

| MEMORIAL DE CÁLCULO DA CAPACIDADE DE CARGA DAS ESTACAS |          |  |  |                               |          |       |                         |              |         |        |        |           |                  |         |     |   |           |            |            |           |          |          |       |            |             |            |            |
|--------------------------------------------------------|----------|--|--|-------------------------------|----------|-------|-------------------------|--------------|---------|--------|--------|-----------|------------------|---------|-----|---|-----------|------------|------------|-----------|----------|----------|-------|------------|-------------|------------|------------|
| DADOS DE AUXÍLIO                                       |          |  |  | DESCRIÇÃO DAS CAMADAS DO SOLO |          |       |                         |              |         |        |        |           |                  |         |     |   |           |            |            |           |          |          |       |            |             |            |            |
| TIPO                                                   | FRANKI   |  |  | NÍVEL DA PONTA                | COTA (m) | NSPT  | DESCRIÇÃO GERAL DO SOLO | AOKI-VELLOSO |         |        |        |           | DECOURT-QUAREMAS |         |     |   |           | RECALQUES  |            |           |          |          |       |            |             |            |            |
| SEÇÃO                                                  | CIRCULAR |  |  |                               |          |       |                         | α (%)        | K (MPa) | F1 (P) | F2 (L) | Rp (tf)   | RI (tf)          | C (KPa) | α   | β | Rp (tf)   | RI (tf)    | RI (tf)    | CP (tf)   | RE (mm)  | φo       | B (m) | ΔP (tf/m²) | Ead (tf/m²) | RS (mm)    |            |
| Φ (cm)                                                 | 35       |  |  | INÍCIO                        | 0        | 1     | ARGILA                  | ARENOSO(A)   | 2,4     | 0,35   | 2,5    | 5         | 1,3469579        | 0,1847  | 260 | 1 | 1         | 3,7522397  | 1,46607657 | 0         | 50       | 0,278405 | 2     | 0          | 0           | 50         | 0          |
| Área da ponta (m²)                                     | 0,09621  |  |  |                               | -1       | 2     | ARGILA                  | ARENOSO(A)   | 2,4     | 0,35   | 2,5    | 5         | 2,6939157        | 0,3695  | 260 | 1 | 1         | 4,1691553  | 1,83259571 | 0,3694513 | 49,63055 | 0,276348 | 2     | 0          | 0           | 100        | 0          |
| Área lateral tot (m²)                                  | 3,29867  |  |  |                               | -2       | 2     | ARGILA                  | ARENOSO(A)   | 2,4     | 0,35   | 2,5    | 5         | 2,6939157        | 0,3695  | 260 | 1 | 1         | 5,8368174  | 1,83259571 | 0,3694513 | 49,2611  | 0,274291 | 2     | 0          | 0           | 100        | 0          |
| Comp. Estaca (m)                                       | 3        |  |  |                               | -3       | 3     | ARGILA                  | ARENOSO(A)   | 2,4     | 0,35   | 2,5    | 5         | 4,0408736        | 0,5542  | 260 | 1 | 1         | 7,5044795  | 2,19911486 | 0,5541769 | 48,70692 | 0,271205 | 2     | 0,35       | 0           | 150        | 0          |
| E (MPa)                                                | 2,8E+07  |  |  |                               | -4       | 4     | ARGILA                  | ARENOSO(A)   | 2,4     | 0,35   | 2,5    | 5         | 5,3878314        | 0,7389  | 260 | 1 | 1         | 10,839804  | 2,565634   | 0         | 48,70692 | 0        | 2     | 0,85       | 67,4144228  | 200        | 505,608171 |
| Nk (tf)                                                | 50       |  |  |                               | -5       | 6     | SILTE                   | ARENOSO(A)   | 2,2     | 0,55   | 2,5    | 5         | 12,699888        | 1,5966  | 400 | 1 | 1         | 19,242255  | 3,29867229 | 0         | 48,70692 | 0        | 2     | 2,35       | 8,81972304  | 900        | 14,6995384 |
|                                                        |          |  |  |                               | -6       | 5     | SILTE                   | ARENOSO(A)   | 2,2     | 0,55   | 2,5    | 5         | 10,58324         | 1,3305  | 400 | 1 | 1         | 21,807889  | 2,93215314 | 0         | 48,70692 | 0        | 2     | 3,85       | 3,28601251  | 750        | 6,57202502 |
|                                                        |          |  |  |                               | -7       | 6     | SILTE                   | ARENOSO(A)   | 2,2     | 0,55   | 2,5    | 5         | 12,699888        | 1,5966  | 400 | 1 | 1         | 20,525072  | 3,29867229 | 0         | 48,70692 | 0        | 2     | 5,35       | 1,70170043  | 900        | 2,83616738 |
|                                                        |          |  |  |                               | -8       | 5     | SILTE                   | ARENOSO(A)   | 2,2     | 0,55   | 2,5    | 5         | 10,58324         | 1,3305  | 400 | 1 | 1         | 24,373523  | 2,93215314 | 0         | 48,70692 | 0        | 2     | 6,85       | 1,0380291   | 750        | 2,0760582  |
|                                                        |          |  |  |                               | -9       | 8     | SILTE                   | ARENOSO(A)   | 2,2     | 0,55   | 2,5    | 5         | 16,933184        | 2,1287  | 400 | 1 | 1         | 30,787608  | 4,03171057 | 0         | 48,70692 | 0        | 2     | 8,35       | 0,69858253  | 1200       | 0,87322816 |
|                                                        |          |  |  |                               | -10      | 11    | SILTE                   | ARENOSO(A)   | 2,2     | 0,55   | 2,5    | 5         | 23,283129        | 2,927   | 400 | 1 | 1         | 43,615778  | 5,131268   | 0         | 48,70692 | 0        | 2     | 9,85       | 0,50201675  | 1815       | 0,41488988 |
|                                                        |          |  |  |                               | -11      | 15    | SILTE                   | ARENOSO(A)   | 2,2     | 0,55   | 2,5    | 5         | 31,749721        | 3,9914  | 400 | 1 | 1         | 71,837752  | 6,59734457 | 0         | 48,70692 | 0        | 1     | 11,85      | 0,3468598   | 2475       | 0,21021806 |
|                                                        |          |  |  |                               | -12      | 30    | SILTE                   | ARENOSO(A)   | 2,2     | 0,55   | 2,5    | 5         | 63,499442        | 7,9828  | 400 | 1 | 1         | 96,211275  | 6,59734457 | 0         | 48,70692 | 0        | 1     | 13,85      | 0,25391662  | 4950       | 0,07694443 |
|                                                        |          |  |  |                               | -13      | 30    | SILTE                   | ARENOSO(A)   | 2,2     | 0,55   | 2,5    | 5         | 63,499442        | 7,9828  | 400 | 1 | 1         | 118,01916  | 6,59734457 | 0         | 48,70692 | 0        | 1     | 15,85      | 0,19387961  | 4950       | 0,0587514  |
|                                                        |          |  |  |                               | -14      | 32    | SILTE                   | ARENOSO(A)   | 2,2     | 0,55   | 2,5    | 5         | 67,732738        | 8,515   | 400 | 1 | 1         | 124,43325  | 6,59734457 | 0         | 48,70692 | 0        | 1     | 17,85      | 0,15286717  | 5280       | 0,04342817 |
|                                                        |          |  |  |                               | -15      | 35    | SILTE                   | ARENOSO(A)   | 2,2     | 0,55   | 2,5    | 5         | 74,082682        | 9,3133  | 400 | 1 | 1         | 87,231556  | 6,59734457 | 0         | 48,70692 | 0        | 1     | 19,85      | 0,12361457  | 5775       | 0,03210768 |
|                                                        |          |  |  |                               | -16      | 1     | SILTE                   | ARENOSO(A)   | 2,2     | 0,55   | 2,5    | 5         | 2,1166481        | 0,2661  | 400 | 1 | 1         | 47,464229  | 1,46607657 | 0         | 48,70692 | 0        | 2     | 21,35      | 0,10685502  | 150        | 1,06855016 |
|                                                        |          |  |  |                               | -17      | 1     | SILTE                   | ARENOSO(A)   | 2,2     | 0,55   | 2,5    | 5         | 2,1166481        | 0,2661  | 400 | 1 | 1         | 3,848451   | 1,46607657 | 0         | 48,70692 | 0        | 2     | 22,85      | 0,09328638  | 150        | 0,93286385 |
|                                                        |          |  |  |                               | -18      | 1     | SILTE                   | ARENOSO(A)   | 2,2     | 0,55   | 2,5    | 5         | 2,1166481        | 0,2661  | 400 | 1 | 1         | 3,848451   | 1,46607657 | 0         | 48,70692 | 0        | 2     | 24,35      | 0,0821472   | 150        | 0,82147195 |
|                                                        |          |  |  |                               | -19      | 1     | SILTE                   | ARENOSO(A)   | 2,2     | 0,55   | 2,5    | 5         | 2,1166481        | 0,2661  | 400 | 1 | 1         | 3,848451   | 1,46607657 | 0         | 48,70692 | 0        | 2     | 25,85      | 0,07289027  | 150        | 0,72890273 |
|                                                        |          |  |  | -20                           | 1        | SILTE | PURO(A)                 | 3            | 0,4     | 2,5    | 5      | 1,5393804 | 0,2639           | 200     | 1   | 1 | 1,9242255 | 1,46607657 | 0          | 48,70692  | 0        | 2        | 27,35 | 0,06511425 | 150         | 0,65114245 |            |
| RESULTADOS                                             |          |  |  |                               |          |       |                         |              |         |        |        |           |                  |         |     |   |           |            |            |           |          |          |       |            |             |            |            |
| Rec. Elástico (cm)                                     | 0,11002  |  |  |                               |          |       |                         |              |         |        |        |           |                  |         |     |   |           |            |            |           |          |          |       |            |             |            |            |
| Rec. do solo (cm)                                      | 53,7704  |  |  |                               |          |       |                         |              |         |        |        |           |                  |         |     |   |           |            |            |           |          |          |       |            |             |            |            |
| RT (cm)                                                | 53,8805  |  |  |                               |          |       |                         |              |         |        |        |           |                  |         |     |   |           |            |            |           |          |          |       |            |             |            |            |
| FÓRMULAS PRINCIPAIS                                    |          |  |  |                               |          |       |                         |              |         |        |        |           |                  |         |     |   |           |            |            |           |          |          |       |            |             |            |            |
| AOKI-VELLOSO                                           |          |  |  |                               |          |       |                         |              |         |        |        |           |                  |         |     |   |           |            |            |           |          |          |       |            |             |            |            |
| Rp = (K.Nspt/F1) . Ap                                  |          |  |  |                               |          |       |                         |              |         |        |        |           |                  |         |     |   |           |            |            |           |          |          |       |            |             |            |            |
| RI = (α.K.NI/F2) . AI                                  |          |  |  |                               |          |       |                         |              |         |        |        |           |                  |         |     |   |           |            |            |           |          |          |       |            |             |            |            |
| Rt = Rp + RI                                           |          |  |  |                               |          |       |                         |              |         |        |        |           |                  |         |     |   |           |            |            |           |          |          |       |            |             |            |            |
| DECOURT-QUARESMA                                       |          |  |  |                               |          |       |                         |              |         |        |        |           |                  |         |     |   |           |            |            |           |          |          |       |            |             |            |            |
| Rp = (α.c.Np) . Ap                                     |          |  |  |                               |          |       |                         |              |         |        |        |           |                  |         |     |   |           |            |            |           |          |          |       |            |             |            |            |
| RI = (β.10.(NI/3 + 1)) . AI                            |          |  |  |                               |          |       |                         |              |         |        |        |           |                  |         |     |   |           |            |            |           |          |          |       |            |             |            |            |
| Rt = Rp + RI                                           |          |  |  |                               |          |       |                         |              |         |        |        |           |                  |         |     |   |           |            |            |           |          |          |       |            |             |            |            |