

ELEMENTOS GEOMÉTRICOS - V57-VIA EPCT OESTE

| Nº | DEFLEXÃO/ AZIMUTE | LC (m) | TT (m) | TL (m) | TC (m) | R (m) | D/L (m) | AC | TE-PC | ET-PT | PONTO | PI | TE-PC | ET-PT |
|----|----------------------|-----------|-----------|-----------|-----------|----------|------------|-----------------|------------|------------|--------|---------------------------|---------------------------|---------------------------|
| C1 | - | - | 2,010 | - | - | 600,000 | 98,089 | 009° 22' 00.44" | 80+9,740 | 85+7,829 | N E | 198739,8360 89815,5294 | 198786,5730 89800,3059 | 198696.1998 89838,1566 |
| C2 | - | - | 2,010 | - | - | 600,000 | 98,089 | 009° 22' 00.44" | 85+7,829 | 90+5,917 | N E | 198652,5636 89860,7838 | 198696,1998 89838,1566 | 198605.8265 89876,0073 |
| C3 | - | - | 0,361 | - | - | 700,000 | 44,935 | 003° 40' 40.71" | 96+5,394 | 98+10,328 | N E | 198470,8160 89919,8520 | 198492,1861 89912,8912 | 198449.9365 89928,1694 |
| C4 | - | - | 0,361 | - | - | 700,000 | 44,935 | 003° 40' 40.71" | 99+15,528 | 102+0,463 | N E | 198405,6468 89945,8121 | 198426,5263 89937,4947 | 198384.2767 89952,7729 |
| C5 | - | - | 0,361 | - | - | 700,000 | 44,935 | 003° 40' 40.71" | 107+2,790 | 109+7,725 | N E | 198265,6577 89991,5712 | 198287,0193 89984,5842 | 198243.8919 89997,1735 |
| C6 | - | - | 0,361 | - | - | 700,000 | 44,935 | 003° 40' 40.71" | 110+12,924 | 112+17,859 | N E | 198197,7225 90009,0571 | 198219,4882 90003,4548 | 198176.3609 90016,0441 |
| C7 | - | - | 2,010 | - | - | 600,000 | 98,089 | 009° 22' 00.44" | 115+10,574 | 120+8,663 | N E | 198080,1076 90049,3517 | 198126,8447 90034,1281 | 198031.5161 90056,7656 |
| C8 | - | - | 2,010 | - | - | 600,000 | 98,089 | 009° 22' 00.44" | 120+8,663 | 125+6,752 | N E | 197982,9245 90064,1795 | 198031,5161 90056,7656 | 197936.1874 90079,4030 |
| L1 | 161° 57' 29.38" | - | - | - | - | - | 1352,330 | - | 12+17,410 | 80+9,740 | N E | - | 200072,4095 89381,4740 | 198786,5730 89800,3059 |
| L2 | 162° 01' 05.91" | - | - | - | - | - | 119,476 | - | 90+5,917 | 96+5,394 | N E | - | 198605,8265 89876,0073 | 198492,1861 89912,8912 |
| L3 | 158° 16' 48.67" | - | - | - | - | - | 25,199 | - | 98+10,328 | 99+15,528 | N E | - | 198449,9365 89928,1694 | 198426,5263 89937,4947 |
| L4 | 161° 53' 16.57" | - | - | - | - | - | 102,328 | - | 102+0,463 | 107+2,790 | N E | - | 198384,2767 89952,7729 | 198287,0193 89984,5842 |
| L5 | 165° 33' 57.28" | - | - | - | - | - | 25,199 | - | 109+7,725 | 110+12,924 | N E | - | 198243,8919 89997,1735 | 198219,4882 90003,4548 |
| L6 | 159° 56' 13.56" | - | - | - | - | - | 52,715 | - | 112+17,859 | 115+10,574 | N E | - | 198176,3609 90016,0441 | 198126,8447 90034,1281 |
| L7 | 161° 57' 29.38" | - | - | - | - | - | 376,022 | - | 125+6,752 | 144+2,774 | N E | - | 197936,1874 90079,4030 | 197578,6545 90195,8612 |

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ELEMENTOS GEOMÉTRICOS - V58-VIA EPCT LESTE

| Nº | DEFLEXÃO/ AZIMUTE | LC (m) | TT (m) | TL (m) | TC (m) | R (m) | D/L (m) | AC | TE-PC | ET-PT | PONTO | PI | TE-PC | ET-PT |
|-----|----------------------|-----------|-----------|-----------|-----------|----------|------------|-----------------|------------|------------|--------|---------------------------|---------------------------|---------------------------|
| C9 | - | - | 0,751 | - | - | 600,000 | 60,025 | 005° 43' 55.08" | 107+10,876 | 110+10,901 | N E | 198772,8785 89855,2487 | 198801,4392 89845,9457 | 198745.3898 89867,3577 |
| C10 | - | - | 0,751 | - | - | 600,000 | 60,025 | 005° 43' 55.08" | 110+10,901 | 113+10,926 | N E | 198717,9011 89879,4666 | 198745,3898 89867,3577 | 198689.3405 89888,7696 |
| C11 | - | - | 1,119 | - | - | 700,000 | 79,125 | 006° 28' 35.21" | 119+19,013 | 123+18,138 | N E | 198529,8942 89940,7056 | 198567,5515 89928,4396 | 198491.0938 89948,6457 |
| C12 | - | - | 1,119 | - | - | 700,000 | 79,125 | 006° 28' 35.21" | 125+7,090 | 129+6,214 | N E | 198423,9293 89962,3904 | 198462,7297 89954,4502 | 198386.2720 89974,6564 |
| C13 | - | - | 1,112 | - | - | 700,000 | 78,868 | 006° 27' 19.62" | 133+17,134 | 137+16,002 | N E | 198262,2880 90015,0413 | 198299,8229 90002,8152 | 198226.3658 90031,4100 |
| C14 | - | - | 1,112 | - | - | 700,000 | 78,868 | 006° 27' 19.62" | 138+7,773 | 142+6,641 | N E | 198179,7322 90052,6595 | 198215,6545 90036,2908 | 198142.1973 90064,8856 |
| C15 | - | - | 0,751 | - | - | 600,000 | 60,025 | 005° 43' 55.08" | 146+7,168 | 149+7,193 | N E | 198037,0693 90099,1286 | 198065,6300 90089,8257 | 198007.7223 90105,5326 |
| C16 | - | - | 0,751 | - | - | 600,000 | 60,025 | 005° 43' 55.08" | 149+7,193 | 152+7,218 | N E | 197978,3754 90111,9366 | 198007,7223 90105,5326 | 197949.8147 90121,2396 |
| L8 | 161° 57' 29.38" | - | - | - | - | - | 1356,626 | - | 39+14,250 | 107+10,876 | N E | - | 200091,3605 89425,7833 | 198801,4392 89845,9457 |
| L9 | 161° 57' 29.38" | - | - | - | - | - | 128,087 | - | 113+10,926 | 119+19,013 | N E | - | 198689,3405 89888,7696 | 198567,5515 89928,4396 |
| L10 | 168° 26' 04.60" | - | - | - | - | - | 28,952 | - | 123+18,138 | 125+7,090 | N E | - | 198491,0938 89948,6457 | 198462,7297 89954,4502 |
| L11 | 161° 57' 29.38" | - | - | - | - | - | 90,920 | - | 129+6,214 | 133+17,134 | N E | - | 198386,2720 89974,6564 | 198299,8229 90002,8152 |
| L12 | 155° 30' 09.76" | - | - | - | - | - | 11,771 | - | 137+16,002 | 138+7,773 | N E | - | 198226,3658 90031,4100 | 198215,6545 90036,2908 |
| L13 | 161° 57' 29.38" | - | - | - | - | - | 80,527 | - | 142+6,641 | 146+7,168 | N E | - | 198142,1973 90064,8856 | 198065,6300 90089,8257 |
| L14 | 161° 57' 29.38" | - | - | - | - | - | 994,366 | - | 152+7,218 | 202+1,584 | N E | - | 197949,8147 90121,2396 | 197004,3415 90429,2059 |

ELEMENTOS GEOMÉTRICOS - V59-MARGINAL OESTE-RAMO A

| Nº | DEFLEXÃO/ AZIMUTE | LC (m) | TT (m) | TL (m) | TC (m) | R (m) | D/L (m) | AC | TE-PC | ET-PT | PONTO | PI | TE-PC | ET-PT |
|-----|----------------------|-----------|-----------|-----------|-----------|----------|------------|-----------------|------------|------------|--------|---------------------------|---------------------------|---------------------------|
| C17 | - | - | 0,751 | - | - | 600,000 | 60,025 | 005° 43' 55.08" | 75+7,356 | 78+7,381 | N E | 198750,1147 89785,3627 | 198778,6754 89776,0597 | 198722.6260 89797,4716 |
| C18 | - | - | 0,751 | - | - | 600,000 | 60,025 | 005° 43' 55.08" | 78+7,381 | 81+7,406 | N E | 198695,1373 89809,5806 | 198722,6260 89797,4716 | 198666.5767 89818,8836 |
| C19 | - | - | 0,096 | - | - | 400,000 | 17,489 | 002° 30' 18.33" | 83+14,419 | 84+11,908 | N E | 198613,5590 89836,1528 | 198621,8748 89833,4442 | 198605.3696 89839,2224 |
| C20 | - | - | 0,096 | - | - | 400,000 | 17,489 | 002° 30' 18.33" | 87+14,493 | 88+11,982 | N E | 198538,5766 89864,2577 | 198546,7660 89861,1881 | 198530.2608 89866,9663 |
| C21 | - | - | 26,606 | - | - | 65,000 | 101,649 | 089° 36' 04.40" | 95+14,226 | 100+15,875 | N E | 198333,6353 89931,0126 | 198395,0106 89911,0210 | 198313.2170 89869,7779 |
| L15 | 161° 57' 29.38" | - | - | - | - | - | 1369,685 | - | 6+17,671 | 75+7,356 | N E | - | 200081,0135 89351,8528 | 198778,6754 89776,0597 |
| L16 | 161° 57' 29.38" | - | - | - | - | - | 47,013 | - | 81+7,406 | 83+14,419 | N E | - | 198666,5767 89818,8836 | 198621,8748 89833,4442 |
| L17 | 159° 27' 11.05" | - | - | - | - | - | 62,585 | - | 84+11,908 | 87+14,493 | N E | - | 198605,3696 89839,2224 | 198546,7660 89861,1881 |
| L18 | 251° 33' 33.78" | - | - | - | - | - | 71,014 | - | 100+15,875 | 104+6,890 | N E | - | 198313,2170 89869,7779 | 198290,7536 89802,4099 |

ELEMENTOS GEOMÉTRICOS - V60-MARGINAL OESTE-RAMO B_R02

| Nº | DEFLEXÃO/ AZIMUTE | LC (m) | TT (m) | TL (m) | TC (m) | R (m) | D/L (m) | AC | TE-PC | ET-PT | PONTO | PI | TE-PC | ET-PT |
|-----|----------------------|-----------|-----------|-----------|-----------|----------|------------|-----------------|----------|----------|--------|---------------------------|---------------------------|---------------------------|
| C22 | - | - | 20,954 | - | - | 50,000 | 78,883 | 090° 23' 33.81" | 4+7,208 | 8+6,090 | N E | 198315,7125 89938,9540 | 198299,7927 89891,1935 | 198267.8440 89954,5461 |
| C23 | - | - | 0,176 | - | - | 300,000 | 20,565 | 003° 55' 39.36" | 14+0,505 | 15+1,070 | N E | 198149,2743 89993,1674 | 198159,0550 89989,9816 | 198139.2984 89995,6758 |
| C24 | - | - | 0,176 | - | - | 300,000 | 20,565 | 003° 55' 39.36" | 18+0,794 | 19+1,358 | N E | 198071,4016 90012,7483 | 198081,3775 90010,2398 | 198061.6209 90015,9341 |
| C25 | - | - | 0,751 | - | - | 600,000 | 60,025 | 005° 43' 55.08" | 20+0,432 | 23+0,457 | N E | 198014,9250 90031,1442 | 198043,4856 90021,8413 | 197985.5780 90037,5482 |
| L19 | 071° 33' 55.57" | - | - | - | - | - | 87,208 | - | 0+0,000 | 4+7,208 | N E | - | 198272,2157 89808,4608 | 198299,7927 89891,1935 |
| L20 | 161° 57' 29.38" | - | - | - | - | - | 114,415 | - | 8+6,090 | 14+0,505 | N E | - | 198267,8440 89954,5461 | 198159,0550 89989,9816 |
| L21 | 165° 53' 08.75" | - | - | - | - | - | 59,724 | - | 15+1,070 | 18+0,794 | N E | - | 198139,2984 89995,6758 | 198081,3775 90010,2398 |
| L22 | 161° 57' 29.38" | - | - | - | - | - | 19,073 | - | 19+1,358 | 20+0,432 | N E | - | 198061,6209 90015,9341 | 198043,4856 90021,8413 |
| L23 | 161° 57' 29.38" | - | - | - | - | - | 743,738 | - | 26+0,482 | 63+4,220 | N E | - | 197927,6704 90053,2552 | 197220,5016 90283,5992 |

ELEMENTOS GEOMÉTRICOS - V62-MARGINAL LESTE-RAMO A

| Nº | DEFLEXÃO/ AZIMUTE | LC (m) | TT (m) | TL (m) | TC (m) | R (m) | D/L (m) | AC | TE-PC | ET-PT | PONTO | PI | TE-PC | ET-PT |
|-----|----------------------|-----------|-----------|-----------|-----------|----------|------------|-----------------|------------|------------|--------|---------------------------|---------------------------|---------------------------|
| C26 | - | - | 0,751 | - | - | 600,000 | 60,025 | 005° 43' 55.08" | 79+12,496 | 82+12,521 | N E | 198760,0031 89886,2613 | 198788,5637 89876,9583 | 198732.5144 89898,3702 |
| C27 | - | - | 25,150 | - | - | 60,000 | 94,665 | 090° 23' 55.60" | 99+0,914 | 103+15,579 | N E | 198363,8447 90021,6111 | 198421,2930 90002,8986 | 198382.9566 90078,9277 |
| L24 | 161° 57' 29.38" | - | - | - | - | - | 1386,963 | - | 10+5,534 | 79+12,496 | N E | - | 200107,3305 89447,4001 | 198788,5637 89876,9583 |
| L25 | 161° 57' 29.38" | - | - | - | - | - | 268,367 | - | 85+12,546 | 99+0,914 | N E | - | 198676,4650 89919,7821 | 198421,2930 90002,8986 |
| L26 | 071° 33' 33.78" | - | - | - | - | - | 67,967 | - | 103+15,579 | 107+3,547 | N E | - | 198382,9566 90078,9277 | 198404,4561 90143,4050 |

ELEMENTOS GEOMÉTRICOS - V63-MARGINAL LESTE-RAMO B_R03

| Nº | DEFLEXÃO/ AZIMUTE | LC (m) | TT (m) | TL (m) | TC (m) | R (m) | D/L (m) | AC | TE-PC | ET-PT | PONTO | PI | TE-PC | ET-PT |
|-----|----------------------|-----------|-----------|-----------|-----------|----------|------------|-----------------|----------|----------|--------|---------------------------|---------------------------|---------------------------|
| C28 | - | - | 24,563 | - | - | 60,000 | 93,837 | 089° 36' 26.19" | 3+8,757 | 8+2,594 | N E | 198345,2799 90027,6582 | 198364,1236 90084,1905 | 198288.6198 90046,1139 |
| C29 | - | - | 0,751 | - | - | 600,000 | 60,025 | 005° 43' 55.08" | 19+8,157 | 22+8,182 | N E | 198045,5864 90125,2765 | 198074,1470 90115,9735 | 198016.2394 90131,6804 |
| C30 | - | - | 0,751 | - | - | 600,000 | 60,025 | 005° 43' 55.08" | 22+8,182 | 25+8,207 | N E | 197986,8924 90138,0844 | 198016,2394 90131,6804 | 197958.3318 90147,3874 |
| L27 | 251° 33' 55.57" | - | - | - | - | - | 68,757 | - | 0+0,000 | 3+8,757 | N E | - | 198385,8661 90149,4194 | 198364,1236 90084,1905 |
| L28 | 161° 57' 29.38" | - | - | - | - | - | 225,564 | - | 8+2,594 | 19+8,157 | N E | - | 198288,6198 90046,1139 | 198074,1470 90115,9735 |
| L29 | 161° 57' 29.38" | - | - | - | - | - | 754,974 | - | 25+8,207 | 63+3,181 | N E | - | 197958,3318 90147,3874 | 197240,4795 90381,2114 |



ELEMENTOS GEOMÉTRICOS - V68-OAE(ALÇA NOROESTE - LESTE)_R01

| Nº | DEFLEXÃO/ AZIMUTE | LC (m) | TT (m) | TL (m) | TC (m) | R (m) | D/L (m) | AC | TE-PC | ET-PT | PONTO | PI | TE-PC | ET-PT |
|-----|----------------------|-----------|-----------|-----------|-----------|----------|------------|-----------------|----------|-----------|--------|---------------------------|---------------------------|---------------------------|
| C31 | - | - | 35,622 | - | - | 85,000 | 134,100 | 090° 23' 33.81" | 1+12,124 | 8+6,224 | N E | 198317,2936 89943,6975 | 198398,6701 89917,1910 | 198344.3573 90024,8904 |
| L30 | 071° 33' 55.57" | - | - | - | - | - | 131,265 | - | 8+6,224 | 14+17,489 | N E | - | 198344,3573 90024,8904 | 198385,8661 90149,4194 |

ELEMENTOS GEOMÉTRICOS - V69-OAE(ALÇA OESTE - SUDOESTE)_R01

| Nº | DEFLEXÃO/ AZIMUTE | LC (m) | TT (m) | TL (m) | TC (m) | R (m) | D/L (m) | AC | TE-PC | ET-PT | PONTO | PI | TE-PC | ET-PT |
|-----|----------------------|-----------|-----------|-----------|-----------|----------|------------|-----------------|----------|-----------|--------|---------------------------|---------------------------|---------------------------|
| C32 | - | - | 38,892 | - | - | 95,000 | 148,574 | 089° 36' 26.19" | 6+16,727 | 14+5,301 | N E | 198348,6079 90026,5741 | 198318,7720 89937,0647 | 198438,3197 89997,3525 |
| L31 | 071° 33' 55.57" | - | - | - | - | - | 136,727 | - | 0+0,000 | 6+16,727 | N E | - | 198275,5361 89807,3540 | 198318,7720 89937,0647 |
| L32 | 341° 57' 29.38" | - | - | - | - | - | 7,186 | - | 14+5,301 | 14+12,487 | N E | - | 198438,3197 89997,3525 | 198445,1520 89995,1271 |

ELEMENTOS GEOMÉTRICOS - V70-OAE(ALÇA SUDESTE - OESTE)_R01

| Nº | DEFLEXÃO/ AZIMUTE | LC (m) | TT (m) | TL (m) | TC (m) | R (m) | D/L (m) | AC | TE-PC | ET-PT | PONTO | PI | TE-PC | ET-PT |
|-----|----------------------|-----------|-----------|-----------|-----------|----------|------------|-----------------|----------|----------|--------|---------------------------|---------------------------|---------------------------|
| C33 | - | - | 39,401 | - | - | 94,000 | 148,309 | 090° 23' 55.60" | 4+11,816 | 12+0,125 | N E | 198361,6304 90014,9704 | 198271,6281 90044,2866 | 198331,6885 89925,1743 |
| L33 | 341° 57' 29.38" | - | - | - | - | - | 91,816 | - | 0+0,000 | 4+11,816 | N E | - | 198184,3266 90072,7230 | 198271,6281 90044,2866 |
| L34 | 251° 33' 33.78" | - | - | - | - | - | 129,387 | - | 12+0,125 | 18+9,512 | N E | - | 198331,6885 89925,1743 | 198290,7606 89802,4310 |

ELEMENTOS GEOMÉTRICOS - V72-OAE(ALÇA OESTE-LESTE)

| Nº | DEFLEXÃO/ AZIMUTE | LC (m) | TT (m) | TL (m) | TC (m) | R (m) | D/L (m) | AC | TE-PC | ET-PT | PONTO | PI | TE-PC | ET-PT |
|-----|----------------------|-----------|-----------|-----------|-----------|----------|------------|----|---------|-----------|--------|----|---------------------------|---------------------------|
| L37 | 071° 33' 55.57" | - | - | - | - | - | 359,401 | - | 0+0,000 | 17+19,401 | N E | - | 198272,2157 89808,4608 | 198385,8661 90149,4194 |



ELEMENTOS GEOMÉTRICOS - V73-OAE(ALÇA LESTE-OESTE)

| Nº | DEFLEXÃO/ AZIMUTE | LC (m) | TT (m) | TL (m) | TC (m) | R (m) | D/L (m) | AC | TE-PC | ET-PT | PONTO | PI | TE-PC | ET-PT |
|-----|----------------------|-----------|-----------|-----------|-----------|----------|------------|----|---------|-----------|--------|----|---------------------------|---------------------------|
| L38 | 071° 33' 33.78" | - | - | - | - | - | 359,426 | - | 0+0,000 | 17+19,426 | N E | - | 198290,7536 89802,4099 | 198404,4477 90143,3798 |

ELEMENTOS GEOMÉTRICOS - V78-AGULHA OESTE-RAMO B

| Nº | DEFLEXÃO/ AZIMUTE | LC (m) | TT (m) | TL (m) | TC (m) | R (m) | D/L (m) | AC | TE-PC | ET-PT | PONTO | PI | TE-PC | ET-PT |
|-----|----------------------|-----------|-----------|-----------|-----------|----------|------------|-----------------|----------|----------|--------|---------------------------|---------------------------|---------------------------|
| C35 | - | - | 0,715 | - | - | 280,000 | 39,976 | 008° 10' 48.82" | 0+19,978 | 2+19,954 | N E | 198993,5762 89725,5173 | 199012,6138 89719,3163 | 198973.8499 89728,9465 |
| C36 | - | - | 0,715 | - | - | 280,000 | 39,976 | 008° 10' 48.83" | 5+0,732 | 7+0,708 | N E | 198913,9480 89739,3597 | 198933,6743 89735,9305 | 198894.9104 89745,5608 |
| L39 | 161° 57' 29.39" | - | - | - | - | - | 19,978 | - | 0+0,000 | 0+19,978 | N E | - | 199031,6094 89713,1289 | 199012,6138 89719,3163 |
| L40 | 170° 08' 18.22" | - | - | - | - | - | 40,778 | - | 2+19,954 | 5+0,732 | N E | - | 198973,8499 89728,9465 | 198933,6743 89735,9305 |
| L41 | 161° 57' 29.38" | - | - | - | - | - | 19,978 | - | 7+0,708 | 8+0,686 | N E | - | 198894,9104 89745,5608 | 198875,9148 89751,7482 |

ELEMENTOS GEOMÉTRICOS - V79-AGULHA OESTE-RAMO C-R01

| Nº | DEFLEXÃO/ AZIMUTE | LC (m) | TT (m) | TL (m) | TC (m) | R (m) | D/L (m) | AC | TE-PC | ET-PT | PONTO | PI | TE-PC | ET-PT |
|-----|----------------------|-----------|-----------|-----------|-----------|----------|------------|-----------------|----------|----------|--------|---------------------------|---------------------------|---------------------------|
| C37 | - | - | 0,715 | - | - | 280,000 | 39,976 | 008° 10' 48.83" | 0+19,978 | 2+19,954 | N E | 198837,8816 89764,1366 | 198856,9192 89757,9355 | 198819.9200 89772,9834 |
| C38 | - | - | 0,460 | - | - | 280,000 | 32,071 | 006° 33' 45.62" | 4+5,653 | 5+17,725 | N E | 198782,4644 89791,4317 | 198796,8656 89784,3386 | 198767.3470 89796,8325 |
| C39 | - | - | 0,066 | - | - | 609,500 | 17,944 | 001° 41' 12.51" | 5+17,725 | 6+15,668 | N E | 198758,8974 89799,8511 | 198767,3470 89796,8325 | 198750.5404 89803,1172 |
| L42 | 161° 57' 29.38" | - | - | - | - | - | 19,978 | - | 0+0,000 | 0+19,978 | N E | - | 198875,9148 89751,7482 | 198856,9192 89757,9355 |
| L43 | 153° 46' 40.55" | - | - | - | - | - | 25,699 | - | 2+19,954 | 4+5,653 | N E | - | 198819,9200 89772,9834 | 198796,8656 89784,3386 |

D. de A.

ELEMENTOS GEOMÉTRICOS - V80-AGULHA OESTE-RAMO D-R01

| Nº | DEFLEXÃO/ AZIMUTE | LC (m) | TT (m) | TL (m) | TC (m) | R (m) | D/L (m) | AC | TE-PC | ET-PT | PONTO | PI | TE-PC | ET-PT |
|-----|----------------------|-----------|-----------|-----------|-----------|----------|------------|-----------------|----------|----------|--------|---------------------------|---------------------------|---------------------------|
| C40 | - | - | 0,981 | - | - | 280,000 | 46,809 | 009° 34' 42.31" | 0+16,541 | 3+3,350 | N E | 197907,9375 90081,2428 | 197930,2431 90073,9772 | 197884,7338 90084,6955 |
| C41 | - | - | 0,981 | - | - | 280,000 | 46,809 | 009° 34' 42.32" | 4+17,563 | 7+4,372 | N E | 197827,6899 90093,1835 | 197850,8936 90089,7308 | 197805,3842 90100,4491 |
| L44 | 161° 57' 29.39" | - | - | - | - | - | 16,541 | - | 0+0,000 | 0+16,541 | N E | - | 197945,9707 90068,8544 | 197930,2431 90073,9772 |
| L45 | 171° 32' 11.70" | - | - | - | - | - | 34,213 | - | 3+3,350 | 4+17,563 | N E | - | 197884,7338 90084,6955 | 197850,8936 90089,7308 |
| L46 | 161° 57' 29.38" | - | - | - | - | - | 16,541 | - | 7+4,372 | 8+0,912 | N E | - | 197805,3842 90100,4491 | 197789,6567 90105,5720 |

ELEMENTOS GEOMÉTRICOS - V84-AGULHA LESTE-RAMO B

| Nº | DEFLEXÃO/ AZIMUTE | LC (m) | TT (m) | TL (m) | TC (m) | R (m) | D/L (m) | AC | TE-PC | ET-PT | PONTO | PI | TE-PC | ET-PT |
|-----|----------------------|-----------|-----------|-----------|-----------|----------|------------|-----------------|----------|----------|--------|---------------------------|---------------------------|---------------------------|
| C42 | - | - | 0,715 | - | - | 280,000 | 39,976 | 008° 10' 48.80" | 0+19,978 | 2+19,954 | N E | 199012,7783 89784,4688 | 199031,8159 89778,2678 | 198994.8167 89793,3156 |
| C43 | - | - | 0,715 | - | - | 280,000 | 39,976 | 008° 10' 48.82" | 5+0,732 | 7+0,708 | N E | 198940,2735 89820,1803 | 198958,2351 89811,3335 | 198921.2359 89826,3814 |
| L47 | 161° 57' 29.36" | - | - | - | - | - | 19,978 | - | 0+0,000 | 0+19,978 | N E | - | 199050,8115 89772,0804 | 199031,8159 89778,2678 |
| L48 | 153° 46' 40.56" | - | - | - | - | - | 40,778 | - | 2+19,954 | 5+0,732 | N E | - | 198994,8167 89793,3156 | 198958,2351 89811,3335 |
| L49 | 161° 57' 29.38" | - | - | - | - | - | 19,978 | - | 7+0,708 | 8+0,686 | N E | - | 198921,2359 89826,3814 | 198902,2403 89832,5688 |

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ELEMENTOS GEOMÉTRICOS - V85-AGULHA LESTE-RAMO C_R02

| Nº | DEFLEXÃO/ AZIMUTE | LC (m) | TT (m) | TL (m) | TC (m) | R (m) | D/L (m) | AC | TE-PC | ET-PT | PONTO | PI | TE-PC | ET-PT |
|-----|----------------------|-----------|-----------|-----------|-----------|----------|------------|-----------------|----------|----------|--------|---------------------------|---------------------------|---------------------------|
| C44 | - | - | 0,715 | - | - | 280,000 | 39,976 | 008° 10' 48.83" | 0+19,978 | 2+19,954 | N E | 198636,2638 89925,5148 | 198655,3015 89919,3137 | 198616,5376 89928,9439 |
| C45 | - | - | 0,715 | - | - | 280,000 | 39,976 | 008° 10' 48.82" | 5+0,732 | 7+0,708 | N E | 198556,6357 89939,3571 | 198576,3620 89935,9280 | 198537,5981 89945,5582 |
| L50 | 161° 57' 29.38" | - | - | - | - | - | 19,978 | - | 0+0,000 | 0+19,978 | N E | - | 198674,2971 89913,1263 | 198655,3015 89919,3137 |
| L51 | 170° 08' 18.22" | - | - | - | - | - | 40,778 | - | 2+19,954 | 5+0,732 | N E | - | 198616,5376 89928,9439 | 198576,3620 89935,9280 |
| L52 | 161° 57' 29.39" | - | - | - | - | - | 19,978 | - | 7+0,708 | 8+0,686 | N E | - | 198537,5981 89945,5582 | 198518,6025 89951,7456 |

ELEMENTOS GEOMÉTRICOS - V86-AGULHA LESTE-RAMO D-R01

| Nº | DEFLEXÃO/ AZIMUTE | LC (m) | TT (m) | TL (m) | TC (m) | R (m) | D/L (m) | AC | TE-PC | ET-PT | PONTO | PI | TE-PC | ET-PT |
|-----|----------------------|-----------|-----------|-----------|-----------|----------|------------|-----------------|----------|----------|--------|---------------------------|---------------------------|---------------------------|
| C46 | - | - | 0,981 | - | - | 280,000 | 46,809 | 009° 34' 42.31" | 0+16,541 | 3+3,350 | N E | 197925,9007 90136,3910 | 197948,2064 90129,1254 | 197905.1150 90147,2669 |
| C47 | - | - | 0,981 | - | - | 280,000 | 46,809 | 009° 34' 42.32" | 4+17,563 | 7+4,372 | N E | 197854,0154 90174,0041 | 197874,8011 90163,1282 | 197831.7097 90181,2697 |
| L53 | 161° 57' 29.38" | - | - | - | - | - | 16,541 | - | 0+0,000 | 0+16,541 | N E | - | 197963,9339 90124,0025 | 197948,2064 90129,1254 |
| L54 | 152° 22' 47.06" | - | - | - | - | - | 34,213 | - | 3+3,350 | 4+17,563 | N E | - | 197905,1150 90147,2669 | 197874,8011 90163,1282 |
| L55 | 161° 57' 29.38" | - | - | - | - | - | 16,541 | - | 7+4,372 | 8+0,912 | N E | - | 197831,7097 90181,2697 | 197815,9821 90186,3926 |

ELEMENTOS GEOMÉTRICOS - V92-ACESSO VIA LOCAL-MARGINAL OESTE-RAMO A

| Nº | DEFLEXÃO/ AZIMUTE | LC (m) | TT (m) | TL (m) | TC (m) | R (m) | D/L (m) | AC | TE-PC | ET-PT | PONTO | PI | TE-PC | ET-PT |
|-----|----------------------|-----------|-----------|-----------|-----------|----------|------------|----|---------|---------|--------|----|---------------------------|---------------------------|
| L56 | 205° 43' 54.22" | - | - | - | - | - | 41,368 | - | 0+0,000 | 2+1,368 | N E | - | 198035,3551 90024,4258 | 197998,0896 90006,4657 |

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ELEMENTOS GEOMÉTRICOS - V93-ACESSO VIA LOCAL-MARGINAL OESTE-RAMO B

| Nº | DEFLEXÃO/ AZIMUTE | LC (m) | TT (m) | TL (m) | TC (m) | R (m) | D/L (m) | AC | TE-PC | ET-PT | PONTO | PI | TE-PC | ET-PT |
|-----|----------------------|-----------|-----------|-----------|-----------|----------|------------|----|---------|----------|--------|----|---------------------------|---------------------------|
| L57 | 118° 11' 04.55" | - | - | - | - | - | 34,220 | - | 0+0,000 | 1+14,220 | N E | - | 197976,3894 90013,4980 | 197960,2270 90043,6602 |

D. de A.