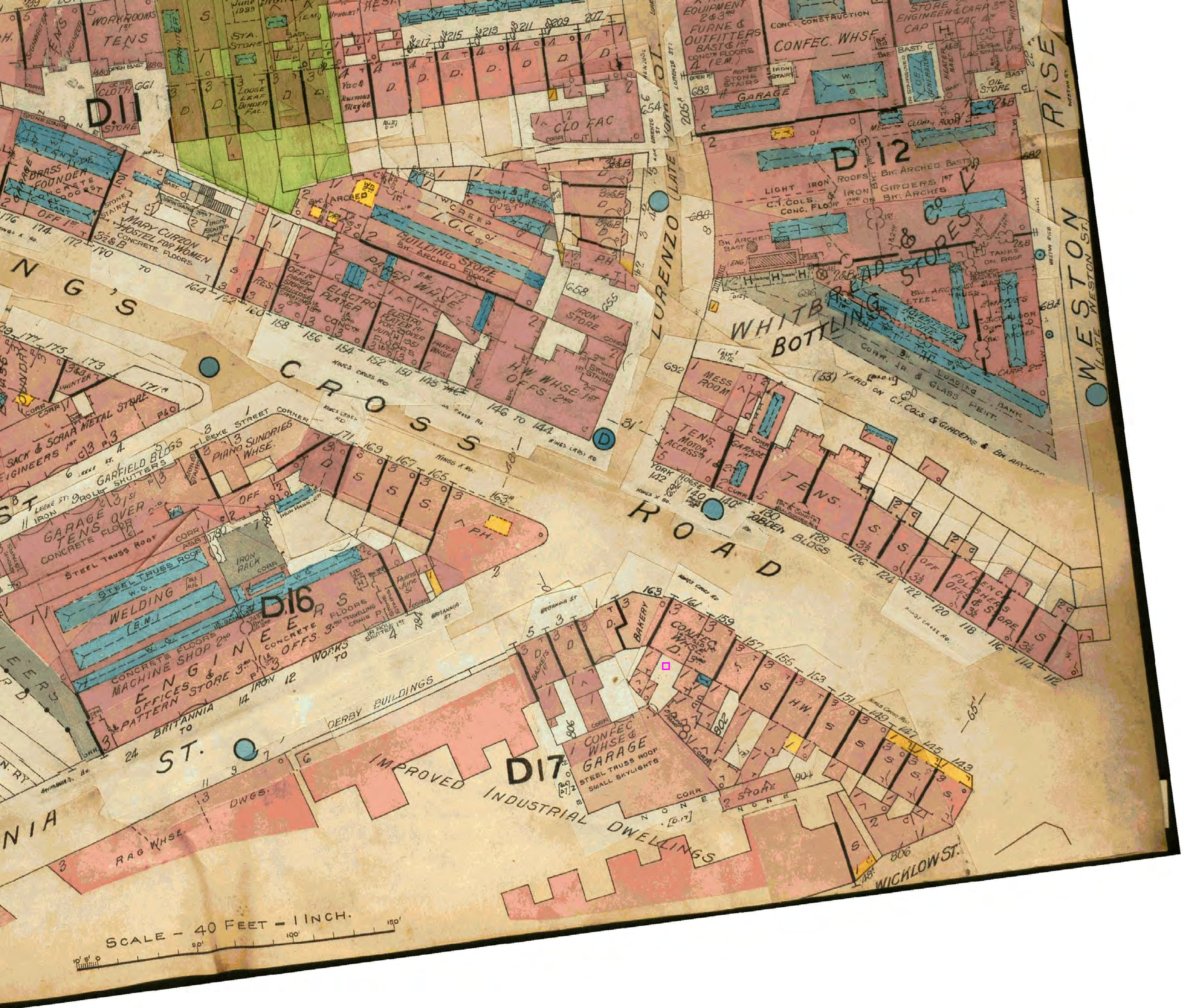






GEA LIMITED (GEOTECHNICAL & ENV ASSOC)

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

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

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	0.30000	0.00000	0.00000	-	80.00000	0.00000	250	100.00000	250	No	Surface
Line	A	-	22.50000	48.10000	-0.50000	25.90000	48.10000	-0.50000	4	-	-	Yes	Surface
Line	B	-	25.90000	48.10000	-0.50000	25.90000	45.00000	-0.50000	4	-	-	Yes	Surface
Line	C	-	25.90000	45.00000	-0.50000	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	47.60000	-1.85000	6	-	-	Yes	Surface
Line	Q	-	41.90000	52.20000	-0.65000	41.90000	47.60000	-0.65000	5	-	-	Yes	Surface
Line	R	-	33.00000	50.30000	-0.50000	32.60000	42.90000	-0.50000	8	-	-	Yes	Surface
Line	S	-	54.40000	58.50000	-0.50000	73.00000	33.70000	-0.50000	16	-	-	Yes	Surface
Line	T	-	45.50000	53.30000	-0.50000	68.90000	23.70000	-0.50000	19	-	-	Yes	Surface
Line	U	-	63.00000	47.00000	-0.50000	55.10000	41.10000	-0.50000	10	-	-	Yes	Surface
Line	V	-	55.10000	41.10000	-0.50000	52.20000	38.90000	-0.50000	4	-	-	Yes	Surface
Line	W	-	52.20000	38.90000	-1.70000	52.90000	38.00000	-1.70000	2	-	-	Yes	Surface
Line	X	-	66.40000	42.50000	-0.50000	58.60000	36.70000	-0.50000	10	-	-	Yes	Surface
Line	Y	-	58.60000	36.70000	-1.40000	55.70000	34.50000	-1.40000	4	-	-	Yes	Surface
Line	Z	-	69.70000	38.10000	-0.50000	62.00000	32.40000	-0.50000	10	-	-	Yes	Surface
Line	AA	-	62.00000	32.40000	-1.40000	59.00000	30.30000	-1.40000	4	-	-	Yes	Surface
Line	AB	-	73.00000	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	36.70000	29.10000	-2.00000	6	-	-	Yes	Surface

Vertical Ground Movement Curves

Curve Name:	No vertical ground movement
Coordinates:	[Distance from wall / wall depth or max. excavation depth (x), Depth / wall depth or max. excavation depth (y), Settlement / wall depth or max. excavation depth (z) (%)]
Curve Fitting Method:	Polynomial
x Order:	1
y Order:	0
Polynomial: z =	0.0x + 0.0
Coeff. of Determination:	-2147483648.E+2147483647
Curve Name:	Installation of contiguous bored pile wall in stiff clay (CIRIA 580 Fig. 2.8(b))
Coordinates:	[Distance from wall / wall depth or max. excavation depth (x), Depth / wall depth or max. excavation depth (y), Settlement / wall depth or max. excavation depth (z) (%)]
Curve Fitting Method:	Polynomial
x Order:	1
y Order:	0
Polynomial: z =	-2.0E-2x + 4.0E-2
Coeff. of Determination:	1.0
Curve Name:	Installation of planar diaphragm wall in stiff clay (CIRIA 580 Fig. 2.9(b))
Coordinates:	[Distance from wall / wall depth or max. excavation depth (x), Depth / wall depth or max. excavation depth (y), Settlement / wall depth or max. excavation depth (z) (%)]
Curve Fitting Method:	Polynomial
x Order:	4
y Order:	0
Polynomial: z =	-1.2355E-2x ⁴ + 3.4814E-2x ³ - 2.8885E-3x ² - 6.5161E-2x + 4.9987E-2
Coeff. of Determination:	1.0000

Horizontal Ground Movement Curves

Curve Name:	No horizontal ground movement
Coordinates:	[Distance from wall / wall depth or max. excavation depth (x), Depth / wall depth or max. excavation depth (y), Horizontal movement / wall depth or max. excavation depth (z) (%)]
Curve Fitting Method:	Polynomial
x Order:	0
y Order:	0
Polynomial: z =	0.0



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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
Coeff. of Determination: -2147483648.E+2147483647							
Curve Name: Installation of contiguous bored pile wall in stiff clay (CIRIA 580 Fig. 2.8(a))							
Coordinates: [Distance from wall / wall depth or max. excavation depth (x), Depth / wall depth or max. excavation depth (y), Horizontal movement / wall depth or max. excavation depth (z)](%)							
[0.000,0.000,0.041][0.050,0.000,0.039][0.100,0.000,0.036][0.150,0.000,0.034]							
[0.200,0.000,0.032][0.250,0.000,0.030][0.300,0.000,0.029][0.350,0.000,0.027]							
[0.400,0.000,0.025][0.450,0.000,0.023][0.500,0.000,0.022][0.550,0.000,0.020]							
[0.600,0.000,0.019][0.650,0.000,0.018][0.700,0.000,0.016][0.750,0.000,0.015]							
[0.800,0.000,0.014][0.850,0.000,0.013][0.900,0.000,0.012][0.950,0.000,0.010]							
[1.000,0.000,0.009][1.050,0.000,0.008][1.100,0.000,0.007][1.150,0.000,0.006]							
[1.200,0.000,0.005][1.250,0.000,0.004][1.300,0.000,0.004][1.350,0.000,0.003]							
[1.400,0.000,0.002][1.450,0.000,0.001][1.500,0.000,0.000]							
Curve Fitting Method: Polynomial							
x Order: 3							
y Order: 0							
Polynomial: z = -4.2486E-3x ³ + 1.9096E-2x ² - 4.6221E-2x + 4.0729E-2							
Coeff. of Determination: 1.0000							
Curve Name: Installation of planar diaphragm wall in stiff clay (CIRIA 580 Fig. 2.9(a))							
Coordinates: [Distance from wall / wall depth or max. excavation depth (x), Depth / wall depth or max. excavation depth (y), Horizontal movement / wall depth or max. excavation depth (z)](%)							
[0.000,0.000,0.050][1.500,0.000,0.000]							
Curve Fitting Method: Polynomial							
x Order: 1							
y Order: 0							
Polynomial: z = -3.33E-2x + 5.00E-2							
Coeff. of Determination: 1.00							
Polygonal Excavations							
Excavation Name: Wall Installation A							
Surface level [m]: 0.0							
Contribution: Positive							
Enabled: Yes							
Surface movement curves which are selected are applied between surface and [m]: -4.4000							
Corner	x	y	Base Level	Stiffened	Previous Side	Next Side	
	[m]	[m]	[m]	d	p1 p2*	d p1 p2*	
				[m]	[%] [%]	[m] [%] [%]	
1	32.700	32.500	-4.4000	No	- - -	- - -	
2	36.800	32.000	-4.4000	No	- - -	- - -	
3	37.300	42.900	-4.4000	No	- - -	- - -	
4	33.400	42.900	-4.4000	No	- - -	- - -	
Side	Corner 1	Corner 2	Ground Movement Curve				
	x y	x y	Vertical Horizontal				
	[m] [m]	[m] [m]					
1	32.700 32.500	36.800 32.000	Installation of planar diaphragm wall in stiff clay (CIRIA 580 Fig. 2.9(b))				
2	36.800 32.000	37.300 42.900	No vertical ground movement				
3	37.300 42.900	33.400 42.900	Installation of planar diaphragm wall in stiff clay (CIRIA 580 Fig. 2.9(b))				
4	33.400 42.900	32.700 32.500	Installation of planar diaphragm wall in stiff clay (CIRIA 580 Fig. 2.9(b))				
Excavation Name: Wall Installation B							
Surface level [m]: 0.0							
Contribution: Positive							
Enabled: Yes							
Surface movement curves which are selected are applied between surface and [m]: -8.5000							
Corner	x	y	Base Level	Stiffened	Previous Side	Next Side	
	[m]	[m]	[m]	d	p1 p2*	d p1 p2*	
				[m]	[%] [%]	[m] [%] [%]	
1	36.700	28.400	-8.5000	No	- - -	- - -	
2	50.100	26.600	-8.5000	No	- - -	- - -	
3	48.400	35.400	-8.5000	No	- - -	- - -	
4	48.166	36.351	-4.4000	No	- - -	- - -	
5	45.300	47.600	-4.4000	No	- - -	- - -	
6	37.600	47.600	-4.4000	No	- - -	- - -	
7	36.700	28.800	-4.4000	No	- - -	- - -	
Side	Corner 1	Corner 2	Ground Movement Curve				
	x y	x y	Vertical Horizontal				
	[m] [m]	[m] [m]					
1	36.700 28.400	50.100 26.600	Installation of contiguous bored pile wall in stiff clay (CIRIA 580 Fig. 2.8(b))				
2	50.100 26.600	48.400 35.400	Installation of contiguous bored pile wall in stiff clay (CIRIA 580 Fig. 2.8(b))				
3	48.400 35.400	48.166 36.351	Installation of contiguous bored pile wall in stiff clay (CIRIA 580 Fig. 2.8(b))				
4	48.166 36.351	45.300 47.600	Installation of planar diaphragm wall in stiff clay (CIRIA 580 Fig. 2.9(b))				
5	45.300 47.600	37.600 47.600	Installation of planar diaphragm wall in stiff clay (CIRIA 580 Fig. 2.9(b))				
6	37.600 47.600	36.700 28.800	Installation of planar diaphragm wall in stiff clay (CIRIA 580 Fig. 2.9(b))				
7	36.700 28.800	36.700 28.400	Installation of contiguous bored pile wall in stiff clay (CIRIA 580 Fig. 2.8(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	End Distance Along	Vertical Offsets from Line for	Vertical Displacement Limit	Damage Category Strains Poisson's Ratio E/G



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		Line	Line	Vertical Movement Calculations	Sensitivity		
		[m]	[m]	[m]	[mm]		
A		0.00000	3.39900	0.0	0.10000	Burland Strain Limits	0.20000 2.60000
B		0.00000	3.09900	0.0	0.10000	Burland Strain Limits	0.20000 2.60000
C		0.00000	4.60009	0.0	0.10000	Burland Strain Limits	0.20000 2.60000
D		0.00000	5.39993	0.0	0.10000	Burland Strain Limits	0.20000 2.60000
E		0.00000	2.49900	0.0	0.10000	Burland Strain Limits	0.20000 2.60000
F		0.00000	9.29954	0.0	0.10000	Burland Strain Limits	0.20000 2.60000
G		0.00000	4.99900	0.0	0.10000	Burland Strain Limits	0.20000 2.60000
H		0.00000	2.70085	0.0	0.10000	Burland Strain Limits	0.20000 2.60000
I		0.00000	7.19969	0.0	0.10000	Burland Strain Limits	0.20000 2.60000
J		0.00000	19.49900	0.0	0.10000	Burland Strain Limits	0.20000 2.60000
K		0.00000	8.89900	0.0	0.10000	Burland Strain Limits	0.20000 2.60000
L		0.00000	7.19900	0.0	0.10000	Burland Strain Limits	0.20000 2.60000
M		0.00000	7.29968	0.0	0.10000	Burland Strain Limits	0.20000 2.60000
N		0.00000	6.09900	0.0	0.10000	Burland Strain Limits	0.20000 2.60000
O		0.00000	4.59900	0.0	0.10000	Burland Strain Limits	0.20000 2.60000
P	Sub #	0.00000	5.69900	0.0	0.10000	Burland Strain Limits	0.20000 2.60000
Q		0.00000	4.59900	0.0	0.10000	Burland Strain Limits	0.20000 2.60000
R		0.00000	7.40080	0.0	0.10000	Burland Strain Limits	0.20000 2.60000
S		0.00000	30.99900	0.0	0.10000	Burland Strain Limits	0.20000 2.60000
T		0.00000	37.73121	0.0	0.10000	Burland Strain Limits	0.20000 2.60000
U		0.00000	9.85902	0.0	0.10000	Burland Strain Limits	0.20000 2.60000
V		0.00000	3.63905	0.0	0.10000	Burland Strain Limits	0.20000 2.60000
W		0.00000	1.13918	0.0	0.10000	Burland Strain Limits	0.20000 2.60000
X		0.00000	9.71908	0.0	0.10000	Burland Strain Limits	0.20000 2.60000
Y		0.00000	3.63905	0.0	0.10000	Burland Strain Limits	0.20000 2.60000
Z		0.00000	9.57919	0.0	0.10000	Burland Strain Limits	0.20000 2.60000
AA		0.00000	3.66097	0.0	0.10000	Burland Strain Limits	0.20000 2.60000
AB		0.00000	9.46156	0.0	0.10000	Burland Strain Limits	0.20000 2.60000
AC		0.00000	5.07935	0.0	0.10000	Burland Strain Limits	0.20000 2.60000
AD		0.00000	7.86284	0.0	0.10000	Burland Strain Limits	0.20000 2.60000
AE		0.00000	3.30506	0.0	0.10000	Burland Strain Limits	0.20000 2.60000
AF		0.00000	3.21393	0.0	0.10000	Burland Strain Limits	0.20000 2.60000
AG		0.00000	17.14076	0.0	0.10000	Burland Strain Limits	0.20000 2.60000
AH		0.00000	6.33777	0.0	0.10000	Burland Strain Limits	0.20000 2.60000
AI	Sub #	0.00000	4.84977	0.0	0.10000	Burland Strain Limits	0.20000 2.60000
AJ	Sub #	0.00000	8.96672	0.0	0.10000	Burland Strain Limits	0.20000 2.60000
AK	Sub #	0.00000	4.94875	0.0	0.10000	Burland Strain Limits	0.20000 2.60000
AL	Sub #	0.00000	4.73714	0.0	0.10000	Burland Strain Limits	0.20000 2.60000
AM	Sub #	0.00000	2.70640	0.0	0.10000	Burland Strain Limits	0.20000 2.60000
AN	Sub #	0.00000	3.33666	0.0	0.10000	Burland Strain Limits	0.20000 2.60000
AO	Sub #	0.00000	2.51694	0.0	0.10000	Burland Strain Limits	0.20000 2.60000
AP	Sub #	0.00000	4.45433	0.0	0.10000	Burland Strain Limits	0.20000 2.60000
AQ	Sub #	0.00000	9.94875	0.0	0.10000	Burland Strain Limits	0.20000 2.60000
AR	Sub #	0.00000	8.47072	0.0	0.10000	Burland Strain Limits	0.20000 2.60000
AS	Sub #	0.00000	8.16049	0.0	0.10000	Burland Strain Limits	0.20000 2.60000
AT	Sub #	0.00000	11.07555	0.0	0.10000	Burland Strain Limits	0.20000 2.60000
AU		0.00000	7.11026	0.0	0.10000	Burland Strain Limits	0.20000 2.60000
AV		0.00000	9.21854	0.0	0.10000	Burland Strain Limits	0.20000 2.60000
AW		0.00000	11.32066	0.0	0.10000	Burland Strain Limits	0.20000 2.60000

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 ²]	[m]	[m]	[m ²]	[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
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		3.6800	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		18.500	Yes	2110.5	18.500	18.500	527.64	9.2500	9.2500
AI	Sub #	18.500	Yes	2110.5	18.500	18.500	527.64	9.2500	9.2500
AJ	Sub #	18.500	Yes	2110.5	18.500	18.500	527.64	9.2500	9.2500
AK	Sub #	18.500	Yes	2110.5	18.500	18.500	527.64	9.2500	9.2500
AL	Sub #	18.500	Yes	2110.5	18.500	18.500	527.64	9.2500	9.2500
AM	Sub #	18.500	Yes	2110.5	18.500	18.500	527.64	9.2500	9.2500
AN	Sub #	18.500	Yes	2110.5	18.500	18.500	527.64	9.2500	9.2500
AO	Sub #	18.500	Yes	2110.5	18.500	18.500	527.64	9.2500	9.2500
AP	Sub #	18.500	Yes	2110.5	18.500	18.500	527.64	9.2500	9.2500
AQ	Sub #	18.500	Yes	2110.5	18.500	18.500	527.64	9.2500	9.2500
AR	Sub #	18.500	Yes	2110.5	18.500	18.500	527.64	9.2500	9.2500
AS	Sub #	18.500	Yes	2110.5	18.500	18.500	527.64	9.2500	9.2500
AT	Sub #	18.500	Yes	2110.5	18.500	18.500	527.64	9.2500	9.2500
AU		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]		
No structures have segments combined.						

Warnings



GEA LIMITED (GEOTECHNICAL & ENV ASSOC)

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

Wall Installation only Issue 4

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

Structure Name	Sub-Structure Name	Vertical Offset from Line for Vertical	Segment	Start	Length	Curvature	Combined Segment					
1 Multiple excavations have been specified. The displacements resulting from these excavations are calculated by summing the displacements resulting from each individual excavation. No account has been taken of the interactions between excavations (e.g. overlapping zones of influence or 'shielding' of one excavation by another).												
Displacement and Strain Results												
Type/No.	Coordinates			Displacements			Angle of Line					
Name	Dist.	x	y	z	x	y	z	Horizontal displacement along the Line	Horizontal displacement perpendicular to Line	to x Axis		
	[m]	[m]	[m]	[m]	[mm]	[mm]	[mm]	[mm]	[mm]	[°]		
A	Line 1	22.50000	48.10000	-0.50000	0.0	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	0.0		
	1.7000	24.20000	48.10000	-0.50000	0.0	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	0.0		
	3.4000	25.90000	48.10000	-0.50000	0.0	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	0.0	270.00		
	0.77500	25.90000	47.32500	-0.50000	0.0	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	0.0	270.00		
	2.3250	25.90000	45.77500	-0.50000	0.0	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	0.0	270.00		
C	Line 3	25.90000	45.00000	-0.50000	0.0	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	0.0	358.75		
	1.8404	27.74000	44.96000	-0.50000	0.18067	-0.065755	0.029441	0.18205	-0.061812	358.75		
	2.7607	28.66000	44.94000	-0.50000	0.44079	-0.18971	0.081065	0.44481	-0.18080	358.75		
	3.6809	29.58000	44.92000	-0.50000	0.67150	-0.35508	0.18662	0.67905	-0.34041	358.75		
D	Line 4	30.50000	44.90000	-0.50000	0.84440	-0.58235	0.36915	0.85686	-0.56386	358.75		
	0.90015	30.48333	45.80000	-0.50000	0.58786	-0.58450	0.22561	-0.59529	-0.57694	91.061		
	1.8003	30.46667	46.70000	-0.50000	0.36654	-0.47483	0.11723	-0.48154	-0.35768	91.061		
	2.7005	30.45000	47.60000	-0.50000	0.18623	-0.29670	0.053595	-0.30010	-0.18070	91.061		
	3.6006	30.43333	48.50000	-0.50000	0.040990	-0.077385	0.014768	-0.078131	-0.039556	91.061		
E	Line 5	30.40000	50.30000	-0.50000	0.0	0.0	0.0	0.0	0.0	91.061		
	0.83333	31.23333	50.30000	-0.50000	0.0	0.0	0.0	0.0	0.0	0.0		
	1.6667	32.06667	50.30000	-0.50000	0.13273	-0.064767	0.023319	0.13273	-0.064767	0.0		
	2.5000	32.90000	50.30000	-0.50000	0.34097	-0.19587	0.061567	0.34097	-0.19587	0.0		
	3.3333	33.73333	50.30000	-0.50000	0.54903	-0.39174	0.12313	0.54903	-0.39174	0.0		
F	Line 6	32.90000	50.30000	-0.50000	0.34097	-0.19587	0.061567	-0.19220	-0.34305	89.384		
	0.93005	32.91000	51.23000	-0.50000	0.17643	-0.13656	0.033718	-0.13465	-0.17789	89.384		
	1.8601	32.92000	52.16000	-0.50000	0.015705	-0.015302	0.0043513	-0.015133	-0.015689	89.384		
	2.7902	32.93000	53.09000	-0.50000	0.0	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	0.0	89.384		
G	Line 7	32.95000	54.95000	-0.50000	0.0	0.0	0.0	0.0	0.0	89.384		
	4.6503	32.95000	54.95000	-0.50000	0.0	0.0	0.0	0.0	0.0	89.384		
	5.5803	32.96000	55.88000	-0.50000	0.0	0.0	0.0	0.0	0.0	89.384		
	6.5104	32.97000	56.81000	-0.50000	0.0	0.0	0.0	0.0	0.0	89.384		
	7.4404	32.98000	57.74000	-0.50000	0.0	0.0	0.0	0.0	0.0	89.384		
H	Line 8	32.99000	58.67000	-0.50000	0.0	0.0	0.0	0.0	0.0	89.384		
	0.90062	33.00000	59.60000	-0.50000	0.0	0.0	0.0	0.0	0.0	180.00		
	1.8012	33.00000	59.60000	-0.50000	0.0	0.0	0.0	0.0	0.0	180.00		
	2.7019	33.00000	59.60000	-0.50000	0.0	0.0	0.0	0.0	0.0	180.00		
	3.6003	33.00000	59.60000	-0.50000	0.0	0.0	0.0	0.0	0.0	180.00		
I	Line 9	33.00000	59.60000	-0.50000	0.0	0.0	0.0	0.0	0.0	180.00		
	0.90009	33.00000	59.60000	-0.50000	0.0	0.0	0.0	0.0	0.0	179.20		
	1.8002	33.00000	59.60000	-0.50000	0.0	0.0	0.0	0.0	0.0	179.20		
	2.7003	33.00000	59.60000	-0.50000	0.0	0.0	0.0	0.0	0.0	179.20		
	3.6003	33.00000	59.60000	-0.50000	0.0	0.0	0.0	0.0	0.0	179.20		
J	Line 10	33.00000	59.60000	-0.50000	0.0	0.0	0.0	0.0	0.0	179.20		
	4.5004	33.00000	59.60000	-0.50000	0.0	0.0	0.0	0.0	0.0	179.20		
	5.4005	33.00000	59.60000	-0.50000	0.0	0.0	0.0	0.0	0.0	179.20		
	6.3006	33.00000	59.60000	-0.50000	0.0	0.0	0.0	0.0	0.0	179.20		
	7.2007	33.00000	59.60000	-0.50000	0.0	0.0	0.0	0.0	0.0	179.20		
K	Line 11	33.00000	59.60000	-0.50000	0.0	0.0	0.0	0.0	0.0	0.0		
	0.90009	33.00000	59.60000	-0.50000	0.022302	-0.022302	0.0059792	0.022302	-0.022302	0.0		
	1.8002	33.00000	59.60000	-0.50000	0.15477	-0.15477	0.037639	0.15477	-0.15477	0.0		
	2.7003	33.00000	59.60000	-0.50000	0.21544	-0.21544	0.070379	0.21544	-0.21544	0.0		
	3.6003	33.00000	59.60000	-0.50000	0.19169	-0.19169	0.010803	0.19169	-0.010803	0.0		
L	Line 12	33.00000	59.60000	-0.50000	0.0	0.0	0.0	0.0	0.0	0.0		
	0.90009	33.00000	59.60000	-0.50000	0.090417	-0.090417	0.03685	0.090417	-0.03685	0.0		
	1.8002	33.00000	59.60000	-0.50000	0.0	0.0	0.0	0.0	0.0	0.0		
	2.7003	33.00000	59.60000	-0.50000	0.0	0.0	0.0	0.0	0.0	0.0		
	3.6003	33.00000	59.60000	-0.50000	0.0	0.0	0.0	0.0	0.0	0.0		
M	Line 13	33.00000	59.60000	-0.50000	0.0	0.0	0.0	0.0	0.0	0.0		
	0.91259	33.00000	59.60000	-0.50000	0.0	0.0	0.0	0.0	0.0	0.0		
	1.8252	33.00000	59.60000	-0.50000	0.0	0.0	0.0	0.0	0.0	0.0		
	2.7378	33.00000	59.60000	-0.50000	0.0	0.0	0.0	0.0	0.0	0.0		
	3.6503	33.00000	59.60000	-0.50000	0.0	0.0	0.0	0.0	0.0	0.0		
N	Line 14	33.00000	59.60000	-0.50000	0.0	0.0	0.0	0.0	0.0	0.0		
	0.91259	33.00000	59.60000	-0.50000	0.0	0.0	0.0	0.0	0.0	0.0		
	1.8252	33.00000	59.60000	-0.50000	0.0	0.0	0.0	0.0	0.0	0.0		
	2.7378	33.00000	59.60000	-0.50000	0.0	0.0	0.0	0.0	0.0	0.0		
	3.6503	33.00000	59.60000	-0.50000	0.0	0.0	0.0	0.0	0.0	0.0		
O	Line 15	33.00000	59.60000	-0.50000	0.0	0.0	0.0	0.0	0.0	0.0		
	0.91259	33.00000	59.60000	-0.50000	0.0	0.0	0.0	0.0	0.0	0.0		
	1.8252	33.00000	59.60000	-0.50000	0.0	0.0	0.0	0.0	0.0	0.0		
	2.7378	33.00000	59.60000	-0.50000	0.0	0.0	0.0	0.0	0.0	0.0		
	3.6503	33.00000	59.60000	-0.50000	0.0	0.0	0.0	0.0	0.0	0.0		
P	Line 16	33.00000	59.60000	-0.50000	0.0	0.0	0.0	0.0	0.0	0.0		
	0.91259	33.00000	59.60000	-0.50000	0.0	0.0	0.0	0.0	0.0	0.0		
	1.8252	33.00000	59.60000	-0.50000	0.0	0.0	0.0	0.0	0.0	0.0		
	2.7378	33.00000	59.60000	-0.50000	0.0	0.0	0.0	0.0	0.0	0.0		
	3.6503	33.00000	59.60000	-0.50000	0.0	0.0	0.0	0.0	0.0	0.0		



GEA LIMITED (GEOTECHNICAL & ENV ASSOC)

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

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

Type/No.	Coordinates		Displacements						Angle of Line		
Name	Dist.	x	y	z	x	y	z	Horizontal displacement	Horizontal displacement	to x Axis	
Q	Line 17	1.9000	45.50000	51.40000	-1.85000	-0.048963	-0.93029	0.29415	0.93029	-0.048963	270.00
		2.8500	45.50000	50.45000	-1.85000	-0.087341	-1.2446	0.59384	1.2446	-0.087341	270.00
		3.8000	45.50000	49.50000	-1.85000	-0.16364	-1.5546	1.0279	1.5546	-0.16364	270.00
		4.7500	45.50000	48.55000	-1.85000	-0.38656	-1.8361	1.5714	1.8361	-0.38656	270.00
		5.7000	45.50000	47.60000	-1.85000	-2.0693	-0.52721	2.0721	0.52721	-2.0693	270.00
		6.6500	41.90000	52.20000	-0.65000	0.0	-0.66667	0.14301	0.66667	0.0	270.00
		0.92000	41.90000	51.28000	-0.65000	0.0	-0.97333	0.32595	0.97333	0.0	270.00
		1.8400	41.90000	50.36000	-0.65000	0.0	-1.2800	0.63226	1.2800	0.0	270.00
		2.7600	41.90000	49.44000	-0.65000	0.0	-1.5867	1.0652	1.5867	0.0	270.00
		3.6800	41.90000	48.52000	-0.65000	0.0	-1.8933	1.6031	1.8933	0.0	270.00
R	Line 18	4.6900	41.90000	47.60000	-0.65000	-0.0028569	-2.2029	2.2004	2.2029	-0.0028569	270.00
		0.92635	32.95000	49.37500	-0.50000	0.50788	-0.22927	0.10476	0.20153	0.51951	266.91
		1.8527	32.90000	48.45000	-0.50000	0.62895	-0.44931	0.17225	0.41471	0.65228	266.91
		2.7791	32.85000	47.52500	-0.50000	0.69542	-0.67257	0.25957	0.63406	0.73071	266.91
		3.7054	32.80000	46.60000	-0.50000	0.76922	-0.96784	0.43204	0.92491	0.82034	266.91
		4.6318	32.75000	45.67500	-0.50000	0.90023	-1.2465	0.71954	1.1961	0.96620	266.91
		5.5581	32.70000	44.75000	-0.50000	1.1585	-1.4703	1.1151	1.4056	1.2362	266.91
		6.4845	32.65000	43.82500	-0.50000	1.7469	-1.4298	1.5578	1.3334	1.8215	266.91
		7.4108	32.60000	42.90000	-0.50000	2.5399	-0.15905	1.8010	0.021775	2.5439	266.91
		8.3371	32.55000	41.97500	-0.50000	0.0	0.0	0.0	0.0	0.0	306.87
S	Line 19	1.9375	55.56250	56.95000	-0.50000	0.0	0.0	0.0	0.0	0.0	306.87
		3.8750	56.72500	55.40000	-0.50000	0.0	0.0	0.0	0.0	0.0	306.87
		5.8125	57.88750	53.85000	-0.50000	0.0	0.0	0.0	0.0	0.0	306.87
		7.7500	59.95000	52.30000	-0.50000	0.0	0.0	0.0	0.0	0.0	306.87
		9.6875	60.21250	50.75000	-0.50000	0.0	0.0	0.0	0.0	0.0	306.87
		11.625	61.37500	49.20000	-0.50000	0.0	0.0	0.0	0.0	0.0	306.87
		13.562	62.53750	47.65000	-0.50000	0.0	0.0	0.0	0.0	0.0	306.87
		15.500	63.70000	46.10000	-0.50000	0.0	0.0	0.0	0.0	0.0	306.87
		17.438	64.86250	44.55000	-0.50000	0.0	0.0	0.0	0.0	0.0	306.87
		19.375	66.02500	43.00000	-0.50000	0.0	0.0	0.0	0.0	0.0	306.87
T	Line 20	21.313	67.18750	41.45000	-0.50000	0.0	0.0	0.0	0.0	0.0	306.87
		23.250	68.35000	39.90000	-0.50000	0.0	0.0	0.0	0.0	0.0	306.87
		25.188	69.51250	38.35000	-0.50000	0.0	0.0	0.0	0.0	0.0	306.87
		27.125	70.67500	36.80000	-0.50000	0.0	0.0	0.0	0.0	0.0	306.87
		29.063	71.83750	35.25000	-0.50000	0.0	0.0	0.0	0.0	0.0	306.87
		31.000	73.00000	33.70000	-0.50000	0.0	0.0	0.0	0.0	0.0	306.87
		1.9859	46.73158	51.74211	-0.50000	-0.010479	-0.29865	0.044906	0.22778	-0.19343	308.33
		3.9718	47.96316	50.18421	-0.50000	-0.24145	-0.69861	0.17621	0.39831	-0.62266	308.33
		5.9577	49.19474	48.62632	-0.50000	-0.82913	-0.21849	0.24328	-0.34280	-0.78593	308.33
		7.9436	50.42632	47.06842	-0.50000	-0.56968	-0.14514	0.11387	-0.23943	-0.53691	308.33
U	Line 21	9.9295	51.65789	45.51053	-0.50000	-0.30842	-0.078578	0.048035	-0.12962	-0.29068	308.33
		11.915	52.88947	43.95263	-0.50000	-0.047155	-0.012014	0.0087825	-0.019819	-0.044443	308.33
		13.901	54.12105	42.39474	-0.50000	0.0	0.0	0.0	0.0	0.0	308.33
		15.887	55.35263	40.83864	-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	-0.53491	-0.13160	1.4532	-0.22849	-0.50124	308.33
		21.845	59.04737	36.16316	-0.50000	-0.37959	-0.073338	1.2082	-0.17788	-0.34326	308.33
		23.831	60.27895	34.60526	-0.50000	-0.21702	-0.041924	1.0975	-0.10170	-0.19624	308.33
		25.817	61.51053	33.04737	-0.50000	-0.057777	-0.011208	0.91474	-0.027169	-0.052428	308.33
		27.803	62.74211	31.48947	-0.50000	0.0	0.0	0.0	0.73209	0.0	308.33
V	Line 22	29.789	63.97368	29.93158	-0.50000	0.0	0.0	0.54925	0.0	0.0	308.33
		31.774	65.20526	28.37368	-0.50000	0.0	0.0	0.35819	0.0	0.0	308.33
		33.760	66.43684	26.81579	-0.50000	0.0	0.0	0.13235	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
		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
W	Line 23	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
		0.91001	54.37500	40.55000	-0.50000	0.0	0.0	0.0	0.0	0.0	217.18
		1.8200	53.55000	40.00000	-0.50000	-0.12432	-0.031675	0.020621	0.11810	-0.049903	217.18
		2.7300	52.92500	39.45000	-0.50000	-0.39512	-0.10067	0.064512	0.37563	-0.15860	217.18
		3.6401	52.20000	38.90000	-0.50000	-0.66592	-0.16966	0.15183	-0.27491	-0.62981	307.87
		0.57089	52.55000	38.45000	-1.70000	-0.59225	-0.15089	0.12129	-0.24450	-0.56013	307.87
X	Line 24	1.1402	52.90000	37.90000	-0.50000	-0.51858	-0.13212	0.096244	-0.21409	-0.49406	307.87
		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	0.0	0.0	0.0	0.0	0.0	216.63
		2.9160	64.06000	40.76000	-0.50000	0.0	0.0	0.0	0.0	0.0	216.63
		3.8880	63.28000	40.18000	-0.50000	0.0	0.0	0.0	0.0	0.0	216.63
		4.8600	62.50000	39.60000	-0.50000	0.0	0.0	0.0	0.0	0.0	216.63
		5.8320	61.72000	39.02000	-0.50000	0.0	0.0	0.082433	0.0	0.0	216.63
		6.8041	60.94000	38.44000	-0.50000	0.0	0.0	0.81936	0.0	0.0	216.63
		7.7761	60.16000	37.86000	-0.50000	-0.12898	-0.026980	0.99709	0.11960	-0.055311	216.63
		8.7481	59.38000	37.28000	-0.50000	-0.28321	-0.054712	1.1725	0.25999	-0.12589	216.63
Y	Line 25	0.7201	58.60000	36.70000	-0.50000	-0.44105	-0.085202	1.3477	0.40476	-0.19444	216.63
		0.91001	57.87500	36.15000	-1.40000	-0.59399	-0.11475	1.5109	0.54258	-0.26758	217.18
		1.8200	57.15000	35.60000	-1.40000	-0.75453	-0.14576	1.6742	0.68922	-0.33990	217.18
		2.7300	56.42500	35.05000	-1.40000	-0.92487	-0.17860	1.8374	0.84534	-0.43890	217.18
		3.6401	55.70000	34.50000	-1.40000	-1.0959	-0.21364	2.0066	1.0102	-0.49819	217.18
		0.95802	68.70000	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	36.96000	-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
Z	Line 26	4.7901	65.85000	35.25000	-0.50000	0.0	0.0	0.0	0.0	0.0	216.51
		5.7481	65.08000	34.68000	-0.50000	0.0	0.0	0.15187	0.0	0.0	216.51
		6.7061	64.31000	34.11000	-0.50000	0.0	0.0	0.32470	0.0	0.0	216.51
		7.6642	63.54000	33.54000	-0.50000	0.0	0.0	0.4975	0.0	0.0	216.51
		8.6222	62.77000	32.97000	-0.50000	0.0	0.0	0.67035	0.0	0.0	216.51
		9.5802	62.00000	32.40000	-0.50000	0.0	0.0	0.84318	0.0	0.0	216.51
		0.95802	62.00000	32.40000	-1.40000	0.0	0.0	0.84318	0.0	0.0	214.99
		0.91549	61.25000	31.87500	-1.40000	-0.14093	-0.072224	1.0104	0.13106	-0.055513	214.99
		1.8310	60.50000	31.30000	-1.40000	-0.39572	-0.055572	1.1715	0.26127	-0.10167	214.99
		2.7465	59.75000	30.82500	-1.40000	-0.43834	-0.064678	1.3448	0.40766	-0.18200	214.99
AA	Line 27	3.6620	59.00000	30.30000	-1.40000	-0.59496	-0.11493	1.5120	0.55332	-0.24703	214.99
		0.94826	72.23000	32.72000	-0.50000	0.0	0.0	0.0	0.0	0.0	215.54
		1.8925	71.46000	32.00000	-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	<		



GEA LIMITED (GEOTECHNICAL & ENV ASSOC)

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

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

Type/No.	Coordinates			Displacements			Angle of Line				
Name	Dist.	x	y	z	x	y	z	Horizontal displacement	Horizontal displacement	to x Axis	
AE	Line 31	3.9319	57.39000	25.70000	-1.46000	-1.0581	0.13226	1.9488	1.0663	0.0033637	172.69
		4.9149	56.32500	25.82500	-1.46000	-1.2914	0.16078	2.1454	1.3014	0.0047485	172.69
		5.8979	55.35000	25.95000	-1.46000	-1.5467	0.19149	2.3420	1.5485	0.0061332	172.69
		6.8809	54.37500	26.07500	-1.46000	-1.8272	0.22439	2.5386	1.8409	0.0097834	172.69
		7.8638	53.40000	26.20000	-1.46000	-2.1365	0.25897	2.7352	2.1521	0.014819	172.69
AF	Line 32	0.82651	61.15000	24.37500	-0.50000	-0.25900	0.052152	1.1456	-0.036388	-0.26168	266.53
		1.6530	61.10000	23.55000	-0.50000	-0.22982	0.063722	1.1170	-0.049372	-0.23727	266.53
		2.4795	61.05000	22.72500	-0.50000	-0.19105	0.067611	1.0769	-0.055929	-0.19479	266.53
		3.3061	61.00000	21.90000	-0.50000	-0.14450	0.062308	1.0260	-0.053452	-0.14801	266.53
		4.1327	60.95000	21.07500	-0.50000	-0.10793	0.057005	0.9750	-0.050985	-0.12002	266.53
AG	Line 33	0.80351	50.22500	25.70000	-1.46000	-0.38425	0.18595	1.2338	-0.21217	-0.21217	352.63
		1.6070	50.15000	24.90000	-1.46000	-0.080493	0.27368	1.8599	-0.049372	-0.049372	352.63
		2.4105	50.07500	24.10000	-1.46000	0.024375	0.4375	2.9000	-0.24291	-0.20325	352.63
		3.2140	50.00000	23.30000	-1.46000	0.065415	0.7356	3.3553	-0.21554	-0.13636	352.63
		4.0175	49.92500	22.50000	-1.46000	0.096457	1.0787	3.8093	-0.21217	-0.096457	352.63
AH	Line 34	0.80351	50.22500	25.70000	-1.46000	-0.38425	0.18595	1.2338	-0.21217	-0.21217	352.63
		1.6070	50.15000	24.90000	-1.46000	-0.080493	0.27368	1.8599	-0.049372	-0.049372	352.63
		2.4105	50.07500	24.10000	-1.46000	0.024375	0.4375	2.9000	-0.24291	-0.20325	352.63
		3.2140	50.00000	23.30000	-1.46000	0.065415	0.7356	3.3553	-0.21554	-0.13636	352.63
		4.0175	49.92500	22.50000	-1.46000	0.096457	1.0787	3.8093	-0.21217	-0.096457	352.63
AI	Line 35	0.80351	50.22500	25.70000	-1.46000	-0.38425	0.18595	1.2338	-0.21217	-0.21217	352.63
		1.6070	50.15000	24.90000	-1.46000	-0.080493	0.27368	1.8599	-0.049372	-0.049372	352.63
		2.4105	50.07500	24.10000	-1.46000	0.024375	0.4375	2.9000	-0.24291	-0.20325	352.63
		3.2140	50.00000	23.30000	-1.46000	0.065415	0.7356	3.3553	-0.21554	-0.13636	352.63
		4.0175	49.92500	22.50000	-1.46000	0.096457	1.0787	3.8093	-0.21217	-0.096457	352.63
AJ	Line 36	0.80351	50.22500	25.70000	-1.46000	-0.38425	0.18595	1.2338	-0.21217	-0.21217	352.63
		1.6070	50.15000	24.90000	-1.46000	-0.080493	0.27368	1.8599	-0.049372	-0.049372	352.63
		2.4105	50.07500	24.10000	-1.46000	0.024375	0.4375	2.9000	-0.24291	-0.20325	352.63
		3.2140	50.00000	23.30000	-1.46000	0.065415	0.7356	3.3553	-0.21554	-0.13636	352.63
		4.0175	49.92500	22.50000	-1.46000	0.096457	1.0787	3.8093	-0.21217	-0.096457	352.63
AK	Line 37	0.80351	50.22500	25.70000	-1.46000	-0.38425	0.18595	1.2338	-0.21217	-0.21217	352.63
		1.6070	50.15000	24.90000	-1.46000	-0.080493	0.27368	1.8599	-0.049372	-0.049372	352.63
		2.4105	50.07500	24.10000	-1.46000	0.024375	0.4375	2.9000	-0.24291	-0.20325	352.63
		3.2140	50.00000	23.30000	-1.46000	0.065415	0.7356	3.3553	-0.21554	-0.13636	352.63
		4.0175	49.92500	22.50000	-1.46000	0.096457	1.0787	3.8093	-0.21217	-0.096457	352.63
AL	Line 38	0.80351	50.22500	25.70000	-1.46000	-0.38425	0.18595	1.2338	-0.21217	-0.21217	352.63
		1.6070	50.15000	24.90000	-1.46000	-0.080493	0.27368	1.8599	-0.049372	-0.049372	352.63
		2.4105	50.07500	24.10000	-1.46000	0.024375	0.4375	2.9000	-0.24291	-0.20325	352.63
		3.2140	50.00000	23.30000	-1.46000	0.065415	0.7356	3.3553	-0.21554	-0.13636	352.63
		4.0175	49.92500	22.50000	-1.46000	0.096457	1.0787	3.8093	-0.21217	-0.096457	352.63
AM	Line 39	0.80351	50.22500	25.70000	-1.46000	-0.38425	0.18595	1.2338	-0.21217	-0.21217	352.63
		1.6070	50.15000	24.90000	-1.46000	-0.080493	0.27368	1.8599	-0.049372	-0.049372	352.63
		2.4105	50.07500	24.10000	-1.46000	0.024375	0.4375	2.9000	-0.24291	-0.20325	352.63
		3.2140	50.00000	23.30000	-1.46000	0.065415	0.7356	3.3553	-0.21554	-0.13636	352.63
		4.0175	49.92500	22.50000	-1.46000	0.096457	1.0787	3.8093	-0.21217	-0.096457	352.63
AN	Line 40	0.80351	50.22500	25.70000	-1.46000	-0.38425	0.18595	1.2338	-0.21217	-0.21217	352.63
		1.6070	50.15000	24.90000	-1.46000	-0.080493	0.27368	1.8599	-0.049372	-0.049372	352.63
		2.4105	50.07500	24.10000	-1.46000	0.024375	0.4375	2.9000	-0.24291	-0.20325	352.63
		3.2140	50.00000	23.30000	-1.46000	0.065415	0.7356	3.3553	-0.21554	-0.13636	352.63
		4.0175	49.92500	22.50000	-1.46000	0.096457	1.0787	3.8093	-0.21217	-0.096457	352.63
AO	Line 41	0.80351	50.22500	25.70000	-1.46000	-0.38425	0.18595	1.2338	-0.21217	-0.21217	352.63
		1.6070	50.15000	24.90000	-1.46000	-0.080493	0.27368	1.8599	-0.049372	-0.049372	352.63
		2.4105	50.07500	24.10000	-1.46000	0.024375	0.4375	2.9000	-0.24291	-0.20325	352.63
		3.2140	50.00000	23.30000	-1.46000	0.065415	0.7356	3.3553	-0.21554	-0.13636	352.63
		4.0175	49.92500	22.50000	-1.46000	0.096457	1.0787	3.8093	-0.21217	-0.096457	352.63
AP	Line 42	0.80351	50.22500	25.70000	-1.46000	-0.38425	0.18595	1.2338	-0.21217	-0.21217	352.63
		1.6070	50.15000	24.90000	-1.46000	-0.080493	0.27368	1.8599	-0.049372	-0.049372	352.63
		2.4105	50.07500	24.10000	-1.46000	0.024375	0.4375	2.9000	-0.24291	-0.20325	352.63
		3.2140	50.00000	23.30000	-1.46000	0.065415	0.7356	3.3553	-0.21554	-0.13636	352.63
		4.0175	49.92500	22.50000	-1.46000	0.096457	1.0787	3.8093	-0.21217	-0.096457	352.63
AQ	Line 43	0.80351	50.22500	25.70000	-1.46000	-0.38425	0.18595	1.2338	-0.21217	-0.21217	352.63
		1.6070	50.15000	24.90000	-1.46000	-0.080493	0.27368	1.8599	-0.049372	-0.049372	352.63
		2.4105	50.07500	24.10000	-1.46000	0.024375	0.4375	2.9000	-0.24291	-0.20325	352.63
		3.2140	50.00000	23.30000	-1.46000	0.065415	0.7356	3.3553	-0.21554	-0.13636	352.63
		4.0175	49.92500	22.50000	-1.46000	0.096457	1.0787	3.8093	-0.21217	-0.096457	352.63
AR	Line 44	0.80351	50.22500	25.70000	-1.46000	-0.38425	0.18595	1.2338	-0.21217	-0.21217	352.63
		1.6070	50.15000	24.90000	-1.46000	-0.080493	0.27368	1.8599	-0.049372	-0.049372	352.63
		2.4105	50.07500	24.10000	-1.46000	0.024375	0.4375	2.9000	-0.24291	-0.20325	352.63
		3.2140	50.00000	23.30000	-1.46000	0.065415	0.7356	3.3553	-0.21554	-0.13636	352.63
		4.0175	49.92500	22.50000	-1.46000	0.096457	1.0787	3.8093	-0.21217	-0.096457	352.63
AS	Line 45	0.80351	50.22500	25.70000	-1.46000	-0.38425	0.18595	1.2338	-0.21217	-0.21217	352.63
		1.6070	50.15000	24.90000	-1.46000	-0.080493	0.27368	1.8599	-0.049372	-0.049372	352.63
		2.4105	50.07500	24.10000	-1.46000	0.024375	0.4375	2.9000	-0.24291	-0.20325	352.63
		3.2140	50.00000	23.30000	-1.46000	0.065415	0.7356	3.3553	-0.21554	-0.13636	352.63
		4.0175	49.92500	22.50000	-1.46000	0.096457	1.0787	3.8093	-0.21217	-0.096457	352.63
AT	Line 46	0.80351	50.22500	25.70000	-1.46000	-0.38425	0.18595	1.2338	-0.21217	-0.21217	352.63
		1.6070	50.15000	24.90000	-1.46000	-0.080493	0.27368	1.8599	-0.049372	-0.049372	352.63
		2.4105	50.07500	24.10000	-1.46000	0.024375	0.4375	2.9000	-0.24291	-0.20325	352.63
		3.2140	50.00000	23.30000	-1.46000	0.065415	0.7356	3.3553	-0.21554	-0.13636	352.63
		4.0175	49.92500	22.50000	-1.46000	0.096457	1.0787	3.8093	-0.21217	-0.096457	352.63
AU	Line 47	0.80351	50.22500	25.70000	-1.46000	-0.38425	0.18595	1.2338	-0.21217	-0.21217	352.63
		1.6070	50.15000	24.90000	-1.46000	-0.080493	0.27368	1.8599	-0.049372	-0.049372	352.63
		2.4105	50.07500	24.10000	-1.46000	0.024375	0.4375	2.9000	-0.24291	-0.20325	352.63
		3.2140	50.00000	23.30000	-1.46000	0.065415	0.7356	3.3553	-0.21554	-0.13636	352.63
		4.0175	49.92500	22.50000	-1.46000	0.096457	1.0787	3.8093	-0.21217	-0.096457	352.63
AV	Line 48	0.80351	50.22500	25.70000	-1.46000	-0.38425	0.18595	1.2338	-0.21217	-0.21217	352.63
		1.6070	50.15000	24.90000	-1.46000	-0.080493	0.27368	1.8599	-0.049372	-0.049372	352.63
		2.4105	50.07500	24.10000	-1.46000	0.024375	0.4375	2.9000	-0.24291	-0.20325	352.63
		3.2140	50.00000	23.30000	-1.46000	0.065415	0.7356	3.3553	-0.21554	-0.13636	352.63
		4.0175	49.92500	22.50000	-1.46000	0.096457	1.0787	3.8093	-0.21217	-0.096457	352.63



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.
J16180		
Drg. Ref.		
Made by	Date 07-Mar-2017	Checked

Type/No.		Coordinates			Displacements					Angle of Line	
Name	Dist.	x	y	z	x	y	z	Horizontal displacement	Horizontal displacement	to x Axis	
AW	Line 49	7.3756	25.52000	31.64000	-2.00000	0.0	0.0	0.0	0.0	0.0	266.27
		8.2976	25.46000	30.72000	-2.00000	0.0	0.0	0.0	0.0	0.0	266.27
		9.2195	25.40000	29.80000	-2.00000	0.0	0.0	0.0	0.0	0.0	266.27
		1.8869	27.28333	29.80000	-2.00000	0.0	0.0	0.0	0.0	0.0	356.46
		1.8869	27.28333	29.68333	-2.00000	0.14632	0.076087	0.025690	0.14134	0.084988	356.46
		3.7739	29.16667	29.56667	-2.00000	0.51492	0.42748	0.14409	0.48751	0.45850	356.46
		5.6608	31.05000	29.45000	-2.00000	0.80491	0.90358	0.43160	0.74750	0.95162	356.46
		7.5478	32.93333	29.33333	-2.00000	1.0769	1.1083	0.79708	1.0063	1.1727	356.46
		9.4347	34.81667	29.21667	-2.00000	1.7097	1.1153	1.5716	1.6374	1.2189	356.46
		11.322	36.70000	29.10000	-2.00000	2.2329	1.0620	2.7362	2.1630	1.1981	356.46

Specific Building Damage Results - Horizontal Displacements

Structure: A | Sub-structure:

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

Structure: B | Sub-structure:

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

Structure: C | Sub-structure:

Dist.	Coordinates			Displacements		
	x	y	z	x	y	z
				Horizontal displacement along the Line	Horizontal displacement perpendicular to Line	
[m]	[m]	[m]	[m]	[mm]	[mm]	[mm]
0.0	25.90000	45.00000	-0.50000	0.0	0.0	0.0
0.92022	26.82000	44.98000	-0.50000	0.0	0.0	0.0
1.8404	27.74000	44.96000	-0.50000	0.18067	-0.065755	0.18205
2.7607	28.66000	44.94000	-0.50000	0.44079	-0.18971	0.44481
3.6809	29.58000	44.92000	-0.50000	0.67150	-0.35508	0.67905
4.6011	30.50000	44.90000	-0.50000	0.84440	-0.58235	0.85686

Structure: D | Sub-structure:

Dist.	Coordinates			Displacements		
	x	y	z	x	y	z
				Horizontal displacement along the Line	Horizontal displacement perpendicular to Line	
[m]	[m]	[m]	[m]	[mm]	[mm]	[mm]
0.0	30.50000	44.00000	-0.50000	0.84440	-0.58235	-0.59788
0.90015	30.48333	45.80000	-0.50000	0.58786	-0.58450	-0.59529
1.8003	30.46667	46.70000	-0.50000	0.36654	-0.47483	-0.48154
2.7005	30.45000	47.60000	-0.50000	0.18623	-0.29670	-0.30010
3.6006	30.43333	48.50000	-0.50000	0.040996	-0.077385	-0.078131
4.5008	30.41667	49.40000	-0.50000	0.0	0.0	0.0
5.4009	30.40000	50.30000	-0.50000	0.0	0.0	0.0

Structure: E | Sub-structure:

Dist.	Coordinates			Displacements		
	x	y	z	x	y	z
				Horizontal displacement along the Line	Horizontal displacement perpendicular to Line	
[m]	[m]	[m]	[m]	[mm]	[mm]	[mm]
0.0	30.40000	50.30000	-0.50000	0.0	0.0	0.0
0.83333	31.23333	50.30000	-0.50000	0.0	0.0	0.0
1.6667	32.06667	50.30000	-0.50000	0.13273	-0.064767	-0.064767
2.5000	32.90000	50.30000	-0.50000	0.34097	-0.19587	-0.19587

Structure: F | Sub-structure:

Dist.	Coordinates			Displacements		
	x	y	z	x	y	z
				Horizontal displacement along the Line	Horizontal displacement perpendicular to Line	
[m]	[m]	[m]	[m]	[mm]	[mm]	[mm]
0.0	32.90000	50.30000	-0.50000	0.34097	-0.19587	-0.19220
0.93085	32.91000	51.23000	-0.50000	0.17643	-0.13656	-0.13465
1.8611	32.92000	52.16000	-0.50000	0.015705	-0.015302	-0.015133
2.7902	32.93000	53.09000	-0.50000	0.0	0.0	0.0
3.7202	32.94000	54.02000	-0.50000	0.0	0.0	0.0
4.6503	32.95000	54.95000	-0.50000	0.0	0.0	0.0
5.5803	32.96000	55.88000	-0.50000	0.0	0.0	0.0
6.5104	32.97000	56.81000	-0.50000	0.0	0.0	0.0
7.4404	32.98000	57.74000	-0.50000	0.0	0.0	0.0
8.3705	32.99000	58.67000	-0.50000	0.0	0.0	0.0
9.3005	33.00000	59.60000	-0.50000	0.0	0.0	0.0

Structure: G | Sub-structure:

Dist.	Coordinates			Displacements		
	x	y	z	x	y	z
				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



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Dist.	Coordinates			Displacements		
	x	y	z	x	y	
				Horizontal displacement along the		Horizontal displacement perpendicular
				Line		to Line
				[mm]		[mm]
0.0	28.00000	59.60000	-0.50000	0.0	0.0	0.0
0.90062	28.03333	59.70000	-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: H | Sub-structure:

Dist.	Coordinates			Displacements		
	x	y	z	x	y	
				Horizontal displacement along the		Horizontal displacement perpendicular
				Line		to Line
				[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: I | Sub-structure:

Dist.	Coordinates			Displacements		
	x	y	z	x	y	
				Horizontal displacement along the		Horizontal displacement perpendicular
				Line		to Line
				[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		Horizontal displacement perpendicular
				Line		to Line
				[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
11.7000	44.70000	59.50000	-0.50000	0.0	0.0	0.0
13.6500	46.65000	59.50000	-0.50000	0.0	0.0	0.0
15.6000	48.60000	59.50000	-0.50000	0.0	0.0	0.0
17.5500	50.55000	59.50000	-0.50000	0.0	0.0	0.0
19.5000	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		Horizontal displacement perpendicular
				Line		to Line
				[mm]		[mm]
0.0	33.00000	52.20000	-0.50000	0.022302	0.022302	0.022302
0.98889	33.98889	52.20000	-0.50000	0.15477	0.15477	-0.19715
1.9778	34.97778	52.20000	-0.50000	0.21544	-0.37794	0.21544
2.9667	35.96667	52.20000	-0.50000	0.19169	-0.53985	0.19169
3.9556	36.95556	52.20000	-0.50000	0.090417	-0.64539	0.090417
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		Horizontal displacement perpendicular
				Line		to Line
				[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	0.0	-0.66667	0.0
6.3000	37.70000	53.10000	-0.50000	0.0	-0.36667	0.36667
7.2000	37.70000	52.20000	-0.50000	0.0	-0.66667	0.66667

Structure: M | Sub-structure:

Dist.	Coordinates			Displacements		
	x	y	z	x	y	
				Horizontal displacement along the		Horizontal displacement perpendicular
				Line		to Line
				[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	-0.36250	0.36247
7.3007	41.90000	52.20000	-1.50000	0.0	-0.66667	0.66660

Structure: N | Sub-structure:

Dist.	Coordinates			Displacements		
	x	y	z	x	y	
				Horizontal displacement along the		Horizontal displacement perpendicular
				Line		to Line
				[mm]		[mm]
0.0	45.50000	53.30000	-4.00000	-0.010479	-0.29865	-0.29865
0.87143	45.50000	54.17143	-4.00000	-258.87E-6	-0.0085056	-0.0085056
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