

| | | |
|-----------|-------------|---------|
| Job No. | Sheet No. | Rev. |
| | | |
| Drg. Ref. | | |
| Made by | Date | Checked |
| | 28-Feb-2023 | |
| | | Date |

Titles

Job No.:
Job Title:
Sub-title:
Calculation Heading:
Initials:
Checker:
Date Saved: 28-Feb-2023
Date Checked:
Notes:
File Name: GWPR5173 Xdisp Model.xdd
File Path: C:\Users\RobertTerrell\Ground and Water Limited\GWShare - Documents\Project Files\GWPR5151 - GWPR5200\GWPR5173 71 Avenue Road, London, NW8 6HP\Modelling\10 2023

History

| Date | Time | By | Notes |
|-------------|-------|---------------|-------|
| 28-Feb-2023 | 13:03 | RobertTerrell | New |
| 28-Feb-2023 | 15:31 | RobertTerrell | |
| 25-Apr-2023 | 15:38 | RobertTerrell | |
| 25-Apr-2023 | 17:11 | RobertTerrell | |
| 10-May-2023 | 14:51 | RobertTerrell | |
| 07-Aug-2023 | 15:26 | RobertTerrell | |
| 08-Aug-2023 | 10:48 | RobertTerrell | |
| 15-Aug-2023 | 16:42 | RobertTerrell | |
| 06-Oct-2023 | 15:16 | RobertTerrell | |
| 02-Nov-2023 | 12:27 | RobertTerrell | |
| 14-Nov-2023 | 09:30 | RobertTerrell | |

Displacement Lines

| Ref. | Name | x1 | y1 | z1 | x2 | y2 | z2 | Intervals | Surface |
|-------------|----------------------------|-----------|-----------|---------|-----------|-----------|---------|-----------|------------|
| Interpolate | Calculate | | | | | | | | |
| | | | | | | | | | type |
| | | | | | | | | | for |
| | | | | | | | | | tunnels |
| | | [m] | [m] | [m] | [m] | [m] | [m] | [No.] | |
| 1 | 69 Avenue Road NW Wall 1 | 12.50000 | -29.30000 | 0.00000 | 23.00000 | -29.30000 | 0.00000 | 8 | Surface No |
| Yes | | | | | | | | | |
| 2 | 69 Avenue Road NE Wall 1 | 23.00000 | -29.30000 | 0.00000 | 23.00000 | -41.90000 | 0.00000 | 10 | Surface No |
| Yes | | | | | | | | | |
| 3 | 69 Avenue Road NW Wall 2 | 23.00000 | -41.90000 | 0.00000 | 35.90000 | -41.90000 | 0.00000 | 10 | Surface No |
| Yes | | | | | | | | | |
| 4 | 69 Avenue Road NE Wall 2 | 35.90000 | -41.90000 | 0.00000 | 35.90000 | -49.40000 | 0.00000 | 5 | Surface No |
| Yes | | | | | | | | | |
| 5 | 69 Avenue Road SE Wall | 35.90000 | -49.40000 | 0.00000 | 12.50000 | -49.40000 | 0.00000 | 15 | Surface No |
| Yes | | | | | | | | | |
| 6 | 69 Avenue Road SW Wall | 12.50000 | -29.30000 | 0.00000 | 12.50000 | -49.40000 | 0.00000 | 15 | Surface No |
| Yes | | | | | | | | | |
| 7 | 37A Queens Grove NW Wall | -10.40000 | -1.00000 | 0.00000 | -24.10000 | -1.00000 | 0.00000 | 10 | Surface No |
| Yes | | | | | | | | | |
| 8 | 37A Queens Grove SW Wall | -24.10000 | -1.00000 | 0.00000 | -24.10000 | -16.30000 | 0.00000 | 10 | Surface No |
| Yes | | | | | | | | | |
| 9 | 37A Queens Grove NE Wall 1 | -10.40000 | -1.00000 | 0.00000 | -10.40000 | -7.70000 | 0.00000 | 5 | Surface No |
| Yes | | | | | | | | | |
| 10 | 37A Queens Grove SE Wall 1 | -10.40000 | -7.70000 | 0.00000 | -14.50000 | -7.70000 | 0.00000 | 3 | Surface No |
| Yes | | | | | | | | | |
| 11 | 37A Queens Grove NE Wall 2 | -14.50000 | -7.70000 | 0.00000 | -14.50000 | -12.90000 | 0.00000 | 4 | Surface No |
| Yes | | | | | | | | | |
| 12 | 37A Queens Grove SE Wall 2 | -14.50000 | -12.90000 | 0.00000 | -19.60000 | -12.90000 | 0.00000 | 4 | Surface No |
| Yes | | | | | | | | | |
| 13 | 37A Queens Grove NE Wall 3 | -19.60000 | -12.90000 | 0.00000 | -19.60000 | -16.30000 | 0.00000 | 3 | Surface No |
| Yes | | | | | | | | | |
| 14 | 37A Queens Grove SE Wall 3 | -19.60000 | -16.30000 | 0.00000 | -24.00000 | -16.30000 | 0.00000 | 3 | Surface No |
| Yes | | | | | | | | | |



GROUND AND WATER LIMITED

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| | | |
| Drg. Ref. | | |
| Made by | Date 28-Feb-2023 | Checked Date |

| Ref. | Name | x1 | y1 | z1 | x2 | y2 | z2 | Intervals | Surface |
|-------------|-----------|----|----|----|----|----|----|-----------|---------|
| Interpolate | Calculate | | | | | | | | |
| imported | | | | | | | | | type |

Displacement Grids

| Ref. | Name | Extrusion: | Base line | Base line | Base | Base | Base | Base | Base | Extrusion: | Extrusion: |
|-------------|-----------|------------|-----------|-----------|---------|----------|-----------|---------|-----------|------------|------------|
| Surface | Calculate | Direction | start: X | start: Y | line | line | line | line | line: | Distance | Intervals |
| type | | | | | start: | end: X | end: | end: | Intervals | | |
| for | | | | Z (level) | | Y | Z (level) | | | | |
| tunnels | | | [m] | [m] | [m] | [m] | [m] | [m] | [No.] | [m] | [No.] |
| 1 | 1 | Global Y | -20.00000 | -32.20000 | 0.00000 | 46.60000 | - | 0.00000 | 27 | 57.10000 | 18 |
| Surface Yes | | | | | | | | | | | |

Imported Displacements

| Set: | Set: | Result: | Coordinates: | Coordinates: | Coordinates: | Displacements: | Displacements: | Displacements: |
|------|----------|---------|--------------|--------------|--------------|----------------|----------------|----------------|
| Ref. | Name | Ref. | x | y | z | x | y | z |
| | | | [m] | [m] | [m] | [mm] | [mm] | [mm] |
| 1 | ID Set # | 1 | 20.00000 | -12.20100 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| | | 2 | 20.00000 | -13.31733 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| | | 3 | 20.00000 | -14.43367 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| | | 4 | 20.00000 | -15.55000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| | | 5 | 21.23333 | -15.54167 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| | | 6 | 22.46667 | -15.53333 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| | | 7 | 23.70000 | -15.52500 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| | | 8 | 24.93333 | -15.51667 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| | | 9 | 26.16667 | -15.50833 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| | | 10 | 27.40000 | -15.50000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| | | 11 | 27.40000 | -16.57500 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| | | 12 | 27.40000 | -17.65000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| | | 13 | 27.40000 | -18.72500 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| | | 14 | 27.40000 | -19.80000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| | | 15 | 27.40000 | -20.87500 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| | | 16 | 27.40000 | -21.95000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| | | 17 | 27.40000 | -23.02500 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| | | 18 | 27.40000 | -24.10000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| | | 19 | 26.16667 | -24.10000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| | | 20 | 24.93333 | -24.10000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| | | 21 | 23.70000 | -24.10000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| | | 22 | 22.46667 | -24.10000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| | | 23 | 21.23333 | -24.10000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| | | 24 | 20.00000 | -24.10000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| | | 25 | 20.00000 | -25.40000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| | | 26 | 20.00000 | -26.70000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| | | 27 | 20.00000 | -28.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| | | 28 | 20.00000 | -29.30000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| | | 29 | 21.00000 | -29.30000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| | | 30 | 22.00000 | -29.30000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| | | 31 | 23.00000 | -29.30000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 1,2,6 |
| | | 32 | 23.00000 | -30.56000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 1,2,6 |
| | | 33 | 23.00000 | -31.82000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 1,2,6 |
| | | 34 | 23.00000 | -33.08000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 1,2,6 |
| | | 35 | 23.00000 | -34.34000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 1,2,6 |
| | | 36 | 23.00000 | -35.60000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 1,2,6 |
| | | 37 | 23.00000 | -36.86000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 1,2,6 |
| | | 38 | 23.00000 | -38.12000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 1,2,6 |
| | | 39 | 23.00000 | -39.38000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 1,2,6 |
| | | 40 | 23.00000 | -40.64000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 1,2,6 |
| | | 41 | 23.00000 | -41.90000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 1,2,6 |
| | | 42 | 24.29000 | -41.90000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 1,2,6 |
| | | 43 | 25.58000 | -41.90000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 1,2,6 |
| | | 44 | 26.87000 | -41.90000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 1,2,6 |
| | | 45 | 28.16000 | -41.90000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 1,2,6 |
| | | 46 | 29.45000 | -41.90000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 1,2,6 |
| | | 47 | 30.74000 | -41.90000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 1,2,6 |
| | | 48 | 32.03000 | -41.90000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 1,2,6 |
| | | 49 | 33.32000 | -41.90000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 1,2,6 |



GROUND AND WATER LIMITED

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| Drg. Ref. | | |
| Made by | Date | Checked |
| | 28-Feb-2023 | |
| | | Date |

| Set: Ref. | Set: Name | Result: Ref. | Coordinates: x [m] | Coordinates: y [m] | Coordinates: z [m] | Displacements: x [mm] | Displacements: y [mm] | Displacements: z [mm] | |
|-----------|-----------|--------------|--------------------|--------------------|--------------------|-----------------------|-----------------------|-----------------------|-------|
| | | 50 | 34.61000 | -41.90000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 1,2,6 |
| | | 51 | 35.90000 | -41.90000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 1,2,6 |
| | | 52 | 35.90000 | -43.40000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 1,2,6 |
| | | 53 | 35.90000 | -44.90000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 1,2,6 |
| | | 54 | 35.90000 | -46.40000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 1,2,6 |
| | | 55 | 35.90000 | -47.90000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 1,2,6 |
| | | 56 | 35.90000 | -49.40000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 1,2,6 |
| | | 57 | 34.34000 | -49.40000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 1,2,6 |
| | | 58 | 32.78000 | -49.40000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 1,2,6 |
| | | 59 | 31.22000 | -49.40000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 1,2,6 |
| | | 60 | 29.66000 | -49.40000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 1,2,6 |
| | | 61 | 28.10000 | -49.40000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 1,2,6 |
| | | 62 | 26.54000 | -49.40000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 1,2,6 |
| | | 63 | 24.98000 | -49.40000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 1,2,6 |
| | | 64 | 23.42000 | -49.40000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 1,2,6 |
| | | 65 | 21.86000 | -49.40000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 1,2,6 |
| | | 66 | 20.30000 | -49.40000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 1,2,6 |
| | | 67 | 18.74000 | -49.40000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 1,2,6 |
| | | 68 | 17.18000 | -49.40000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 1,2,6 |
| | | 69 | 15.62000 | -49.40000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 1,2,6 |
| | | 70 | 14.06000 | -49.40000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 1,2,6 |
| | | 71 | 12.50000 | -49.40000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 1,2,6 |
| | | 72 | 12.50000 | -47.78265 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | |
| | | 73 | 12.50000 | -46.16530 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | |
| | | 74 | 12.50000 | -44.54796 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | |
| | | 75 | 12.50000 | -42.93061 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | |
| | | 76 | 12.50000 | -41.31326 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | |
| | | 77 | 12.50000 | -39.69591 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | |
| | | 78 | 12.50000 | -38.07857 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | |
| | | 79 | 12.50000 | -36.46122 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | |
| | | 80 | 12.50000 | -34.84387 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | |
| | | 81 | 12.50000 | -33.22652 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | |
| | | 82 | 12.50000 | -31.60917 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | |
| | | 83 | 12.50000 | -29.99183 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | |
| | | 84 | 12.50000 | -28.37448 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | |
| | | 85 | 12.50000 | -26.75713 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | |
| | | 86 | 12.50000 | -25.13978 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | |
| | | 87 | 12.50000 | -23.52243 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | |
| | | 88 | 12.50000 | -21.90509 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | |
| | | 89 | 12.50000 | -20.28774 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | |
| | | 90 | 12.50000 | -18.67039 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | |
| | | 91 | 12.50000 | -17.05304 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | |
| | | 92 | 12.50000 | -15.43570 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | |
| | | 93 | 12.50000 | -13.81835 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | |
| | | 94 | 12.50000 | -12.20100 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | |
| | | 95 | -10.40000 | -1.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 1,2,6 |
| | | 96 | -11.77000 | -1.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 1,2,6 |
| | | 97 | -13.14000 | -1.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 1,2,6 |
| | | 98 | -14.51000 | -1.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 1,2,6 |
| | | 99 | -15.88000 | -1.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 1,2,6 |
| | | 100 | -17.25000 | -1.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 1,2,6 |
| | | 101 | -18.62000 | -1.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 1,2,6 |
| | | 102 | -19.99000 | -1.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 1,2,6 |
| | | 103 | -21.36000 | -1.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 1,2,6 |
| | | 104 | -22.73000 | -1.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 1,2,6 |
| | | 105 | -24.10000 | -1.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 1,2,6 |
| | | 106 | -24.10000 | -2.53000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 1,2,6 |
| | | 107 | -24.10000 | -4.06000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 1,2,6 |
| | | 108 | -24.10000 | -5.59000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 1,2,6 |
| | | 109 | -24.10000 | -7.12000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 1,2,6 |
| | | 110 | -24.10000 | -8.65000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 1,2,6 |
| | | 111 | -24.10000 | -10.18000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 1,2,6 |
| | | 112 | -24.10000 | -11.71000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 1,2,6 |
| | | 113 | -24.10000 | -13.24000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 1,2,6 |
| | | 114 | -24.10000 | -14.77000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 1,2,6 |
| | | 115 | -24.10000 | -16.30000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 1,2,6 |
| | | 116 | -10.40000 | -2.34000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 1,2,6 |
| | | 117 | -10.40000 | -3.68000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 1,2,6 |
| | | 118 | -10.40000 | -5.02000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 1,2,6 |
| | | 119 | -10.40000 | -6.36000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 1,2,6 |
| | | 120 | -10.40000 | -7.70000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 1,2,6 |
| | | 121 | -11.76667 | -7.70000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 1,2,6 |
| | | 122 | -13.13333 | -7.70000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 1,2,6 |
| | | 123 | -14.50000 | -7.70000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 1,2,6 |
| | | 124 | -14.50000 | -9.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 1,2,6 |
| | | 125 | -14.50000 | -10.30000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 1,2,6 |
| | | 126 | -14.50000 | -11.60000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 1,2,6 |



**GROUND AND WATER
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| Job No. | Sheet No. | Rev. |
| | | |
| Drg. Ref. | | |
| Made by | Date 28-Feb-2023 | Checked Date |

| Set: Ref. | Set: Name | Result: Ref. | Coordinates: x [m] | Coordinates: y [m] | Coordinates: z [m] | Displacements: x [mm] | Displacements: y [mm] | Displacements: z [mm] | |
|-----------|-----------|--------------|--------------------|--------------------|--------------------|-----------------------|-----------------------|-----------------------|-------|
| | | 127 | -14.50000 | -12.90000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 1,2,6 |
| | | 128 | -15.77500 | -12.90000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 1,2,6 |
| | | 129 | -17.05000 | -12.90000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 1,2,6 |
| | | 130 | -18.32500 | -12.90000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 1,2,6 |
| | | 131 | -19.60000 | -12.90000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 1,2,6 |
| | | 132 | -19.60000 | -14.03333 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 1,2,6 |
| | | 133 | -19.60000 | -15.16667 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 1,2,6 |
| | | 134 | -19.60000 | -16.30000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 1,2,6 |
| | | 135 | -21.06667 | -16.30000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 1,2,6 |
| | | 136 | -22.53333 | -16.30000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 1,2,6 |
| | | 137 | -24.00000 | -16.30000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 1,2,6 |
| | | 138 | 0.00000 | -12.20000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 | |
| | | 139 | 0.00000 | -11.25000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 | |
| | | 140 | 0.00000 | -10.30000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 | |
| | | 141 | 0.00000 | -9.35000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 | |
| | | 142 | 0.00000 | -8.40000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 | |
| | | 143 | 0.00000 | -7.45000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 | |
| | | 144 | 0.00000 | -6.50000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 | |
| | | 145 | 0.00000 | -5.55000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 | |
| | | 146 | 0.00000 | -4.60000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 | |
| | | 147 | 0.00000 | -3.65000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 | |
| | | 148 | 0.00000 | -2.70000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 | |
| | | 149 | 0.00000 | -1.75000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 | |
| | | 150 | 0.00000 | -0.80000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 | |
| | | 151 | 0.00000 | 0.15000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 | |
| | | 152 | 0.00000 | 1.10000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 | |
| | | 153 | 0.00000 | 2.05000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 | |
| | | 154 | 0.00000 | 3.00000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 | |
| | | 155 | 0.00000 | 3.95000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 | |
| | | 156 | 0.00000 | 4.90000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 | |
| | | 157 | 0.98519 | -12.20000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 | |
| | | 158 | 0.98519 | -11.25000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 | |
| | | 159 | 0.98519 | -10.30000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 | |
| | | 160 | 0.98519 | -9.35000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 | |
| | | 161 | 0.98519 | -8.40000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 | |
| | | 162 | 0.98519 | -7.45000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 | |
| | | 163 | 0.98519 | -6.50000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 | |
| | | 164 | 0.98519 | -5.55000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 | |
| | | 165 | 0.98519 | -4.60000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 | |
| | | 166 | 0.98519 | -3.65000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 | |
| | | 167 | 0.98519 | -2.70000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 | |
| | | 168 | 0.98519 | -1.75000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 | |
| | | 169 | 0.98519 | -0.80000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 | |
| | | 170 | 0.98519 | 0.15000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 | |
| | | 171 | 0.98519 | 1.10000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 | |
| | | 172 | 0.98519 | 2.05000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 | |
| | | 173 | 0.98519 | 3.00000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 | |
| | | 174 | 0.98519 | 3.95000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 | |
| | | 175 | 0.98519 | 4.90000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 | |
| | | 176 | 1.97037 | -12.20000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 | |
| | | 177 | 1.97037 | -11.25000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 | |
| | | 178 | 1.97037 | -10.30000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 | |
| | | 179 | 1.97037 | -9.35000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 | |
| | | 180 | 1.97037 | -8.40000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 | |
| | | 181 | 1.97037 | -7.45000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 | |
| | | 182 | 1.97037 | -6.50000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 | |
| | | 183 | 1.97037 | -5.55000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 | |
| | | 184 | 1.97037 | -4.60000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 | |
| | | 185 | 1.97037 | -3.65000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 | |
| | | 186 | 1.97037 | -2.70000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 | |
| | | 187 | 1.97037 | -1.75000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 | |
| | | 188 | 1.97037 | -0.80000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 | |
| | | 189 | 1.97037 | 0.15000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 | |
| | | 190 | 1.97037 | 1.10000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 | |
| | | 191 | 1.97037 | 2.05000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 | |
| | | 192 | 1.97037 | 3.00000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 | |
| | | 193 | 1.97037 | 3.95000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 | |
| | | 194 | 1.97037 | 4.90000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 | |
| | | 195 | 2.95556 | -12.20000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 | |
| | | 196 | 2.95556 | -11.25000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 | |
| | | 197 | 2.95556 | -10.30000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 | |
| | | 198 | 2.95556 | -9.35000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 | |
| | | 199 | 2.95556 | -8.40000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 | |
| | | 200 | 2.95556 | -7.45000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 | |
| | | 201 | 2.95556 | -6.50000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 | |
| | | 202 | 2.95556 | -5.55000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 | |
| | | 203 | 2.95556 | -4.60000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 | |



**GROUND AND WATER
LIMITED**

| | | |
|-----------|---------------------|-----------------|
| Job No. | Sheet No. | Rev. |
| | | |
| Drg. Ref. | | |
| Made by | Date 28-Feb-2023 | Checked Date |

| Set: Ref. | Set: Name | Result: Ref. | Coordinates: x [m] | Coordinates: y [m] | Coordinates: z [m] | Displacements: x [mm] | Displacements: y [mm] | Displacements: z [mm] |
|-----------|-----------|--------------|--------------------|--------------------|--------------------|-----------------------|-----------------------|-----------------------|
| | | 204 | 2.95556 | -3.65000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 205 | 2.95556 | -2.70000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 206 | 2.95556 | -1.75000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 207 | 2.95556 | -0.80000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 208 | 2.95556 | 0.15000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 209 | 2.95556 | 1.10000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 210 | 2.95556 | 2.05000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 211 | 2.95556 | 3.00000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 212 | 2.95556 | 3.95000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 213 | 2.95556 | 4.90000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 214 | 3.94074 | -12.20000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 215 | 3.94074 | -11.25000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 216 | 3.94074 | -10.30000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 217 | 3.94074 | -9.35000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 218 | 3.94074 | -8.40000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 219 | 3.94074 | -7.45000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 220 | 3.94074 | -6.50000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 221 | 3.94074 | -5.55000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 222 | 3.94074 | -4.60000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 223 | 3.94074 | -3.65000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 224 | 3.94074 | -2.70000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 225 | 3.94074 | -1.75000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 226 | 3.94074 | -0.80000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 227 | 3.94074 | 0.15000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 228 | 3.94074 | 1.10000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 229 | 3.94074 | 2.05000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 230 | 3.94074 | 3.00000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 231 | 3.94074 | 3.95000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 232 | 3.94074 | 4.90000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 233 | 4.92593 | -12.20000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 234 | 4.92593 | -11.25000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 235 | 4.92593 | -10.30000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 236 | 4.92593 | -9.35000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 237 | 4.92593 | -8.40000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 238 | 4.92593 | -7.45000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 239 | 4.92593 | -6.50000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 240 | 4.92593 | -5.55000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 241 | 4.92593 | -4.60000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 242 | 4.92593 | -3.65000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 243 | 4.92593 | -2.70000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 244 | 4.92593 | -1.75000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 245 | 4.92593 | -0.80000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 246 | 4.92593 | 0.15000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 247 | 4.92593 | 1.10000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 248 | 4.92593 | 2.05000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 249 | 4.92593 | 3.00000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 250 | 4.92593 | 3.95000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 251 | 4.92593 | 4.90000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 252 | 5.91111 | -12.20000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 253 | 5.91111 | -11.25000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 254 | 5.91111 | -10.30000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 255 | 5.91111 | -9.35000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 256 | 5.91111 | -8.40000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 257 | 5.91111 | -7.45000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 258 | 5.91111 | -6.50000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 259 | 5.91111 | -5.55000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 260 | 5.91111 | -4.60000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 261 | 5.91111 | -3.65000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 262 | 5.91111 | -2.70000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 263 | 5.91111 | -1.75000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 264 | 5.91111 | -0.80000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 265 | 5.91111 | 0.15000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 266 | 5.91111 | 1.10000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 267 | 5.91111 | 2.05000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 268 | 5.91111 | 3.00000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 269 | 5.91111 | 3.95000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 270 | 5.91111 | 4.90000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 271 | 6.89630 | -12.20000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 272 | 6.89630 | -11.25000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 273 | 6.89630 | -10.30000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 274 | 6.89630 | -9.35000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 275 | 6.89630 | -8.40000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 276 | 6.89630 | -7.45000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 277 | 6.89630 | -6.50000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 278 | 6.89630 | -5.55000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 279 | 6.89630 | -4.60000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 280 | 6.89630 | -3.65000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |



**GROUND AND WATER
LIMITED**

| | | |
|-----------|---------------------|-----------------|
| Job No. | Sheet No. | Rev. |
| Drg. Ref. | | |
| Made by | Date 28-Feb-2023 | Checked Date |

| Set: Ref. | Set: Name | Result: Ref. | Coordinates: x [m] | Coordinates: y [m] | Coordinates: z [m] | Displacements: x [mm] | Displacements: y [mm] | Displacements: z [mm] |
|-----------|-----------|--------------|--------------------|--------------------|--------------------|-----------------------|-----------------------|-----------------------|
| | | 281 | 6.89630 | -2.70000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 282 | 6.89630 | -1.75000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 283 | 6.89630 | -0.80000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 284 | 6.89630 | 0.15000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 285 | 6.89630 | 1.10000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 286 | 6.89630 | 2.05000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 287 | 6.89630 | 3.00000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 288 | 6.89630 | 3.95000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 289 | 6.89630 | 4.90000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 290 | 7.88148 | -12.20000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 291 | 7.88148 | -11.25000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 292 | 7.88148 | -10.30000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 293 | 7.88148 | -9.35000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 294 | 7.88148 | -8.40000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 295 | 7.88148 | -7.45000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 296 | 7.88148 | -6.50000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 297 | 7.88148 | -5.55000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 298 | 7.88148 | -4.60000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 299 | 7.88148 | -3.65000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 300 | 7.88148 | -2.70000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 301 | 7.88148 | -1.75000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 302 | 7.88148 | -0.80000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 303 | 7.88148 | 0.15000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 304 | 7.88148 | 1.10000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 305 | 7.88148 | 2.05000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 306 | 7.88148 | 3.00000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 307 | 7.88148 | 3.95000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 308 | 7.88148 | 4.90000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 309 | 8.86667 | -12.20000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 310 | 8.86667 | -11.25000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 311 | 8.86667 | -10.30000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 312 | 8.86667 | -9.35000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 313 | 8.86667 | -8.40000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 314 | 8.86667 | -7.45000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 315 | 8.86667 | -6.50000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 316 | 8.86667 | -5.55000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 317 | 8.86667 | -4.60000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 318 | 8.86667 | -3.65000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 319 | 8.86667 | -2.70000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 320 | 8.86667 | -1.75000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 321 | 8.86667 | -0.80000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 322 | 8.86667 | 0.15000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 323 | 8.86667 | 1.10000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 324 | 8.86667 | 2.05000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 325 | 8.86667 | 3.00000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 326 | 8.86667 | 3.95000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 327 | 8.86667 | 4.90000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 328 | 9.85185 | -12.20000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 329 | 9.85185 | -11.25000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 330 | 9.85185 | -10.30000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 331 | 9.85185 | -9.35000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 332 | 9.85185 | -8.40000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 333 | 9.85185 | -7.45000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 334 | 9.85185 | -6.50000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 335 | 9.85185 | -5.55000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 336 | 9.85185 | -4.60000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 337 | 9.85185 | -3.65000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 338 | 9.85185 | -2.70000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 339 | 9.85185 | -1.75000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 340 | 9.85185 | -0.80000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 341 | 9.85185 | 0.15000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 342 | 9.85185 | 1.10000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 343 | 9.85185 | 2.05000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 344 | 9.85185 | 3.00000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 345 | 9.85185 | 3.95000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 346 | 9.85185 | 4.90000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 347 | 10.83704 | -12.20000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 348 | 10.83704 | -11.25000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 349 | 10.83704 | -10.30000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 350 | 10.83704 | -9.35000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 351 | 10.83704 | -8.40000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 352 | 10.83704 | -7.45000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 353 | 10.83704 | -6.50000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 354 | 10.83704 | -5.55000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 355 | 10.83704 | -4.60000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 356 | 10.83704 | -3.65000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 357 | 10.83704 | -2.70000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |



**GROUND AND WATER
LIMITED**

| | | |
|-----------|---------------------|-----------------|
| Job No. | Sheet No. | Rev. |
| Drg. Ref. | | |
| Made by | Date 28-Feb-2023 | Checked Date |

| Set: Ref. | Set: Name | Result: Ref. | Coordinates: x [m] | Coordinates: y [m] | Coordinates: z [m] | Displacements: x [mm] | Displacements: y [mm] | Displacements: z [mm] |
|-----------|-----------|--------------|--------------------|--------------------|--------------------|-----------------------|-----------------------|-----------------------|
| | | 358 | 10.83704 | -1.75000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 359 | 10.83704 | -0.80000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 360 | 10.83704 | 0.15000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 361 | 10.83704 | 1.10000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 362 | 10.83704 | 2.05000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 363 | 10.83704 | 3.00000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 364 | 10.83704 | 3.95000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 365 | 10.83704 | 4.90000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 366 | 11.82222 | -12.20000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 367 | 11.82222 | -11.25000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 368 | 11.82222 | -10.30000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 369 | 11.82222 | -9.35000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 370 | 11.82222 | -8.40000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 371 | 11.82222 | -7.45000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 372 | 11.82222 | -6.50000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 373 | 11.82222 | -5.55000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 374 | 11.82222 | -4.60000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 375 | 11.82222 | -3.65000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 376 | 11.82222 | -2.70000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 377 | 11.82222 | -1.75000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 378 | 11.82222 | -0.80000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 379 | 11.82222 | 0.15000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 380 | 11.82222 | 1.10000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 381 | 11.82222 | 2.05000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 382 | 11.82222 | 3.00000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 383 | 11.82222 | 3.95000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 384 | 11.82222 | 4.90000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 385 | 12.80741 | -12.20000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 386 | 12.80741 | -11.25000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 387 | 12.80741 | -10.30000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 388 | 12.80741 | -9.35000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 389 | 12.80741 | -8.40000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 390 | 12.80741 | -7.45000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 391 | 12.80741 | -6.50000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 392 | 12.80741 | -5.55000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 393 | 12.80741 | -4.60000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 394 | 12.80741 | -3.65000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 395 | 12.80741 | -2.70000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 396 | 12.80741 | -1.75000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 397 | 12.80741 | -0.80000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 398 | 12.80741 | 0.15000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 399 | 12.80741 | 1.10000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 400 | 12.80741 | 2.05000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 401 | 12.80741 | 3.00000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 402 | 12.80741 | 3.95000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 403 | 12.80741 | 4.90000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 404 | 13.79259 | -12.20000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 405 | 13.79259 | -11.25000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 406 | 13.79259 | -10.30000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 407 | 13.79259 | -9.35000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 408 | 13.79259 | -8.40000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 409 | 13.79259 | -7.45000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 410 | 13.79259 | -6.50000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 411 | 13.79259 | -5.55000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 412 | 13.79259 | -4.60000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 413 | 13.79259 | -3.65000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 414 | 13.79259 | -2.70000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 415 | 13.79259 | -1.75000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 416 | 13.79259 | -0.80000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 417 | 13.79259 | 0.15000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 418 | 13.79259 | 1.10000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 419 | 13.79259 | 2.05000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 420 | 13.79259 | 3.00000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 421 | 13.79259 | 3.95000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 422 | 13.79259 | 4.90000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 423 | 14.77778 | -12.20000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 424 | 14.77778 | -11.25000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 425 | 14.77778 | -10.30000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 426 | 14.77778 | -9.35000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 427 | 14.77778 | -8.40000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 428 | 14.77778 | -7.45000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 429 | 14.77778 | -6.50000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 430 | 14.77778 | -5.55000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 431 | 14.77778 | -4.60000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 432 | 14.77778 | -3.65000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 433 | 14.77778 | -2.70000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 434 | 14.77778 | -1.75000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |



GROUND AND WATER LIMITED

| | | |
|-----------|-------------|---------|
| Job No. | Sheet No. | Rev. |
| | | |
| Drg. Ref. | | |
| Made by | Date | Checked |
| | 28-Feb-2023 | |
| | | Date |

| Set: Ref. | Set: Name | Result: Ref. | Coordinates: x [m] | Coordinates: y [m] | Coordinates: z [m] | Displacements: x [mm] | Displacements: y [mm] | Displacements: z [mm] |
|-----------|-----------|--------------|--------------------|--------------------|--------------------|-----------------------|-----------------------|-----------------------|
| | | 435 | 14.77778 | -0.80000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 436 | 14.77778 | 0.15000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 437 | 14.77778 | 1.10000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 438 | 14.77778 | 2.05000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 439 | 14.77778 | 3.00000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 440 | 14.77778 | 3.95000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 441 | 14.77778 | 4.90000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 442 | 15.76296 | -12.20000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 443 | 15.76296 | -11.25000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 444 | 15.76296 | -10.30000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 445 | 15.76296 | -9.35000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 446 | 15.76296 | -8.40000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 447 | 15.76296 | -7.45000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 448 | 15.76296 | -6.50000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 449 | 15.76296 | -5.55000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 450 | 15.76296 | -4.60000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 451 | 15.76296 | -3.65000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 452 | 15.76296 | -2.70000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 453 | 15.76296 | -1.75000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 454 | 15.76296 | -0.80000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 455 | 15.76296 | 0.15000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 456 | 15.76296 | 1.10000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 457 | 15.76296 | 2.05000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 458 | 15.76296 | 3.00000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 459 | 15.76296 | 3.95000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 460 | 15.76296 | 4.90000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 461 | 16.74815 | -12.20000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 462 | 16.74815 | -11.25000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 463 | 16.74815 | -10.30000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 464 | 16.74815 | -9.35000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 465 | 16.74815 | -8.40000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 466 | 16.74815 | -7.45000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 467 | 16.74815 | -6.50000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 468 | 16.74815 | -5.55000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 469 | 16.74815 | -4.60000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 470 | 16.74815 | -3.65000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 471 | 16.74815 | -2.70000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 472 | 16.74815 | -1.75000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 473 | 16.74815 | -0.80000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 474 | 16.74815 | 0.15000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 475 | 16.74815 | 1.10000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 476 | 16.74815 | 2.05000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 477 | 16.74815 | 3.00000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 478 | 16.74815 | 3.95000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 479 | 16.74815 | 4.90000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 480 | 17.73333 | -12.20000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 481 | 17.73333 | -11.25000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 482 | 17.73333 | -10.30000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 483 | 17.73333 | -9.35000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 484 | 17.73333 | -8.40000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 485 | 17.73333 | -7.45000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 486 | 17.73333 | -6.50000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 487 | 17.73333 | -5.55000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 488 | 17.73333 | -4.60000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 489 | 17.73333 | -3.65000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 490 | 17.73333 | -2.70000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 491 | 17.73333 | -1.75000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 492 | 17.73333 | -0.80000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 493 | 17.73333 | 0.15000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 494 | 17.73333 | 1.10000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 495 | 17.73333 | 2.05000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 496 | 17.73333 | 3.00000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 497 | 17.73333 | 3.95000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 498 | 17.73333 | 4.90000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 499 | 18.71852 | -12.20000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 500 | 18.71852 | -11.25000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 501 | 18.71852 | -10.30000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 502 | 18.71852 | -9.35000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 503 | 18.71852 | -8.40000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 504 | 18.71852 | -7.45000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 505 | 18.71852 | -6.50000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 506 | 18.71852 | -5.55000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 507 | 18.71852 | -4.60000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 508 | 18.71852 | -3.65000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 509 | 18.71852 | -2.70000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 510 | 18.71852 | -1.75000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 511 | 18.71852 | -0.80000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |



**GROUND AND WATER
LIMITED**

| | | |
|-----------|---------------------|-----------------|
| Job No. | Sheet No. | Rev. |
| | | |
| Drg. Ref. | | |
| Made by | Date 28-Feb-2023 | Checked Date |

| Set: Ref. | Set: Name | Result: Ref. | Coordinates: x [m] | Coordinates: y [m] | Coordinates: z [m] | Displacements: x [mm] | Displacements: y [mm] | Displacements: z [mm] |
|-----------|-----------|--------------|--------------------|--------------------|--------------------|-----------------------|-----------------------|-----------------------|
| | | 512 | 18.71852 | 0.15000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 513 | 18.71852 | 1.10000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 514 | 18.71852 | 2.05000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 515 | 18.71852 | 3.00000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 516 | 18.71852 | 3.95000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 517 | 18.71852 | 4.90000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 518 | 19.70370 | -12.20000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 519 | 19.70370 | -11.25000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 520 | 19.70370 | -10.30000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 521 | 19.70370 | -9.35000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 522 | 19.70370 | -8.40000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 523 | 19.70370 | -7.45000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 524 | 19.70370 | -6.50000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 525 | 19.70370 | -5.55000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 526 | 19.70370 | -4.60000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 527 | 19.70370 | -3.65000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 528 | 19.70370 | -2.70000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 529 | 19.70370 | -1.75000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 530 | 19.70370 | -0.80000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 531 | 19.70370 | 0.15000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 532 | 19.70370 | 1.10000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 533 | 19.70370 | 2.05000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 534 | 19.70370 | 3.00000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 535 | 19.70370 | 3.95000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 536 | 19.70370 | 4.90000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 537 | 20.68889 | -12.20000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 538 | 20.68889 | -11.25000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 539 | 20.68889 | -10.30000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 540 | 20.68889 | -9.35000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 541 | 20.68889 | -8.40000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 542 | 20.68889 | -7.45000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 543 | 20.68889 | -6.50000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 544 | 20.68889 | -5.55000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 545 | 20.68889 | -4.60000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 546 | 20.68889 | -3.65000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 547 | 20.68889 | -2.70000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 548 | 20.68889 | -1.75000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 549 | 20.68889 | -0.80000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 550 | 20.68889 | 0.15000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 551 | 20.68889 | 1.10000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 552 | 20.68889 | 2.05000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 553 | 20.68889 | 3.00000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 554 | 20.68889 | 3.95000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 555 | 20.68889 | 4.90000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 556 | 21.67407 | -12.20000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 557 | 21.67407 | -11.25000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 558 | 21.67407 | -10.30000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 559 | 21.67407 | -9.35000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 560 | 21.67407 | -8.40000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 561 | 21.67407 | -7.45000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 562 | 21.67407 | -6.50000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 563 | 21.67407 | -5.55000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 564 | 21.67407 | -4.60000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 565 | 21.67407 | -3.65000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 566 | 21.67407 | -2.70000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 567 | 21.67407 | -1.75000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 568 | 21.67407 | -0.80000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 569 | 21.67407 | 0.15000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 570 | 21.67407 | 1.10000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 571 | 21.67407 | 2.05000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 572 | 21.67407 | 3.00000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 573 | 21.67407 | 3.95000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 574 | 21.67407 | 4.90000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 575 | 22.65926 | -12.20000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 576 | 22.65926 | -11.25000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 577 | 22.65926 | -10.30000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 578 | 22.65926 | -9.35000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 579 | 22.65926 | -8.40000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 580 | 22.65926 | -7.45000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 581 | 22.65926 | -6.50000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 582 | 22.65926 | -5.55000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 583 | 22.65926 | -4.60000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 584 | 22.65926 | -3.65000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 585 | 22.65926 | -2.70000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 586 | 22.65926 | -1.75000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 587 | 22.65926 | -0.80000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 588 | 22.65926 | 0.15000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |



GROUND AND WATER LIMITED

| | | |
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| Job No. | Sheet No. | Rev. |
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| Drg. Ref. | | |
| Made by | Date 28-Feb-2023 | Checked Date |

| Set: Ref. | Set: Name | Result: Ref. | Coordinates: x [m] | Coordinates: y [m] | Coordinates: z [m] | Displacements: x [mm] | Displacements: y [mm] | Displacements: z [mm] |
|-----------|-----------|--------------|--------------------|--------------------|--------------------|-----------------------|-----------------------|-----------------------|
| | | 589 | 22.65926 | 1.10000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 590 | 22.65926 | 2.05000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 591 | 22.65926 | 3.00000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 592 | 22.65926 | 3.95000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 593 | 22.65926 | 4.90000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 594 | 23.64444 | -12.20000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 595 | 23.64444 | -11.25000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 596 | 23.64444 | -10.30000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 597 | 23.64444 | -9.35000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 598 | 23.64444 | -8.40000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 599 | 23.64444 | -7.45000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 600 | 23.64444 | -6.50000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 601 | 23.64444 | -5.55000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 602 | 23.64444 | -4.60000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 603 | 23.64444 | -3.65000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 604 | 23.64444 | -2.70000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 605 | 23.64444 | -1.75000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 606 | 23.64444 | -0.80000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 607 | 23.64444 | 0.15000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 608 | 23.64444 | 1.10000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 609 | 23.64444 | 2.05000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 610 | 23.64444 | 3.00000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 611 | 23.64444 | 3.95000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 612 | 23.64444 | 4.90000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 613 | 24.62963 | -12.20000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 614 | 24.62963 | -11.25000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 615 | 24.62963 | -10.30000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 616 | 24.62963 | -9.35000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 617 | 24.62963 | -8.40000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 618 | 24.62963 | -7.45000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 619 | 24.62963 | -6.50000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 620 | 24.62963 | -5.55000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 621 | 24.62963 | -4.60000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 622 | 24.62963 | -3.65000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 623 | 24.62963 | -2.70000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 624 | 24.62963 | -1.75000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 625 | 24.62963 | -0.80000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 626 | 24.62963 | 0.15000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 627 | 24.62963 | 1.10000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 628 | 24.62963 | 2.05000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 629 | 24.62963 | 3.00000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 630 | 24.62963 | 3.95000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 631 | 24.62963 | 4.90000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 632 | 25.61481 | -12.20000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 633 | 25.61481 | -11.25000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 634 | 25.61481 | -10.30000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 635 | 25.61481 | -9.35000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 636 | 25.61481 | -8.40000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 637 | 25.61481 | -7.45000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 638 | 25.61481 | -6.50000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 639 | 25.61481 | -5.55000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 640 | 25.61481 | -4.60000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 641 | 25.61481 | -3.65000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 642 | 25.61481 | -2.70000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 643 | 25.61481 | -1.75000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 644 | 25.61481 | -0.80000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 645 | 25.61481 | 0.15000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 646 | 25.61481 | 1.10000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 647 | 25.61481 | 2.05000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 648 | 25.61481 | 3.00000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 649 | 25.61481 | 3.95000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 650 | 25.61481 | 4.90000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 651 | 26.60000 | -12.20000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 652 | 26.60000 | -11.25000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 653 | 26.60000 | -10.30000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 654 | 26.60000 | -9.35000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 655 | 26.60000 | -8.40000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 656 | 26.60000 | -7.45000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 657 | 26.60000 | -6.50000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 658 | 26.60000 | -5.55000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 659 | 26.60000 | -4.60000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 660 | 26.60000 | -3.65000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 661 | 26.60000 | -2.70000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 662 | 26.60000 | -1.75000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 663 | 26.60000 | -0.80000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 664 | 26.60000 | 0.15000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 665 | 26.60000 | 1.10000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |

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| Job No. | Sheet No. | Rev. |
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| Drg. Ref. | | |
| Made by | Date | Checked |
| | 28-Feb-2023 | |
| | | Date |

| Set: Ref. | Set: Name | Result: Ref. | Coordinates: x [m] | Coordinates: y [m] | Coordinates: z [m] | Displacements: x [mm] | Displacements: y [mm] | Displacements: z [mm] |
|-----------|-----------|--------------|--------------------|--------------------|--------------------|-----------------------|-----------------------|-----------------------|
| | | 666 | 26.60000 | 2.05000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 667 | 26.60000 | 3.00000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 668 | 26.60000 | 3.95000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |
| | | 669 | 26.60000 | 4.90000 | -6.40000 | 0.00000 | 0.00000 | 0.00000 |

1 - Data point coincident with displacement location. Its displacement has been added to those calculated by Xdisp.
 2 - Data point coincident with horizontal movement calculation point for a specific building. Its displacement has been added before performing building damage calculations.
 6 - Data point coincident with vertical movement calculation point for a specific building. Its displacement has been added before performing building damage calculations.

Polygonal Excavations

Ref. 1
Excavation Name: Excavation Curve
 Surface level [m]: 0.0
 Contribution: Positive

| Corner | x [m] | y [m] | Base Level [m] | Arc Enabled | Stiffened | Prev. Side: d [m] | Prev. Side: p1 [%] | Prev. Side: p2* [%] | Next Side: d [m] | Next Side: p1 [%] | Next Side: p2* [%] |
|--------|--------|---------|----------------|-------------|-----------|-------------------|--------------------|---------------------|------------------|-------------------|--------------------|
| 1 | 0.0 | 4.9000 | -6.2000 | Yes | No | - | - | - | - | - | - |
| 2 | 26.600 | 4.9000 | -6.2000 | Yes | No | - | - | - | - | - | - |
| 3 | 26.600 | -12.200 | -6.2000 | Yes | No | - | - | - | - | - | - |
| 4 | 0.0 | -12.200 | -6.2000 | Yes | No | - | - | - | - | - | - |

| Side | x1 [m] | y1 [m] | x2 [m] | y2 [m] | G.M. Curve: Vertical | G.M. Curve: Horizontal |
|------|--------|---------|--------|---------|--|--|
| 1 | 0.0 | 4.9000 | 26.600 | 4.9000 | Exc. in front of high stiffness wall in stiff clay (CIRIA C760 Fig. 6.15(b)) | Exc. in front of high stiffness wall in stiff clay (CIRIA C760 Fig. 6.15(a)) |
| 2 | 26.600 | 4.9000 | 26.600 | -12.200 | Exc. in front of high stiffness wall in stiff clay (CIRIA C760 Fig. 6.15(b)) | Exc. in front of high stiffness wall in stiff clay (CIRIA C760 Fig. 6.15(a)) |
| 3 | 26.600 | -12.200 | 0.0 | -12.200 | Exc. in front of high stiffness wall in stiff clay (CIRIA C760 Fig. 6.15(b)) | Exc. in front of high stiffness wall in stiff clay (CIRIA C760 Fig. 6.15(a)) |
| 4 | 0.0 | -12.200 | 0.0 | 4.9000 | Exc. in front of high stiffness wall in stiff clay (CIRIA C760 Fig. 6.15(b)) | Exc. in front of high stiffness wall in stiff clay (CIRIA C760 Fig. 6.15(a)) |

Ref. 2
Excavation Name: Installation Curve
 Surface level [m]: 0.0
 Contribution: Positive

| Corner | x [m] | y [m] | Base Level [m] | Arc Enabled | Stiffened | Prev. Side: d [m] | Prev. Side: p1 [%] | Prev. Side: p2* [%] | Next Side: d [m] | Next Side: p1 [%] | Next Side: p2* [%] |
|--------|--------|---------|----------------|-------------|-----------|-------------------|--------------------|---------------------|------------------|-------------------|--------------------|
| 1 | 0.0 | 4.9000 | -10.000 | Yes | No | - | - | - | - | - | - |
| 2 | 26.600 | 4.9000 | -10.000 | Yes | No | - | - | - | - | - | - |
| 3 | 26.600 | -12.200 | -10.000 | Yes | No | - | - | - | - | - | - |
| 4 | 0.0 | -12.200 | -10.000 | Yes | No | - | - | - | - | - | - |

| Side | x1 [m] | y1 [m] | x2 [m] | y2 [m] | G.M. Curve: Vertical | G.M. Curve: Horizontal |
|------|--------|---------|--------|---------|--|--|
| 1 | 0.0 | 4.9000 | 26.600 | 4.9000 | Inst. of contiguous bored pile wall in stiff clay (CIRIA C760 Fig. 6.8(b)) | Inst. of contiguous bored pile wall in stiff clay (CIRIA C760 Fig. 6.8(a)) |
| 2 | 26.600 | 4.9000 | 26.600 | -12.200 | Inst. of contiguous bored pile wall in stiff clay (CIRIA C760 Fig. 6.8(b)) | Inst. of contiguous bored pile wall in stiff clay (CIRIA C760 Fig. 6.8(a)) |
| 3 | 26.600 | -12.200 | 0.0 | -12.200 | Inst. of contiguous bored pile wall in stiff clay (CIRIA C760 Fig. 6.8(b)) | Inst. of contiguous bored pile wall in stiff clay (CIRIA C760 Fig. 6.8(a)) |
| 4 | 0.0 | -12.200 | 0.0 | 4.9000 | Inst. of contiguous bored pile wall in stiff clay (CIRIA C760 Fig. 6.8(b)) | Inst. of contiguous bored pile wall in stiff clay (CIRIA C760 Fig. 6.8(a)) |

| | | | | | | |
|-------------|-----------|-----------|-----------|-----------|-----------------------------|-------------------------------|
| Side | x1 | y1 | x2 | y2 | G.M. Curve: Vertical | G.M. Curve: Horizontal |
| | [m] | [m] | [m] | [m] | | |

Circular Excavations

Vertical Ground Movement Curves

Curve Name: Inst. of contiguous bored pile wall in stiff clay (CIRIA C760 Fig. 6.8(b))

Coordinates: [Distance from wall / wall depth or max. excavation depth (x), Depth / wall depth or max. excavation depth (y), Settlement / wall depth or max. excavation depth (z) (%)]

[0.000,0.000,0.040] [2.000,0.000,0.000]

Curve Fitting Method: Polynomial

x Order: 1

y Order: 0

Polynomial: z = -2.0E-2x + 4.0E-2

Coeff. of Determination: 1.0

Curve Name: Exc. in front of high stiffness wall in stiff clay (CIRIA C760 Fig. 6.15(b))

Coordinates: [Distance from wall / wall depth or max. excavation depth (x), Depth / wall depth or max. excavation depth (y), Settlement / wall depth or max. excavation depth (z) (%)]

[0.000,0.000,0.039] [0.100,0.000,0.049] [0.200,0.000,0.056] [0.300,0.000,0.062] [0.400,0.000,0.067] [0.500,0.000,0.070] [0.600,0.000,0.072] [0.700,0.000,0.073] [0.800,0.000,0.073] [0.900,0.000,0.072] [1.000,0.000,0.070] [1.100,0.000,0.068] [1.200,0.000,0.065] [1.300,0.000,0.061] [1.400,0.000,0.058] [1.500,0.000,0.054] [1.600,0.000,0.050] [1.700,0.000,0.046] [1.800,0.000,0.042] [1.900,0.000,0.038] [2.000,0.000,0.034] [2.100,0.000,0.030] [2.200,0.000,0.027] [2.300,0.000,0.023] [2.400,0.000,0.020] [2.500,0.000,0.017] [2.600,0.000,0.014] [2.700,0.000,0.012] [2.800,0.000,0.010] [2.900,0.000,0.008] [3.000,0.000,0.007] [3.100,0.000,0.005] [3.200,0.000,0.004] [3.300,0.000,0.004] [3.400,0.000,0.003] [3.500,0.000,0.002] [3.600,0.000,0.002] [3.700,0.000,0.002] [3.800,0.000,0.001] [3.900,0.000,0.001] [4.000,0.000,0.000]

Curve Fitting Method: Polynomial

x Order: 4

y Order: 0

Polynomial: z = -2.6455E-3x⁴ + 2.8495E-2x³ - 1.0051E-1x² + 1.0569E-1x + 3.8990E-2

Coeff. of Determination: 9.9991E-1

Horizontal Ground Movement Curves

Curve Name: Inst. of contiguous bored pile wall in stiff clay (CIRIA C760 Fig. 6.8(a))

Coordinates: [Distance from wall / wall depth or max. excavation depth (x), Depth / wall depth or max. excavation depth (y), Horizontal movement / wall depth or max. excavation depth (z) (%)]

[0.000,0.000,0.041] [0.050,0.000,0.038] [0.100,0.000,0.036] [0.150,0.000,0.034] [0.200,0.000,0.032] [0.250,0.000,0.030] [0.300,0.000,0.029] [0.350,0.000,0.027] [0.400,0.000,0.025] [0.450,0.000,0.023] [0.500,0.000,0.022] [0.550,0.000,0.020] [0.600,0.000,0.019] [0.650,0.000,0.018] [0.700,0.000,0.016] [0.750,0.000,0.015] [0.800,0.000,0.014] [0.850,0.000,0.013] [0.900,0.000,0.011] [0.950,0.000,0.010] [1.000,0.000,0.009] [1.050,0.000,0.008] [1.100,0.000,0.007] [1.150,0.000,0.006] [1.200,0.000,0.005] [1.250,0.000,0.004] [1.300,0.000,0.004] [1.350,0.000,0.003] [1.400,0.000,0.002] [1.450,0.000,0.001] [1.500,0.000,0.000]

Curve Fitting Method: Polynomial

x Order: 3

y Order: 0

Polynomial: z = -4.2486E-3x³ + 1.9096E-2x² - 4.6221E-2x + 4.0729E-2

Coeff. of Determination: 1.0000

Curve Name: Exc. in front of high stiffness wall in stiff clay (CIRIA C760 Fig. 6.15(a))

Coordinates: [Distance from wall / wall depth or max. excavation depth (x), Depth / wall depth or max. excavation depth (y), Horizontal movement / wall depth or max. excavation depth (z) (%)]

[0.000,0.000,0.150] [4.000,0.000,0.000]

Curve Fitting Method: Polynomial

x Order: 1

y Order: 0

Polynomial: z = -3.75E-2x + 1.50E-1

Coeff. of Determination: 1.00

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| Job No. | Sheet No. | Rev. |
| | | |
| Drg. Ref. | | |
| Made by | Date 28-Feb-2023 | Checked Date |

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|------|-----------|-----------|-----------|-----------|----------------------|------------------------|
| Side | x1 [m] | y1 [m] | x2 [m] | y2 [m] | G.M. Curve: Vertical | G.M. Curve: Horizontal |
|------|-----------|-----------|-----------|-----------|----------------------|------------------------|

Damage Category Strains

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

Specific Buildings - Geometry

| Ref. | Building Damage Category Name | Sub-Building Poisson's Name Ratio | Displacement Line E/G | Distance Along Line: Start | Distance Along Line: End | Vertical Offsets from Vertical Movement Calculations | Vertical Displacement Limit Sensitivity |
|-----------------------|-------------------------------------|--|-----------------------------|-------------------------------------|-----------------------------------|--|--|
| | | | | [m] | [m] | [m] | [mm] |
| 1 | Building 1 | Sub # | 69 Avenue Road NW Wall 1 | 0.00000 | 10.50000 | 0.0 | 0.10000 |
| Burland Strain Limits | | | 0.20000 2.6000 | | | | |
| 2 | Building 2 | Sub # | 69 Avenue Road NE Wall 1 | 0.00000 | 12.59900 | 0.0 | 0.10000 |
| Burland Strain Limits | | | 0.20000 2.6000 | | | | |
| 3 | Building 3 | Sub # | 69 Avenue Road NW Wall 2 | 0.00000 | 12.89900 | 0.0 | 0.10000 |
| Burland Strain Limits | | | 0.20000 2.6000 | | | | |
| 4 | Building 4 | Sub # | 69 Avenue Road NE Wall 2 | 0.00000 | 7.50000 | 0.0 | 0.10000 |
| Burland Strain Limits | | | 0.20000 2.6000 | | | | |
| 5 | Building 5 | Sub # | 69 Avenue Road SE Wall | 0.00000 | 23.40000 | 0.0 | 0.10000 |
| Burland Strain Limits | | | 0.20000 2.6000 | | | | |
| 6 | Building 6 | Sub # | 69 Avenue Road SW Wall | 0.00000 | 20.09900 | 0.0 | 0.10000 |
| Burland Strain Limits | | | 0.20000 2.6000 | | | | |
| 7 | Building 7 | Sub # | 37A Queens Grove NW Wall | 0.00000 | 13.70000 | 0.0 | 0.10000 |
| Burland Strain Limits | | | 0.20000 2.6000 | | | | |
| 8 | Building 8 | Sub # | 37A Queens Grove SW Wall | 0.00000 | 15.30000 | 0.0 | 0.10000 |
| Burland Strain Limits | | | 0.20000 2.6000 | | | | |
| 9 | Building 9 | Sub # | 37A Queens Grove NE Wall 1 | 0.00000 | 6.70000 | 0.0 | 0.10000 |
| Burland Strain Limits | | | 0.20000 2.6000 | | | | |
| 10 | Building 10 | Sub # | 37A Queens Grove SE Wall 1 | 0.00000 | 4.10000 | 0.0 | 0.10000 |
| Burland Strain Limits | | | 0.20000 2.6000 | | | | |
| 11 | Building 11 | Sub # | 37A Queens Grove NE Wall 2 | 0.00000 | 5.20000 | 0.0 | 0.10000 |
| Burland Strain Limits | | | 0.20000 2.6000 | | | | |
| 12 | Building 12 | Sub # | 37A Queens Grove SE Wall 2 | 0.00000 | 5.10000 | 0.0 | 0.10000 |
| Burland Strain Limits | | | 0.20000 2.6000 | | | | |
| 13 | Building 13 | Sub # | 37A Queens Grove NE Wall 3 | 0.00000 | 3.40000 | 0.0 | 0.10000 |
| Burland Strain Limits | | | 0.20000 2.6000 | | | | |
| 14 | Building 14 | Sub # | 37A Queens Grove SE Wall 3 | 0.00000 | 4.39900 | 0.0 | 0.10000 |
| Burland Strain Limits | | | 0.20000 2.6000 | | | | |

Specific Buildings - Bending Parameters

| Ref. | Building Name | Sub-Building Name | Height Default | Hogging: Hogging: Hogging: | Sagging: Sagging: Sagging: | Sagging: Sagging: Sagging: | | | | |
|------|------------------|----------------------|-------------------|--|---|---|--|---|---|--------|
| | | | [m] | 2nd Mom. of Area (per unit width) [m³] | Dist. of Bending Strain from N.A. [m] | Dist. of N.A. from Edge of Beam in Tension [m] | 2nd Mom. of Area (per unit width) [m³] | Dist. of Bending Strain from N.A. [m] | Dist. of N.A. from Edge of Beam in Tension [m] | |
| 1 | Building 1 | Sub # | 10.000 | Yes | 333.33 | 10.000 | 10.000 | 83.333 | 5.0000 | 5.0000 |
| 2 | Building 2 | Sub # | 10.000 | Yes | 333.33 | 10.000 | 10.000 | 83.333 | 5.0000 | 5.0000 |
| 3 | Building 3 | Sub # | 10.000 | Yes | 333.33 | 10.000 | 10.000 | 83.333 | 5.0000 | 5.0000 |
| 4 | Building 4 | Sub # | 10.000 | Yes | 333.33 | 10.000 | 10.000 | 83.333 | 5.0000 | 5.0000 |
| 5 | Building 5 | Sub # | 10.000 | Yes | 333.33 | 10.000 | 10.000 | 83.333 | 5.0000 | 5.0000 |
| 6 | Building 6 | Sub # | 10.000 | Yes | 333.33 | 10.000 | 10.000 | 83.333 | 5.0000 | 5.0000 |
| 7 | Building 7 | Sub # | 8.0000 | Yes | 170.67 | 8.0000 | 8.0000 | 42.667 | 4.0000 | 4.0000 |
| 8 | Building 8 | Sub # | 8.0000 | Yes | 170.67 | 8.0000 | 8.0000 | 42.667 | 4.0000 | 4.0000 |
| 9 | Building 9 | Sub # | 8.0000 | Yes | 170.67 | 8.0000 | 8.0000 | 42.667 | 4.0000 | 4.0000 |
| 10 | Building 10 | Sub # | 8.0000 | Yes | 170.67 | 8.0000 | 8.0000 | 42.667 | 4.0000 | 4.0000 |
| 11 | Building 11 | Sub # | 8.0000 | Yes | 170.67 | 8.0000 | 8.0000 | 42.667 | 4.0000 | 4.0000 |
| 12 | Building 12 | Sub # | 8.0000 | Yes | 170.67 | 8.0000 | 8.0000 | 42.667 | 4.0000 | 4.0000 |
| 13 | Building 13 | Sub # | 8.0000 | Yes | 170.67 | 8.0000 | 8.0000 | 42.667 | 4.0000 | 4.0000 |

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| Ref. | Building Name | Sub-Building Name | Height Default | Hogging: | Hogging: | Hogging: | Sagging: | Sagging: | Sagging: | |
|------|---------------|-------------------|----------------|------------------|------------------|--------------------|------------------|------------------|--------------------|--------|
| | | | | 2nd Mom. of Area | Dist. of Bending | Dist. of N.A. from | 2nd Mom. of Area | Dist. of Bending | Dist. of N.A. from | |
| 14 | Building 14 | Sub # | 8.0000 | Yes | 170.67 | 8.0000 | 8.0000 | 42.667 | 4.0000 | 4.0000 |

Specific Buildings - Segment Combinations

| Stage: | Stage: | Name | Building: | Building: | Sub-Building | Vertical | Segment Start | Length | Curvature |
|------------------------------|------------|------|-------------|-----------|--------------|---|--------------------------------------|--------|-----------|
| Combined Segment | Ref. | Ref. | Name | Name | | Offset from Line for Vertical Movement Calculations [m] | [m] | [m] | |
| 0 | Base Model | 1 | Building 1 | Sub # | | 0.0 | No combined segments for this stage, | | |
| specific building and offset | 2 | | Building 2 | Sub # | | 0.0 | No combined segments for this stage, | | |
| specific building and offset | 3 | | Building 3 | Sub # | | 0.0 | No combined segments for this stage, | | |
| specific building and offset | 4 | | Building 4 | Sub # | | 0.0 | No combined segments for this stage, | | |
| specific building and offset | 5 | | Building 5 | Sub # | | 0.0 | No combined segments for this stage, | | |
| specific building and offset | 6 | | Building 6 | Sub # | | 0.0 | No combined segments for this stage, | | |
| specific building and offset | 7 | | Building 7 | Sub # | | 0.0 | No combined segments for this stage, | | |
| specific building and offset | 8 | | Building 8 | Sub # | | 0.0 | No combined segments for this stage, | | |
| specific building and offset | 9 | | Building 9 | Sub # | | 0.0 | 12 | 0.0 | 0.0 None |
| 1 | | 12 | Building 12 | Sub # | | 0.0 | No combined segments for this stage, | | |
| specific building and offset | 13 | | Building 13 | Sub # | | 0.0 | No combined segments for this stage, | | |
| specific building and offset | 14 | | Building 14 | Sub # | | 0.0 | No combined segments for this stage, | | |
| specific building and offset | | | | | | | | | |

Warnings

1 Multiple excavations have been specified. Displacements resulting from each excavation are summed with no account taken of the interactions between excavations (e.g. overlapping zones of influence or 'shielding' of one excavation by another).

Errors

None

Displacement Results - Displacement Lines

| Stage: | Stage: | Disp. | Disp. Line: Name | Chainage | x | y | z | δx | δy |
|--------|------------|------------|--------------------------|----------|----------|-----------|---------|------|--------|
| δz | δH// | δHperp. | Angle | | | | | | |
| Ref. | Name | Line: Ref. | | [m] | [m] | [m] | [m] | [mm] | [mm] |
| [mm] | [mm] | [mm] | [°] | | | | | | |
| 0 | Base Model | 1 | 69 Avenue Road NW Wall 1 | 0.0 | 12.50000 | -29.30000 | 0.00000 | 0.0 | 2.8875 |
| 1.2437 | 0.0 | 2.8875 | 0.0 | | | | | | |
| 1.2437 | 0.0 | 2.8875 | 0.0 | 1.3125 | 13.81250 | -29.30000 | 0.00000 | 0.0 | 2.8875 |
| 1.2437 | 0.0 | 2.8875 | 0.0 | 2.6250 | 15.12500 | -29.30000 | 0.00000 | 0.0 | 2.8875 |
| 1.2437 | 0.0 | 2.8875 | 0.0 | 3.9375 | 16.43750 | -29.30000 | 0.00000 | 0.0 | 2.8875 |



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| Stage: δz Ref. | Stage: δH // Name | Disp. $\delta H_{perp.}$ Line: Ref. | Disp. Angle | Line: Name | Chainage | x | y | z | δx | δy |
|------------------------------|---------------------------------|--|----------------|--------------------------|----------|----------|-----------|---------|------------|------------|
| 1.2437 | 0.0 | 2.8875 | 0.0 | | 5.2500 | 17.75000 | -29.30000 | 0.00000 | 0.0 | 2.8875 |
| 1.2437 | 0.0 | 2.8875 | 0.0 | | 6.5625 | 19.06250 | -29.30000 | 0.00000 | 0.0 | 2.8875 |
| 1.2437 | 0.0 | 2.8875 | 0.0 | | 7.8750 | 20.37500 | -29.30000 | 0.00000 | 0.0 | 2.8875 |
| 1.2437 | 0.0 | 2.8875 | 0.0 | | 9.1875 | 21.68750 | -29.30000 | 0.00000 | 0.0 | 2.8875 |
| 1.2437 | 0.0 | 2.8875 | 0.0 | | 10.5000 | 23.00000 | -29.30000 | 0.00000 | 0.0 | 2.8875 |
| 1.2437 | 0.0 | 2.8875 | 0.0 | * | | | | | | |
| 1.2437 | -2.8875 | 0.0 | 270.00 | 69 Avenue Road NE Wall 1 | 0.0 | 23.00000 | -29.30000 | 0.00000 | 0.0 | 2.8875 |
| 0.77052 | -2.4150 | 0.0 | 270.00 | * | 1.2600 | 23.00000 | -30.56000 | 0.00000 | 0.0 | 2.4150 |
| 0.36567 | -1.9425 | 0.0 | 270.00 | * | 2.5200 | 23.00000 | -31.82000 | 0.00000 | 0.0 | 1.9425 |
| 0.19288 | -1.4700 | 0.0 | 270.00 | * | 3.7800 | 23.00000 | -33.08000 | 0.00000 | 0.0 | 1.4700 |
| 0.13322 | -0.99750 | 0.0 | 270.00 | * | 5.0400 | 23.00000 | -34.34000 | 0.00000 | 0.0 | 0.99750 |
| 0.085026 | -0.52500 | 0.0 | 270.00 | * | 6.3000 | 23.00000 | -35.60000 | 0.00000 | 0.0 | 0.52500 |
| 0.015925 | -0.052500 | 0.0 | 270.00 | * | 7.5600 | 23.00000 | -36.86000 | 0.00000 | 0.0 | 0.052500 |
| 0.0 | 0.0 | 0.0 | 270.00 | * | 8.8200 | 23.00000 | -38.12000 | 0.00000 | 0.0 | 0.0 |
| 0.0 | 0.0 | 0.0 | 270.00 | * | 10.080 | 23.00000 | -39.38000 | 0.00000 | 0.0 | 0.0 |
| 0.0 | 0.0 | 0.0 | 270.00 | * | 11.340 | 23.00000 | -40.64000 | 0.00000 | 0.0 | 0.0 |
| 0.0 | 0.0 | 0.0 | 270.00 | * | 12.600 | 23.00000 | -41.90000 | 0.00000 | 0.0 | 0.0 |
| 0.0 | 0.0 | 3 | 0.0 | 69 Avenue Road NW Wall 2 | 0.0 | 23.00000 | -41.90000 | 0.00000 | 0.0 | 0.0 |
| 0.0 | 0.0 | 0.0 | 0.0 | * | 1.2900 | 24.29000 | -41.90000 | 0.00000 | 0.0 | 0.0 |
| 0.0 | 0.0 | 0.0 | 0.0 | * | 2.5800 | 25.58000 | -41.90000 | 0.00000 | 0.0 | 0.0 |
| 0.0 | 0.0 | 0.0 | 0.0 | * | 3.8700 | 26.87000 | -41.90000 | 0.00000 | 0.0 | 0.0 |
| 0.0 | 0.0 | 0.0 | 0.0 | * | 5.1600 | 28.16000 | -41.90000 | 0.00000 | 0.0 | 0.0 |
| 0.0 | 0.0 | 0.0 | 0.0 | * | 6.4500 | 29.45000 | -41.90000 | 0.00000 | 0.0 | 0.0 |
| 0.0 | 0.0 | 0.0 | 0.0 | * | 7.7400 | 30.74000 | -41.90000 | 0.00000 | 0.0 | 0.0 |
| 0.0 | 0.0 | 0.0 | 0.0 | * | 9.0300 | 32.03000 | -41.90000 | 0.00000 | 0.0 | 0.0 |
| 0.0 | 0.0 | 0.0 | 0.0 | * | 10.320 | 33.32000 | -41.90000 | 0.00000 | 0.0 | 0.0 |
| 0.0 | 0.0 | 0.0 | 0.0 | * | 11.610 | 34.61000 | -41.90000 | 0.00000 | 0.0 | 0.0 |
| 0.0 | 0.0 | 0.0 | 0.0 | * | 12.900 | 35.90000 | -41.90000 | 0.00000 | 0.0 | 0.0 |
| 0.0 | 0.0 | 4 | 0.0 | 69 Avenue Road NE Wall 2 | 0.0 | 35.90000 | -41.90000 | 0.00000 | 0.0 | 0.0 |
| 0.0 | 0.0 | 0.0 | 270.00 | * | 1.5000 | 35.90000 | -43.40000 | 0.00000 | 0.0 | 0.0 |
| 0.0 | 0.0 | 0.0 | 270.00 | * | 3.0000 | 35.90000 | -44.90000 | 0.00000 | 0.0 | 0.0 |
| 0.0 | 0.0 | 0.0 | 270.00 | * | 4.5000 | 35.90000 | -46.40000 | 0.00000 | 0.0 | 0.0 |
| 0.0 | 0.0 | 0.0 | 270.00 | * | 6.0000 | 35.90000 | -47.90000 | 0.00000 | 0.0 | 0.0 |
| 0.0 | 0.0 | 0.0 | 270.00 | * | 7.5000 | 35.90000 | -49.40000 | 0.00000 | 0.0 | 0.0 |
| 0.0 | 0.0 | 5 | 0.0 | 69 Avenue Road SE Wall | 0.0 | 35.90000 | -49.40000 | 0.00000 | 0.0 | 0.0 |
| 0.0 | 0.0 | 0.0 | 180.00 | * | 1.5600 | 34.34000 | -49.40000 | 0.00000 | 0.0 | 0.0 |
| 0.0 | 0.0 | 0.0 | 180.00 | * | 3.1200 | 32.78000 | -49.40000 | 0.00000 | 0.0 | 0.0 |
| 0.0 | 0.0 | 0.0 | 180.00 | * | 4.6800 | 31.22000 | -49.40000 | 0.00000 | 0.0 | 0.0 |
| 0.0 | 0.0 | 0.0 | 180.00 | * | 6.2400 | 29.66000 | -49.40000 | 0.00000 | 0.0 | 0.0 |
| 0.0 | 0.0 | 0.0 | 180.00 | * | 7.8000 | 28.10000 | -49.40000 | 0.00000 | 0.0 | 0.0 |



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| | | |
| Drg. Ref. | | |
| Made by | Date 28-Feb-2023 | Checked Date |

| Stage: δz Ref. | Stage: $\delta H//$ Name | Disp. $\delta H_{perp.}$ Line: Ref. | Disp. Angle | Line: Name | Chainage | x | y | z | δx | δy |
|------------------------------|--------------------------------|--|------------------------------------|------------|----------|-----------|-----------|---------|------------|------------|
| 0.0 | 0.0 | 0.0 | 180.00 | * | | | | | | |
| | | | | | 9.3600 | 26.54000 | -49.40000 | 0.00000 | 0.0 | 0.0 |
| 0.0 | 0.0 | 0.0 | 180.00 | * | 10.920 | 24.98000 | -49.40000 | 0.00000 | 0.0 | 0.0 |
| 0.0 | 0.0 | 0.0 | 180.00 | * | 12.480 | 23.42000 | -49.40000 | 0.00000 | 0.0 | 0.0 |
| 0.0 | 0.0 | 0.0 | 180.00 | * | 14.040 | 21.86000 | -49.40000 | 0.00000 | 0.0 | 0.0 |
| 0.0 | 0.0 | 0.0 | 180.00 | * | 15.600 | 20.30000 | -49.40000 | 0.00000 | 0.0 | 0.0 |
| 0.0 | 0.0 | 0.0 | 180.00 | * | 17.160 | 18.74000 | -49.40000 | 0.00000 | 0.0 | 0.0 |
| 0.0 | 0.0 | 0.0 | 180.00 | * | 18.720 | 17.18000 | -49.40000 | 0.00000 | 0.0 | 0.0 |
| 0.0 | 0.0 | 0.0 | 180.00 | * | 20.280 | 15.62000 | -49.40000 | 0.00000 | 0.0 | 0.0 |
| 0.0 | 0.0 | 0.0 | 180.00 | * | 21.840 | 14.06000 | -49.40000 | 0.00000 | 0.0 | 0.0 |
| 0.0 | 0.0 | 0.0 | 180.00 | * | 23.400 | 12.50000 | -49.40000 | 0.00000 | 0.0 | 0.0 |
| 0.0 | 0.0 | 0.0 | 180.00 | * | | | | | | |
| 1.2437 | -2.8875 | 6 0.0 | 69 Avenue Road SW Wall 270.00 | | 0.0 | 12.50000 | -29.30000 | 0.00000 | 0.0 | 2.8875 |
| 0.74288 | -2.3850 | 0.0 | 270.00 | | 1.3400 | 12.50000 | -30.64000 | 0.00000 | 0.0 | 2.3850 |
| 0.31860 | -1.8825 | 0.0 | 270.00 | | 2.6800 | 12.50000 | -31.98000 | 0.00000 | 0.0 | 1.8825 |
| 0.17935 | -1.3800 | 0.0 | 270.00 | | 4.0200 | 12.50000 | -33.32000 | 0.00000 | 0.0 | 1.3800 |
| 0.12106 | -0.87750 | 0.0 | 270.00 | | 5.3600 | 12.50000 | -34.66000 | 0.00000 | 0.0 | 0.87750 |
| 0.067079 | -0.37500 | 0.0 | 270.00 | | 6.7000 | 12.50000 | -36.00000 | 0.00000 | 0.0 | 0.37500 |
| 0.0 | 0.0 | 0.0 | 270.00 | | 8.0400 | 12.50000 | -37.34000 | 0.00000 | 0.0 | 0.0 |
| 0.0 | 0.0 | 0.0 | 270.00 | | 9.3800 | 12.50000 | -38.68000 | 0.00000 | 0.0 | 0.0 |
| 0.0 | 0.0 | 0.0 | 270.00 | | 10.720 | 12.50000 | -40.02000 | 0.00000 | 0.0 | 0.0 |
| 0.0 | 0.0 | 0.0 | 270.00 | | 12.060 | 12.50000 | -41.36000 | 0.00000 | 0.0 | 0.0 |
| 0.0 | 0.0 | 0.0 | 270.00 | | 13.400 | 12.50000 | -42.70000 | 0.00000 | 0.0 | 0.0 |
| 0.0 | 0.0 | 0.0 | 270.00 | | 14.740 | 12.50000 | -44.04000 | 0.00000 | 0.0 | 0.0 |
| 0.0 | 0.0 | 0.0 | 270.00 | | 16.080 | 12.50000 | -45.38000 | 0.00000 | 0.0 | 0.0 |
| 0.0 | 0.0 | 0.0 | 270.00 | | 17.420 | 12.50000 | -46.72000 | 0.00000 | 0.0 | 0.0 |
| 0.0 | 0.0 | 0.0 | 270.00 | | 18.760 | 12.50000 | -48.06000 | 0.00000 | 0.0 | 0.0 |
| 0.0 | 0.0 | 0.0 | 270.00 | | 20.100 | 12.50000 | -49.40000 | 0.00000 | 0.0 | 0.0 |
| 0.0 | 0.0 | 0.0 | 270.00 | * | | | | | | |
| 4.8358 | -6.2534 | 7 0.0 | 37A Queens Grove NW Wall 180.00 | * | 0.0 | -10.40000 | -1.00000 | 0.00000 | 6.2534 | 0.0 |
| 4.0028 | -5.4716 | 0.0 | 180.00 | * | 1.3700 | -11.77000 | -1.00000 | 0.00000 | 5.4716 | 0.0 |
| 3.1967 | -4.7051 | 0.0 | 180.00 | * | 2.7400 | -13.14000 | -1.00000 | 0.00000 | 4.7051 | 0.0 |
| 2.4466 | -3.9475 | 0.0 | 180.00 | * | 4.1100 | -14.51000 | -1.00000 | 0.00000 | 3.9475 | 0.0 |
| 1.7721 | -3.3450 | 0.0 | 180.00 | * | 5.4800 | -15.88000 | -1.00000 | 0.00000 | 3.3450 | 0.0 |
| 1.1835 | -2.8313 | 0.0 | 180.00 | * | 6.8500 | -17.25000 | -1.00000 | 0.00000 | 2.8313 | 0.0 |
| 0.68169 | -2.3175 | 0.0 | 180.00 | * | 8.2200 | -18.62000 | -1.00000 | 0.00000 | 2.3175 | 0.0 |
| 0.25815 | -1.8038 | 0.0 | 180.00 | * | 9.5900 | -19.99000 | -1.00000 | 0.00000 | 1.8038 | 0.0 |
| 0.16702 | -1.2900 | 0.0 | 180.00 | * | 10.960 | -21.36000 | -1.00000 | 0.00000 | 1.2900 | 0.0 |
| 0.11104 | -0.77625 | 0.0 | 180.00 | * | 12.330 | -22.73000 | -1.00000 | 0.00000 | 0.77625 | 0.0 |
| 0.051564 | -0.26250 | 0.0 | 180.00 | * | 13.700 | -24.10000 | -1.00000 | 0.00000 | 0.26250 | 0.0 |
| 0.051564 | 0.0 | 8 0.0 | 37A Queens Grove SW Wall 270.00 | * | 0.0 | -24.10000 | -1.00000 | 0.00000 | 0.26250 | 0.0 |



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| Job No. | Sheet No. | Rev. |
| | | |
| Drg. Ref. | | |
| Made by | Date 28-Feb-2023 | Checked Date |

| Stage: δz Ref. | Stage: δH// Name | Disp. δHperp. Line: Ref. | Disp. Line: Angle | Name | Chainage | x | y | z | δx | δy | |
|----------------------|------------------------|-----------------------------------|----------------------------|--------|----------|--------|-----------|-----------|---------|---------|-----------|
| 0.051564 | | 0.0 | 0.26250 | 270.00 | * | 1.5300 | -24.10000 | -2.53000 | 0.00000 | 0.26250 | 0.0 |
| 0.051564 | | 0.0 | 0.26250 | 270.00 | * | 3.0600 | -24.10000 | -4.06000 | 0.00000 | 0.26250 | 0.0 |
| 0.051564 | | 0.0 | 0.26250 | 270.00 | * | 4.5900 | -24.10000 | -5.59000 | 0.00000 | 0.26250 | 0.0 |
| 0.051564 | | 0.0 | 0.26250 | 270.00 | * | 6.1200 | -24.10000 | -7.12000 | 0.00000 | 0.26250 | 0.0 |
| 0.051564 | | 0.0 | 0.26250 | 270.00 | * | 7.6500 | -24.10000 | -8.65000 | 0.00000 | 0.26250 | 0.0 |
| 0.051564 | | 0.0 | 0.26250 | 270.00 | * | 9.1800 | -24.10000 | -10.18000 | 0.00000 | 0.26250 | 0.0 |
| 0.051564 | | 0.0 | 0.26250 | 270.00 | * | 10.710 | -24.10000 | -11.71000 | 0.00000 | 0.26250 | 0.0 |
| 0.051564 | | 0.0 | 0.26250 | 270.00 | * | 12.240 | -24.10000 | -13.24000 | 0.00000 | 0.24711 | 0.0069761 |
| 0.050317 | -0.0069761 | 0.24711 | | 270.00 | * | 13.770 | -24.10000 | -14.77000 | 0.00000 | 0.19697 | 0.014288 |
| 0.043755 | -0.014288 | 0.19697 | | 270.00 | * | 15.300 | -24.10000 | -16.30000 | 0.00000 | 0.11842 | 0.014230 |
| 0.030714 | -0.014230 | 0.11842 | | 270.00 | * | | | | | | |
| 4.8358 | 0.0 | 9 6.2534 | 37A Queens Grove NE Wall 1 | 270.00 | * | 0.0 | -10.40000 | -1.00000 | 0.00000 | 6.2534 | 0.0 |
| 4.8358 | 0.0 | 6.2534 | 270.00 | * | | 1.3400 | -10.40000 | -2.34000 | 0.00000 | 6.2534 | 0.0 |
| 4.8358 | 0.0 | 6.2534 | 270.00 | * | | 2.6800 | -10.40000 | -3.68000 | 0.00000 | 6.2534 | 0.0 |
| 4.8358 | 0.0 | 6.2534 | 270.00 | * | | 4.0200 | -10.40000 | -5.02000 | 0.00000 | 6.2534 | 0.0 |
| 4.8358 | 0.0 | 6.2534 | 270.00 | * | | 5.3600 | -10.40000 | -6.36000 | 0.00000 | 6.2534 | 0.0 |
| 4.8358 | 0.0 | 6.2534 | 270.00 | * | | 6.7000 | -10.40000 | -7.70000 | 0.00000 | 6.2534 | 0.0 |
| 4.8358 | 0.0 | 10 6.2534 | 37A Queens Grove SE Wall 1 | 270.00 | * | 0.0 | -10.40000 | -7.70000 | 0.00000 | 6.2534 | 0.0 |
| 4.8358 | -6.2534 | 0.0 | 180.00 | * | | 1.3667 | -11.76667 | -7.70000 | 0.00000 | 5.4734 | 0.0 |
| 4.0048 | -5.4734 | 0.0 | 180.00 | * | | 2.7333 | -13.13333 | -7.70000 | 0.00000 | 4.7088 | 0.0 |
| 3.2005 | -4.7088 | 0.0 | 180.00 | * | | 4.1000 | -14.50000 | -7.70000 | 0.00000 | 3.9530 | 0.0 |
| 2.4518 | -3.9530 | 0.0 | 180.00 | * | | 0.0 | -14.50000 | -7.70000 | 0.00000 | 3.9530 | 0.0 |
| 2.4518 | 0.0 | 11 3.9530 | 37A Queens Grove NE Wall 2 | 270.00 | * | 1.3000 | -14.50000 | -9.00000 | 0.00000 | 3.9530 | 0.0 |
| 2.4518 | 0.0 | 3.9530 | 270.00 | * | | 2.6000 | -14.50000 | -10.30000 | 0.00000 | 3.9530 | 0.0 |
| 2.4518 | 0.0 | 3.9530 | 270.00 | * | | 3.9000 | -14.50000 | -11.60000 | 0.00000 | 3.9530 | 0.0 |
| 2.4518 | 0.0 | 3.9530 | 270.00 | * | | 5.2000 | -14.50000 | -12.90000 | 0.00000 | 3.8226 | 0.12111 |
| 2.4430 | -0.12111 | 3.8226 | | 270.00 | * | 0.0 | -14.50000 | -12.90000 | 0.00000 | 3.8226 | 0.12111 |
| 2.4430 | -3.8226 | -0.12111 | 180.00 | * | | 1.2750 | -15.77500 | -12.90000 | 0.00000 | 3.2832 | 0.095379 |
| 1.8136 | -3.2832 | -0.095379 | 180.00 | * | | 2.5500 | -17.05000 | -12.90000 | 0.00000 | 2.8251 | 0.075777 |
| 1.2581 | -2.8251 | -0.075777 | 180.00 | * | | 3.8250 | -18.32500 | -12.90000 | 0.00000 | 2.3642 | 0.058897 |
| 0.77805 | -2.3642 | -0.058897 | 180.00 | * | | 5.1000 | -19.60000 | -12.90000 | 0.00000 | 1.9011 | 0.044211 |
| 0.36790 | -1.9011 | -0.044211 | 180.00 | * | | 0.0 | -19.60000 | -12.90000 | 0.00000 | 1.9011 | 0.044211 |
| 0.36790 | -0.044211 | 1.9011 | 37A Queens Grove NE Wall 3 | 270.00 | * | 1.1333 | -19.60000 | -14.03333 | 0.00000 | 1.8040 | 0.11388 |
| 0.34627 | -0.11388 | 1.8040 | 270.00 | * | | 2.2667 | -19.60000 | -15.16667 | 0.00000 | 1.6878 | 0.17848 |
| 0.30603 | -0.17848 | 1.6878 | 270.00 | * | | 3.4000 | -19.60000 | -16.30000 | 0.00000 | 1.5558 | 0.23511 |
| 0.25328 | -0.23511 | 1.5558 | 270.00 | * | | 0.0 | -19.60000 | -16.30000 | 0.00000 | 1.5558 | 0.23511 |
| 0.25328 | -1.5558 | -0.23511 | 37A Queens Grove SE Wall 3 | 180.00 | * | 1.4667 | -21.06667 | -16.30000 | 0.00000 | 1.0986 | 0.15318 |
| 0.16211 | -1.0986 | -0.15318 | 180.00 | * | | 2.9333 | -22.53333 | -16.30000 | 0.00000 | 0.62977 | 0.081497 |
| 0.10457 | -0.62977 | -0.081497 | 180.00 | * | | 4.4000 | -24.00000 | -16.30000 | 0.00000 | 0.15135 | 0.018270 |
| 0.037015 | -0.15135 | -0.018270 | 180.00 | * | | | | | | | |

* Result includes imported displacement(s).



**GROUND AND WATER
LIMITED**

| | | |
|-----------|---------------------|-----------------|
| Job No. | Sheet No. | Rev. |
| | | |
| Drg. Ref. | | |
| Made by | Date 28-Feb-2023 | Checked Date |

| | | | | | | | | | | | |
|--------|--------|---------|-------|-------|------|----------|---|---|---|----|----|
| Stage: | Stage: | Disp. | Disp. | Line: | Name | Chainage | x | y | z | δx | δy |
| δz | δH// | δHperp. | Angle | | | | | | | | |
| Ref. | Name | Line: | | | | | | | | | |
| | | Ref. | | | | | | | | | |

Displacement Results - Displacement Grids

| Stage: | Stage: | Disp. | Disp. | x | y | z | δx | δy | δz |
|--------|--------------|-------|-------|-----------|-----------|---------|----------|-----------|----------|
| Ref. | Name | Grid: | Grid: | [m] | [m] | [m] | [mm] | [mm] | [mm] |
| | | Ref. | Name | | | | | | |
| 0 | Base Model 1 | 1 | | -20.00000 | -32.20000 | 0.00000 | 0.0 | 0.0 | 0.0 |
| | | | | -20.00000 | -29.02778 | 0.00000 | 0.0 | 0.0 | 0.0 |
| | | | | -20.00000 | -25.85556 | 0.00000 | 0.13519 | 0.083347 | 0.044896 |
| | | | | -20.00000 | -22.68333 | 0.00000 | 0.57637 | 0.25576 | 0.11656 |
| | | | | -20.00000 | -19.51111 | 0.00000 | 1.0213 | 0.29330 | 0.17028 |
| | | | | -20.00000 | -16.33889 | 0.00000 | 1.4279 | 0.21320 | 0.22250 |
| | | | | -20.00000 | -13.16667 | 0.00000 | 1.7362 | 0.055074 | 0.25336 |
| | | | | -20.00000 | -9.99444 | 0.00000 | 1.8000 | 0.0 | 0.25531 |
| | | | | -20.00000 | -6.82222 | 0.00000 | 1.8000 | 0.0 | 0.25531 |
| | | | | -20.00000 | -3.65000 | 0.00000 | 1.8000 | 0.0 | 0.25531 |
| | | | | -20.00000 | -0.47778 | 0.00000 | 1.8000 | 0.0 | 0.25531 |
| | | | | -20.00000 | 2.69444 | 0.00000 | 1.8000 | 0.0 | 0.25531 |
| | | | | -20.00000 | 5.86667 | 0.00000 | 1.7362 | -0.055074 | 0.25336 |
| | | | | -20.00000 | 9.03889 | 0.00000 | 1.4279 | -0.21320 | 0.22250 |
| | | | | -20.00000 | 12.21111 | 0.00000 | 1.0213 | -0.29330 | 0.17028 |
| | | | | -20.00000 | 15.38333 | 0.00000 | 0.57637 | -0.25576 | 0.11656 |
| | | | | -20.00000 | 18.55556 | 0.00000 | 0.13519 | -0.083347 | 0.044896 |
| | | | | -20.00000 | 21.72778 | 0.00000 | 0.0 | 0.0 | 0.0 |
| | | | | -20.00000 | 24.90000 | 0.00000 | 0.0 | 0.0 | 0.0 |
| | | | | -17.53333 | -32.20000 | 0.00000 | 0.0 | 0.0 | 0.0 |
| | | | | -17.53333 | -29.02778 | 0.00000 | 0.095797 | 0.090917 | 0.039827 |
| | | | | -17.53333 | -25.85556 | 0.00000 | 0.55914 | 0.40698 | 0.12999 |
| | | | | -17.53333 | -22.68333 | 0.00000 | 1.0770 | 0.56240 | 0.22218 |
| | | | | -17.53333 | -19.51111 | 0.00000 | 1.6289 | 0.54734 | 0.55805 |
| | | | | -17.53333 | -16.33889 | 0.00000 | 2.1688 | 0.37548 | 0.89285 |
| | | | | -17.53333 | -13.16667 | 0.00000 | 2.6198 | 0.095197 | 1.0625 |
| | | | | -17.53333 | -9.99444 | 0.00000 | 2.7250 | 0.0 | 1.0728 |
| | | | | -17.53333 | -6.82222 | 0.00000 | 2.7250 | 0.0 | 1.0728 |
| | | | | -17.53333 | -3.65000 | 0.00000 | 2.7250 | 0.0 | 1.0728 |
| | | | | -17.53333 | -0.47778 | 0.00000 | 2.7250 | 0.0 | 1.0728 |
| | | | | -17.53333 | 2.69444 | 0.00000 | 2.7250 | 0.0 | 1.0728 |
| | | | | -17.53333 | 5.86667 | 0.00000 | 2.6198 | -0.095197 | 1.0625 |
| | | | | -17.53333 | 9.03889 | 0.00000 | 2.1688 | -0.37548 | 0.89285 |
| | | | | -17.53333 | 12.21111 | 0.00000 | 1.6289 | -0.54734 | 0.55805 |
| | | | | -17.53333 | 15.38333 | 0.00000 | 1.0770 | -0.56240 | 0.22218 |
| | | | | -17.53333 | 18.55556 | 0.00000 | 0.55914 | -0.40698 | 0.12999 |
| | | | | -17.53333 | 21.72778 | 0.00000 | 0.095797 | -0.090917 | 0.039827 |
| | | | | -17.53333 | 24.90000 | 0.00000 | 0.0 | 0.0 | 0.0 |
| | | | | -15.06667 | -32.20000 | 0.00000 | 0.0 | 0.0 | 0.0 |
| | | | | -15.06667 | -29.02778 | 0.00000 | 0.38577 | 0.44405 | 0.11634 |
| | | | | -15.06667 | -25.85556 | 0.00000 | 0.88968 | 0.78501 | 0.22899 |
| | | | | -15.06667 | -22.68333 | 0.00000 | 1.4816 | 0.93534 | 0.77227 |
| | | | | -15.06667 | -19.51111 | 0.00000 | 2.1514 | 0.86857 | 1.3895 |
| | | | | -15.06667 | -16.33889 | 0.00000 | 2.8535 | 0.58723 | 1.8914 |
| | | | | -15.06667 | -13.16667 | 0.00000 | 3.4900 | 0.14841 | 2.1472 |
| | | | | -15.06667 | -9.99444 | 0.00000 | 3.6500 | 0.0 | 2.1627 |
| | | | | -15.06667 | -6.82222 | 0.00000 | 3.6500 | 0.0 | 2.1627 |
| | | | | -15.06667 | -3.65000 | 0.00000 | 3.6500 | 0.0 | 2.1627 |
| | | | | -15.06667 | -0.47778 | 0.00000 | 3.6500 | 0.0 | 2.1627 |
| | | | | -15.06667 | 2.69444 | 0.00000 | 3.6500 | 0.0 | 2.1627 |
| | | | | -15.06667 | 5.86667 | 0.00000 | 3.4900 | -0.14841 | 2.1472 |
| | | | | -15.06667 | 9.03889 | 0.00000 | 2.8535 | -0.58723 | 1.8914 |
| | | | | -15.06667 | 12.21111 | 0.00000 | 2.1514 | -0.86857 | 1.3895 |
| | | | | -15.06667 | 15.38333 | 0.00000 | 1.4816 | -0.93534 | 0.77227 |
| | | | | -15.06667 | 18.55556 | 0.00000 | 0.88968 | -0.78501 | 0.22899 |
| | | | | -15.06667 | 21.72778 | 0.00000 | 0.38577 | -0.44405 | 0.11634 |
| | | | | -15.06667 | 24.90000 | 0.00000 | 0.0 | 0.0 | 0.0 |
| | | | | -12.60000 | -32.20000 | 0.00000 | 0.15594 | 0.27977 | 0.074664 |
| | | | | -12.60000 | -29.02778 | 0.00000 | 0.57964 | 0.83702 | 0.18471 |
| | | | | -12.60000 | -25.85556 | 0.00000 | 1.1065 | 1.2258 | 0.69501 |
| | | | | -12.60000 | -22.68333 | 0.00000 | 1.7603 | 1.3931 | 1.5424 |
| | | | | -12.60000 | -19.51111 | 0.00000 | 2.6051 | 1.3107 | 2.4167 |
| | | | | -12.60000 | -16.33889 | 0.00000 | 3.7002 | 0.93694 | 3.1271 |
| | | | | -12.60000 | -13.16667 | 0.00000 | 4.7421 | 0.24300 | 3.4875 |
| | | | | -12.60000 | -9.99444 | 0.00000 | 5.0058 | 0.0 | 3.5092 |
| | | | | -12.60000 | -6.82222 | 0.00000 | 5.0058 | 0.0 | 3.5092 |
| | | | | -12.60000 | -3.65000 | 0.00000 | 5.0058 | 0.0 | 3.5092 |
| | | | | -12.60000 | -0.47778 | 0.00000 | 5.0058 | 0.0 | 3.5092 |
| | | | | -12.60000 | 2.69444 | 0.00000 | 5.0058 | 0.0 | 3.5092 |



GROUND AND WATER LIMITED

| | | |
|-----------|---------------------|-----------------|
| Job No. | Sheet No. | Rev. |
| | | |
| Drg. Ref. | | |
| Made by | Date 28-Feb-2023 | Checked Date |

| Stage: Ref. | Stage: Name | Disp. Grid: Ref. | Disp. Grid: Name | x | y | z | δx | δy | δz |
|----------------|----------------|------------------------|------------------------|-----------|-----------|---------|------------|------------|------------|
| | | | | [m] | [m] | [m] | [mm] | [mm] | [mm] |
| -12.60000 | 5.86667 | 0.00000 | | -12.60000 | 5.86667 | 0.00000 | 4.7421 | -0.24300 | 3.4875 |
| -12.60000 | 9.03889 | 0.00000 | | -12.60000 | 9.03889 | 0.00000 | 3.7002 | -0.93694 | 3.1271 |
| -12.60000 | 12.21111 | 0.00000 | | -12.60000 | 12.21111 | 0.00000 | 2.6051 | -1.3107 | 2.4167 |
| -12.60000 | 15.38333 | 0.00000 | | -12.60000 | 15.38333 | 0.00000 | 1.7603 | -1.3931 | 1.5424 |
| -12.60000 | 18.55556 | 0.00000 | | -12.60000 | 18.55556 | 0.00000 | 1.1065 | -1.2258 | 0.69501 |
| -12.60000 | 21.72778 | 0.00000 | | -12.60000 | 21.72778 | 0.00000 | 0.57964 | -0.83702 | 0.18471 |
| -12.60000 | 24.90000 | 0.00000 | | -12.60000 | 24.90000 | 0.00000 | 0.15594 | -0.27977 | 0.074664 |
| -10.13333 | -32.20000 | 0.00000 | | -10.13333 | -32.20000 | 0.00000 | 0.26639 | 0.62588 | 0.12253 |
| -10.13333 | -29.02778 | 0.00000 | | -10.13333 | -29.02778 | 0.00000 | 0.66727 | 1.2665 | 0.35876 |
| -10.13333 | -25.85556 | 0.00000 | | -10.13333 | -25.85556 | 0.00000 | 1.1881 | 1.7352 | 1.2825 |
| -10.13333 | -22.68333 | 0.00000 | | -10.13333 | -22.68333 | 0.00000 | 1.9121 | 1.9966 | 2.4101 |
| -10.13333 | -19.51111 | 0.00000 | | -10.13333 | -19.51111 | 0.00000 | 3.0492 | 2.0150 | 3.5705 |
| -10.13333 | -16.33889 | 0.00000 | | -10.13333 | -16.33889 | 0.00000 | 4.4733 | 1.4662 | 4.5028 |
| -10.13333 | -13.16667 | 0.00000 | | -10.13333 | -13.16667 | 0.00000 | 5.9948 | 0.38636 | 4.9700 |
| -10.13333 | -9.99444 | 0.00000 | | -10.13333 | -9.99444 | 0.00000 | 6.4079 | 0.0 | 4.9979 |
| -10.13333 | -6.82222 | 0.00000 | | -10.13333 | -6.82222 | 0.00000 | 6.4079 | 0.0 | 4.9979 |
| -10.13333 | -3.65000 | 0.00000 | | -10.13333 | -3.65000 | 0.00000 | 6.4079 | 0.0 | 4.9979 |
| -10.13333 | -0.47778 | 0.00000 | | -10.13333 | -0.47778 | 0.00000 | 6.4079 | 0.0 | 4.9979 |
| -10.13333 | 2.69444 | 0.00000 | | -10.13333 | 2.69444 | 0.00000 | 6.4079 | 0.0 | 4.9979 |
| -10.13333 | 5.86667 | 0.00000 | | -10.13333 | 5.86667 | 0.00000 | 5.9948 | -0.38636 | 4.9700 |
| -10.13333 | 9.03889 | 0.00000 | | -10.13333 | 9.03889 | 0.00000 | 4.4733 | -1.4662 | 4.5028 |
| -10.13333 | 12.21111 | 0.00000 | | -10.13333 | 12.21111 | 0.00000 | 3.0492 | -2.0150 | 3.5705 |
| -10.13333 | 15.38333 | 0.00000 | | -10.13333 | 15.38333 | 0.00000 | 1.9121 | -1.9966 | 2.4101 |
| -10.13333 | 18.55556 | 0.00000 | | -10.13333 | 18.55556 | 0.00000 | 1.1881 | -1.7352 | 1.2825 |
| -10.13333 | 21.72778 | 0.00000 | | -10.13333 | 21.72778 | 0.00000 | 0.66727 | -1.2665 | 0.35876 |
| -10.13333 | 24.90000 | 0.00000 | | -10.13333 | 24.90000 | 0.00000 | 0.26639 | -0.62588 | 0.12253 |
| -7.66667 | -32.20000 | 0.00000 | | -7.66667 | -32.20000 | 0.00000 | 0.29546 | 0.97238 | 0.16415 |
| -7.66667 | -29.02778 | 0.00000 | | -7.66667 | -29.02778 | 0.00000 | 0.64379 | 1.7217 | 0.72508 |
| -7.66667 | -25.85556 | 0.00000 | | -7.66667 | -25.85556 | 0.00000 | 1.1162 | 2.3111 | 1.8746 |
| -7.66667 | -22.68333 | 0.00000 | | -7.66667 | -22.68333 | 0.00000 | 1.9254 | 2.8644 | 3.2841 |
| -7.66667 | -19.51111 | 0.00000 | | -7.66667 | -19.51111 | 0.00000 | 3.1636 | 2.9780 | 4.7176 |
| -7.66667 | -16.33889 | 0.00000 | | -7.66667 | -16.33889 | 0.00000 | 4.9633 | 2.2839 | 5.8410 |
| -7.66667 | -13.16667 | 0.00000 | | -7.66667 | -13.16667 | 0.00000 | 7.2210 | 0.62662 | 6.3840 |
| -7.66667 | -9.99444 | 0.00000 | | -7.66667 | -9.99444 | 0.00000 | 7.8852 | 0.0 | 6.4158 |
| -7.66667 | -6.82222 | 0.00000 | | -7.66667 | -6.82222 | 0.00000 | 7.8852 | 0.0 | 6.4158 |
| -7.66667 | -3.65000 | 0.00000 | | -7.66667 | -3.65000 | 0.00000 | 7.8852 | 0.0 | 6.4158 |
| -7.66667 | -0.47778 | 0.00000 | | -7.66667 | -0.47778 | 0.00000 | 7.8852 | 0.0 | 6.4158 |
| -7.66667 | 2.69444 | 0.00000 | | -7.66667 | 2.69444 | 0.00000 | 7.8852 | 0.0 | 6.4158 |
| -7.66667 | 5.86667 | 0.00000 | | -7.66667 | 5.86667 | 0.00000 | 7.2210 | -0.62662 | 6.3840 |
| -7.66667 | 9.03889 | 0.00000 | | -7.66667 | 9.03889 | 0.00000 | 4.9633 | -2.2839 | 5.8410 |
| -7.66667 | 12.21111 | 0.00000 | | -7.66667 | 12.21111 | 0.00000 | 3.1636 | -2.9780 | 4.7176 |
| -7.66667 | 15.38333 | 0.00000 | | -7.66667 | 15.38333 | 0.00000 | 1.9254 | -2.8644 | 3.2841 |
| -7.66667 | 18.55556 | 0.00000 | | -7.66667 | 18.55556 | 0.00000 | 1.1162 | -2.3111 | 1.8746 |
| -7.66667 | 21.72778 | 0.00000 | | -7.66667 | 21.72778 | 0.00000 | 0.64379 | -1.7217 | 0.72508 |
| -7.66667 | 24.90000 | 0.00000 | | -7.66667 | 24.90000 | 0.00000 | 0.29546 | -0.97238 | 0.16415 |
| -5.20000 | -32.20000 | 0.00000 | | -5.20000 | -32.20000 | 0.00000 | 0.25110 | 1.2995 | 0.20617 |
| -5.20000 | -29.02778 | 0.00000 | | -5.20000 | -29.02778 | 0.00000 | 0.51423 | 2.1809 | 1.0423 |
| -5.20000 | -25.85556 | 0.00000 | | -5.20000 | -25.85556 | 0.00000 | 0.90131 | 2.9899 | 2.3936 |
| -5.20000 | -22.68333 | 0.00000 | | -5.20000 | -22.68333 | 0.00000 | 1.6152 | 3.8947 | 4.0437 |
| -5.20000 | -19.51111 | 0.00000 | | -5.20000 | -19.51111 | 0.00000 | 2.7912 | 4.3007 | 5.6912 |
| -5.20000 | -16.33889 | 0.00000 | | -5.20000 | -16.33889 | 0.00000 | 4.8779 | 3.6495 | 6.9118 |
| -5.20000 | -13.16667 | 0.00000 | | -5.20000 | -13.16667 | 0.00000 | 8.3144 | 1.1018 | 7.4248 |
| -5.20000 | -9.99444 | 0.00000 | | -5.20000 | -9.99444 | 0.00000 | 9.4760 | 0.0 | 7.4512 |
| -5.20000 | -6.82222 | 0.00000 | | -5.20000 | -6.82222 | 0.00000 | 9.4760 | 0.0 | 7.4512 |
| -5.20000 | -3.65000 | 0.00000 | | -5.20000 | -3.65000 | 0.00000 | 9.4760 | 0.0 | 7.4512 |
| -5.20000 | -0.47778 | 0.00000 | | -5.20000 | -0.47778 | 0.00000 | 9.4760 | 0.0 | 7.4512 |
| -5.20000 | 2.69444 | 0.00000 | | -5.20000 | 2.69444 | 0.00000 | 9.4760 | 0.0 | 7.4512 |
| -5.20000 | 5.86667 | 0.00000 | | -5.20000 | 5.86667 | 0.00000 | 8.3144 | -1.1018 | 7.4248 |
| -5.20000 | 9.03889 | 0.00000 | | -5.20000 | 9.03889 | 0.00000 | 4.8779 | -3.6495 | 6.9118 |
| -5.20000 | 12.21111 | 0.00000 | | -5.20000 | 12.21111 | 0.00000 | 2.7912 | -4.3007 | 5.6912 |
| -5.20000 | 15.38333 | 0.00000 | | -5.20000 | 15.38333 | 0.00000 | 1.6152 | -3.8947 | 4.0437 |
| -5.20000 | 18.55556 | 0.00000 | | -5.20000 | 18.55556 | 0.00000 | 0.90131 | -2.9899 | 2.3936 |
| -5.20000 | 21.72778 | 0.00000 | | -5.20000 | 21.72778 | 0.00000 | 0.51423 | -2.1809 | 1.0423 |
| -5.20000 | 24.90000 | 0.00000 | | -5.20000 | 24.90000 | 0.00000 | 0.25110 | -1.2995 | 0.20617 |
| -2.73333 | -32.20000 | 0.00000 | | -2.73333 | -32.20000 | 0.00000 | 0.14962 | 1.5807 | 0.24024 |
| -2.73333 | -29.02778 | 0.00000 | | -2.73333 | -29.02778 | 0.00000 | 0.29799 | 2.6089 | 1.2646 |
| -2.73333 | -25.85556 | 0.00000 | | -2.73333 | -25.85556 | 0.00000 | 0.53696 | 3.7326 | 2.7578 |
| -2.73333 | -22.68333 | 0.00000 | | -2.73333 | -22.68333 | 0.00000 | 0.97484 | 5.0289 | 4.5712 |
| -2.73333 | -19.51111 | 0.00000 | | -2.73333 | -19.51111 | 0.00000 | 1.7764 | 6.0231 | 6.3429 |
| -2.73333 | -16.33889 | 0.00000 | | -2.73333 | -16.33889 | 0.00000 | 3.5812 | 6.0570 | 7.5170 |
| -2.73333 | -13.16667 | 0.00000 | | -2.73333 | -13.16667 | 0.00000 | 8.6946 | 2.4012 | 7.7120 |
| -2.73333 | -9.99444 | 0.00000 | | -2.73333 | -9.99444 | 0.00000 | 11.218 | 0.0 | 7.6937 |
| -2.73333 | -6.82222 | 0.00000 | | -2.73333 | -6.82222 | 0.00000 | 11.218 | 0.0 | 7.6937 |
| -2.73333 | -3.65000 | 0.00000 | | -2.73333 | -3.65000 | 0.00000 | 11.218 | 0.0 | 7.6937 |
| -2.73333 | -0.47778 | 0.00000 | | -2.73333 | -0.47778 | 0.00000 | 11.218 | 0.0 | 7.6937 |
| -2.73333 | 2.69444 | 0.00000 | | -2.73333 | 2.69444 | 0.00000 | 11.218 | 0.0 | 7.6937 |
| -2.73333 | 5.86667 | 0.00000 | | -2.73333 | 5.86667 | 0.00000 | 8.6946 | -2.4012 | 7.7120 |



**GROUND AND WATER
LIMITED**

| | | |
|-----------|---------------------|-----------------|
| Job No. | Sheet No. | Rev. |
| | | |
| Drg. Ref. | | |
| Made by | Date 28-Feb-2023 | Checked Date |

| Stage: Ref. | Stage: Name | Disp. Grid: Ref. | Disp. Grid: Name | x | y | z | δx | δy | δz |
|----------------|----------------|------------------------|------------------------|----------|-----------|---------|----------------------------------|---------|---------|
| | | | | [m] | [m] | [m] | [mm] | [mm] | [mm] |
| -2.73333 | 9.03889 | 0.00000 | | -2.73333 | 9.03889 | 0.00000 | 3.5812 | -6.0570 | 7.5170 |
| -2.73333 | 12.21111 | 0.00000 | | -2.73333 | 12.21111 | 0.00000 | 1.7764 | -6.0231 | 6.3429 |
| -2.73333 | 15.38333 | 0.00000 | | -2.73333 | 15.38333 | 0.00000 | 0.97484 | -5.0289 | 4.5712 |
| -2.73333 | 18.55556 | 0.00000 | | -2.73333 | 18.55556 | 0.00000 | 0.53696 | -3.7326 | 2.7578 |
| -2.73333 | 21.72778 | 0.00000 | | -2.73333 | 21.72778 | 0.00000 | 0.29799 | -2.6089 | 1.2646 |
| -2.73333 | 24.90000 | 0.00000 | | -2.73333 | 24.90000 | 0.00000 | 0.14962 | -1.5807 | 0.24024 |
| -0.26667 | -32.20000 | 0.00000 | | -0.26667 | -32.20000 | 0.00000 | 0.015272 | 1.7841 | 0.25516 |
| -0.26667 | -29.02778 | 0.00000 | | -0.26667 | -29.02778 | 0.00000 | 0.030150 | 2.9586 | 1.3547 |
| -0.26667 | -25.85556 | 0.00000 | | -0.26667 | -25.85556 | 0.00000 | 0.054916 | 4.3630 | 2.9052 |
| -0.26667 | -22.68333 | 0.00000 | | -0.26667 | -22.68333 | 0.00000 | 0.10043 | 6.1029 | 4.7829 |
| -0.26667 | -19.51111 | 0.00000 | | -0.26667 | -19.51111 | 0.00000 | 0.18808 | 7.9155 | 6.5948 |
| -0.26667 | -16.33889 | 0.00000 | | -0.26667 | -16.33889 | 0.00000 | 0.41775 | 9.7810 | 7.6790 |
| -0.26667 | -13.16667 | 0.00000 | | -0.26667 | -13.16667 | 0.00000 | 2.1509 | 10.401 | 7.1210 |
| -0.26667 | -9.99444 | 0.00000 | | -0.26667 | -9.99444 | 0.00000 | 13.151 | 0.0 | 6.6345 |
| -0.26667 | -6.82222 | 0.00000 | | -0.26667 | -6.82222 | 0.00000 | 13.151 | 0.0 | 6.6345 |
| -0.26667 | -3.65000 | 0.00000 | | -0.26667 | -3.65000 | 0.00000 | 13.151 | 0.0 | 6.6345 |
| -0.26667 | -0.47778 | 0.00000 | | -0.26667 | -0.47778 | 0.00000 | 13.151 | 0.0 | 6.6345 |
| -0.26667 | 2.69444 | 0.00000 | | -0.26667 | 2.69444 | 0.00000 | 13.151 | 0.0 | 6.6345 |
| -0.26667 | 5.86667 | 0.00000 | | -0.26667 | 5.86667 | 0.00000 | 2.1509 | -10.401 | 7.1210 |
| -0.26667 | 9.03889 | 0.00000 | | -0.26667 | 9.03889 | 0.00000 | 0.41775 | -9.7810 | 7.6790 |
| -0.26667 | 12.21111 | 0.00000 | | -0.26667 | 12.21111 | 0.00000 | 0.18808 | -7.9155 | 6.5948 |
| -0.26667 | 15.38333 | 0.00000 | | -0.26667 | 15.38333 | 0.00000 | 0.10043 | -6.1029 | 4.7829 |
| -0.26667 | 18.55556 | 0.00000 | | -0.26667 | 18.55556 | 0.00000 | 0.054916 | -4.3630 | 2.9052 |
| -0.26667 | 21.72778 | 0.00000 | | -0.26667 | 21.72778 | 0.00000 | 0.030150 | -2.9586 | 1.3547 |
| -0.26667 | 24.90000 | 0.00000 | | -0.26667 | 24.90000 | 0.00000 | 0.015272 | -1.7841 | 0.25516 |
| 2.20000 | -32.20000 | 0.00000 | | 2.20000 | -32.20000 | 0.00000 | 0.0 | 1.8000 | 0.25531 |
| 2.20000 | -29.02778 | 0.00000 | | 2.20000 | -29.02778 | 0.00000 | 0.0 | 2.9896 | 1.3555 |
| 2.20000 | -25.85556 | 0.00000 | | 2.20000 | -25.85556 | 0.00000 | 0.0 | 4.4193 | 2.9066 |
| 2.20000 | -22.68333 | 0.00000 | | 2.20000 | -22.68333 | 0.00000 | 0.0 | 6.2053 | 4.7850 |
| 2.20000 | -19.51111 | 0.00000 | | 2.20000 | -19.51111 | 0.00000 | 0.0 | 8.1066 | 6.5972 |
| 2.20000 | -16.33889 | 0.00000 | | 2.20000 | -16.33889 | 0.00000 | 0.0 | 10.205 | 7.6801 |
| 2.20000 | -13.16667 | 0.00000 | | 2.20000 | -13.16667 | 0.00000 | 0.0 | 12.581 | 7.1009 |
| 2.20000 | -9.99444 | 0.00000 | | 2.20000 | -9.99444 | 0.00000 | Point lies within an excavation. | | |
| 2.20000 | -6.82222 | 0.00000 | | 2.20000 | -6.82222 | 0.00000 | Point lies within an excavation. | | |
| 2.20000 | -3.65000 | 0.00000 | | 2.20000 | -3.65000 | 0.00000 | Point lies within an excavation. | | |
| 2.20000 | -0.47778 | 0.00000 | | 2.20000 | -0.47778 | 0.00000 | Point lies within an excavation. | | |
| 2.20000 | 2.69444 | 0.00000 | | 2.20000 | 2.69444 | 0.00000 | Point lies within an excavation. | | |
| 2.20000 | 5.86667 | 0.00000 | | 2.20000 | 5.86667 | 0.00000 | 0.0 | -12.581 | 7.1009 |
| 2.20000 | 9.03889 | 0.00000 | | 2.20000 | 9.03889 | 0.00000 | 0.0 | -10.205 | 7.6801 |
| 2.20000 | 12.21111 | 0.00000 | | 2.20000 | 12.21111 | 0.00000 | 0.0 | -8.1066 | 6.5972 |
| 2.20000 | 15.38333 | 0.00000 | | 2.20000 | 15.38333 | 0.00000 | 0.0 | -6.2053 | 4.7850 |
| 2.20000 | 18.55556 | 0.00000 | | 2.20000 | 18.55556 | 0.00000 | 0.0 | -4.4193 | 2.9066 |
| 2.20000 | 21.72778 | 0.00000 | | 2.20000 | 21.72778 | 0.00000 | 0.0 | -2.9896 | 1.3555 |
| 2.20000 | 24.90000 | 0.00000 | | 2.20000 | 24.90000 | 0.00000 | 0.0 | -1.8000 | 0.25531 |
| 4.66667 | -32.20000 | 0.00000 | | 4.66667 | -32.20000 | 0.00000 | 0.0 | 1.8000 | 0.25531 |
| 4.66667 | -29.02778 | 0.00000 | | 4.66667 | -29.02778 | 0.00000 | 0.0 | 2.9896 | 1.3555 |
| 4.66667 | -25.85556 | 0.00000 | | 4.66667 | -25.85556 | 0.00000 | 0.0 | 4.4193 | 2.9066 |
| 4.66667 | -22.68333 | 0.00000 | | 4.66667 | -22.68333 | 0.00000 | 0.0 | 6.2053 | 4.7850 |
| 4.66667 | -19.51111 | 0.00000 | | 4.66667 | -19.51111 | 0.00000 | 0.0 | 8.1066 | 6.5972 |
| 4.66667 | -16.33889 | 0.00000 | | 4.66667 | -16.33889 | 0.00000 | 0.0 | 10.205 | 7.6801 |
| 4.66667 | -13.16667 | 0.00000 | | 4.66667 | -13.16667 | 0.00000 | 0.0 | 12.581 | 7.1009 |
| 4.66667 | -9.99444 | 0.00000 | | 4.66667 | -9.99444 | 0.00000 | Point lies within an excavation. | | |
| 4.66667 | -6.82222 | 0.00000 | | 4.66667 | -6.82222 | 0.00000 | Point lies within an excavation. | | |
| 4.66667 | -3.65000 | 0.00000 | | 4.66667 | -3.65000 | 0.00000 | Point lies within an excavation. | | |
| 4.66667 | -0.47778 | 0.00000 | | 4.66667 | -0.47778 | 0.00000 | Point lies within an excavation. | | |
| 4.66667 | 2.69444 | 0.00000 | | 4.66667 | 2.69444 | 0.00000 | Point lies within an excavation. | | |
| 4.66667 | 5.86667 | 0.00000 | | 4.66667 | 5.86667 | 0.00000 | 0.0 | -12.581 | 7.1009 |
| 4.66667 | 9.03889 | 0.00000 | | 4.66667 | 9.03889 | 0.00000 | 0.0 | -10.205 | 7.6801 |
| 4.66667 | 12.21111 | 0.00000 | | 4.66667 | 12.21111 | 0.00000 | 0.0 | -8.1066 | 6.5972 |
| 4.66667 | 15.38333 | 0.00000 | | 4.66667 | 15.38333 | 0.00000 | 0.0 | -6.2053 | 4.7850 |
| 4.66667 | 18.55556 | 0.00000 | | 4.66667 | 18.55556 | 0.00000 | 0.0 | -4.4193 | 2.9066 |
| 4.66667 | 21.72778 | 0.00000 | | 4.66667 | 21.72778 | 0.00000 | 0.0 | -2.9896 | 1.3555 |
| 4.66667 | 24.90000 | 0.00000 | | 4.66667 | 24.90000 | 0.00000 | 0.0 | -1.8000 | 0.25531 |
| 7.13333 | -32.20000 | 0.00000 | | 7.13333 | -32.20000 | 0.00000 | 0.0 | 1.8000 | 0.25531 |
| 7.13333 | -29.02778 | 0.00000 | | 7.13333 | -29.02778 | 0.00000 | 0.0 | 2.9896 | 1.3555 |
| 7.13333 | -25.85556 | 0.00000 | | 7.13333 | -25.85556 | 0.00000 | 0.0 | 4.4193 | 2.9066 |
| 7.13333 | -22.68333 | 0.00000 | | 7.13333 | -22.68333 | 0.00000 | 0.0 | 6.2053 | 4.7850 |
| 7.13333 | -19.51111 | 0.00000 | | 7.13333 | -19.51111 | 0.00000 | 0.0 | 8.1066 | 6.5972 |
| 7.13333 | -16.33889 | 0.00000 | | 7.13333 | -16.33889 | 0.00000 | 0.0 | 10.205 | 7.6801 |
| 7.13333 | -13.16667 | 0.00000 | | 7.13333 | -13.16667 | 0.00000 | 0.0 | 12.581 | 7.1009 |
| 7.13333 | -9.99444 | 0.00000 | | 7.13333 | -9.99444 | 0.00000 | Point lies within an excavation. | | |
| 7.13333 | -6.82222 | 0.00000 | | 7.13333 | -6.82222 | 0.00000 | Point lies within an excavation. | | |
| 7.13333 | -3.65000 | 0.00000 | | 7.13333 | -3.65000 | 0.00000 | Point lies within an excavation. | | |
| 7.13333 | -0.47778 | 0.00000 | | 7.13333 | -0.47778 | 0.00000 | Point lies within an excavation. | | |
| 7.13333 | 2.69444 | 0.00000 | | 7.13333 | 2.69444 | 0.00000 | Point lies within an excavation. | | |
| 7.13333 | 5.86667 | 0.00000 | | 7.13333 | 5.86667 | 0.00000 | 0.0 | -12.581 | 7.1009 |
| 7.13333 | 9.03889 | 0.00000 | | 7.13333 | 9.03889 | 0.00000 | 0.0 | -10.205 | 7.6801 |

| | | |
|-----------|---------------------|-----------------|
| Job No. | Sheet No. | Rev. |
| | | |
| Drg. Ref. | | |
| Made by | Date 28-Feb-2023 | Checked Date |

| Stage: Ref. | Stage: Name | Disp. Grid: Ref. | Disp. Grid: Name | x | y | z | δx | δy | δz |
|----------------|----------------|------------------------|------------------------|---------|-----|-----|----------------------------------|------------|------------|
| | | | | [m] | [m] | [m] | [mm] | [mm] | [mm] |
| 7.13333 | | 12.21111 | | 0.00000 | | | 0.0 | -8.1066 | 6.5972 |
| 7.13333 | | 15.38333 | | 0.00000 | | | 0.0 | -6.2053 | 4.7850 |
| 7.13333 | | 18.55556 | | 0.00000 | | | 0.0 | -4.4193 | 2.9066 |
| 7.13333 | | 21.72778 | | 0.00000 | | | 0.0 | -2.9896 | 1.3555 |
| 7.13333 | | 24.90000 | | 0.00000 | | | 0.0 | -1.8000 | 0.25531 |
| 9.60000 | | -32.20000 | | 0.00000 | | | 0.0 | 1.8000 | 0.25531 |
| 9.60000 | | -29.02778 | | 0.00000 | | | 0.0 | 2.9896 | 1.3555 |
| 9.60000 | | -25.85556 | | 0.00000 | | | 0.0 | 4.4193 | 2.9066 |
| 9.60000 | | -22.68333 | | 0.00000 | | | 0.0 | 6.2053 | 4.7850 |
| 9.60000 | | -19.51111 | | 0.00000 | | | 0.0 | 8.1066 | 6.5972 |
| 9.60000 | | -16.33889 | | 0.00000 | | | 0.0 | 10.205 | 7.6801 |
| 9.60000 | | -13.16667 | | 0.00000 | | | 0.0 | 12.581 | 7.1009 |
| 9.60000 | | -9.99444 | | 0.00000 | | | Point lies within an excavation. | | |
| 9.60000 | | -6.82222 | | 0.00000 | | | Point lies within an excavation. | | |
| 9.60000 | | -3.65000 | | 0.00000 | | | Point lies within an excavation. | | |
| 9.60000 | | -0.47778 | | 0.00000 | | | Point lies within an excavation. | | |
| 9.60000 | | 2.69444 | | 0.00000 | | | Point lies within an excavation. | | |
| 9.60000 | | 5.86667 | | 0.00000 | | | 0.0 | -12.581 | 7.1009 |
| 9.60000 | | 9.03889 | | 0.00000 | | | 0.0 | -10.205 | 7.6801 |
| 9.60000 | | 12.21111 | | 0.00000 | | | 0.0 | -8.1066 | 6.5972 |
| 9.60000 | | 15.38333 | | 0.00000 | | | 0.0 | -6.2053 | 4.7850 |
| 9.60000 | | 18.55556 | | 0.00000 | | | 0.0 | -4.4193 | 2.9066 |
| 9.60000 | | 21.72778 | | 0.00000 | | | 0.0 | -2.9896 | 1.3555 |
| 9.60000 | | 24.90000 | | 0.00000 | | | 0.0 | -1.8000 | 0.25531 |
| 12.06667 | | -32.20000 | | 0.00000 | | | 0.0 | 1.8000 | 0.25531 |
| 12.06667 | | -29.02778 | | 0.00000 | | | 0.0 | 2.9896 | 1.3555 |
| 12.06667 | | -25.85556 | | 0.00000 | | | 0.0 | 4.4193 | 2.9066 |
| 12.06667 | | -22.68333 | | 0.00000 | | | 0.0 | 6.2053 | 4.7850 |
| 12.06667 | | -19.51111 | | 0.00000 | | | 0.0 | 8.1066 | 6.5972 |
| 12.06667 | | -16.33889 | | 0.00000 | | | 0.0 | 10.205 | 7.6801 |
| 12.06667 | | -13.16667 | | 0.00000 | | | 0.0 | 12.581 | 7.1009 |
| 12.06667 | | -9.99444 | | 0.00000 | | | Point lies within an excavation. | | |
| 12.06667 | | -6.82222 | | 0.00000 | | | Point lies within an excavation. | | |
| 12.06667 | | -3.65000 | | 0.00000 | | | Point lies within an excavation. | | |
| 12.06667 | | -0.47778 | | 0.00000 | | | Point lies within an excavation. | | |
| 12.06667 | | 2.69444 | | 0.00000 | | | Point lies within an excavation. | | |
| 12.06667 | | 5.86667 | | 0.00000 | | | 0.0 | -12.581 | 7.1009 |
| 12.06667 | | 9.03889 | | 0.00000 | | | 0.0 | -10.205 | 7.6801 |
| 12.06667 | | 12.21111 | | 0.00000 | | | 0.0 | -8.1066 | 6.5972 |
| 12.06667 | | 15.38333 | | 0.00000 | | | 0.0 | -6.2053 | 4.7850 |
| 12.06667 | | 18.55556 | | 0.00000 | | | 0.0 | -4.4193 | 2.9066 |
| 12.06667 | | 21.72778 | | 0.00000 | | | 0.0 | -2.9896 | 1.3555 |
| 12.06667 | | 24.90000 | | 0.00000 | | | 0.0 | -1.8000 | 0.25531 |
| 14.53333 | | -32.20000 | | 0.00000 | | | 0.0 | 1.8000 | 0.25531 |
| 14.53333 | | -29.02778 | | 0.00000 | | | 0.0 | 2.9896 | 1.3555 |
| 14.53333 | | -25.85556 | | 0.00000 | | | 0.0 | 4.4193 | 2.9066 |
| 14.53333 | | -22.68333 | | 0.00000 | | | 0.0 | 6.2053 | 4.7850 |
| 14.53333 | | -19.51111 | | 0.00000 | | | 0.0 | 8.1066 | 6.5972 |
| 14.53333 | | -16.33889 | | 0.00000 | | | 0.0 | 10.205 | 7.6801 |
| 14.53333 | | -13.16667 | | 0.00000 | | | 0.0 | 12.581 | 7.1009 |
| 14.53333 | | -9.99444 | | 0.00000 | | | Point lies within an excavation. | | |
| 14.53333 | | -6.82222 | | 0.00000 | | | Point lies within an excavation. | | |
| 14.53333 | | -3.65000 | | 0.00000 | | | Point lies within an excavation. | | |
| 14.53333 | | -0.47778 | | 0.00000 | | | Point lies within an excavation. | | |
| 14.53333 | | 2.69444 | | 0.00000 | | | Point lies within an excavation. | | |
| 14.53333 | | 5.86667 | | 0.00000 | | | 0.0 | -12.581 | 7.1009 |
| 14.53333 | | 9.03889 | | 0.00000 | | | 0.0 | -10.205 | 7.6801 |
| 14.53333 | | 12.21111 | | 0.00000 | | | 0.0 | -8.1066 | 6.5972 |
| 14.53333 | | 15.38333 | | 0.00000 | | | 0.0 | -6.2053 | 4.7850 |
| 14.53333 | | 18.55556 | | 0.00000 | | | 0.0 | -4.4193 | 2.9066 |
| 14.53333 | | 21.72778 | | 0.00000 | | | 0.0 | -2.9896 | 1.3555 |
| 14.53333 | | 24.90000 | | 0.00000 | | | 0.0 | -1.8000 | 0.25531 |
| 17.00000 | | -32.20000 | | 0.00000 | | | 0.0 | 1.8000 | 0.25531 |
| 17.00000 | | -29.02778 | | 0.00000 | | | 0.0 | 2.9896 | 1.3555 |
| 17.00000 | | -25.85556 | | 0.00000 | | | 0.0 | 4.4193 | 2.9066 |
| 17.00000 | | -22.68333 | | 0.00000 | | | 0.0 | 6.2053 | 4.7850 |
| 17.00000 | | -19.51111 | | 0.00000 | | | 0.0 | 8.1066 | 6.5972 |
| 17.00000 | | -16.33889 | | 0.00000 | | | 0.0 | 10.205 | 7.6801 |
| 17.00000 | | -13.16667 | | 0.00000 | | | 0.0 | 12.581 | 7.1009 |
| 17.00000 | | -9.99444 | | 0.00000 | | | Point lies within an excavation. | | |
| 17.00000 | | -6.82222 | | 0.00000 | | | Point lies within an excavation. | | |
| 17.00000 | | -3.65000 | | 0.00000 | | | Point lies within an excavation. | | |
| 17.00000 | | -0.47778 | | 0.00000 | | | Point lies within an excavation. | | |
| 17.00000 | | 2.69444 | | 0.00000 | | | Point lies within an excavation. | | |
| 17.00000 | | 5.86667 | | 0.00000 | | | 0.0 | -12.581 | 7.1009 |
| 17.00000 | | 9.03889 | | 0.00000 | | | 0.0 | -10.205 | 7.6801 |
| 17.00000 | | 12.21111 | | 0.00000 | | | 0.0 | -8.1066 | 6.5972 |

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|-----------|---------------------|-----------------|
| Job No. | Sheet No. | Rev. |
| | | |
| Drg. Ref. | | |
| Made by | Date 28-Feb-2023 | Checked Date |

| Stage: Ref. | Stage: Name | Disp. Grid: Ref. | Disp. Grid: Name | x | y | z | δx | δy | δz |
|----------------|----------------|------------------------|------------------------|---------|-----|---------|----------------------------------|------------|------------|
| | | | | [m] | [m] | [m] | [mm] | [mm] | [mm] |
| 17.00000 | | 15.38333 | | 0.00000 | | 0.00000 | 0.0 | -6.2053 | 4.7850 |
| 17.00000 | | 18.55556 | | 0.00000 | | 0.00000 | 0.0 | -4.4193 | 2.9066 |
| 17.00000 | | 21.72778 | | 0.00000 | | 0.00000 | 0.0 | -2.9896 | 1.3555 |
| 17.00000 | | 24.90000 | | 0.00000 | | 0.00000 | 0.0 | -1.8000 | 0.25531 |
| 19.46667 | | -32.20000 | | 0.00000 | | 0.00000 | 0.0 | 1.8000 | 0.25531 |
| 19.46667 | | -29.02778 | | 0.00000 | | 0.00000 | 0.0 | 2.9896 | 1.3555 |
| 19.46667 | | -25.85556 | | 0.00000 | | 0.00000 | 0.0 | 4.4193 | 2.9066 |
| 19.46667 | | -22.68333 | | 0.00000 | | 0.00000 | 0.0 | 6.2053 | 4.7850 |
| 19.46667 | | -19.51111 | | 0.00000 | | 0.00000 | 0.0 | 8.1066 | 6.5972 |
| 19.46667 | | -16.33889 | | 0.00000 | | 0.00000 | 0.0 | 10.205 | 7.6801 |
| 19.46667 | | -13.16667 | | 0.00000 | | 0.00000 | 0.0 | 12.581 | 7.1009 |
| 19.46667 | | -9.99444 | | 0.00000 | | 0.00000 | Point lies within an excavation. | | |
| 19.46667 | | -6.82222 | | 0.00000 | | 0.00000 | Point lies within an excavation. | | |
| 19.46667 | | -3.65000 | | 0.00000 | | 0.00000 | Point lies within an excavation. | | |
| 19.46667 | | -0.47778 | | 0.00000 | | 0.00000 | Point lies within an excavation. | | |
| 19.46667 | | 2.69444 | | 0.00000 | | 0.00000 | Point lies within an excavation. | | |
| 19.46667 | | 5.86667 | | 0.00000 | | 0.00000 | 0.0 | -12.581 | 7.1009 |
| 19.46667 | | 9.03889 | | 0.00000 | | 0.00000 | 0.0 | -10.205 | 7.6801 |
| 19.46667 | | 12.21111 | | 0.00000 | | 0.00000 | 0.0 | -8.1066 | 6.5972 |
| 19.46667 | | 15.38333 | | 0.00000 | | 0.00000 | 0.0 | -6.2053 | 4.7850 |
| 19.46667 | | 18.55556 | | 0.00000 | | 0.00000 | 0.0 | -4.4193 | 2.9066 |
| 19.46667 | | 21.72778 | | 0.00000 | | 0.00000 | 0.0 | -2.9896 | 1.3555 |
| 19.46667 | | 24.90000 | | 0.00000 | | 0.00000 | 0.0 | -1.8000 | 0.25531 |
| 21.93333 | | -32.20000 | | 0.00000 | | 0.00000 | 0.0 | 1.8000 | 0.25531 |
| 21.93333 | | -29.02778 | | 0.00000 | | 0.00000 | 0.0 | 2.9896 | 1.3555 |
| 21.93333 | | -25.85556 | | 0.00000 | | 0.00000 | 0.0 | 4.4193 | 2.9066 |
| 21.93333 | | -22.68333 | | 0.00000 | | 0.00000 | 0.0 | 6.2053 | 4.7850 |
| 21.93333 | | -19.51111 | | 0.00000 | | 0.00000 | 0.0 | 8.1066 | 6.5972 |
| 21.93333 | | -16.33889 | | 0.00000 | | 0.00000 | 0.0 | 10.205 | 7.6801 |
| 21.93333 | | -13.16667 | | 0.00000 | | 0.00000 | 0.0 | 12.581 | 7.1009 |
| 21.93333 | | -9.99444 | | 0.00000 | | 0.00000 | Point lies within an excavation. | | |
| 21.93333 | | -6.82222 | | 0.00000 | | 0.00000 | Point lies within an excavation. | | |
| 21.93333 | | -3.65000 | | 0.00000 | | 0.00000 | Point lies within an excavation. | | |
| 21.93333 | | -0.47778 | | 0.00000 | | 0.00000 | Point lies within an excavation. | | |
| 21.93333 | | 2.69444 | | 0.00000 | | 0.00000 | Point lies within an excavation. | | |
| 21.93333 | | 5.86667 | | 0.00000 | | 0.00000 | 0.0 | -12.581 | 7.1009 |
| 21.93333 | | 9.03889 | | 0.00000 | | 0.00000 | 0.0 | -10.205 | 7.6801 |
| 21.93333 | | 12.21111 | | 0.00000 | | 0.00000 | 0.0 | -8.1066 | 6.5972 |
| 21.93333 | | 15.38333 | | 0.00000 | | 0.00000 | 0.0 | -6.2053 | 4.7850 |
| 21.93333 | | 18.55556 | | 0.00000 | | 0.00000 | 0.0 | -4.4193 | 2.9066 |
| 21.93333 | | 21.72778 | | 0.00000 | | 0.00000 | 0.0 | -2.9896 | 1.3555 |
| 21.93333 | | 24.90000 | | 0.00000 | | 0.00000 | 0.0 | -1.8000 | 0.25531 |
| 24.40000 | | -32.20000 | | 0.00000 | | 0.00000 | 0.0 | 1.8000 | 0.25531 |
| 24.40000 | | -29.02778 | | 0.00000 | | 0.00000 | 0.0 | 2.9896 | 1.3555 |
| 24.40000 | | -25.85556 | | 0.00000 | | 0.00000 | 0.0 | 4.4193 | 2.9066 |
| 24.40000 | | -22.68333 | | 0.00000 | | 0.00000 | 0.0 | 6.2053 | 4.7850 |
| 24.40000 | | -19.51111 | | 0.00000 | | 0.00000 | 0.0 | 8.1066 | 6.5972 |
| 24.40000 | | -16.33889 | | 0.00000 | | 0.00000 | 0.0 | 10.205 | 7.6801 |
| 24.40000 | | -13.16667 | | 0.00000 | | 0.00000 | 0.0 | 12.581 | 7.1009 |
| 24.40000 | | -9.99444 | | 0.00000 | | 0.00000 | Point lies within an excavation. | | |
| 24.40000 | | -6.82222 | | 0.00000 | | 0.00000 | Point lies within an excavation. | | |
| 24.40000 | | -3.65000 | | 0.00000 | | 0.00000 | Point lies within an excavation. | | |
| 24.40000 | | -0.47778 | | 0.00000 | | 0.00000 | Point lies within an excavation. | | |
| 24.40000 | | 2.69444 | | 0.00000 | | 0.00000 | Point lies within an excavation. | | |
| 24.40000 | | 5.86667 | | 0.00000 | | 0.00000 | 0.0 | -12.581 | 7.1009 |
| 24.40000 | | 9.03889 | | 0.00000 | | 0.00000 | 0.0 | -10.205 | 7.6801 |
| 24.40000 | | 12.21111 | | 0.00000 | | 0.00000 | 0.0 | -8.1066 | 6.5972 |
| 24.40000 | | 15.38333 | | 0.00000 | | 0.00000 | 0.0 | -6.2053 | 4.7850 |
| 24.40000 | | 18.55556 | | 0.00000 | | 0.00000 | 0.0 | -4.4193 | 2.9066 |
| 24.40000 | | 21.72778 | | 0.00000 | | 0.00000 | 0.0 | -2.9896 | 1.3555 |
| 24.40000 | | 24.90000 | | 0.00000 | | 0.00000 | 0.0 | -1.8000 | 0.25531 |
| 26.86667 | | -32.20000 | | 0.00000 | | 0.00000 | -0.015272 | 1.7841 | 0.25516 |
| 26.86667 | | -29.02778 | | 0.00000 | | 0.00000 | -0.030150 | 2.9586 | 1.3547 |
| 26.86667 | | -25.85556 | | 0.00000 | | 0.00000 | -0.054916 | 4.3630 | 2.9052 |
| 26.86667 | | -22.68333 | | 0.00000 | | 0.00000 | -0.10043 | 6.1029 | 4.7829 |
| 26.86667 | | -19.51111 | | 0.00000 | | 0.00000 | -0.18808 | 7.9155 | 6.5948 |
| 26.86667 | | -16.33889 | | 0.00000 | | 0.00000 | -0.41775 | 9.7810 | 7.6790 |
| 26.86667 | | -13.16667 | | 0.00000 | | 0.00000 | -2.1509 | 10.401 | 7.1210 |
| 26.86667 | | -9.99444 | | 0.00000 | | 0.00000 | -13.151 | 0.0 | 6.6345 |
| 26.86667 | | -6.82222 | | 0.00000 | | 0.00000 | -13.151 | 0.0 | 6.6345 |
| 26.86667 | | -3.65000 | | 0.00000 | | 0.00000 | -13.151 | 0.0 | 6.6345 |
| 26.86667 | | -0.47778 | | 0.00000 | | 0.00000 | -13.151 | 0.0 | 6.6345 |
| 26.86667 | | 2.69444 | | 0.00000 | | 0.00000 | -13.151 | 0.0 | 6.6345 |
| 26.86667 | | 5.86667 | | 0.00000 | | 0.00000 | -2.1509 | -10.401 | 7.1210 |
| 26.86667 | | 9.03889 | | 0.00000 | | 0.00000 | -0.41775 | -9.7810 | 7.6790 |
| 26.86667 | | 12.21111 | | 0.00000 | | 0.00000 | -0.18808 | -7.9155 | 6.5948 |
| 26.86667 | | 15.38333 | | 0.00000 | | 0.00000 | -0.10043 | -6.1029 | 4.7829 |

| | | |
|-----------|---------------------|-----------------|
| Job No. | Sheet No. | Rev. |
| | | |
| Drg. Ref. | | |
| Made by | Date 28-Feb-2023 | Checked Date |

| Stage: Ref. | Stage: Name | Disp. Grid: Ref. | Disp. Grid: Name | x | y | z | δx | δy | δz |
|----------------|----------------|------------------------|------------------------|----------|---------|-----|------------|------------|------------|
| | | | | [m] | [m] | [m] | [mm] | [mm] | [mm] |
| 26.86667 | 18.55556 | 0.00000 | -0.054916 | -4.3630 | 2.9052 | | | | |
| 26.86667 | 21.72778 | 0.00000 | -0.030150 | -2.9586 | 1.3547 | | | | |
| 26.86667 | 24.90000 | 0.00000 | -0.015272 | -1.7841 | 0.25516 | | | | |
| 29.33333 | -32.20000 | 0.00000 | -0.14962 | 1.5807 | 0.24024 | | | | |
| 29.33333 | -29.02778 | 0.00000 | -0.29799 | 2.6089 | 1.2646 | | | | |
| 29.33333 | -25.85556 | 0.00000 | -0.53696 | 3.7326 | 2.7578 | | | | |
| 29.33333 | -22.68333 | 0.00000 | -0.97484 | 5.0289 | 4.5712 | | | | |
| 29.33333 | -19.51111 | 0.00000 | -1.7764 | 6.0231 | 6.3429 | | | | |
| 29.33333 | -16.33889 | 0.00000 | -3.5812 | 6.0570 | 7.5170 | | | | |
| 29.33333 | -13.16667 | 0.00000 | -8.6946 | 2.4012 | 7.7120 | | | | |
| 29.33333 | -9.99444 | 0.00000 | -11.218 | 0.0 | 7.6937 | | | | |
| 29.33333 | -6.82222 | 0.00000 | -11.218 | 0.0 | 7.6937 | | | | |
| 29.33333 | -3.65000 | 0.00000 | -11.218 | 0.0 | 7.6937 | | | | |
| 29.33333 | -0.47778 | 0.00000 | -11.218 | 0.0 | 7.6937 | | | | |
| 29.33333 | 2.69444 | 0.00000 | -11.218 | 0.0 | 7.6937 | | | | |
| 29.33333 | 5.86667 | 0.00000 | -8.6946 | -2.4012 | 7.7120 | | | | |
| 29.33333 | 9.03889 | 0.00000 | -3.5812 | -6.0570 | 7.5170 | | | | |
| 29.33333 | 12.21111 | 0.00000 | -1.7764 | -6.0231 | 6.3429 | | | | |
| 29.33333 | 15.38333 | 0.00000 | -0.97484 | -5.0289 | 4.5712 | | | | |
| 29.33333 | 18.55556 | 0.00000 | -0.53696 | -3.7326 | 2.7578 | | | | |
| 29.33333 | 21.72778 | 0.00000 | -0.29799 | -2.6089 | 1.2646 | | | | |
| 29.33333 | 24.90000 | 0.00000 | -0.14962 | -1.5807 | 0.24024 | | | | |
| 31.80000 | -32.20000 | 0.00000 | -0.25110 | 1.2995 | 0.20617 | | | | |
| 31.80000 | -29.02778 | 0.00000 | -0.51423 | 2.1809 | 1.0423 | | | | |
| 31.80000 | -25.85556 | 0.00000 | -0.90131 | 2.9899 | 2.3936 | | | | |
| 31.80000 | -22.68333 | 0.00000 | -1.6152 | 3.8947 | 4.0437 | | | | |
| 31.80000 | -19.51111 | 0.00000 | -2.7912 | 4.3007 | 5.6912 | | | | |
| 31.80000 | -16.33889 | 0.00000 | -4.8779 | 3.6495 | 6.9118 | | | | |
| 31.80000 | -13.16667 | 0.00000 | -8.3144 | 1.1018 | 7.4248 | | | | |
| 31.80000 | -9.99444 | 0.00000 | -9.4760 | 0.0 | 7.4512 | | | | |
| 31.80000 | -6.82222 | 0.00000 | -9.4760 | 0.0 | 7.4512 | | | | |
| 31.80000 | -3.65000 | 0.00000 | -9.4760 | 0.0 | 7.4512 | | | | |
| 31.80000 | -0.47778 | 0.00000 | -9.4760 | 0.0 | 7.4512 | | | | |
| 31.80000 | 2.69444 | 0.00000 | -9.4760 | 0.0 | 7.4512 | | | | |
| 31.80000 | 5.86667 | 0.00000 | -8.3144 | -1.1018 | 7.4248 | | | | |
| 31.80000 | 9.03889 | 0.00000 | -4.8779 | -3.6495 | 6.9118 | | | | |
| 31.80000 | 12.21111 | 0.00000 | -2.7912 | -4.3007 | 5.6912 | | | | |
| 31.80000 | 15.38333 | 0.00000 | -1.6152 | -3.8947 | 4.0437 | | | | |
| 31.80000 | 18.55556 | 0.00000 | -0.90131 | -2.9899 | 2.3936 | | | | |
| 31.80000 | 21.72778 | 0.00000 | -0.51423 | -2.1809 | 1.0423 | | | | |
| 31.80000 | 24.90000 | 0.00000 | -0.25110 | -1.2995 | 0.20617 | | | | |
| 34.26667 | -32.20000 | 0.00000 | -0.29546 | 0.97238 | 0.16415 | | | | |
| 34.26667 | -29.02778 | 0.00000 | -0.64379 | 1.7217 | 0.72508 | | | | |
| 34.26667 | -25.85556 | 0.00000 | -1.1162 | 2.3111 | 1.8746 | | | | |
| 34.26667 | -22.68333 | 0.00000 | -1.9254 | 2.8644 | 3.2841 | | | | |
| 34.26667 | -19.51111 | 0.00000 | -3.1636 | 2.9780 | 4.7176 | | | | |
| 34.26667 | -16.33889 | 0.00000 | -4.9633 | 2.2839 | 5.8410 | | | | |
| 34.26667 | -13.16667 | 0.00000 | -7.2210 | 0.62662 | 6.3840 | | | | |
| 34.26667 | -9.99444 | 0.00000 | -7.8852 | 0.0 | 6.4158 | | | | |
| 34.26667 | -6.82222 | 0.00000 | -7.8852 | 0.0 | 6.4158 | | | | |
| 34.26667 | -3.65000 | 0.00000 | -7.8852 | 0.0 | 6.4158 | | | | |
| 34.26667 | -0.47778 | 0.00000 | -7.8852 | 0.0 | 6.4158 | | | | |
| 34.26667 | 2.69444 | 0.00000 | -7.8852 | 0.0 | 6.4158 | | | | |
| 34.26667 | 5.86667 | 0.00000 | -7.2210 | -0.62662 | 6.3840 | | | | |
| 34.26667 | 9.03889 | 0.00000 | -4.9633 | -2.2839 | 5.8410 | | | | |
| 34.26667 | 12.21111 | 0.00000 | -3.1636 | -2.9780 | 4.7176 | | | | |
| 34.26667 | 15.38333 | 0.00000 | -1.9254 | -2.8644 | 3.2841 | | | | |
| 34.26667 | 18.55556 | 0.00000 | -1.1162 | -2.3111 | 1.8746 | | | | |
| 34.26667 | 21.72778 | 0.00000 | -0.64379 | -1.7217 | 0.72508 | | | | |
| 34.26667 | 24.90000 | 0.00000 | -0.29546 | -0.97238 | 0.16415 | | | | |
| 36.73333 | -32.20000 | 0.00000 | -0.26639 | 0.62588 | 0.12253 | | | | |
| 36.73333 | -29.02778 | 0.00000 | -0.66727 | 1.2665 | 0.35876 | | | | |
| 36.73333 | -25.85556 | 0.00000 | -1.1881 | 1.7352 | 1.2825 | | | | |
| 36.73333 | -22.68333 | 0.00000 | -1.9121 | 1.9966 | 2.4101 | | | | |
| 36.73333 | -19.51111 | 0.00000 | -3.0492 | 2.0150 | 3.5705 | | | | |
| 36.73333 | -16.33889 | 0.00000 | -4.4733 | 1.4662 | 4.5028 | | | | |
| 36.73333 | -13.16667 | 0.00000 | -5.9948 | 0.38636 | 4.9700 | | | | |
| 36.73333 | -9.99444 | 0.00000 | -6.4079 | 0.0 | 4.9979 | | | | |
| 36.73333 | -6.82222 | 0.00000 | -6.4079 | 0.0 | 4.9979 | | | | |
| 36.73333 | -3.65000 | 0.00000 | -6.4079 | 0.0 | 4.9979 | | | | |
| 36.73333 | -0.47778 | 0.00000 | -6.4079 | 0.0 | 4.9979 | | | | |
| 36.73333 | 2.69444 | 0.00000 | -6.4079 | 0.0 | 4.9979 | | | | |
| 36.73333 | 5.86667 | 0.00000 | -5.9948 | -0.38636 | 4.9700 | | | | |
| 36.73333 | 9.03889 | 0.00000 | -4.4733 | -1.4662 | 4.5028 | | | | |
| 36.73333 | 12.21111 | 0.00000 | -3.0492 | -2.0150 | 3.5705 | | | | |
| 36.73333 | 15.38333 | 0.00000 | -1.9121 | -1.9966 | 2.4101 | | | | |
| 36.73333 | 18.55556 | 0.00000 | -1.1881 | -1.7352 | 1.2825 | | | | |



**GROUND AND WATER
LIMITED**

| | | |
|-----------|---------------------|-----------------|
| Job No. | Sheet No. | Rev. |
| | | |
| Drg. Ref. | | |
| Made by | Date 28-Feb-2023 | Checked Date |

| Stage: Ref. | Stage: Name | Disp. Grid: Ref. | Disp. Grid: Name | x | y | z | δx | δy | δz |
|----------------|----------------|------------------------|------------------------|----------|-----------|---------|-----------|-----------|----------|
| | | | | [m] | [m] | [m] | [mm] | [mm] | [mm] |
| 36.73333 | 21.72778 | 0.00000 | | 36.73333 | 21.72778 | 0.00000 | -0.66727 | -1.2665 | 0.35876 |
| 36.73333 | 24.90000 | 0.00000 | | 36.73333 | 24.90000 | 0.00000 | -0.26639 | -0.62588 | 0.12253 |
| 39.20000 | -32.20000 | 0.00000 | | 39.20000 | -32.20000 | 0.00000 | -0.15594 | 0.27977 | 0.074664 |
| 39.20000 | -29.02778 | 0.00000 | | 39.20000 | -29.02778 | 0.00000 | -0.57964 | 0.83702 | 0.18471 |
| 39.20000 | -25.85556 | 0.00000 | | 39.20000 | -25.85556 | 0.00000 | -1.1065 | 1.2258 | 0.69501 |
| 39.20000 | -22.68333 | 0.00000 | | 39.20000 | -22.68333 | 0.00000 | -1.7603 | 1.3931 | 1.5424 |
| 39.20000 | -19.51111 | 0.00000 | | 39.20000 | -19.51111 | 0.00000 | -2.6051 | 1.3107 | 2.4167 |
| 39.20000 | -16.33889 | 0.00000 | | 39.20000 | -16.33889 | 0.00000 | -3.7002 | 0.93694 | 3.1271 |
| 39.20000 | -13.16667 | 0.00000 | | 39.20000 | -13.16667 | 0.00000 | -4.7421 | 0.24300 | 3.4875 |
| 39.20000 | -9.99444 | 0.00000 | | 39.20000 | -9.99444 | 0.00000 | -5.0058 | 0.0 | 3.5092 |
| 39.20000 | -6.82222 | 0.00000 | | 39.20000 | -6.82222 | 0.00000 | -5.0058 | 0.0 | 3.5092 |
| 39.20000 | -3.65000 | 0.00000 | | 39.20000 | -3.65000 | 0.00000 | -5.0058 | 0.0 | 3.5092 |
| 39.20000 | -0.47778 | 0.00000 | | 39.20000 | -0.47778 | 0.00000 | -5.0058 | 0.0 | 3.5092 |
| 39.20000 | 2.69444 | 0.00000 | | 39.20000 | 2.69444 | 0.00000 | -5.0058 | 0.0 | 3.5092 |
| 39.20000 | 5.86667 | 0.00000 | | 39.20000 | 5.86667 | 0.00000 | -4.7421 | -0.24300 | 3.4875 |
| 39.20000 | 9.03889 | 0.00000 | | 39.20000 | 9.03889 | 0.00000 | -3.7002 | -0.93694 | 3.1271 |
| 39.20000 | 12.21111 | 0.00000 | | 39.20000 | 12.21111 | 0.00000 | -2.6051 | -1.3107 | 2.4167 |
| 39.20000 | 15.38333 | 0.00000 | | 39.20000 | 15.38333 | 0.00000 | -1.7603 | -1.3931 | 1.5424 |
| 39.20000 | 18.55556 | 0.00000 | | 39.20000 | 18.55556 | 0.00000 | -1.1065 | -1.2258 | 0.69501 |
| 39.20000 | 21.72778 | 0.00000 | | 39.20000 | 21.72778 | 0.00000 | -0.57964 | -0.83702 | 0.18471 |
| 39.20000 | 24.90000 | 0.00000 | | 39.20000 | 24.90000 | 0.00000 | -0.15594 | -0.27977 | 0.074664 |
| 41.66667 | -32.20000 | 0.00000 | | 41.66667 | -32.20000 | 0.00000 | 0.0 | 0.0 | 0.0 |
| 41.66667 | -29.02778 | 0.00000 | | 41.66667 | -29.02778 | 0.00000 | -0.38577 | 0.44405 | 0.11634 |
| 41.66667 | -25.85556 | 0.00000 | | 41.66667 | -25.85556 | 0.00000 | -0.88968 | 0.78501 | 0.22899 |
| 41.66667 | -22.68333 | 0.00000 | | 41.66667 | -22.68333 | 0.00000 | -1.4816 | 0.93534 | 0.77227 |
| 41.66667 | -19.51111 | 0.00000 | | 41.66667 | -19.51111 | 0.00000 | -2.1514 | 0.86857 | 1.3895 |
| 41.66667 | -16.33889 | 0.00000 | | 41.66667 | -16.33889 | 0.00000 | -2.8535 | 0.58723 | 1.8914 |
| 41.66667 | -13.16667 | 0.00000 | | 41.66667 | -13.16667 | 0.00000 | -3.4900 | 0.14841 | 2.1472 |
| 41.66667 | -9.99444 | 0.00000 | | 41.66667 | -9.99444 | 0.00000 | -3.6500 | 0.0 | 2.1627 |
| 41.66667 | -6.82222 | 0.00000 | | 41.66667 | -6.82222 | 0.00000 | -3.6500 | 0.0 | 2.1627 |
| 41.66667 | -3.65000 | 0.00000 | | 41.66667 | -3.65000 | 0.00000 | -3.6500 | 0.0 | 2.1627 |
| 41.66667 | -0.47778 | 0.00000 | | 41.66667 | -0.47778 | 0.00000 | -3.6500 | 0.0 | 2.1627 |
| 41.66667 | 2.69444 | 0.00000 | | 41.66667 | 2.69444 | 0.00000 | -3.6500 | 0.0 | 2.1627 |
| 41.66667 | 5.86667 | 0.00000 | | 41.66667 | 5.86667 | 0.00000 | -3.4900 | -0.14841 | 2.1472 |
| 41.66667 | 9.03889 | 0.00000 | | 41.66667 | 9.03889 | 0.00000 | -2.8535 | -0.58723 | 1.8914 |
| 41.66667 | 12.21111 | 0.00000 | | 41.66667 | 12.21111 | 0.00000 | -2.1514 | -0.86857 | 1.3895 |
| 41.66667 | 15.38333 | 0.00000 | | 41.66667 | 15.38333 | 0.00000 | -1.4816 | -0.93534 | 0.77227 |
| 41.66667 | 18.55556 | 0.00000 | | 41.66667 | 18.55556 | 0.00000 | -0.88968 | -0.78501 | 0.22899 |
| 41.66667 | 21.72778 | 0.00000 | | 41.66667 | 21.72778 | 0.00000 | -0.38577 | -0.44405 | 0.11634 |
| 41.66667 | 24.90000 | 0.00000 | | 41.66667 | 24.90000 | 0.00000 | 0.0 | 0.0 | 0.0 |
| 44.13333 | -32.20000 | 0.00000 | | 44.13333 | -32.20000 | 0.00000 | 0.0 | 0.0 | 0.0 |
| 44.13333 | -29.02778 | 0.00000 | | 44.13333 | -29.02778 | 0.00000 | -0.095797 | 0.090917 | 0.039827 |
| 44.13333 | -25.85556 | 0.00000 | | 44.13333 | -25.85556 | 0.00000 | -0.55914 | 0.40698 | 0.12999 |
| 44.13333 | -22.68333 | 0.00000 | | 44.13333 | -22.68333 | 0.00000 | -1.0770 | 0.56240 | 0.22218 |
| 44.13333 | -19.51111 | 0.00000 | | 44.13333 | -19.51111 | 0.00000 | -1.6289 | 0.54734 | 0.55805 |
| 44.13333 | -16.33889 | 0.00000 | | 44.13333 | -16.33889 | 0.00000 | -2.1688 | 0.37548 | 0.89285 |
| 44.13333 | -13.16667 | 0.00000 | | 44.13333 | -13.16667 | 0.00000 | -2.6198 | 0.095197 | 1.0625 |
| 44.13333 | -9.99444 | 0.00000 | | 44.13333 | -9.99444 | 0.00000 | -2.7250 | 0.0 | 1.0728 |
| 44.13333 | -6.82222 | 0.00000 | | 44.13333 | -6.82222 | 0.00000 | -2.7250 | 0.0 | 1.0728 |
| 44.13333 | -3.65000 | 0.00000 | | 44.13333 | -3.65000 | 0.00000 | -2.7250 | 0.0 | 1.0728 |
| 44.13333 | -0.47778 | 0.00000 | | 44.13333 | -0.47778 | 0.00000 | -2.7250 | 0.0 | 1.0728 |
| 44.13333 | 2.69444 | 0.00000 | | 44.13333 | 2.69444 | 0.00000 | -2.7250 | 0.0 | 1.0728 |
| 44.13333 | 5.86667 | 0.00000 | | 44.13333 | 5.86667 | 0.00000 | -2.6198 | -0.095197 | 1.0625 |
| 44.13333 | 9.03889 | 0.00000 | | 44.13333 | 9.03889 | 0.00000 | -2.1688 | -0.37548 | 0.89285 |
| 44.13333 | 12.21111 | 0.00000 | | 44.13333 | 12.21111 | 0.00000 | -1.6289 | -0.54734 | 0.55805 |
| 44.13333 | 15.38333 | 0.00000 | | 44.13333 | 15.38333 | 0.00000 | -1.0770 | -0.56240 | 0.22218 |
| 44.13333 | 18.55556 | 0.00000 | | 44.13333 | 18.55556 | 0.00000 | -0.55914 | -0.40698 | 0.12999 |
| 44.13333 | 21.72778 | 0.00000 | | 44.13333 | 21.72778 | 0.00000 | -0.095797 | -0.090917 | 0.039827 |
| 44.13333 | 24.90000 | 0.00000 | | 44.13333 | 24.90000 | 0.00000 | 0.0 | 0.0 | 0.0 |
| 46.60000 | -32.20000 | 0.00000 | | 46.60000 | -32.20000 | 0.00000 | 0.0 | 0.0 | 0.0 |
| 46.60000 | -29.02778 | 0.00000 | | 46.60000 | -29.02778 | 0.00000 | 0.0 | 0.0 | 0.0 |
| 46.60000 | -25.85556 | 0.00000 | | 46.60000 | -25.85556 | 0.00000 | -0.13519 | 0.083347 | 0.044896 |
| 46.60000 | -22.68333 | 0.00000 | | 46.60000 | -22.68333 | 0.00000 | -0.57637 | 0.25576 | 0.11656 |
| 46.60000 | -19.51111 | 0.00000 | | 46.60000 | -19.51111 | 0.00000 | -1.0213 | 0.29330 | 0.17028 |
| 46.60000 | -16.33889 | 0.00000 | | 46.60000 | -16.33889 | 0.00000 | -1.4279 | 0.21320 | 0.22250 |
| 46.60000 | -13.16667 | 0.00000 | | 46.60000 | -13.16667 | 0.00000 | -1.7362 | 0.055074 | 0.25336 |
| 46.60000 | -9.99444 | 0.00000 | | 46.60000 | -9.99444 | 0.00000 | -1.8000 | 0.0 | 0.25531 |
| 46.60000 | -6.82222 | 0.00000 | | 46.60000 | -6.82222 | 0.00000 | -1.8000 | 0.0 | 0.25531 |
| 46.60000 | -3.65000 | 0.00000 | | 46.60000 | -3.65000 | 0.00000 | -1.8000 | 0.0 | 0.25531 |
| 46.60000 | -0.47778 | 0.00000 | | 46.60000 | -0.47778 | 0.00000 | -1.8000 | 0.0 | 0.25531 |
| 46.60000 | 2.69444 | 0.00000 | | 46.60000 | 2.69444 | 0.00000 | -1.8000 | 0.0 | 0.25531 |
| 46.60000 | 5.86667 | 0.00000 | | 46.60000 | 5.86667 | 0.00000 | -1.7362 | -0.055074 | 0.25336 |
| 46.60000 | 9.03889 | 0.00000 | | 46.60000 | 9.03889 | 0.00000 | -1.4279 | -0.21320 | 0.22250 |
| 46.60000 | 12.21111 | 0.00000 | | 46.60000 | 12.21111 | 0.00000 | -1.0213 | -0.29330 | 0.17028 |
| 46.60000 | 15.38333 | 0.00000 | | 46.60000 | 15.38333 | 0.00000 | -0.57637 | -0.25576 | 0.11656 |
| 46.60000 | 18.55556 | 0.00000 | | 46.60000 | 18.55556 | 0.00000 | -0.13519 | -0.083347 | 0.044896 |
| 46.60000 | 21.72778 | 0.00000 | | 46.60000 | 21.72778 | 0.00000 | 0.0 | 0.0 | 0.0 |

| | | |
|-----------|-------------|---------|
| Job No. | Sheet No. | Rev. |
| | | |
| Drg. Ref. | | |
| Made by | Date | Checked |
| | 28-Feb-2023 | |
| | | Date |

| Stage: Ref. | Stage: Name | Disp. Grid: Ref. | Disp. Grid: Name | x | y | z | δx | δy | δz |
|-------------|-------------|------------------|------------------|----------|----------|---------|------------|------------|------------|
| | | | | [m] | [m] | [m] | [mm] | [mm] | [mm] |
| | | | | 46.60000 | 24.90000 | 0.00000 | 0.0 | 0.0 | 0.0 |

Specific Building Damage Results - Horizontal Displacements

| Stage: δH // Ref. | Stage: δH_{perp} . | Name | Specific Building: Ref. | Specific Building: Name | Sub-building Name | Dist. | x | y | z | δx | δy |
|---------------------------|----------------------------|------------|-------------------------|-------------------------|-------------------|---------|----------|-----------|---------|------------|------------|
| [mm] | [mm] | | | | | [m] | [m] | [m] | [m] | [mm] | [mm] |
| 0.0 | 2.8875 | Base Model | 1 | Building 1 | Sub # | 0.0 | 12.50000 | -29.30000 | 0.00000 | 0.0 | 2.8875 |
| 0.0 | 2.8875 | | | | | 1.3125 | 13.81250 | -29.30000 | 0.00000 | 0.0 | 2.8875 |
| 0.0 | 2.8875 | | | | | 2.6250 | 15.12500 | -29.30000 | 0.00000 | 0.0 | 2.8875 |
| 0.0 | 2.8875 | | | | | 3.9375 | 16.43750 | -29.30000 | 0.00000 | 0.0 | 2.8875 |
| 0.0 | 2.8875 | | | | | 5.2500 | 17.75000 | -29.30000 | 0.00000 | 0.0 | 2.8875 |
| 0.0 | 2.8875 | | | | | 6.5625 | 19.06250 | -29.30000 | 0.00000 | 0.0 | 2.8875 |
| 0.0 | 2.8875 | | | | | 7.8750 | 20.37500 | -29.30000 | 0.00000 | 0.0 | 2.8875 |
| 0.0 | 2.8875 | | | | | 9.1875 | 21.68750 | -29.30000 | 0.00000 | 0.0 | 2.8875 |
| 0.0 | 2.8875 | | | | | 10.5000 | 23.00000 | -29.30000 | 0.00000 | 0.0 | 2.8875 |
| -2.8875 | 0.0 | d | 2 | Building 2 | Sub # | 0.0 | 23.00000 | -29.30000 | 0.00000 | 0.0 | 2.8875 |
| -2.4150 | 0.0 | d | | | | 1.2600 | 23.00000 | -30.56000 | 0.00000 | 0.0 | 2.4150 |
| -1.9425 | 0.0 | d | | | | 2.5200 | 23.00000 | -31.82000 | 0.00000 | 0.0 | 1.9425 |
| -1.4700 | 0.0 | d | | | | 3.7800 | 23.00000 | -33.08000 | 0.00000 | 0.0 | 1.4700 |
| -0.99750 | 0.0 | d | | | | 5.0400 | 23.00000 | -34.34000 | 0.00000 | 0.0 | 0.99750 |
| -0.52500 | 0.0 | d | | | | 6.3000 | 23.00000 | -35.60000 | 0.00000 | 0.0 | 0.52500 |
| -0.052500 | 0.0 | d | | | | 7.5600 | 23.00000 | -36.86000 | 0.00000 | 0.0 | 0.052500 |
| 0.0 | 0.0 | d | | | | 8.8200 | 23.00000 | -38.12000 | 0.00000 | 0.0 | 0.0 |
| 0.0 | 0.0 | d | | | | 10.080 | 23.00000 | -39.38000 | 0.00000 | 0.0 | 0.0 |
| 0.0 | 0.0 | d | | | | 11.340 | 23.00000 | -40.64000 | 0.00000 | 0.0 | 0.0 |
| 0.0 | 0.0 | d | | | | 12.600 | 23.00000 | -41.90000 | 0.00000 | 0.0 | 0.0 |
| 0.0 | 0.0 | d | 3 | Building 3 | Sub # | 0.0 | 23.00000 | -41.90000 | 0.00000 | 0.0 | 0.0 |
| 0.0 | 0.0 | d | | | | 1.2900 | 24.29000 | -41.90000 | 0.00000 | 0.0 | 0.0 |
| 0.0 | 0.0 | d | | | | 2.5800 | 25.58000 | -41.90000 | 0.00000 | 0.0 | 0.0 |
| 0.0 | 0.0 | d | | | | 3.8700 | 26.87000 | -41.90000 | 0.00000 | 0.0 | 0.0 |
| 0.0 | 0.0 | d | | | | 5.1600 | 28.16000 | -41.90000 | 0.00000 | 0.0 | 0.0 |
| 0.0 | 0.0 | d | | | | 6.4500 | 29.45000 | -41.90000 | 0.00000 | 0.0 | 0.0 |
| 0.0 | 0.0 | d | | | | 7.7400 | 30.74000 | -41.90000 | 0.00000 | 0.0 | 0.0 |
| 0.0 | 0.0 | d | | | | 9.0300 | 32.03000 | -41.90000 | 0.00000 | 0.0 | 0.0 |
| 0.0 | 0.0 | d | | | | 10.320 | 33.32000 | -41.90000 | 0.00000 | 0.0 | 0.0 |
| 0.0 | 0.0 | d | | | | 11.610 | 34.61000 | -41.90000 | 0.00000 | 0.0 | 0.0 |
| 0.0 | 0.0 | d | | | | 12.900 | 35.90000 | -41.90000 | 0.00000 | 0.0 | 0.0 |
| 0.0 | 0.0 | d | 4 | Building 4 | Sub # | 0.0 | 35.90000 | -41.90000 | 0.00000 | 0.0 | 0.0 |
| 0.0 | 0.0 | d | | | | 1.5000 | 35.90000 | -43.40000 | 0.00000 | 0.0 | 0.0 |



**GROUND AND WATER
LIMITED**

| | | |
|-----------|-------------|---------|
| Job No. | Sheet No. | Rev. |
| | | |
| Drg. Ref. | | |
| Made by | Date | Checked |
| | 28-Feb-2023 | |
| | | Date |

| Stage: $\delta H//$ Ref. | Stage: $\delta H_{\text{perp.}}$ | Name Building: Ref. | Specific Building: Name | Sub-building Name | Dist. | x | y | z | δx | δy | |
|--------------------------------|-------------------------------------|---------------------------|-------------------------------|----------------------|--------|-----------|-----------|-----------|------------|------------|--------|
| 0.0 | 0.0 | d | | | 3.0000 | 35.90000 | -44.90000 | 0.00000 | 0.0 | 0.0 | |
| 0.0 | 0.0 | d | | | 4.5000 | 35.90000 | -46.40000 | 0.00000 | 0.0 | 0.0 | |
| 0.0 | 0.0 | d | | | 6.0000 | 35.90000 | -47.90000 | 0.00000 | 0.0 | 0.0 | |
| 0.0 | 0.0 | d | | | 7.5000 | 35.90000 | -49.40000 | 0.00000 | 0.0 | 0.0 | |
| 0.0 | 0.0 | d | 5 | Building 5 | Sub # | 0.0 | 35.90000 | -49.40000 | 0.00000 | 0.0 | 0.0 |
| 0.0 | 0.0 | d | | | 1.5600 | 34.34000 | -49.40000 | 0.00000 | 0.0 | 0.0 | |
| 0.0 | 0.0 | d | | | 3.1200 | 32.78000 | -49.40000 | 0.00000 | 0.0 | 0.0 | |
| 0.0 | 0.0 | d | | | 4.6800 | 31.22000 | -49.40000 | 0.00000 | 0.0 | 0.0 | |
| 0.0 | 0.0 | d | | | 6.2400 | 29.66000 | -49.40000 | 0.00000 | 0.0 | 0.0 | |
| 0.0 | 0.0 | d | | | 7.8000 | 28.10000 | -49.40000 | 0.00000 | 0.0 | 0.0 | |
| 0.0 | 0.0 | d | | | 9.3600 | 26.54000 | -49.40000 | 0.00000 | 0.0 | 0.0 | |
| 0.0 | 0.0 | d | | | 10.920 | 24.98000 | -49.40000 | 0.00000 | 0.0 | 0.0 | |
| 0.0 | 0.0 | d | | | 12.480 | 23.42000 | -49.40000 | 0.00000 | 0.0 | 0.0 | |
| 0.0 | 0.0 | d | | | 14.040 | 21.86000 | -49.40000 | 0.00000 | 0.0 | 0.0 | |
| 0.0 | 0.0 | d | | | 15.600 | 20.30000 | -49.40000 | 0.00000 | 0.0 | 0.0 | |
| 0.0 | 0.0 | d | | | 17.160 | 18.74000 | -49.40000 | 0.00000 | 0.0 | 0.0 | |
| 0.0 | 0.0 | d | | | 18.720 | 17.18000 | -49.40000 | 0.00000 | 0.0 | 0.0 | |
| 0.0 | 0.0 | d | | | 20.280 | 15.62000 | -49.40000 | 0.00000 | 0.0 | 0.0 | |
| 0.0 | 0.0 | d | | | 21.840 | 14.06000 | -49.40000 | 0.00000 | 0.0 | 0.0 | |
| 0.0 | 0.0 | d | | | 23.400 | 12.50000 | -49.40000 | 0.00000 | 0.0 | 0.0 | |
| 0.0 | 0.0 | d | 6 | Building 6 | Sub # | 0.0 | 12.50000 | -29.30000 | 0.00000 | 0.0 | 2.8875 |
| -2.8875 | 0.0 | | | | 1.3400 | 12.50000 | -30.64000 | 0.00000 | 0.0 | 2.3850 | |
| -2.3850 | 0.0 | | | | 2.6800 | 12.50000 | -31.98000 | 0.00000 | 0.0 | 1.8825 | |
| -1.8825 | 0.0 | | | | 4.0200 | 12.50000 | -33.32000 | 0.00000 | 0.0 | 1.3800 | |
| -1.3800 | 0.0 | | | | 5.3600 | 12.50000 | -34.66000 | 0.00000 | 0.0 | 0.87750 | |
| -0.87750 | 0.0 | | | | 6.7000 | 12.50000 | -36.00000 | 0.00000 | 0.0 | 0.37500 | |
| -0.37500 | 0.0 | | | | 8.0400 | 12.50000 | -37.34000 | 0.00000 | 0.0 | 0.0 | |
| 0.0 | 0.0 | | | | 9.3800 | 12.50000 | -38.68000 | 0.00000 | 0.0 | 0.0 | |
| 0.0 | 0.0 | | | | 10.720 | 12.50000 | -40.02000 | 0.00000 | 0.0 | 0.0 | |
| 0.0 | 0.0 | | | | 12.060 | 12.50000 | -41.36000 | 0.00000 | 0.0 | 0.0 | |
| 0.0 | 0.0 | | | | 13.400 | 12.50000 | -42.70000 | 0.00000 | 0.0 | 0.0 | |
| 0.0 | 0.0 | | | | 14.740 | 12.50000 | -44.04000 | 0.00000 | 0.0 | 0.0 | |
| 0.0 | 0.0 | | | | 16.080 | 12.50000 | -45.38000 | 0.00000 | 0.0 | 0.0 | |
| 0.0 | 0.0 | | | | 17.420 | 12.50000 | -46.72000 | 0.00000 | 0.0 | 0.0 | |
| 0.0 | 0.0 | | | | 18.760 | 12.50000 | -48.06000 | 0.00000 | 0.0 | 0.0 | |
| 0.0 | 0.0 | | | | 20.100 | 12.50000 | -49.40000 | 0.00000 | 0.0 | 0.0 | |
| 0.0 | 0.0 | d | 7 | Building 7 | Sub # | 0.0 | -10.40000 | -1.00000 | 0.00000 | 6.2534 | 0.0 |
| -6.2534 | 0.0 | d | | | 1.3700 | -11.77000 | -1.00000 | 0.00000 | 5.4716 | 0.0 | |
| -5.4716 | 0.0 | d | | | | | | | | | |



**GROUND AND WATER
LIMITED**

| | | |
|-----------|---------------------|-----------------|
| Job No. | Sheet No. | Rev. |
| | | |
| Drg. Ref. | | |
| Made by | Date 28-Feb-2023 | Checked Date |

| Stage: $\delta H//$ Ref. | Stage: $\delta H_{perp.}$ | Name Building: Ref. | Specific Building: Name | Sub-building Name | Dist. | x | y | z | δx | δy |
|--------------------------------|------------------------------|---------------------------|-------------------------------|----------------------|--------|-----------|-----------|---------|------------|------------|
| -4.7051 | 0.0 | d | | | 2.7400 | -13.14000 | -1.00000 | 0.00000 | 4.7051 | 0.0 |
| -3.9475 | 0.0 | d | | | 4.1100 | -14.51000 | -1.00000 | 0.00000 | 3.9475 | 0.0 |
| -3.3450 | 0.0 | d | | | 5.4800 | -15.88000 | -1.00000 | 0.00000 | 3.3450 | 0.0 |
| -2.8313 | 0.0 | d | | | 6.8500 | -17.25000 | -1.00000 | 0.00000 | 2.8313 | 0.0 |
| -2.3175 | 0.0 | d | | | 8.2200 | -18.62000 | -1.00000 | 0.00000 | 2.3175 | 0.0 |
| -1.8038 | 0.0 | d | | | 9.5900 | -19.99000 | -1.00000 | 0.00000 | 1.8038 | 0.0 |
| -1.2900 | 0.0 | d | | | 10.960 | -21.36000 | -1.00000 | 0.00000 | 1.2900 | 0.0 |
| -0.77625 | 0.0 | d | | | 12.330 | -22.73000 | -1.00000 | 0.00000 | 0.77625 | 0.0 |
| -0.26250 | 0.0 | d | | | 13.700 | -24.10000 | -1.00000 | 0.00000 | 0.26250 | 0.0 |
| 0.0 | 0.26250 | d | 8 | Building 8 Sub # | 0.0 | -24.10000 | -1.00000 | 0.00000 | 0.26250 | 0.0 |
| 0.0 | 0.26250 | d | | | 1.5300 | -24.10000 | -2.53000 | 0.00000 | 0.26250 | 0.0 |
| 0.0 | 0.26250 | d | | | 3.0600 | -24.10000 | -4.06000 | 0.00000 | 0.26250 | 0.0 |
| 0.0 | 0.26250 | d | | | 4.5900 | -24.10000 | -5.59000 | 0.00000 | 0.26250 | 0.0 |
| 0.0 | 0.26250 | d | | | 6.1200 | -24.10000 | -7.12000 | 0.00000 | 0.26250 | 0.0 |
| 0.0 | 0.26250 | d | | | 7.6500 | -24.10000 | -8.65000 | 0.00000 | 0.26250 | 0.0 |
| 0.0 | 0.26250 | d | | | 9.1800 | -24.10000 | -10.18000 | 0.00000 | 0.26250 | 0.0 |
| 0.0 | 0.26250 | d | | | 10.710 | -24.10000 | -11.71000 | 0.00000 | 0.26250 | 0.0 |
| -0.0069761 | 0.24711 | d | | | 12.240 | -24.10000 | -13.24000 | 0.00000 | 0.24711 | 0.0069761 |
| -0.014288 | 0.19697 | d | | | 13.770 | -24.10000 | -14.77000 | 0.00000 | 0.19697 | 0.014288 |
| -0.014230 | 0.11842 | d | 9 | Building 9 Sub # | 0.0 | -10.40000 | -1.00000 | 0.00000 | 0.11842 | 0.014230 |
| 0.0 | 6.2534 | d | | | 1.3400 | -10.40000 | -2.34000 | 0.00000 | 6.2534 | 0.0 |
| 0.0 | 6.2534 | d | | | 2.6800 | -10.40000 | -3.68000 | 0.00000 | 6.2534 | 0.0 |
| 0.0 | 6.2534 | d | | | 4.0200 | -10.40000 | -5.02000 | 0.00000 | 6.2534 | 0.0 |
| 0.0 | 6.2534 | d | | | 5.3600 | -10.40000 | -6.36000 | 0.00000 | 6.2534 | 0.0 |
| 0.0 | 6.2534 | d | | | 6.7000 | -10.40000 | -7.70000 | 0.00000 | 6.2534 | 0.0 |
| -6.2534 | 0.0 | d | 10 | Building 10 Sub # | 0.0 | -10.40000 | -7.70000 | 0.00000 | 6.2534 | 0.0 |
| -5.4734 | 0.0 | d | | | 1.3667 | -11.76667 | -7.70000 | 0.00000 | 5.4734 | 0.0 |
| -4.7088 | 0.0 | d | | | 2.7333 | -13.13333 | -7.70000 | 0.00000 | 4.7088 | 0.0 |
| -3.9530 | 0.0 | d | | | 4.1000 | -14.50000 | -7.70000 | 0.00000 | 3.9530 | 0.0 |
| 0.0 | 3.9530 | d | 11 | Building 11 Sub # | 0.0 | -14.50000 | -7.70000 | 0.00000 | 3.9530 | 0.0 |
| 0.0 | 3.9530 | d | | | 1.3000 | -14.50000 | -9.00000 | 0.00000 | 3.9530 | 0.0 |
| 0.0 | 3.9530 | d | | | 2.6000 | -14.50000 | -10.30000 | 0.00000 | 3.9530 | 0.0 |
| 0.0 | 3.9530 | d | | | 3.9000 | -14.50000 | -11.60000 | 0.00000 | 3.9530 | 0.0 |
| -0.12111 | 3.8226 | d | | | 5.2000 | -14.50000 | -12.90000 | 0.00000 | 3.8226 | 0.12111 |
| -3.8226 | -0.12111 | d | 12 | Building 12 Sub # | 0.0 | -14.50000 | -12.90000 | 0.00000 | 3.8226 | 0.12111 |
| -3.2832 | -0.095379 | d | | | 1.2750 | -15.77500 | -12.90000 | 0.00000 | 3.2832 | 0.095379 |
| -2.8251 | -0.075777 | d | | | 2.5500 | -17.05000 | -12.90000 | 0.00000 | 2.8251 | 0.075777 |
| | | | | | 3.8250 | -18.32500 | -12.90000 | 0.00000 | 2.3642 | 0.058897 |



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|-----------|-------------|---------|
| Job No. | Sheet No. | Rev. |
| | | |
| Drg. Ref. | | |
| Made by | Date | Checked |
| | 28-Feb-2023 | |
| | | Date |

| Stage: Ref. | Stage: Name | Specific Building: Ref. | Specific Building: Name | Sub-building Name | Dist. | x | y | z | δx | δy |
|-------------|-------------|-------------------------|-------------------------|-------------------|--------|-----------|-----------|---------|---------|----------|
| -2.3642 | -0.058897 | d | | | 5.1000 | -19.60000 | -12.90000 | 0.00000 | 1.9011 | 0.044211 |
| -1.9011 | -0.044211 | d | | | 0.0 | -19.60000 | -12.90000 | 0.00000 | 1.9011 | 0.044211 |
| -0.044211 | 1.9011 | d | Building 13 | Sub # | 1.1333 | -19.60000 | -14.03333 | 0.00000 | 1.8040 | 0.11388 |
| -0.11388 | 1.8040 | d | | | 2.2667 | -19.60000 | -15.16667 | 0.00000 | 1.6878 | 0.17848 |
| -0.17848 | 1.6878 | d | | | 3.4000 | -19.60000 | -16.30000 | 0.00000 | 1.5558 | 0.23511 |
| -0.23511 | 1.5558 | d | Building 14 | Sub # | 0.0 | -19.60000 | -16.30000 | 0.00000 | 1.5558 | 0.23511 |
| -1.5558 | -0.23511 | d | | | 1.4667 | -21.06667 | -16.30000 | 0.00000 | 1.0986 | 0.15318 |
| -1.0986 | -0.15318 | d | | | 2.9333 | -22.53333 | -16.30000 | 0.00000 | 0.62977 | 0.081497 |
| -0.62977 | -0.081497 | d | | | 4.4000 | -24.00000 | -16.30000 | 0.00000 | 0.15135 | 0.018270 |
| -0.15135 | -0.018270 | d | | | | | | | | |

d - Displacements include imported displacements.

Specific Building Damage Results - Vertical Displacements

| Stage: Ref. | Stage: Name | Specific Building: Ref. | Specific Building: Name | Sub-building Name | Vertical Offset | Dist. | x | y | z | δz |
|-------------|-------------|-------------------------|-------------------------|-------------------|-----------------|---------|----------|-----------|---------|----------|
| | | | | | [m] | [m] | [m] | [m] | [m] | [mm] |
| 0 | Base Model | 1 | Building 1 | Sub # | 0.0 | 0.0 | 12.50000 | -29.30000 | 0.00000 | 1.2437 |
| | | | | | | 1.3125 | 13.81250 | -29.30000 | 0.00000 | 1.2437 |
| | | | | | | 2.6250 | 15.12500 | -29.30000 | 0.00000 | 1.2437 |
| | | | | | | 3.9375 | 16.43750 | -29.30000 | 0.00000 | 1.2437 |
| | | | | | | 5.2500 | 17.75000 | -29.30000 | 0.00000 | 1.2437 |
| | | | | | | 6.5625 | 19.06250 | -29.30000 | 0.00000 | 1.2437 |
| | | | | | | 7.8750 | 20.37500 | -29.30000 | 0.00000 | 1.2437 |
| | | | | | | 9.1875 | 21.68750 | -29.30000 | 0.00000 | 1.2437 |
| | | | | | | 10.5000 | 23.00000 | -29.30000 | 0.00000 | 1.2437 |
| d | | | | | | | | | | |
| | | 2 | Building 2 | Sub # | 0.0 | 0.0 | 23.00000 | -29.30000 | 0.00000 | 1.2437 |
| d | | | | | | 1.2600 | 23.00000 | -30.56000 | 0.00000 | 0.77052 |
| d | | | | | | 2.5200 | 23.00000 | -31.82000 | 0.00000 | 0.36567 |
| d | | | | | | 3.7800 | 23.00000 | -33.08000 | 0.00000 | 0.19288 |
| d | | | | | | 5.0400 | 23.00000 | -34.34000 | 0.00000 | 0.13322 |
| d | | | | | | 6.3000 | 23.00000 | -35.60000 | 0.00000 | 0.085026 |
| d | | | | | | 7.5600 | 23.00000 | -36.86000 | 0.00000 | 0.015925 |
| d | | | | | | 8.8200 | 23.00000 | -38.12000 | 0.00000 | 0.0 |
| d | | | | | | 10.080 | 23.00000 | -39.38000 | 0.00000 | 0.0 |
| d | | | | | | 11.340 | 23.00000 | -40.64000 | 0.00000 | 0.0 |
| d | | | | | | 12.600 | 23.00000 | -41.90000 | 0.00000 | 0.0 |
| d | | | | | | | | | | |
| | | 3 | Building 3 | Sub # | 0.0 | 0.0 | 23.00000 | -41.90000 | 0.00000 | 0.0 |
| d | | | | | | 1.2900 | 24.29000 | -41.90000 | 0.00000 | 0.0 |
| d | | | | | | 2.5800 | 25.58000 | -41.90000 | 0.00000 | 0.0 |
| d | | | | | | 3.8700 | 26.87000 | -41.90000 | 0.00000 | 0.0 |
| d | | | | | | 5.1600 | 28.16000 | -41.90000 | 0.00000 | 0.0 |
| d | | | | | | 6.4500 | 29.45000 | -41.90000 | 0.00000 | 0.0 |
| d | | | | | | 7.7400 | 30.74000 | -41.90000 | 0.00000 | 0.0 |
| d | | | | | | 9.0300 | 32.03000 | -41.90000 | 0.00000 | 0.0 |
| d | | | | | | 10.320 | 33.32000 | -41.90000 | 0.00000 | 0.0 |



**GROUND AND WATER
LIMITED**

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|-----------|---------------------|-----------------|
| Job No. | Sheet No. | Rev. |
| | | |
| Drg. Ref. | | |
| Made by | Date 28-Feb-2023 | Checked Date |

| Stage: Ref. | Stage: Name | Specific Building: Ref. | Specific Building: Name | Sub-building Name | Vertical Offset [m] | Dist. [m] | x [m] | y [m] | z [m] | δz [mm] |
|-------------|-------------|-------------------------|-------------------------|-------------------|---------------------|-----------|-----------|-----------|---------|----------|
| d | | | | | | 11.610 | 34.61000 | -41.90000 | 0.00000 | 0.0 |
| d | | | | | | 12.900 | 35.90000 | -41.90000 | 0.00000 | 0.0 |
| d | | 4 | Building 4 | Sub # | 0.0 | 0.0 | 35.90000 | -41.90000 | 0.00000 | 0.0 |
| d | | | | | | 1.5000 | 35.90000 | -43.40000 | 0.00000 | 0.0 |
| d | | | | | | 3.0000 | 35.90000 | -44.90000 | 0.00000 | 0.0 |
| d | | | | | | 4.5000 | 35.90000 | -46.40000 | 0.00000 | 0.0 |
| d | | | | | | 6.0000 | 35.90000 | -47.90000 | 0.00000 | 0.0 |
| d | | | | | | 7.5000 | 35.90000 | -49.40000 | 0.00000 | 0.0 |
| d | | 5 | Building 5 | Sub # | 0.0 | 0.0 | 35.90000 | -49.40000 | 0.00000 | 0.0 |
| d | | | | | | 1.5600 | 34.34000 | -49.40000 | 0.00000 | 0.0 |
| d | | | | | | 3.1200 | 32.78000 | -49.40000 | 0.00000 | 0.0 |
| d | | | | | | 4.6800 | 31.22000 | -49.40000 | 0.00000 | 0.0 |
| d | | | | | | 6.2400 | 29.66000 | -49.40000 | 0.00000 | 0.0 |
| d | | | | | | 7.8000 | 28.10000 | -49.40000 | 0.00000 | 0.0 |
| d | | | | | | 9.3600 | 26.54000 | -49.40000 | 0.00000 | 0.0 |
| d | | | | | | 10.920 | 24.98000 | -49.40000 | 0.00000 | 0.0 |
| d | | | | | | 12.480 | 23.42000 | -49.40000 | 0.00000 | 0.0 |
| d | | | | | | 14.040 | 21.86000 | -49.40000 | 0.00000 | 0.0 |
| d | | | | | | 15.600 | 20.30000 | -49.40000 | 0.00000 | 0.0 |
| d | | | | | | 17.160 | 18.74000 | -49.40000 | 0.00000 | 0.0 |
| d | | | | | | 18.720 | 17.18000 | -49.40000 | 0.00000 | 0.0 |
| d | | | | | | 20.280 | 15.62000 | -49.40000 | 0.00000 | 0.0 |
| d | | | | | | 21.840 | 14.06000 | -49.40000 | 0.00000 | 0.0 |
| d | | | | | | 23.400 | 12.50000 | -49.40000 | 0.00000 | 0.0 |
| d | | 6 | Building 6 | Sub # | 0.0 | 0.0 | 12.50000 | -29.30000 | 0.00000 | 1.2437 |
| | | | | | | 1.3400 | 12.50000 | -30.64000 | 0.00000 | 0.74288 |
| | | | | | | 2.6800 | 12.50000 | -31.98000 | 0.00000 | 0.31860 |
| | | | | | | 4.0200 | 12.50000 | -33.32000 | 0.00000 | 0.17935 |
| | | | | | | 5.3600 | 12.50000 | -34.66000 | 0.00000 | 0.12106 |
| | | | | | | 6.7000 | 12.50000 | -36.00000 | 0.00000 | 0.067079 |
| | | | | | | 8.0400 | 12.50000 | -37.34000 | 0.00000 | 0.0 |
| | | | | | | 9.3800 | 12.50000 | -38.68000 | 0.00000 | 0.0 |
| | | | | | | 10.720 | 12.50000 | -40.02000 | 0.00000 | 0.0 |
| | | | | | | 12.060 | 12.50000 | -41.36000 | 0.00000 | 0.0 |
| | | | | | | 13.400 | 12.50000 | -42.70000 | 0.00000 | 0.0 |
| | | | | | | 14.740 | 12.50000 | -44.04000 | 0.00000 | 0.0 |
| | | | | | | 16.080 | 12.50000 | -45.38000 | 0.00000 | 0.0 |
| | | | | | | 17.420 | 12.50000 | -46.72000 | 0.00000 | 0.0 |
| | | | | | | 18.760 | 12.50000 | -48.06000 | 0.00000 | 0.0 |
| | | | | | | 20.100 | 12.50000 | -49.40000 | 0.00000 | 0.0 |
| d | | 7 | Building 7 | Sub # | 0.0 | 0.0 | -10.40000 | -1.00000 | 0.00000 | 4.8358 |
| d | | | | | | 1.3700 | -11.77000 | -1.00000 | 0.00000 | 4.0028 |
| d | | | | | | 2.7400 | -13.14000 | -1.00000 | 0.00000 | 3.1967 |
| d | | | | | | 4.1100 | -14.51000 | -1.00000 | 0.00000 | 2.4466 |
| d | | | | | | 5.4800 | -15.88000 | -1.00000 | 0.00000 | 1.7721 |
| d | | | | | | 6.8500 | -17.25000 | -1.00000 | 0.00000 | 1.1835 |



**GROUND AND WATER
LIMITED**

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| Job No. | Sheet No. | Rev. |
| | | |
| Drg. Ref. | | |
| Made by | Date 28-Feb-2023 | Checked Date |

| Stage: Ref. | Stage: Name | Specific Building: Ref. | Specific Building: Name | Sub-building Name | Vertical Offset [m] | Dist. [m] | x [m] | y [m] | z [m] | δz [mm] |
|-------------|-------------|-------------------------|-------------------------|-------------------|---------------------|-----------|-----------|-----------|---------|----------|
| d | | | | | | 8.2200 | -18.62000 | -1.00000 | 0.00000 | 0.68169 |
| d | | | | | | 9.5900 | -19.99000 | -1.00000 | 0.00000 | 0.25815 |
| d | | | | | | 10.960 | -21.36000 | -1.00000 | 0.00000 | 0.16702 |
| d | | | | | | 12.330 | -22.73000 | -1.00000 | 0.00000 | 0.11104 |
| d | | | | | | 13.700 | -24.10000 | -1.00000 | 0.00000 | 0.051564 |
| d | | 8 | Building 8 | Sub # | 0.0 | 0.0 | -24.10000 | -1.00000 | 0.00000 | 0.051564 |
| d | | | | | | 1.5300 | -24.10000 | -2.53000 | 0.00000 | 0.051564 |
| d | | | | | | 3.0600 | -24.10000 | -4.06000 | 0.00000 | 0.051564 |
| d | | | | | | 4.5900 | -24.10000 | -5.59000 | 0.00000 | 0.051564 |
| d | | | | | | 6.1200 | -24.10000 | -7.12000 | 0.00000 | 0.051564 |
| d | | | | | | 7.6500 | -24.10000 | -8.65000 | 0.00000 | 0.051564 |
| d | | | | | | 9.1800 | -24.10000 | -10.18000 | 0.00000 | 0.051564 |
| d | | | | | | 10.710 | -24.10000 | -11.71000 | 0.00000 | 0.051564 |
| d | | | | | | 12.240 | -24.10000 | -13.24000 | 0.00000 | 0.050317 |
| d | | | | | | 13.770 | -24.10000 | -14.77000 | 0.00000 | 0.043755 |
| d | | | | | | 15.300 | -24.10000 | -16.30000 | 0.00000 | 0.030714 |
| d | | 9 | Building 9 | Sub # | 0.0 | 0.0 | -10.40000 | -1.00000 | 0.00000 | 4.8358 |
| d | | | | | | 1.3400 | -10.40000 | -2.34000 | 0.00000 | 4.8358 |
| d | | | | | | 2.6800 | -10.40000 | -3.68000 | 0.00000 | 4.8358 |
| d | | | | | | 4.0200 | -10.40000 | -5.02000 | 0.00000 | 4.8358 |
| d | | | | | | 5.3600 | -10.40000 | -6.36000 | 0.00000 | 4.8358 |
| d | | | | | | 6.7000 | -10.40000 | -7.70000 | 0.00000 | 4.8358 |
| d | | 10 | Building 10 | Sub # | 0.0 | 0.0 | -10.40000 | -7.70000 | 0.00000 | 4.8358 |
| d | | | | | | 1.3667 | -11.76667 | -7.70000 | 0.00000 | 4.0048 |
| d | | | | | | 2.7333 | -13.13333 | -7.70000 | 0.00000 | 3.2005 |
| d | | | | | | 4.1000 | -14.50000 | -7.70000 | 0.00000 | 2.4518 |
| d | | 11 | Building 11 | Sub # | 0.0 | 0.0 | -14.50000 | -7.70000 | 0.00000 | 2.4518 |
| d | | | | | | 1.3000 | -14.50000 | -9.00000 | 0.00000 | 2.4518 |
| d | | | | | | 2.6000 | -14.50000 | -10.30000 | 0.00000 | 2.4518 |
| d | | | | | | 3.9000 | -14.50000 | -11.60000 | 0.00000 | 2.4518 |
| d | | | | | | 5.2000 | -14.50000 | -12.90000 | 0.00000 | 2.4430 |
| d | | 12 | Building 12 | Sub # | 0.0 | 0.0 | -14.50000 | -12.90000 | 0.00000 | 2.4430 |
| d | | | | | | 1.2750 | -15.77500 | -12.90000 | 0.00000 | 1.8136 |
| d | | | | | | 2.5500 | -17.05000 | -12.90000 | 0.00000 | 1.2581 |
| d | | | | | | 3.8250 | -18.32500 | -12.90000 | 0.00000 | 0.77805 |
| d | | | | | | 5.1000 | -19.60000 | -12.90000 | 0.00000 | 0.36790 |
| d | | 13 | Building 13 | Sub # | 0.0 | 0.0 | -19.60000 | -12.90000 | 0.00000 | 0.36790 |
| d | | | | | | 1.1333 | -19.60000 | -14.03333 | 0.00000 | 0.34627 |
| d | | | | | | | | | | |



**GROUND AND WATER
LIMITED**

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| | 28-Feb-2023 | |
| | | Date |

| Stage Ref. | Stage Name | Specific Building Ref. | Specific Building Name | Sub-building Name | Vertical Offset [m] | Dist. [m] | x [m] | y [m] | z [m] | δz [mm] |
|------------|------------|------------------------|------------------------|-------------------|---------------------|-----------|-----------|-----------|---------|----------|
| d | | | | | | 2.2667 | -19.60000 | -15.16667 | 0.00000 | 0.30603 |
| d | | | | | | 3.4000 | -19.60000 | -16.30000 | 0.00000 | 0.25328 |
| d | | 14 | Building 14 | Sub # | 0.0 | 0.0 | -19.60000 | -16.30000 | 0.00000 | 0.25328 |
| d | | | | | | 1.4667 | -21.06667 | -16.30000 | 0.00000 | 0.16211 |
| d | | | | | | 2.9333 | -22.53333 | -16.30000 | 0.00000 | 0.10457 |
| d | | | | | | 4.4000 | -24.00000 | -16.30000 | 0.00000 | 0.037015 |

d - Displacements include imported displacements.

Specific Building Damage Results - Detail

| Stage Ref. | Stage Name | Specific Building Ref. | Specific Building Name | Sub-building Name | Vertical Offset from Line for Vertical Movement [m] | Segment Damage Category | Start | Length | Curvature |
|------------------------|-------------|------------------------|------------------------|-------------------|---|-------------------------|--------|--------|-----------|
| 0.0 | Base Model | 1 | Building 1 | Sub # | 0.0 | 1 | 0.0 | 10.500 | None |
| 0.0063599 | 0.037500 | 0.042130 | -374.86E-6 | 375.38E-6 | 9898.9 | 0 (Negligible) | 0.0 | 5.0400 | None |
| the limit sensitivity. | | | | | | | | | |
| 0.0067309 | 0.037500 | 0.042670 | -374.86E-6 | 373.59E-6 | 9938.4 | 0 (Negligible) | 0.0 | 5.3600 | None |
| 0.0083274 | 0.044421 | 0.056693 | -570.35E-6 | 607.65E-6 | 9654.2 | 1 (Very Slight) | 0.0 | 12.330 | None |
| the limit sensitivity. | | | | | | | | | |
| 0.0011197 | 0.056107 | 0.056935 | -570.36E-6 | 607.67E-6 | 29786.1 | 1 (Very Slight) | 0.0 | 4.1000 | None |
| 0.0 | 0.035763E-9 | 0.0 | 0.0 | 0.0 | 0 (Negligible) | 1 | 0.0 | 6.7000 | None |
| 150.63E-6 | -0.0031053 | 626.46E-6 | 93.169E-6 | 6.7789E-6 | 153410.0 | 0 (Negligible) | 1.3000 | 3.9000 | None |
| 0.0028732 | 0.037676 | 0.040228 | -422.87E-6 | 493.45E-6 | 21910.0 | 0 (Negligible) | 0.0 | 5.1000 | None |
| 487.72E-6 | -0.0056146 | 0.0011550 | 61.473E-6 | 46.544E-6 | 63733.0 | 0 (Negligible) | 0.0 | 3.4000 | None |
| 567.36E-6 | 0.031570 | 0.031879 | -326.09E-6 | 62.143E-6 | 48316.0 | 0 (Negligible) | 0.0 | 2.9333 | None |

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

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

| Stage Ref. | Stage Name | Specific Building Ref. | Specific Building Name | Sub-building Name | Vertical Offset from Line for Vertical Movement [m] | Deflection Ratio | Average Horizontal Strain | Max Slope | Max Settlement |
|------------|------------|------------------------|------------------------|-------------------|---|------------------|---------------------------|-----------|----------------|
| | | | | | | | | | |

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| | | Date |

| [%] | [m] | [m] | | | | | | | |
|-----------|------------|-----------|-------------|-------|-----|-----------|----------------|-----------|---------|
| 0 | Base Model | 1 | Building 1 | Sub # | 0.0 | 0.0 | 0.0 | 0.0 | 1.2437 |
| 35.763E-9 | 0.0 | 0.0 | Building 1 | Sub # | - | - | 0 (Negligible) | | |
| 0.042130 | -374.86E-6 | 375.38E-6 | Building 2 | Sub # | 0.0 | 0.0063599 | 0.037500 | 375.38E-6 | 1.2437 |
| 0.042670 | -374.86E-6 | 373.59E-6 | Building 6 | Sub # | 0.0 | 0.0067309 | 0.037500 | 373.59E-6 | 1.2437 |
| 0.056693 | -570.35E-6 | 607.65E-6 | Building 7 | Sub # | 0.0 | 0.0083274 | 0.044421 | 607.65E-6 | 4.8358 |
| 35.763E-9 | 0.0 | 0.0 | Building 9 | Sub # | 0.0 | 0.0 | 0.0 | 0.0 | 4.8358 |
| 0.056935 | -570.36E-6 | 607.67E-6 | Building 10 | Sub # | 0.0 | 0.0011197 | 0.056107 | 607.67E-6 | 4.8358 |
| 626.46E-6 | 93.169E-6 | 6.7789E-6 | Building 11 | Sub # | 0.0 | 150.63E-6 | -0.0031053 | 6.7789E-6 | 2.4518 |
| 0.040228 | -422.87E-6 | 493.45E-6 | Building 12 | Sub # | 0.0 | 0.0028732 | 0.037676 | 493.45E-6 | 2.4430 |
| 0.0011550 | 61.473E-6 | 46.544E-6 | Building 13 | Sub # | 0.0 | 487.72E-6 | -0.0056146 | 46.544E-6 | 0.36790 |
| 0.031879 | -326.09E-6 | 62.143E-6 | Building 14 | Sub # | 0.0 | 567.36E-6 | 0.031570 | 62.143E-6 | 0.25328 |

Specific Building Damage Results - Critical Segments within Each Building

| Stage: Curvature | Stage: Max Slope | Name: Building Ref. | Specific Max | Specific Max | Min | Parameter Min | Damage Category | Critical | Critical | Start | End |
|------------------|------------------|---------------------|--------------|---|-----|---------------|-----------------|-----------------------------------|----------|-------|-----|
| Ref. | Tensile | Building Ref. | Radius | Radius | | | | Sub-Building | Segment | | |
| Strain | Curvature | Curvature | | | | | | | | | |
| (Hogging) | (Sagging) | | | | | | | | | [m] | [m] |
| [mm] | [%] | [m] | [m] | | | | | | | | |
| 0 | Base Model | 0 | Building 1 | Max Slope | | | | | | | |
| - | - | - | - | - | - | - | - | - | - | - | - |
| 10.500 | None | 0.0 | 1.2437 | 35.763E-9 | | | | Sub # | 1 | 0.0 | |
| 10.500 | None | 0.0 | 1.2437 | 35.763E-9 | | | | Sub # | 1 | 0.0 | |
| - | - | - | - | - | - | - | - | Min Radius of Curvature (Hogging) | | | |
| - | - | - | - | - | - | - | - | Min Radius of Curvature (Sagging) | | | |
| 5.0400 | None | 375.38E-6 | 1.2437 | 0.042130 | | | | Sub # | 1 | 0.0 | |
| 5.0400 | None | 375.38E-6 | 1.2437 | 0.042130 | | | | Sub # | 1 | 0.0 | |
| 5.0400 | None | 375.38E-6 | 1.2437 | 0.042130 | | | | Sub # | 1 | 0.0 | |
| 5.0400 | None | 375.38E-6 | 1.2437 | 0.042130 | | | | Sub # | 1 | 0.0 | |
| - | - | - | - | - | - | - | - | Min Radius of Curvature (Hogging) | | | |
| - | - | - | - | - | - | - | - | Min Radius of Curvature (Sagging) | | | |
| 0 | | | Building 3 | All vertical displacements are less than the limit sensitivity. | | | | | | | |
| 0 | | | Building 4 | All vertical displacements are less than the limit sensitivity. | | | | | | | |
| 0 | | | Building 5 | All vertical displacements are less than the limit sensitivity. | | | | | | | |
| 5.3600 | None | 373.59E-6 | 1.2437 | 0.042670 | | | | Sub # | 1 | 0.0 | |
| 5.3600 | None | 373.59E-6 | 1.2437 | 0.042670 | | | | Sub # | 1 | 0.0 | |



**GROUND AND WATER
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| Stage: Ref. | Stage: Settlement | Name: Max Slope | Specific Max Building: Radius of | Specific Max Building: Radius of | Min | Parameter Min | Damage Category | Critical Sub-Building Segment | Critical | Start | End |
|-------------|-------------------|-----------------|----------------------------------|----------------------------------|------------------|---|-------------------|-------------------------------|----------|--------|-----|
| 5.3600 | None | | 373.59E-6 | 1.2437 | 0.042670 | Max Tensile Strain | - 0 (Negligible) | Sub # | 1 | 0.0 | |
| -- | -- | -- | -- | -- | -- | Min Radius of Curvature (Hogging) | | | -- | -- | |
| -- | -- | -- | -- | -- | -- | Min Radius of Curvature (Sagging) | | | -- | -- | |
| 12.330 | None | | 0 | Building 7 | 4.8358 | Max Slope | - 1 (Very Slight) | Sub # | 1 | 0.0 | |
| 12.330 | None | | 607.65E-6 | 4.8358 | 0.056693 | Max Settlement | - 1 (Very Slight) | Sub # | 1 | 0.0 | |
| 12.330 | None | | 607.65E-6 | 4.8358 | 0.056693 | Max Tensile Strain | - 1 (Very Slight) | Sub # | 1 | 0.0 | |
| 12.330 | None | | 607.65E-6 | 4.8358 | 0.056693 | Min Radius of Curvature (Hogging) | | | -- | -- | |
| -- | -- | -- | -- | -- | -- | Min Radius of Curvature (Sagging) | | | -- | -- | |
| -- | -- | -- | 0 | Building 8 | -- | All vertical displacements are less than the limit sensitivity. | | | -- | -- | |
| -- | -- | -- | -- | -- | -- | All vertical displacements are less than the limit sensitivity. | | | -- | -- | |
| -- | -- | -- | -- | -- | -- | All vertical displacements are less than the limit sensitivity. | | | -- | -- | |
| -- | -- | -- | -- | -- | -- | All vertical displacements are less than the limit sensitivity. | | | -- | -- | |
| -- | -- | -- | 0 | Building 9 | -- | Max Slope | | | -- | -- | |
| 6.7000 | None | | 0.0 | | 4.8358 | Max Settlement | - 0 (Negligible) | Sub # | 1 | 0.0 | |
| 6.7000 | None | | 0.0 | | 4.8358 | Max Tensile Strain | - 0 (Negligible) | Sub # | 1 | 0.0 | |
| -- | -- | -- | -- | -- | -- | Min Radius of Curvature (Hogging) | | | -- | -- | |
| -- | -- | -- | -- | -- | -- | Min Radius of Curvature (Sagging) | | | -- | -- | |
| 4.1000 | None | | 0 | Building 10 | 4.8358 | Max Slope | - 1 (Very Slight) | Sub # | 1 | 0.0 | |
| 4.1000 | None | | 607.67E-6 | 4.8358 | 0.056935 | Max Settlement | - 1 (Very Slight) | Sub # | 1 | 0.0 | |
| 4.1000 | None | | 607.67E-6 | 4.8358 | 0.056935 | Max Tensile Strain | - 1 (Very Slight) | Sub # | 1 | 0.0 | |
| 4.1000 | None | | 607.67E-6 | 4.8358 | 0.056935 | Min Radius of Curvature (Hogging) | | | -- | -- | |
| -- | -- | -- | -- | -- | -- | Min Radius of Curvature (Sagging) | | | -- | -- | |
| 5.2000 | None | | 0 | Building 11 | 2.4518 | Max Slope | - 0 (Negligible) | Sub # | 2 | 1.3000 | |
| 1.3000 | None | | 0.0 | | 2.4518 | Max Settlement | - 0 (Negligible) | Sub # | 1 | 0.0 | |
| 5.2000 | None | | 6.7789E-6 | 2.4518 | 626.46E-6 | Max Tensile Strain | - 0 (Negligible) | Sub # | 2 | 1.3000 | |
| -- | -- | -- | -- | -- | -- | Min Radius of Curvature (Hogging) | | | -- | -- | |
| -- | -- | -- | -- | -- | -- | Min Radius of Curvature (Sagging) | | | -- | -- | |
| 5.1000 | None | | 0 | Building 12 | 2.4430 | Max Slope | - 0 (Negligible) | Sub # | 1 | 0.0 | |
| 5.1000 | None | | 493.45E-6 | 2.4430 | 0.040228 | Max Settlement | - 0 (Negligible) | Sub # | 1 | 0.0 | |
| 5.1000 | None | | 493.45E-6 | 2.4430 | 0.040228 | Max Tensile Strain | - 0 (Negligible) | Sub # | 1 | 0.0 | |
| 5.1000 | None | | 493.45E-6 | 2.4430 | 0.040228 | Min Radius of Curvature (Hogging) | | | -- | -- | |
| -- | -- | -- | -- | -- | -- | Min Radius of Curvature (Sagging) | | | -- | -- | |
| 3.4000 | None | | 0 | Building 13 | 0.36790 | Max Slope | - 0 (Negligible) | Sub # | 1 | 0.0 | |
| 3.4000 | None | | 46.544E-6 | 0.36790 | 0.0011550 | Max Settlement | - 0 (Negligible) | Sub # | 1 | 0.0 | |
| 3.4000 | None | | 46.544E-6 | 0.36790 | 0.0011550 | Max Tensile Strain | - 0 (Negligible) | Sub # | 1 | 0.0 | |
| 3.4000 | None | | 46.544E-6 | 0.36790 | 0.0011550 | Min Radius of Curvature (Hogging) | | | -- | -- | |
| -- | -- | -- | -- | -- | -- | Min Radius of Curvature (Sagging) | | | -- | -- | |
| 2.9333 | None | | 0 | Building 14 | 0.25328 | Max Slope | - 0 (Negligible) | Sub # | 1 | 0.0 | |
| 2.9333 | None | | 62.143E-6 | 0.25328 | 0.031879 | Max Settlement | - 0 (Negligible) | Sub # | 1 | 0.0 | |
| 2.9333 | None | | 62.143E-6 | 0.25328 | 0.031879 | Max Tensile Strain | - 0 (Negligible) | Sub # | 1 | 0.0 | |



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| Stage: Ref. | Stage: Name | Specific Max Slope | Specific Max Radius of Building: | Specific Max Radius of Building: | Min | Parameter Min | Damage Category | Critical | Critical | Start | End |
|----------------------|-------------|--------------------|----------------------------------|----------------------------------|-----|---------------|-----------------------------------|----------|----------|-------|-----|
| Sub-Building Segment | | | | | | | | | | | |
| 2.9333 | None | 62.143E-6 | 0.25328 | 0.031879 | - | - | 0 (Negligible) | - | - | - | - |
| - | - | - | - | - | - | - | Min Radius of Curvature (Hogging) | - | - | - | - |
| - | - | - | - | - | - | - | Min Radius of Curvature (Sagging) | - | - | - | - |

Specific Building Damage Results - All Combined Segments

| Stage: Deflection Ratio | Stage: Average Horizontal Strain | Name Building: Ref. | Specific Max Tensile Ref. | Specific Max Damage Building: Name | Sub-building Category Name | Vertical Offset from Line for | Combined Segment | Start [m] | Length [m] | Curvature [%] |
|--------------------------------|----------------------------------|---------------------|---------------------------|------------------------------------|----------------------------|--|------------------|--|------------|---------------|
| Vertical Movement Calculations | | | | | | | | | | |
| 0 | Base Model | 1 | Building 1 | Sub # | 0.0 | No combined segments for this stage, specific building and offset. | | | | |
| | | 2 | Building 2 | Sub # | 0.0 | No combined segments for this stage, specific building and offset. | | | | |
| | | 3 | Building 3 | Sub # | 0.0 | No combined segments for this stage, specific building and offset. | | | | |
| | | 4 | Building 4 | Sub # | 0.0 | No combined segments for this stage, specific building and offset. | | | | |
| | | 5 | Building 5 | Sub # | 0.0 | No combined segments for this stage, specific building and offset. | | | | |
| | | 6 | Building 6 | Sub # | 0.0 | No combined segments for this stage, specific building and offset. | | | | |
| | | 7 | Building 7 | Sub # | 0.0 | No combined segments for this stage, specific building and offset. | | | | |
| | | 8 | Building 8 | Sub # | 0.0 | No combined segments for this stage, specific building and offset. | | | | |
| | | 9 | Building 9 | Sub # | 0.0 | No combined segments for this stage, specific building and offset. | | | | |
| | | 10 | Building 10 | Sub # | 0.0 | No combined segments for this stage, specific building and offset. | | | | |
| 126.67E-6 | -0.0023290 | 470.46E-6 | 0 (Negligible) | 11 | Building 11 | Sub # | 0.0 | 1 | 0.0 | 5.2000 |
| | | | | 12 | Building 12 | Sub # | 0.0 | No combined segments for this stage, specific building and offset. | | |
| | | | | 13 | Building 13 | Sub # | 0.0 | No combined segments for this stage, specific building and offset. | | |
| | | | | 14 | Building 14 | Sub # | 0.0 | No combined segments for this stage, specific building and offset. | | |

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