ROGGIO
BENITO ROGGIO E HIJOS S.A.

**MINISTERIO DE**
OBRA: PAVIMENTACIONASFALTICA DE VARIOS TRAMOS
**CRONOGRAMA FÍSICO FINANCIERO RE**

| Nº | Item | Unidad de medida | Cantidad Contractual | Cantidad CMO N°02 | Monto Contractual | Monto CMO N°02 | Incidencia Contractual | Incidencia CMO N°02 | 1 agosto-19 | 2 septiembre-19 | 3 octubre-19 | 4 noviembre-19 | 5 diciembre-19 | 6 enero-20 | 7 febrero-20 | 8 marzo-20 | 9 abril-20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Desbroce, Despeje y Limpieza | há | 27,33 | 27,90 | 368.824.281 | 376.516.554 | 0,54% | 0,55% | | 9,00% | 11,71% | | 6,60% | 4,71% | 4,70% | 10,98% | 3,66% |
| 2 | Demolición y Remoción de Estructuras Existentes | gl | 1,00 | 0,95 | 127.704.326 | 121.319.110 | 0,19% | 0,18% | | | | | | | | 10,00% | 9,00% |
| 3 | Excavación No Clasificada | m3 | 8.410,58 | 12.300,05 | 251.764.725 | 368.225.945 | 0,37% | 0,54% | | | | | | | | | 15,32% |
| 4 | Excavación de Zanjas de Drenaje | m3 | 2.946,00 | 3.649,78 | 98.850.084 | 122.464.758 | 0,14% | 0,18% | | | | | | | | 8,01% | |
| 5 | Excavación de Bolsones | m3 | 8.500,00 | 13.462,56 | 266.449.500 | 422.010.868 | 0,39% | 0,62% | | | | | | | 17,42% | | 6,14% |
| 6 | Excavación Estructural | m3 | 1.468,88 | 3.664,03 | 62.912.190 | 156.930.405 | 0,09% | 0,23% | | | | | | 7,54% | | 8,67% | |
| 7 | Terraplén | m3 | 38.813,43 | 160.179,70 | 1.778.819.497 | 7.341.035.651 | 2,60% | 10,74% | | 5,63% | 5,43% | 2,59% | 6,64% | 6,35% | | 0,62% | |
| 8 | Subrasante Mejorada (CBR=20%) | m3 | 87.232,50 | 109.292,49 | 5.961.469.050 | 7.469.048.767 | 8,72% | 10,93% | | 5,05% | 3,13% | 6,87% | 10,47% | 3,19% | 8,59% | 6,73% | 6,72% |
| 9 | Sub-base Granular Estabilizada (CBR=80%) | m3 | 53.590,00 | 64.619,08 | 9.356.814.000 | 11.282.491.368 | 13,69% | 16,51% | | | 8,13% | 10,29% | 4,59% | 8,25% | 5,32% | 9,70% | 6,42% |
| 10 | Base Granular Estabilizada (CBR=100%) | m3 | 52.760,00 | 64.895,92 | 11.795.605.960 | 14.508.845.730 | 17,26% | 21,23% | | | 8,20% | 10,02% | 3,88% | 5,60% | 5,63% | 9,75% | 5,06% |
| 11 | Riego de Imprimación | ltrs | 227.220,00 | 432.864,85 | 2.585.309.160 | 4.025.136.263 | 3,78% | 7,21% | | | | 18,66% | 3,58% | 3,38% | 4,70% | 10,18% | 5,60% |
| 12 | Riego de Liga | ltrs | 121.820,00 | 106.167,00 | 837.999.780 | 730.322.793 | 1,23% | 1,07% | | | | 9,32% | 2,89% | 7,78% | 4,72% | 8,78% | 3,34% |
| 13 | Regularización con Concreto Asfáltico | tn | 129,60 | | 65.565.936 | | 0,10% | | | | | | | | | | |
| 14 | Carpeta de Concreto Asfáltico | m3 | 14.529,00 | 15.012,64 | 17.722.314.381 | 18.312.253.133 | 25,94% | 26,80% | | | | 13,03% | 3,30% | 8,49% | 5,52% | 12,19% | 5,97% |
| 15 | Pavimento tipo Empedrado | m2 | 2.000,00 | | 110.688.000 | | 0,16% | | | | | | | | | | |
| 16 | Ensanche Alcantarilla tubular simple D=0,80 m. | m | 27,00 | 5,10 | 21.354.921 | 4.033.707 | 0,03% | 0,01% | | | | | | | | | |
| 17 | Alcantarilla tubular simple D=0,80 m. | m | 43,00 | 409,25 | 26.669.116 | 253.821.761 | 0,04% | 0,37% | | | | | 8,05% | 0,50% | | | 3,68% |
| 18 | Alcantarilla tubular simple D=1,00 m. | m | 32,00 | 43,81 | 27.061.184 | 37.082.279 | 0,04% | 0,05% | | | | | | | 17,29% | 13,18% | |
| 19 | Ensanche Alcantarilla tubular doble D=0,80 m. | m | 8,00 | 30,65 | 20.340.032 | 77.927.748 | 0,03% | 0,11% | | | | | | 14,84% | | | 4,25% |
| 20 | Alcantarilla tubular doble D=0,80 m. | m | 53,00 | 32,80 | 118.894.582 | 73.580.043 | 0,17% | 0,11% | | | | | | | | | |
| 21 | Ensanche Alcantarilla tubular doble D=1,00 m. | m | 6,00 | 14,30 | 12.730.800 | 30.341.740 | 0,02% | 0,04% | | | | | | | 15,42% | | |
| 22 | Alcantarilla tubular doble D=1,00 m. | m | 16,00 | 17,80 | 26.468.560 | 29.446.273 | 0,04% | 0,04% | | | | | | 39,89% | | | |
| 23 | Alcantarilla tubular triple D=0,80 m. | m | 13,00 | 33,00 | 63.781.666 | 161.907.306 | 0,09% | 0,24% | | | | | | | | | |
| 24 | Ensanche Alcantarilla tubular triple D=1,00 m | m | 4,00 | 9,60 | 12.741.148 | 30.578.755 | 0,02% | 0,04% | | | | | | | | 43,67% | |
| 25 | Alcantarilla tubular triple D = 1,20 m. | m | 14,00 | | 46.923.576 | | 0,07% | | | | | | | | | | |
| 26 | Cabeceras para alcantarillas tubulares | m3 | 113,52 | 382,87 | 188.142.940 | 634.551.509 | 0,28% | 0,93% | | | | | | 5,69% | 1,87% | 4,35% | 4,13% |
| 27 | Plateas de Hº simple para alcantarillas tubulares | m3 | 158,05 | 316,50 | 107.475.106 | 215.222.216 | 0,16% | 0,31% | | | | | 1,33% | 6,32% | 2,48% | 4,59% | 2,01% |
| 28 | Ensanche Alcantarilla celular simple 2,00 m x 2,00 m | m | 8,00 | 13,00 | 23.307.576 | 37.874.811 | 0,03% | 0,06% | | | | | | | | | |
| 29 | Alcantarilla celular simple 2,50 m x 2,50 m | m | 22,00 | 19,20 | 95.113.590 | 83.008.224 | 0,14% | 0,12% | | | | | | | | | |
| 30 | Alcantarilla celular doble 2,00 m x 2,00 m | m | 16,00 | | 93.230.240 | | 0,14% | | | | | | | | | | |
| 31 | Alcantarilla Celular Doble 2,50 m x 2,50 m | m | 16,00 | 48,65 | 147.337.968 | 447.999.509 | 0,22% | 0,66% | | | | | | | | | |
| 32 | Alcantarilla Celular doble 3,00 m x 3,00 m | m | 18,00 | | 234.231.642 | | 0,34% | | | | | | | | | | |
| 33 | Cabeceras de Alcantarillas Celulares | m3 | 143,44 | 165,01 | 280.725.563 | 322.940.081 | 0,41% | 0,47% | | | | | | | 4,80% | 4,15% | |
| 34 | Plateas de Hº simple para alcantarilla celular | m3 | 107,08 | 105,27 | 107.622.146 | 105.802.982 | 0,16% | 0,15% | | | | | | | 8,12% | 2,80% | |
| 35 | Cordón Cuneta de H° | m | 12.120,00 | 641,00 | 1.505.631.240 | 79.629.507 | 2,20% | 0,12% | | | | | | | | | |
| 36 | Cuneta revestida de hormigón | m3 | 4.500,00 | 1.635,19 | 4.094.955.500 | 1.488.021.263 | 5,99% | 2,18% | | | | | | | | | |
| 37 | Mampostería de P.B.C. | m3 | 36,00 | 254,24 | 15.605.893 | 110.212.277 | 0,02% | 0,16% | | | | | | | | | |
| 38 | Losas de H° A° | m3 | 12,00 | 190,72 | 30.354.888 | 482.440.353 | 0,04% | 0,71% | | | | | | | | | |
| 39 | Badén de Hormigón | m3 | 42,00 | 185,61 | 64.809.948 | 286.413.677 | 0,09% | 0,42% | | | | | | | | 21,98% | |
| 40 | Demolición de Cabeceras de Alcantarillas Existentes | m3 | 90,34 | 104,68 | 46.869.386 | 54.309.135 | 0,07% | 0,08% | | 2,09% | | | | 3,32% | | 10,47% | |
| 41 | Traslado de Alambradas | m | 14.050,00 | 50,00 | 761.200.900 | 2.708.900 | 1,11% | 0,00% | | | | | | | | | |
| 42 | Señalización Horizontal | m2 | 10.230,00 | 12.644,47 | 1.004.258.640 | 1.241.282.331 | 1,47% | 1,82% | | | | | | | | | |
| 43 | Señalización Vertical | m2 | 60,00 | 250,00 | 88.158.780 | 367.328.250 | 0,13% | 0,54% | | | | | | | | | |
| 44 | Tachas Reflectivas | un | 8.040,00 | 9.258,00 | 205.486.320 | 236.615.964 | 0,30% | 0,35% | | | | | | | | | |
| 45 | Tachones Reflectivos | un | 603,00 | 450,00 | 59.991.264 | 44.769.600 | 0,09% | 0,07% | | | | | | | | | |
| 46 | Portico de Señalización | un | 2,00 | 2,00 | 120.403.412 | 120.403.412 | 0,18% | 0,18% | | | | | | | | | |
| 47 | Revestimiento Vegetal con Tepes | m2 | 158.000,00 | 163.100,00 | 872.634.000 | 900.801.300 | 1,28% | 1,32% | | | | | 1,09% | 4,21% | 4,73% | 4,54% | 7,34% |
| 48 | Caseta de Resguardo Peatonal | un | 4,00 | 4,00 | 106.063.508 | 106.063.508 | 0,16% | 0,16% | | | | | | | | | |
| | Estación de Control Vehicular | m | 3.000,00 | 3.500,00 | 667.635.000 | 778.907.500 | 0,98% | 1,14% | | | | | | | | | |
| | Traslado de Líneas Eléctricas | un | 32,00 | 36,00 | 169.640.864 | 190.845.972 | 0,25% | 0,28% | | | | | | | | | |
| 51 | Cordón de H° | m | 12.540,00 | 8.812,50 | 831.464.700 | 584.312.813 | 1,22% | 0,86% | | | | | | | | | 4,41% |
| 52 | Dársena para Pesaje | un | 1,00 | 1,00 | 281.511.933 | 281.511.933 | 0,41% | 0,41% | | | | | | | | | |
| 53 | Iluminación en Intersecciones | un | 30,00 | 30,00 | 759.816.990 | 759.816.990 | 1,11% | 1,11% | | | | | | | | | |
| 54 | Protección Forestal en Áreas de Préstamo | un | 7,00 | 1,00 | 312.277.868 | 44.611.124 | 0,46% | 0,07% | | | | | | | | | |
| 55 | Vereda de Hormigón | m2 | 6.000,00 | 720,00 | 530.580.000 | 63.669.600 | 0,78% | 0,09% | | | | | | | | | |
| 56 | Instalaciones y Servicios Especializados | mes | 24,00 | 24,00 | 759.739.464 | 759.739.464 | 1,11% | 1,11% | 4,17% | 4,17% | 4,17% | 4,17% | 4,17% | 4,17% | 4,17% | 4,17% | 4,17% |
| 57 | Movilización | gl | 1,00 | 1,00 | 1.993.970.499 | 1.993.970.499 | 2,92% | 2,92% | 70,00% | 30,00% | | | | | | | |
| 58 | Alcantarilla celular doble 1,00 m x 1,00 m | m | | 17,40 | | 72.141.809 | | 0,11% | | | | | | | | | |
| 59 | Reposición de cañerías de agua | m | | 30.650,00 | | 1.799.859.950 | | 2,63% | | | | | | | | | |
| 60 | Ensanche de Alcantarilla celular simple 3,00 m x 3,00 | m | | 11,00 | | 96.689.351 | | 0,14% | | | | | | | | | |
| 61 | Alcantarilla celular simple 2,00 m x 2,00 | m | | 24,40 | | 94.404.576 | | 0,14% | | | | | | | | | |
| 62 | Alcantarilla celular triple 1,00 m x 1,00 m | m | | 14,30 | | 117.034.289 | | 0,17% | | | | | | | | | |
| | | | | | 68.326.344.182,00 | 81.841.235.398 | 100,00% | 119,79% | | | | | | | | | |
| | CRONOGRAMA CONTRACTUAL RECALENDARIZADO | AVANCE MENSUAL PROGRAMADO Contractual Recalendarizado | | | | | | | 0,66% | 1,47% | 1,23% | 1,50% | 1,96% | 2,72% | 2,57% | 2,74% | 2,49% |
| | | AVANCE ACUMULADO PROGRAMADO Contractual Recalendarizado | | | | | | | 0,66% | 2,13% | 3,36% | 4,85% | 6,81% | 9,53% | 12,10% | 14,84% | 17,33% |
| | CRONOGRAMA CONVENIO MODIFICATORIO DE OBRA N° 01 | AVANCE MENSUAL PROGRAMADO Convenio Modificatorio N°01 | | | | | | | 2,09% | 2,09% | 3,85% | 9,36% | 4,60% | 4,96% | 5,20% | 8,99% | 4,88% |
| | | AVANCE ACUMULADO PROGRAMADO Convenio Modificatorio N°01 | | | | | | | 2,09% | 4,18% | 8,04% | 17,39% | 21,99% | 26,95% | 32,15% | 41,14% | 46,02% |
| | CRONOGRAMA CONVENIO MODIFICATORIO DE OBRA N° 02 | AVANCE MENSUAL PROGRAMADO Convenio Modificatorio N°02 | | | | | | | 2,09% | 1,84% | 3,93% | 9,59% | 4,71% | 5,24% | 5,26% | 9,12% | 4,86% |
| | | AVANCE ACUMULADO PROGRAMADO Convenio Modificatorio N°02 | | | | | | | 2,09% | 3,93% | 7,86% | 17,45% | 22,16% | 27,40% | 32,66% | 41,78% | 46,63% |

**Fecha de Inicio Contractural: 06 de agosto de 2019**

**Fecha Final Contractual: 06 de agosto de 202**

ING. ROLANDO LÓPEZ GONZÁLEZ
Benito Roggio e Hijos S.A

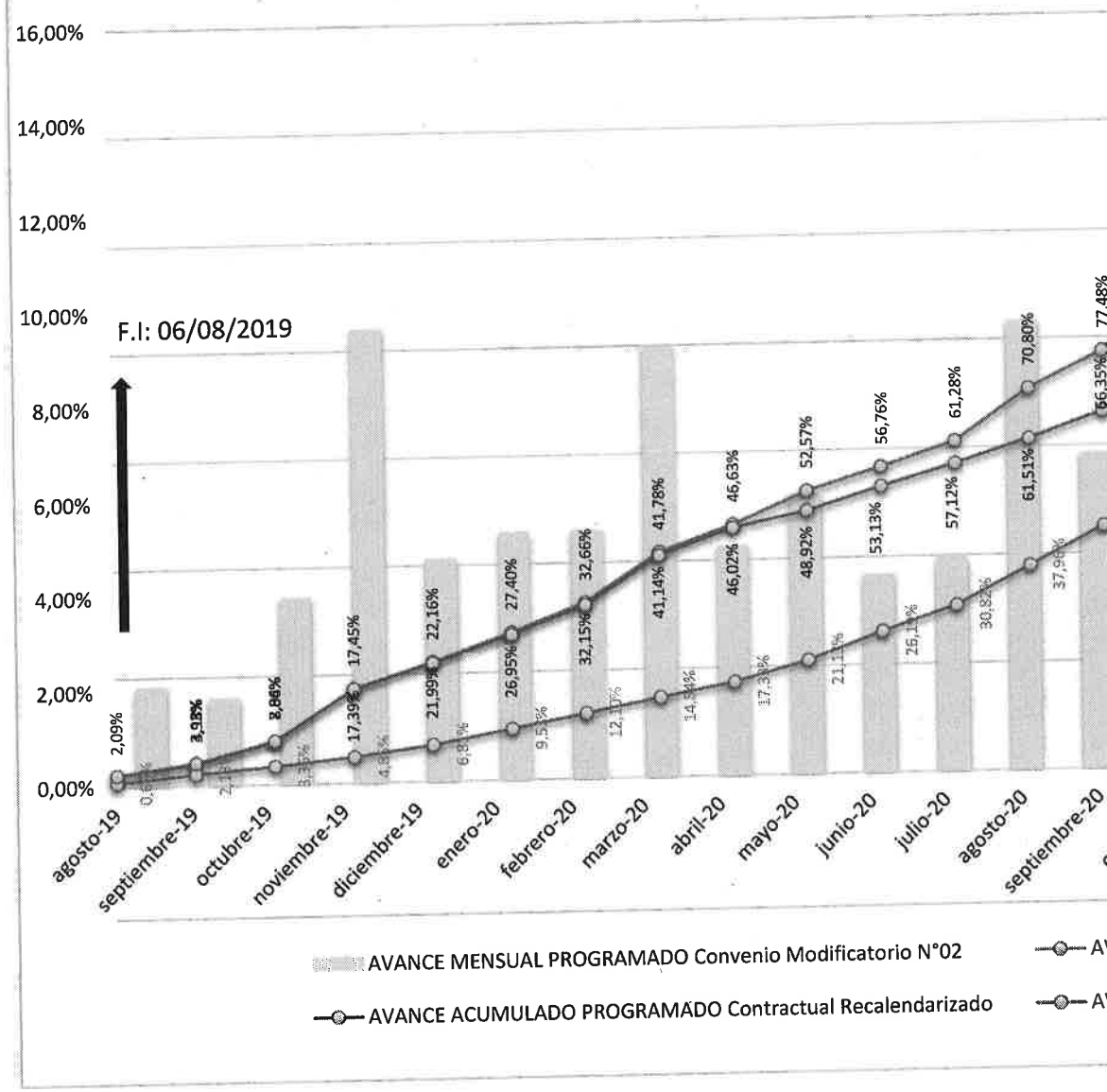
**COMUNICACIONES**
**NTAL - 4TA TANDA - TRAMO: MARÍA AUXILIADORA - NATALIO**
**ONVENIO MODIFICATORIO DE OBRA N° 2**

| 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| julio-20 | agosto-20 | septiembre-20 | octubre-20 | noviembre-20 | diciembre-20 | enero-21 | febrero-21 | marzo-21 | abril-21 | mayo-21 | junio-21 | julio-21 | agosto-21 | septiembre-21 | octubre-21 | noviembre-21 | diciembre-21 |
| | 12,27% | 33,51% | 2,71% | | | 0,69% | | | | | | | | | | | |
| 10,00% | 15,00% | 14,00% | | | | | | | | | | | | | | | |
| 18,67% | | | 11,68% | | | | | | | | | | | | | | |
| | 11,89% | | 14,39% | 26,15% | | 7,58% | | | | | | | | | | | |
| | | | 30,44% | | | | | | | | | | | | | | |
| | | | 53,60% | | | | | | | | | | | | | | |
| | | | 22,24% | 2,00% | 0,39% | | 0,08% | | | | | | | | | | |
| 6,13% | 15,00% | 2,13% | 13,38% | 4,18% | 0,96% | | 0,75% | | | | | | | | | | |
| 4,99% | 10,53% | 7,13% | 3,02% | 9,74% | 6,44% | | | | | | | | | | | | |
| 7,71% | 10,56% | 7,19% | 2,13% | 10,33% | 3,65% | 2,48% | 0,80% | | | | | | | | | | |
| 0,27% | | | 27,57% | 11,26% | 3,17% | 3,15% | 0,14% | | | | | | | | | | |
| 0,48% | 10,25% | 9,90% | | 10,33% | 3,34% | 17,62% | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |
| 0,58% | 11,97% | 11,31% | | 9,70% | 3,06% | 5,12% | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |
| | | 100,00% | | | | | | | | | | | | | | | |
| | | | 55,41% | 5,42% | 8,15% | 8,45% | 9,82% | | | | | | | | | | |
| | | 5,28% | 11,26% | | | | | | | | | | | | | | |
| | | | 46,27% | | | | 34,64% | | | | | | | | | | |
| | 28,73% | 70,27% | | | | | | | | | | | | | | | |
| | | 14,43% | 70,15% | | | | | | | | | | | | | | |
| | | | 10,11% | | | | | | | | | | | | | | |
| 35,14% | | | 64,01% | | | | | | | | | | | | | | |
| | | | 58,13% | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |
| 0,50% | | | 16,10% | 5,45% | 3,78% | 3,15% | 3,56% | 8,46% | 4,44% | 25,02% | | | | | | | |
| 5,51% | 8,43% | 2,74% | 22,47% | 3,18% | 7,50% | 2,83% | 4,39% | 8,33% | 17,87% | | | | | | | | |
| 61,34% | | | 38,66% | | | | | | | | | | | | | | |
| 112,94% | | | -12,94% | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |
| | | | 67,21% | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |
| 26,14% | 13,35% | 13,92% | 16,78% | | | | | | | | | | | | | | |
| 11,11% | 18,77% | 11,92% | | | | | | | | | | | | | | | |
| | | | | | | | 6,61% | 5,00% | 5,00% | 5,00% | 5,00% | 5,00% | 68,39% | | | | |
| 5,52% | 3,19% | 4,63% | 7,71% | 10,64% | 6,05% | 6,50% | 6,24% | 5,00% | 5,00% | 5,00% | 5,00% | 5,00% | 20,85% | | | | |
| 3,98% | 7,27% | 0,94% | 10,29% | 9,31% | 6,17% | 6,81% | 4,41% | 4,41% | 7,34% | 7,34% | 7,34% | 7,34% | 14,68% | | | | |
| 3,63% | | | 3,53% | 7,00% | 8,60% | 7,47% | 2,56% | 2,56% | 10,68% | 10,68% | 10,68% | 10,68% | 21,36% | | | | |
| | | | 20,58% | | | | | | 18,93% | 18,93% | 18,93% | | | | | | |
| | 11,64% | 57,62% | 13,70% | | | | | | | | | | | | | | |
| | | | | | 100,00% | | | | | | | | | | | | |
| | | | | | | | 37,16% | 20,95% | 20,00% | 20,95% | | | | | | | |
| | | | | | | | | | | | | | 100,00% | | | | |
| | | | | | | | | | | | | | 100,00% | | | | |
| | | | | | | | | | | | | | 100,00% | | | | |
| | | | | | | | | | | | | | 100,00% | | | | |
| 6,66% | 7,86% | 8,13% | 4,85% | 5,09% | 6,08% | 4,75% | 12,97% | 1,21% | 1,21% | 1,21% | 1,21% | 1,21% | | | | | |
| | | | | | | | | | | | | | 100,00% | | | | |
| | | | | | | | 5,08% | 13,82% | 13,18% | 13,18% | 13,18% | 13,18% | 26,37% | | | | |
| | | | 14,89% | 13,89% | 16,67% | | 38,89% | | | 5,56% | 5,56% | 5,56% | | | | | |
| 32,67% | 0,75% | 1,83% | 11,77% | 11,31% | 6,31% | | | | | | | | | | | | |
| 10,00% | | | | | | | 16,00% | 17,00% | 17,00% | | | | | | | | |
| | | | | | | | | | | | | | 25,00% | 25,00% | 25,00% | 25,00% | |
| | | | | | | | | | | | | | 100,00% | | | | |
| | | | | | | | | | | 10,00% | 10,00% | 10,00% | 70,00% | | | | |
| 4,17% | 4,17% | 4,17% | 4,17% | 4,17% | 4,17% | 4,17% | 4,17% | 4,17% | 4,17% | 4,17% | 4,17% | 4,17% | | | | | 10,00% |
| | | | | 100,00% | | | | | | | | | | | | | |
| | | | | 98,89% | | | | 0,72% | 11,43% | | | | | | | | |
| | | | | 100,00% | | | | | | | | | | | | | |
| | | | | 100,00% | | | | | | | | | | | | | |
| | | | | 100,00% | | | | | | | | | | | | | |
| 4,63% | 7,15% | 7,38% | 8,13% | 5,77% | 5,37% | 5,07% | 5,16% | 5,14% | 5,16% | 4,98% | 5,43% | 4,51% | 0,16% | | | | |
| 30,82% | 37,96% | 45,34% | 53,27% | 59,04% | 64,41% | 69,48% | 74,64% | 79,78% | 84,94% | 89,90% | 95,33% | 99,84% | 100,00% | | | | |
| 3,99% | 4,39% | 4,84% | 5,40% | 4,92% | 4,51% | 3,98% | 3,78% | 3,78% | 3,68% | 3,50% | 3,63% | 4,06% | 2,72% | 2,55% | 2,75% | 1,38% | 2,53% |
| 57,13% | 61,51% | 66,35% | 71,75% | 76,67% | 81,17% | 85,15% | 88,93% | 92,71% | 96,59% | 100,09% | 103,72% | 107,78% | 110,51% | 113,06% | 115,81% | 117,20% | 119,73% |
| 4,52% | 9,51% | 6,69% | 14,45% | 11,84% | 3,53% | 2,71% | 1,83% | 0,96% | 1,05% | 1,13% | 0,52% | 0,44% | 2,69% | 0,28% | 0,28% | 0,28% | 0,29% |
| 61,28% | 70,80% | 77,48% | 91,94% | 103,78% | 107,31% | 110,02% | 111,86% | 112,81% | 113,87% | 115,00% | 115,52% | 115,96% | 118,65% | 118,93% | 119,21% | 119,48% | 119,78% |

**Fecha de Finalización CMN°2: 25 de Diciembre de 2021**

Ing. Mario Silva
Supervisor de Obras
M.O.P.C.

OBRA: PAVIMENTACION ASFALTICA DE VARIOS TRAMOS DE
AUXILIADORA -
Convenio Modificatorio
Curva de Avance Físi



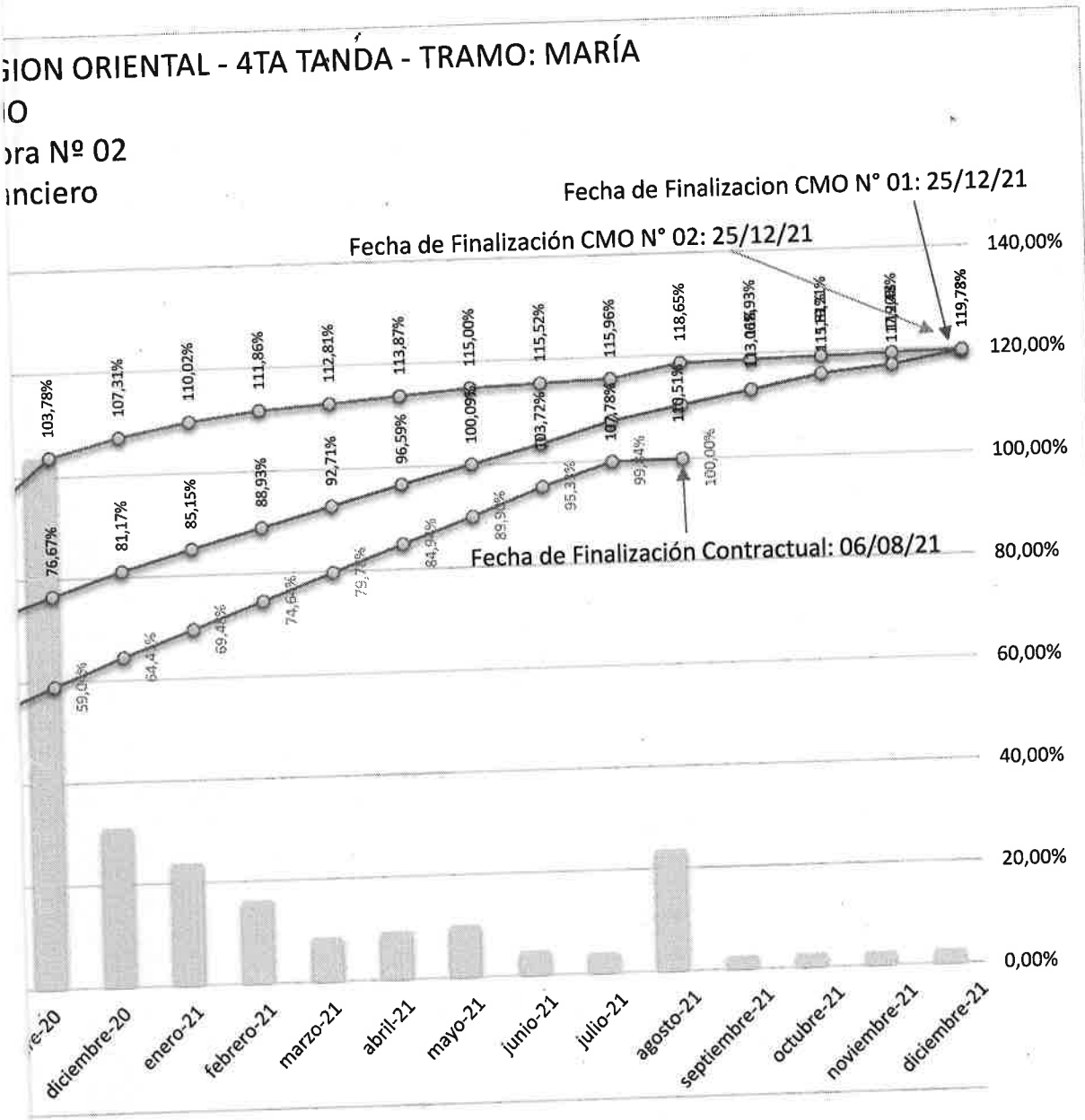

ING. ROLANDO LOPEZ GONZALEZ
Benito Roggio e Hijos S.A

ION ORIENTAL - 4TA TANDA - TRAMO: MARÍA

O

ra Nº 02

nciero




MULADO PROGRAMADO Convenio Modificatorio N°02

MULADO PROGRAMADO Convenio Modificatorio N°01

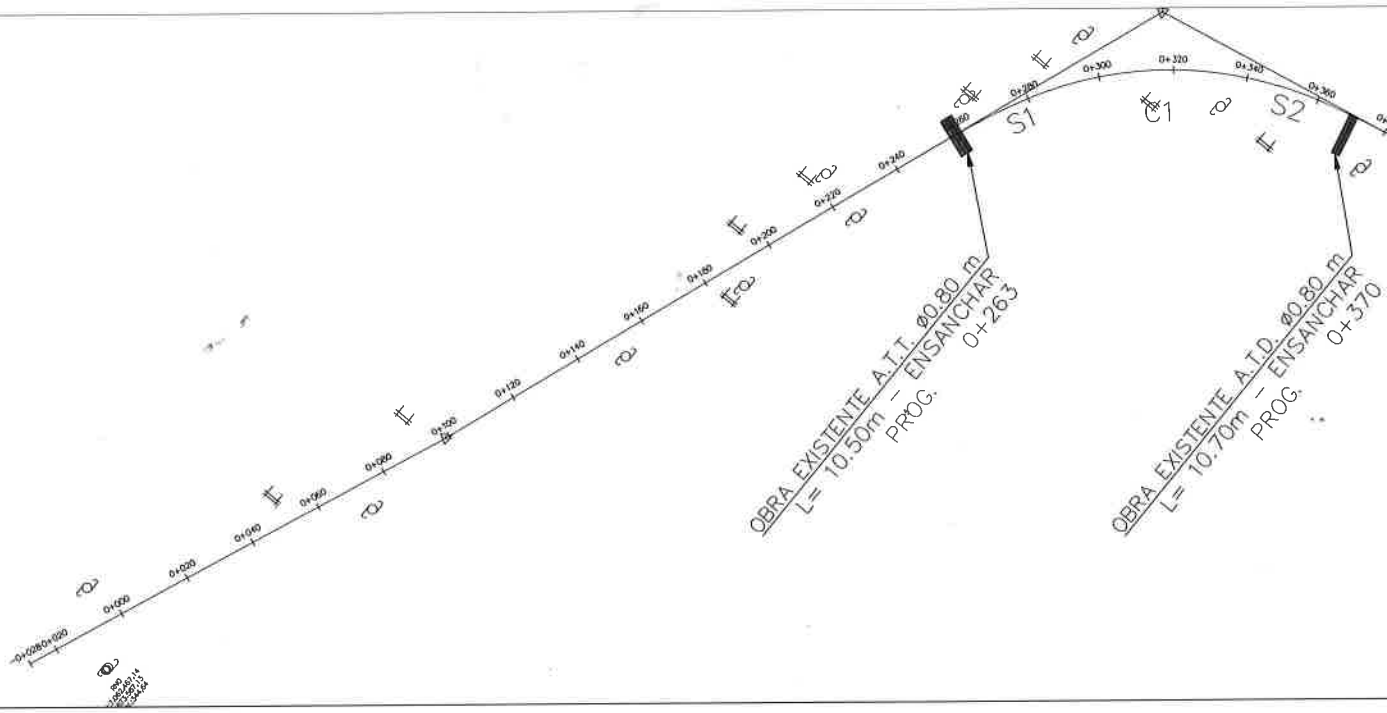
Ing. Mario Silva
Supervisor de Obras
M.O.P.C.

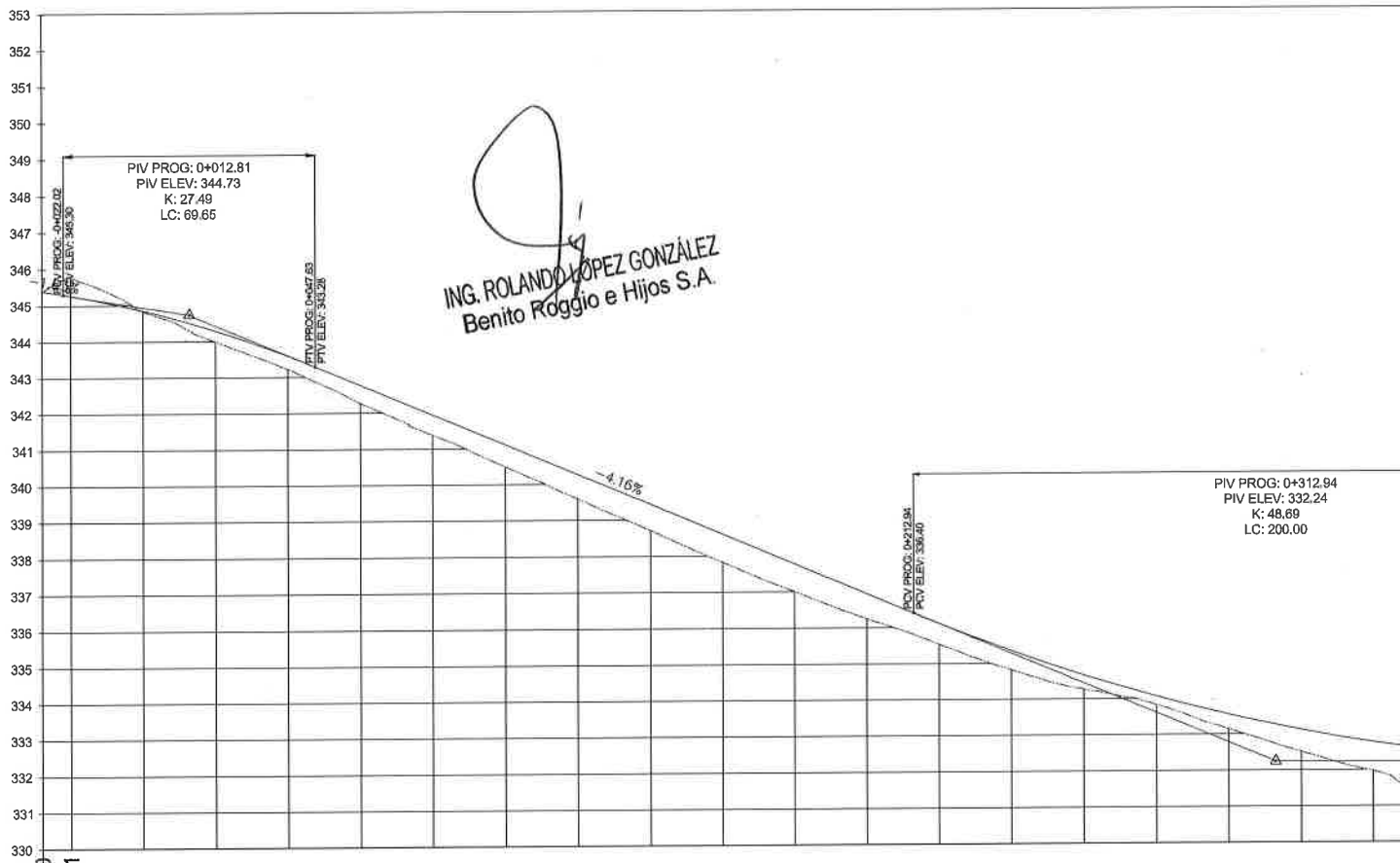
# ANEXO 5

# PLANOS

ING. ROLANDO LÓPEZ GONZÁLEZ
Benito Roggio e Hijos S.A.

Ing. Mario Silva
Supervisor de Obras
M.O.P.C.




ING. ROLANDO LÓPEZ GONZÁLEZ
Benito Roggio e Hijos S.A.

| Prog. | TN | Rasante | Relleno | Corte |
|---|---|---|---|---|
| -0+028 | 345.40 | 345.40 | 0.00 | 0.00 |
| -0+020 | 345.78 | 345.26 | -0.51 | 0.51 |
| 0+000 | 344.83 | 344.85 | 0.02 | |
| 0+020 | 344.00 | 344.29 | 0.29 | |
| 0+040 | 343.22 | 343.59 | 0.37 | |
| 0+060 | 342.27 | 342.77 | 0.50 | |
| 0+080 | 341.39 | 341.93 | 0.55 | |
| 0+100 | 340.50 | 341.10 | 0.61 | |
| 0+120 | 339.59 | 340.27 | 0.68 | |
| 0+140 | 338.71 | 339.44 | 0.73 | |
| 0+160 | 337.82 | 338.61 | 0.78 | |
| 0+180 | 337.00 | 337.77 | 0.77 | |
| 0+200 | 336.25 | 336.94 | 0.69 | |
| 0+220 | 335.54 | 336.11 | 0.58 | |
| 0+240 | 334.82 | 335.35 | 0.53 | |
| 0+260 | 334.27 | 334.67 | 0.40 | |
| 0+280 | 333.82 | 334.07 | 0.25 | |
| 0+300 | 333.14 | 333.56 | 0.42 | |
| 0+320 | 332.51 | 333.12 | 0.62 | |
| 0+340 | 331.96 | 332.77 | 0.81 | |

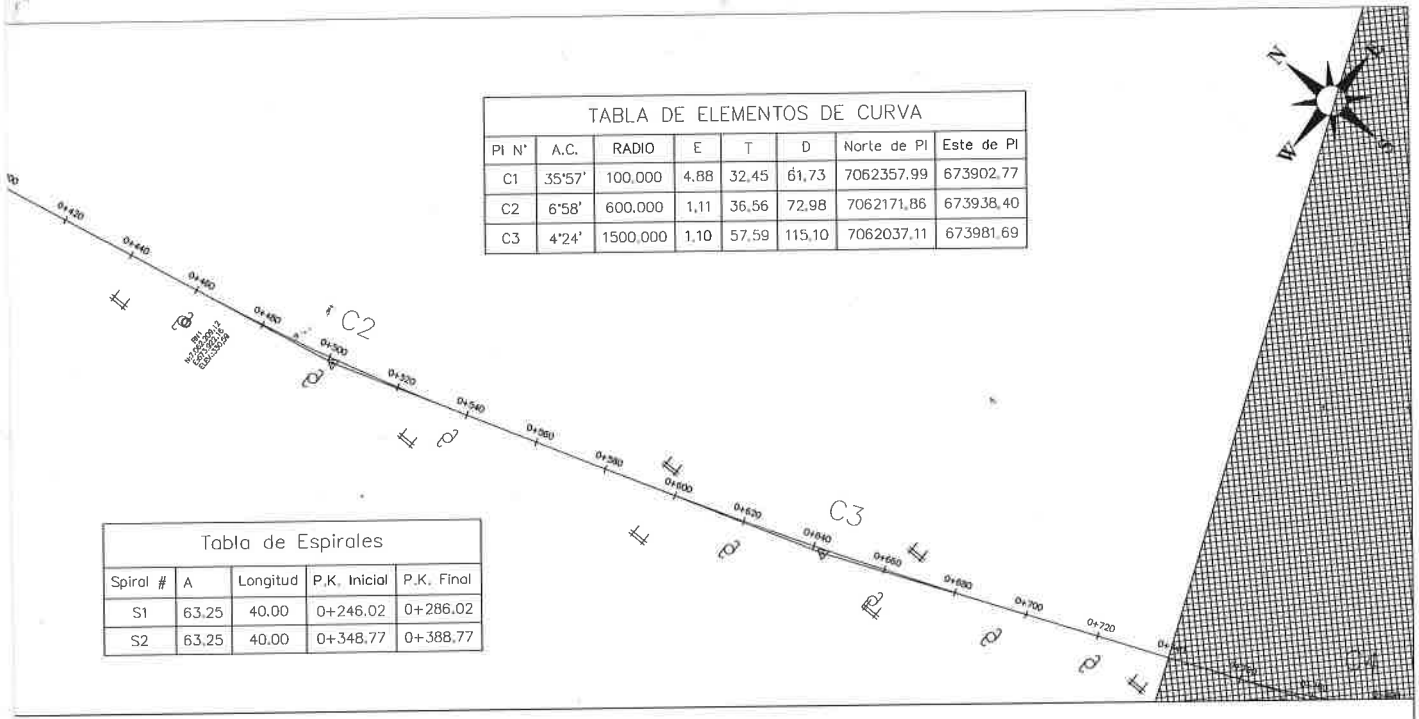
ROGGIO
BENITO ROGGIO E HIJOS S.A.

MINISTERIO DE OBRAS PÚBLICAS Y COMUNICACIONES

GOBIERNO NACIONAL

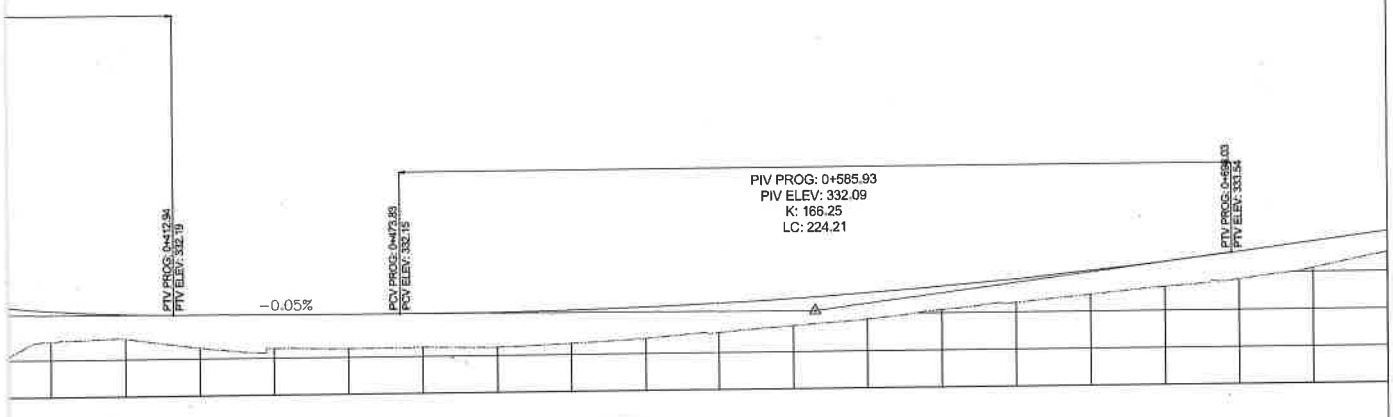
Paraguay de la gente

| TABLA DE ELEMENTOS DE CURVA | | | | | | | |
|---|---|---|---|---|---|---|---|
| PI N° | A.C. | RADIO | E | T | D | Norte de PI | Este de PI |
| C1 | 35°57' | 100.000 | 4.88 | 32.45 | 61.73 | 7062357.99 | 673902.77 |
| C2 | 6°58' | 600.000 | 1.11 | 36.56 | 72.98 | 7062171.86 | 673938.40 |
| C3 | 4°24' | 1500.000 | 1.10 | 57.59 | 115.10 | 7062037.11 | 673981.69 |




| Tabla de Espirales | | | | |
|---|---|---|---|---|
| Spiral # | A | Longitud | P.K. Inicial | P.K. Final |
| S1 | 63.25 | 40.00 | 0+246.02 | 0+286.02 |
| S2 | 63.25 | 40.00 | 0+348.77 | 0+388.77 |

Ing. Mario Silva
Supervisor de Obras
M.O.P.C.




| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0+380 | 331.49 | 332.31 | 0.82 | | | | | | | | | | | | | | | | |
| 0+400 | 331.55 | 332.21 | 0.66 | | | | | | | | | | | | | | | | |
| 0+420 | 331.29 | 332.18 | 0.90 | | | | | | | | | | | | | | | | |
| 0+440 | 331.26 | 332.17 | 0.91 | | | | | | | | | | | | | | | | |
| 0+460 | 331.23 | 332.16 | 0.93 | | | | | | | | | | | | | | | | |
| 0+480 | 331.24 | 332.15 | 0.91 | | | | | | | | | | | | | | | | |
| 0+500 | 331.22 | 332.16 | 0.94 | | | | | | | | | | | | | | | | |
| 0+520 | 331.30 | 332.19 | 0.89 | | | | | | | | | | | | | | | | |
| 0+540 | 331.40 | 332.25 | 0.84 | | | | | | | | | | | | | | | | |
| 0+560 | 331.53 | 332.33 | 0.80 | | | | | | | | | | | | | | | | |
| 0+580 | 331.69 | 332.43 | 0.74 | | | | | | | | | | | | | | | | |
| 0+600 | 331.84 | 332.56 | 0.72 | | | | | | | | | | | | | | | | |
| 0+620 | 332.08 | 332.71 | 0.64 | | | | | | | | | | | | | | | | |
| 0+640 | 332.25 | 332.89 | 0.64 | | | | | | | | | | | | | | | | |
| 0+660 | 332.45 | 333.09 | 0.64 | | | | | | | | | | | | | | | | |
| 0+680 | 332.64 | 333.32 | 0.68 | | | | | | | | | | | | | | | | |
| 0+700 | 332.82 | 333.57 | 0.75 | | | | | | | | | | | | | | | | |
| 0+720 | 333.10 | 333.83 | 0.73 | | | | | | | | | | | | | | | | |
| 0+740 | 333.50 | 334.08 | 0.58 | | | | | | | | | | | | | | | | |

# IMENTACION ASFALTICA 4TA TANDA -
## Lote 1 - Maria Auxiliadora - Natalio

**PLANIALTIMETRIA**

**ESCALA:**

**LÁMINA Nº:** 1 (ciento dos)