

**Alignment: Acesso Rodoviário A**

**Description:**

| Tangent Data |            |             |            |
|--------------|------------|-------------|------------|
| Description  | PT Station | Northing    | Easting    |
| Start:       | 0+000.000  | 7117013.765 | 451557.342 |
| End:         | 0+074.570  | 7117025.344 | 451631.008 |

| Tangent Data |        |           |              |
|--------------|--------|-----------|--------------|
| Parameter    | Value  | Parameter | Value        |
| Length:      | 74.570 | Course:   | N 90.0747g E |

| Curve Point Data |           |             |            |
|------------------|-----------|-------------|------------|
| Description      | Station   | Northing    | Easting    |
| PC:              | 0+074.570 | 7117025.344 | 451631.008 |
| RP:              |           | 7116728.982 | 451677.591 |
| PT:              | 0+100.033 | 7117028.226 | 451656.299 |

| Circular Curve Data |                  |           |              |
|---------------------|------------------|-----------|--------------|
| Parameter           | Value            | Parameter | Value        |
| Delta:              | 04° 51' 46.9575" | Type:     | RIGHT        |
| Radius:             | 300.000          |           |              |
| Length:             | 25.463           | Tangent:  | 12.739       |
| Mid-Ord:            | 0.270            | External: | 0.270        |
| Chord:              | 25.455           | Course:   | N 92.7763g E |

| Tangent Data |            |             |            |
|--------------|------------|-------------|------------|
| Description  | PT Station | Northing    | Easting    |
| Start:       | 0+100.033  | 7117028.226 | 451656.299 |
| End:         | 0+769.307  | 7117075.725 | 452323.886 |

| Tangent Data |         |           |              |
|--------------|---------|-----------|--------------|
| Parameter    | Value   | Parameter | Value        |
| Length:      | 669.274 | Course:   | N 95.4780g E |

| Curve Point Data |           |             |            |
|------------------|-----------|-------------|------------|
| Description      | Station   | Northing    | Easting    |
| PC:              | 0+769.307 | 7117075.725 | 452323.886 |
| RP:              |           | 7112088.333 | 452678.741 |
| PT:              | 0+860.219 | 7117081.352 | 452414.622 |

Circular Curve Data

| Parameter | Value            | Parameter | Value        |
|-----------|------------------|-----------|--------------|
| Delta:    | 01° 02' 30.3717" | Type:     | RIGHT        |
| Radius:   | 5000.000         |           |              |
| Length:   | 90.912           | Tangent:  | 45.457       |
| Mid-Ord:  | 0.207            | External: | 0.207        |
| Chord:    | 90.910           | Course:   | N 96.0568g E |

Tangent Data

| Description | PT Station | Northing    | Easting    |
|-------------|------------|-------------|------------|
| Start:      | 0+860.219  | 7117081.352 | 452414.622 |
| End:        | 0+940.500  | 7117085.593 | 452494.791 |

Tangent Data

| Parameter | Value  | Parameter | Value        |
|-----------|--------|-----------|--------------|
| Length:   | 80.282 | Course:   | N 96.6356g E |

## Alignment: Acesso Rodoviário B

### Description:

Tangent Data

| Description | PT Station | Northing    | Easting    |
|-------------|------------|-------------|------------|
| Start:      | 0+000.000  | 7117085.593 | 452494.791 |
| End:        | 0+138.174  | 7117204.450 | 452565.255 |

Tangent Data

| Parameter | Value   | Parameter | Value        |
|-----------|---------|-----------|--------------|
| Length:   | 138.174 | Course:   | N 34.0682g E |

Curve Point Data

| Description | Station   | Northing    | Easting    |
|-------------|-----------|-------------|------------|
| PC:         | 0+138.174 | 7117204.450 | 452565.255 |
| RP:         |           | 7117969.394 | 451274.960 |
| PT:         | 0+195.804 | 7117254.575 | 452593.684 |

Circular Curve Data

| Parameter | Value            | Parameter | Value        |
|-----------|------------------|-----------|--------------|
| Delta:    | 02° 12' 04.7273" | Type:     | LEFT         |
| Radius:   | 1500.000         |           |              |
| Length:   | 57.630           | Tangent:  | 28.819       |
| Mid-Ord:  | 0.277            | External: | 0.277        |
| Chord:    | 57.627           | Course:   | N 32.8452g E |

Tangent Data

| Description | PT Station | Northing    | Easting    |
|-------------|------------|-------------|------------|
| Start:      | 0+195.804  | 7117254.575 | 452593.684 |
| End:        | 0+390.912  | 7117426.105 | 452686.662 |

Tangent Data

| Parameter | Value   | Parameter | Value        |
|-----------|---------|-----------|--------------|
| Length:   | 195.108 | Course:   | N 31.6223g E |

Curve Point Data

| Description | Station   | Northing    | Easting    |
|-------------|-----------|-------------|------------|
| PC:         | 0+390.912 | 7117426.105 | 452686.662 |
| RP:         |           | 7116711.286 | 454005.387 |
| PT:         | 0+636.176 | 7117631.234 | 452820.611 |

Circular Curve Data

| Parameter | Value            | Parameter | Value        |
|-----------|------------------|-----------|--------------|
| Delta:    | 09° 22' 06.1752" | Type:     | RIGHT        |
| Radius:   | 1500.000         |           |              |
| Length:   | 245.264          | Tangent:  | 122.906      |
| Mid-Ord:  | 5.010            | External: | 5.027        |
| Chord:    | 244.991          | Course:   | N 36.8269g E |

Tangent Data

| Description | PT Station | Northing    | Easting    |
|-------------|------------|-------------|------------|
| Start:      | 0+636.176  | 7117631.234 | 452820.611 |
| End:        | 0+718.647  | 7117696.374 | 452871.190 |

Tangent Data

| Parameter | Value  | Parameter | Value        |
|-----------|--------|-----------|--------------|
| Length:   | 82.471 | Course:   | N 42.0316g E |

Curve Point Data

| Description | Station   | Northing    | Easting    |
|-------------|-----------|-------------|------------|
| PC:         | 0+718.647 | 7117696.374 | 452871.190 |
| RP:         |           | 7118033.689 | 452436.772 |
| PT:         | 1+001.345 | 7117953.546 | 452980.902 |

Circular Curve Data

| Parameter | Value            | Parameter | Value        |
|-----------|------------------|-----------|--------------|
| Delta:    | 29° 26' 59.3431" | Type:     | LEFT         |
| Radius:   | 550.000          |           |              |
| Length:   | 282.698          | Tangent:  | 144.545      |
| Mid-Ord:  | 18.063           | External: | 18.677       |
| Chord:    | 279.596          | Course:   | N 25.6706g E |

Tangent Data

| Description | PT Station | Northing    | Easting    |
|-------------|------------|-------------|------------|
| Start:      | 1+001.345  | 7117953.546 | 452980.902 |
| End:        | 1+130.009  | 7118080.837 | 452999.650 |

Tangent Data

| Parameter | Value   | Parameter | Value       |
|-----------|---------|-----------|-------------|
| Length:   | 128.664 | Course:   | N 9.3096g E |

Curve Point Data

| Description | Station   | Northing    | Easting    |
|-------------|-----------|-------------|------------|
| PC:         | 1+130.009 | 7118080.837 | 452999.650 |
| RP:         |           | 7118037.122 | 453296.448 |
| PT:         | 1+237.064 | 7118181.762 | 453033.618 |

Circular Curve Data

| Parameter | Value            | Parameter | Value        |
|-----------|------------------|-----------|--------------|
| Delta:    | 20° 26' 45.6588" | Type:     | RIGHT        |
| Radius:   | 300.000          |           |              |
| Length:   | 107.055          | Tangent:  | 54.103       |
| Mid-Ord:  | 4.763            | External: | 4.840        |
| Chord:    | 106.488          | Course:   | N 20.6685g E |

Tangent Data

| Description | PT Station | Northing    | Easting    |
|-------------|------------|-------------|------------|
| Start:      | 1+237.064  | 7118181.762 | 453033.618 |
| End:        | 1+510.026  | 7118420.903 | 453165.222 |

Tangent Data

| Parameter | Value   | Parameter | Value        |
|-----------|---------|-----------|--------------|
| Length:   | 272.962 | Course:   | N 32.0274g E |

Curve Point Data

| Description | Station   | Northing    | Easting    |
|-------------|-----------|-------------|------------|
| PC:         | 1+510.026 | 7118420.903 | 453165.222 |
| RP:         |           | 7118059.306 | 453822.296 |
| PT:         | 1+549.771 | 7118455.200 | 453185.298 |

Circular Curve Data

| Parameter | Value            | Parameter | Value        |
|-----------|------------------|-----------|--------------|
| Delta:    | 03° 02' 10.8119" | Type:     | RIGHT        |
| Radius:   | 750.000          |           |              |
| Length:   | 39.746           | Tangent:  | 19.877       |
| Mid-Ord:  | 0.263            | External: | 0.263        |
| Chord:    | 39.741           | Course:   | N 33.7142g E |

Tangent Data

| Description | PT Station | Northing    | Easting    |
|-------------|------------|-------------|------------|
| Start:      | 1+549.771  | 7118455.200 | 453185.298 |
| End:        | 1+585.821  | 7118485.818 | 453204.327 |

Tangent Data

| Parameter | Value  | Parameter | Value        |
|-----------|--------|-----------|--------------|
| Length:   | 36.049 | Course:   | N 35.4011g E |

Curve Point Data

| Description | Station   | Northing    | Easting    |
|-------------|-----------|-------------|------------|
| PC:         | 1+585.821 | 7118485.818 | 453204.327 |
| RP:         |           | 7118855.320 | 452609.795 |
| PT:         | 1+625.299 | 7118519.918 | 453224.209 |

Circular Curve Data

| Parameter | Value            | Parameter | Value        |
|-----------|------------------|-----------|--------------|
| Delta:    | 03° 13' 52.9017" | Type:     | LEFT         |
| Radius:   | 700.000          |           |              |
| Length:   | 39.479           | Tangent:  | 19.744       |
| Mid-Ord:  | 0.278            | External: | 0.278        |
| Chord:    | 39.473           | Course:   | N 33.6059g E |

Tangent Data

| Description | PT Station | Northing    | Easting    |
|-------------|------------|-------------|------------|
| Start:      | 1+625.299  | 7118519.918 | 453224.209 |
| End:        | 2+183.041  | 7119009.468 | 453491.449 |

Tangent Data

| Parameter | Value   | Parameter | Value        |
|-----------|---------|-----------|--------------|
| Length:   | 557.742 | Course:   | N 31.8107g E |

Curve Point Data

| Description | Station   | Northing    | Easting    |
|-------------|-----------|-------------|------------|
| PC:         | 2+183.041 | 7119009.468 | 453491.449 |
| RP:         |           | 7119728.187 | 452174.846 |
| PT:         | 2+254.642 | 7119073.109 | 453524.243 |

Circular Curve Data

| Parameter | Value            | Parameter | Value        |
|-----------|------------------|-----------|--------------|
| Delta:    | 02° 44' 05.7828" | Type:     | LEFT         |
| Radius:   | 1500.000         |           |              |
| Length:   | 71.601           | Tangent:  | 35.807       |
| Mid-Ord:  | 0.427            | External: | 0.427        |
| Chord:    | 71.594           | Course:   | N 30.2913g E |

Tangent Data

| Description | PT Station | Northing    | Easting    |
|-------------|------------|-------------|------------|
| Start:      | 2+254.642  | 7119073.109 | 453524.243 |
| End:        | 2+348.458  | 7119157.507 | 453565.215 |

Tangent Data

| Parameter | Value  | Parameter | Value        |
|-----------|--------|-----------|--------------|
| Length:   | 93.816 | Course:   | N 28.7719g E |

Curve Point Data

| Description | Station   | Northing    | Easting    |
|-------------|-----------|-------------|------------|
| PC:         | 2+348.458 | 7119157.507 | 453565.215 |
| RP:         |           | 7118502.429 | 454914.612 |
| PT:         | 2+415.200 | 7119216.879 | 453595.688 |

Circular Curve Data

| Parameter | Value            | Parameter | Value        |
|-----------|------------------|-----------|--------------|
| Delta:    | 02° 32' 57.6887" | Type:     | RIGHT        |
| Radius:   | 1500.000         |           |              |
| Length:   | 66.742           | Tangent:  | 33.377       |
| Mid-Ord:  | 0.371            | External: | 0.371        |
| Chord:    | 66.737           | Course:   | N 30.1882g E |

Tangent Data

| Description | PT Station | Northing    | Easting    |
|-------------|------------|-------------|------------|
| Start:      | 2+415.200  | 7119216.879 | 453595.688 |
| End:        | 2+791.970  | 7119548.167 | 453775.144 |

Tangent Data

| Parameter | Value   | Parameter | Value        |
|-----------|---------|-----------|--------------|
| Length:   | 376.770 | Course:   | N 31.6045g E |

Curve Point Data

| Description | Station   | Northing    | Easting    |
|-------------|-----------|-------------|------------|
| PC:         | 2+791.970 | 7119548.167 | 453775.144 |
| RP:         |           | 7119071.867 | 454654.426 |
| PT:         | 2+827.728 | 7119579.297 | 453792.734 |

Circular Curve Data

| Parameter | Value            | Parameter | Value        |
|-----------|------------------|-----------|--------------|
| Delta:    | 02° 02' 55.7278" | Type:     | RIGHT        |
| Radius:   | 1000.000         |           |              |
| Length:   | 35.759           | Tangent:  | 17.881       |
| Mid-Ord:  | 0.160            | External: | 0.160        |
| Chord:    | 35.757           | Course:   | N 32.7427g E |

Tangent Data

| Description | PT Station | Northing    | Easting    |
|-------------|------------|-------------|------------|
| Start:      | 2+827.728  | 7119579.297 | 453792.734 |
| End:        | 2+851.612  | 7119599.877 | 453804.853 |

Tangent Data

| Parameter | Value  | Parameter | Value        |
|-----------|--------|-----------|--------------|
| Length:   | 23.883 | Course:   | N 33.8809g E |

Curve Point Data

| Description | Station   | Northing    | Easting    |
|-------------|-----------|-------------|------------|
| PC:         | 2+851.612 | 7119599.877 | 453804.853 |
| RP:         |           | 7120107.308 | 452943.160 |
| PT:         | 2+896.542 | 7119639.092 | 453826.775 |

Circular Curve Data

| Parameter | Value            | Parameter | Value        |
|-----------|------------------|-----------|--------------|
| Delta:    | 02° 34' 27.5609" | Type:     | LEFT         |
| Radius:   | 1000.000         |           |              |
| Length:   | 44.930           | Tangent:  | 22.469       |
| Mid-Ord:  | 0.252            | External: | 0.252        |
| Chord:    | 44.927           | Course:   | N 32.4508g E |

Tangent Data

| Description | PT Station | Northing    | Easting    |
|-------------|------------|-------------|------------|
| Start:      | 2+896.542  | 7119639.092 | 453826.775 |
| End:        | 3+295.170  | 7119991.326 | 454013.419 |

Tangent Data

| Parameter | Value   | Parameter | Value        |
|-----------|---------|-----------|--------------|
| Length:   | 398.628 | Course:   | N 31.0206g E |

Curve Point Data

| Description | Station   | Northing    | Easting    |
|-------------|-----------|-------------|------------|
| PC:         | 3+295.170 | 7119991.326 | 454013.419 |
| RP:         |           | 7119569.932 | 454808.671 |
| PT:         | 3+338.205 | 7120028.856 | 454034.470 |

Circular Curve Data

| Parameter | Value            | Parameter | Value        |
|-----------|------------------|-----------|--------------|
| Delta:    | 02° 44' 22.9201" | Type:     | RIGHT        |
| Radius:   | 900.000          |           |              |
| Length:   | 43.035           | Tangent:  | 21.522       |
| Mid-Ord:  | 0.257            | External: | 0.257        |
| Chord:    | 43.031           | Course:   | N 32.5426g E |

Tangent Data

| Description | PT Station | Northing    | Easting    |
|-------------|------------|-------------|------------|
| Start:      | 3+338.205  | 7120028.856 | 454034.470 |
| End:        | 3+398.760  | 7120080.947 | 454065.347 |

Tangent Data

| Parameter | Value  | Parameter | Value        |
|-----------|--------|-----------|--------------|
| Length:   | 60.554 | Course:   | N 34.0647g E |

Curve Point Data

| Description | Station   | Northing    | Easting    |
|-------------|-----------|-------------|------------|
| PC:         | 3+398.760 | 7120080.947 | 454065.347 |
| RP:         |           | 7120259.417 | 453764.269 |
| PT:         | 3+431.100 | 7120109.488 | 454080.530 |

Circular Curve Data

| Parameter | Value            | Parameter | Value        |
|-----------|------------------|-----------|--------------|
| Delta:    | 05° 17' 39.0641" | Type:     | LEFT         |
| Radius:   | 350.000          |           |              |
| Length:   | 32.340           | Tangent:  | 16.182       |
| Mid-Ord:  | 0.373            | External: | 0.374        |
| Chord:    | 32.329           | Course:   | N 31.1235g E |

Tangent Data

| Description | PT Station | Northing    | Easting    |
|-------------|------------|-------------|------------|
| Start:      | 3+431.100  | 7120109.488 | 454080.530 |
| End:        | 3+458.000  | 7120133.796 | 454092.053 |

Tangent Data

| Parameter | Value  | Parameter | Value        |
|-----------|--------|-----------|--------------|
| Length:   | 26.900 | Course:   | N 28.1823g E |

Curve Point Data

| Description | Station   | Northing    | Easting    |
|-------------|-----------|-------------|------------|
| PC:         | 3+458.000 | 7120133.796 | 454092.053 |
| RP:         |           | 7120005.285 | 454363.135 |
| PT:         | 3+476.565 | 7120150.314 | 454100.520 |

Circular Curve Data

| Parameter | Value            | Parameter | Value        |
|-----------|------------------|-----------|--------------|
| Delta:    | 03° 32' 44.2215" | Type:     | RIGHT        |
| Radius:   | 300.000          |           |              |
| Length:   | 18.565           | Tangent:  | 9.285        |
| Mid-Ord:  | 0.144            | External: | 0.144        |
| Chord:    | 18.562           | Course:   | N 30.1520g E |



Tangent Data

| Description | PT Station | Northing    | Easting    |
|-------------|------------|-------------|------------|
| Start:      | 3+476.565  | 7120150.314 | 454100.520 |
| End:        | 3+560.670  | 7120223.938 | 454141.178 |

Tangent Data

| Parameter | Value  | Parameter | Value        |
|-----------|--------|-----------|--------------|
| Length:   | 84.104 | Course:   | N 32.1218g E |

Curve Point Data

| Description | Station   | Northing    | Easting    |
|-------------|-----------|-------------|------------|
| PC:         | 3+560.670 | 7120223.938 | 454141.178 |
| RP:         |           | 7120368.967 | 453878.563 |
| PT:         | 3+575.141 | 7120236.770 | 454147.866 |

Circular Curve Data

| Parameter | Value            | Parameter | Value        |
|-----------|------------------|-----------|--------------|
| Delta:    | 02° 45' 49.8600" | Type:     | LEFT         |
| Radius:   | 300.000          |           |              |
| Length:   | 14.471           | Tangent:  | 7.237        |
| Mid-Ord:  | 0.087            | External: | 0.087        |
| Chord:    | 14.470           | Course:   | N 30.5864g E |

Tangent Data

| Description | PT Station | Northing    | Easting    |
|-------------|------------|-------------|------------|
| Start:      | 3+575.141  | 7120236.770 | 454147.866 |
| End:        | 3+861.128  | 7120493.493 | 454273.888 |

Tangent Data

| Parameter | Value   | Parameter | Value        |
|-----------|---------|-----------|--------------|
| Length:   | 285.987 | Course:   | N 29.0509g E |

Curve Point Data

| Description | Station   | Northing    | Easting    |
|-------------|-----------|-------------|------------|
| PC:         | 3+861.128 | 7120493.493 | 454273.888 |
| RP:         |           | 7120757.887 | 453735.283 |
| PT:         | 4+023.358 | 7120646.961 | 454324.940 |

Circular Curve Data

| Parameter | Value            | Parameter | Value        |
|-----------|------------------|-----------|--------------|
| Delta:    | 15° 29' 30.4746" | Type:     | LEFT         |
| Radius:   | 600.000          |           |              |
| Length:   | 162.230          | Tangent:  | 81.613       |
| Mid-Ord:  | 5.475            | External: | 5.525        |
| Chord:    | 161.736          | Course:   | N 20.4443g E |

Tangent Data

| Description | PT Station | Northing    | Easting    |
|-------------|------------|-------------|------------|
| Start:      | 4+023.358  | 7120646.961 | 454324.940 |
| End:        | 4+292.664  | 7120911.624 | 454374.728 |

Tangent Data

| Parameter | Value   | Parameter | Value        |
|-----------|---------|-----------|--------------|
| Length:   | 269.306 | Course:   | N 11.8378g E |

Curve Point Data

| Description | Station   | Northing    | Easting    |
|-------------|-----------|-------------|------------|
| PC:         | 4+292.664 | 7120911.624 | 454374.728 |
| RP:         |           | 7121558.696 | 450935.063 |
| PT:         | 4+508.597 | 7121124.932 | 454408.080 |

Circular Curve Data

| Parameter | Value            | Parameter | Value       |
|-----------|------------------|-----------|-------------|
| Delta:    | 03° 32' 05.5751" | Type:     | LEFT        |
| Radius:   | 3500.000         |           |             |
| Length:   | 215.934          | Tangent:  | 108.001     |
| Mid-Ord:  | 1.665            | External: | 1.666       |
| Chord:    | 215.899          | Course:   | N 9.8740g E |

Tangent Data

| Description | PT Station | Northing    | Easting    |
|-------------|------------|-------------|------------|
| Start:      | 4+508.597  | 7121124.932 | 454408.080 |
| End:        | 4+788.530  | 7121402.706 | 454442.773 |

Tangent Data

| Parameter | Value   | Parameter | Value       |
|-----------|---------|-----------|-------------|
| Length:   | 279.933 | Course:   | N 7.9101g E |

Curve Point Data

| Description | Station   | Northing    | Easting    |
|-------------|-----------|-------------|------------|
| PC:         | 4+788.530 | 7121402.706 | 454442.773 |
| RP:         |           | 7121439.886 | 454145.086 |
| PT:         | 4+840.445 | 7121454.520 | 454444.729 |

Circular Curve Data

| Parameter | Value            | Parameter | Value       |
|-----------|------------------|-----------|-------------|
| Delta:    | 09° 54' 54.2836" | Type:     | LEFT        |
| Radius:   | 300.000          |           |             |
| Length:   | 51.915           | Tangent:  | 26.023      |
| Mid-Ord:  | 1.122            | External: | 1.127       |
| Chord:    | 51.850           | Course:   | N 2.4018g E |

Tangent Data

| Description | PT Station | Northing    | Easting    |
|-------------|------------|-------------|------------|
| Start:      | 4+840.445  | 7121454.520 | 454444.729 |
| End:        | 4+866.739  | 7121480.783 | 454443.446 |

Tangent Data

| Parameter | Value  | Parameter | Value       |
|-----------|--------|-----------|-------------|
| Length:   | 26.294 | Course:   | N 3.1066g W |

Curve Point Data

| Description | Station   | Northing    | Easting    |
|-------------|-----------|-------------|------------|
| PC:         | 4+866.739 | 7121480.783 | 454443.446 |
| RP:         |           | 7121495.417 | 454743.089 |
| PT:         | 4+889.982 | 7121504.018 | 454443.212 |

Circular Curve Data

| Parameter | Value            | Parameter | Value       |
|-----------|------------------|-----------|-------------|
| Delta:    | 04° 26' 20.3191" | Type:     | RIGHT       |
| Radius:   | 300.000          |           |             |
| Length:   | 23.242           | Tangent:  | 11.627      |
| Mid-Ord:  | 0.225            | External: | 0.225       |
| Chord:    | 23.237           | Course:   | N 0.6405g W |

Tangent Data

| Description | PT Station | Northing    | Easting    |
|-------------|------------|-------------|------------|
| Start:      | 4+889.982  | 7121504.018 | 454443.212 |
| End:        | 5+058.836  | 7121672.803 | 454448.054 |

Tangent Data

| Parameter | Value   | Parameter | Value       |
|-----------|---------|-----------|-------------|
| Length:   | 168.854 | Course:   | N 1.8256g E |

Curve Point Data

| Description | Station   | Northing    | Easting    |
|-------------|-----------|-------------|------------|
| PC:         | 5+058.836 | 7121672.803 | 454448.054 |
| RP:         |           | 7121664.202 | 454747.930 |
| PT:         | 5+147.703 | 7121759.965 | 454463.625 |

Circular Curve Data

| Parameter | Value            | Parameter | Value        |
|-----------|------------------|-----------|--------------|
| Delta:    | 16° 58' 20.1474" | Type:     | RIGHT        |
| Radius:   | 300.000          |           |              |
| Length:   | 88.867           | Tangent:  | 44.761       |
| Mid-Ord:  | 3.285            | External: | 3.321        |
| Chord:    | 88.542           | Course:   | N 11.2546g E |

Tangent Data

| Description | PT Station | Northing    | Easting    |
|-------------|------------|-------------|------------|
| Start:      | 5+147.703  | 7121759.965 | 454463.625 |
| End:        | 5+378.798  | 7121978.971 | 454537.394 |

Tangent Data

| Parameter | Value   | Parameter | Value        |
|-----------|---------|-----------|--------------|
| Length:   | 231.096 | Course:   | N 20.6836g E |

Curve Point Data

| Description | Station   | Northing    | Easting    |
|-------------|-----------|-------------|------------|
| PC:         | 5+378.798 | 7121978.971 | 454537.394 |
| RP:         |           | 7122138.577 | 454063.552 |
| PT:         | 5+451.213 | 7122049.028 | 454555.468 |

Circular Curve Data

| Parameter | Value            | Parameter | Value        |
|-----------|------------------|-----------|--------------|
| Delta:    | 08° 17' 53.2085" | Type:     | LEFT         |
| Radius:   | 500.000          |           |              |
| Length:   | 72.415           | Tangent:  | 36.271       |
| Mid-Ord:  | 1.310            | External: | 1.314        |
| Chord:    | 72.351           | Course:   | N 16.0736g E |

Tangent Data

| Description | PT Station | Northing    | Easting    |
|-------------|------------|-------------|------------|
| Start:      | 5+451.213  | 7122049.028 | 454555.468 |
| End:        | 5+621.950  | 7122217.004 | 454586.047 |

Tangent Data

| Parameter | Value   | Parameter | Value        |
|-----------|---------|-----------|--------------|
| Length:   | 170.737 | Course:   | N 11.4635g E |

Curve Point Data

| Description | Station   | Northing    | Easting    |
|-------------|-----------|-------------|------------|
| PC:         | 5+621.950 | 7122217.004 | 454586.047 |
| RP:         |           | 7122306.553 | 454094.131 |
| PT:         | 5+724.763 | 7122319.330 | 454593.968 |

Circular Curve Data

| Parameter | Value            | Parameter | Value       |
|-----------|------------------|-----------|-------------|
| Delta:    | 11° 46' 53.5065" | Type:     | LEFT        |
| Radius:   | 500.000          |           |             |
| Length:   | 102.813          | Tangent:  | 51.589      |
| Mid-Ord:  | 2.640            | External: | 2.654       |
| Chord:    | 102.632          | Course:   | N 4.9182g E |

Tangent Data

| Description | PT Station | Northing    | Easting    |
|-------------|------------|-------------|------------|
| Start:      | 5+724.763  | 7122319.330 | 454593.968 |
| End:        | 5+732.717  | 7122327.281 | 454593.764 |

Tangent Data

| Parameter | Value | Parameter | Value       |
|-----------|-------|-----------|-------------|
| Length:   | 7.954 | Course:   | N 1.6271g W |

Curve Point Data

| Description | Station   | Northing    | Easting    |
|-------------|-----------|-------------|------------|
| PC:         | 5+732.717 | 7122327.281 | 454593.764 |
| RP:         |           | 7122334.948 | 454893.666 |
| PT:         | 5+779.987 | 7122374.436 | 454596.277 |

Circular Curve Data

| Parameter | Value            | Parameter | Value       |
|-----------|------------------|-----------|-------------|
| Delta:    | 09° 01' 40.8404" | Type:     | RIGHT       |
| Radius:   | 300.000          |           |             |
| Length:   | 47.271           | Tangent:  | 23.684      |
| Mid-Ord:  | 0.931            | External: | 0.933       |
| Chord:    | 47.222           | Course:   | N 3.3885g E |

Tangent Data

| Description | PT Station | Northing    | Easting    |
|-------------|------------|-------------|------------|
| Start:      | 5+779.987  | 7122374.436 | 454596.277 |
| End:        | 5+897.087  | 7122490.518 | 454611.690 |

Tangent Data

| Parameter | Value   | Parameter | Value       |
|-----------|---------|-----------|-------------|
| Length:   | 117.100 | Course:   | N 8.4041g E |

Curve Point Data

| Description | Station   | Northing    | Easting    |
|-------------|-----------|-------------|------------|
| PC:         | 5+897.087 | 7122490.518 | 454611.690 |
| RP:         |           | 7122516.843 | 454413.430 |
| PT:         | 5+920.670 | 7122514.024 | 454613.410 |

Circular Curve Data

| Parameter | Value            | Parameter | Value       |
|-----------|------------------|-----------|-------------|
| Delta:    | 06° 45' 21.5872" | Type:     | LEFT        |
| Radius:   | 200.000          |           |             |
| Length:   | 23.583           | Tangent:  | 11.805      |
| Mid-Ord:  | 0.347            | External: | 0.348       |
| Chord:    | 23.569           | Course:   | N 4.6507g E |

Tangent Data

| Description | PT Station | Northing    | Easting    |
|-------------|------------|-------------|------------|
| Start:      | 5+920.670  | 7122514.024 | 454613.410 |
| End:        | 5+937.113  | 7122530.465 | 454613.642 |

Tangent Data

| Parameter | Value  | Parameter | Value       |
|-----------|--------|-----------|-------------|
| Length:   | 16.442 | Course:   | N 0.8974g E |

Curve Point Data

| Description | Station   | Northing    | Easting    |
|-------------|-----------|-------------|------------|
| PC:         | 5+937.113 | 7122530.465 | 454613.642 |
| RP:         |           | 7122525.108 | 454993.604 |
| PT:         | 6+041.437 | 7122633.273 | 454629.324 |

Circular Curve Data

| Parameter | Value            | Parameter | Value       |
|-----------|------------------|-----------|-------------|
| Delta:    | 15° 43' 47.6371" | Type:     | RIGHT       |
| Radius:   | 380.000          |           |             |
| Length:   | 104.325          | Tangent:  | 52.492      |
| Mid-Ord:  | 3.575            | External: | 3.608       |
| Chord:    | 103.997          | Course:   | N 9.6362g E |

Tangent Data

| Description | PT Station | Northing    | Easting    |
|-------------|------------|-------------|------------|
| Start:      | 6+041.437  | 7122633.273 | 454629.324 |
| End:        | 6+168.853  | 7122755.418 | 454665.592 |

Tangent Data

| Parameter | Value   | Parameter | Value        |
|-----------|---------|-----------|--------------|
| Length:   | 127.416 | Course:   | N 18.3751g E |

Curve Point Data

| Description | Station   | Northing    | Easting    |
|-------------|-----------|-------------|------------|
| PC:         | 6+168.853 | 7122755.418 | 454665.592 |
| RP:         |           | 7122948.976 | 454013.721 |
| PT:         | 6+379.728 | 7122963.578 | 454693.564 |

Circular Curve Data

| Parameter | Value            | Parameter | Value       |
|-----------|------------------|-----------|-------------|
| Delta:    | 17° 46' 04.8196" | Type:     | LEFT        |
| Radius:   | 680.000          |           |             |
| Length:   | 210.875          | Tangent:  | 106.291     |
| Mid-Ord:  | 8.158            | External: | 8.257       |
| Chord:    | 210.031          | Course:   | N 8.5039g E |

Tangent Data

| Description | PT Station | Northing    | Easting    |
|-------------|------------|-------------|------------|
| Start:      | 6+379.728  | 7122963.578 | 454693.564 |
| End:        | 6+456.535  | 7123040.367 | 454691.915 |

Tangent Data

| Parameter | Value  | Parameter | Value       |
|-----------|--------|-----------|-------------|
| Length:   | 76.807 | Course:   | N 1.3672g W |

Curve Point Data

| Description | Station   | Northing    | Easting    |
|-------------|-----------|-------------|------------|
| PC:         | 6+456.535 | 7123040.367 | 454691.915 |
| RP:         |           | 7123054.969 | 455371.758 |
| PT:         | 6+589.576 | 7123172.809 | 454702.047 |

Circular Curve Data

| Parameter | Value            | Parameter | Value       |
|-----------|------------------|-----------|-------------|
| Delta:    | 11° 12' 35.4182" | Type:     | RIGHT       |
| Radius:   | 680.000          |           |             |
| Length:   | 133.041          | Tangent:  | 66.734      |
| Mid-Ord:  | 3.251            | External: | 3.267       |
| Chord:    | 132.829          | Course:   | N 4.8605g E |

Tangent Data

| Description | PT Station | Northing    | Easting    |
|-------------|------------|-------------|------------|
| Start:      | 6+589.576  | 7123172.809 | 454702.047 |
| End:        | 6+705.826  | 7123287.300 | 454722.192 |

Tangent Data

| Parameter | Value   | Parameter | Value        |
|-----------|---------|-----------|--------------|
| Length:   | 116.250 | Course:   | N 11.0882g E |

Curve Point Data

| Description | Station   | Northing    | Easting    |
|-------------|-----------|-------------|------------|
| PC:         | 6+705.826 | 7123287.300 | 454722.192 |
| RP:         |           | 7123318.493 | 454544.915 |
| PT:         | 6+801.313 | 7123381.280 | 454713.609 |

Circular Curve Data

| Parameter | Value            | Parameter | Value       |
|-----------|------------------|-----------|-------------|
| Delta:    | 30° 23' 40.2992" | Type:     | LEFT        |
| Radius:   | 180.000          |           |             |
| Length:   | 95.487           | Tangent:  | 48.896      |
| Mid-Ord:  | 6.295            | External: | 6.523       |
| Chord:    | 94.372           | Course:   | N 5.7976g W |

Tangent Data

| Description | PT Station | Northing    | Easting    |
|-------------|------------|-------------|------------|
| Start:      | 6+801.313  | 7123381.280 | 454713.609 |
| End:        | 6+940.832  | 7123512.036 | 454664.942 |

Tangent Data

| Parameter | Value   | Parameter | Value        |
|-----------|---------|-----------|--------------|
| Length:   | 139.519 | Course:   | N 22.6835g W |

Curve Point Data

| Description | Station   | Northing    | Easting    |
|-------------|-----------|-------------|------------|
| PC:         | 6+940.832 | 7123512.036 | 454664.942 |
| RP:         |           | 7123581.800 | 454852.380 |
| PT:         | 6+974.696 | 7123544.620 | 454655.867 |

Circular Curve Data

| Parameter | Value            | Parameter | Value        |
|-----------|------------------|-----------|--------------|
| Delta:    | 09° 42' 05.3041" | Type:     | RIGHT        |
| Radius:   | 200.000          |           |              |
| Length:   | 33.865           | Tangent:  | 16.973       |
| Mid-Ord:  | 0.716            | External: | 0.719        |
| Chord:    | 33.824           | Course:   | N 17.2938g W |

Tangent Data

| Description | PT Station | Northing    | Easting    |
|-------------|------------|-------------|------------|
| Start:      | 6+974.696  | 7123544.620 | 454655.867 |
| End:        | 7+002.186  | 7123571.631 | 454650.756 |

Tangent Data

| Parameter | Value  | Parameter | Value        |
|-----------|--------|-----------|--------------|
| Length:   | 27.490 | Course:   | N 11.9041g W |

Curve Point Data

| Description | Station   | Northing    | Easting    |
|-------------|-----------|-------------|------------|
| PC:         | 7+002.186 | 7123571.631 | 454650.756 |
| RP:         |           | 7123608.811 | 454847.270 |
| PT:         | 7+037.844 | 7123607.071 | 454647.278 |

Circular Curve Data

| Parameter | Value            | Parameter | Value       |
|-----------|------------------|-----------|-------------|
| Delta:    | 10° 12' 55.0321" | Type:     | RIGHT       |
| Radius:   | 200.000          |           |             |
| Length:   | 35.658           | Tangent:  | 17.876      |
| Mid-Ord:  | 0.794            | External: | 0.797       |
| Chord:    | 35.611           | Course:   | N 6.2289g W |



Tangent Data

| Description | PT Station | Northing    | Easting    |
|-------------|------------|-------------|------------|
| Start:      | 7+037.844  | 7123607.071 | 454647.278 |
| End:        | 7+059.995  | 7123629.221 | 454647.085 |

Tangent Data

| Parameter | Value  | Parameter | Value       |
|-----------|--------|-----------|-------------|
| Length:   | 22.150 | Course:   | N 0.5538g W |

**Alignment: Acesso Rodoviário C**

**Description:**

Tangent Data

| Description | PT Station | Northing    | Easting    |
|-------------|------------|-------------|------------|
| Start:      | 0+000.000  | 7123629.221 | 454647.085 |
| End:        | 0+023.742  | 7123636.613 | 454669.647 |

Tangent Data

| Parameter | Value  | Parameter | Value        |
|-----------|--------|-----------|--------------|
| Length:   | 23.742 | Course:   | N 79.8433g E |

Curve Point Data

| Description | Station   | Northing    | Easting    |
|-------------|-----------|-------------|------------|
| PC:         | 0+023.742 | 7123636.613 | 454669.647 |
| RP:         |           | 7123446.555 | 454731.919 |
| PT:         | 0+060.194 | 7123644.752 | 454705.127 |

Circular Curve Data

| Parameter | Value            | Parameter | Value        |
|-----------|------------------|-----------|--------------|
| Delta:    | 10° 26' 33.2913" | Type:     | RIGHT        |
| Radius:   | 200.000          |           |              |
| Length:   | 36.451           | Tangent:  | 18.276       |
| Mid-Ord:  | 0.830            | External: | 0.833        |
| Chord:    | 36.401           | Course:   | N 85.6447g E |

Tangent Data

| Description | PT Station | Northing    | Easting    |
|-------------|------------|-------------|------------|
| Start:      | 0+060.194  | 7123644.752 | 454705.127 |
| End:        | 0+230.345  | 7123667.545 | 454873.744 |

Tangent Data

| Parameter | Value   | Parameter | Value        |
|-----------|---------|-----------|--------------|
| Length:   | 170.151 | Course:   | N 91.4461g E |

| Curve Point Data    |                  |             |              |
|---------------------|------------------|-------------|--------------|
| Description         | Station          | Northing    | Easting      |
| PC:                 | 0+230.345        | 7123667.545 | 454873.744   |
| RP:                 |                  | 7123499.078 | 454896.517   |
| PT:                 | 0+280.232        | 7123666.931 | 454923.449   |
| Circular Curve Data |                  |             |              |
| Parameter           | Value            | Parameter   | Value        |
| Delta:              | 16° 48' 49.3079" | Type:       | RIGHT        |
| Radius:             | 170.000          |             |              |
| Length:             | 49.887           | Tangent:    | 25.124       |
| Mid-Ord:            | 1.827            | External:   | 1.847        |
| Chord:              | 49.708           | Course:     | S 99.2129g E |
| Tangent Data        |                  |             |              |
| Description         | PT Station       | Northing    | Easting      |
| Start:              | 0+280.232        | 7123666.931 | 454923.449   |
| End:                | 0+366.095        | 7123653.329 | 455008.227   |
| Tangent Data        |                  |             |              |
| Parameter           | Value            | Parameter   | Value        |
| Length:             | 85.862           | Course:     | S 89.8720g E |
| Curve Point Data    |                  |             |              |
| Description         | Station          | Northing    | Easting      |
| PC:                 | 0+366.095        | 7123653.329 | 455008.227   |
| RP:                 |                  | 7124147.014 | 455087.437   |
| PT:                 | 0+398.106        | 7123649.272 | 455039.975   |
| Circular Curve Data |                  |             |              |
| Parameter           | Value            | Parameter   | Value        |
| Delta:              | 03° 40' 05.7221" | Type:       | LEFT         |
| Radius:             | 500.000          |             |              |
| Length:             | 32.012           | Tangent:    | 16.011       |
| Mid-Ord:            | 0.256            | External:   | 0.256        |
| Chord:              | 32.006           | Course:     | S 91.9099g E |
| Tangent Data        |                  |             |              |
| Description         | PT Station       | Northing    | Easting      |
| Start:              | 0+398.106        | 7123649.272 | 455039.975   |
| End:                | 1+045.688        | 7123587.801 | 455684.633   |
| Tangent Data        |                  |             |              |
| Parameter           | Value            | Parameter   | Value        |
| Length:             | 647.582          | Course:     | S 93.9478g E |

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**Alignment: Rotunda 1**

**Description:**

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| Curve Point Data    |                   |             |                      |
|---------------------|-------------------|-------------|----------------------|
| Description         | Station           | Northing    | Easting              |
| PC:                 | 0+00.000          | 7117084.431 | 452472.822           |
| RP:                 |                   | 7117085.593 | 452494.791           |
| PT:                 | 1+38.230          | 7117084.430 | 452472.822           |
| Circular Curve Data |                   |             |                      |
| Parameter           | Value             | Parameter   | Value                |
| Delta:              | 359° 59' 55.3122" | Type:       | RIGHT                |
| Radius:             | 22.000            |             |                      |
| Length:             | 138.230           | Tangent:    | 0.000                |
| Mid-Ord:            | 44.000            | External:   | 44.000               |
| Chord:              | 0.000             | Course:     | S 03° 01' 43.1182" E |

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**Alignment: Rotunda 2**

**Description:**

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| Curve Point Data    |                   |             |                      |
|---------------------|-------------------|-------------|----------------------|
| Description         | Station           | Northing    | Easting              |
| PC:                 | 0+000.000         | 7123607.222 | 454647.276           |
| RP:                 |                   | 7123629.221 | 454647.085           |
| PT:                 | 1+38.230          | 7123607.222 | 454647.277           |
| Circular Curve Data |                   |             |                      |
| Parameter           | Value             | Parameter   | Value                |
| Delta:              | 359° 59' 55.3122" | Type:       | RIGHT                |
| Radius:             | 22.000            |             |                      |
| Length:             | 138.230           | Tangent:    | 0.000                |
| Mid-Ord:            | 44.000            | External:   | 44.000               |
| Chord:              | 0.000             | Course:     | N 89° 30' 03.4670" E |

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