

**CALCULATION-N60 & FRICTION ANGLE**

|                       |               |                        |                               |                              |           |     | <b>Drilling Started:</b>   |    |      |               | 31-Jan-24   |  |
|-----------------------|---------------|------------------------|-------------------------------|------------------------------|-----------|-----|----------------------------|----|------|---------------|---|--|
|                       |               |                        |                               |                              |           |     | <b>Drilling Completed:</b> |    |      |               | 1-Feb-24  |  |
|                       |               |                        |                               |                              |           |     | <b>X:</b>                  |    |      |               | 848800.636  |  |
|                       |               |                        |                               |                              |           |     | <b>Y:</b>                  |    |      |               | 9750936.68  |  |
| <b>Country:</b>       |               |                        | RWANDA                        |                              |           |     | <b>Hole ID:</b>            |    |      |               | BH1   |  |
| <b>Site Location:</b> |               |                        | BUGESERA DISTRICT             |                              |           |     | <b>Chainage:</b>           |    |      |               | N/A   |  |
| <b>Location Note:</b> |               |                        |                               |                              |           |     | <b>Total Depth (m):</b>    |    |      |               | 12  |  |
| Test No               | SPT depth (m) | First step No of Blows | Second step No of Blows /15cm | Third step No of Blows /15cm | “N” Value |     |                            |    |      | SPT depth (m) | Corrected N60   | Friction Angle (φ') [deg]                                    |
|                       |               |                        |                               |                              |           | EH  | CB                         | CS | CR   |               | $N_{60}=(EH \times CB \times CS \times CR) \times N / 0.60$ | $\phi'(\text{deg})= 27.1+0.3(N_{1,60}-0.00054[(N_{1,60})^2]$ |
| 1                     | 1             | 7                      | 7                             | 8                            | 15        | 0.7 | 1                          | 1  | 0.75 | 1             | 13.13   | 30.94  |
| 2                     | 2             | 11                     | 7                             | 15                           | 22        | 0.7 | 1                          | 1  | 0.75 | 2             | 19.25   | 32.67  |
| 3                     | 3             | 10                     | 16                            | 20                           | 36        | 0.7 | 1                          | 1  | 0.75 | 3             | 31.50   | 36.01  |
| 4                     | 4             | 14                     | 22                            | 25                           | 47        | 0.7 | 1                          | 1  | 0.85 | 4             | 46.61   | 39.91  |
| 5                     | 5             | 20                     | 30                            | 20                           | 50        | 0.7 | 1                          | 1  | 0.85 | 5             | 49.58   | 40.65  |
| 6                     | 6             | 25                     | 35                            | 15                           | 50        | 0.7 | 1                          | 1  | 0.85 | 6             | 49.58   | 40.65  |
| 7                     | 7             | 30                     | 42                            | 8                            | 50        | 0.7 | 1                          | 1  | 0.95 | 7             | 55.42   | 42.07  |
| 8                     | 8             | 25                     | 38                            | 12                           | 50        | 0.7 | 1                          | 1  | 0.95 | 8             | 55.42   | 42.07  |
| 9                     | 9             | 19                     | 29                            | 21                           | 50        | 0.7 | 1                          | 1  | 0.95 | 9             | 55.42   | 42.07  |
| 10                    | 10            | 18                     | 25                            | 25                           | 50        | 0.7 | 1                          | 1  | 0.95 | 10            | 55.42   | 42.07  |
| 11                    | 11            | 20                     | 28                            | 22                           | 50        | 0.7 | 1                          | 1  | 1    | 11            | 58.33   | 42.76  |
| 12                    | 12            | 17                     | 24                            | 26                           | 50        | 0.7 | 1                          | 1  | 1    | 12            | 58.33   | 42.76  |

**CALCULATION OF BEARING CAPACITY**

|                       |                   |                            |                        |
|-----------------------|-------------------|----------------------------|------------------------|
|                       |                   | <b>Drilling Started:</b>   | 31-Jan-24              |
|                       |                   | <b>Drilling Completed:</b> | 1-Feb-24               |
|                       |                   | <b>X:</b>                  | 848800.636             |
|                       |                   | <b>Y:</b>                  | 9750936.68             |
| <b>Country:</b>       | RWANDA            | <b>Hole ID:</b>            | BH at River crossing E |
| <b>Site Location:</b> | BUGESERA DISTRICT | <b>Chainage:</b>           | N/A                    |
| <b>Location Note:</b> |                   | <b>Total Depth (m):</b>    | 12                     |

| Parameter Tested |               | Test Results                 |                               |                              |           |               |                     |       |                |                    |          |  | Legend  |  |
|------------------|---------------|------------------------------|-------------------------------|------------------------------|-----------|---------------|---------------------|-------|----------------|--------------------|----------|--|---|--|
| Test No          | SPT depth (m) | First step No of Blows /15cm | Second step No of Blows /15cm | Third step No of Blows /15cm | “N” Value | Corrected N60 | Plasticity index PI | Su    | q <sub>u</sub> | q <sub>u</sub> ULS | qu SLS   | Allowable Bearing Capacity (Service limit state) | N: measured SPT N-value in field<br>Su: undrained shear strength,<br>q <sub>u</sub> <sup>ULS</sup> :Ultimate Limit State<br>q <sub>u</sub> <sup>SLS</sup> :Serviceability Limit State |  |
|                  |               |                              |                               |                              |           |               | PI < 20             | kPa   | kPa            | kPa                | kPa      | kPa  |   |  |
| 1                | 1.0           | 7                            | 7                             | 8                            | 15        | 13.1          |                     | 72.2  | 371.0438       | 185.5219           | 123.6813 | 120  |   |  |
| 2                | 2.0           | 11                           | 7                             | 15                           | 22        | 19.3          |                     | 105.9 | 544.1975       | 272.0988           | 181.3992 | 290  |   |  |
| 3                | 3.0           | 10                           | 16                            | 20                           | 36        | 31.5          |                     | 173.3 | 890.505        | 445.2525           | 296.835  | 400  |   |  |
| 4                | 4.0           | 14                           | 22                            | 25                           | 47        | 46.6          |                     | 256.3 | 1317.618       | 658.8088           | 439.2059 |  |   |  |
| 5                | 5.0           | 20                           | 30                            | 20                           | 50        | 49.6          |                     | 272.7 | 1401.721       | 700.8604           | 467.2403 |  |   |  |
| 6                | 6.0           | 25                           | 35                            | 15                           | 50        | 49.6          |                     | 272.7 | 1401.721       | 700.8604           | 467.2403 |  |   |  |
| 7                | 7.0           | 30                           | 42                            | 8                            | 50        | 55.4          |                     | 304.8 | 1566.629       | 783.3146           | 522.2097 |  |   |  |
| 8                | 8.0           | 25                           | 38                            | 12                           | 50        | 55.4          |                     | 304.8 | 1566.629       | 783.3146           | 522.2097 |  |   |  |
| 9                | 9.0           | 19                           | 29                            | 21                           | 50        | 55.4          |                     | 304.8 | 1566.629       | 783.3146           | 522.2097 |  |   |  |
| 10               | 10.0          | 18                           | 25                            | 25                           | 50        | 55.4          |                     | 304.8 | 1566.629       | 783.3146           | 522.2097 |  |   |  |
| 11               | 11.0          | 20                           | 28                            | 22                           | 50        | 58.3          |                     | 320.8 | 1649.083       | 824.5417           | 549.6944 |  |   |  |
| 12               | 12.0          | 17                           | 24                            | 26                           | 50        | 58.3          |                     | 320.8 | 1649.083       | 824.5417           | 549.6944 |  |   |  |

**CALCULATION-N60**

|                       |               |                        |                               |                              |           |     | <b>Drilling Started:</b>   |    |      |               | 30-Jan-24   |   |
|-----------------------|---------------|------------------------|-------------------------------|------------------------------|-----------|-----|----------------------------|----|------|---------------|---|---|
|                       |               |                        |                               |                              |           |     | <b>Drilling Completed:</b> |    |      |               | 31-Jan-24   |   |
|                       |               |                        |                               |                              |           |     | <b>X:</b>                  |    |      |               | 848328.615  |   |
|                       |               |                        |                               |                              |           |     | <b>Y:</b>                  |    |      |               | 9750793.867   |   |
| <b>Country:</b>       |               |                        | RWANDA                        |                              |           |     | <b>Hole ID:</b>            |    |      |               | BH2   |   |
| <b>Site Location:</b> |               |                        | BUGESERA DISTRICT             |                              |           |     | <b>Chainage:</b>           |    |      |               | N/A   |   |
| <b>Location Note:</b> |               |                        |                               |                              |           |     | <b>Total Depth (m):</b>    |    |      |               | 12.0  |   |
| Test No               | SPT depth (m) | First step No of Blows | Second step No of Blows /15cm | Third step No of Blows /15cm | “N” Value | EH  | CB                         | CS | CR   | SPT depth (m) | Corrected N60   | Friction Angle (φ') [deg]                                 |
|                       |               |                        |                               |                              |           |     |                            |    |      |               | $N_{60}=(EH \times CB \times CS \times CR) \times N / 0.60$ | $\phi'(deg) = 27.1 + 0.3(N_{160}) - 0.00054[(N_{160})^2]$ |
| 1                     | 1.0           | 3                      | 5                             | 6                            | 11        | 0.7 | 1                          | 1  | 0.75 | 1.0           | 9.6   | 29.9  |
| 2                     | 2.0           | 6                      | 8                             | 14                           | 22        | 0.7 | 1                          | 1  | 0.75 | 2.0           | 19.3  | 32.7  |
| 3                     | 3.0           | 9                      | 12                            | 16                           | 28        | 0.7 | 1                          | 1  | 0.75 | 3.0           | 24.5  | 34.1  |
| 4                     | 4.0           | 14                     | 16                            | 20                           | 36        | 0.7 | 1                          | 1  | 0.85 | 4.0           | 35.7  | 37.1  |
| 5                     | 5.0           | 18                     | 20                            | 23                           | 43        | 0.7 | 1                          | 1  | 0.85 | 5.0           | 42.6  | 38.9  |
| 6                     | 6.0           | 17                     | 22                            | 25                           | 47        | 0.7 | 1                          | 1  | 0.85 | 6.0           | 46.6  | 39.9  |
| 7                     | 7.0           | 18                     | 24                            | 26                           | 50        | 0.7 | 1                          | 1  | 0.95 | 7.0           | 55.4  | 42.1  |
| 8                     | 8.0           | 16                     | 25                            | 25                           | 50        | 0.7 | 1                          | 1  | 0.95 | 8.0           | 55.4  | 42.1  |
| 9                     | 9.0           | 20                     | 28                            | 22                           | 50        | 0.7 | 1                          | 1  | 0.95 | 9.0           | 55.4  | 42.1  |
| 10                    | 10.0          | 18                     | 25                            | 25                           | 50        | 0.7 | 1                          | 1  | 0.95 | 10.0          | 55.4  | 42.1  |
| 11                    | 11.0          | 14                     | 21                            | 26                           | 47        | 0.7 | 1                          | 1  | 1    | 11.0          | 54.8  | 41.9  |
| 12                    | 12.0          | 17                     | 23                            | 26                           | 49        | 0.7 | 1                          | 1  | 1    | 12.0          | 57.2  | 42.5  |

**CALCULATION OF BEARING CAPACITY**

|                       |               |                              |                               |                              |           |               | <b>Drilling Started:</b>   | 30-Jan-24   |                |                    |        |  |   |  |
|-----------------------|---------------|------------------------------|-------------------------------|------------------------------|-----------|---------------|----------------------------|-------------|----------------|--------------------|--------|--|---|--|
|                       |               |                              |                               |                              |           |               | <b>Drilling Completed:</b> | 31-Jan-24   |                |                    |        |  |   |  |
|                       |               |                              |                               |                              |           |               | <b>X:</b>                  | 848328.615  |                |                    |        |  |   |  |
|                       |               |                              |                               |                              |           |               | <b>Y:</b>                  | 9750793.867 |                |                    |        |  |   |  |
| <b>Country:</b>       |               | RWANDA                       |                               |                              |           |               | <b>Hole ID:</b>            | BH2         |                |                    |        |  |   |  |
| <b>Site Location:</b> |               | BUGESERA DISTRICT            |                               |                              |           |               | <b>Chainage:</b>           | N/A         |                |                    |        |  |   |  |
| <b>Location Note:</b> |               |                              |                               |                              |           |               | <b>Total Depth (m):</b>    | 12          |                |                    |        |  |   |  |
| Parameter             | Test Results  |                              |                               |                              |           |               |                            |             |                |                    |        |  | Legend  |  |
| Test No               | SPT depth (m) | First step No of Blows /15cm | Second step No of Blows /15cm | Third step No of Blows /15cm | “N” Value | Corrected N60 | Plasticity index PI        | Su          | q <sub>u</sub> | q <sub>u</sub> ULS | qu SLS | Allowable Bearing Capacity (Service limit state) | N: measured SPT N-value in field<br>Su: undrained shear strength,<br>q <sub>u</sub> <sup>ULS</sup> :Ultimate Limit State<br>q <sub>u</sub> <sup>SLS</sup> :Serviceability Limit State |  |
|                       |               |                              |                               |                              |           |               |                            | kPa         | kPa            | kPa                | kPa    | kPa  |   |  |
| 1                     | 1.0           | 3                            | 5                             | 6                            | 11        | 9.6           |                            | 52.9        | 272.10         | 136.05             | 90.70  | 90   |   |  |
| 2                     | 2.0           | 6                            | 8                             | 14                           | 22        | 19.3          |                            | 105.9       | 544.20         | 272.10             | 181.40 | 180  |   |  |
| 3                     | 3.0           | 9                            | 12                            | 16                           | 28        | 24.5          |                            | 134.8       | 692.62         | 346.31             | 230.87 | 230  |   |  |
| 4                     | 4.0           | 14                           | 16                            | 20                           | 36        | 35.7          |                            | 196.4       | 1009.24        | 504.62             | 336.41 | 330  |   |  |
| 5                     | 5.0           | 18                           | 20                            | 23                           | 43        | 42.6          |                            | 234.5       | 1205.48        | 602.74             | 401.83 |  |   |  |
| 6                     | 6.0           | 17                           | 22                            | 25                           | 47        | 46.6          | PI < 20                    | 256.3       | 1317.62        | 658.81             | 439.21 |  |   |  |
| 7                     | 7.0           | 18                           | 24                            | 26                           | 50        | 55.4          |                            | 304.8       | 1566.63        | 783.31             | 522.21 |  |   |  |
| 8                     | 8.0           | 16                           | 25                            | 25                           | 50        | 55.4          |                            | 304.8       | 1566.63        | 783.31             | 522.21 |  |   |  |
| 9                     | 9.0           | 20                           | 28                            | 22                           | 50        | 55.4          |                            | 304.8       | 1566.63        | 783.31             | 522.21 |  |   |  |
| 10                    | 10.0          | 18                           | 25                            | 25                           | 50        | 55.4          |                            | 304.8       | 1566.63        | 783.31             | 522.21 |  |   |  |
| 11                    | 11.0          | 14                           | 21                            | 26                           | 47        | 54.8          |                            | 301.6       | 1550.14        | 775.07             | 516.71 |  |   |  |
| 12                    | 12.0          | 17                           | 23                            | 26                           | 49        | 57.2          |                            | 314.4       | 1616.10        | 808.05             | 538.70 | 400  |   |  |

CALCULATION-N60

| Test No | SPT depth (m) | First step No of Blows | Second step No of Blows /15cm | Third step No of Blows /15cm | “N” Value | EH  | CB | CS | CR   | SPT depth (m) | Corrected N60  | N60 <sub>corr</sub>                  | Friction Angle (φ') [deg]                                 |
|---------|---------------|------------------------|-------------------------------|------------------------------|-----------|-----|----|----|------|---------------|--|--------------------------------------|---|
|         |               |                        |                               |                              |           | EH  | CB | CS | CR   |               | $N60=(EH \times CB \times CS \times CR) \times N / 0.60$ | $N60_{corr} = 15 + 0.5 * (N60 - 15)$ | $\phi'(deg) = 27.1 + 0.3(N_{i60}) - 0.00054[(N_{i60})^2]$ |
| 1       | 1.0           | 3                      | 4                             | 5                            | 9         | 0.7 | 1  | 1  | 0.75 | 1.0           | 7.9  | 11.4                                 | 30.5  |
| 2       | 2.0           | 4                      | 6                             | 7                            | 13        | 0.7 | 1  | 1  | 0.75 | 2.0           | 11.4   | 13.2                                 | 31.0  |
| 3       | 3.0           | 1                      | 2                             | 2                            | 4         | 0.7 | 1  | 1  | 0.75 | 3.0           | 3.5  | 9.3                                  | 29.8  |
| 4       | 4.0           | 2                      | 2                             | 2                            | 4         | 0.7 | 1  | 1  | 0.85 | 4.0           | 4.0  | 9.5                                  | 29.9  |
| 5       | 5.0           | 2                      | 3                             | 2                            | 5         | 0.7 | 1  | 1  | 0.85 | 5.0           | 5.0  | 10.0                                 | 30.0  |
| 6       | 6.0           | 3                      | 2                             | 2                            | 4         | 0.7 | 1  | 1  | 0.85 | 6.0           | 4.0  | 9.5                                  | 29.9  |
| 7       | 7.0           | 2                      | 3                             | 2                            | 5         | 0.7 | 1  | 1  | 0.95 | 7.0           | 5.5  | 10.3                                 | 30.1  |
| 8       | 8.0           | 2                      | 2                             | 2                            | 4         | 0.7 | 1  | 1  | 0.95 | 8.0           | 4.4  | 9.7                                  | 30.0  |
| 9       | 9.0           | 2                      | 3                             | 4                            | 7         | 0.7 | 1  | 1  | 0.95 | 9.0           | 7.8  | 11.4                                 | 30.4  |
| 10      | 10.0          | 3                      | 4                             | 5                            | 9         | 0.7 | 1  | 1  | 0.95 | 10.0          | 10.0   | 12.5                                 | 30.8  |
| 11      | 11.0          | 4                      | 8                             | 10                           | 18        | 0.7 | 1  | 1  | 1    | 11.0          | 21.0   | 18.0                                 | 32.3  |
| 12      | 12.0          | 5                      | 9                             | 11                           | 20        | 0.7 | 1  | 1  | 1    | 12.0          | 23.3   | 19.2                                 | 32.7  |

|                       |                   |                            |             |
|-----------------------|-------------------|----------------------------|-------------|
|                       |                   | <b>Drilling Started:</b>   | 29-Jan-24   |
|                       |                   | <b>Drilling Completed:</b> | 29-Jan-24   |
|                       |                   | <b>X:</b>                  | 829943.454  |
|                       |                   | <b>Y:</b>                  | 9746936.722 |
| <b>Country:</b>       | RWANDA            | <b>Hole ID:</b>            | BH3         |
| <b>Site Location:</b> | BUGESERA DISTRICT | <b>Chainage:</b>           | N/A         |
| <b>Location Note:</b> |                   | <b>Total Depth (m):</b>    | 12          |

**CALCULATION OF BEARING CAPACITY**

| <b>CALCULATION OF BEARING CAPACITY</b> |               |                              |                               |                              |           |                            |         |                     |       |        |        |        |  |   |  |
|--|---------------|------------------------------|-------------------------------|------------------------------|-----------|----------------------------|---------|---------------------|-------|--------|--------|--------|--|---|--|
|  |               |                              |                               |                              |           | <b>Drilling Started:</b>   |         | 29-Jan-24           |       |        |        |        |  |   |  |
|  |               |                              |                               |                              |           | <b>Drilling Completed:</b> |         | 29-Jan-24           |       |        |        |        |  |   |  |
|  |               |                              |                               |                              |           | <b>X:</b>                  |         | 829943.454          |       |        |        |        |  |   |  |
|  |               |                              |                               |                              |           | <b>Y:</b>                  |         | 9746936.722         |       |        |        |        |  |   |  |
| <b>Country:</b>                        |               |                              | RWANDA                        |                              |           | <b>Hole ID:</b>            |         | BH at Busoro bridge |       |        |        |        |  |   |  |
| <b>Site Location:</b>                  |               |                              | BUGESERA DISTRICT             |                              |           | <b>Chainage:</b>           |         | N/A                 |       |        |        |        |  |   |  |
| <b>Location Note:</b>                  |               |                              |                               |                              |           | <b>Total Depth (m):</b>    |         | 12                  |       |        |        |        |  |   |  |
| Parameter                              | Test Results  |                              |                               |                              |           |                            |         |                     |       |        |        |        | Legend   |   |  |
| Test No                                | SPT depth (m) | First step No of Blows /15cm | Second step No of Blows /15cm | Third step No of Blows /15cm | ‘N’ Value | Corrected N60              | N60corr | Plasticity index PI | Su    | qu     | qu ULS | qu SLS | Allowable Bearing Capacity (Service limit state) | N: measured SPT N-value in field<br>Su: undrained shear strength,<br>qu <sup>ULS</sup> :Ultimate Limit State<br>qu <sup>SLS</sup> :Serviceability Limit State |  |
|  |               |                              |                               |                              |           |                            |         | PI < 20             | kPa   | kPa    | kPa    | kPa    | kPa  |   |  |
| 1                                      | 1.0           | 3                            | 4                             | 5                            | 9         | 7.9                        | 11.44   |                     | 62.9  | 323.34 | 161.67 | 107.78 | 100  |   |  |
| 2                                      | 2.0           | 4                            | 6                             | 7                            | 13        | 11.4                       | 13.19   |                     | 72.5  | 372.81 | 186.41 | 124.27 |  |   |  |
| 3                                      | 3.0           | 1                            | 2                             | 2                            | 4         | 3.5                        | 9.25    |                     | 50.9  | 261.50 | 130.75 | 87.17  |  |   |  |
| 4                                      | 4.0           | 2                            | 2                             | 2                            | 4         | 4.0                        | 9.48    |                     | 52.2  | 268.09 | 134.05 | 89.36  |  |   |  |
| 5                                      | 5.0           | 2                            | 3                             | 2                            | 5         | 5.0                        | 9.98    |                     | 54.9  | 282.11 | 141.06 | 94.04  |  |   |  |
| 6                                      | 6.0           | 3                            | 2                             | 2                            | 4         | 4.0                        | 9.48    |                     | 52.2  | 268.09 | 134.05 | 89.36  |  |   |  |
| 7                                      | 7.0           | 2                            | 3                             | 2                            | 5         | 5.5                        | 10.27   |                     | 56.5  | 290.36 | 145.18 | 96.79  |  |   |  |
| 8                                      | 8.0           | 2                            | 2                             | 2                            | 4         | 4.4                        | 9.72    |                     | 53.4  | 274.69 | 137.35 | 91.56  |  |   |  |
| 9                                      | 9.0           | 2                            | 3                             | 4                            | 7         | 7.8                        | 11.38   |                     | 62.6  | 321.69 | 160.84 | 107.23 |  |   |  |
| 10                                     | 10.0          | 3                            | 4                             | 5                            | 9         | 10.0                       | 12.49   |                     | 68.7  | 353.02 | 176.51 | 117.67 |  |   |  |
| 11                                     | 11.0          | 4                            | 8                             | 10                           | 18        | 21.0                       | 18.00   |                     | 99.0  | 508.86 | 254.43 | 169.62 |  |   |  |
| 12                                     | 12.0          | 5                            | 9                             | 11                           | 20        | 23.3                       | 19.17   |                     | 105.4 | 541.84 | 270.92 | 180.61 |  |   |  |

**CALCULATION-N60**

|                       |               |                        |                               |                              |           |     | <b>Drilling Started:</b>   |    |      |               | 28-Jan-24   |  |
|-----------------------|---------------|------------------------|-------------------------------|------------------------------|-----------|-----|----------------------------|----|------|---------------|---|--|
|                       |               |                        |                               |                              |           |     | <b>Drilling Completed:</b> |    |      |               | 28-Jan-24   |  |
|                       |               |                        |                               |                              |           |     | <b>X:</b>                  |    |      |               | 828691.767  |  |
|                       |               |                        |                               |                              |           |     | <b>Y:</b>                  |    |      |               | 9746890.035   |  |
| <b>Country:</b>       |               |                        | RWANDA                        |                              |           |     | <b>Hole ID:</b>            |    |      |               | BH4   |  |
| <b>Site Location:</b> |               |                        | BUGESERA DISTRICT             |                              |           |     | <b>Chainage:</b>           |    |      |               | N/A   |  |
| <b>Location Note:</b> |               |                        |                               |                              |           |     | <b>Total Depth (m):</b>    |    |      |               | 12  |  |
| Test No               | SPT depth (m) | First step No of Blows | Second step No of Blows /15cm | Third step No of Blows /15cm | ‘N’ Value | EH  | CB                         | CS | CR   | SPT depth (m) | Corrected N60   | Friction Angle (φ') [deg]                                  |
|                       |               |                        |                               |                              |           |     |                            |    |      |               | $N_{60}=(EH \times CB \times CS \times CR) \times N / 0.60$ | $\phi'(\text{deg})= 27.1+0.3(N_{160}-0.00054[(N_{160})^2]$ |
| 1                     | 1.0           | 2                      | 3                             | 3                            | 6         | 0.7 | 1                          | 1  | 0.75 | 1.0           | 5.3   | 28.7   |
| 2                     | 2.0           | 2                      | 4                             | 6                            | 10        | 0.7 | 1                          | 1  | 0.75 | 2.0           | 8.8   | 29.7   |
| 3                     | 3.0           | 4                      | 6                             | 8                            | 14        | 0.7 | 1                          | 1  | 0.75 | 3.0           | 12.3  | 30.7   |
| 4                     | 4.0           | 10                     | 14                            | 15                           | 29        | 0.7 | 1                          | 1  | 0.85 | 4.0           | 28.8  | 35.3   |
| 5                     | 5.0           | 17                     | 27                            | 23                           | 50        | 0.7 | 1                          | 1  | 0.85 | 5.0           | 49.6  | 40.6   |
| 6                     | 6.0           | 14                     | 28                            | 22                           | 50        | 0.7 | 1                          | 1  | 0.85 | 6.0           | 49.6  | 40.6   |
| 7                     | 7.0           | 11                     | 17                            | 23                           | 40        | 0.7 | 1                          | 1  | 0.95 | 7.0           | 44.3  | 39.3   |
| 8                     | 8.0           | 18                     | 25                            | 25                           | 50        | 0.7 | 1                          | 1  | 0.95 | 8.0           | 55.4  | 42.1   |
| 9                     | 9.0           | 16                     | 23                            | 27                           | 50        | 0.7 | 1                          | 1  | 0.95 | 9.0           | 55.4  | 42.1   |
| 10                    | 10.0          | 22                     | 30                            | 20                           | 50        | 0.7 | 1                          | 1  | 0.95 | 10.0          | 55.4  | 42.1   |
| 11                    | 11.0          | 21                     | 28                            | 22                           | 50        | 0.7 | 1                          | 1  | 1    | 11.0          | 58.3  | 42.8   |
| 12                    | 12.0          | 20                     | 32                            | 18                           | 50        | 0.7 | 1                          | 1  | 1    | 12.0          | 58.3  | 42.8   |

**CALCULATION OF BEARING CAPACITY**

|                       |                   |                            |             |
|-----------------------|-------------------|----------------------------|-------------|
|                       |                   | <b>Drilling Started:</b>   | 28-Jan-24   |
|                       |                   | <b>Drilling Completed:</b> | 28-Jan-24   |
|                       |                   | <b>X:</b>                  | 828691.767  |
|                       |                   | <b>Y:</b>                  | 9746890.035 |
| <b>Country:</b>       | RWANDA            | <b>Hole ID:</b>            | BH at PI    |
| <b>Site Location:</b> | BUGESERA DISTRICT | <b>Chainage:</b>           | N/A         |
| <b>Location Note:</b> |                   | <b>Total Depth (m):</b>    | 12          |

| Parameter Tested |               | Test Results                 |                               |                              |           |               |                     |       |                |                    |          |  | Legend  |  |
|------------------|---------------|------------------------------|-------------------------------|------------------------------|-----------|---------------|---------------------|-------|----------------|--------------------|----------|--|---|--|
| Test No          | SPT depth (m) | First step No of Blows /15cm | Second step No of Blows /15cm | Third step No of Blows /15cm | “N” Value | Corrected N60 | Plasticity index PI | Su    | q <sub>u</sub> | q <sub>u</sub> ULS | qu SLS   | Allowable Bearing Capacity (Service limit state) | N: measured SPT N-value in field<br>Su: undrained shear strength,<br>q <sub>u</sub> <sup>ULS</sup> :Ultimate Limit State<br>q <sub>u</sub> <sup>SLS</sup> :Serviceability Limit State |  |
|                  |               |                              |                               |                              |           |               | PI < 20             | kPa   | kPa            | kPa                | kPa      | kPa  |   |  |
| 1                | 1.0           | 2                            | 3                             | 3                            | 6         | 5.3           |                     | 28.9  | 148.4175       | 74.20875           | 49.4725  | 40   |   |  |
| 2                | 2.0           | 2                            | 4                             | 6                            | 10        | 8.8           |                     | 48.1  | 247.3625       | 123.6813           | 82.45417 | 80   |   |  |
| 3                | 3.0           | 4                            | 6                             | 8                            | 14        | 12.3          |                     | 67.4  | 346.3075       | 173.1538           | 115.4358 | 115  |   |  |
| 4                | 4.0           | 10                           | 14                            | 15                           | 29        | 28.8          |                     | 158.2 | 812.9981       | 406.499            | 270.9994 | 270  |   |  |
| 5                | 5.0           | 17                           | 27                            | 23                           | 50        | 49.6          |                     | 272.7 | 1401.721       | 700.8604           | 467.2403 | 400  |   |  |
| 6                | 6.0           | 14                           | 28                            | 22                           | 50        | 49.6          |                     | 272.7 | 1401.721       | 700.8604           | 467.2403 |  |   |  |
| 7                | 7.0           | 11                           | 17                            | 23                           | 40        | 44.3          |                     | 243.8 | 1253.303       | 626.6517           | 417.7678 |  |   |  |
| 8                | 8.0           | 18                           | 25                            | 25                           | 50        | 55.4          |                     | 304.8 | 1566.629       | 783.3146           | 522.2097 |  |   |  |
| 9                | 9.0           | 16                           | 23                            | 27                           | 50        | 55.4          |                     | 304.8 | 1566.629       | 783.3146           | 522.2097 |  |   |  |
| 10               | 10.0          | 22                           | 30                            | 20                           | 50        | 55.4          |                     | 304.8 | 1566.629       | 783.3146           | 522.2097 |  |   |  |
| 11               | 11.0          | 21                           | 28                            | 22                           | 50        | 58.3          |                     | 320.8 | 1649.083       | 824.5417           | 549.6944 |  |   |  |
| 12               | 12.0          | 20                           | 32                            | 18                           | 50        | 58.3          |                     | 320.8 | 1649.083       | 824.5417           | 549.6944 |  |   |  |

**CALCULATION-N60**

|                       |                   |                              |                               |                              |           |     |    |    |      |               | <b>Drilling Started:</b>                                    | 27-Jan-24   |
|-----------------------|-------------------|------------------------------|-------------------------------|------------------------------|-----------|-----|----|----|------|---------------|---|---|
|                       |                   |                              |                               |                              |           |     |    |    |      |               | <b>Drilling Completed:</b>                                  | 27-Jan-24   |
|                       |                   |                              |                               |                              |           |     |    |    |      |               | <b>X:</b>   | 828163.534  |
|                       |                   |                              |                               |                              |           |     |    |    |      |               | <b>Y:</b>   | 9746631.583   |
| <b>Country:</b>       | RWANDA            |                              |                               |                              |           |     |    |    |      |               | <b>Hole ID:</b>   | BH5   |
| <b>Site Location:</b> | BUGESERA DISTRICT |                              |                               |                              |           |     |    |    |      |               | <b>Chainage:</b>  | N/A   |
| <b>Location Note:</b> |                   |                              |                               |                              |           |     |    |    |      |               | <b>Total Depth (m):</b>                                     | 12  |
| Test No               | SPT depth (m)     | First step No of Blows /15cm | Second step No of Blows /15cm | Third step No of Blows /15cm | “N” Value | EH  | CB | CS | CR   | SPT depth (m) | Corrected N60   |   |
|                       |                   |                              |                               |                              |           |     |    |    |      |               | Friction Angle (φ') [deg]                                   |   |
|                       |                   |                              |                               |                              |           |     |    |    |      |               | $N_{60}=(EH \times CB \times CS \times CR) \times N / 0.60$ | $\phi'(\text{deg})= 27.1+0.3(N_1)_{60}-0.00054[(N_1)_{60}]^2$ |
| 1                     | 1.0               | 6                            | 7                             | 9                            | 16        | 0.7 | 1  | 1  | 0.75 | 1.0           | 14.0  | 31.2  |
| 2                     | 2.0               | 10                           | 8                             | 12                           | 20        | 0.7 | 1  | 1  | 0.75 | 2.0           | 17.5  | 32.2  |
| 3                     | 3.0               | 14                           | 17                            | 21                           | 38        | 0.7 | 1  | 1  | 0.75 | 3.0           | 33.3  | 36.5  |
| 4                     | 4.0               | 17                           | 22                            | 27                           | 49        | 0.7 | 1  | 1  | 0.85 | 4.0           | 48.6  | 40.4  |
| 5                     | 5.0               | 25                           | 35                            | 15                           | 50        | 0.7 | 1  | 1  | 0.85 | 5.0           | 49.6  | 40.6  |
| 6                     | 6.0               | 20                           | 30                            | 20                           | 50        | 0.7 | 1  | 1  | 0.85 | 6.0           | 49.6  | 40.6  |
| 7                     | 7.0               | 21                           | 38                            | 12                           | 50        | 0.7 | 1  | 1  | 0.95 | 7.0           | 55.4  | 42.1  |
| 8                     | 8.0               | 25                           | 35                            | 15                           | 50        | 0.7 | 1  | 1  | 0.95 | 8.0           | 55.4  | 42.1  |
| 9                     | 9.0               | 22                           | 40                            | 10                           | 50        | 0.7 | 1  | 1  | 0.95 | 9.0           | 55.4  | 42.1  |
| 10                    | 10.0              | 20                           | 38                            | 12                           | 50        | 0.7 | 1  | 1  | 0.95 | 10.0          | 55.4  | 42.1  |
| 11                    | 11.0              | 23                           | 42                            | 8                            | 50        | 0.7 | 1  | 1  | 1    | 11.0          | 58.3  | 42.8  |
| 12                    | 12.0              | 17                           | 32                            | 18                           | 50        | 0.7 | 1  | 1  | 1    | 12.0          | 58.3  | 42.8  |

**CALCULATION OF BEARING CAPACITY**

|                       |               |                              |                               |                              |           |               | <b>Drilling Started:</b>   | 27-Jan-24   |                |                    |          |  |   |  |
|-----------------------|---------------|------------------------------|-------------------------------|------------------------------|-----------|---------------|----------------------------|-------------|----------------|--------------------|----------|--|---|--|
|                       |               |                              |                               |                              |           |               | <b>Drilling Completed:</b> | 27-Jan-24   |                |                    |          |  |   |  |
|                       |               |                              |                               |                              |           |               | <b>X:</b>                  | 828163.534  |                |                    |          |  |   |  |
|                       |               |                              |                               |                              |           |               | <b>Y:</b>                  | 9746631.583 |                |                    |          |  |   |  |
|                       |               |                              |                               |                              |           |               | <b>Hole ID:</b>            | BH5         |                |                    |          |  |   |  |
| <b>Site Location:</b> |               |                              | BUGESERA DISTRICT             |                              |           |               | <b>Chainage:</b>           | N/A         |                |                    |          |  |   |  |
| <b>Location Note:</b> |               |                              |                               |                              |           |               | <b>Total Depth (m):</b>    | 12          |                |                    |          |  |   |  |
| Parameter             | Test Results  |                              |                               |                              |           |               |                            |             |                |                    |          |  | Legend  |  |
| Test No               | SPT depth (m) | First step No of Blows /15cm | Second step No of Blows /15cm | Third step No of Blows /15cm | “N” Value | Corrected N60 | Plasticity index PI        | Su          | q <sub>u</sub> | q <sub>u</sub> ULS | qu SLS   | Allowable Bearing Capacity (Service limit state) | N: measured SPT N-value in field<br>Su: undrained shear strength,<br>q <sub>u</sub> <sup>ULS</sup> :Ultimate Limit State<br>q <sub>u</sub> <sup>SLS</sup> :Serviceability Limit State |  |
|                       |               |                              |                               |                              |           |               | PI < 20                    | kPa         | kPa            | kPa                | kPa      | kPa  |   |  |
| 1                     | 1.0           | 6                            | 7                             | 9                            | 16        | 14.0          |                            | 77.0        | 395.78         | 197.89             | 131.9267 | 130  |   |  |
| 2                     | 2.0           | 10                           | 8                             | 12                           | 20        | 17.5          |                            | 96.3        | 494.725        | 247.3625           | 164.9083 | 300  |   |  |
| 3                     | 3.0           | 14                           | 17                            | 21                           | 38        | 33.3          |                            | 182.9       | 939.9775       | 469.9888           | 313.3258 | 400  |   |  |
| 4                     | 4.0           | 17                           | 22                            | 27                           | 49        | 48.6          |                            | 267.3       | 1373.686       | 686.8432           | 457.8955 |  |   |  |
| 5                     | 5.0           | 25                           | 35                            | 15                           | 50        | 49.6          |                            | 272.7       | 1401.721       | 700.8604           | 467.2403 |  |   |  |
| 6                     | 6.0           | 20                           | 30                            | 20                           | 50        | 49.6          |                            | 272.7       | 1401.721       | 700.8604           | 467.2403 |  |   |  |
| 7                     | 7.0           | 21                           | 38                            | 12                           | 50        | 55.4          |                            | 304.8       | 1566.629       | 783.3146           | 522.2097 |  |   |  |
| 8                     | 8.0           | 25                           | 35                            | 15                           | 50        | 55.4          |                            | 304.8       | 1566.629       | 783.3146           | 522.2097 |  |   |  |
| 9                     | 9.0           | 22                           | 40                            | 10                           | 50        | 55.4          |                            | 304.8       | 1566.629       | 783.3146           | 522.2097 |  |   |  |
| 10                    | 10.0          | 20                           | 38                            | 12                           | 50        | 55.4          |                            | 304.8       | 1566.629       | 783.3146           | 522.2097 |  |   |  |
| 11                    | 11.0          | 23                           | 42                            | 8                            | 50        | 58.3          |                            | 320.8       | 1649.083       | 824.5417           | 549.6944 |  |   |  |
| 12                    | 12.0          | 17                           | 32                            | 18                           | 50        | 58.3          |                            | 320.8       | 1649.083       | 824.5417           | 549.6944 |  |   |  |

**CALCULATION-N60**

|                       |               |                        |                               |                              |           |     | <b>Drilling Started:</b>   |    |      |               | 26-Jan-24   |   |
|-----------------------|---------------|------------------------|-------------------------------|------------------------------|-----------|-----|----------------------------|----|------|---------------|---|---|
|                       |               |                        |                               |                              |           |     | <b>Drilling Completed:</b> |    |      |               | 26-Jan-24   |   |
|                       |               |                        |                               |                              |           |     | <b>X:</b>                  |    |      |               | 824300.08   |   |
|                       |               |                        |                               |                              |           |     | <b>Y:</b>                  |    |      |               | 9747614.15  |   |
| <b>Country:</b>       |               |                        | RWANDA                        |                              |           |     | <b>Hole ID:</b>            |    |      |               | BH6   |   |
| <b>Site Location:</b> |               |                        | NYANZA DISTRICT               |                              |           |     | <b>Chainage:</b>           |    |      |               | N/A   |   |
| <b>Location Note:</b> |               |                        |                               |                              |           |     | <b>Total Depth (m):</b>    |    |      |               | 12.0  |   |
| Test No               | SPT depth (m) | First step No of Blows | Second step No of Blows /15cm | Third step No of Blows /15cm | ‘N’ Value | EH  | CB                         | CS | CR   | SPT depth (m) | Corrected N60   | Friction Angle (φ') [deg]                                 |
|                       |               |                        |                               |                              |           |     |                            |    |      |               | $N_{60}=(EH \times CB \times CS \times CR) \times N / 0.60$ | $\phi'(deg) = 27.1 + 0.3(N_{160}) - 0.00054[(N_{160})^2]$ |
| 1                     | 1.0           | 3                      | 4                             | 4                            | 8         | 0.7 | 1                          | 1  | 0.75 | 1.0           | 7.0   | 29.2  |
| 2                     | 2.0           | 4                      | 5                             | 7                            | 12        | 0.7 | 1                          | 1  | 0.75 | 2.0           | 10.5  | 30.2  |
| 3                     | 3.0           | 7                      | 8                             | 12                           | 20        | 0.7 | 1                          | 1  | 0.75 | 3.0           | 17.5  | 32.2  |
| 4                     | 4.0           | 10                     | 14                            | 16                           | 30        | 0.7 | 1                          | 1  | 0.85 | 4.0           | 29.8  | 35.5  |
| 5                     | 5.0           | 14                     | 20                            | 23                           | 43        | 0.7 | 1                          | 1  | 0.85 | 5.0           | 42.6  | 38.9  |
| 6                     | 6.0           | 11                     | 17                            | 20                           | 37        | 0.7 | 1                          | 1  | 0.85 | 6.0           | 36.7  | 37.4  |
| 7                     | 7.0           | 12                     | 20                            | 25                           | 45        | 0.7 | 1                          | 1  | 0.95 | 7.0           | 49.9  | 40.7  |
| 8                     | 8.0           | 13                     | 23                            | 25                           | 48        | 0.7 | 1                          | 1  | 0.95 | 8.0           | 53.2  | 41.5  |
| 9                     | 9.0           | 17                     | 25                            | 25                           | 50        | 0.7 | 1                          | 1  | 0.95 | 9.0           | 55.4  | 42.1  |
| 10                    | 10.0          | 14                     | 24                            | 26                           | 50        | 0.7 | 1                          | 1  | 0.95 | 10.0          | 55.4  | 42.1  |
| 11                    | 11.0          | 13                     | 20                            | 24                           | 44        | 0.7 | 1                          | 1  | 1    | 11.0          | 51.3  | 41.1  |
| 12                    | 12.0          | 17                     | 26                            | 24                           | 50        | 0.7 | 1                          | 1  | 1    | 12.0          | 58.3  | 42.8  |

**CALCULATION OF BEARING CAPACITY**

|                       |               |                              |                               |                              |           |               | <b>Drilling Started:</b>   | 26-Jan-24  |                |                    |                    |  |   |  |
|-----------------------|---------------|------------------------------|-------------------------------|------------------------------|-----------|---------------|----------------------------|------------|----------------|--------------------|--------------------|--|---|--|
|                       |               |                              |                               |                              |           |               | <b>Drilling Completed:</b> | 26-Jan-24  |                |                    |                    |  |   |  |
|                       |               |                              |                               |                              |           |               | <b>X:</b>                  | 824300.08  |                |                    |                    |  |   |  |
|                       |               |                              |                               |                              |           |               | <b>Y:</b>                  | 9747614.15 |                |                    |                    |  |   |  |
| <b>Country:</b>       |               | RWANDA                       |                               |                              |           |               | <b>Hole ID:</b>            | BH6        |                |                    |                    |  |   |  |
| <b>Site Location:</b> |               | NYANZA DISTRICT              |                               |                              |           |               | <b>Chainage:</b>           | N/A        |                |                    |                    |  |   |  |
| <b>Location Note:</b> |               |                              |                               |                              |           |               | <b>Total Depth (m):</b>    | 12         |                |                    |                    |  |   |  |
| Parameter             | Test Results  |                              |                               |                              |           |               |                            |            |                |                    |                    |  | Legend  |  |
| Test No               | SPT depth (m) | First step No of Blows /15cm | Second step No of Blows /15cm | Third step No of Blows /15cm | “N” Value | Corrected N60 | Plasticity index PI        | Su         | q <sub>u</sub> | q <sub>u</sub> ULS | q <sub>u</sub> SLS | Allowable Bearing Capacity (Service limit state) | N: measured SPT N-value in field<br>Su: undrained shear strength,<br>q <sub>u</sub> <sup>ULS</sup> :Ultimate Limit State<br>q <sub>u</sub> <sup>SLS</sup> :Serviceability Limit State |  |
|                       |               |                              |                               |                              |           |               | PI < 20                    | kPa        | kPa            | kPa                | kPa                | kPa  |   |  |
| 1                     | 1.0           | 3                            | 4                             | 4                            | 8         | 7.0           |                            | 38.5       | 197.89         | 98.945             | 65.96333           | 65   |   |  |
| 2                     | 2.0           | 4                            | 5                             | 7                            | 12        | 10.5          |                            | 57.8       | 296.835        | 148.4175           | 98.945             | 98   |   |  |
| 3                     | 3.0           | 7                            | 8                             | 12                           | 20        | 17.5          |                            | 96.3       | 494.725        | 247.3625           | 164.9083           | 165  |   |  |
| 4                     | 4.0           | 10                           | 14                            | 16                           | 30        | 29.8          |                            | 163.6      | 841.0325       | 420.5163           | 280.3442           |  |   |  |
| 5                     | 5.0           | 14                           | 20                            | 23                           | 43        | 42.6          |                            | 234.5      | 1205.48        | 602.74             | 401.8266           |  |   |  |
| 6                     | 6.0           | 11                           | 17                            | 20                           | 37        | 36.7          |                            | 201.8      | 1037.273       | 518.6367           | 345.7578           | 400  |   |  |
| 7                     | 7.0           | 12                           | 20                            | 25                           | 45        | 49.9          |                            | 274.3      | 1409.966       | 704.9831           | 469.9888           |  |   |  |
| 8                     | 8.0           | 13                           | 23                            | 25                           | 48        | 53.2          |                            | 292.6      | 1503.964       | 751.982            | 501.3213           |  |   |  |
| 9                     | 9.0           | 17                           | 25                            | 25                           | 50        | 55.4          |                            | 304.8      | 1566.629       | 783.3146           | 522.2097           |  |   |  |
| 10                    | 10.0          | 14                           | 24                            | 26                           | 50        | 55.4          |                            | 304.8      | 1566.629       | 783.3146           | 522.2097           |  |   |  |
| 11                    | 11.0          | 13                           | 20                            | 24                           | 44        | 51.3          |                            | 282.3      | 1451.193       | 725.5967           | 483.7311           |  |   |  |
| 12                    | 12.0          | 17                           | 26                            | 24                           | 50        | 58.3          |                            | 320.8      | 1649.083       | 824.5417           | 549.6944           |  |   |  |

**CALCULATION-N60**

|                       |               |                        |                               |                              |           | <b>Drilling Started:</b>   |    |    |      | 28-Jan-24     |   |  |
|-----------------------|---------------|------------------------|-------------------------------|------------------------------|-----------|----------------------------|----|----|------|---------------|---|--|
|                       |               |                        |                               |                              |           | <b>Drilling Completed:</b> |    |    |      | 28-Jan-24     |   |  |
|                       |               |                        |                               |                              |           | <b>X:</b>                  |    |    |      | 829036        |   |  |
|                       |               |                        |                               |                              |           | <b>Y:</b>                  |    |    |      | 9725433       |   |  |
| <b>Country:</b>       |               | RWANDA                 |                               |                              |           | <b>Hole ID:</b>            |    |    |      | BH7           |   |  |
| <b>Site Location:</b> |               | GISAGARA DISTRICT      |                               |                              |           | <b>Chainage:</b>           |    |    |      | N/A           |   |  |
| <b>Location Note:</b> |               |                        |                               |                              |           | <b>Total Depth (m):</b>    |    |    |      | 12            |   |  |
| Test No               | SPT depth (m) | First step No of Blows | Second step No of Blows /15cm | Third step No of Blows /15cm | 'N' Value |                            |    |    |      | SPT depth (m) | Corrected N60   | Friction Angle (φ') [deg]                                    |
|                       |               |                        |                               |                              |           | EH                         | CB | CS | CR   |               | $N_{60}=(EH \times CB \times CS \times CR) \times N / 0.60$ | $\phi'(\text{deg})=27.1+0.3(N_{1,60})-0.00054[(N_{1,60})^2]$ |
| 1                     | 1.0           | 4                      | 4                             | 7                            | 11        | 0.7                        | 1  | 1  | 0.75 | 1.0           | 9.6   | 29.9   |
| 2                     | 2.0           | 7                      | 9                             | 12                           | 21        | 0.7                        | 1  | 1  | 0.75 | 2.0           | 18.4  | 32.4   |
| 3                     | 3.0           | 14                     | 20                            | 27                           | 47        | 0.7                        | 1  | 1  | 0.75 | 3.0           | 41.1  | 38.5   |
| 4                     | 4.0           | 19                     | 30                            | 20                           | 50        | 0.7                        | 1  | 1  | 0.85 | 4.0           | 49.6  | 40.6   |
| 5                     | 5.0           | 25                     | 35                            | 15                           | 50        | 0.7                        | 1  | 1  | 0.85 | 5.0           | 49.6  | 40.6   |
| 6                     | 6.0           | 20                     | 40                            | 10                           | 50        | 0.7                        | 1  | 1  | 0.85 | 6.0           | 49.6  | 40.6   |
| 7                     | 7.0           | 30                     | 40                            | 10                           | 50        | 0.7                        | 1  | 1  | 0.95 | 7.0           | 55.4  | 42.1   |
| 8                     | 8.0           | 25                     | 35                            | 15                           | 50        | 0.7                        | 1  | 1  | 0.95 | 8.0           | 55.4  | 42.1   |
| 9                     | 9.0           | 28                     | 32                            | 18                           | 50        | 0.7                        | 1  | 1  | 0.95 | 9.0           | 55.4  | 42.1   |
| 10                    | 10.0          | 30                     | 38                            | 12                           | 50        | 0.7                        | 1  | 1  | 0.95 | 10.0          | 55.4  | 42.1   |
| 11                    | 11.0          | 27                     | 42                            | 8                            | 50        | 0.7                        | 1  | 1  | 1    | 11.0          | 58.3  | 42.8   |
| 12                    | 12.0          | 30                     | 45                            | 5                            | 50        | 0.7                        | 1  | 1  | 1    | 12.0          | 58.3  | 42.8   |

**CALCULATION OF BEARING CAPACITY**

|                       |               |                              |                               |                              |           |               | <b>Drilling Started:</b>   | 23-Jan-24 |                |                    |          |  |   |  |
|-----------------------|---------------|------------------------------|-------------------------------|------------------------------|-----------|---------------|----------------------------|-----------|----------------|--------------------|----------|--|---|--|
|                       |               |                              |                               |                              |           |               | <b>Drilling Completed:</b> | 23-Jan-24 |                |                    |          |  |   |  |
|                       |               |                              |                               |                              |           |               | <b>X:</b>                  | 829036    |                |                    |          |  |   |  |
|                       |               |                              |                               |                              |           |               | <b>Y:</b>                  | 9725433   |                |                    |          |  |   |  |
| <b>Country:</b>       |               | RWANDA                       |                               |                              |           |               | <b>Hole ID:</b>            | BH7       |                |                    |          |  |   |  |
| <b>Site Location:</b> |               | GISAGARA DISTRICT            |                               |                              |           |               | <b>Chainage:</b>           | N/A       |                |                    |          |  |   |  |
| <b>Location Note:</b> |               |                              |                               |                              |           |               | <b>Total Depth (m):</b>    | 12        |                |                    |          |  |   |  |
| Parameter             | Test Results  |                              |                               |                              |           |               |                            |           |                |                    |          |  | Legend  |  |
| Test No               | SPT depth (m) | First step No of Blows /15cm | Second step No of Blows /15cm | Third step No of Blows /15cm | “N” Value | Corrected N60 | Plasticity index PI        | Su        | q <sub>u</sub> | q <sub>u</sub> ULS | qu SLS   | Allowable Bearing Capacity (Service limit state) | N: measured SPT N-value in field<br>Su: undrained shear strength,<br>q <sub>u</sub> <sup>ULS</sup> :Ultimate Limit State<br>q <sub>u</sub> <sup>SLS</sup> :Serviceability Limit State |  |
|                       |               |                              |                               |                              |           |               |                            | kPa       | kPa            | kPa                | kPa      | kPa  |   |  |
| 1                     | 1.0           | 4                            | 4                             | 7                            | 11        | 9.6           | PI < 20                    | 52.9      | 272.0988       | 136.0494           | 90.69958 | 90   |   |  |
| 2                     | 2.0           | 7                            | 9                             | 12                           | 21        | 18.4          |                            | 101.1     | 519.4613       | 259.7306           | 173.1538 | 170  |   |  |
| 3                     | 3.0           | 14                           | 20                            | 27                           | 47        | 41.1          |                            | 226.2     | 1162.604       | 581.3019           | 387.5346 | 380  |   |  |
| 4                     | 4.0           | 19                           | 30                            | 20                           | 50        | 49.6          |                            | 272.7     | 1401.721       | 700.8604           | 467.2403 | 400  |   |  |
| 5                     | 5.0           | 25                           | 35                            | 15                           | 50        | 49.6          |                            | 272.7     | 1401.721       | 700.8604           | 467.2403 |  |   |  |
| 6                     | 6.0           | 20                           | 40                            | 10                           | 50        | 49.6          |                            | 272.7     | 1401.721       | 700.8604           | 467.2403 |  |   |  |
| 7                     | 7.0           | 30                           | 40                            | 10                           | 50        | 55.4          |                            | 304.8     | 1566.629       | 783.3146           | 522.2097 |  |   |  |
| 8                     | 8.0           | 25                           | 35                            | 15                           | 50        | 55.4          |                            | 304.8     | 1566.629       | 783.3146           | 522.2097 |  |   |  |
| 9                     | 9.0           | 28                           | 32                            | 18                           | 50        | 55.4          |                            | 304.8     | 1566.629       | 783.3146           | 522.2097 |  |   |  |
| 10                    | 10.0          | 30                           | 38                            | 12                           | 50        | 55.4          |                            | 304.8     | 1566.629       | 783.3146           | 522.2097 |  |   |  |
| 11                    | 11.0          | 27                           | 42                            | 8                            | 50        | 58.3          |                            | 320.8     | 1649.083       | 824.5417           | 549.6944 |  |   |  |
| 12                    | 12.0          | 30                           | 45                            | 5                            | 50        | 58.3          |                            | 320.8     | 1649.083       | 824.5417           | 549.6944 |  |   |  |