[%] 0.0	[%] 0.0		[mm] 0.0	[%] 0.0			[m] 0.0	[m] 0.0	



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Vertical Offset from Line for Vertical Movement Calculations [m] 0.0	Deflection Ratio 0.0018083	Average Horizontal Strain 0.031743	Maximum Slope 313.31E-6	Maximum Settlement 1.9882	Max. Tensile Strain 0.032438	Maximum Gradient of Horizontal Displacement Curve -601.21E-6	Maximum Gradient of Vertical Displacement Curve 313.31E-6	Min. Radius of Curvature (Hogging) 21541.	Min. Radius of Curvature (Sagging) -	Damage Category 0 (Negligible)
Structure: 0 Sub-structure:										
Vertical Offset from Line for Vertical Movement Calculations [m] 0.0	Deflection Ratio 0.012105	Average Horizontal Strain -0.19212	Maximum Slope -787.07E-6	Maximum Settlement 3.9520	Max. Tensile Strain 0.057615	Maximum Gradient of Horizontal Displacement Curve 0.0062857	Maximum Gradient of Vertical Displacement Curve -787.07E-6	Min. Radius of Curvature (Hogging) 1242.7	Min. Radius of Curvature (Sagging) 34679.	Damage Category 1 (Very Slight)
Structure: P Sub-structure: Sub #										
Vertical Offset from Line for Vertical Movement Calculations [m] 0.0	Deflection Ratio 0.0044795	Average Horizontal Strain 0.060157	Maximum Slope -328.87E-6	Maximum Settlement 3.4348	Max. Tensile Strain 0.064520	Maximum Gradient of Horizontal Displacement Curve -601.21E-6	Maximum Gradient of Vertical Displacement Curve -328.87E-6	Min. Radius of Curvature (Hogging) 59221.	Min. Radius of Curvature (Sagging) 4690.2	Damage Category 1 (Very Slight)
Structure: Q Sub-structure:										
Vertical Offset from Line for Vertical Movement Calculations [m] 0.0	Deflection Ratio 0.0085266	Average Horizontal Strain 0.070833	Maximum Slope -362.57E-6	Maximum Settlement 4.1108	Max. Tensile Strain 0.082469	Maximum Gradient of Horizontal Displacement Curve -707.83E-6	Maximum Gradient of Vertical Displacement Curve -362.57E-6	Min. Radius of Curvature (Hogging) -	Min. Radius of Curvature (Sagging) 3050.3	Damage Category 2 (Slight)
Structure: R Sub-structure:										
Vertical Offset from Line for Vertical Movement Calculations [m] 0.0	Deflection Ratio 0.015255	Average Horizontal Strain -0.054179	Maximum Slope -0.0011497	Maximum Settlement 3.0503	Max. Tensile Strain 0.014144	Maximum Gradient of Horizontal Displacement Curve 645.32E-6	Maximum Gradient of Vertical Displacement Curve -0.0011497	Min. Radius of Curvature (Hogging) 4109.2	Min. Radius of Curvature (Sagging) 2756.2	Damage Category 0 (Negligible)
Structure: S Sub-structure:										
Vertical Offset from Line for Vertical Movement Calculations [m] 0.0	Deflection Ratio 422.45E-6	Average Horizontal Strain -0.0072605	Maximum Slope 18.045E-6	Maximum Settlement 0.14620	Max. Tensile Strain 0.0014521	Maximum Gradient of Horizontal Displacement Curve 72.610E-6	Maximum Gradient of Vertical Displacement Curve 18.045E-6	Min. Radius of Curvature (Hogging) 7.0547E+6	Min. Radius of Curvature (Sagging) 226400.	Damage Category 0 (Negligible)
Structure: T Sub-structure:										
Vertical Offset from Line for Vertical Movement Calculations [m] 0.0	Deflection Ratio 0.0097691	Average Horizontal Strain -0.10531	Maximum Slope -315.16E-6	Maximum Settlement 3.1405	Max. Tensile Strain 0.021141	Maximum Gradient of Horizontal Displacement Curve 0.0011786	Maximum Gradient of Vertical Displacement Curve -315.16E-6	Min. Radius of Curvature (Hogging) 23740.	Min. Radius of Curvature (Sagging) 9894.2	Damage Category 0 (Negligible)
Structure: U Sub-structure:										
Vertical Offset from Line for Vertical Movement Calculations [m] 0.0	Deflection Ratio 0.0047319	Average Horizontal Strain 0.031101	Maximum Slope -363.82E-6	Maximum Settlement 1.8206	Max. Tensile Strain 0.034302	Maximum Gradient of Horizontal Displacement Curve -310.92E-6	Maximum Gradient of Vertical Displacement Curve -363.82E-6	Min. Radius of Curvature (Hogging) 18854.	Min. Radius of Curvature (Sagging) -	Damage Category 0 (Negligible)
Structure: V Sub-structure:										
Vertical Offset from Line for Vertical Movement Calculations [m] 0.0	Deflection Ratio 629.72E-6	Average Horizontal Strain 0.052796	Maximum Slope -375.48E-6	Maximum Settlement 3.1493	Max. Tensile Strain 0.053166	Maximum Gradient of Horizontal Displacement Curve -583.09E-6	Maximum Gradient of Vertical Displacement Curve -375.48E-6	Min. Radius of Curvature (Hogging) 127750.	Min. Radius of Curvature (Sagging) 31375.	Damage Category 1 (Very Slight)
Structure: W Sub-structure:										
Vertical Offset from Line for Vertical Movement Calculations [m] 0.0	Deflection Ratio 43.180E-6	Average Horizontal Strain 0.013147	Maximum Slope 162.83E-6	Maximum Settlement 3.1496	Max. Tensile Strain 0.013157	Maximum Gradient of Horizontal Displacement Curve -131.45E-6	Maximum Gradient of Vertical Displacement Curve 162.83E-6	Min. Radius of Curvature (Hogging) -	Min. Radius of Curvature (Sagging) 326770.	Damage Category 0 (Negligible)
Structure: X Sub-structure:										
Vertical Offset from Line for Vertical Movement Calculations [m] 0.0	Deflection Ratio 0.0029763	Average Horizontal Strain 0.031160	Maximum Slope -259.42E-6	Maximum Settlement 0.90395	Max. Tensile Strain 0.032442	Maximum Gradient of Horizontal Displacement Curve -311.50E-6	Maximum Gradient of Vertical Displacement Curve -259.42E-6	Min. Radius of Curvature (Hogging) 18523.	Min. Radius of Curvature (Sagging) -	Damage Category 0 (Negligible)
Structure: Y Sub-structure:										
Vertical	Deflection	Average	Maximum	Maximum	Max.	Maximum	Maximum	Min.	Min.	Damage Category



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Offset from Line for Vertical Movement Calculations	Ratio	Horizontal Strain	Slope	Settlement	Tensile Strain	Gradient of Horizontal Displacement Curve	Gradient of Vertical Displacement Curve	Radius of Curvature (Hogging)	Radius of Curvature (Sagging)	
[m] 0.0	[%] 0.0011318	[%] 0.030888	-371.15E-6	[mm] 2.1586	[%] 0.031309	-308.78E-6	-371.15E-6	[m] 23485.	[m]	- 0 (Negligible)
Structure: Z 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] 0.0	[%] 0.0012607	[%] 0.031220	-119.73E-6	[mm] 0.33894	[%] 0.031546	-312.11E-6	-119.73E-6	[m] 21335.	[m]	- 0 (Negligible)
Structure: AA 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] 0.0	[%] 0.0024377	[%] 0.031945	-316.20E-6	[mm] 1.2357	[%] 0.032058	-319.35E-6	-316.20E-6	[m] 17756.	[m]	- 0 (Negligible)
Structure: AB 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] 0.0	[%]	[%]		[mm]	[%]			[m]	[m]	
Structure: AC 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] 0.0	[%] 593.95E-6	[%] 0.0073107	-83.036E-6	[mm] 0.33123	[%] 0.0077277	-114.35E-6	-83.036E-6	[m] 64668.	[m]	- 0 (Negligible)
Structure: AD 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] 0.0	[%] 0.0017093	[%] 0.031818	-297.22E-6	[mm] 1.9612	[%] 0.033751	-513.28E-6	-297.22E-6	[m] 15442.	[m]	- 0 (Negligible)
Structure: AE 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] 0.0	[%] 277.22E-6	[%] -0.0074156	37.723E-6	[mm] 0.33131	[%] 0.0014888	94.576E-6	37.723E-6	[m] -	[m] 105640.	0 (Negligible)
Structure: AF 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] 0.0	[%] 0.0048249	[%] -0.001904	332.97E-6	[mm] 2.8870	[%] 0.049492	0.0037932	332.97E-6	[m] -	[m] 3428.1	0 (Negligible)
Structure: AG 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] 0.0	[%] 0.0018044	[%] -0.072620	230.08E-6	[mm] 2.0766	[%] 0.014524	726.73E-6	230.08E-6	[m] 45828.	[m]	- 0 (Negligible)
Structure: AH 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] 0.0	[%] 0.0010505	[%] 0.0039673	-170.12E-6	[mm] 1.2239	[%] 0.0042942	-78.668E-6	-170.12E-6	[m] 58422.	[m]	- 0 (Negligible)
Structure: AI 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] 0.0	[%] 382.11E-6	[%] 0.017157	161.66E-6	[mm] 1.2240	[%] 0.017167	-209.58E-6	161.66E-6	[m] 62570.	[m] 149270.	0 (Negligible)



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Vertical Offset from Line for Vertical Movement Calculations [m] 0.0	Deflection Ratio [%] 0.0093201	Average Horizontal Strain [%] -0.012069	Maximum Slope -556.39E-6	Maximum Settlement [mm] 1.1614	Max. Tensile Strain [%] 0.0090329	Maximum Gradient of Horizontal Displacement Curve 152.44E-6	Maximum Gradient of Vertical Displacement Curve -556.39E-6	Min. Radius of Curvature (Hogging) [m] 8236.4	Min. Radius of Curvature (Sagging) [m] 6806.7	Damage Category 0 (Negligible)
Structure: AJ Sub-structure:										
Vertical Offset from Line for Vertical Movement Calculations [m] 0.0	Deflection Ratio [%] 816.23E-6	Average Horizontal Strain [%] 0.066110	Maximum Slope -417.48E-6	Maximum Settlement [mm] 3.1221	Max. Tensile Strain [%] 0.066283	Maximum Gradient of Horizontal Displacement Curve -707.64E-6	Maximum Gradient of Vertical Displacement Curve -417.48E-6	Min. Radius of Curvature (Hogging) [m] 27946.	Min. Radius of Curvature (Sagging) [m] 21342.	Damage Category 1 (Very Slight)
Structure: AL Sub-structure:										
Vertical Offset from Line for Vertical Movement Calculations [m] 0.0	Deflection Ratio [%] 0.0	Average Horizontal Strain [%] 0.0	Maximum Slope 0.0	Maximum Settlement [mm] 3.1254	Max. Tensile Strain [%] 0.0	Maximum Gradient of Horizontal Displacement Curve 0.0	Maximum Gradient of Vertical Displacement Curve 0.0	Min. Radius of Curvature (Hogging) [m] - 24.863E+9	Min. Radius of Curvature (Sagging) [m] 0	Damage Category 0 (Negligible)
Structure: AM Sub-structure:										
Vertical Offset from Line for Vertical Movement Calculations [m] 0.0	Deflection Ratio [%] 854.34E-6	Average Horizontal Strain [%] 0.070028	Maximum Slope 415.77E-6	Maximum Settlement [mm] 3.1254	Max. Tensile Strain [%] 0.070184	Maximum Gradient of Horizontal Displacement Curve -705.97E-6	Maximum Gradient of Vertical Displacement Curve 415.77E-6	Min. Radius of Curvature (Hogging) [m] 41537.	Min. Radius of Curvature (Sagging) [m] 19525.	Damage Category 1 (Very Slight)
Structure: AN Sub-structure:										
Vertical Offset from Line for Vertical Movement Calculations [m] 0.0	Deflection Ratio [%] 0.015957	Average Horizontal Strain [%] -0.023666	Maximum Slope 756.09E-6	Maximum Settlement [mm] 2.0570	Max. Tensile Strain [%] 0.012122	Maximum Gradient of Horizontal Displacement Curve 345.12E-6	Maximum Gradient of Vertical Displacement Curve 756.09E-6	Min. Radius of Curvature (Hogging) [m] 795.76	Min. Radius of Curvature (Sagging) [m] 3943.4	Damage Category 0 (Negligible)
Structure: AO Sub-structure:										
Vertical Offset from Line for Vertical Movement Calculations [m] 0.0	Deflection Ratio [%] 572.66E-6	Average Horizontal Strain [%] 0.051882	Maximum Slope -277.78E-6	Maximum Settlement [mm] 2.0287	Max. Tensile Strain [%] 0.051958	Maximum Gradient of Horizontal Displacement Curve -533.98E-6	Maximum Gradient of Vertical Displacement Curve -277.78E-6	Min. Radius of Curvature (Hogging) [m] 26325.	Min. Radius of Curvature (Sagging) [m] 23360.	Damage Category 1 (Very Slight)
Structure: AP Sub-structure:										
Vertical Offset from Line for Vertical Movement Calculations [m] 0.0	Deflection Ratio [%] 0.0022543	Average Horizontal Strain [%] -0.044662	Maximum Slope 216.21E-6	Maximum Settlement [mm] 2.0289	Max. Tensile Strain [%] 0.0089378	Maximum Gradient of Horizontal Displacement Curve 580.08E-6	Maximum Gradient of Vertical Displacement Curve 216.21E-6	Min. Radius of Curvature (Hogging) [m] 8141.4	Min. Radius of Curvature (Sagging) [m] 37071.	Damage Category 0 (Negligible)
Structure: AQ Sub-structure:										
Vertical Offset from Line for Vertical Movement Calculations [m] 0.0	Deflection Ratio [%] 799.94E-6	Average Horizontal Strain [%] 0.0045662	Maximum Slope 200.22E-6	Maximum Settlement [mm] 1.2133	Max. Tensile Strain [%] 0.0047614	Maximum Gradient of Horizontal Displacement Curve -105.30E-6	Maximum Gradient of Vertical Displacement Curve 200.22E-6	Min. Radius of Curvature (Hogging) [m] 18068.	Min. Radius of Curvature (Sagging) [m] -	Damage Category 0 (Negligible)
Structure: AR Sub-structure:										
Vertical Offset from Line for Vertical Movement Calculations [m] 0.0	Deflection Ratio [%] 0.0052512	Average Horizontal Strain [%] 0.037499	Maximum Slope -407.67E-6	Maximum Settlement [mm] 2.0489	Max. Tensile Strain [%] 0.039432	Maximum Gradient of Horizontal Displacement Curve -374.85E-6	Maximum Gradient of Vertical Displacement Curve -407.67E-6	Min. Radius of Curvature (Hogging) [m] 15698.	Min. Radius of Curvature (Sagging) [m] -	Damage Category 0 (Negligible)
Structure: AS Sub-structure:										
Vertical Offset from Line for Vertical Movement Calculations [m] 0.0	Deflection Ratio [%] 0.0041065	Average Horizontal Strain [%] 0.037500	Maximum Slope -330.55E-6	Maximum Settlement [mm] 1.1666	Max. Tensile Strain [%] 0.038600	Maximum Gradient of Horizontal Displacement Curve -374.86E-6	Maximum Gradient of Vertical Displacement Curve -330.55E-6	Min. Radius of Curvature (Hogging) [m] 15684.	Min. Radius of Curvature (Sagging) [m] -	Damage Category 0 (Negligible)
Structure: AT Sub-structure:										
Vertical Offset from	Deflection Ratio	Average Horizontal	Maximum Slope	Maximum Settlement	Max. Tensile	Maximum Gradient of	Maximum Gradient of	Min. Radius of	Min. Radius of	Damage Category



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Line for Vertical Movement Calculations	Strain	Strain	Horizontal Displacement Curve	Vertical Displacement Curve	Curvature (Hogging)	Curvature (Sagging)
[m] 0.0	[%] 340.14E-6	[%] 0.0054011	[mm] 0.72137	[%] 0.0054530	-107.10E-6	-102.00E-6
					[m] 70488.	[m] 97545.0 (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] 0.0	[%] 0.0023127	[%] 0.064504		[mm] 3.2126	[%] 0.065058	-706.93E-6	414.02E-6	[m] 15704.	[m] 29841.1	1 (Very Slight)

Structure: AV | 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] 0.0	[%] 15.093E-6	[%] 74.242E-6	10.558E-6	[mm] 0.58517	[%] 92.733E-6	0.0	10.558E-6	[m] 7.6173E+6	[m]	-0 (Negligible)

Structure: AW | 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] 0.0	[%] 0.0059950	[%] 0.068146	-410.99E-6	[mm] 4.0639	[%] 0.076099	-706.69E-6	-410.99E-6	[m] 16373.	[m] 6447.3	2 (Slight)

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	Maximum Slope			1	0.85000	[m] 3.3990 Hogging	127.86E-6	[mm] 0.34724	[%] 0.025133	[m] 23188.	[m]	-0 (Negligible)
	Maximum Settlement			1	0.85000	3.3990 Hogging	127.86E-6	0.34724	0.025133	23188.		-0 (Negligible)
	Max. Tensile Strain			1	0.85000	3.3990 Hogging	127.86E-6	0.34724	0.025133	23188.		-0 (Negligible)
	Min. Radius of Curvature (Hogging)			1	0.85000	3.3990 Hogging	127.86E-6	0.34724	0.025133	23188.		-0 (Negligible)
	Min. Radius of Curvature (Sagging)			-	-	-	-	-	-	-	-	-
B	Maximum Slope			1	0.0	2.3247 Sagging	226.37E-6	0.52988	0.0046483	-	2795.1	0 (Negligible)
	Maximum Settlement			2	2.3247	3.0990 Hogging	4.6031E-6	0.53344	15.914E-6	35.457E+6		-0 (Negligible)
	Max. Tensile Strain			1	0.0	2.3247 Sagging	226.37E-6	0.52988	0.0046483	-	2795.1	0 (Negligible)
	Min. Radius of Curvature (Hogging)			2	2.3247	3.0990 Hogging	4.6031E-6	0.53344	15.914E-6	35.457E+6		-0 (Negligible)
	Min. Radius of Curvature (Sagging)			1	0.0	2.3247 Sagging	226.37E-6	0.52988	0.0046483	-	2795.1	0 (Negligible)
C	Maximum Slope			1	0.0	4.6001 Hogging	408.71E-6	2.1251	0.038072	15401.		-0 (Negligible)
	Maximum Settlement			1	0.0	4.6001 Hogging	408.71E-6	2.1251	0.038072	15401.		-0 (Negligible)
	Max. Tensile Strain			1	0.0	4.6001 Hogging	408.71E-6	2.1251	0.038072	15401.		-0 (Negligible)
	Min. Radius of Curvature (Hogging)			1	0.0	4.6001 Hogging	408.71E-6	2.1251	0.038072	15401.		-0 (Negligible)
	Min. Radius of Curvature (Sagging)			-	-	-	-	-	-	-	-	-
D	Maximum Slope			1	0.0	3.2397 Sagging	825.78E-6	2.1255	0.0098075	-	3996.8	0 (Negligible)
	Maximum Settlement			1	0.0	3.2397 Sagging	825.78E-6	2.1255	0.0098075	-	3996.8	0 (Negligible)
	Max. Tensile Strain			1	0.0	3.2397 Sagging	825.78E-6	2.1255	0.0098075	-	3996.8	0 (Negligible)
	Min. Radius of Curvature (Hogging)			2	3.2397	4.9014 Hogging	825.78E-6	1.6372	0.0092098	5485.6		-0 (Negligible)
	Min. Radius of Curvature (Sagging)			1	0.0	3.2397 Sagging	825.78E-6	2.1255	0.0098075	-	3996.8	0 (Negligible)
E	Maximum Slope			1	0.0	2.4990 Sagging	207.11E-6	1.6188	0.019082	-	47418.	0 (Negligible)
	Maximum Settlement			1	0.0	2.4990 Sagging	207.11E-6	1.6188	0.019082	-	47418.	0 (Negligible)
	Max. Tensile Strain			1	0.0	2.4990 Sagging	207.11E-6	1.6188	0.019082	-	47418.	0 (Negligible)
	Min. Radius of Curvature (Hogging)			-	-	-	-	-	-	-	-	-
	Min. Radius of Curvature (Sagging)			1	0.0	2.4990 Sagging	207.11E-6	1.6188	0.019082	-	47418.	0 (Negligible)
F	Maximum Slope			2	0.62051	3.4539 Hogging	221.15E-6	1.4861	0.0014850	23344.		-0 (Negligible)
	Maximum Settlement			1	0.0	0.62051	214.21E-6	1.6190	0.0021084	33560.		-0 (Negligible)
	Max. Tensile Strain			4	5.3082	9.2995 Hogging	158.59E-6	0.71384	0.012705	35598.		-0 (Negligible)
	Min. Radius of Curvature (Hogging)			2	0.62051	3.4539 Hogging	221.15E-6	1.4861	0.0014850	23344.		-0 (Negligible)
	Min. Radius of Curvature (Sagging)			3	3.4539	5.3082 Sagging	158.59E-6	0.99296	0.0023632	-	108520.	0 (Negligible)
G	Maximum Slope			1	0.0	2.0000 Hogging	37.925E-6	0.19529	118.77E-6	193140.		-0 (Negligible)
	Maximum Settlement			1	0.0	2.0000 Hogging	37.925E-6	0.19529	118.77E-6	193140.		-0 (Negligible)
	Max. Tensile Strain			1	0.0	2.0000 Hogging	37.925E-6	0.19529	118.77E-6	193140.		-0 (Negligible)
	Min. Radius of Curvature (Hogging)			1	0.0	2.0000 Hogging	37.925E-6	0.19529	118.77E-6	193140.		-0 (Negligible)
	Min. Radius of Curvature (Sagging)			-	-	-	-	-	-	-	-	-



GEA LIMITED
(GEOTECHNICAL & ENV ASSOC)

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

												Job No.	Sheet No.	Rev.
												J16180		
												Drg. Ref.		
												Made by	Date 01-Nov-2016	Checked
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		
H	(Sagging)			-	-									
	Maximum Slope		1	2.7009	2.7009	Sagging	40.476E-6	0.13287	0.0	-	61441.0	0	(Negligible)	
	Maximum Settlement		1	2.7009	2.7009	Sagging	40.476E-6	0.13287	0.0	-	61441.0	0	(Negligible)	
	Max. Tensile Strain		1	2.7009	2.7009	Sagging	40.476E-6	0.13287	0.0	-	61441.0	0	(Negligible)	
	Min. Radius of Curvature (Hogging)		-	-	-	-	-	-	-	-	-	-	-	
I	Min. Radius of Curvature (Sagging)		-	-	-	-	-	-	-	-	-	-	-	
	Maximum Slope		1	0.0	0.0	Sagging	38.241E-6	0.13291	0.0	-	85376.0	0	(Negligible)	
	Maximum Settlement		1	0.0	0.0	Sagging	38.241E-6	0.13291	0.0	-	85376.0	0	(Negligible)	
	Max. Tensile Strain		1	0.0	0.0	Sagging	38.241E-6	0.13291	0.0	-	85376.0	0	(Negligible)	
	Min. Radius of Curvature (Hogging)		-	-	-	-	-	-	-	-	-	-	-	
J	Min. Radius of Curvature (Sagging)		-	-	-	-	-	-	-	-	-	-	-	
	Maximum Slope		2	1.5168	4.2298	Hogging	93.892E-6	0.36887	0.0017204	233820.	-	0	(Negligible)	
	Maximum Settlement		3	4.2298	13.486	Sagging	93.892E-6	0.52099	956.98E-6	-	63854.0	0	(Negligible)	
	Max. Tensile Strain		2	1.5168	4.2298	Hogging	93.892E-6	0.36887	0.0017204	233820.	-	0	(Negligible)	
	Min. Radius of Curvature (Hogging)		2	1.5168	4.2298	Hogging	93.892E-6	0.36887	0.0017204	233820.	-	0	(Negligible)	
K	Min. Radius of Curvature (Sagging)		3	4.2298	13.486	Sagging	93.892E-6	0.52099	956.98E-6	-	63854.0	0	(Negligible)	
	Maximum Slope		1	0.0	4.2986	Hogging	0.0011440	2.4422	0.0064709	4399.2	-	0	(Negligible)	
	Maximum Settlement		2	4.2986	6.9222	Sagging	0.0011440	3.1806	0.016170	-	2938.8	0	(Negligible)	
	Max. Tensile Strain		2	4.2986	6.9222	Sagging	0.0011440	3.1806	0.016170	-	2938.8	0	(Negligible)	
	Min. Radius of Curvature (Hogging)		1	0.0	4.2986	Hogging	0.0011440	2.4422	0.0064709	4399.2	-	0	(Negligible)	
L	Min. Radius of Curvature (Sagging)		2	4.2986	6.9222	Sagging	0.0011440	3.1806	0.016170	-	2938.8	0	(Negligible)	
	Maximum Slope		1	0.0	6.0203	Hogging	288.35E-6	1.8415	0.030484	23024.	-	0	(Negligible)	
	Maximum Settlement		2	6.0203	7.1990	Sagging	288.35E-6	2.1764	0.058069	-	95259.1	1	(Very Slight)	
	Max. Tensile Strain		2	6.0203	7.1990	Sagging	288.35E-6	2.1764	0.058069	-	95259.1	1	(Very Slight)	
	Min. Radius of Curvature (Hogging)		1	0.0	6.0203	Hogging	288.35E-6	1.8415	0.030484	23024.	-	0	(Negligible)	
M	Min. Radius of Curvature (Sagging)		2	6.0203	7.1990	Sagging	288.35E-6	2.1764	0.058069	-	95259.1	1	(Very Slight)	
	Maximum Slope		1	0.0	4.9006	Hogging	410.50E-6	2.2255	0.038934	15334.	-	0	(Negligible)	
	Maximum Settlement		2	4.9006	7.2997	Sagging	410.50E-6	3.1802	0.064644	-	24200.1	1	(Very Slight)	
	Max. Tensile Strain		2	4.9006	7.2997	Sagging	410.50E-6	3.1802	0.064644	-	24200.1	1	(Very Slight)	
	Min. Radius of Curvature (Hogging)		1	0.0	4.9006	Hogging	410.50E-6	2.2255	0.038934	15334.	-	0	(Negligible)	
N	Min. Radius of Curvature (Sagging)		2	4.9006	7.2997	Sagging	410.50E-6	3.1802	0.064644	-	24200.1	1	(Very Slight)	
	Maximum Slope		1	0.0	6.0990	Hogging	313.31E-6	1.9882	0.032438	21541.	-	0	(Negligible)	
	Maximum Settlement		1	0.0	6.0990	Hogging	313.31E-6	1.9882	0.032438	21541.	-	0	(Negligible)	
	Max. Tensile Strain		1	0.0	6.0990	Hogging	313.31E-6	1.9882	0.032438	21541.	-	0	(Negligible)	
	Min. Radius of Curvature (Hogging)		1	0.0	6.0990	Hogging	313.31E-6	1.9882	0.032438	21541.	-	0	(Negligible)	
O	Min. Radius of Curvature (Sagging)		-	-	-	-	-	-	-	-	-	-	-	
	Maximum Slope		3	2.0430	4.5990	Hogging	787.07E-6	3.9520	0.039021	1242.7	-	0	(Negligible)	
	Maximum Settlement		3	2.0430	4.5990	Hogging	787.07E-6	3.9520	0.039021	1242.7	-	0	(Negligible)	
	Max. Tensile Strain		1	0.0	1.1692	Hogging	322.81E-6	2.5371	0.057615	33438.	-	1	(Very Slight)	
	Min. Radius of Curvature (Hogging)		3	2.0430	4.5990	Hogging	787.07E-6	3.9520	0.039021	1242.7	-	0	(Negligible)	
P	Min. Radius of Curvature (Sagging)		2	1.1692	2.0430	Sagging	322.81E-6	2.8160	0.056704	-	34679.1	1	(Very Slight)	
	Maximum Slope	Sub #	1	0.0	2.1242	Hogging	328.87E-6	2.6414	0.060313	59221.	-	1	(Very Slight)	
	Maximum Settlement	Sub #	2	2.1242	5.5990	Sagging	328.87E-6	3.4348	0.064520	-	4690.2	1	(Very Slight)	
	Max. Tensile Strain	Sub #	2	2.1242	5.5990	Sagging	328.87E-6	3.4348	0.064520	-	4690.2	1	(Very Slight)	
	Min. Radius of Curvature (Hogging)	Sub #	1	0.0	2.1242	Hogging	328.87E-6	2.6414	0.060313	59221.	-	1	(Very Slight)	
Q	Min. Radius of Curvature (Sagging)	Sub #	2	2.1242	5.5990	Sagging	328.87E-6	3.4348	0.064520	-	4690.2	1	(Very Slight)	
	Maximum Slope		1	0.0	4.4990	Sagging	362.57E-6	4.1108	0.082469	-	3050.3	2	(Slight)	
	Maximum Settlement		1	0.0	4.4990	Sagging	362.57E-6	4.1108	0.082469	-	3050.3	2	(Slight)	
	Max. Tensile Strain		1	0.0	4.4990	Sagging	362.57E-6	4.1108	0.082469	-	3050.3	2	(Slight)	
	Min. Radius of Curvature (Hogging)		-	-	-	-	-	-	-	-	-	-	-	
R	Min. Radius of Curvature (Sagging)		1	0.0	4.4990	Sagging	362.57E-6	4.1108	0.082469	-	3050.3	2	(Slight)	
	Maximum Slope		2	0.50663	2.1856	Hogging	0.0011497	2.3689	0.014144	4109.2	-	0	(Negligible)	
	Maximum Settlement		3	2.1856	7.4098	Sagging	0.0011497	3.0503	0.0096919	-	2756.2	0	(Negligible)	
	Max. Tensile Strain		2	0.50663	2.1856	Hogging	0.0011497	2.3689	0.014144	4109.2	-	0	(Negligible)	
	Min. Radius of Curvature (Hogging)		2	0.50663	2.1856	Hogging	0.0011497	2.3689	0.014144	4109.2	-	0	(Negligible)	
S	Min. Radius of Curvature (Sagging)		3	2.1856	7.4098	Sagging	0.0011497	3.0503	0.0096919	-	2756.2	0	(Negligible)	
	Maximum Slope		3	7.8279	9.6875	Sagging	18.045E-6	0.12424	0.0014521	-	293850.0	0	(Negligible)	
	Maximum Settlement		1	0.0	7.5540	Sagging	13.147E-6	0.14620	0.0011522	-	226400.0	0	(Negligible)	
	Max. Tensile Strain		3	7.8279	9.6875	Sagging	18.045E-6	0.12424	0.0014521	-	293850.0	0	(Negligible)	



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Wall Installation and Excavation Combined

Job No.	Sheet No.	Rev.
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Made by	Date 01-Nov-2016	Checked

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
T	Min. Radius of Curvature (Hogging)			2	7.5540	7.8279 Hogging	11.522E-6	0.11896	0.0011286	7.0547E+6	- 0 (Negligible)	
	Min. Radius of Curvature (Sagging)			1	0.0	7.5540 Sagging	13.147E-6	0.14620	0.0011522	-	226400. 0 (Negligible)	
	Maximum Slope			3	5.9167	13.154 Sagging	315.16E-6	3.1405	0.010283	-	9894.2 0 (Negligible)	
	Maximum Settlement			3	5.9167	13.154 Sagging	315.16E-6	3.1405	0.010283	-	9894.2 0 (Negligible)	
	Max. Tensile Strain			2	2.6346	5.9167 Hogging	144.53E-6	2.5124	0.021141	23740.	- 0 (Negligible)	
	Min. Radius of Curvature (Hogging)			2	2.6346	5.9167 Hogging	144.53E-6	2.5124	0.021141	23740.	- 0 (Negligible)	
	Min. Radius of Curvature (Sagging)			3	5.9167	13.154 Sagging	315.16E-6	3.1405	0.010283	-	9894.2 0 (Negligible)	
U	Maximum Slope			1	1.9720	9.8590 Hogging	363.82E-6	1.8206	0.034302	18854.	- 0 (Negligible)	
	Maximum Settlement			1	1.9720	9.8590 Hogging	363.82E-6	1.8206	0.034302	18854.	- 0 (Negligible)	
	Max. Tensile Strain			1	1.9720	9.8590 Hogging	363.82E-6	1.8206	0.034302	18854.	- 0 (Negligible)	
	Min. Radius of Curvature (Hogging)			1	1.9720	9.8590 Hogging	363.82E-6	1.8206	0.034302	18854.	- 0 (Negligible)	
	Min. Radius of Curvature (Sagging)			-	-	-	-	-	-	-	-	
V	Maximum Slope			1	0.0	1.0497 Hogging	375.48E-6	2.2113	0.032066	127750.	- 0 (Negligible)	
	Maximum Settlement			2	1.0497	3.6391 Sagging	375.48E-6	3.1493	0.053166	-	31375. 1 (Very Slight)	
	Max. Tensile Strain			2	1.0497	3.6391 Sagging	375.48E-6	3.1493	0.053166	-	31375. 1 (Very Slight)	
	Min. Radius of Curvature (Hogging)			1	0.0	1.0497 Hogging	375.48E-6	2.2113	0.032066	127750.	- 0 (Negligible)	
	Min. Radius of Curvature (Sagging)			2	1.0497	3.6391 Sagging	375.48E-6	3.1493	0.053166	-	31375. 1 (Very Slight)	
W	Maximum Slope			1	0.0	1.1392 Sagging	162.83E-6	3.1496	0.013157	-	326770. 0 (Negligible)	
	Maximum Settlement			1	0.0	1.1392 Sagging	162.83E-6	3.1496	0.013157	-	326770. 0 (Negligible)	
	Max. Tensile Strain			1	0.0	1.1392 Sagging	162.83E-6	3.1496	0.013157	-	326770. 0 (Negligible)	
	Min. Radius of Curvature (Hogging)			-	-	-	-	-	-	-	-	
X	Min. Radius of Curvature (Sagging)			1	0.0	1.1392 Sagging	162.83E-6	3.1496	0.013157	-	326770. 0 (Negligible)	
	Maximum Slope			1	4.8600	9.7191 Hogging	259.42E-6	0.90395	0.032442	18523.	- 0 (Negligible)	
	Maximum Settlement			1	4.8600	9.7191 Hogging	259.42E-6	0.90395	0.032442	18523.	- 0 (Negligible)	
	Max. Tensile Strain			1	4.8600	9.7191 Hogging	259.42E-6	0.90395	0.032442	18523.	- 0 (Negligible)	
	Min. Radius of Curvature (Hogging)			1	4.8600	9.7191 Hogging	259.42E-6	0.90395	0.032442	18523.	- 0 (Negligible)	
Y	Min. Radius of Curvature (Sagging)			-	-	-	-	-	-	-	-	
	Maximum Slope			1	0.0	3.6391 Hogging	371.15E-6	2.1586	0.031309	23485.	- 0 (Negligible)	
	Maximum Settlement			1	0.0	3.6391 Hogging	371.15E-6	2.1586	0.031309	23485.	- 0 (Negligible)	
	Max. Tensile Strain			1	0.0	3.6391 Hogging	371.15E-6	2.1586	0.031309	23485.	- 0 (Negligible)	
	Min. Radius of Curvature (Hogging)			1	0.0	3.6391 Hogging	371.15E-6	2.1586	0.031309	23485.	- 0 (Negligible)	
Z	Min. Radius of Curvature (Sagging)			-	-	-	-	-	-	-	-	
	Maximum Slope			1	6.7061	9.5792 Hogging	119.73E-6	0.33894	0.031546	21335.	- 0 (Negligible)	
	Maximum Settlement			1	6.7061	9.5792 Hogging	119.73E-6	0.33894	0.031546	21335.	- 0 (Negligible)	
	Max. Tensile Strain			1	6.7061	9.5792 Hogging	119.73E-6	0.33894	0.031546	21335.	- 0 (Negligible)	
	Min. Radius of Curvature (Hogging)			1	6.7061	9.5792 Hogging	119.73E-6	0.33894	0.031546	21335.	- 0 (Negligible)	
AA	Min. Radius of Curvature (Sagging)			-	-	-	-	-	-	-	-	
	Maximum Slope			1	0.0	3.6610 Hogging	316.20E-6	1.2357	0.032858	17756.	- 0 (Negligible)	
	Maximum Settlement			1	0.0	3.6610 Hogging	316.20E-6	1.2357	0.032858	17756.	- 0 (Negligible)	
	Max. Tensile Strain			1	0.0	3.6610 Hogging	316.20E-6	1.2357	0.032858	17756.	- 0 (Negligible)	
	Min. Radius of Curvature (Hogging)			1	0.0	3.6610 Hogging	316.20E-6	1.2357	0.032858	17756.	- 0 (Negligible)	
AB	Min. Radius of Curvature (Sagging)			-	-	-	-	-	-	-	-	
	Maximum Slope			1	0.0	7.8628 Hogging	297.22E-6	1.9612	0.033751	15442.	- 0 (Negligible)	
	Maximum Settlement			1	0.0	7.8628 Hogging	297.22E-6	1.9612	0.033751	15442.	- 0 (Negligible)	
	Max. Tensile Strain			1	0.0	7.8628 Hogging	297.22E-6	1.9612	0.033751	15442.	- 0 (Negligible)	
	Min. Radius of Curvature (Hogging)			1	0.0	7.8628 Hogging	297.22E-6	1.9612	0.033751	15442.	- 0 (Negligible)	
AD	Min. Radius of Curvature (Sagging)			-	-	-	-	-	-	-	-	
	Maximum Slope			1	0.0	7.8628 Hogging	297.22E-6	1.9612	0.033751	15442.	- 0 (Negligible)	
	Maximum Settlement			1	0.0	7.8628 Hogging	297.22E-6	1.9612	0.033751	15442.	- 0 (Negligible)	
	Max. Tensile Strain			1	0.0	7.8628 Hogging	297.22E-6	1.9612	0.033751	15442.	- 0 (Negligible)	
	Min. Radius of Curvature (Hogging)			1	0.0	7.8628 Hogging	297.22E-6	1.9612	0.033751	15442.	- 0 (Negligible)	
AE	Min. Radius of Curvature (Sagging)			-	-	-	-	-	-	-	-	
	Maximum Slope			1	0.0	3.3051 Sagging	37.723E-6	0.33131	0.0014888	-	105640. 0 (Negligible)	
	Maximum Settlement			1	0.0	3.3051 Sagging	37.723E-6	0.33131	0.0014888	-	105640. 0 (Negligible)	
	Max. Tensile Strain			1	0.0	3.3051 Sagging	37.723E-6	0.33131	0.0014888	-	105640. 0 (Negligible)	
	Min. Radius of			-	-	-	-	-	-	-	-	



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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
AF	Curvature (Hogging)			-	-	-	-	-	-	-	-	
	Min. Radius of Curvature (Sagging)		1	0.0	3.3051	Sagging	37.723E-6	0.33131	0.0014888	-	105640.0	0 (Negligible)
	Maximum Slope		1	0.0	2.7715	Sagging	332.97E-6	2.8870	0.016577	-	3428.10	0 (Negligible)
	Maximum Settlement		1	0.0	2.7715	Sagging	332.97E-6	2.8870	0.016577	-	3428.10	0 (Negligible)
	Max. Tensile Strain		2	2.7715	3.2130	Sagging	331.40E-6	2.2233	0.049492	-	46571.0	0 (Negligible)
AG	Min. Radius of Curvature (Hogging)		-	-	-	-	-	-	-	-	-	
	Min. Radius of Curvature (Sagging)		1	0.0	2.7715	Sagging	332.97E-6	2.8870	0.016577	-	3428.10	0 (Negligible)
	Maximum Slope		2	1.2243	11.428	Hogging	230.08E-6	1.8027	0.0066518	45828.	-0	0 (Negligible)
	Maximum Settlement		1	0.0	1.2243	Hogging	223.93E-6	2.0766	0.014524	68834.	-0	0 (Negligible)
	Max. Tensile Strain		1	0.0	1.2243	Hogging	223.93E-6	2.0766	0.014524	68834.	-0	0 (Negligible)
AH	Min. Radius of Curvature (Hogging)		2	1.2243	11.428	Hogging	230.08E-6	1.8027	0.0066518	45828.	-0	0 (Negligible)
	Min. Radius of Curvature (Sagging)		-	-	-	-	-	-	-	-	-	
	Maximum Slope		1	0.0	6.3378	Hogging	170.12E-6	1.2239	0.0042942	58422.	-0	0 (Negligible)
	Maximum Settlement		1	0.0	6.3378	Hogging	170.12E-6	1.2239	0.0042942	58422.	-0	0 (Negligible)
	Max. Tensile Strain		1	0.0	6.3378	Hogging	170.12E-6	1.2239	0.0042942	58422.	-0	0 (Negligible)
AI	Min. Radius of Curvature (Hogging)		1	0.0	6.3378	Hogging	170.12E-6	1.2239	0.0042942	58422.	-0	0 (Negligible)
	Min. Radius of Curvature (Sagging)		-	-	-	-	-	-	-	-	-	
	Maximum Slope		2	1.2592	3.2352	Sagging	161.66E-6	1.0354	0.0073994	-	149270.0	0 (Negligible)
	Maximum Settlement		1	0.0	1.2592	Hogging	151.90E-6	1.2240	0.017167	62570.	-0	0 (Negligible)
	Max. Tensile Strain		1	0.0	1.2592	Hogging	151.90E-6	1.2240	0.017167	62570.	-0	0 (Negligible)
AJ	Min. Radius of Curvature (Hogging)		1	0.0	1.2592	Hogging	151.90E-6	1.2240	0.017167	62570.	-0	0 (Negligible)
	Min. Radius of Curvature (Sagging)		2	1.2592	3.2352	Sagging	161.66E-6	1.0354	0.0073994	-	149270.0	0 (Negligible)
	Maximum Slope		2	1.0951	3.4397	Hogging	556.39E-6	0.85764	0.0060089	8236.4	-0	0 (Negligible)
	Maximum Settlement		3	3.4397	5.9785	Sagging	556.39E-6	1.1614	0.0090329	-	6806.70	0 (Negligible)
	Max. Tensile Strain		3	3.4397	5.9785	Sagging	556.39E-6	1.1614	0.0090329	-	6806.70	0 (Negligible)
AK	Min. Radius of Curvature (Hogging)		2	1.0951	3.4397	Hogging	556.39E-6	0.85764	0.0060089	8236.4	-0	0 (Negligible)
	Min. Radius of Curvature (Sagging)		3	3.4397	5.9785	Sagging	556.39E-6	1.1614	0.0090329	-	6806.70	0 (Negligible)
	Maximum Slope		2	2.8027	4.9487	Sagging	417.48E-6	3.1221	0.066283	-	21342.1	1 (Very Slight)
	Maximum Settlement		2	2.8027	4.9487	Sagging	417.48E-6	3.1221	0.066283	-	21342.1	1 (Very Slight)
	Max. Tensile Strain		2	2.8027	4.9487	Sagging	417.48E-6	3.1221	0.066283	-	21342.1	1 (Very Slight)
AL	Min. Radius of Curvature (Hogging)		1	0.0	2.8027	Hogging	405.84E-6	2.2620	0.037584	27946.	-0	0 (Negligible)
	Min. Radius of Curvature (Sagging)		2	2.8027	4.9487	Sagging	417.48E-6	3.1221	0.066283	-	21342.1	1 (Very Slight)
	Maximum Slope		1	0.0	4.7371	Sagging	0.0	3.1254	0.0	-	24.863E+90	0 (Negligible)
	Maximum Settlement		1	0.0	4.7371	Sagging	0.0	3.1254	0.0	-	24.863E+90	0 (Negligible)
	Max. Tensile Strain		1	0.0	4.7371	Sagging	0.0	3.1254	0.0	-	24.863E+90	0 (Negligible)
AM	Min. Radius of Curvature (Hogging)		-	-	-	-	-	-	-	-	-	
	Min. Radius of Curvature (Sagging)		1	0.0	4.7371	Sagging	0.0	3.1254	0.0	-	24.863E+90	0 (Negligible)
	Maximum Slope		1	0.0	1.8411	Sagging	415.77E-6	3.1254	0.070184	-	19525.1	1 (Very Slight)
	Maximum Settlement		1	0.0	1.8411	Sagging	415.77E-6	3.1254	0.070184	-	19525.1	1 (Very Slight)
	Max. Tensile Strain		1	0.0	1.8411	Sagging	415.77E-6	3.1254	0.070184	-	19525.1	1 (Very Slight)
AN	Min. Radius of Curvature (Hogging)		2	1.8411	2.7064	Hogging	405.36E-6	2.3913	0.039214	41537.	-0	0 (Negligible)
	Min. Radius of Curvature (Sagging)		1	0.0	1.8411	Sagging	415.77E-6	3.1254	0.070184	-	19525.1	1 (Very Slight)
	Maximum Slope		2	0.41720	1.9992	Sagging	756.09E-6	2.0570	0.012122	-	3943.40	0 (Negligible)
	Maximum Settlement		2	0.41720	1.9992	Sagging	756.09E-6	2.0570	0.012122	-	3943.40	0 (Negligible)
	Max. Tensile Strain		2	0.41720	1.9992	Sagging	756.09E-6	2.0570	0.012122	-	3943.40	0 (Negligible)
AO	Min. Radius of Curvature (Hogging)		3	1.9992	3.3367	Hogging	756.09E-6	1.8073	0.011888	795.76	-0	0 (Negligible)
	Min. Radius of Curvature (Sagging)		2	0.41720	1.9992	Sagging	756.09E-6	2.0570	0.012122	-	3943.40	0 (Negligible)
	Maximum Slope		1	0.0	1.1837	Hogging	277.78E-6	1.6788	0.031586	26325.	-0	0 (Negligible)
	Maximum Settlement		2	1.1837	2.5169	Sagging	277.78E-6	2.0287	0.051958	-	23360.1	1 (Very Slight)
	Max. Tensile Strain		2	1.1837	2.5169	Sagging	277.78E-6	2.0287	0.051958	-	23360.1	1 (Very Slight)
AP	Min. Radius of Curvature (Hogging)		1	0.0	1.1837	Hogging	277.78E-6	1.6788	0.031586	26325.	-0	0 (Negligible)
	Min. Radius of Curvature (Sagging)		2	1.1837	2.5169	Sagging	277.78E-6	2.0287	0.051958	-	23360.1	1 (Very Slight)
	Maximum Slope		1	0.0	1.9048	Sagging	216.21E-6	2.0289	0.0089378	-	37071.0	0 (Negligible)
	Maximum Settlement		1	0.0	1.9048	Sagging	216.21E-6	2.0289	0.0089378	-	37071.0	0 (Negligible)
	Max. Tensile Strain		1	0.0	1.9048	Sagging	216.21E-6	2.0289	0.0089378	-	37071.0	0 (Negligible)
AQ	Min. Radius of Curvature (Hogging)		2	1.9048	4.4543	Hogging	216.21E-6	1.6507	0.0020716	8141.4	-0	0 (Negligible)
	Min. Radius of Curvature (Sagging)		1	0.0	1.9048	Sagging	216.21E-6	2.0289	0.0089378	-	37071.0	0 (Negligible)
	Maximum Slope		1	0.0	4.9487	Hogging	200.22E-6	1.2133	0.0047614	18068.	-0	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
AR	Maximum Settlement		1	0.0	4.9487	Hogging	200.22E-6	1.2133	0.0047614	18068.	- 0 (Negligible)	
	Max. Tensile Strain		1	0.0	4.9487	Hogging	200.22E-6	1.2133	0.0047614	18068.	- 0 (Negligible)	
	Min. Radius of Curvature (Hogging)		1	0.0	4.9487	Hogging	200.22E-6	1.2133	0.0047614	18068.	- 0 (Negligible)	
	Min. Radius of Curvature (Sagging)		-	-	-	-	-	-	-	-	-	
	Maximum Slope		1	0.94130	8.4707	Hogging	407.67E-6	2.0489	0.039432	15698.	- 0 (Negligible)	
	Maximum Settlement		1	0.94130	8.4707	Hogging	407.67E-6	2.0489	0.039432	15698.	- 0 (Negligible)	
	Max. Tensile Strain		1	0.94130	8.4707	Hogging	407.67E-6	2.0489	0.039432	15698.	- 0 (Negligible)	
	Min. Radius of Curvature (Hogging)		1	0.94130	8.4707	Hogging	407.67E-6	2.0489	0.039432	15698.	- 0 (Negligible)	
	Min. Radius of Curvature (Sagging)		-	-	-	-	-	-	-	-	-	
	AS	Maximum Slope		1	2.7205	8.1605	Hogging	330.55E-6	1.1666	0.038600	15684.	- 0 (Negligible)
	Maximum Settlement		1	2.7205	8.1605	Hogging	330.55E-6	1.1666	0.038600	15684.	- 0 (Negligible)	
	Max. Tensile Strain		1	2.7205	8.1605	Hogging	330.55E-6	1.1666	0.038600	15684.	- 0 (Negligible)	
	Min. Radius of Curvature (Hogging)		1	2.7205	8.1605	Hogging	330.55E-6	1.1666	0.038600	15684.	- 0 (Negligible)	
	Min. Radius of Curvature (Sagging)		-	-	-	-	-	-	-	-	-	
AT	Maximum Slope		1	5.5383	8.6241	Hogging	102.00E-6	0.49402	0.0054530	70488.	- 0 (Negligible)	
	Maximum Settlement		2	8.6241	11.076	Sagging	102.00E-6	0.72137	569.31E-6	-	97545. 0 (Negligible)	
	Max. Tensile Strain		1	5.5383	8.6241	Hogging	102.00E-6	0.49402	0.0054530	70488.	- 0 (Negligible)	
	Min. Radius of Curvature (Hogging)		1	5.5383	8.6241	Hogging	102.00E-6	0.49402	0.0054530	70488.	- 0 (Negligible)	
	Min. Radius of Curvature (Sagging)		2	8.6241	11.076	Sagging	102.00E-6	0.72137	569.31E-6	-	97545. 0 (Negligible)	
AU	Maximum Slope		1	0.0	2.4963	Sagging	414.02E-6	3.2126	0.065058	-	29841. 1 (Very Slight)	
	Maximum Settlement		1	0.0	2.4963	Sagging	414.02E-6	3.2126	0.065058	-	29841. 1 (Very Slight)	
	Max. Tensile Strain		1	0.0	2.4963	Sagging	414.02E-6	3.2126	0.065058	-	29841. 1 (Very Slight)	
	Min. Radius of Curvature (Hogging)		2	2.4963	7.1103	Hogging	414.02E-6	2.2223	0.039558	15704.	- 0 (Negligible)	
	Min. Radius of Curvature (Sagging)		1	0.0	2.4963	Sagging	414.02E-6	3.2126	0.065058	-	29841. 1 (Very Slight)	
AV	Maximum Slope		1	0.0	9.2185	Hogging	10.558E-6	0.58517	92.733E-6	7.6173E+6	- 0 (Negligible)	
	Maximum Settlement		1	0.0	9.2185	Hogging	10.558E-6	0.58517	92.733E-6	7.6173E+6	- 0 (Negligible)	
	Max. Tensile Strain		1	0.0	9.2185	Hogging	10.558E-6	0.58517	92.733E-6	7.6173E+6	- 0 (Negligible)	
	Min. Radius of Curvature (Hogging)		1	0.0	9.2185	Hogging	10.558E-6	0.58517	92.733E-6	7.6173E+6	- 0 (Negligible)	
	Min. Radius of Curvature (Sagging)		-	-	-	-	-	-	-	-	-	
AW	Maximum Slope		1	0.0	5.1693	Hogging	410.99E-6	2.2835	0.041054	16373.	- 0 (Negligible)	
	Maximum Settlement		2	5.1693	11.520	Sagging	410.99E-6	4.0639	0.076699	-	6447.3 2 (Slight)	
	Max. Tensile Strain		2	5.1693	11.520	Sagging	410.99E-6	4.0639	0.076699	-	6447.3 2 (Slight)	
	Min. Radius of Curvature (Hogging)		1	0.0	5.1693	Hogging	410.99E-6	2.2835	0.041054	16373.	- 0 (Negligible)	
	Min. Radius of Curvature (Sagging)		2	5.1693	11.520	Sagging	410.99E-6	4.0639	0.076699	-	6447.3 2 (Slight)	

Specific Building Damage Results - All Combined Segments

Structure: A | 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: 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]	[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]	[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]	[m]	[%]	[%]	[%]	
No structures have segments combined.								



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Vertical Offset from Line for Vertical Movement Calculations	Combined Segment	Start	Length	Curvature	Deflection Ratio	Average Horizontal Strain	Max. Tensile Strain	Damage	Category
Structure: E Sub-structure:									
[m]		[m]	[m]		[%]	[%]	[%]		
No structures have segments combined.									
Structure: F Sub-structure:									
[m]		[m]	[m]		[%]	[%]	[%]		
No structures have segments combined.									
Structure: G Sub-structure:									
[m]		[m]	[m]		[%]	[%]	[%]		
No structures have segments combined.									
Structure: H Sub-structure:									
[m]		[m]	[m]		[%]	[%]	[%]		
No structures have segments combined.									
Structure: I Sub-structure:									
[m]		[m]	[m]		[%]	[%]	[%]		
No structures have segments combined.									
Structure: J Sub-structure:									
[m]		[m]	[m]		[%]	[%]	[%]		
No structures have segments combined.									
Structure: K Sub-structure:									
[m]		[m]	[m]		[%]	[%]	[%]		
No structures have segments combined.									
Structure: L Sub-structure:									
[m]		[m]	[m]		[%]	[%]	[%]		
No structures have segments combined.									
Structure: M Sub-structure:									
[m]		[m]	[m]		[%]	[%]	[%]		
No structures have segments combined.									
Structure: N Sub-structure:									
[m]		[m]	[m]		[%]	[%]	[%]		
No structures have segments combined.									
Structure: O Sub-structure:									
[m]		[m]	[m]		[%]	[%]	[%]		
No structures have segments combined.									



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



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Vertical Offset from Line for Vertical Movement Calculations	Combined Segment	Start	Length	Curvature	Deflection Ratio	Average Horizontal Strain	Max. Tensile Strain	Damage	Category
Structure: Z Sub-structure:									
[m]		[m]	[m]		[%]	[%]	[%]		
No structures have segments combined.									
Structure: AA Sub-structure:									
[m]		[m]	[m]		[%]	[%]	[%]		
No structures have segments combined.									
Structure: AB Sub-structure:									
[m]		[m]	[m]		[%]	[%]	[%]		
No structures have segments combined.									
Structure: AC Sub-structure:									
[m]		[m]	[m]		[%]	[%]	[%]		
No structures have segments combined.									
Structure: AD Sub-structure:									
[m]		[m]	[m]		[%]	[%]	[%]		
No structures have segments combined.									
Structure: AE Sub-structure:									
[m]		[m]	[m]		[%]	[%]	[%]		
No structures have segments combined.									
Structure: AF Sub-structure:									
[m]		[m]	[m]		[%]	[%]	[%]		
No structures have segments combined.									
Structure: AG Sub-structure:									
[m]		[m]	[m]		[%]	[%]	[%]		
No structures have segments combined.									
Structure: AH Sub-structure:									
[m]		[m]	[m]		[%]	[%]	[%]		
No structures have segments combined.									
Structure: AI Sub-structure:									
[m]		[m]	[m]		[%]	[%]	[%]		
No structures have segments combined.									
Structure: AJ Sub-structure:									
[m]		[m]	[m]		[%]	[%]	[%]		
No structures have segments combined.									



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Line for Vertical Movement Calculations				Strain		Strain	
[m]	[m]	[m]		[%]	[%]	[%]	
No structures have segments combined.							
Structure: AK 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]		[%]	[%]	[%]	
No structures have segments combined.							
Structure: AL 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]		[%]	[%]	[%]	
No structures have segments combined.							
Structure: AM 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]		[%]	[%]	[%]	
No structures have segments combined.							
Structure: AN 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]		[%]	[%]	[%]	
No structures have segments combined.							
Structure: AO 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]		[%]	[%]	[%]	
No structures have segments combined.							
Structure: AP 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]		[%]	[%]	[%]	
No structures have segments combined.							
Structure: AQ 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]		[%]	[%]	[%]	
No structures have segments combined.							
Structure: AR 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]		[%]	[%]	[%]	
No structures have segments combined.							
Structure: AS 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]		[%]	[%]	[%]	
No structures have segments combined.							
Structure: AT 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]		[%]	[%]	[%]	
No structures have segments combined.							

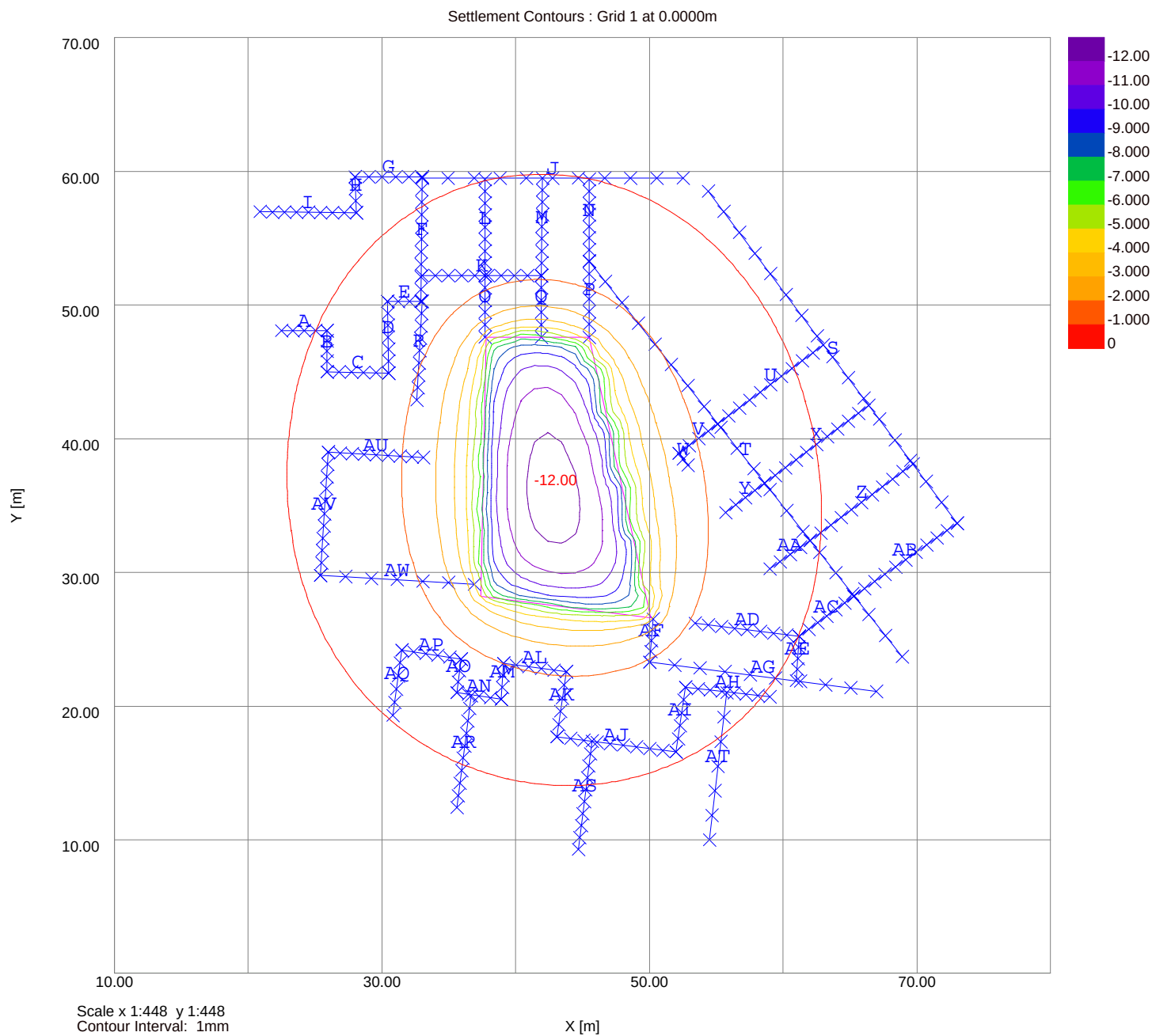


Rear of 159-163 King's Cross Road, London WC1X 9BN
Wall Installation and Excavation Combined

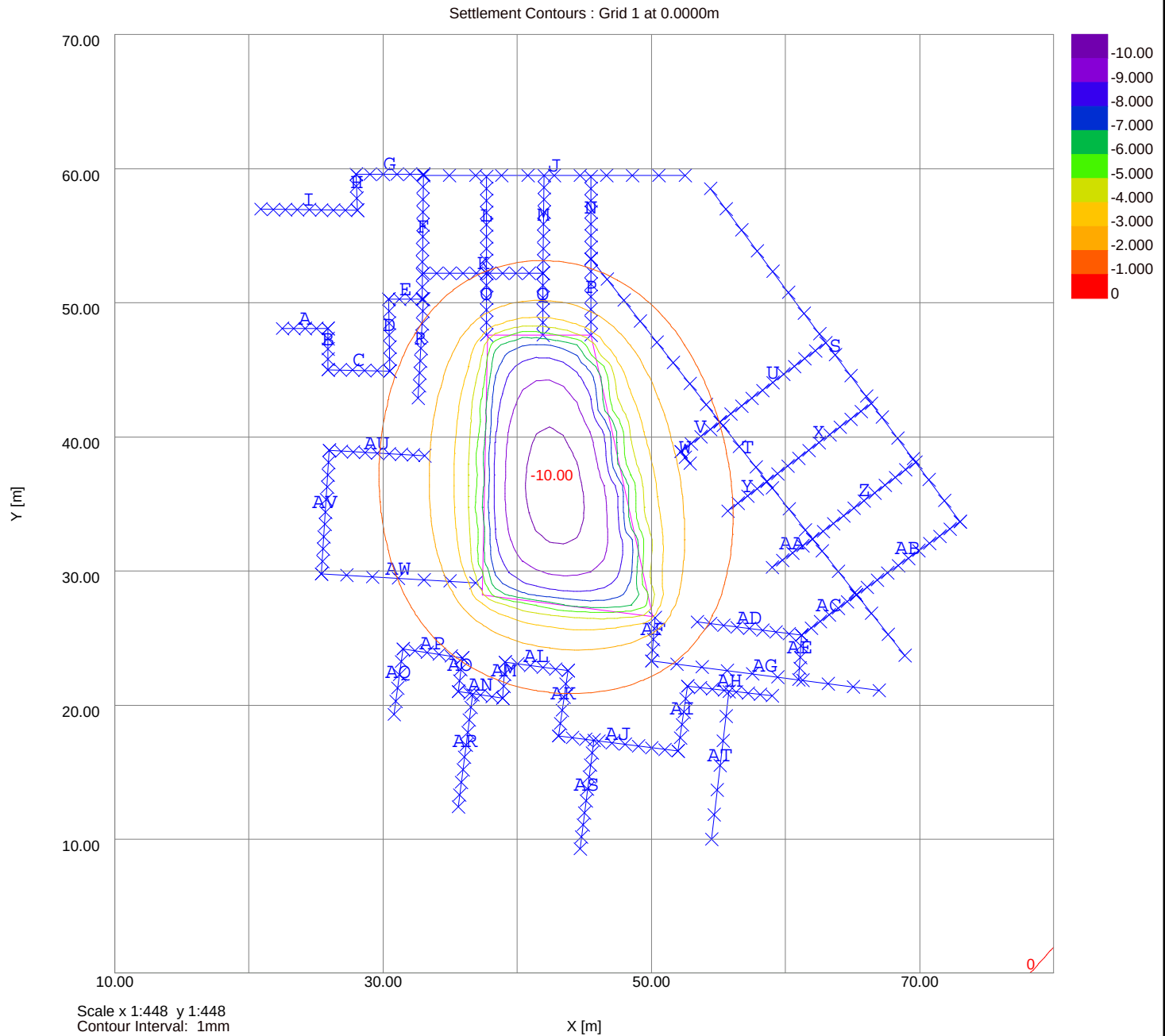
Job No.	Sheet No.	Rev.
J16180		
Drg. Ref.		
Made by	Date	Checked
	01-Nov-2016	

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

Job No.	Sheet No.	Rev.
J16180		
Drg. Ref.		
Made by	Date	Checked

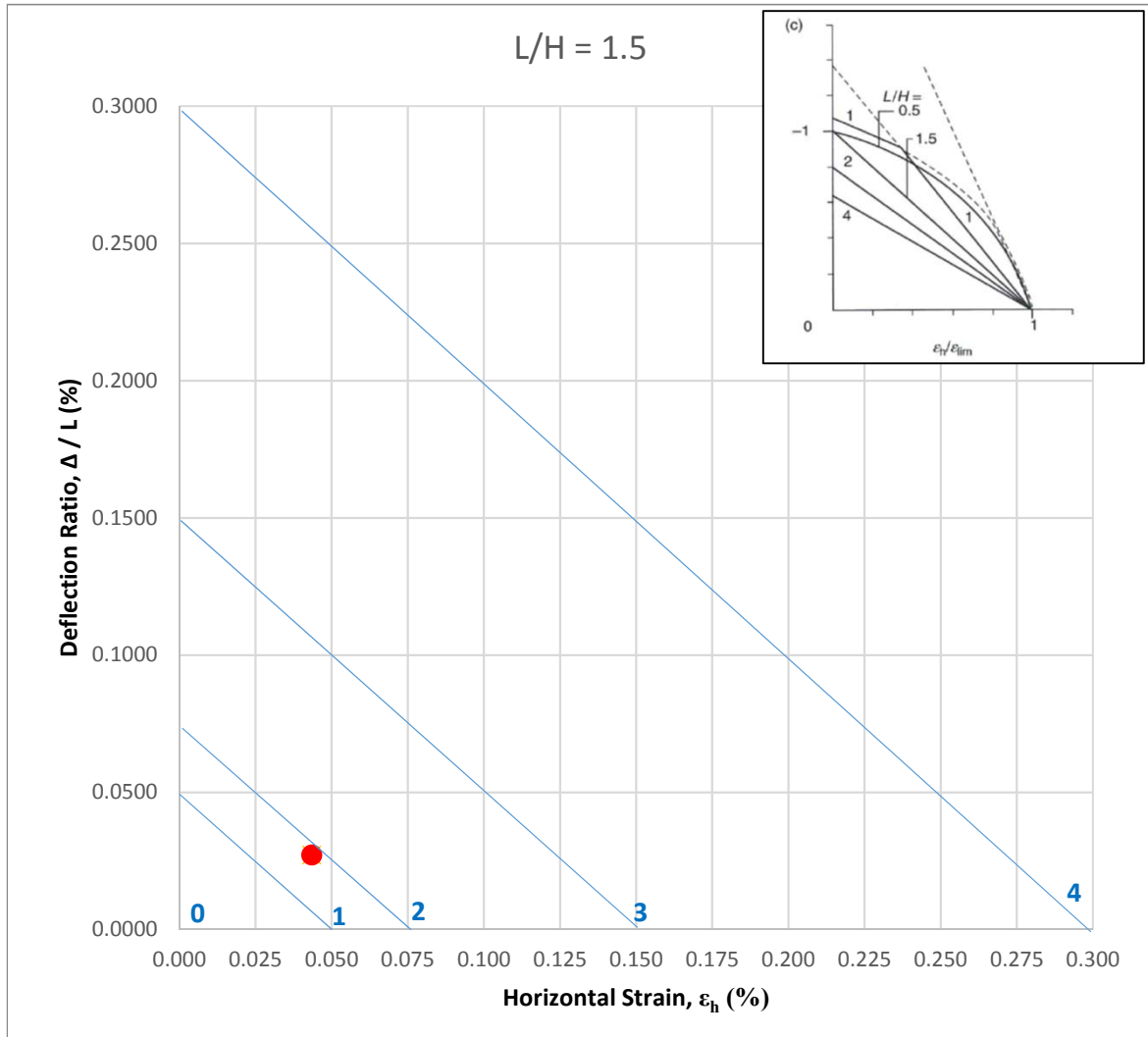


Job No.	Sheet No.	Rev.
J16180		
Drg. Ref.		
Made by	Date	Checked



Project Number J16180
Revision 0.0
Wall Reference Q

L / H = 1.26



Wall Length, $L = 4.6$ m
Wall Height, $H = 3.7$ m
Change in horizontal movement, $\delta_h = 2$ mm
Change in vertical movement, $\Delta = 1.25$ mm

Horizontal Strain:

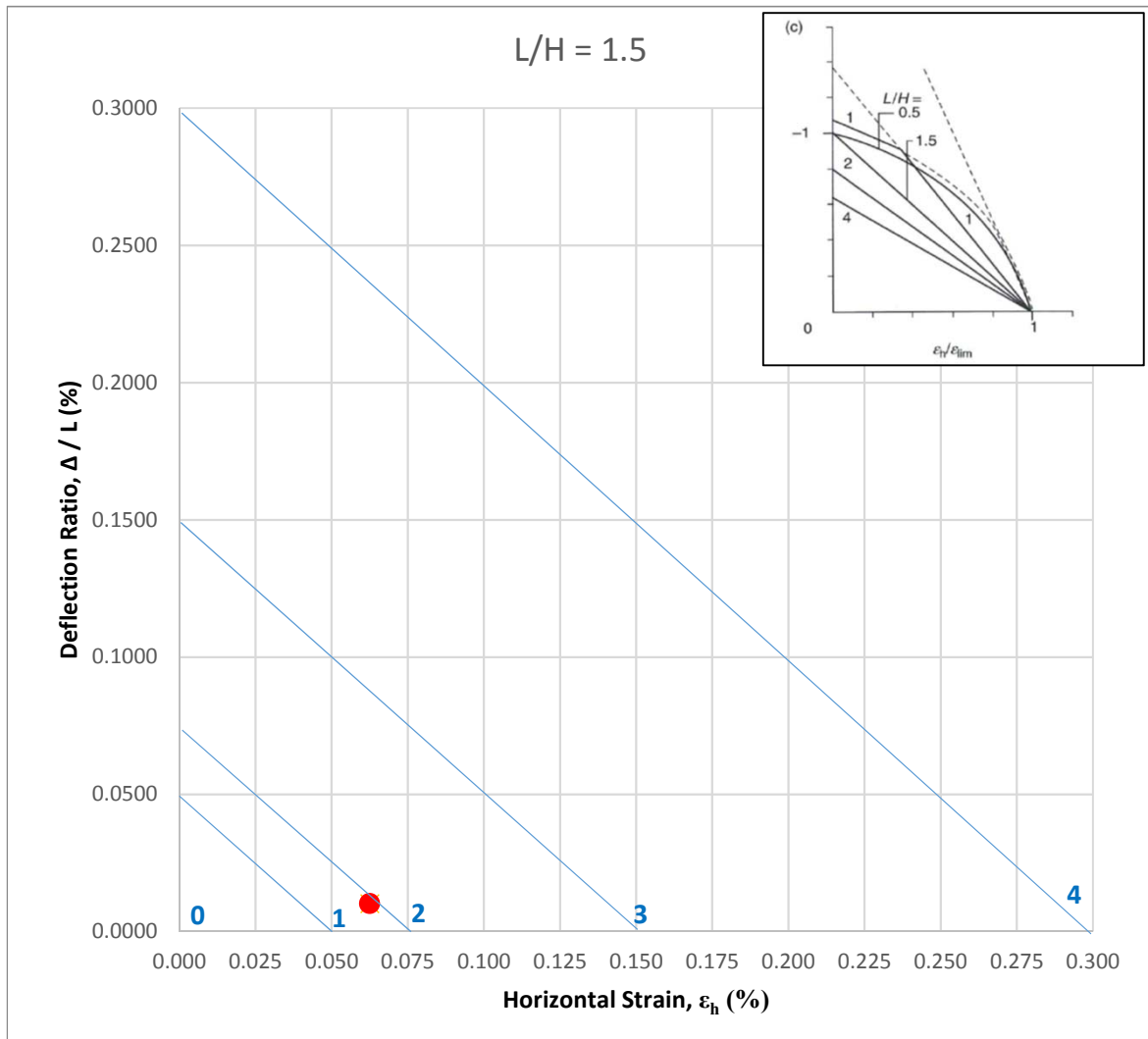
$$\text{Horizontal Strain, } \epsilon_h = \frac{\delta_h \times 100}{L \times 1000}$$

$\epsilon_h = 0.0435$

Deflection Ratio:

$$\text{Deflection Ratio} = \frac{\Delta \times 100}{L \times 1000}$$

= 0.0272



Wall Length, L = 5.6 m

Wall Height, H = 4.9 m

Change in horizontal movement, δ_h = 3.5 mm

Change in vertical movement, Δ = 0.57 mm

Horizontal Strain:

$$\text{Horizontal Strain, } \epsilon_h = \frac{\delta_h \times 100}{L \times 1000}$$

$$\epsilon_h = 0.0625$$

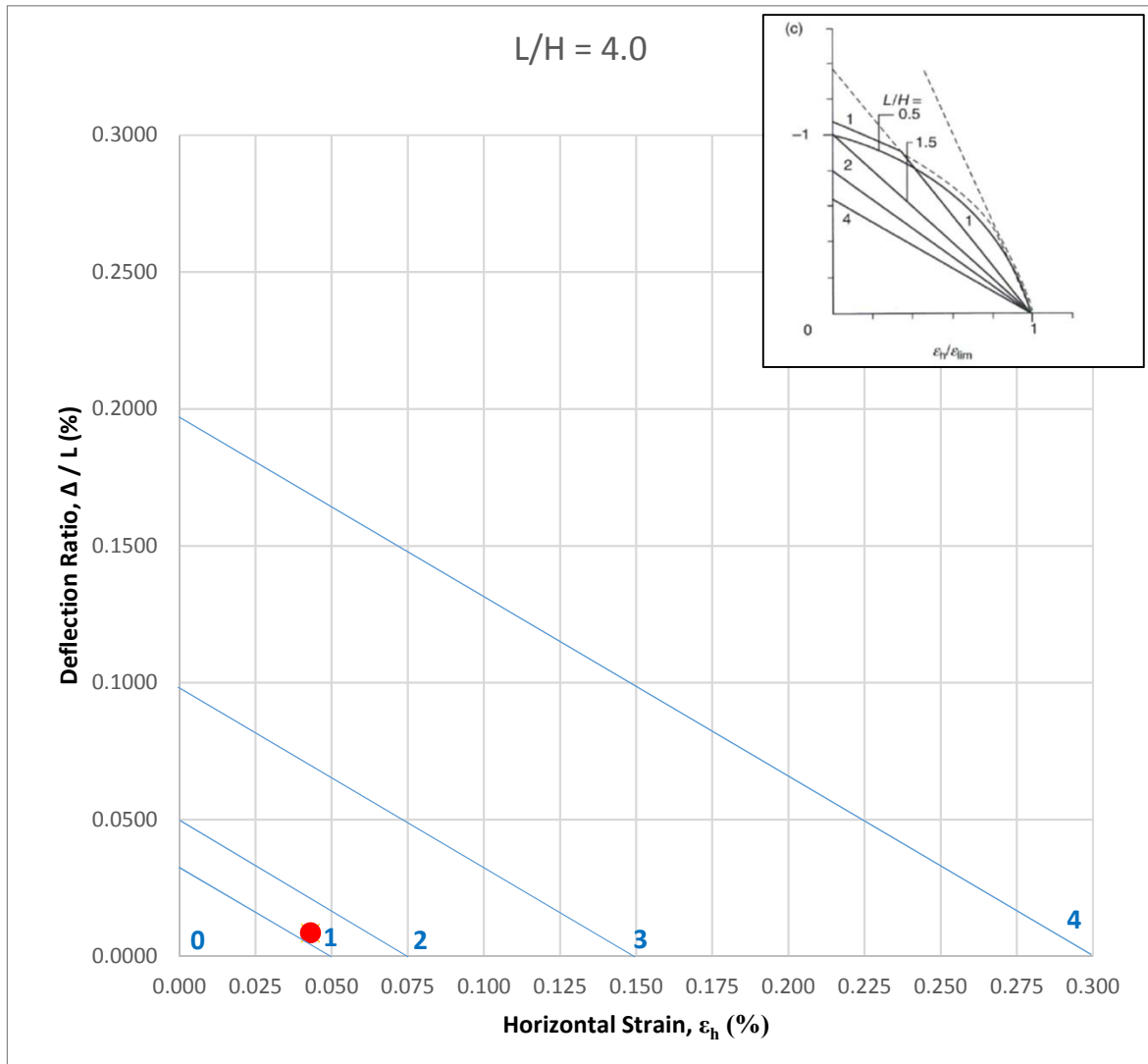
Deflection Ratio:

$$\text{Deflection Ratio} = \frac{\Delta \times 100}{L \times 1000}$$

$$= 0.0102$$

Project Number J16180
Revision 0.0
Wall Reference AW

L / H = 2.52



Wall Length, $L = 11.6$ m
Wall Height, $H = 4.6$ m
Change in horizontal movement, $\delta_h = 5$ mm
Change in vertical movement, $\Delta = 1$ mm

Horizontal Strain:

$$\text{Horizontal Strain, } \epsilon_h = \frac{\delta_h \times 100}{L \times 1000}$$

$\epsilon_h = 0.0431$

Deflection Ratio:

$$\text{Deflection Ratio} = \frac{\Delta \times 100}{L \times 1000}$$

= 0.0086

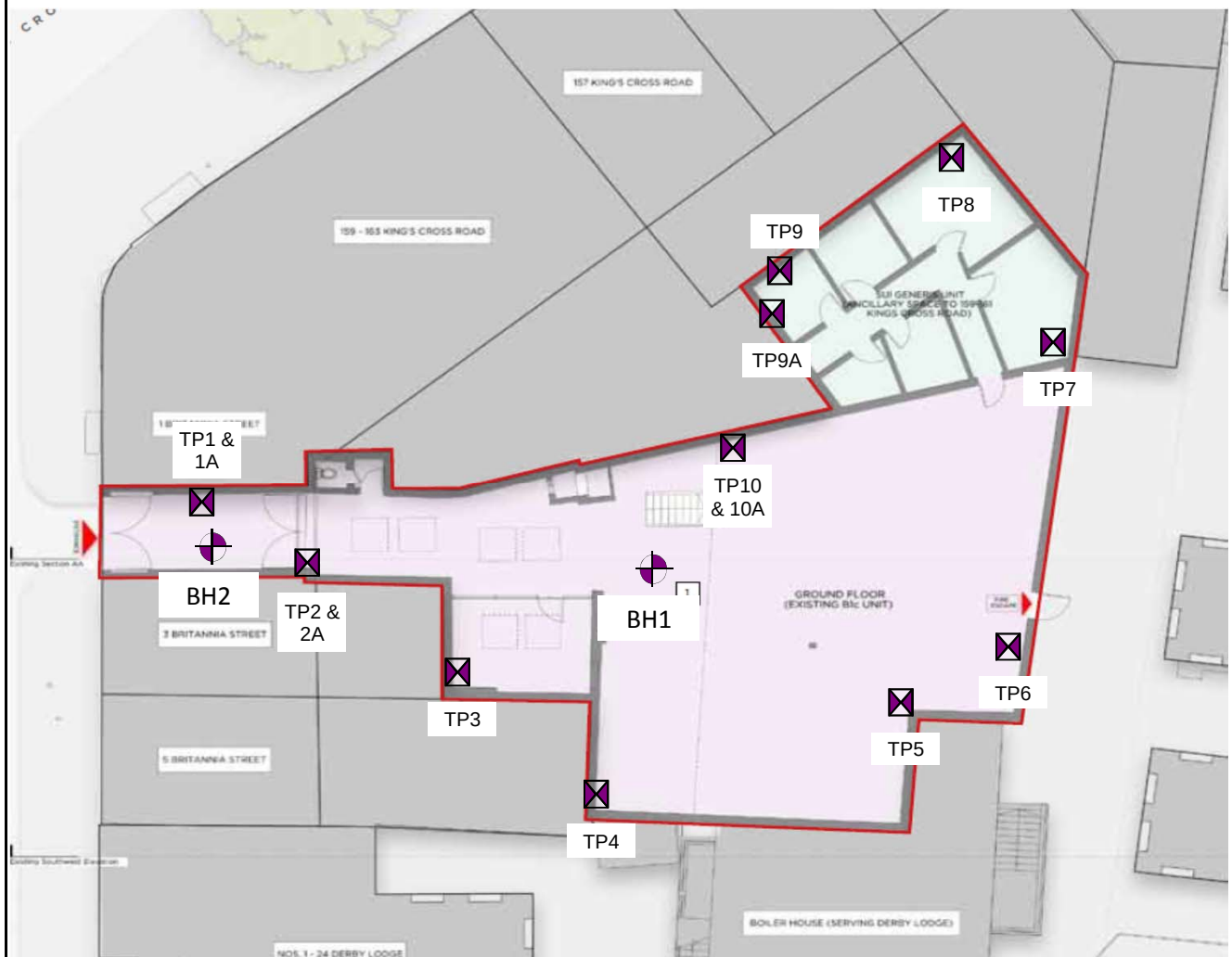
Site	Rear of 159-163 King's Cross Road, London WC1X 9BN
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Client	Balcap RE
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Engineer Parmarbrook

Job Number
J16180

Sheet
1 / 1



Geotechnical & Environmental Associates (GEA) is an engineer-led and client-focused independent specialist providing a complete range of geotechnical and contaminated land investigation, analytical and consultancy services to the property and construction industries.

We have offices at

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Enquiries can also be made on-line at

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where information can be found on all of the services that we offer.



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