

## **ANEJO Nº 4**

# **DATOS DEL LEVANTAMIENTO TOPOGRÁFICO. REPLANTEO**

## ÍNDICE

### ANEJO Nº 4. DATOS DEL LEVANTAMIENTO TOPOGRÁFICO.

#### REPLANTEO

|          |   |            |
|----------|---|------------|
| <b>1</b> | <b>INTRODUCCIÓN Y OBJETO</b>                  | <b>2</b>   |
| <b>2</b> | <b>ZONA DE TRABAJO</b>                        | <b>2</b>   |
| <b>3</b> | <b>DESCRIPCIÓN DE LOS TRABAJOS REALIZADOS</b> | <b>5</b>   |
| 3.1      | DESCRIPCIÓN DE LOS TRABAJOS FOTOMÉTRICOS      | 5          |
| 3.2      | PRODUCTOS FINALES                             | 9          |
| 3.3      | PRECISIÓN Y RESULTADOS                        | 10         |
| <b>4</b> | <b>ESTACIÓN PERMANENTE Y PUNTOS DE APOYO</b>  | <b>11</b>  |
| <b>5</b> | <b>EDICION CARTOGRÁFICA</b>                   | <b>17</b>  |
| 5.1      | LISTADOS DE EJES                              | 17         |
| 5.2      | LISTADOS DE RASANTES                          | 34         |
|          | <b>PLANOS</b>                                 | <b>144</b> |

## **1 INTRODUCCIÓN Y OBJETO**

En el presente anejo se describe y se adjuntan los trabajos realizados para obtener la topografía necesaria para realizar el presente proyecto.

Se han realizado dos trabajos principales, un levantamiento fotogramétrico completo de un ancho de banda suficiente donde transcurren los ejes del proyecto y la toma de datos mediante GPS de las zonas que tenían vegetación para asegurar la obtención de datos de zonas cubiertas de vegetación.

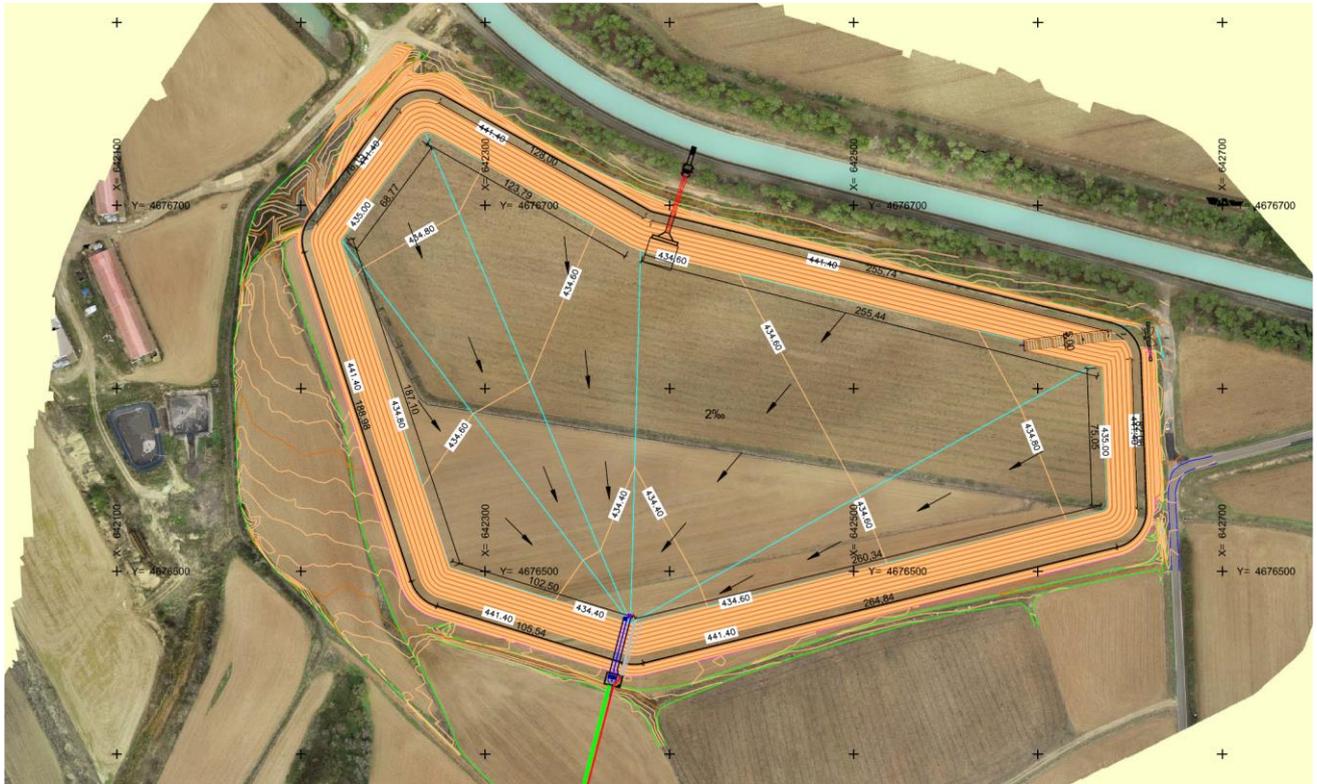
El estándar de sistema de coordenadas de referencia tomado para este trabajo es el ETRS89 iberia 30N EPSG: 25830.

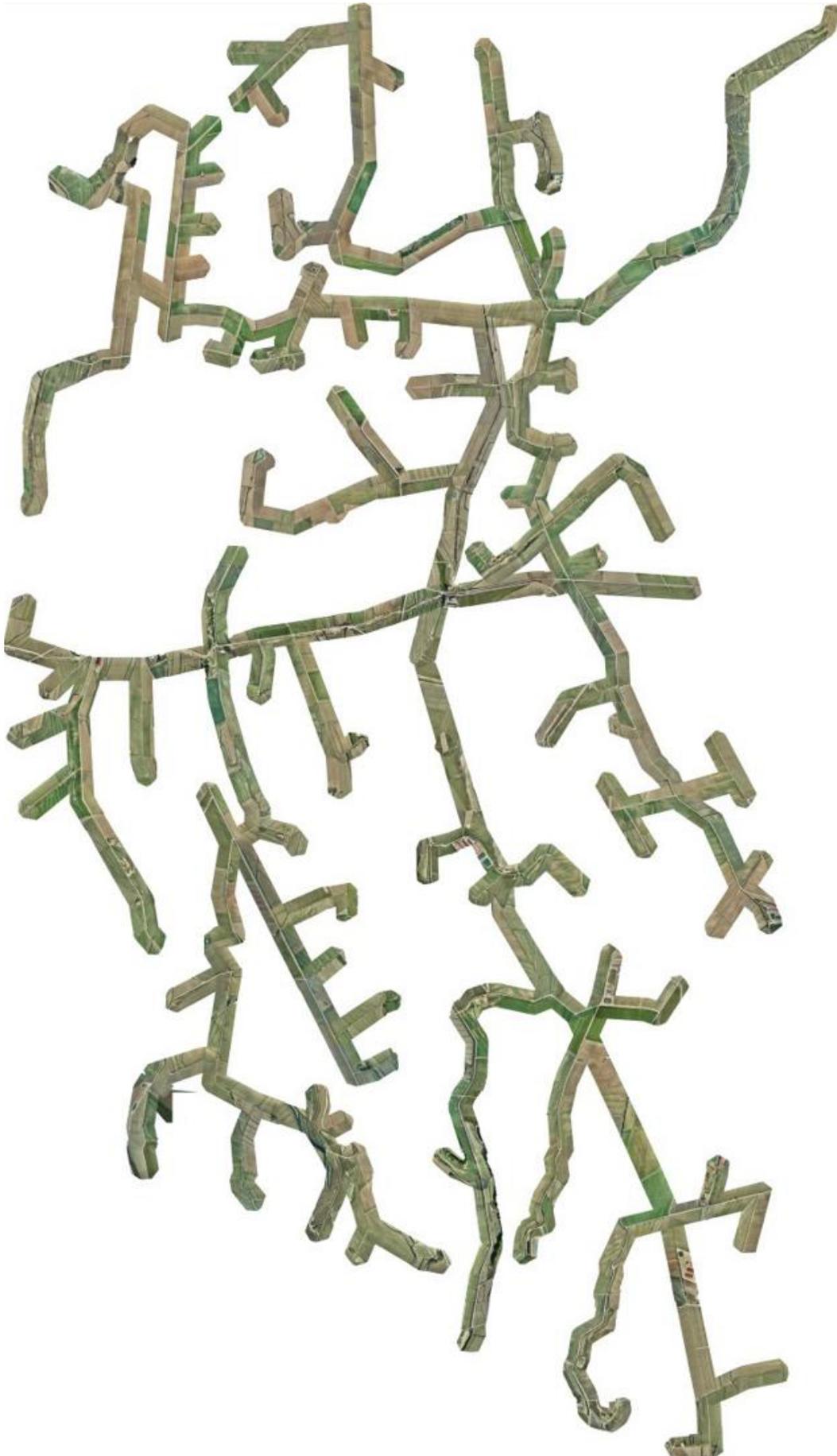
## **2 ZONA DE TRABAJO**

La zona de trabajo ha sido la zona por la cual discurre la red de riego hasta llegar a los hidrantes con un ancho de banda de 25 metros a cada lado del eje de las tuberías. Así como la zona de la balsa con sus elementos, como se puede apreciar en los planos 6.2, 6.3 y 6.4 del presente proyecto.

Los edificios a construir como son la estación de filtrado, la estación de bombeo, los cobertizos de los nudos de la red de riego, los elementos hidráulicos de la red de riego y la planta fotovoltaica con sus elementos también han tenido el mismo levantamiento completo ya que estos elementos están ubicados cercanos al eje de las tuberías y por tanto con el ancho de banda de 25 metros han sido estudiados.

A continuación se muestra la ilustración de la zona de trabajo, tanto de la balsa como de la red de riego como se ha explicado anteriormente.





### **3 DESCRIPCIÓN DE LOS TRABAJOS REALIZADOS**

Como se ha indicado en la introducción de este anejo se han realizado dos trabajos principales. Un levantamiento fotogramétrico completo de un ancho de banda suficiente donde transcurren los ejes del proyecto y la toma de datos mediante GPS de las zonas que tenían vegetación para asegurar la obtención de datos de zonas cubiertas de vegetación.

El estándar de sistema de coordenadas de referencia tomado para este trabajo es. El ETRS89 iberia 30N EPSG: 25830.

#### **3.1 DESCRIPCIÓN DE LOS TRABAJOS FOTOMÉTRICOS**

Lo primero a reseñar, es la misma tecnología con la que se obtienen los datos: el microdrone "**PHANTOM 4 RTK**" con correcciones centimétricas gracias a su conexión a la red como a las bases fijas donde no hay cobertura telefónica. Se trata de un cuadricoptero no tripulado que se maneja desde tierra tanto en posición waypoint (control por GPS) o RC (posición controlada por operador humano en tierra). Este "pequeño" vehículo permite elevar una cámara 1" CMOS Píxeles efectivos: 20 MP y transportarla de manera que es capaz de tomar las fotografías allí donde le marquemos.

Las fases en las que se ha dispuesto el trabajo son:

**Posicionamiento global de la zona de estudio.** Por topografía clásica con un GPS GS15 de la marca leica hemos obtenido la posición de unas marcas realizadas sobre el terreno con pintura en spray "Dianas1" (Ilustración 1) que serán las que veremos posteriormente en las fotografías pudiendo así, comprobar que la georreferencia del posicionamiento RTK del DRON es perfecta y así obtener una doble comprobación de dichas imágenes en un sistema integrado en una red de orden superior. Incluso en sistemas de coordenadas locales que no influyan demasiado puesto que posteriormente, también podemos analizar matemáticamente dichas fotos.



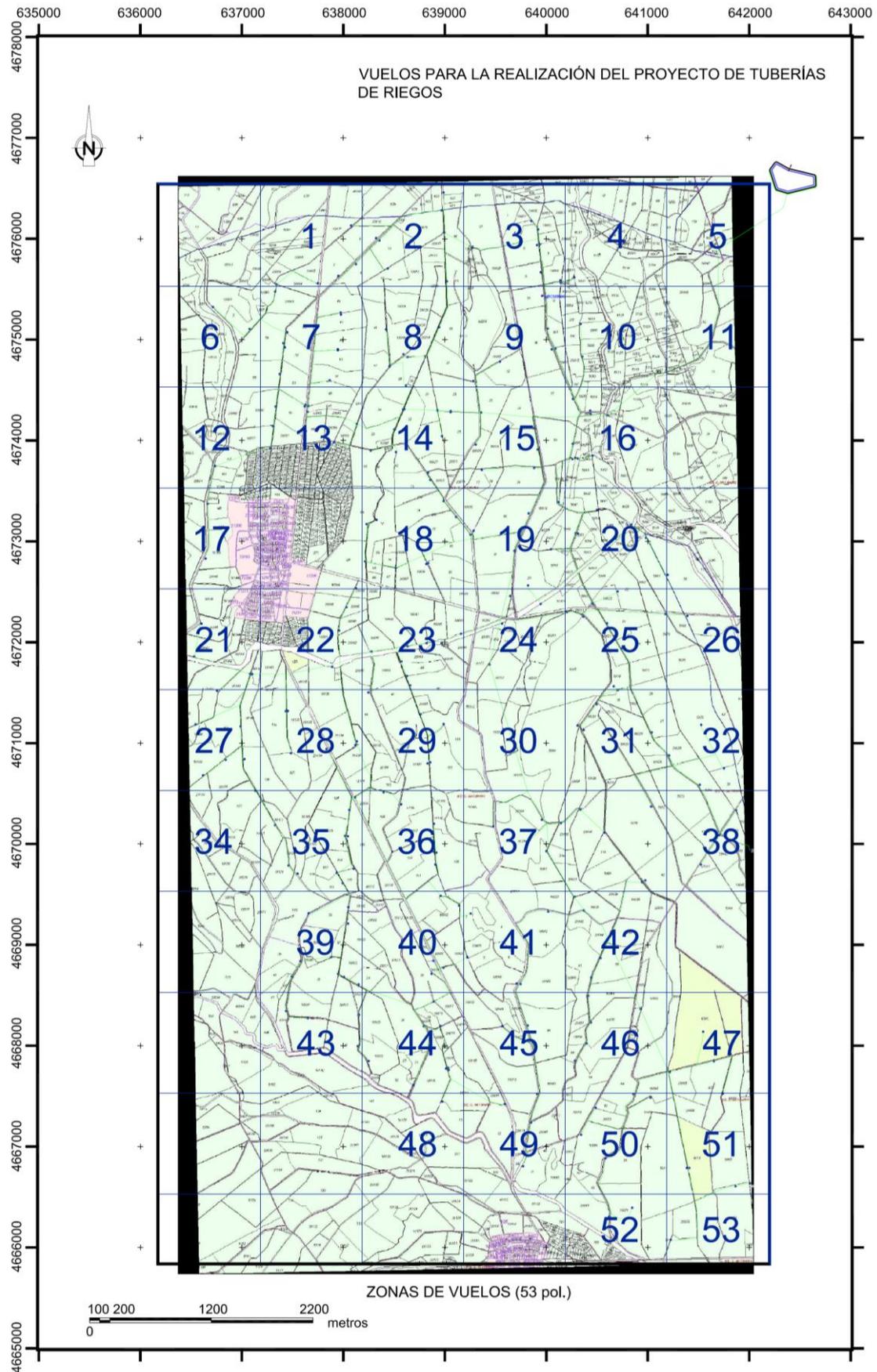
Ilustración 1

El conjunto y en el archivo entregado en el trabajo “.txt” de todas las “Dianas” colocadas para este trabajo se encuentran geolocalizadas en los planos del final del anejo.

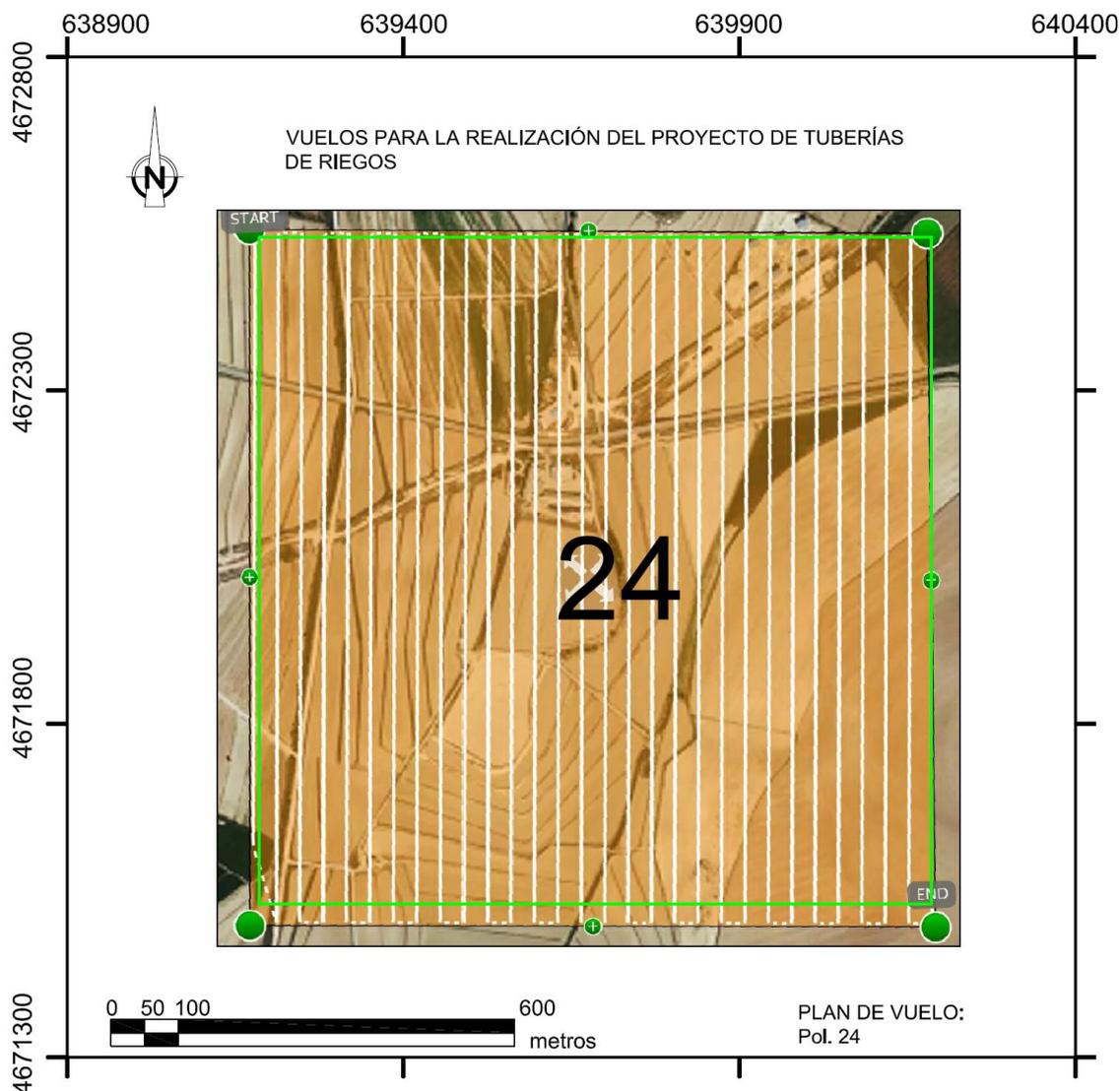
**El planteamiento de vuelo:** una vez establecido el sistema en el que vamos a trabajar y, definido el entorno de estudio, se pasa a componer un recorrido (waypoint) que cargaremos sobre el "PHAMTON 4 RTK". Este waypoint, es un archivo que predice la cantidad de fotografías necesarias para la realización de los distintos productos, así como otros factores que le facilitan la labor al operador en tierra. Se genera un plan de vuelo que recorre la totalidad del entorno del proyecto. Generamos por lo tanto, dicho archivo con coordenadas geodésicas que le dirán al drone, las posiciones correctas en las que este debe tomar las fotografías.

Para este caso concreto se han diseñado vuelos siguiendo el eje longitudinal de las tuberías con una superficie media fotografiada de 120m x 1000m en cada vuelo. Con una altura de vuelo comprendida entre 60 y los 80 m sobre el punto de despegue, lográndose una resolución espacial o GSD2 teórico de 2cm/pixel.

A continuación se muestran unas imágenes sobre la planificación del vuelo. El área de estudio dividida por agrupaciones de cuadrículas de los vuelos y un recorrido tipo de vuelo, concretamente el correspondiente al área de vuelo número 24.



Área de estudio dividida por áreas de vuelo



Recorrido tipo de vuelo, concretamente del área de vuelo nº 24

**Calibración del sistema:** Normalmente antes de iniciar los vuelos de forma masiva se requiere de un procedimiento de calibrado de la cámara (1-2 días), a fin de asegurar una configuración óptima de la cámara y del sistema cámara-dron adaptado para la coloración del terreno, luz existente y otros parámetros del entorno. Este paso repercute en una mayor velocidad y calidad en las fotografías aéreas.

**Restitución fotogramétrica:** Por un lado tenemos, un posicionamiento RTK con imágenes precisas y unas coordenadas asumibles a puntos reconocibles del entorno y por otro, fotografías que compondrán un modelo digital.

Para la restitución fotogramétrica acometida se ha empleado el programa Pix4d mapper Pro.

Tras el proceso de restitución y georeferenciación, el resultado es un modelo digital de varios millones de puntos y cientos de miles de facetas y caras que permiten al usuario, tener un control total de toda la zona de estudio. (Un punto vectorial cada 2.4 cm<sup>2</sup> de la realidad o cm<sup>2</sup>/pix).

Apoyándonos en estos millones de puntos vectoriales visionados en 3D. De forma manual, el operario ha definido aquella serie de puntos que enlazados crean las líneas de rotura del terreno. "Dibujando" estas líneas igual que haría un topógrafo en campo.

A fin de hacer accesible a los programas de CAD la información de esta nube de puntos (La mayoría de los CAD actuales son incapaces de gestionar una cantidad tan abrumadoramente grande de geo información). Se realiza una **desdensificación** de la misma desde Pix4d dejando solamente un punto vectorial cada 5 m<sup>2</sup> y se le da formato de salida ".dxf". Uniéndose mediante herramienta CAD las líneas de rotura y los puntos des densificados en un único archivo.

Como último producto vectorial, sirviéndonos la información sobre la elevación del terreno aportada por la nube de millones de puntos y las fotografías aéreas generamos una **ortofografía aérea** de altísima resolución (2.4cm<sup>2</sup>/pix).

### 3.2 PRODUCTOS FINALES

Como productos finales de este trabajo de restitución fotogramétrica Generamos:

- Ortofotografía digital en formato ".tif y .jpg" de resolución espacial variable según altitud del terreno respecto del punto de despegue (Tamaño del pixel de 2-2.5 cm<sup>2</sup>/Pixel).

A petición del cliente, se genera otra serie de ortofotografías, donde se reduce la resolución espacial a 25 cm/pix. Dándole formato de salida “.jpg”

- Nubes de puntos vectoriales densas LIDAR, Este producto es un archivo vectorial compuesto por una serie de millones de puntos con coordenadas XYZ en la que cada punto tiene codificado el color del terreno que representa en codificación RGB. Se entregan en formato LIDAR comprimido “.las”. Estos puntos presentan una resolución espacial idéntica a la ortofoto. Reflejando la información correspondiente a un MDE3.
- Archivos vectoriales MDT3 de línea y puntos en formato CAD “.dxf”. Estos archivos se componen de: Las líneas de rotura, Límites de vías, puentes y de una nube de puntos des densificada a 5m<sup>2</sup> (Un punto vectorial cada 5m<sup>2</sup>).

### 3.3 PRECISIÓN Y RESULTADOS

Una georreferenciación de las fotografías aéreas “crudas” de +-3m (Precisión del GPS embarcado).

Una precisión de +-2.4 cm en X e Y para las ortofotografías generadas.

Una precisión media de los puntos de la nube LIDAR densa MDE de +-2.4 cm en X e Y.

Una precisión media de los productos “Archivos vectoriales de MDT” (nube de puntos desdensificada a 5 m y líneas de rotura) “.dxf” para CAD de +-2.4 cm en X e Y y de inferior a 5 cm en Z de error medio entre todos los puntos entregados en el producto.

## 4 ESTACIÓN PERMANENTE Y PUNTOS DE APOYO

En este apartado se muestra la localización de la Estación Permanente de la Red ARAGEA en Ejea de los Caballeros y puntos de apoyo utilizados.



### Estación permanente de Ejea de los Caballeros (EJEA)

#### SITUACIÓN

|                    |  |
|--------------------|--|
| Código estación:   | EJEA   |
| Nombre:            | Ejea de los Caballeros   |
| Localización:      | Pº Constitución 25<br>50600 Ejea de los Caballeros (Zaragoza)      |
| Tipo instalación:  | Basada ajustable anclada a cornisa. Nivelada y orientada al norte. |
| Fecha instalación: | 13/01/2010   |

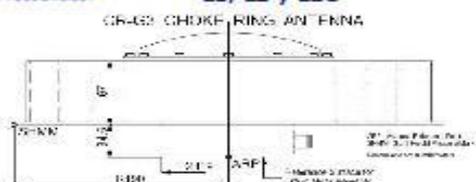


#### COORDENADAS ETRS89

| Cartesianas (X,Y,Z) | Geográficas (φ, λ, h)   | U.T.M. (x, y, huso) |
|---------------------|-------------------------|---------------------|
| 4.736.994,0220      | 42° 07' 33" 24639 N     | 654.571,66          |
| -93.430,59327       | 1° 07' 47" 75789 W      | 4.665.447,44        |
| 4.256.243,9810      | 384,551 m. (elipsoidal) | 30                  |

#### INSTRUMENTACIÓN

|                |                       |
|----------------|-----------------------|
| Receptor:      | NET-G3 de TOPCON      |
| Antena:        | GNSS Choke Ring CR-G3 |
| Altura antena: | 0 metros.             |
| Observaciones: | GPS y GLONASS         |
| Frecuencias:   | L1, L2 y L2C          |



#### INFORMACIÓN ADICIONAL

Número **DOMES: 19371M001**

Rinex horarios de 1 segundo y diarios de 30 segundos:  
<http://www.aragon.es/aragea>  
<http://sitar.aragon.es/aragea>

e-mail de contacto: [aragea@aragon.es](mailto:aragea@aragon.es)

Última actualización: 28/11/2013

#### IMÁGENES



## PUNTOS DE APOYO O DIANAS

| Nombre | Coord. X   | Coord. Y    | Coord. Z |
|--------|------------|-------------|----------|
| 1      | 640808.081 | 4671556.859 | 358.644  |
| 2      | 640401.709 | 4672329.945 | 366.302  |
| 3      | 640356.924 | 4672274.841 | 368.341  |
| 4      | 640534.179 | 4671463.315 | 365.876  |
| 5      | 640366.526 | 4671232.290 | 365.552  |
| 6      | 641136.710 | 4672744.010 | 367.396  |
| 7      | 640837.057 | 4673142.384 | 370.326  |
| 8      | 640534.905 | 4672890.977 | 368.192  |
| 9      | 640411.814 | 4672784.115 | 367.351  |
| 10     | 640190.650 | 4672604.321 | 366.371  |
| 11     | 639904.081 | 4672428.580 | 368.923  |
| 12     | 640216.411 | 4672923.185 | 368.555  |
| 13     | 640086.164 | 4672918.305 | 369.599  |
| 14     | 640469.648 | 4673300.364 | 371.809  |
| 15     | 640389.652 | 4673289.605 | 371.788  |
| 16     | 640271.163 | 4673827.065 | 376.464  |
| 17     | 640452.629 | 4673851.548 | 375.574  |
| 18     | 640469.961 | 4673756.087 | 374.010  |
| 19     | 639908.922 | 4673739.785 | 387.590  |
| 20     | 639623.515 | 4673742.360 | 383.052  |
| 21     | 639413.795 | 4673718.996 | 383.811  |
| 22     | 638231.982 | 4672788.797 | 379.279  |
| 23     | 638274.542 | 4673184.366 | 380.876  |
| 24     | 638517.900 | 4672735.121 | 379.082  |
| 25     | 638818.332 | 4672801.988 | 379.962  |
| 26     | 638800.664 | 4672840.757 | 380.175  |
| 27     | 638789.666 | 4672864.915 | 380.329  |
| 28     | 639723.356 | 4673093.487 | 386.577  |
| 29     | 639065.570 | 4673305.162 | 374.348  |
| 30     | 638841.356 | 4673642.253 | 377.072  |
| 31     | 639217.261 | 4673120.514 | 372.188  |
| 32     | 639278.420 | 4673021.487 | 372.041  |
| 33     | 640939.370 | 4671259.438 | 357.487  |
| 34     | 640851.788 | 4671289.020 | 358.397  |
| 35     | 641706.516 | 4670118.503 | 348.675  |
| 36     | 641524.750 | 4669824.455 | 348.224  |
| 37     | 641857.876 | 4670338.499 | 350.570  |
| 38     | 641855.530 | 4670332.953 | 350.615  |
| 39     | 639620.682 | 4671146.815 | 358.669  |
| 40     | 640356.268 | 4674797.571 | 380.689  |
| 41     | 640359.833 | 4674610.928 | 379.316  |
| 42     | 640291.257 | 4674435.875 | 378.553  |
| 43     | 640339.145 | 4675232.859 | 384.235  |
| 44     | 640037.153 | 4675554.530 | 391.513  |
| 45     | 640318.821 | 4675448.045 | 387.788  |
| 46     | 641744.438 | 4670075.005 | 348.413  |
| 47     | 641531.000 | 4670514.878 | 352.142  |
| 48     | 641175.610 | 4670906.406 | 355.017  |
| 49     | 641034.990 | 4671090.100 | 356.385  |
| 50     | 640829.311 | 4671635.136 | 359.603  |
| 51     | 640569.492 | 4672221.097 | 363.691  |
| 52     | 640449.878 | 4672400.474 | 365.372  |
| 53     | 640283.983 | 4672781.863 | 367.979  |
| 54     | 640333.415 | 4673184.326 | 370.594  |
| 55     | 640314.315 | 4673284.749 | 372.032  |
| 56     | 640096.359 | 4673675.314 | 382.258  |

| Nombre | Coord. X   | Coord. Y    | Coord. Z |
|--------|------------|-------------|----------|
| 57     | 640294.362 | 4674096.335 | 378.231  |
| 58     | 640314.840 | 4674325.744 | 378.433  |
| 59     | 640130.047 | 4674760.553 | 382.409  |
| 60     | 639991.279 | 4675219.164 | 387.290  |
| 61     | 639976.916 | 4675493.787 | 390.913  |
| 62     | 639947.811 | 4675792.769 | 393.543  |
| 63     | 639913.752 | 4676099.104 | 395.824  |
| 64     | 638477.639 | 4673966.205 | 380.242  |
| 65     | 638589.698 | 4674304.928 | 381.782  |
| 66     | 638589.696 | 4674304.931 | 381.785  |
| 67     | 638937.737 | 4674291.357 | 386.479  |
| 68     | 639271.439 | 4674277.523 | 386.031  |
| 69     | 639868.461 | 4674235.767 | 390.709  |
| 70     | 640349.023 | 4674280.467 | 378.135  |
| 71     | 640349.017 | 4674280.474 | 378.123  |
| 72     | 640563.081 | 4674269.593 | 376.929  |
| 73     | 641067.686 | 4674649.929 | 377.498  |
| 74     | 641383.579 | 4674760.347 | 380.221  |
| 75     | 641655.260 | 4675078.736 | 384.461  |
| 76     | 641713.029 | 4675300.946 | 388.377  |
| 77     | 638080.503 | 4670445.763 | 353.279  |
| 78     | 638013.305 | 4670077.118 | 350.575  |
| 79     | 638087.279 | 4669800.412 | 348.702  |
| 80     | 638072.363 | 4669493.193 | 347.931  |
| 81     | 638051.323 | 4669325.104 | 347.944  |
| 82     | 637988.913 | 4668933.164 | 344.760  |
| 83     | 638077.573 | 4668633.982 | 343.986  |
| 84     | 638228.513 | 4668546.293 | 343.687  |
| 85     | 638479.194 | 4668460.720 | 342.937  |
| 86     | 638735.804 | 4667697.831 | 328.120  |
| 87     | 638850.487 | 4667989.502 | 330.826  |
| 88     | 638722.058 | 4668313.067 | 332.942  |
| 89     | 638617.635 | 4669454.629 | 348.527  |
| 90     | 638444.638 | 4669821.798 | 349.418  |
| 91     | 638257.986 | 4670180.273 | 351.907  |
| 92     | 638123.211 | 4670453.214 | 353.123  |
| 93     | 638080.506 | 4670445.776 | 353.301  |
| 94     | 638268.946 | 4670560.332 | 359.194  |
| 95     | 638560.951 | 4670404.225 | 355.385  |
| 96     | 638487.168 | 4669918.991 | 350.229  |
| 97     | 638617.637 | 4669454.633 | 348.548  |
| 98     | 638823.195 | 4669626.596 | 354.666  |
| 99     | 638896.322 | 4670057.856 | 365.755  |
| 100    | 639149.502 | 4669270.246 | 351.280  |
| 101    | 638825.735 | 4669046.265 | 346.222  |
| 102    | 637689.328 | 4669322.683 | 346.792  |
| 103    | 637488.292 | 4668652.613 | 335.223  |
| 104    | 637445.370 | 4668194.350 | 329.480  |
| 105    | 637968.191 | 4668864.893 | 344.635  |
| 106    | 638148.458 | 4668162.794 | 333.727  |
| 107    | 638234.123 | 4667855.700 | 327.692  |
| 108    | 638087.150 | 4670452.795 | 353.510  |
| 109    | 638561.675 | 4670404.753 | 354.508  |
| 110    | 638488.130 | 4669925.693 | 349.626  |
| 111    | 639131.055 | 4669260.243 | 349.938  |
| 112    | 637689.464 | 4669324.956 | 347.196  |
| 113    | 638150.009 | 4668165.507 | 331.464  |
| 114    | 638958.825 | 4668774.747 | 344.764  |

| Nombre | Coord. X   | Coord. Y    | Coord. Z |
|--------|------------|-------------|----------|
| 115    | 639200.229 | 4668864.304 | 347.524  |
| 116    | 638730.101 | 4669224.521 | 346.749  |
| 117    | 639717.314 | 4669180.334 | 341.403  |
| 118    | 639717.545 | 4668607.690 | 335.841  |
| 119    | 639808.664 | 4668188.787 | 333.050  |
| 120    | 639860.828 | 4668018.697 | 331.979  |
| 121    | 639933.311 | 4667533.760 | 327.445  |
| 122    | 639805.628 | 4667035.910 | 324.351  |
| 123    | 639802.323 | 4666914.311 | 325.565  |
| 124    | 639772.584 | 4666826.828 | 328.124  |
| 125    | 640410.656 | 4669296.429 | 350.002  |
| 126    | 640598.843 | 4669016.938 | 346.637  |
| 127    | 640910.609 | 4668369.659 | 343.725  |
| 128    | 641068.791 | 4668037.196 | 340.970  |
| 129    | 641208.097 | 4667744.845 | 345.168  |
| 130    | 641300.186 | 4667234.046 | 341.240  |
| 131    | 641335.240 | 4667091.106 | 336.697  |
| 132    | 641413.412 | 4666698.501 | 333.826  |
| 133    | 641489.928 | 4666094.053 | 330.729  |
| 134    | 641258.069 | 4666069.608 | 321.977  |
| 135    | 639437.651 | 4667434.924 | 330.821  |
| 136    | 638810.213 | 4668195.883 | 332.005  |
| 137    | 639028.476 | 4667764.779 | 340.109  |
| 138    | 638698.838 | 4668342.785 | 333.319  |
| 139    | 638845.491 | 4668412.444 | 341.991  |
| 140    | 638690.726 | 4668485.874 | 334.666  |
| 141    | 638687.771 | 4668619.374 | 335.820  |
| 142    | 639574.402 | 4668188.741 | 334.016  |
| 143    | 639798.967 | 4669288.121 | 344.324  |
| 144    | 640009.985 | 4669318.353 | 352.366  |
| 145    | 640380.565 | 4669318.755 | 351.085  |
| 146    | 640821.897 | 4669255.999 | 348.421  |
| 147    | 641104.446 | 4669221.310 | 346.916  |
| 148    | 641255.684 | 4669416.812 | 348.945  |
| 149    | 641480.124 | 4666470.790 | 332.996  |
| 150    | 641805.370 | 4666601.542 | 329.112  |
| 151    | 641741.457 | 4667551.384 | 334.170  |
| 152    | 641605.775 | 4667840.764 | 339.499  |
| 153    | 639861.745 | 4668013.394 | 331.860  |
| 154    | 638979.266 | 4667492.743 | 335.489  |
| 155    | 639045.029 | 4667640.335 | 340.041  |
| 156    | 638080.496 | 4670445.754 | 353.321  |
| 157    | 637932.944 | 4670743.341 | 355.392  |
| 158    | 636917.353 | 4671339.562 | 355.429  |
| 159    | 636982.695 | 4670963.672 | 353.802  |
| 160    | 636789.153 | 4670808.852 | 345.246  |
| 161    | 636655.882 | 4670703.735 | 344.928  |
| 162    | 636559.070 | 4671192.402 | 343.814  |
| 163    | 636798.929 | 4671542.301 | 348.642  |
| 164    | 636974.655 | 4671699.259 | 352.432  |
| 165    | 640723.441 | 4669332.355 | 347.995  |
| 166    | 640548.685 | 4668915.891 | 345.857  |
| 167    | 640430.501 | 4668596.857 | 344.394  |
| 168    | 640410.623 | 4668437.823 | 343.784  |
| 169    | 640300.625 | 4667864.200 | 337.723  |
| 170    | 640171.383 | 4667536.053 | 332.638  |
| 171    | 640171.383 | 4667536.059 | 332.642  |
| 172    | 641372.727 | 4667786.514 | 346.081  |

| Nombre | Coord. X   | Coord. Y    | Coord. Z |
|--------|------------|-------------|----------|
| 173    | 640893.285 | 4667664.358 | 338.671  |
| 174    | 640755.630 | 4667164.244 | 333.071  |
| 175    | 640733.985 | 4667003.491 | 330.085  |
| 176    | 640521.261 | 4666600.991 | 324.025  |
| 177    | 640643.956 | 4666335.513 | 321.227  |
| 178    | 640338.617 | 4669356.895 | 354.084  |
| 179    | 640000.203 | 4670197.628 | 356.053  |
| 180    | 639762.031 | 4670654.655 | 355.572  |
| 181    | 639649.939 | 4671112.473 | 360.139  |
| 182    | 639500.626 | 4671621.685 | 362.645  |
| 183    | 639463.514 | 4671828.881 | 372.207  |
| 184    | 639621.872 | 4672457.373 | 380.621  |
| 185    | 639690.369 | 4672909.304 | 385.046  |
| 186    | 639781.512 | 4673130.147 | 386.575  |
| 187    | 639885.394 | 4674112.299 | 390.284  |
| 188    | 641191.644 | 4672277.349 | 363.888  |
| 189    | 640745.435 | 4672313.544 | 365.402  |
| 190    | 640401.708 | 4672329.958 | 366.338  |
| 191    | 639981.847 | 4673603.162 | 388.127  |
| 192    | 638980.039 | 4671170.874 | 369.163  |
| 193    | 638867.159 | 4671084.592 | 370.850  |
| 194    | 638842.720 | 4670910.532 | 369.696  |
| 195    | 638675.536 | 4671495.937 | 373.415  |
| 196    | 638535.548 | 4671878.013 | 374.791  |
| 197    | 638281.654 | 4671857.342 | 373.405  |
| 198    | 638294.152 | 4671680.889 | 369.924  |
| 199    | 638267.110 | 4671523.583 | 367.706  |
| 200    | 637966.517 | 4671752.293 | 373.729  |
| 201    | 637435.633 | 4671662.913 | 359.066  |
| 202    | 637441.956 | 4671319.344 | 357.817  |
| 203    | 637479.257 | 4670948.052 | 356.083  |
| 204    | 639496.789 | 4670290.448 | 349.225  |
| 205    | 639562.277 | 4670401.314 | 354.948  |
| 206    | 639725.188 | 4670475.971 | 359.478  |
| 207    | 639881.292 | 4670087.836 | 352.647  |
| 208    | 640321.995 | 4670348.500 | 357.940  |
| 209    | 640561.786 | 4670102.306 | 358.447  |
| 210    | 640873.841 | 4670682.912 | 355.987  |
| 211    | 640904.277 | 4670694.341 | 355.853  |
| 212    | 641017.221 | 4670441.114 | 354.076  |
| 213    | 640766.810 | 4670865.982 | 358.214  |
| 214    | 641249.406 | 4670769.565 | 354.408  |
| 215    | 641622.255 | 4670880.739 | 354.342  |
| 216    | 641718.703 | 4670799.579 | 353.307  |
| 217    | 641653.786 | 4670900.598 | 354.608  |
| 218    | 641532.736 | 4671130.775 | 355.980  |
| 219    | 639719.182 | 4672217.666 | 371.877  |
| 220    | 640158.920 | 4672298.773 | 368.117  |
| 221    | 639307.960 | 4672124.686 | 366.165  |
| 222    | 639116.197 | 4672056.717 | 370.058  |
| 223    | 638725.537 | 4671971.100 | 372.184  |
| 224    | 638270.731 | 4671893.557 | 374.218  |
| 225    | 637845.612 | 4671792.838 | 360.672  |
| 226    | 637435.647 | 4671662.893 | 359.053  |
| 227    | 637091.871 | 4671684.185 | 358.033  |
| 228    | 636988.564 | 4671729.180 | 353.235  |
| 229    | 636579.913 | 4671828.600 | 349.281  |
| 230    | 636546.901 | 4672138.542 | 344.179  |

| Nombre | Coord. X   | Coord. Y    | Coord. Z |
|--------|------------|-------------|----------|
| 231    | 637066.659 | 4671618.521 | 357.757  |
| 232    | 636999.277 | 4671109.112 | 354.446  |
| 233    | 637021.775 | 4670731.765 | 352.974  |
| 234    | 637163.149 | 4670492.216 | 350.849  |
| 235    | 637347.433 | 4670172.747 | 346.527  |
| 236    | 637498.930 | 4669749.486 | 337.897  |
| 237    | 638278.784 | 4670640.138 | 362.661  |
| 238    | 638130.572 | 4670967.665 | 364.846  |
| 239    | 637995.059 | 4671522.428 | 373.883  |
| 240    | 637966.509 | 4671752.275 | 373.759  |
| 241    | 637952.293 | 4672131.089 | 376.170  |
| 242    | 638075.565 | 4672453.169 | 377.737  |
| 243    | 637945.055 | 4673978.867 | 373.264  |
| 244    | 638056.681 | 4673952.964 | 373.077  |
| 245    | 638123.804 | 4674119.751 | 375.086  |
| 246    | 638495.598 | 4673950.113 | 379.976  |
| 247    | 638529.663 | 4673905.074 | 380.872  |
| 248    | 638436.231 | 4674996.147 | 384.982  |
| 249    | 638594.499 | 4674832.292 | 385.630  |
| 250    | 638512.042 | 4674217.466 | 381.096  |
| 251    | 638610.945 | 4674359.672 | 382.755  |
| 252    | 638658.676 | 4674482.733 | 386.434  |
| 253    | 638939.610 | 4674261.371 | 386.209  |
| 254    | 638973.039 | 4674079.961 | 385.843  |
| 255    | 639350.652 | 4674239.647 | 387.431  |
| 256    | 639353.534 | 4674078.740 | 384.664  |
| 257    | 639314.729 | 4673980.261 | 383.703  |
| 258    | 638773.565 | 4674834.671 | 390.224  |
| 259    | 639019.194 | 4676048.720 | 397.082  |
| 260    | 639224.593 | 4675941.628 | 396.811  |
| 261    | 638943.967 | 4676280.852 | 398.962  |
| 262    | 638157.651 | 4675814.167 | 388.889  |
| 263    | 638485.744 | 4676135.297 | 395.273  |
| 264    | 638273.040 | 4675884.531 | 390.782  |
| 265    | 638117.245 | 4676130.555 | 389.455  |
| 266    | 638392.051 | 4675694.489 | 390.889  |
| 267    | 639760.276 | 4674898.752 | 394.717  |
| 268    | 639303.798 | 4674613.837 | 389.383  |
| 269    | 638853.072 | 4674701.702 | 389.624  |
| 270    | 638925.395 | 4675089.914 | 391.867  |
| 271    | 639017.078 | 4675498.498 | 393.938  |
| 272    | 639006.490 | 4675758.712 | 395.339  |
| 273    | 638983.207 | 4676387.039 | 399.680  |
| 274    | 637351.458 | 4675537.413 | 382.727  |
| 275    | 637891.468 | 4675550.400 | 385.062  |
| 276    | 637767.148 | 4675433.411 | 384.156  |
| 277    | 637742.804 | 4675222.276 | 382.524  |
| 278    | 637722.971 | 4674887.570 | 379.363  |
| 279    | 637673.410 | 4674564.789 | 377.300  |
| 280    | 637649.558 | 4674280.023 | 374.943  |
| 281    | 637282.696 | 4673939.635 | 372.451  |
| 282    | 637314.161 | 4674135.310 | 373.940  |
| 283    | 637332.403 | 4674279.778 | 375.354  |
| 284    | 637391.695 | 4674745.516 | 378.577  |
| 285    | 637426.509 | 4675036.938 | 380.244  |
| 286    | 636717.023 | 4673689.072 | 351.197  |
| 287    | 637076.019 | 4675092.672 | 360.590  |
| 288    | 637737.511 | 4675557.440 | 384.743  |

| Nombre | Coord. X   | Coord. Y    | Coord. Z |
|--------|------------|-------------|----------|
| 289    | 638139.293 | 4674163.684 | 375.785  |
| 290    | 638512.039 | 4674217.482 | 381.125  |
| 291    | 636653.263 | 4673328.840 | 350.769  |
| 292    | 636663.346 | 4673155.991 | 349.577  |
| 293    | 636670.753 | 4672943.078 | 347.887  |
| 294    | 637388.283 | 4674497.982 | 376.970  |
| 295    | 637627.912 | 4674358.308 | 375.929  |
| 296    | 637835.915 | 4674591.644 | 377.567  |
| 297    | 637673.397 | 4674564.784 | 377.282  |
| 298    | 637722.964 | 4674887.572 | 379.385  |
| 299    | 637913.100 | 4674896.368 | 380.471  |
| 300    | 637780.946 | 4675224.283 | 382.213  |
| 301    | 637967.069 | 4675260.199 | 382.873  |

## 5 EDICION CARTOGRÁFICA

En este apartado se adjunta la cartografía de los trazados de tuberías en forma de listados de replanteo.

### 5.1 LISTADOS DE EJES

#### R1

| Tipo | P.K.     | Coord. X   | Coord. Y    | Azimut (g) | Radio | Parametro | Longitud |
|------|----------|------------|-------------|------------|-------|-----------|----------|
| Rec  | 0.000    | 642375.996 | 4676460.543 | 216.879010 | 0.000 | 0.000     | 162.434  |
| Rec  | 162.434  | 642333.432 | 4676303.785 | 263.820125 | 0.000 | 0.000     | 759.001  |
| Rec  | 921.435  | 641693.738 | 4675895.282 | 199.773639 | 0.000 | 0.000     | 598.508  |
| Rec  | 1519.943 | 641695.866 | 4675296.778 | 216.177177 | 0.000 | 0.000     | 335.102  |
| Rec  | 1855.045 | 641611.626 | 4674972.438 | 242.132178 | 0.000 | 0.000     | 205.533  |
| Rec  | 2060.578 | 641485.317 | 4674810.296 | 273.012780 | 0.000 | 0.000     | 126.756  |
| Rec  | 2187.335 | 641369.780 | 4674758.157 | 277.072327 | 0.000 | 0.000     | 218.173  |
| Rec  | 2405.508 | 641165.604 | 4674681.271 | 295.180817 | 0.000 | 0.000     | 58.729   |
|      | 2464.237 | 641107.043 | 4674676.829 | 295.180817 |       |           |          |

#### R1B

| Tipo | P.K.     | Coord. X   | Coord. Y    | Azimut (g) | Radio | Parametro | Longitud |
|------|----------|------------|-------------|------------|-------|-----------|----------|
| Rec  | 0.000    | 641107.043 | 4674676.829 | 254.686831 | 0.000 | 0.000     | 671.497  |
| Rec  | 671.497  | 640598.585 | 4674238.220 | 299.329465 | 0.000 | 0.000     | 165.709  |
| Rec  | 837.206  | 640432.884 | 4674236.475 | 299.329465 | 0.000 | 0.000     | 122.713  |
| Rec  | 959.919  | 640310.178 | 4674235.183 | 299.329465 | 0.000 | 0.000     | 447.192  |
| Rec  | 1407.111 | 639863.011 | 4674230.473 | 189.044412 | 0.000 | 0.000     | 513.506  |
| Rec  | 1920.617 | 639950.945 | 4673724.552 | 189.044412 | 0.000 | 0.000     | 137.646  |
| Rec  | 2058.263 | 639974.516 | 4673588.939 | 224.893763 | 0.000 | 0.000     | 153.388  |
| Rec  | 2211.650 | 639916.053 | 4673447.130 | 226.772222 | 0.000 | 0.000     | 377.881  |
| Rec  | 2589.531 | 639761.783 | 4673102.174 | 225.435239 | 0.000 | 0.000     | 202.055  |
| Rec  | 2791.586 | 639683.186 | 4672916.032 | 205.244050 | 0.000 | 0.000     | 219.687  |
| Rec  | 3011.273 | 639665.110 | 4672697.091 | 215.192728 | 0.000 | 0.000     | 477.955  |
| Rec  | 3489.228 | 639552.127 | 4672232.681 | 215.192728 | 0.000 | 0.000     | 14.681   |

|     |           |            |             |            |       |       |         |
|-----|-----------|------------|-------------|------------|-------|-------|---------|
| Rec | 3503.909  | 639548.656 | 4672218.416 | 215.192728 | 0.000 | 0.000 | 453.339 |
| Rec | 3957.248  | 639441.492 | 4671777.925 | 181.562253 | 0.000 | 0.000 | 658.999 |
| Rec | 4616.247  | 639629.694 | 4671146.372 | 181.562253 | 0.000 | 0.000 | 655.528 |
| Rec | 5271.775  | 639816.905 | 4670518.145 | 169.117367 | 0.000 | 0.000 | 101.308 |
| Rec | 5373.083  | 639864.145 | 4670428.525 | 163.741848 | 0.000 | 0.000 | 148.060 |
| Rec | 5521.143  | 639943.986 | 4670303.837 | 168.372042 | 0.000 | 0.000 | 62.512  |
| Rec | 5583.655  | 639973.780 | 4670248.882 | 160.784538 | 0.000 | 0.000 | 60.896  |
| Rec | 5644.551  | 640008.964 | 4670199.179 | 198.482898 | 0.000 | 0.000 | 276.122 |
| Rec | 5920.673  | 640015.544 | 4669923.135 | 166.721100 | 0.000 | 0.000 | 519.709 |
| Rec | 6440.382  | 640275.013 | 4669472.832 | 157.740069 | 0.000 | 0.000 | 166.597 |
| Rec | 6606.979  | 640377.658 | 4669341.612 | 144.734741 | 0.000 | 0.000 | 221.877 |
| Rec | 6828.856  | 640546.974 | 4669198.219 | 173.748075 | 0.000 | 0.000 | 166.980 |
| Rec | 6995.837  | 640613.896 | 4669045.235 | 172.344110 | 0.000 | 0.000 | 744.350 |
| Rec | 7740.187  | 640927.180 | 4668370.024 | 173.576624 | 0.000 | 0.000 | 691.578 |
| Rec | 8431.765  | 641206.054 | 4667737.165 | 186.863039 | 0.000 | 0.000 | 328.602 |
| Rec | 8760.368  | 641273.382 | 4667415.535 | 187.386500 | 0.000 | 0.000 | 297.072 |
| Rec | 9057.440  | 641331.857 | 4667124.274 | 186.885670 | 0.000 | 0.000 | 350.282 |
| Rec | 9407.722  | 641403.506 | 4666781.398 | 186.885670 | 0.000 | 0.000 | 329.688 |
| Rec | 9737.410  | 641470.942 | 4666458.680 | 189.358554 | 0.000 | 0.000 | 87.111  |
| Rec | 9824.521  | 641485.436 | 4666372.784 | 197.163234 | 0.000 | 0.000 | 284.278 |
| Rec | 10108.799 | 641498.099 | 4666088.788 | 295.355887 | 0.000 | 0.000 | 271.994 |
|     | 10380.793 | 641226.828 | 4666068.964 | 295.355887 |       |       |         |

### R1B-1

| Tipo | P.K.     | Coord. X   | Coord. Y    | Azimut (g) | Radio | Parametro | Longitud |
|------|----------|------------|-------------|------------|-------|-----------|----------|
| Rec  | 0.000    | 640310.178 | 4674235.183 | 24.491356  | 0.000 | 0.000     | 70.577   |
| Rec  | 70.577   | 640336.665 | 4674300.601 | 373.910307 | 0.000 | 0.000     | 123.294  |
| Rec  | 193.871  | 640287.540 | 4674413.685 | 371.544211 | 0.000 | 0.000     | 37.206   |
| Rec  | 231.077  | 640271.458 | 4674447.236 | 375.934031 | 0.000 | 0.000     | 504.241  |
| Rec  | 735.318  | 640085.348 | 4674915.875 | 382.800727 | 0.000 | 0.000     | 26.443   |
| Rec  | 761.761  | 640078.291 | 4674941.359 | 369.417451 | 0.000 | 0.000     | 101.050  |
| Rec  | 862.812  | 640031.593 | 4675030.972 | 387.367624 | 0.000 | 0.000     | 102.341  |
| Rec  | 965.153  | 640011.419 | 4675131.305 | 399.544067 | 0.000 | 0.000     | 208.286  |
| Rec  | 1173.439 | 640009.927 | 4675339.586 | 392.431191 | 0.000 | 0.000     | 102.729  |
| Rec  | 1276.168 | 639997.742 | 4675441.589 | 392.571693 | 0.000 | 0.000     | 96.775   |
| Rec  | 1372.943 | 639986.476 | 4675537.706 | 394.072309 | 0.000 | 0.000     | 134.251  |
| Rec  | 1507.193 | 639973.994 | 4675671.375 | 394.072309 | 0.000 | 0.000     | 37.597   |
| Rec  | 1544.791 | 639970.498 | 4675708.810 | 396.311187 | 0.000 | 0.000     | 55.061   |
| Rec  | 1599.852 | 639967.309 | 4675763.779 | 380.007709 | 0.000 | 0.000     | 54.919   |
| Rec  | 1654.771 | 639950.345 | 4675816.012 | 393.505594 | 0.000 | 0.000     | 124.453  |
| Rec  | 1779.224 | 639937.671 | 4675939.818 | 392.574842 | 0.000 | 0.000     | 61.292   |
| Rec  | 1840.516 | 639930.538 | 4676000.693 | 286.831222 | 0.000 | 0.000     | 379.666  |
| Rec  | 2220.181 | 639558.966 | 4675922.717 | 291.609372 | 0.000 | 0.000     | 192.509  |
| Rec  | 2412.690 | 639368.128 | 4675897.418 | 313.269356 | 0.000 | 0.000     | 103.097  |
| Rec  | 2515.787 | 639267.262 | 4675918.751 | 330.336210 | 0.000 | 0.000     | 300.996  |
| Rec  | 2816.783 | 638999.798 | 4676056.815 | 7.493290   | 0.000 | 0.000     | 20.699   |
| Rec  | 2837.482 | 639002.229 | 4676077.371 | 397.312006 | 0.000 | 0.000     | 208.329  |
| Rec  | 3045.810 | 638993.435 | 4676285.514 | 291.332155 | 0.000 | 0.000     | 405.080  |
| Rec  | 3450.891 | 638592.104 | 4676230.531 | 247.759490 | 0.000 | 0.000     | 137.805  |
| Rec  | 3588.696 | 638498.150 | 4676129.719 | 250.238637 | 0.000 | 0.000     | 330.351  |
| Rec  | 3919.047 | 638263.682 | 4675897.003 | 164.199612 | 0.000 | 0.000     | 256.136  |
| Rec  | 4175.183 | 638400.248 | 4675680.311 | 63.202035  | 0.000 | 0.000     | 44.174   |
|      | 4219.357 | 638437.246 | 4675704.446 | 63.202035  |       |           |          |

### R1B-1-1

| Tipo | P.K.     | Coord. X   | Coord. Y    | Azimut (g) | Radio | Parametro | Longitud |
|------|----------|------------|-------------|------------|-------|-----------|----------|
| Rec  | 0.000    | 638999.798 | 4676056.815 | 207.493290 | 0.000 | 0.000     | 26.402   |
| Rec  | 26.402   | 638996.698 | 4676030.596 | 197.107649 | 0.000 | 0.000     | 679.852  |
| Rec  | 706.254  | 639027.575 | 4675351.446 | 194.279551 | 0.000 | 0.000     | 30.647   |
| Rec  | 736.900  | 639030.325 | 4675320.923 | 225.711001 | 0.000 | 0.000     | 339.495  |
| Rec  | 1076.395 | 638896.911 | 4675008.741 | 225.755774 | 0.000 | 0.000     | 135.407  |
| Rec  | 1211.801 | 638843.612 | 4674884.266 | 226.001421 | 0.000 | 0.000     | 47.615   |
| Rec  | 1259.417 | 638824.700 | 4674840.567 | 291.317461 | 0.000 | 0.000     | 22.827   |
| Rec  | 1282.244 | 638802.085 | 4674837.463 | 293.940003 | 0.000 | 0.000     | 159.586  |
| Rec  | 1441.830 | 638643.222 | 4674822.295 | 293.898895 | 0.000 | 0.000     | 7.981    |
| Rec  | 1449.811 | 638635.277 | 4674821.531 | 307.162370 | 0.000 | 0.000     | 42.652   |
| Rec  | 1492.464 | 638592.894 | 4674826.320 | 399.278128 | 0.000 | 0.000     | 28.484   |
|      | 1520.948 | 638592.571 | 4674854.802 | 399.278128 |       |           |          |

### R1B-1-2

| Tipo | P.K.    | Coord. X   | Coord. Y    | Azimut (g) | Radio | Parametro | Longitud |
|------|---------|------------|-------------|------------|-------|-----------|----------|
| Rec  | 0.000   | 640287.540 | 4674413.685 | 28.102778  | 0.000 | 0.000     | 153.361  |
| Rec  | 153.361 | 640353.062 | 4674552.345 | 13.090749  | 0.000 | 0.000     | 108.367  |
| Rec  | 261.729 | 640375.189 | 4674658.430 | 3.339946   | 0.000 | 0.000     | 68.334   |
| Rec  | 330.063 | 640378.772 | 4674726.670 | 386.039261 | 0.000 | 0.000     | 106.635  |
| Rec  | 436.698 | 640355.575 | 4674830.751 | 396.191027 | 0.000 | 0.000     | 325.402  |
|      | 762.099 | 640336.117 | 4675155.570 | 396.191027 |       |           |          |

### R1B-1-4

| Tipo | P.K.    | Coord. X   | Coord. Y    | Azimut(g) | Radio | Parametro | Longitud |
|------|---------|------------|-------------|-----------|-------|-----------|----------|
| Rec  | 0.000   | 639986.476 | 4675537.706 | 86.318992 | 0.000 | 0.000     | 157.622  |
| Rec  | 157.622 | 640140.473 | 4675571.319 | 99.265531 | 0.000 | 0.000     | 45.289   |
| Rec  | 202.912 | 640185.759 | 4675571.842 | 90.116403 | 0.000 | 0.000     | 32.146   |
| Rec  | 235.058 | 640217.518 | 4675576.813 | 76.238679 | 0.000 | 0.000     | 30.410   |
| Rec  | 265.468 | 640245.834 | 4675587.901 | 59.161406 | 0.000 | 0.000     | 41.042   |
|      | 306.510 | 640278.718 | 4675612.460 | 59.161406 |       |           |          |

### R1B-1-6

| Tipo | P.K.    | Coord. X   | Coord. Y    | Azimut (g) | Radio | Parametro | Longitud |
|------|---------|------------|-------------|------------|-------|-----------|----------|
| Rec  | 0.000   | 639930.538 | 4676000.693 | 392.574842 | 0.000 | 0.000     | 91.581   |
| Rec  | 91.581  | 639919.881 | 4676091.652 | 358.570925 | 0.000 | 0.000     | 108.607  |
|      | 200.188 | 639854.087 | 4676178.062 | 358.570925 |       |           |          |

### R1B-2

| Tipo | P.K.     | Coord. X   | Coord. Y    | Azimut (g) | Radio | Parametro | Longitud |
|------|----------|------------|-------------|------------|-------|-----------|----------|
| Rec  | 0.000    | 640310.178 | 4674235.183 | 224.491402 | 0.000 | 0.000     | 27.192   |
| Rec  | 27.192   | 640299.973 | 4674209.978 | 204.552754 | 0.000 | 0.000     | 81.422   |
| Rec  | 108.614  | 640294.155 | 4674128.765 | 213.487916 | 0.000 | 0.000     | 244.810  |
| Rec  | 353.423  | 640242.675 | 4673889.429 | 215.322048 | 0.000 | 0.000     | 75.860   |
| Rec  | 429.283  | 640224.593 | 4673815.755 | 254.365612 | 0.000 | 0.000     | 161.404  |
| Rec  | 590.687  | 640102.911 | 4673709.714 | 195.336326 | 0.000 | 0.000     | 148.982  |
| Rec  | 739.669  | 640113.815 | 4673561.132 | 200.241880 | 0.000 | 0.000     | 178.520  |
| Rec  | 918.189  | 640113.137 | 4673382.613 | 133.855829 | 0.000 | 0.000     | 126.042  |
| Rec  | 1044.231 | 640221.772 | 4673318.699 | 118.169713 | 0.000 | 0.000     | 95.970   |

| Tipo | P.K.     | Coord. X   | Coord. Y    | Azimut (g) | Radio | Parametro | Longitud |
|------|----------|------------|-------------|------------|-------|-----------|----------|
| Rec  | 1140.201 | 640313.860 | 4673291.678 | 100.427991 | 0.000 | 0.000     | 45.886   |
| Rec  | 1186.087 | 640359.745 | 4673291.370 | 220.647777 | 0.000 | 0.000     | 81.029   |
| Rec  | 1267.116 | 640333.923 | 4673214.566 | 222.194910 | 0.000 | 0.000     | 141.665  |
| Rec  | 1408.781 | 640285.528 | 4673081.424 | 222.194910 | 0.000 | 0.000     | 156.759  |
| Rec  | 1565.539 | 640231.976 | 4672934.096 | 195.395545 | 0.000 | 0.000     | 34.118   |
| Rec  | 1599.657 | 640234.442 | 4672900.067 | 178.608949 | 0.000 | 0.000     | 206.532  |
| Rec  | 1806.189 | 640302.540 | 4672705.085 | 55.878791  | 0.000 | 0.000     | 395.081  |
| Rec  | 2201.270 | 640606.475 | 4672957.498 | 56.606413  | 0.000 | 0.000     | 156.124  |
| Rec  | 2357.394 | 640727.714 | 4673055.865 | 52.167875  | 0.000 | 0.000     | 154.739  |
| Rec  | 2512.133 | 640840.792 | 4673161.493 | 137.443081 | 0.000 | 0.000     | 150.219  |
| Rec  | 2662.353 | 640965.770 | 4673078.147 | 171.418473 | 0.000 | 0.000     | 463.396  |
|      | 3125.749 | 641166.896 | 4672660.674 | 171.418473 |       |           |          |

### R1B-2-1

| Tipo | P.K.    | Coord. X   | Coord. Y    | Azimut (g) | Radio | Parametro | Longitud |
|------|---------|------------|-------------|------------|-------|-----------|----------|
| Rec  | 0.000   | 640302.540 | 4672705.085 | 255.541886 | 0.000 | 0.000     | 108.884  |
| Rec  | 108.884 | 640219.146 | 4672635.078 | 252.439399 | 0.000 | 0.000     | 158.174  |
| Rec  | 267.057 | 640103.097 | 4672527.599 | 263.752941 | 0.000 | 0.000     | 213.016  |
| Rec  | 480.073 | 639923.686 | 4672412.762 | 344.025673 | 0.000 | 0.000     | 17.535   |
| Rec  | 497.608 | 639910.180 | 4672423.945 | 358.680923 | 0.000 | 0.000     | 85.384   |
| Rec  | 582.993 | 639858.572 | 4672491.968 | 349.403995 | 0.000 | 0.000     | 46.014   |
| Rec  | 629.007 | 639825.732 | 4672524.199 | 382.964908 | 0.000 | 0.000     | 32.122   |
|      | 661.129 | 639817.238 | 4672555.177 | 382.964908 |       |           |          |

### R1B-2-2

| Tipo | P.K.    | Coord. X   | Coord. Y    | Azimut (g) | Radio | Parametro | Longitud |
|------|---------|------------|-------------|------------|-------|-----------|----------|
| Rec  | 0.000   | 640224.800 | 4673815.797 | 80.640994  | 0.000 | 0.000     | 24.882   |
| Rec  | 24.882  | 640248.540 | 4673823.247 | 102.906363 | 0.000 | 0.000     | 63.536   |
| Rec  | 88.418  | 640312.010 | 4673820.347 | 102.906363 | 0.000 | 0.000     | 38.961   |
| Rec  | 127.379 | 640350.931 | 4673818.569 | 82.203349  | 0.000 | 0.000     | 109.182  |
|      | 236.561 | 640455.874 | 4673848.695 | 82.203349  |       |           |          |

### R1B-2-4

| Tipo | P.K.    | Coord. X   | Coord. Y    | Azimut     | Radio | Parametro | Longitud |
|------|---------|------------|-------------|------------|-------|-----------|----------|
| Rec  | 0.000   | 640302.540 | 4672705.085 | 178.608949 | 0.000 | 0.000     | 28.411   |
| Rec  | 28.411  | 640311.908 | 4672678.262 | 177.159950 | 0.000 | 0.000     | 113.140  |
| Rec  | 141.551 | 640351.634 | 4672572.326 | 168.715343 | 0.000 | 0.000     | 213.275  |
| Rec  | 354.827 | 640452.274 | 4672384.289 | 73.443724  | 0.000 | 0.000     | 272.736  |
|      | 627.562 | 640701.622 | 4672494.788 | 73.443724  |       |           |          |

### R1B-3

| Tipo | P.K.     | Coord. X   | Coord. Y    | Azimut (g) | Radio | Parametro | Longitud |
|------|----------|------------|-------------|------------|-------|-----------|----------|
| Rec  | 0.000    | 639863.011 | 4674230.473 | 305.979276 | 0.000 | 0.000     | 505.179  |
| Rec  | 505.179  | 639360.058 | 4674277.850 | 305.979276 | 0.000 | 0.000     | 7.272    |
| Rec  | 512.452  | 639352.818 | 4674278.532 | 303.010479 | 0.000 | 0.000     | 294.590  |
| Rec  | 807.042  | 639058.557 | 4674292.458 | 303.077109 | 0.000 | 0.000     | 131.983  |
| Rec  | 939.024  | 638926.729 | 4674298.835 | 302.144966 | 0.000 | 0.000     | 325.756  |
| Rec  | 1264.780 | 638601.158 | 4674309.808 | 301.591218 | 0.000 | 0.000     | 17.406   |
| Rec  | 1282.186 | 638583.757 | 4674310.244 | 224.612260 | 0.000 | 0.000     | 87.761   |
| Rec  | 1369.948 | 638550.667 | 4674228.960 | 276.695877 | 0.000 | 0.000     | 239.882  |

|     |          |            |             |            |       |       |         |
|-----|----------|------------|-------------|------------|-------|-------|---------|
| Rec | 1609.830 | 638326.678 | 4674143.096 | 284.898905 | 0.000 | 0.000 | 103.940 |
| Rec | 1713.770 | 638225.648 | 4674118.671 | 329.664887 | 0.000 | 0.000 | 106.632 |
| Rec | 1820.402 | 638130.385 | 4674166.581 | 330.227589 | 0.000 | 0.000 | 122.694 |
| Rec | 1943.096 | 638021.263 | 4674222.673 | 306.200777 | 0.000 | 0.000 | 186.419 |
| Rec | 2129.516 | 637835.728 | 4674240.802 | 296.791597 | 0.000 | 0.000 | 192.867 |
| Rec | 2322.383 | 637643.106 | 4674231.086 | 6.420132   | 0.000 | 0.000 | 52.505  |
| Rec | 2374.888 | 637648.392 | 4674283.324 | 8.472670   | 0.000 | 0.000 | 61.123  |
| Rec | 2436.011 | 637656.502 | 4674343.907 | 311.983207 | 0.000 | 0.000 | 34.486  |
| Rec | 2470.497 | 637622.625 | 4674350.360 | 336.224389 | 0.000 | 0.000 | 314.901 |
| Rec | 2785.398 | 637357.342 | 4674520.028 | 7.969836   | 0.000 | 0.000 | 140.852 |
| Rec | 2926.250 | 637374.929 | 4674659.778 | 7.969836   | 0.000 | 0.000 | 142.908 |
| Rec | 3069.159 | 637392.773 | 4674801.568 | 8.092681   | 0.000 | 0.000 | 122.072 |
| Rec | 3191.230 | 637408.249 | 4674922.655 | 8.092681   | 0.000 | 0.000 | 40.973  |
| Rec | 3232.203 | 637413.444 | 4674963.297 | 8.092681   | 0.000 | 0.000 | 111.895 |
| Rec | 3344.098 | 637427.629 | 4675074.289 | 324.766303 | 0.000 | 0.000 | 127.121 |
| Rec | 3471.219 | 637310.007 | 4675122.505 | 336.276110 | 0.000 | 0.000 | 156.121 |
| Rec | 3627.340 | 637178.554 | 4675206.730 | 46.913633  | 0.000 | 0.000 | 77.856  |
| Rec | 3705.196 | 637230.874 | 4675264.386 | 13.596095  | 0.000 | 0.000 | 58.488  |
| Rec | 3763.685 | 637243.270 | 4675321.545 | 58.313615  | 0.000 | 0.000 | 76.168  |
| Rec | 3839.853 | 637303.684 | 4675367.932 | 48.181581  | 0.000 | 0.000 | 4.098   |
| Rec | 3843.951 | 637306.498 | 4675370.911 | 14.057698  | 0.000 | 0.000 | 75.195  |
| Rec | 3919.146 | 637322.968 | 4675444.281 | 11.977873  | 0.000 | 0.000 | 32.498  |
| Rec | 3951.644 | 637329.046 | 4675476.205 | 11.977873  | 0.000 | 0.000 | 72.814  |
| Rec | 4024.458 | 637342.665 | 4675547.734 | 56.939037  | 0.000 | 0.000 | 210.348 |
| Rec | 4234.806 | 637506.701 | 4675679.410 | 130.923522 | 0.000 | 0.000 | 268.735 |
|     | 4503.541 | 637744.351 | 4675553.946 | 130.923522 |       |       |         |

### R1B-3-1

| Tipo | P.K.    | Coord. X   | Coord. Y    | Azimut (g) | Radio | Parametro | Longitud |
|------|---------|------------|-------------|------------|-------|-----------|----------|
| Rec  | 0.000   | 639352.818 | 4674278.532 | 392.086373 | 0.000 | 0.000     | 305.929  |
| Rec  | 305.929 | 639314.887 | 4674582.101 | 392.086373 | 0.000 | 0.000     | 60.112   |
| Rec  | 366.042 | 639307.434 | 4674641.750 | 66.112342  | 0.000 | 0.000     | 274.781  |
|      | 640.823 | 639544.196 | 4674781.207 | 66.112342  |       |           |          |

### R1B-3-2

| Tipo | P.K.    | Coord. X   | Coord. Y    | Azimut (g) | Radio | Parametro | Longitud |
|------|---------|------------|-------------|------------|-------|-----------|----------|
| Rec  | 0.000   | 638549.570 | 4674228.539 | 225.228359 | 0.000 | 0.000     | 128.498  |
| Rec  | 128.498 | 638499.971 | 4674110.000 | 225.035448 | 0.000 | 0.000     | 63.644   |
| Rec  | 192.141 | 638475.583 | 4674051.215 | 201.666273 | 0.000 | 0.000     | 111.983  |
| Rec  | 304.124 | 638472.652 | 4673939.270 | 287.588083 | 0.000 | 0.000     | 206.832  |
|      | 510.956 | 638269.739 | 4673899.200 | 287.588083 |       |           |          |

### R1B-3-3

| Tipo | P.K.    | Coord. X   | Coord. Y    | Azimut (g) | Radio | Parametro | Longitud |
|------|---------|------------|-------------|------------|-------|-----------|----------|
| Rec  | 0.000   | 638583.757 | 4674310.244 | 25.228359  | 0.000 | 0.000     | 238.050  |
| Rec  | 238.050 | 638675.643 | 4674529.845 | 317.404167 | 0.000 | 0.000     | 54.648   |
| Rec  | 292.698 | 638623.024 | 4674544.600 | 325.277640 | 0.000 | 0.000     | 21.490   |
| Rec  | 314.188 | 638603.206 | 4674552.910 | 372.535270 | 0.000 | 0.000     | 16.968   |
| Rec  | 331.156 | 638596.111 | 4674568.323 | 396.887677 | 0.000 | 0.000     | 203.863  |
| Rec  | 535.019 | 638586.149 | 4674771.942 | 297.627418 | 0.000 | 0.000     | 81.861   |
| Rec  | 616.880 | 638504.344 | 4674768.892 | 262.883767 | 0.000 | 0.000     | 60.426   |
| Rec  | 677.306 | 638453.901 | 4674735.625 | 394.703216 | 0.000 | 0.000     | 364.118  |

| Tipo | P.K.     | Coord. X   | Coord. Y    | Azimut (g) | Radio | Parametro | Longitud |
|------|----------|------------|-------------|------------|-------|-----------|----------|
|      | 1041.424 | 638423.640 | 4675098.483 | 394.703216 |       |           |          |

#### R1B-3-4

| Tipo | P.K.     | Coord. X   | Coord. Y    | Azimut (g) | Radio | Parametro | Longitud |
|------|----------|------------|-------------|------------|-------|-----------|----------|
| Rec  | 0.000    | 637357.342 | 4674520.028 | 201.932337 | 0.000 | 0.000     | 17.136   |
| Rec  | 17.136   | 637356.822 | 4674502.900 | 208.475720 | 0.000 | 0.000     | 168.599  |
| Rec  | 185.735  | 637334.442 | 4674335.793 | 207.962613 | 0.000 | 0.000     | 196.602  |
| Rec  | 382.337  | 637309.915 | 4674140.727 | 208.138391 | 0.000 | 0.000     | 213.075  |
| Rec  | 595.412  | 637282.750 | 4673929.390 | 293.658628 | 0.000 | 0.000     | 122.993  |
| Rec  | 718.405  | 637160.367 | 4673917.159 | 267.461991 | 0.000 | 0.000     | 82.017   |
| Rec  | 800.422  | 637088.832 | 4673877.041 | 277.238967 | 0.000 | 0.000     | 374.603  |
| Rec  | 1175.025 | 636737.917 | 4673745.945 | 212.371110 | 0.000 | 0.000     | 380.589  |
| Rec  | 1555.615 | 636664.424 | 4673372.519 | 197.049942 | 0.000 | 0.000     | 420.522  |
| Rec  | 1976.137 | 636683.903 | 4672952.448 | 225.511079 | 0.000 | 0.000     | 119.558  |
|      | 2095.695 | 636637.265 | 4672842.362 | 225.511079 |       |           |          |

#### R1B-3-5

| Tipo | P.K.     | Coord. X   | Coord. Y    | Azimut (g) | Radio | Parametro | Longitud |
|------|----------|------------|-------------|------------|-------|-----------|----------|
| Rec  | 0.000    | 637656.502 | 4674343.907 | 7.049670   | 0.000 | 0.000     | 223.922  |
| Rec  | 223.922  | 637681.248 | 4674566.457 | 6.761652   | 0.000 | 0.000     | 318.528  |
| Rec  | 542.449  | 637715.016 | 4674883.190 | 399.404355 | 0.000 | 0.000     | 2.715    |
| Rec  | 545.164  | 637714.990 | 4674885.905 | 6.210414   | 0.000 | 0.000     | 179.555  |
| Rec  | 724.719  | 637732.479 | 4675064.606 | 6.689618   | 0.000 | 0.000     | 164.998  |
| Rec  | 889.718  | 637749.785 | 4675228.694 | 88.750259  | 0.000 | 0.000     | 227.405  |
| Rec  | 1117.123 | 637973.648 | 4675268.670 | 188.041660 | 0.000 | 0.000     | 11.389   |
|      | 1128.512 | 637975.775 | 4675257.481 | 188.041660 |       |           |          |

#### R1B-3-5-2

| Tipo | P.K.    | Coord. X   | Coord. Y    | Azimut (g) | Radio | Parametro | Longitud |
|------|---------|------------|-------------|------------|-------|-----------|----------|
| Rec  | 0.000   | 637681.254 | 4674566.458 | 90.316872  | 0.000 | 0.000     | 186.154  |
|      | 186.154 | 637865.259 | 4674594.663 | 90.316872  |       |           |          |

#### R1B-3-5-4

| Tipo | P.K.    | Coord. X   | Coord. Y    | Azimut (g) | Radio | Parametro | Longitud |
|------|---------|------------|-------------|------------|-------|-----------|----------|
| Rec  | 0.000   | 637714.990 | 4674885.905 | 97.147615  | 0.000 | 0.000     | 231.112  |
|      | 231.112 | 637945.871 | 4674896.256 | 97.147615  |       |           |          |

#### R1B-3-6

| Tipo | P.K.    | Coord. X   | Coord. Y    | Azimut (g) | Radio | Parametro | Longitud |
|------|---------|------------|-------------|------------|-------|-----------|----------|
| Rec  | 0.000   | 637178.554 | 4675206.730 | 247.342405 | 0.000 | 0.000     | 143.928  |
| Rec  | 143.928 | 637081.117 | 4675100.798 | 247.191887 | 0.000 | 0.000     | 85.964   |
| Rec  | 229.892 | 637023.071 | 4675037.391 | 347.199871 | 0.000 | 0.000     | 265.827  |
| Rec  | 495.719 | 636827.020 | 4675216.912 | 349.264956 | 0.000 | 0.000     | 150.617  |
|      | 646.336 | 636719.295 | 4675322.178 | 349.264956 |       |           |          |

#### R1B-4

| Tipo | P.K. | Coord. X | Coord. Y | Azimut (g) | Radio | Parametro | Longitud |
|------|------|----------|----------|------------|-------|-----------|----------|
|------|------|----------|----------|------------|-------|-----------|----------|

|     |          |            |             |            |       |       |         |
|-----|----------|------------|-------------|------------|-------|-------|---------|
| Rec | 0.000    | 639552.127 | 4672232.681 | 109.635455 | 0.000 | 0.000 | 96.609  |
| Rec | 96.609   | 639647.632 | 4672218.115 | 101.388344 | 0.000 | 0.000 | 47.365  |
| Rec | 143.975  | 639694.986 | 4672217.082 | 101.388344 | 0.000 | 0.000 | 46.523  |
| Rec | 190.498  | 639741.498 | 4672216.067 | 89.522870  | 0.000 | 0.000 | 468.377 |
| Rec | 658.874  | 640203.546 | 4672292.803 | 95.334644  | 0.000 | 0.000 | 189.294 |
| Rec | 848.168  | 640392.331 | 4672306.662 | 95.367350  | 0.000 | 0.000 | 105.329 |
| Rec | 953.497  | 640497.381 | 4672314.320 | 102.989422 | 0.000 | 0.000 | 26.513  |
| Rec | 980.010  | 640523.865 | 4672313.076 | 166.778010 | 0.000 | 0.000 | 146.481 |
| Rec | 1126.490 | 640596.883 | 4672186.092 | 166.778010 | 0.000 | 0.000 | 146.528 |
| Rec | 1273.019 | 640669.926 | 4672059.067 | 166.778010 | 0.000 | 0.000 | 24.763  |
| Rec | 1297.781 | 640682.269 | 4672037.600 | 166.056989 | 0.000 | 0.000 | 118.594 |
| Rec | 1416.376 | 640742.547 | 4671935.467 | 166.056989 | 0.000 | 0.000 | 151.570 |
| Rec | 1567.945 | 640819.586 | 4671804.936 | 183.668674 | 0.000 | 0.000 | 22.689  |
| Rec | 1590.634 | 640825.343 | 4671782.989 | 194.778235 | 0.000 | 0.000 | 213.826 |
| Rec | 1804.460 | 640842.862 | 4671569.882 | 195.086146 | 0.000 | 0.000 | 30.972  |
| Rec | 1835.432 | 640845.250 | 4671539.002 | 173.294768 | 0.000 | 0.000 | 90.986  |
| Rec | 1926.418 | 640882.307 | 4671455.905 | 182.320178 | 0.000 | 0.000 | 36.827  |
| Rec | 1963.245 | 640892.404 | 4671420.489 | 172.995165 | 0.000 | 0.000 | 348.390 |
| Rec | 2311.635 | 641035.795 | 4671102.976 | 172.995165 | 0.000 | 0.000 | 87.918  |
| Rec | 2399.553 | 641071.981 | 4671022.850 | 150.775431 | 0.000 | 0.000 | 181.353 |
| Rec | 2580.906 | 641198.645 | 4670893.062 | 171.944630 | 0.000 | 0.000 | 19.765  |
| Rec | 2600.671 | 641207.076 | 4670875.185 | 171.944630 | 0.000 | 0.000 | 114.547 |
| Rec | 2715.217 | 641255.938 | 4670771.583 | 150.074873 | 0.000 | 0.000 | 59.108  |
| Rec | 2774.325 | 641297.684 | 4670729.738 | 138.996887 | 0.000 | 0.000 | 246.185 |
| Rec | 3020.510 | 641499.108 | 4670588.190 | 167.749705 | 0.000 | 0.000 | 163.522 |
| Rec | 3184.032 | 641578.448 | 4670445.206 | 175.710993 | 0.000 | 0.000 | 143.338 |
| Rec | 3327.370 | 641631.818 | 4670312.174 | 175.710993 | 0.000 | 0.000 | 205.207 |
| Rec | 3532.577 | 641708.226 | 4670121.722 | 146.416862 | 0.000 | 0.000 | 18.711  |
| Rec | 3551.288 | 641722.179 | 4670109.257 | 146.416862 | 0.000 | 0.000 | 104.457 |
| Rec | 3655.745 | 641800.080 | 4670039.667 | 118.565464 | 0.000 | 0.000 | 200.916 |
| Rec | 3856.662 | 641992.513 | 4669981.901 | 179.370314 | 0.000 | 0.000 | 48.976  |
|     | 3905.637 | 642008.108 | 4669935.475 | 179.370314 |       |       |         |

#### R1B-4-1

| Tipo | P.K.    | Coord. X   | Coord. Y    | Azimut (g) | Radio | Parametro | Longitud |
|------|---------|------------|-------------|------------|-------|-----------|----------|
| Rec  | 0.000   | 640842.862 | 4671569.882 | 272.224468 | 0.000 | 0.000     | 44.029   |
| Rec  | 44.029  | 640802.957 | 4671551.276 | 282.370040 | 0.000 | 0.000     | 98.631   |
| Rec  | 142.660 | 640708.084 | 4671524.310 | 282.370040 | 0.000 | 0.000     | 147.428  |
| Rec  | 290.087 | 640566.274 | 4671484.002 | 239.361150 | 0.000 | 0.000     | 120.408  |
| Rec  | 410.496 | 640496.481 | 4671385.884 | 239.361150 | 0.000 | 0.000     | 265.266  |
| Rec  | 675.762 | 640342.723 | 4671169.726 | 173.754722 | 0.000 | 0.000     | 36.701   |
|      | 712.462 | 640357.428 | 4671136.100 | 173.754722 |       |           |          |

#### R1B-4-2

| Tipo | P.K.    | Coord. X   | Coord. Y    | Azimut (g) | Radio | Parametro | Longitud |
|------|---------|------------|-------------|------------|-------|-----------|----------|
| Rec  | 0.000   | 640523.865 | 4672313.076 | 103.461966 | 0.000 | 0.000     | 651.755  |
| Rec  | 651.755 | 641174.657 | 4672277.650 | 103.443495 | 0.000 | 0.000     | 207.605  |
|      | 859.360 | 641381.958 | 4672266.426 | 103.443495 |       |           |          |

#### R1B-4-3

| Tipo | P.K.  | Coord. X   | Coord. Y    | Azimut (g) | Radio | Parametro | Longitud |
|------|-------|------------|-------------|------------|-------|-----------|----------|
| Rec  | 0.000 | 641255.938 | 4670771.583 | 285.445891 | 0.000 | 0.000     | 150.578  |

|     |         |            |             |            |       |       |         |
|-----|---------|------------|-------------|------------|-------|-------|---------|
| Rec | 150.578 | 641109.278 | 4670737.458 | 283.648298 | 0.000 | 0.000 | 248.018 |
| Rec | 398.596 | 640869.396 | 4670674.452 | 166.828799 | 0.000 | 0.000 | 342.293 |
|     | 740.889 | 641039.788 | 4670377.582 | 166.828799 |       |       |         |

#### R1B-4-4

| Tipo | P.K.    | Coord. X   | Coord. Y    | Azimut (g) | Radio | Parametro | Longitud |
|------|---------|------------|-------------|------------|-------|-----------|----------|
| Rec  | 0.000   | 641255.938 | 4670771.583 | 82.643383  | 0.000 | 0.000     | 429.378  |
| Rec  | 429.378 | 641669.457 | 4670887.202 | 169.638840 | 0.000 | 0.000     | 157.478  |
|      | 586.856 | 641741.745 | 4670747.297 | 169.638840 |       |           |          |

#### R1B-5

| Tipo | P.K.    | Coord. X   | Coord. Y    | Azimut (g) | Radio | Parametro | Longitud |
|------|---------|------------|-------------|------------|-------|-----------|----------|
| Rec  | 0.000   | 639950.945 | 4673724.552 | 301.409822 | 0.000 | 0.000     | 70.491   |
| Rec  | 70.491  | 639880.471 | 4673726.112 | 301.409822 | 0.000 | 0.000     | 252.893  |
| Rec  | 323.384 | 639627.640 | 4673731.712 | 292.774692 | 0.000 | 0.000     | 127.546  |
| Rec  | 450.930 | 639500.915 | 4673717.268 | 295.627737 | 0.000 | 0.000     | 133.424  |
|      | 584.355 | 639367.805 | 4673708.111 | 295.627737 |       |           |          |

#### R1B-6

| Tipo | P.K.    | Coord. X   | Coord. Y    | Azimut (g) | Radio | Parametro | Longitud |
|------|---------|------------|-------------|------------|-------|-----------|----------|
| Rec  | 0.000   | 640008.964 | 4670199.179 | 113.811669 | 0.000 | 0.000     | 35.161   |
| Rec  | 35.161  | 640043.301 | 4670191.610 | 89.899692  | 0.000 | 0.000     | 100.579  |
| Rec  | 135.740 | 640142.617 | 4670207.501 | 90.132601  | 0.000 | 0.000     | 32.167   |
| Rec  | 167.906 | 640174.398 | 4670212.466 | 50.290640  | 0.000 | 0.000     | 179.739  |
| Rec  | 347.645 | 640302.071 | 4670338.980 | 95.789684  | 0.000 | 0.000     | 34.285   |
| Rec  | 381.931 | 640336.282 | 4670341.245 | 149.003948 | 0.000 | 0.000     | 329.169  |
|      | 711.100 | 640572.653 | 4670112.158 | 149.003948 |       |           |          |

#### R1B-7

| Tipo | P.K.     | Coord. X   | Coord. Y    | Azimut (g) | Radio | Parametro | Longitud |
|------|----------|------------|-------------|------------|-------|-----------|----------|
| Rec  | 0.000    | 639760.707 | 4673101.346 | 290.330864 | 0.000 | 0.000     | 478.010  |
| Rec  | 478.010  | 639288.200 | 4673029.024 | 290.314424 | 0.000 | 0.000     | 25.424   |
| Rec  | 503.434  | 639263.069 | 4673025.171 | 290.132901 | 0.000 | 0.000     | 6.214    |
| Rec  | 509.649  | 639256.930 | 4673024.211 | 288.153557 | 0.000 | 0.000     | 185.169  |
| Rec  | 694.817  | 639074.958 | 4672989.953 | 272.530936 | 0.000 | 0.000     | 306.526  |
| Rec  | 1001.343 | 638796.526 | 4672861.758 | 272.867841 | 0.000 | 0.000     | 295.911  |
| Rec  | 1297.254 | 638527.085 | 4672739.427 | 311.819929 | 0.000 | 0.000     | 9.834    |
| Rec  | 1307.088 | 638517.420 | 4672741.243 | 311.819929 | 0.000 | 0.000     | 305.161  |
| Rec  | 1612.249 | 638217.504 | 4672797.576 | 396.807839 | 0.000 | 0.000     | 103.219  |
| Rec  | 1715.468 | 638212.330 | 4672900.666 | 8.158811   | 0.000 | 0.000     | 269.765  |
| Rec  | 1985.234 | 638246.809 | 4673168.219 | 69.954163  | 0.000 | 0.000     | 83.653   |
|      | 2068.887 | 638321.317 | 4673206.250 | 69.954163  |       |           |          |

#### R1B-7-1

| Tipo | P.K.   | Coord. X   | Coord. Y    | Azimut (g) | Radio | Parametro | Longitud |
|------|--------|------------|-------------|------------|-------|-----------|----------|
| Rec  | 0.000  | 639263.069 | 4673025.171 | 393.307770 | 0.000 | 0.000     | 29.673   |
| Rec  | 29.673 | 639259.956 | 4673054.680 | 358.645811 | 0.000 | 0.000     | 13.415   |
| Rec  | 43.087 | 639251.842 | 4673065.362 | 358.645811 | 0.000 | 0.000     | 91.748   |

|     |         |            |             |            |       |       |         |
|-----|---------|------------|-------------|------------|-------|-------|---------|
| Rec | 134.836 | 639196.347 | 4673138.424 | 384.404174 | 0.000 | 0.000 | 0.682   |
| Rec | 135.518 | 639196.182 | 4673139.086 | 357.124501 | 0.000 | 0.000 | 61.835  |
| Rec | 197.353 | 639157.614 | 4673187.420 | 355.560836 | 0.000 | 0.000 | 61.116  |
| Rec | 258.470 | 639118.333 | 4673234.241 | 354.819716 | 0.000 | 0.000 | 10.358  |
| Rec | 268.827 | 639111.584 | 4673242.098 | 355.453440 | 0.000 | 0.000 | 98.161  |
| Rec | 366.988 | 639048.367 | 4673317.192 | 359.994593 | 0.000 | 0.000 | 102.795 |
| Rec | 469.783 | 638987.939 | 4673400.349 | 377.192929 | 0.000 | 0.000 | 44.597  |
| Rec | 514.380 | 638972.301 | 4673442.115 | 361.934750 | 0.000 | 0.000 | 202.425 |
| Rec | 716.805 | 638858.350 | 4673609.420 | 361.934750 | 0.000 | 0.000 | 75.966  |
| Rec | 792.771 | 638815.586 | 4673672.206 | 77.159950  | 0.000 | 0.000 | 19.800  |
|     | 812.570 | 638834.125 | 4673679.158 | 77.159950  |       |       |         |

### R1B-8

| Tipo | P.K.    | Coord. X   | Coord. Y    | Azimut (g) | Radio | Parametro | Longitud |
|------|---------|------------|-------------|------------|-------|-----------|----------|
| Rec  | 0.000   | 640613.896 | 4669045.235 | 25.896228  | 0.000 | 0.000     | 93.494   |
| Rec  | 93.494  | 640650.887 | 4669131.101 | 26.174733  | 0.000 | 0.000     | 133.561  |
| Rec  | 227.055 | 640704.267 | 4669253.530 | 19.509453  | 0.000 | 0.000     | 81.798   |
| Rec  | 308.853 | 640728.944 | 4669331.518 | 13.298699  | 0.000 | 0.000     | 301.543  |
| Rec  | 610.396 | 640791.478 | 4669626.505 | 104.446509 | 0.000 | 0.000     | 152.774  |
| Rec  | 763.170 | 640943.879 | 4669615.843 | 58.888665  | 0.000 | 0.000     | 39.843   |
|      | 803.013 | 640975.698 | 4669639.821 | 58.888665  |       |           |          |

### R1B-9

| Tipo | P.K.     | Coord. X   | Coord. Y    | Azimut (g) | Radio | Parametro | Longitud |
|------|----------|------------|-------------|------------|-------|-----------|----------|
| Rec  | 0.000    | 639548.656 | 4672218.416 | 275.765526 | 0.000 | 0.000     | 290.045  |
| Rec  | 290.045  | 639279.374 | 4672110.651 | 280.660780 | 0.000 | 0.000     | 124.251  |
| Rec  | 414.296  | 639160.812 | 4672073.484 | 280.544745 | 0.000 | 0.000     | 207.378  |
| Rec  | 621.675  | 638963.043 | 4672011.090 | 281.738757 | 0.000 | 0.000     | 22.324   |
| Rec  | 643.998  | 638941.631 | 4672004.774 | 291.468143 | 0.000 | 0.000     | 120.842  |
| Rec  | 764.840  | 638821.873 | 4671988.628 | 291.468143 | 0.000 | 0.000     | 109.846  |
| Rec  | 874.686  | 638713.012 | 4671973.950 | 289.863986 | 0.000 | 0.000     | 82.199   |
| Rec  | 956.885  | 638631.852 | 4671960.918 | 289.863986 | 0.000 | 0.000     | 113.361  |
| Rec  | 1070.247 | 638519.925 | 4671942.945 | 290.931486 | 0.000 | 0.000     | 247.400  |
| Rec  | 1317.647 | 638275.031 | 4671907.823 | 278.707206 | 0.000 | 0.000     | 325.666  |
| Rec  | 1643.313 | 637967.411 | 4671800.918 | 202.241728 | 0.000 | 0.000     | 14.313   |
| Rec  | 1657.625 | 637966.907 | 4671786.614 | 196.249105 | 0.000 | 0.000     | 159.182  |
| Rec  | 1816.807 | 637976.281 | 4671627.708 | 193.098171 | 0.000 | 0.000     | 148.760  |
| Rec  | 1965.567 | 637992.377 | 4671479.822 | 184.187740 | 0.000 | 0.000     | 157.460  |
| Rec  | 2123.027 | 638031.086 | 4671327.194 | 177.170474 | 0.000 | 0.000     | 37.883   |
| Rec  | 2160.910 | 638044.381 | 4671291.721 | 183.072740 | 0.000 | 0.000     | 286.953  |
| Rec  | 2447.863 | 638119.784 | 4671014.852 | 170.088281 | 0.000 | 0.000     | 98.372   |
| Rec  | 2546.235 | 638164.323 | 4670927.140 | 180.305293 | 0.000 | 0.000     | 181.234  |
| Rec  | 2727.469 | 638219.500 | 4670754.509 | 163.505726 | 0.000 | 0.000     | 90.539   |
| Rec  | 2818.008 | 638268.605 | 4670678.444 | 202.662869 | 0.000 | 0.000     | 128.766  |
| Rec  | 2946.774 | 638263.221 | 4670549.791 | 264.666684 | 0.000 | 0.000     | 170.982  |
| Rec  | 3117.756 | 638117.904 | 4670459.691 | 267.833401 | 0.000 | 0.000     | 51.404   |
| Rec  | 3169.160 | 638072.924 | 4670434.809 | 209.078608 | 0.000 | 0.000     | 99.914   |
| Rec  | 3269.074 | 638058.724 | 4670335.909 | 209.078608 | 0.000 | 0.000     | 98.078   |
| Rec  | 3367.152 | 638044.784 | 4670238.826 | 211.085254 | 0.000 | 0.000     | 161.620  |
| Rec  | 3528.772 | 638016.784 | 4670079.651 | 211.085254 | 0.000 | 0.000     | 14.179   |
| Rec  | 3542.950 | 638014.328 | 4670065.686 | 185.951010 | 0.000 | 0.000     | 267.692  |
| Rec  | 3810.642 | 638072.924 | 4669804.487 | 258.429660 | 0.000 | 0.000     | 169.391  |
| Rec  | 3980.033 | 637938.381 | 4669701.571 | 166.620150 | 0.000 | 0.000     | 107.803  |

| Tipo | P.K.     | Coord. X   | Coord. Y    | Azimut (g) | Radio | Parametro | Longitud |
|------|----------|------------|-------------|------------|-------|-----------|----------|
| Rec  | 4087.836 | 637992.350 | 4669608.251 | 166.620150 | 0.000 | 0.000     | 136.637  |
| Rec  | 4224.473 | 638060.756 | 4669489.969 | 209.052913 | 0.000 | 0.000     | 117.070  |
| Rec  | 4341.544 | 638044.164 | 4669374.081 | 208.713253 | 0.000 | 0.000     | 161.274  |
| Rec  | 4502.818 | 638022.160 | 4669214.315 | 209.213935 | 0.000 | 0.000     | 340.191  |
| Rec  | 4843.009 | 637973.095 | 4668877.680 | 210.544165 | 0.000 | 0.000     | 162.567  |
| Rec  | 5005.576 | 637946.292 | 4668717.338 | 132.289164 | 0.000 | 0.000     | 69.221   |
| Rec  | 5074.797 | 638006.798 | 4668683.715 | 132.289164 | 0.000 | 0.000     | 163.091  |
| Rec  | 5237.888 | 638149.357 | 4668604.497 | 132.289164 | 0.000 | 0.000     | 106.483  |
| Rec  | 5344.370 | 638242.435 | 4668552.776 | 121.383285 | 0.000 | 0.000     | 445.708  |
| Rec  | 5790.078 | 638663.236 | 4668405.867 | 169.423757 | 0.000 | 0.000     | 72.033   |
| Rec  | 5862.111 | 638696.518 | 4668341.984 | 162.842458 | 0.000 | 0.000     | 178.378  |
| Rec  | 6040.489 | 638794.820 | 4668193.137 | 123.385372 | 0.000 | 0.000     | 115.463  |
| Rec  | 6155.952 | 638902.580 | 4668151.671 | 71.182830  | 0.000 | 0.000     | 67.367   |
| Rec  | 6223.320 | 638963.163 | 4668181.134 | 178.574883 | 0.000 | 0.000     | 120.299  |
| Rec  | 6343.619 | 639002.889 | 4668067.584 | 213.056127 | 0.000 | 0.000     | 110.249  |
| Rec  | 6453.868 | 638980.437 | 4667959.645 | 182.249238 | 0.000 | 0.000     | 186.321  |
| Rec  | 6640.189 | 639031.718 | 4667780.520 | 181.295019 | 0.000 | 0.000     | 21.825   |
| Rec  | 6662.014 | 639038.038 | 4667759.630 | 182.360059 | 0.000 | 0.000     | 96.548   |
| Rec  | 6758.561 | 639064.449 | 4667666.765 | 133.977809 | 0.000 | 0.000     | 437.058  |
| Rec  | 7195.619 | 639440.721 | 4667444.416 | 115.123235 | 0.000 | 0.000     | 129.977  |
| Rec  | 7325.596 | 639567.048 | 4667413.829 | 78.556247  | 0.000 | 0.000     | 16.455   |
|      | 7342.052 | 639582.578 | 4667419.267 | 78.556247  |       |           |          |

#### R1B-9-1

| Tipo | P.K.    | Coord. X   | Coord. Y    | Azimut (g) | Radio | Parametro | Longitud |
|------|---------|------------|-------------|------------|-------|-----------|----------|
| Rec  | 0.000   | 637967.411 | 4671800.918 | 2.241728   | 0.000 | 0.000     | 43.626   |
| Rec  | 43.626  | 637968.947 | 4671844.517 | 394.595277 | 0.000 | 0.000     | 224.512  |
| Rec  | 268.138 | 637949.910 | 4672068.221 | 9.866185   | 0.000 | 0.000     | 47.962   |
| Rec  | 316.101 | 637957.313 | 4672115.608 | 9.820745   | 0.000 | 0.000     | 120.057  |
| Rec  | 436.158 | 637975.760 | 4672234.240 | 29.325593  | 0.000 | 0.000     | 126.277  |
| Rec  | 562.435 | 638031.894 | 4672347.354 | 29.325593  | 0.000 | 0.000     | 207.005  |
|      | 769.440 | 638123.913 | 4672532.782 | 29.325593  |       |           |          |

#### R1B-9-2

| Tipo | P.K.     | Coord. X   | Coord. Y    | Azimut (g) | Radio | Parametro | Longitud |
|------|----------|------------|-------------|------------|-------|-----------|----------|
| Rec  | 0.000    | 638519.925 | 4671942.945 | 176.344507 | 0.000 | 0.000     | 144.926  |
| Rec  | 144.926  | 638572.546 | 4671807.909 | 176.344507 | 0.000 | 0.000     | 15.980   |
| Rec  | 160.906  | 638578.348 | 4671793.020 | 179.240785 | 0.000 | 0.000     | 131.684  |
| Rec  | 292.590  | 638620.531 | 4671668.275 | 177.518363 | 0.000 | 0.000     | 105.591  |
| Rec  | 398.181  | 638657.049 | 4671569.200 | 177.518363 | 0.000 | 0.000     | 129.268  |
| Rec  | 527.449  | 638701.756 | 4671447.909 | 177.206260 | 0.000 | 0.000     | 173.110  |
| Rec  | 700.559  | 638762.421 | 4671285.777 | 178.533813 | 0.000 | 0.000     | 221.597  |
| Rec  | 922.157  | 638835.734 | 4671076.658 | 195.435964 | 0.000 | 0.000     | 270.039  |
| Rec  | 1192.196 | 638855.077 | 4670807.313 | 272.489824 | 0.000 | 0.000     | 14.242   |
|      | 1206.438 | 638842.144 | 4670801.348 | 272.489824 |       |           |          |

#### R1B-9-3

| Tipo | P.K.    | Coord. X   | Coord. Y    | Azimut (g) | Radio | Parametro | Longitud |
|------|---------|------------|-------------|------------|-------|-----------|----------|
| Rec  | 0.000   | 637967.411 | 4671800.918 | 278.707206 | 0.000 | 0.000     | 68.301   |
| Rec  | 68.301  | 637902.896 | 4671778.497 | 286.640449 | 0.000 | 0.000     | 441.388  |
| Rec  | 509.688 | 637471.191 | 4671686.550 | 299.836529 | 0.000 | 0.000     | 40.250   |

| Tipo | P.K.     | Coord. X   | Coord. Y    | Azimut (g) | Radio | Parametro | Longitud |
|------|----------|------------|-------------|------------|-------|-----------|----------|
| Rec  | 549.938  | 637430.941 | 4671686.446 | 299.855164 | 0.000 | 0.000     | 328.032  |
| Rec  | 877.970  | 637102.910 | 4671685.700 | 299.853127 | 0.000 | 0.000     | 22.414   |
| Rec  | 900.384  | 637080.496 | 4671685.648 | 220.247955 | 0.000 | 0.000     | 326.926  |
| Rec  | 1227.310 | 636978.260 | 4671375.119 | 197.159443 | 0.000 | 0.000     | 210.508  |
| Rec  | 1437.818 | 636987.650 | 4671164.820 | 197.159443 | 0.000 | 0.000     | 200.482  |
| Rec  | 1638.301 | 636996.593 | 4670964.538 | 196.407163 | 0.000 | 0.000     | 126.917  |
| Rec  | 1765.218 | 637003.751 | 4670837.823 | 196.159634 | 0.000 | 0.000     | 93.695   |
| Rec  | 1858.912 | 637009.400 | 4670744.299 | 166.493902 | 0.000 | 0.000     | 381.524  |
| Rec  | 2240.436 | 637201.058 | 4670414.408 | 167.720720 | 0.000 | 0.000     | 261.937  |
| Rec  | 2502.373 | 637328.253 | 4670185.427 | 167.720720 | 0.000 | 0.000     | 21.329   |
| Rec  | 2523.702 | 637338.610 | 4670166.781 | 163.642088 | 0.000 | 0.000     | 173.927  |
| Rec  | 2697.629 | 637432.629 | 4670020.457 | 191.890072 | 0.000 | 0.000     | 234.698  |
| Rec  | 2932.326 | 637462.446 | 4669787.661 | 170.114148 | 0.000 | 0.000     | 17.259   |
| Rec  | 2949.586 | 637470.254 | 4669772.268 | 158.982099 | 0.000 | 0.000     | 102.005  |
| Rec  | 3051.590 | 637531.523 | 4669690.714 | 44.334204  | 0.000 | 0.000     | 19.043   |
|      | 3070.634 | 637543.738 | 4669705.323 | 44.334204  |       |           |          |

### R1B-9-3-1

| Tipo | P.K.    | Coord. X   | Coord. Y    | Azimut (g) | Radio | Parametro | Longitud |
|------|---------|------------|-------------|------------|-------|-----------|----------|
| Rec  | 0.000   | 637080.496 | 4671685.648 | 318.666843 | 0.000 | 0.000     | 107.373  |
| Rec  | 107.373 | 636977.706 | 4671716.683 | 318.658212 | 0.000 | 0.000     | 465.717  |
| Rec  | 573.089 | 636531.849 | 4671851.231 | 11.210116  | 0.000 | 0.000     | 336.176  |
|      | 909.266 | 636590.740 | 4672182.208 | 11.210116  |       |           |          |

### R1B-9-3-2

| Tipo | P.K.    | Coord. X   | Coord. Y    | Azimut     | Radio | Parametro | Longitud |
|------|---------|------------|-------------|------------|-------|-----------|----------|
| Rec  | 0.000   | 637430.941 | 4671686.446 | 199.239221 | 0.000 | 0.000     | 369.655  |
| Rec  | 369.655 | 637435.359 | 4671316.818 | 198.783481 | 0.000 | 0.000     | 266.981  |
| Rec  | 636.636 | 637440.460 | 4671049.885 | 179.468986 | 0.000 | 0.000     | 154.103  |
|      | 790.739 | 637489.302 | 4670903.727 | 179.468986 |       |           |          |

### R1B-9-4

| Tipo | P.K.    | Coord. X   | Coord. Y    | Azimut (g) | Radio | Parametro | Longitud |
|------|---------|------------|-------------|------------|-------|-----------|----------|
| Rec  | 0.000   | 638263.221 | 4670549.791 | 116.138577 | 0.000 | 0.000     | 139.813  |
| Rec  | 139.813 | 638398.565 | 4670514.726 | 116.138577 | 0.000 | 0.000     | 91.786   |
| Rec  | 231.599 | 638487.418 | 4670491.706 | 156.103563 | 0.000 | 0.000     | 117.685  |
|      | 349.284 | 638562.285 | 4670400.906 | 156.103563 |       |           |          |

### R1B-9-5

| Tipo | P.K.     | Coord. X   | Coord. Y    | Azimut (g) | Radio | Parametro | Longitud |
|------|----------|------------|-------------|------------|-------|-----------|----------|
| Rec  | 0.000    | 637973.095 | 4668877.680 | 307.146578 | 0.000 | 0.000     | 81.331   |
| Rec  | 81.331   | 637892.276 | 4668886.791 | 290.044618 | 0.000 | 0.000     | 12.428   |
| Rec  | 93.759   | 637879.999 | 4668884.856 | 290.044618 | 0.000 | 0.000     | 308.340  |
| Rec  | 402.099  | 637575.422 | 4668836.834 | 231.994701 | 0.000 | 0.000     | 172.650  |
| Rec  | 574.749  | 637492.259 | 4668685.533 | 225.539922 | 0.000 | 0.000     | 55.231   |
| Rec  | 629.980  | 637470.691 | 4668634.687 | 212.056055 | 0.000 | 0.000     | 242.781  |
| Rec  | 872.761  | 637424.989 | 4668396.246 | 185.425168 | 0.000 | 0.000     | 53.570   |
| Rec  | 926.331  | 637437.146 | 4668344.074 | 185.425168 | 0.000 | 0.000     | 66.251   |
| Rec  | 992.582  | 637452.182 | 4668279.552 | 102.211026 | 0.000 | 0.000     | 197.328  |
|      | 1189.910 | 637649.390 | 4668272.700 | 102.211026 |       |           |          |

### R1B-9-6

| Tipo | P.K.     | Coord. X   | Coord. Y    | Azimut (g) | Radio | Parametro | Longitud |
|------|----------|------------|-------------|------------|-------|-----------|----------|
| Rec  | 0.000    | 638117.904 | 4670459.691 | 170.570644 | 0.000 | 0.000     | 636.981  |
| Rec  | 636.981  | 638401.989 | 4669889.567 | 170.901808 | 0.000 | 0.000     | 493.251  |
| Rec  | 1130.232 | 638619.672 | 4669446.950 | 170.903285 | 0.000 | 0.000     | 2.917    |
| Rec  | 1133.149 | 638620.959 | 4669444.332 | 170.295407 | 0.000 | 0.000     | 757.247  |
| Rec  | 1890.396 | 638961.608 | 4668768.032 | 85.951269  | 0.000 | 0.000     | 27.560   |
| Rec  | 1917.956 | 638988.500 | 4668774.065 | 85.951269  | 0.000 | 0.000     | 87.240   |
| Rec  | 2005.196 | 639073.624 | 4668793.161 | 67.863120  | 0.000 | 0.000     | 167.007  |
|      | 2172.203 | 639219.800 | 4668873.931 | 67.863120  |       |           |          |

### R1B-9-6-2

| Tipo | P.K.    | Coord. X   | Coord. Y    | Azimut (g) | Radio | Parametro | Longitud |
|------|---------|------------|-------------|------------|-------|-----------|----------|
| Rec  | 0.000   | 638619.657 | 4669446.937 | 56.571726  | 0.000 | 0.000     | 281.378  |
| Rec  | 281.378 | 638838.064 | 4669624.339 | 68.164618  | 0.000 | 0.000     | 7.241    |
| Rec  | 288.619 | 638844.418 | 4669627.811 | 57.219481  | 0.000 | 0.000     | 120.305  |
| Rec  | 408.924 | 638938.567 | 4669702.707 | 389.045733 | 0.000 | 0.000     | 102.135  |
| Rec  | 511.058 | 638921.079 | 4669803.333 | 394.069373 | 0.000 | 0.000     | 111.449  |
| Rec  | 622.508 | 638910.711 | 4669914.299 | 394.100984 | 0.000 | 0.000     | 10.633   |
| Rec  | 633.141 | 638909.728 | 4669924.887 | 395.851365 | 0.000 | 0.000     | 109.848  |
| Rec  | 742.989 | 638902.574 | 4670034.502 | 396.803560 | 0.000 | 0.000     | 165.826  |
|      | 908.815 | 638894.252 | 4670200.119 | 396.803560 |       |           |          |

### R1B-9-6-2-2

| Tipo | P.K.    | Coord. X   | Coord. Y    | Azimut (g) | Radio | Parametro | Longitud |
|------|---------|------------|-------------|------------|-------|-----------|----------|
| Rec  | 0.000   | 638844.418 | 4669627.811 | 155.903551 | 0.000 | 0.000     | 182.593  |
| Rec  | 182.593 | 638961.020 | 4669487.298 | 155.903551 | 0.000 | 0.000     | 22.350   |
| Rec  | 204.943 | 638975.293 | 4669470.098 | 92.267105  | 0.000 | 0.000     | 34.247   |
| Rec  | 239.190 | 639009.287 | 4669474.248 | 133.615652 | 0.000 | 0.000     | 174.138  |
| Rec  | 413.328 | 639159.707 | 4669386.511 | 200.496958 | 0.000 | 0.000     | 106.418  |
| Rec  | 519.746 | 639158.877 | 4669280.096 | 80.596851  | 0.000 | 0.000     | 100.919  |
|      | 620.665 | 639255.145 | 4669310.381 | 80.596851  |       |           |          |

### R1B-9-7

| Tipo | P.K.    | Coord. X   | Coord. Y    | Azimut (g) | Radio | Parametro | Longitud |
|------|---------|------------|-------------|------------|-------|-----------|----------|
| Rec  | 0.000   | 638242.435 | 4668552.776 | 221.622840 | 0.000 | 0.000     | 261.021  |
| Rec  | 261.021 | 638155.474 | 4668306.666 | 194.424435 | 0.000 | 0.000     | 246.429  |
| Rec  | 507.450 | 638177.028 | 4668061.182 | 211.536551 | 0.000 | 0.000     | 68.752   |
| Rec  | 576.203 | 638164.638 | 4667993.555 | 211.536551 | 0.000 | 0.000     | 35.059   |
| Rec  | 611.262 | 638158.319 | 4667959.070 | 153.289324 | 0.000 | 0.000     | 137.571  |
|      | 748.833 | 638250.443 | 4667856.898 | 153.289324 |       |           |          |

### R1B-9-8

| Tipo | P.K.    | Coord. X   | Coord. Y    | Azimut (g) | Radio | Parametro | Longitud |
|------|---------|------------|-------------|------------|-------|-----------|----------|
| Rec  | 0.000   | 638696.518 | 4668341.984 | 69.505863  | 0.000 | 0.000     | 217.013  |
| Rec  | 217.013 | 638889.107 | 4668442.004 | 69.505863  | 0.000 | 0.000     | 176.538  |
| Rec  | 393.551 | 639045.777 | 4668523.369 | 370.945378 | 0.000 | 0.000     | 221.379  |
| Rec  | 614.930 | 638948.213 | 4668722.090 | 370.778186 | 0.000 | 0.000     | 133.418  |
|      | 748.348 | 638889.100 | 4668841.697 | 370.778186 |       |           |          |

### R1B-9-10

| Tipo | P.K.     | Coord. X   | Coord. Y    | Azimut (g) | Radio | Parametro | Longitud |
|------|----------|------------|-------------|------------|-------|-----------|----------|
| Rec  | 0.000    | 641206.054 | 4667737.165 | 84.394323  | 0.000 | 0.000     | 12.643   |
| Rec  | 12.643   | 641218.318 | 4667740.234 | 84.394323  | 0.000 | 0.000     | 270.821  |
| Rec  | 283.463  | 641481.043 | 4667805.958 | 84.133877  | 0.000 | 0.000     | 175.795  |
| Rec  | 459.258  | 641651.406 | 4667849.318 | 84.133877  | 0.000 | 0.000     | 191.201  |
| Rec  | 650.459  | 641836.700 | 4667896.478 | 216.476645 | 0.000 | 0.000     | 381.304  |
|      | 1031.764 | 641739.111 | 4667527.874 | 216.476645 |       |           |          |

### R1B-9-11

| Tipo | P.K.     | Coord. X   | Coord. Y    | Azimut (g) | Radio | Parametro | Longitud |
|------|----------|------------|-------------|------------|-------|-----------|----------|
| Rec  | 0.000    | 640377.658 | 4669341.612 | 275.695427 | 0.000 | 0.000     | 154.104  |
| Rec  | 154.104  | 640234.649 | 4669284.198 | 313.160378 | 0.000 | 0.000     | 220.052  |
| Rec  | 374.157  | 640019.282 | 4669329.364 | 313.160378 | 0.000 | 0.000     | 44.462   |
| Rec  | 418.618  | 639975.767 | 4669338.490 | 301.401909 | 0.000 | 0.000     | 54.553   |
| Rec  | 473.172  | 639921.226 | 4669339.692 | 279.537969 | 0.000 | 0.000     | 114.883  |
| Rec  | 588.054  | 639812.227 | 4669303.399 | 239.726541 | 0.000 | 0.000     | 81.587   |
| Rec  | 669.641  | 639764.556 | 4669237.189 | 266.428324 | 0.000 | 0.000     | 64.592   |
| Rec  | 734.233  | 639708.739 | 4669204.683 | 163.877403 | 0.000 | 0.000     | 222.120  |
| Rec  | 956.354  | 639828.118 | 4669017.370 | 184.921740 | 0.000 | 0.000     | 19.752   |
| Rec  | 976.106  | 639832.752 | 4668998.169 | 204.402790 | 0.000 | 0.000     | 199.456  |
| Rec  | 1175.562 | 639818.969 | 4668799.190 | 206.619504 | 0.000 | 0.000     | 32.167   |
| Rec  | 1207.729 | 639815.631 | 4668767.197 | 210.709084 | 0.000 | 0.000     | 59.874   |
| Rec  | 1267.603 | 639805.606 | 4668708.168 | 235.420176 | 0.000 | 0.000     | 112.949  |
| Rec  | 1380.552 | 639745.956 | 4668612.255 | 235.855717 | 0.000 | 0.000     | 68.239   |
| Rec  | 1448.791 | 639709.522 | 4668554.556 | 206.043513 | 0.000 | 0.000     | 25.839   |
| Rec  | 1474.630 | 639707.073 | 4668528.834 | 180.435663 | 0.000 | 0.000     | 347.796  |
| Rec  | 1822.426 | 639812.282 | 4668197.332 | 179.315445 | 0.000 | 0.000     | 178.296  |
| Rec  | 2000.722 | 639869.199 | 4668028.365 | 188.572314 | 0.000 | 0.000     | 19.780   |
| Rec  | 2020.502 | 639872.730 | 4668008.903 | 191.163740 | 0.000 | 0.000     | 171.179  |
| Rec  | 2191.680 | 639896.413 | 4667839.370 | 189.905559 | 0.000 | 0.000     | 292.895  |
| Rec  | 2484.575 | 639942.661 | 4667550.150 | 202.272676 | 0.000 | 0.000     | 18.551   |
| Rec  | 2503.126 | 639941.999 | 4667531.611 | 222.122918 | 0.000 | 0.000     | 22.358   |
| Rec  | 2525.484 | 639934.385 | 4667510.589 | 223.534833 | 0.000 | 0.000     | 142.015  |
| Rec  | 2667.499 | 639883.072 | 4667378.169 | 219.661288 | 0.000 | 0.000     | 72.973   |
| Rec  | 2740.472 | 639860.892 | 4667308.648 | 209.998908 | 0.000 | 0.000     | 73.548   |
| Rec  | 2814.020 | 639849.388 | 4667236.006 | 209.998908 | 0.000 | 0.000     | 177.267  |
| Rec  | 2991.287 | 639821.660 | 4667060.921 | 212.708251 | 0.000 | 0.000     | 98.535   |
| Rec  | 3089.821 | 639802.121 | 4666964.343 | 193.812407 | 0.000 | 0.000     | 69.198   |
| Rec  | 3159.019 | 639808.836 | 4666895.472 | 229.363288 | 0.000 | 0.000     | 96.830   |
|      | 3255.849 | 639765.741 | 4666808.760 | 229.363288 |       |           |          |

### R1B-9-12

| Tipo | P.K.    | Coord. X   | Coord. Y    | Azimut(g) | Radio | Parametro | Longitud |
|------|---------|------------|-------------|-----------|-------|-----------|----------|
| Rec  | 0.000   | 641470.942 | 4666458.680 | 72.511450 | 0.000 | 0.000     | 296.851  |
| Rec  | 296.851 | 641740.548 | 4666582.911 | 86.970295 | 0.000 | 0.000     | 127.317  |
| Rec  | 424.168 | 641865.208 | 4666608.788 | 86.970295 | 0.000 | 0.000     | 141.116  |
|      | 565.285 | 642003.379 | 4666637.469 | 86.970295 |       |           |          |

### R1B-9-13

| Tipo | P.K. | Coord. X | Coord. Y | Azimut (g) | Radio | Parametro | Longitud |
|------|------|----------|----------|------------|-------|-----------|----------|
|------|------|----------|----------|------------|-------|-----------|----------|

|     |          |            |             |            |       |       |         |
|-----|----------|------------|-------------|------------|-------|-------|---------|
| Rec | 0.000    | 640613.951 | 4669045.344 | 229.784209 | 0.000 | 0.000 | 35.236  |
| Rec | 35.236   | 640598.061 | 4669013.894 | 226.443010 | 0.000 | 0.000 | 141.109 |
| Rec | 176.345  | 640541.120 | 4668884.784 | 225.916583 | 0.000 | 0.000 | 16.690  |
| Rec | 193.036  | 640534.511 | 4668869.458 | 226.217179 | 0.000 | 0.000 | 170.405 |
| Rec | 363.441  | 640466.302 | 4668713.300 | 215.480597 | 0.000 | 0.000 | 43.219  |
| Rec | 406.660  | 640455.896 | 4668671.352 | 214.929553 | 0.000 | 0.000 | 181.094 |
| Rec | 587.753  | 640413.815 | 4668495.215 | 194.457637 | 0.000 | 0.000 | 264.703 |
| Rec | 852.457  | 640436.831 | 4668231.514 | 230.648713 | 0.000 | 0.000 | 92.215  |
| Rec | 944.672  | 640394.131 | 4668149.781 | 193.044323 | 0.000 | 0.000 | 111.964 |
| Rec | 1056.636 | 640406.340 | 4668038.484 | 231.789400 | 0.000 | 0.000 | 19.270  |
| Rec | 1075.906 | 640397.112 | 4668021.567 | 235.574471 | 0.000 | 0.000 | 128.312 |
| Rec | 1204.218 | 640329.085 | 4667912.773 | 220.532107 | 0.000 | 0.000 | 82.167  |
| Rec | 1286.385 | 640303.042 | 4667834.842 | 337.453195 | 0.000 | 0.000 | 25.532  |
|     | 1311.917 | 640281.802 | 4667849.012 | 337.453195 |       |       |         |

### R1B-9-15

| Tipo | P.K.     | Coord. X   | Coord. Y    | Azimut (g) | Radio | Parametro | Longitud |
|------|----------|------------|-------------|------------|-------|-----------|----------|
| Rec  | 0.000    | 641206.054 | 4667737.165 | 284.356389 | 0.000 | 0.000     | 301.711  |
| Rec  | 301.711  | 640913.406 | 4667663.770 | 220.289402 | 0.000 | 0.000     | 153.978  |
| Rec  | 455.690  | 640865.158 | 4667517.546 | 220.289402 | 0.000 | 0.000     | 59.960   |
| Rec  | 515.650  | 640846.371 | 4667460.605 | 253.338402 | 0.000 | 0.000     | 89.904   |
| Rec  | 605.553  | 640779.555 | 4667400.453 | 192.188040 | 0.000 | 0.000     | 42.420   |
| Rec  | 647.973  | 640784.747 | 4667358.353 | 192.687293 | 0.000 | 0.000     | 38.353   |
| Rec  | 686.326  | 640789.143 | 4667320.252 | 218.210141 | 0.000 | 0.000     | 138.180  |
| Rec  | 824.506  | 640750.154 | 4667187.687 | 140.538947 | 0.000 | 0.000     | 33.085   |
| Rec  | 857.591  | 640776.755 | 4667168.014 | 206.875945 | 0.000 | 0.000     | 111.936  |
| Rec  | 969.528  | 640764.688 | 4667056.730 | 215.575666 | 0.000 | 0.000     | 92.480   |
| Rec  | 1062.008 | 640742.287 | 4666967.003 | 265.565809 | 0.000 | 0.000     | 189.226  |
| Rec  | 1251.235 | 640580.073 | 4666869.571 | 208.047137 | 0.000 | 0.000     | 138.760  |
| Rec  | 1389.994 | 640562.579 | 4666731.918 | 225.377568 | 0.000 | 0.000     | 118.302  |
| Rec  | 1508.297 | 640516.660 | 4666622.891 | 168.880934 | 0.000 | 0.000     | 212.894  |
| Rec  | 1721.191 | 640616.631 | 4666434.929 | 185.551366 | 0.000 | 0.000     | 93.284   |
| Rec  | 1814.475 | 640637.621 | 4666344.038 | 149.931997 | 0.000 | 0.000     | 59.563   |
| Rec  | 1874.038 | 640679.784 | 4666301.965 | 116.599660 | 0.000 | 0.000     | 103.168  |
| Rec  | 1977.206 | 640779.465 | 4666275.368 | 43.661324  | 0.000 | 0.000     | 76.302   |
| Rec  | 2053.509 | 640827.788 | 4666334.418 | 15.113786  | 0.000 | 0.000     | 29.863   |
| Rec  | 2083.371 | 640834.811 | 4666363.443 | 24.799913  | 0.000 | 0.000     | 31.907   |
|      | 2115.278 | 640846.929 | 4666392.959 | 24.799913  |       |           |          |

### R1B-9-15-1

| Tipo | P.K.    | Coord. X   | Coord. Y    | Azimut (g) | Radio | Parametro | Longitud |
|------|---------|------------|-------------|------------|-------|-----------|----------|
| Rec  | 0.000   | 640750.155 | 4667188.161 | 284.251530 | 0.000 | 0.000     | 45.487   |
| Rec  | 45.487  | 640706.052 | 4667177.022 | 316.025281 | 0.000 | 0.000     | 305.171  |
| Rec  | 350.658 | 640410.499 | 4667253.033 | 31.096949  | 0.000 | 0.000     | 146.810  |
|      | 497.468 | 640479.393 | 4667382.674 | 31.096949  |       |           |          |

### H-147

| Tipo | P.K.   | Coord. X   | Coord. Y    | Azimut     | Radio | Parametro | Longitud |
|------|--------|------------|-------------|------------|-------|-----------|----------|
| Rec  | 0.000  | 640432.896 | 4674235.727 | 399.041928 | 0.000 | 0.000     | 51.973   |
|      | 51.973 | 640432.114 | 4674287.694 | 399.041928 |       |           |          |

### H-173

| Tipo | P.K.    | Coord. X   | Coord. Y    | Azimut (g) | Radio | Parametro | Longitud |
|------|---------|------------|-------------|------------|-------|-----------|----------|
| Rec  | 0.000   | 638993.435 | 4676285.514 | 398.156381 | 0.000 | 0.000     | 167.810  |
|      | 167.810 | 638988.576 | 4676453.253 | 398.156381 |       |           |          |

### H-174

| Tipo | P.K.    | Coord. X   | Coord. Y    | Azimut (g) | Radio | Parametro | Longitud |
|------|---------|------------|-------------|------------|-------|-----------|----------|
| Rec  | 0.000   | 638498.150 | 4676129.719 | 299.946643 | 0.000 | 0.000     | 415.678  |
|      | 415.678 | 638082.472 | 4676129.371 | 299.946643 |       |           |          |

### H-178

| Tipo | P.K.    | Coord. X   | Coord. Y    | Azimut (g) | Radio | Parametro | Longitud |
|------|---------|------------|-------------|------------|-------|-----------|----------|
| Rec  | 0.000   | 638263.682 | 4675897.003 | 164.199612 | 0.000 | 0.000     | 256.136  |
| Rec  | 256.136 | 638400.248 | 4675680.311 | 63.202035  | 0.000 | 0.000     | 44.174   |
|      | 300.310 | 638437.246 | 4675704.446 | 63.202035  |       |           |          |

### H-181

| Tipo | P.K.    | Coord. X   | Coord. Y    | Azimut (g) | Radio | Parametro | Longitud |
|------|---------|------------|-------------|------------|-------|-----------|----------|
| Rec  | 0.000   | 639352.818 | 4674278.532 | 197.715631 | 0.000 | 0.000     | 164.730  |
| Rec  | 164.730 | 639358.728 | 4674113.909 | 203.424959 | 0.000 | 0.000     | 70.168   |
| Rec  | 234.898 | 639354.955 | 4674043.842 | 237.101523 | 0.000 | 0.000     | 98.798   |
|      | 333.696 | 639300.581 | 4673961.353 | 237.101523 |       |           |          |

### H-185

| Tipo | P.K.    | Coord. X   | Coord. Y    | Azimut (g) | Radio | Parametro | Longitud |
|------|---------|------------|-------------|------------|-------|-----------|----------|
| Rec  | 0.000   | 638926.729 | 4674298.835 | 188.178551 | 0.000 | 0.000     | 256.796  |
|      | 256.796 | 638974.140 | 4674046.453 | 188.178551 |       |           |          |

### H-193

| Tipo | P.K.    | Coord. X   | Coord. Y    | Azimut (g) | Radio | Parametro | Longitud |
|------|---------|------------|-------------|------------|-------|-----------|----------|
| Rec  | 0.000   | 638130.385 | 4674166.581 | 220.821043 | 0.000 | 0.000     | 231.656  |
| Rec  | 231.656 | 638055.964 | 4673947.204 | 314.149312 | 0.000 | 0.000     | 150.526  |
|      | 382.182 | 637909.140 | 4673980.385 | 314.149312 |       |           |          |

### H-194

| Tipo | P.K.    | Coord. X   | Coord. Y    | Azimut (g) | Radio | Parametro | Longitud |
|------|---------|------------|-------------|------------|-------|-----------|----------|
| Rec  | 0.000   | 637643.106 | 4674231.086 | 205.905347 | 0.000 | 0.000     | 137.715  |
|      | 137.715 | 637630.349 | 4674093.963 | 205.905347 |       |           |          |

### H-225

| Tipo | P.K.    | Coord. X   | Coord. Y    | Azimut (g) | Radio | Parametro | Longitud |
|------|---------|------------|-------------|------------|-------|-----------|----------|
| Rec  | 0.000   | 640359.745 | 4673291.370 | 91.595217  | 0.000 | 0.000     | 139.088  |
|      | 139.088 | 640497.622 | 4673309.679 | 91.595217  |       |           |          |

### H-228

| Tipo | P.K.    | Coord. X   | Coord. Y    | Azimut (g) | Radio | Parametro | Longitud |
|------|---------|------------|-------------|------------|-------|-----------|----------|
| Rec  | 0.000   | 640231.976 | 4672934.096 | 297.074452 | 0.000 | 0.000     | 133.799  |
| Rec  | 133.799 | 640098.318 | 4672927.949 | 293.494568 | 0.000 | 0.000     | 50.592   |
|      | 184.391 | 640047.990 | 4672922.789 | 293.494568 |       |           |          |

### H-271

| Tipo | P.K.    | Coord. X   | Coord. Y    | Azimut (g) | Radio | Parametro | Longitud |
|------|---------|------------|-------------|------------|-------|-----------|----------|
| Rec  | 0.000   | 641669.457 | 4670887.202 | 369.411693 | 0.000 | 0.000     | 330.577  |
|      | 330.577 | 641516.662 | 4671180.349 | 369.411693 |       |           |          |

### H-277

| Tipo | P.K.    | Coord. X   | Coord. Y    | Azimut (g) | Radio | Parametro | Longitud |
|------|---------|------------|-------------|------------|-------|-----------|----------|
| Rec  | 0.000   | 641722.179 | 4670109.257 | 37.401958  | 0.000 | 0.000     | 270.651  |
|      | 270.651 | 641872.198 | 4670334.526 | 37.401958  |       |           |          |

### H-279

| Tipo | P.K.    | Coord. X   | Coord. Y    | Azimut     | Radio | Parametro | Longitud |
|------|---------|------------|-------------|------------|-------|-----------|----------|
| Rec  | 0.000   | 641632.198 | 4670312.484 | 256.401873 | 0.000 | 0.000     | 482.562  |
|      | 482.562 | 641258.443 | 4670007.241 | 256.401873 |       |           |          |

### H-289

| Tipo | P.K.    | Coord. X   | Coord. Y    | Azimut (g) | Radio | Parametro | Longitud |
|------|---------|------------|-------------|------------|-------|-----------|----------|
| Rec  | 0.000   | 638835.734 | 4671076.658 | 67.679645  | 0.000 | 0.000     | 128.821  |
| Rec  | 128.821 | 638948.306 | 4671139.285 | 41.605220  | 0.000 | 0.000     | 54.321   |
|      | 183.141 | 638981.333 | 4671182.412 | 41.605220  |       |           |          |

### H-293

| Tipo | P.K.    | Coord. X   | Coord. Y    | Azimut (g) | Radio | Parametro | Longitud |
|------|---------|------------|-------------|------------|-------|-----------|----------|
| Rec  | 0.000   | 638275.031 | 4671907.823 | 181.694965 | 0.000 | 0.000     | 129.333  |
| Rec  | 129.333 | 638311.708 | 4671783.799 | 208.209520 | 0.000 | 0.000     | 268.288  |
| Rec  | 397.621 | 638277.207 | 4671517.739 | 269.087942 | 0.000 | 0.000     | 15.937   |
|      | 413.558 | 638263.112 | 4671510.301 | 269.087942 |       |           |          |

### H-303

| Tipo | P.K.    | Coord. X   | Coord. Y    | Azimut (g) | Radio | Parametro | Longitud |
|------|---------|------------|-------------|------------|-------|-----------|----------|
| Rec  | 0.000   | 636977.706 | 4671716.683 | 251.922854 | 0.000 | 0.000     | 290.469  |
|      | 290.469 | 636766.205 | 4671517.587 | 251.922854 |       |           |          |

### H-306

| Tipo | P.K.    | Coord. X   | Coord. Y    | Azimut (g) | Radio | Parametro | Longitud |
|------|---------|------------|-------------|------------|-------|-----------|----------|
| Rec  | 0.000   | 636978.260 | 4671374.457 | 274.263657 | 0.000 | 0.000     | 471.165  |
|      | 471.165 | 636545.075 | 4671189.128 | 274.263657 |       |           |          |

### H-309

| Tipo | P.K. | Coord. X | Coord. Y | Azimut (g) | Radio | Parametro | Longitud |
|------|------|----------|----------|------------|-------|-----------|----------|
|      |      |          |          |            |       |           |          |

|     |         |            |             |            |       |       |         |
|-----|---------|------------|-------------|------------|-------|-------|---------|
| Rec | 0.000   | 636996.593 | 4670964.538 | 257.069162 | 0.000 | 0.000 | 202.643 |
| Rec | 202.643 | 636838.307 | 4670838.009 | 257.069162 | 0.000 | 0.000 | 271.497 |
| Rec | 474.140 | 636626.237 | 4670668.487 | 361.149904 | 0.000 | 0.000 | 10.185  |
|     | 484.325 | 636620.401 | 4670676.834 | 361.149904 |       |       |         |

### H-329

| Tipo | P.K.    | Coord. X   | Coord. Y    | Azimut (g) | Radio | Parametro | Longitud |
|------|---------|------------|-------------|------------|-------|-----------|----------|
| Rec  | 0.000   | 638072.924 | 4670434.809 | 2.520667   | 0.000 | 0.000     | 35.591   |
| Rec  | 35.591  | 638074.333 | 4670470.372 | 370.548432 | 0.000 | 0.000     | 529.717  |
|      | 565.308 | 637837.921 | 4670944.407 | 370.548432 |       |           |          |

### H-337

| Tipo | P.K.    | Coord. X   | Coord. Y    | Azimut (g) | Radio | Parametro | Longitud |
|------|---------|------------|-------------|------------|-------|-----------|----------|
| Rec  | 0.000   | 638060.756 | 4669489.969 | 292.495471 | 0.000 | 0.000     | 44.158   |
| Rec  | 44.158  | 638016.904 | 4669484.776 | 268.294999 | 0.000 | 0.000     | 384.166  |
| Rec  | 428.324 | 637679.403 | 4669301.265 | 333.857719 | 0.000 | 0.000     | 23.335   |
|      | 451.659 | 637659.291 | 4669313.098 | 333.857719 |       |           |          |

### H-354

| Tipo | P.K.    | Coord. X   | Coord. Y    | Azimut (g) | Radio | Parametro | Longitud |
|------|---------|------------|-------------|------------|-------|-----------|----------|
| Rec  | 0.000   | 638794.820 | 4668193.137 | 171.963948 | 0.000 | 0.000     | 116.107  |
| Rec  | 116.107 | 638844.315 | 4668088.109 | 208.359800 | 0.000 | 0.000     | 141.585  |
| Rec  | 257.691 | 638825.776 | 4667947.743 | 225.337670 | 0.000 | 0.000     | 260.779  |
| Rec  | 518.470 | 638724.704 | 4667707.347 | 221.606419 | 0.000 | 0.000     | 100.109  |
|      | 618.579 | 638691.376 | 4667612.949 | 221.606419 |       |           |          |

### H-359

| Tipo | P.K.    | Coord. X   | Coord. Y    | Azimut (g) | Radio | Parametro | Longitud |
|------|---------|------------|-------------|------------|-------|-----------|----------|
| Rec  | 0.000   | 639064.449 | 4667666.765 | 226.080257 | 0.000 | 0.000     | 237.925  |
|      | 237.925 | 638969.683 | 4667448.528 | 226.080257 |       |           |          |

### H-363

| Tipo | P.K.    | Coord. X   | Coord. Y    | Azimut (g) | Radio | Parametro | Longitud |
|------|---------|------------|-------------|------------|-------|-----------|----------|
| Rec  | 0.000   | 639816.905 | 4670518.145 | 271.523692 | 0.000 | 0.000     | 225.279  |
| Rec  | 225.279 | 639613.789 | 4670420.703 | 281.797225 | 0.000 | 0.000     | 148.651  |
| Rec  | 373.930 | 639471.174 | 4670378.776 | 200.216715 | 0.000 | 0.000     | 207.790  |
|      | 581.720 | 639470.466 | 4670170.988 | 200.216715 |       |           |          |

### H-365

| Tipo | P.K.    | Coord. X   | Coord. Y    | Azimut (g) | Radio | Parametro | Longitud |
|------|---------|------------|-------------|------------|-------|-----------|----------|
| Rec  | 0.000   | 640008.964 | 4670199.179 | 251.946770 | 0.000 | 0.000     | 236.806  |
|      | 236.806 | 639836.475 | 4670036.929 | 251.946770 |       |           |          |

### H-373

| Tipo | P.K.    | Coord. X   | Coord. Y    | Azimut     | Radio | Parametro | Longitud |
|------|---------|------------|-------------|------------|-------|-----------|----------|
| Rec  | 0.000   | 640416.927 | 4668493.474 | 273.677791 | 0.000 | 0.000     | 152.005  |
| Rec  | 152.005 | 640277.731 | 4668432.400 | 303.063817 | 0.000 | 0.000     | 56.423   |

|     |         |            |             |            |       |       |        |
|-----|---------|------------|-------------|------------|-------|-------|--------|
| Rec | 208.427 | 640221.374 | 4668435.114 | 372.721238 | 0.000 | 0.000 | 34.318 |
| Rec | 242.745 | 640207.115 | 4668466.330 | 343.878737 | 0.000 | 0.000 | 50.151 |
|     | 292.897 | 640168.412 | 4668498.224 | 343.878737 |       |       |        |

### H-376

| Tipo | P.K.    | Coord. X   | Coord. Y    | Azimut (g) | Radio | Parametro | Longitud |
|------|---------|------------|-------------|------------|-------|-----------|----------|
| Rec  | 0.000   | 639872.730 | 4668008.903 | 324.853639 | 0.000 | 0.000     | 172.464  |
| Rec  | 172.464 | 639713.243 | 4668074.536 | 325.706330 | 0.000 | 0.000     | 39.600   |
| Rec  | 212.065 | 639676.827 | 4668090.095 | 344.965609 | 0.000 | 0.000     | 124.456  |
| Rec  | 336.521 | 639582.146 | 4668170.872 | 363.239052 | 0.000 | 0.000     | 26.078   |
|      | 362.598 | 639567.911 | 4668192.721 | 363.239052 |       |           |          |

### H-392

| Tipo | P.K.    | Coord. X   | Coord. Y    | Azimut (g) | Radio | Parametro | Longitud |
|------|---------|------------|-------------|------------|-------|-----------|----------|
| Rec  | 0.000   | 641481.043 | 4667805.958 | 14.712685  | 0.000 | 0.000     | 247.023  |
| Rec  | 247.023 | 641537.625 | 4668046.413 | 5.693702   | 0.000 | 0.000     | 92.218   |
|      | 339.241 | 641545.861 | 4668138.263 | 5.693702   |       |           |          |

### H-396

| Tipo | P.K.    | Coord. X   | Coord. Y    | Azimut (g) | Radio | Parametro | Longitud |
|------|---------|------------|-------------|------------|-------|-----------|----------|
| Rec  | 0.000   | 640410.499 | 4667253.033 | 230.645049 | 0.000 | 0.000     | 154.287  |
|      | 154.287 | 640339.064 | 4667116.279 | 230.645049 |       |           |          |

### H-400

| Tipo | P.K.    | Coord. X   | Coord. Y    | Azimut (g) | Radio | Parametro | Longitud |
|------|---------|------------|-------------|------------|-------|-----------|----------|
| Rec  | 0.000   | 640784.747 | 4667358.353 | 67.316802  | 0.000 | 0.000     | 277.642  |
|      | 277.642 | 641026.597 | 4667494.711 | 67.316802  |       |           |          |

## 5.2 LISTADOS DE RASANTES

### R1

| Distancia | C. Terreno | C. Rasante | C. Roja | Pendiente   |
|-----------|------------|------------|---------|-------------|
| 0         | 437,845    | 431,05     | -6,795  | -0,00500269 |
| 20        | 437,847    | 430,95     | -6,897  | -0,00500269 |
| 40        | 436,871    | 430,85     | -6,021  | -0,00500269 |
| 60        | 436,888    | 430,75     | -6,138  | -0,00500269 |
| 80        | 436,877    | 430,65     | -6,227  | -0,00500269 |
| 100       | 436,884    | 430,55     | -6,334  | -0,00500269 |
| 120       | 436,782    | 430,45     | -6,332  | -0,00500269 |
| 140       | 435,594    | 430,35     | -5,244  | -0,00500269 |
| 160       | 435,692    | 430,25     | -5,442  | -0,00500269 |
| 176,705   | 434,396    | 430,166    | -4,23   | -0,00500269 |
| 180       | 434,06     | 429,821    | -4,239  | -0,1048347  |
| 200       | 431,507    | 427,724    | -3,783  | -0,1048347  |
| 218,962   | 430,115    | 425,736    | -4,379  | -0,1048347  |
| 220       | 430,069    | 425,643    | -4,426  | -0,08985838 |
| 240       | 428,492    | 423,846    | -4,646  | -0,08985838 |

|         |         |         |        |             |
|---------|---------|---------|--------|-------------|
| 260     | 426,815 | 422,048 | -4,767 | -0,08985838 |
| 280     | 424,534 | 420,251 | -4,283 | -0,08985838 |
| 300     | 422,395 | 418,454 | -3,941 | -0,08985838 |
| 320     | 420,729 | 416,657 | -4,072 | -0,08985838 |
| 340     | 419,18  | 414,86  | -4,32  | -0,08985838 |
| 347,965 | 417,767 | 414,144 | -3,623 | -0,08985838 |
| 360     | 417,522 | 413,463 | -4,059 | -0,05662575 |
| 380     | 417,538 | 412,33  | -5,208 | -0,05662575 |
| 396,035 | 415,037 | 411,422 | -3,615 | -0,05662575 |
| 400     | 415,003 | 411,229 | -3,774 | -0,04856627 |
| 420     | 414,983 | 410,258 | -4,725 | -0,04856627 |
| 440     | 412,993 | 409,287 | -3,706 | -0,04856627 |
| 460     | 412,929 | 408,315 | -4,614 | -0,04856627 |
| 480     | 412,216 | 407,344 | -4,872 | -0,04856627 |
| 490,648 | 410,678 | 406,827 | -3,851 | -0,04856627 |
| 500     | 410,68  | 406,463 | -4,217 | -0,03890347 |
| 520     | 410,618 | 405,685 | -4,933 | -0,03890347 |
| 535,991 | 408,89  | 405,063 | -3,827 | -0,03890347 |
| 540     | 408,908 | 404,93  | -3,978 | -0,03312099 |
| 560     | 408,865 | 404,268 | -4,597 | -0,03312099 |
| 580     | 407,957 | 403,605 | -4,352 | -0,03312099 |
| 583,242 | 406,98  | 403,498 | -3,482 | -0,03312099 |
| 600     | 406,946 | 402,825 | -4,121 | -0,04018948 |
| 620     | 406,881 | 402,021 | -4,86  | -0,04018948 |
| 629,896 | 405,163 | 401,623 | -3,54  | -0,04018948 |
| 640     | 405,117 | 401,328 | -3,789 | -0,02916929 |
| 660     | 405,143 | 400,745 | -4,398 | -0,02916929 |
| 680     | 404,703 | 400,162 | -4,541 | -0,02916929 |
| 683,994 | 403,603 | 400,045 | -3,558 | -0,02916929 |
| 700     | 403,653 | 399,048 | -4,605 | -0,06228247 |
| 720     | 401,58  | 397,802 | -3,778 | -0,06228247 |
| 730,54  | 400,897 | 397,146 | -3,751 | -0,06228247 |
| 740     | 400,851 | 396,829 | -4,022 | -0,03354623 |
| 760     | 400,853 | 396,158 | -4,695 | -0,03354623 |
| 780     | 399,142 | 395,487 | -3,655 | -0,03354623 |
| 781,425 | 399,138 | 395,439 | -3,699 | -0,03354623 |
| 800     | 399,106 | 394,981 | -4,125 | -0,02466595 |
| 820     | 399,112 | 394,488 | -4,624 | -0,02466595 |
| 838,751 | 397,715 | 394,025 | -3,69  | -0,02466595 |
| 840     | 397,71  | 394,005 | -3,705 | -0,01562458 |
| 860     | 397,649 | 393,693 | -3,956 | -0,01562458 |
| 880     | 397,492 | 393,381 | -4,111 | -0,01562458 |
| 900     | 397,464 | 393,068 | -4,396 | -0,01562458 |
| 912,225 | 396,448 | 392,877 | -3,571 | -0,01562458 |
| 920     | 396,184 | 392,695 | -3,489 | -0,0233656  |
| 937,433 | 396,046 | 392,288 | -3,758 | -0,0233656  |
| 940     | 396,035 | 392,274 | -3,761 | -0,00539497 |
| 960     | 395,825 | 392,166 | -3,659 | -0,00539497 |
| 980     | 395,86  | 392,058 | -3,802 | -0,00539497 |
| 1000    | 395,747 | 391,95  | -3,797 | -0,00539497 |
| 1020    | 395,41  | 391,843 | -3,567 | -0,00539497 |
| 1040    | 395,397 | 391,735 | -3,662 | -0,00539497 |
| 1060    | 395,412 | 391,627 | -3,785 | -0,00539497 |
| 1080    | 395,915 | 391,519 | -4,396 | -0,00539497 |
| 1100    | 396,021 | 391,411 | -4,61  | -0,00539497 |
| 1120    | 396,231 | 391,303 | -4,928 | -0,00539497 |

|          |         |         |        |             |
|----------|---------|---------|--------|-------------|
| 1140     | 397,425 | 391,195 | -6,23  | -0,00539497 |
| 1160     | 397,496 | 391,087 | -6,409 | -0,00539497 |
| 1180     | 397,264 | 390,979 | -6,285 | -0,00539497 |
| 1200     | 396,22  | 390,871 | -5,349 | -0,00539497 |
| 1220     | 395,33  | 390,764 | -4,566 | -0,00539497 |
| 1233,264 | 395,284 | 390,692 | -4,592 | -0,00539497 |
| 1240     | 395,293 | 390,434 | -4,859 | -0,03824077 |
| 1260     | 395,258 | 389,67  | -5,588 | -0,03824077 |
| 1272,986 | 393,05  | 389,173 | -3,877 | -0,03824077 |
| 1280     | 393,624 | 389,015 | -4,609 | -0,02256764 |
| 1300     | 393,125 | 388,563 | -4,562 | -0,02256764 |
| 1320     | 392,61  | 388,112 | -4,498 | -0,02256764 |
| 1323,102 | 391,728 | 388,042 | -3,686 | -0,02256764 |
| 1340     | 391,74  | 387,807 | -3,933 | -0,01390733 |
| 1360     | 391,734 | 387,529 | -4,205 | -0,01390733 |
| 1380     | 391,936 | 387,251 | -4,685 | -0,01390733 |
| 1394,647 | 390,605 | 387,047 | -3,558 | -0,01390733 |
| 1400     | 390,614 | 386,871 | -3,743 | -0,03285263 |
| 1420     | 390,584 | 386,214 | -4,37  | -0,03285263 |
| 1440     | 389,754 | 385,557 | -4,197 | -0,03285263 |
| 1460     | 389,64  | 384,9   | -4,74  | -0,03285263 |
| 1480     | 388,255 | 384,243 | -4,012 | -0,03285263 |
| 1481,672 | 387,882 | 384,188 | -3,694 | -0,03285263 |
| 1500     | 388,647 | 383,85  | -4,797 | -0,01843423 |
| 1520     | 387,722 | 383,481 | -4,241 | -0,01843423 |
| 1540     | 387,765 | 383,113 | -4,652 | -0,01843423 |
| 1547,582 | 386,558 | 382,973 | -3,585 | -0,01843423 |
| 1560     | 386,399 | 382,86  | -3,539 | -0,00911834 |
| 1580     | 386,484 | 382,677 | -3,807 | -0,00911834 |
| 1600     | 386,41  | 382,495 | -3,915 | -0,00911834 |
| 1620     | 386,455 | 382,313 | -4,142 | -0,00911834 |
| 1640     | 386,418 | 382,13  | -4,288 | -0,00911834 |
| 1660     | 386,41  | 381,948 | -4,462 | -0,00911834 |
| 1665,915 | 385,538 | 381,894 | -3,644 | -0,00911834 |
| 1680     | 385,548 | 381,582 | -3,966 | -0,02214088 |
| 1700     | 385,4   | 381,139 | -4,261 | -0,02214088 |
| 1716,184 | 384,402 | 380,781 | -3,621 | -0,02214088 |
| 1720     | 384,391 | 380,734 | -3,657 | -0,01231784 |
| 1740     | 384,45  | 380,488 | -3,962 | -0,01231784 |
| 1760     | 384,472 | 380,241 | -4,231 | -0,01231784 |
| 1780     | 383,97  | 379,995 | -3,975 | -0,01231784 |
| 1788,031 | 383,472 | 379,896 | -3,576 | -0,01231784 |
| 1800     | 383,506 | 379,652 | -3,854 | -0,02038977 |
| 1820     | 383,503 | 379,244 | -4,259 | -0,02038977 |
| 1840     | 383,5   | 378,836 | -4,664 | -0,02038977 |
| 1860     | 382,255 | 378,429 | -3,826 | -0,02038977 |
| 1870,131 | 381,873 | 378,222 | -3,651 | -0,02038977 |
| 1880     | 381,789 | 378,134 | -3,655 | -0,00895365 |
| 1900     | 381,812 | 377,955 | -3,857 | -0,00895365 |
| 1920     | 381,823 | 377,775 | -4,048 | -0,00895365 |
| 1940     | 381,796 | 377,596 | -4,2   | -0,00895365 |
| 1960     | 381,841 | 377,417 | -4,424 | -0,00895365 |
| 1980     | 381,815 | 377,238 | -4,577 | -0,00895365 |
| 2000     | 381,858 | 377,059 | -4,799 | -0,00895365 |
| 2020     | 381,861 | 376,88  | -4,981 | -0,00895365 |
| 2040     | 381,781 | 376,701 | -5,08  | -0,00895365 |

|          |         |         |        |             |
|----------|---------|---------|--------|-------------|
| 2060     | 381,778 | 376,522 | -5,256 | -0,00895365 |
| 2080     | 381,832 | 376,343 | -5,489 | -0,00895365 |
| 2100     | 380,539 | 376,164 | -4,375 | -0,00895365 |
| 2120     | 380,547 | 375,985 | -4,562 | -0,00895365 |
| 2127,903 | 379,99  | 375,914 | -4,076 | -0,00895365 |
| 2140     | 380,021 | 375,831 | -4,19  | -0,00684197 |
| 2160     | 380,032 | 375,694 | -4,338 | -0,00684197 |
| 2180     | 380,286 | 375,558 | -4,728 | -0,00684197 |
| 2200     | 378,878 | 375,421 | -3,457 | -0,00684197 |
| 2220     | 378,851 | 375,284 | -3,567 | -0,00684197 |
| 2240     | 378,884 | 375,147 | -3,737 | -0,00684197 |
| 2260     | 378,876 | 375,01  | -3,866 | -0,00684197 |
| 2280     | 378,856 | 374,873 | -3,983 | -0,00684197 |
| 2300     | 378,778 | 374,737 | -4,041 | -0,00684197 |
| 2320     | 378,785 | 374,6   | -4,185 | -0,00684197 |
| 2340     | 378,779 | 374,463 | -4,316 | -0,00684197 |
| 2360     | 378,745 | 374,326 | -4,419 | -0,00684197 |
| 2380     | 376,625 | 372,072 | -4,553 | -0,11269137 |
| 2382,078 | 375,288 | 371,838 | -3,45  | -0,11269137 |
| 2400     | 377,625 | 372,324 | -5,301 | 0,02709381  |
| 2420     | 377,504 | 372,865 | -4,639 | 0,02709381  |
| 2440     | 377,526 | 373,407 | -4,119 | 0,02709381  |
| 2460     | 377,518 | 373,949 | -3,569 | 0,02709381  |
| 2464,237 | 377,514 | 374,064 | -3,45  | 0,02709381  |

### R1B

| Distancia | C. Terreno | C. Rasante | C. Roja | Pendiente |
|-----------|------------|------------|---------|-----------|
| 0         | 377,514    | 374,464    | -3,05   | -0,005    |
| 20        | 377,573    | 374,364    | -3,209  | -0,005    |
| 40        | 377,15     | 374,264    | -2,886  | -0,005    |
| 60        | 377,618    | 374,164    | -3,454  | -0,005    |
| 80        | 377,636    | 374,064    | -3,572  | -0,005    |
| 100       | 377,642    | 373,964    | -3,678  | -0,005    |
| 120       | 377,655    | 373,864    | -3,791  | -0,005    |
| 140       | 376,967    | 373,764    | -3,203  | -0,005    |
| 160       | 376,979    | 373,664    | -3,315  | -0,005    |
| 180       | 376,996    | 373,564    | -3,432  | -0,005    |
| 200       | 377,004    | 373,464    | -3,54   | -0,005    |
| 220       | 377,014    | 373,364    | -3,65   | -0,005    |
| 240       | 377,019    | 373,264    | -3,755  | -0,005    |
| 260       | 376,952    | 373,164    | -3,788  | -0,005    |
| 280       | 376,687    | 373,064    | -3,623  | -0,005    |
| 300       | 376,705    | 372,964    | -3,741  | -0,005    |
| 320       | 376,888    | 372,864    | -4,024  | -0,005    |
| 340       | 376,932    | 372,764    | -4,168  | -0,005    |
| 360       | 376,94     | 372,664    | -4,276  | -0,005    |
| 380       | 376,963    | 372,564    | -4,399  | -0,005    |
| 400       | 376,683    | 372,464    | -4,219  | -0,005    |
| 420       | 376,411    | 372,364    | -4,047  | -0,005    |
| 440       | 376,441    | 372,264    | -4,177  | -0,005    |
| 460       | 376,46     | 372,164    | -4,296  | -0,005    |
| 480       | 376,465    | 372,064    | -4,401  | -0,005    |

|          |         |         |        |             |
|----------|---------|---------|--------|-------------|
| 500      | 377,318 | 371,964 | -5,354 | -0,005      |
| 520      | 377,302 | 371,864 | -5,438 | -0,005      |
| 540      | 377,279 | 371,764 | -5,515 | -0,005      |
| 560      | 377,259 | 371,664 | -5,595 | -0,005      |
| 580      | 377,353 | 371,564 | -5,789 | -0,005      |
| 600      | 376,899 | 371,464 | -5,435 | -0,005      |
| 620      | 376,553 | 371,364 | -5,189 | -0,005      |
| 640      | 376,586 | 371,264 | -5,322 | -0,005      |
| 650      | 376,579 | 371,214 | -5,365 | -0,005      |
| 660      | 376,539 | 370,28  | -6,259 | -0,09340838 |
| 671,497  | 375,948 | 369,206 | -6,742 | -0,09340838 |
| 680      | 376,074 | 369,163 | -6,911 | -0,00503704 |
| 700      | 374,431 | 369,062 | -5,369 | -0,00503704 |
| 705,247  | 375,754 | 369,036 | -6,718 | -0,00503704 |
| 720      | 375,305 | 370,124 | -5,181 | 0,07376026  |
| 740      | 377,083 | 371,599 | -5,484 | 0,07376026  |
| 760      | 377,027 | 373,075 | -3,952 | 0,07376026  |
| 765,941  | 377,023 | 373,513 | -3,51  | 0,07376026  |
| 780      | 377,024 | 373,555 | -3,469 | 0,003       |
| 800      | 377,029 | 373,615 | -3,414 | 0,003       |
| 820      | 377,033 | 373,675 | -3,358 | 0,003       |
| 840      | 377,023 | 373,735 | -3,288 | 0,003       |
| 860      | 377,034 | 373,795 | -3,239 | 0,003       |
| 880      | 377,018 | 373,855 | -3,163 | 0,003       |
| 900      | 377,026 | 373,915 | -3,111 | 0,003       |
| 920      | 377,025 | 373,975 | -3,05  | 0,003       |
| 940      | 377,213 | 374,035 | -3,178 | 0,003       |
| 941,595  | 377,467 | 374,04  | -3,428 | 0,003       |
| 960      | 378,93  | 374,913 | -4,017 | 0,04743213  |
| 980      | 378,947 | 375,861 | -3,086 | 0,04743213  |
| 980,742  | 378,951 | 375,897 | -3,054 | 0,04743213  |
| 1000     | 381,148 | 377,603 | -3,545 | 0,08858128  |
| 1005,793 | 381,153 | 378,116 | -3,037 | 0,08858128  |
| 1020     | 382,506 | 379,065 | -3,441 | 0,06683347  |
| 1033,987 | 383,659 | 380     | -3,659 | 0,06683347  |
| 1040     | 383,638 | 380,073 | -3,565 | 0,01207491  |
| 1060     | 383,655 | 380,314 | -3,341 | 0,01207491  |
| 1080     | 383,659 | 380,556 | -3,103 | 0,01207491  |
| 1084,095 | 383,655 | 380,605 | -3,05  | 0,01207491  |
| 1100     | 383,664 | 380,647 | -3,017 | 0,00261571  |
| 1120     | 383,675 | 380,699 | -2,976 | 0,00261571  |
| 1140     | 383,712 | 380,751 | -2,961 | 0,00261571  |
| 1141,564 | 383,806 | 380,755 | -3,051 | 0,00261571  |
| 1160     | 384,296 | 380,936 | -3,36  | 0,00977704  |
| 1180     | 384,293 | 381,131 | -3,162 | 0,00977704  |
| 1195,94  | 384,337 | 381,287 | -3,05  | 0,00977704  |
| 1200     | 384,89  | 381,302 | -3,588 | 0,00367754  |
| 1215,941 | 384,988 | 381,361 | -3,627 | 0,00367754  |
| 1220     | 384,994 | 381,474 | -3,52  | 0,02794527  |
| 1240     | 385,682 | 382,033 | -3,649 | 0,02794527  |
| 1260     | 385,824 | 382,592 | -3,232 | 0,02794527  |

|          |         |         |        |             |
|----------|---------|---------|--------|-------------|
| 1280     | 386,688 | 383,151 | -3,537 | 0,02794527  |
| 1300     | 387,442 | 383,71  | -3,732 | 0,02794527  |
| 1320     | 387,639 | 384,269 | -3,37  | 0,02794527  |
| 1340     | 388,742 | 384,827 | -3,915 | 0,02794527  |
| 1360     | 389,442 | 385,386 | -4,056 | 0,02794527  |
| 1380     | 390,226 | 385,945 | -4,281 | 0,02794527  |
| 1400     | 390,672 | 386,504 | -4,168 | 0,02794527  |
| 1420     | 390,329 | 387,063 | -3,266 | 0,02794527  |
| 1430,809 | 390,315 | 387,365 | -2,95  | 0,02794527  |
| 1440     | 390,254 | 387,314 | -2,94  | -0,00559729 |
| 1460     | 390,151 | 387,202 | -2,949 | -0,00559729 |
| 1480     | 390,042 | 387,09  | -2,952 | -0,00559729 |
| 1500     | 389,995 | 386,978 | -3,017 | -0,00559729 |
| 1520     | 389,931 | 386,866 | -3,065 | -0,00559729 |
| 1540     | 389,938 | 386,754 | -3,184 | -0,00559729 |
| 1560     | 389,91  | 386,642 | -3,268 | -0,00559729 |
| 1580     | 389,845 | 386,53  | -3,315 | -0,00559729 |
| 1600     | 389,688 | 386,418 | -3,27  | -0,00559729 |
| 1620     | 389,733 | 386,306 | -3,427 | -0,00559729 |
| 1640     | 389,416 | 386,194 | -3,222 | -0,00559729 |
| 1660     | 389,328 | 386,082 | -3,246 | -0,00559729 |
| 1680     | 389,192 | 385,97  | -3,222 | -0,00559729 |
| 1700     | 389,085 | 385,858 | -3,226 | -0,00559729 |
| 1720     | 388,891 | 385,746 | -3,145 | -0,00559729 |
| 1740     | 388,847 | 385,634 | -3,213 | -0,00559729 |
| 1760     | 388,792 | 385,523 | -3,269 | -0,00559729 |
| 1780     | 388,754 | 385,411 | -3,343 | -0,00559729 |
| 1800     | 388,746 | 385,299 | -3,447 | -0,00559729 |
| 1820     | 388,838 | 385,187 | -3,651 | -0,00559729 |
| 1840     | 388,738 | 385,075 | -3,663 | -0,00559729 |
| 1860     | 388,516 | 384,963 | -3,553 | -0,00559729 |
| 1880     | 388,131 | 384,851 | -3,28  | -0,00559729 |
| 1900     | 388,48  | 384,739 | -3,741 | -0,00559729 |
| 1920     | 388,351 | 384,627 | -3,724 | -0,00559729 |
| 1940     | 387,999 | 384,515 | -3,484 | -0,00559729 |
| 1950,147 | 387,968 | 384,458 | -3,51  | -0,00559729 |
| 1960     | 387,992 | 384,488 | -3,504 | 0,003       |
| 1980     | 387,987 | 384,548 | -3,439 | 0,003       |
| 2000     | 388,006 | 384,608 | -3,398 | 0,003       |
| 2020     | 387,92  | 384,668 | -3,252 | 0,003       |
| 2040     | 387,936 | 384,728 | -3,208 | 0,003       |
| 2060     | 387,914 | 384,788 | -3,127 | 0,003       |
| 2080     | 387,922 | 384,848 | -3,074 | 0,003       |
| 2100     | 387,923 | 384,908 | -3,015 | 0,003       |
| 2120     | 387,982 | 384,968 | -3,014 | 0,003       |
| 2140     | 388,166 | 385,028 | -3,138 | 0,003       |
| 2160     | 388,278 | 385,088 | -3,19  | 0,003       |
| 2180     | 388,248 | 385,148 | -3,1   | 0,003       |
| 2200     | 388,222 | 385,208 | -3,014 | 0,003       |
| 2214,13  | 388,316 | 385,25  | -3,066 | 0,003       |
| 2220     | 388,267 | 385,221 | -3,046 | -0,005      |

|          |         |         |        |             |
|----------|---------|---------|--------|-------------|
| 2240     | 388,177 | 385,121 | -3,056 | -0,005      |
| 2260     | 388,051 | 385,021 | -3,03  | -0,005      |
| 2280     | 387,97  | 384,921 | -3,049 | -0,005      |
| 2300     | 387,88  | 384,821 | -3,059 | -0,005      |
| 2320     | 387,743 | 384,721 | -3,022 | -0,005      |
| 2340     | 387,617 | 384,621 | -2,996 | -0,005      |
| 2360     | 387,481 | 384,521 | -2,96  | -0,005      |
| 2380     | 387,364 | 384,421 | -2,943 | -0,005      |
| 2400     | 387,227 | 384,321 | -2,906 | -0,005      |
| 2420     | 387,082 | 384,221 | -2,861 | -0,005      |
| 2440     | 386,974 | 384,121 | -2,853 | -0,005      |
| 2460     | 386,834 | 384,021 | -2,813 | -0,005      |
| 2480     | 386,745 | 383,921 | -2,824 | -0,005      |
| 2500     | 386,636 | 383,821 | -2,815 | -0,005      |
| 2520     | 386,545 | 383,721 | -2,824 | -0,005      |
| 2540     | 386,524 | 383,621 | -2,903 | -0,005      |
| 2560     | 386,475 | 383,521 | -2,954 | -0,005      |
| 2580     | 386,428 | 383,016 | -3,412 | -0,02524241 |
| 2600     | 385,499 | 382,511 | -2,988 | -0,02524241 |
| 2620     | 385,065 | 382,006 | -3,059 | -0,02524241 |
| 2640     | 385,066 | 381,501 | -3,565 | -0,02524241 |
| 2646,043 | 385,063 | 381,349 | -3,714 | -0,02524241 |
| 2660     | 385,001 | 381,391 | -3,61  | 0,003       |
| 2680     | 384,986 | 381,451 | -3,535 | 0,003       |
| 2700     | 385,045 | 381,511 | -3,534 | 0,003       |
| 2720     | 384,965 | 381,571 | -3,394 | 0,003       |
| 2740     | 384,994 | 381,631 | -3,364 | 0,003       |
| 2760     | 384,851 | 381,691 | -3,16  | 0,003       |
| 2780     | 384,852 | 381,751 | -3,102 | 0,003       |
| 2800     | 385,204 | 381,811 | -3,393 | 0,003       |
| 2810     | 384,911 | 381,841 | -3,07  | 0,003       |
| 2820     | 384,602 | 381,791 | -2,811 | -0,005      |
| 2840     | 384,456 | 381,691 | -2,765 | -0,005      |
| 2860     | 384,819 | 381,591 | -3,228 | -0,005      |
| 2880     | 384,477 | 381,491 | -2,986 | -0,005      |
| 2900     | 384,38  | 381,391 | -2,989 | -0,005      |
| 2920     | 384,639 | 381,291 | -3,348 | -0,005      |
| 2940     | 384,385 | 381,191 | -3,194 | -0,005      |
| 2960     | 384,343 | 381,091 | -3,252 | -0,005      |
| 2980     | 384,616 | 380,991 | -3,625 | -0,005      |
| 3000     | 384,399 | 380,891 | -3,508 | -0,005      |
| 3020     | 383,961 | 380,791 | -3,17  | -0,005      |
| 3040     | 383,785 | 380,691 | -3,094 | -0,005      |
| 3060     | 383,781 | 380,591 | -3,19  | -0,005      |
| 3080     | 383,771 | 380,491 | -3,28  | -0,005      |
| 3100     | 383,785 | 380,391 | -3,394 | -0,005      |
| 3120     | 383,773 | 380,291 | -3,482 | -0,005      |
| 3140     | 383,745 | 380,191 | -3,554 | -0,005      |
| 3160     | 383,739 | 380,091 | -3,648 | -0,005      |
| 3178,147 | 383,767 | 380     | -3,767 | -0,005      |
| 3180     | 383,765 | 379,991 | -3,774 | -0,005      |

|          |         |         |        |             |
|----------|---------|---------|--------|-------------|
| 3199,77  | 384,218 | 379,892 | -4,326 | -0,005      |
| 3200     | 384,106 | 379,851 | -4,255 | -0,17723435 |
| 3204,835 | 381,748 | 378,994 | -2,754 | -0,17723435 |
| 3220     | 381,642 | 377,828 | -3,814 | -0,07692614 |
| 3240     | 381,605 | 376,289 | -5,316 | -0,07692614 |
| 3260     | 378,63  | 374,751 | -3,879 | -0,07692614 |
| 3274,67  | 376,694 | 373,622 | -3,072 | -0,07692614 |
| 3280     | 376,618 | 373,595 | -3,023 | -0,00499999 |
| 3300     | 376,676 | 373,495 | -3,181 | -0,00499999 |
| 3320     | 376,57  | 373,395 | -3,175 | -0,00499999 |
| 3340     | 376,634 | 373,295 | -3,339 | -0,00499999 |
| 3360     | 376,583 | 373,195 | -3,388 | -0,00499999 |
| 3380     | 376,458 | 373,095 | -3,363 | -0,00499999 |
| 3390     | 376,432 | 373,045 | -3,387 | -0,00499999 |
| 3400     | 376,412 | 372,622 | -3,79  | -0,04233082 |
| 3420     | 375,783 | 371,775 | -4,008 | -0,04233082 |
| 3436,998 | 374,02  | 371,056 | -2,964 | -0,04233082 |
| 3440     | 374,018 | 371,028 | -2,99  | -0,00936917 |
| 3460     | 373,969 | 370,84  | -3,129 | -0,00936917 |
| 3480     | 373,862 | 370,653 | -3,209 | -0,00936917 |
| 3500     | 373,248 | 370,466 | -2,782 | -0,00936917 |
| 3500,721 | 373,571 | 370,459 | -3,112 | -0,00936917 |
| 3520     | 373,375 | 370,362 | -3,013 | -0,005      |
| 3540     | 373,825 | 370,262 | -3,563 | -0,005      |
| 3560     | 373,237 | 370,162 | -3,075 | -0,005      |
| 3580     | 373,232 | 370,062 | -3,17  | -0,005      |
| 3600     | 373,222 | 369,962 | -3,26  | -0,005      |
| 3620     | 373,219 | 369,862 | -3,357 | -0,005      |
| 3640     | 373,194 | 369,762 | -3,432 | -0,005      |
| 3660     | 373,161 | 369,662 | -3,499 | -0,005      |
| 3680     | 373,164 | 369,562 | -3,602 | -0,005      |
| 3700     | 373,142 | 369,462 | -3,68  | -0,005      |
| 3720     | 373,111 | 369,362 | -3,749 | -0,005      |
| 3740     | 373,117 | 369,262 | -3,855 | -0,005      |
| 3760     | 373,096 | 369,162 | -3,934 | -0,005      |
| 3780     | 373,068 | 369,062 | -4,006 | -0,005      |
| 3800     | 373,047 | 368,962 | -4,085 | -0,005      |
| 3820     | 372,938 | 368,862 | -4,076 | -0,005      |
| 3840     | 373,04  | 368,762 | -4,278 | -0,005      |
| 3860     | 372,926 | 368,662 | -4,264 | -0,005      |
| 3878,185 | 371,383 | 368,572 | -2,811 | -0,005      |
| 3880     | 371,387 | 368,525 | -2,862 | -0,02571026 |
| 3900     | 371,341 | 368,011 | -3,33  | -0,02571026 |
| 3920     | 371,371 | 367,496 | -3,875 | -0,02571026 |
| 3940     | 371,167 | 366,982 | -4,185 | -0,02571026 |
| 3960     | 370,875 | 366,468 | -4,407 | -0,02571026 |
| 3961,329 | 370,881 | 366,434 | -4,447 | -0,02571026 |
| 3980     | 371,166 | 365,619 | -5,547 | -0,04362346 |
| 4000     | 366,971 | 364,747 | -2,224 | -0,04362346 |
| 4020     | 366,925 | 363,874 | -3,051 | -0,04362346 |
| 4040     | 365,352 | 363,002 | -2,35  | -0,04362346 |

|          |         |         |        |             |
|----------|---------|---------|--------|-------------|
| 4060     | 365,313 | 362,242 | -3,071 | -0,03799203 |
| 4080     | 364,223 | 361,482 | -2,741 | -0,03799203 |
| 4100     | 363,853 | 360,722 | -3,131 | -0,03799203 |
| 4113,726 | 362,551 | 360,201 | -2,35  | -0,03799203 |
| 4120     | 362,557 | 359,965 | -2,592 | -0,03763825 |
| 4140     | 362,446 | 359,212 | -3,234 | -0,03763825 |
| 4157,143 | 361,117 | 358,567 | -2,55  | -0,03763825 |
| 4160     | 361,076 | 358,537 | -2,539 | -0,01050791 |
| 4180     | 361,06  | 358,327 | -2,733 | -0,01050791 |
| 4200     | 361,164 | 358,117 | -3,047 | -0,01050791 |
| 4220     | 360,377 | 357,906 | -2,471 | -0,01050791 |
| 4240     | 360,39  | 357,696 | -2,694 | -0,01050791 |
| 4260     | 359,925 | 357,486 | -2,439 | -0,01050791 |
| 4280     | 359,898 | 357,276 | -2,622 | -0,01050791 |
| 4300     | 359,903 | 357,066 | -2,837 | -0,01050791 |
| 4320     | 359,361 | 356,856 | -2,505 | -0,01050791 |
| 4340     | 359,368 | 356,645 | -2,723 | -0,01050791 |
| 4360     | 358,694 | 356,435 | -2,259 | -0,01050791 |
| 4380     | 358,751 | 356,052 | -2,699 | -0,01918278 |
| 4400     | 358,742 | 355,668 | -3,074 | -0,01918278 |
| 4420     | 358,141 | 355,284 | -2,857 | -0,01918278 |
| 4440     | 358,297 | 354,901 | -3,396 | -0,01918278 |
| 4451,633 | 357,007 | 354,677 | -2,33  | -0,01918278 |
| 4460     | 358,556 | 354,75  | -3,806 | 0,00868409  |
| 4480     | 358,534 | 354,924 | -3,61  | 0,00868409  |
| 4500     | 358,536 | 355,097 | -3,439 | 0,00868409  |
| 4520     | 358,545 | 355,271 | -3,274 | 0,00868409  |
| 4540     | 358,769 | 355,445 | -3,324 | 0,00868409  |
| 4560     | 358,698 | 355,619 | -3,079 | 0,00868409  |
| 4580     | 358,731 | 355,792 | -2,939 | 0,00868409  |
| 4600     | 358,725 | 355,966 | -2,759 | 0,00868409  |
| 4620     | 358,769 | 356,14  | -2,629 | 0,00868409  |
| 4640     | 358,732 | 356,313 | -2,419 | 0,00868409  |
| 4654,163 | 359,048 | 356,436 | -2,612 | 0,00868409  |
| 4660     | 359,978 | 356,566 | -3,412 | 0,02221859  |
| 4680     | 359,933 | 357,01  | -2,923 | 0,02221859  |
| 4700     | 359,73  | 357,455 | -2,275 | 0,02221859  |
| 4700,067 | 359,728 | 357,456 | -2,272 | 0,02221859  |
| 4720     | 359,573 | 357,185 | -2,388 | -0,01360912 |
| 4740     | 359,384 | 356,913 | -2,471 | -0,01360912 |
| 4760     | 358,942 | 356,641 | -2,302 | -0,01360912 |
| 4780     | 358,703 | 356,368 | -2,335 | -0,01360912 |
| 4800     | 358,358 | 356,096 | -2,262 | -0,01360912 |
| 4820     | 358,295 | 355,824 | -2,471 | -0,01360912 |
| 4840     | 358,288 | 355,552 | -2,736 | -0,01360912 |
| 4850     | 358,332 | 355,416 | -2,916 | -0,01360912 |
| 4860     | 358,889 | 355,685 | -3,204 | 0,02696522  |
| 4880     | 359,067 | 356,225 | -2,842 | 0,02696522  |
| 4900     | 359,014 | 356,764 | -2,25  | 0,02696522  |
| 4920     | 358,954 | 356,664 | -2,29  | -0,005      |
| 4940     | 358,951 | 356,564 | -2,387 | -0,005      |

|          |         |         |        |             |
|----------|---------|---------|--------|-------------|
| 4960     | 358,915 | 356,464 | -2,451 | -0,005      |
| 4980     | 358,919 | 356,364 | -2,555 | -0,005      |
| 5000     | 358,855 | 356,264 | -2,591 | -0,005      |
| 5020     | 358,835 | 356,164 | -2,671 | -0,005      |
| 5040     | 358,908 | 355,359 | -3,549 | -0,04024572 |
| 5060     | 357,4   | 354,554 | -2,846 | -0,04024572 |
| 5076,915 | 356,584 | 353,873 | -2,71  | -0,04024572 |
| 5080     | 356,473 | 353,812 | -2,661 | -0,01979081 |
| 5100     | 356,426 | 353,417 | -3,009 | -0,01979081 |
| 5118,42  | 355,302 | 353,052 | -2,25  | -0,01979081 |
| 5120     | 355,655 | 353,058 | -2,597 | 0,003812    |
| 5140     | 355,639 | 353,134 | -2,505 | 0,003812    |
| 5160     | 355,582 | 353,211 | -2,371 | 0,003812    |
| 5180     | 356,003 | 353,287 | -2,716 | 0,003812    |
| 5200     | 356,046 | 353,363 | -2,683 | 0,003812    |
| 5220     | 356,016 | 353,439 | -2,577 | 0,003812    |
| 5240     | 355,998 | 353,515 | -2,483 | 0,003812    |
| 5260     | 355,982 | 353,592 | -2,39  | 0,003812    |
| 5280     | 356,463 | 353,668 | -2,795 | 0,003812    |
| 5300     | 356,439 | 353,744 | -2,695 | 0,003812    |
| 5309,662 | 356,566 | 353,781 | -2,785 | 0,003812    |
| 5320     | 357,778 | 354,125 | -3,653 | 0,03330053  |
| 5340     | 357,857 | 354,791 | -3,066 | 0,03330053  |
| 5360     | 358,155 | 355,457 | -2,698 | 0,03330053  |
| 5379,636 | 359,03  | 356,111 | -2,919 | 0,03330053  |
| 5380     | 359,031 | 356,112 | -2,919 | 0,00358809  |
| 5400     | 359,112 | 356,184 | -2,928 | 0,00358809  |
| 5420     | 358,989 | 356,256 | -2,733 | 0,00358809  |
| 5440     | 358,897 | 356,328 | -2,569 | 0,00358809  |
| 5460     | 358,84  | 356,4   | -2,44  | 0,00358809  |
| 5480     | 359,668 | 356,471 | -3,197 | 0,00358809  |
| 5498,311 | 358,787 | 356,537 | -2,25  | 0,00358809  |
| 5500     | 359,235 | 356,445 | -2,79  | -0,05445617 |
| 5520     | 357,726 | 355,356 | -2,37  | -0,05445617 |
| 5527,986 | 357,673 | 354,921 | -2,752 | -0,05445617 |
| 5540     | 359,502 | 354,776 | -4,726 | -0,01206387 |
| 5560     | 358,788 | 354,535 | -4,253 | -0,01206387 |
| 5580     | 358,522 | 354,294 | -4,228 | -0,01206387 |
| 5600     | 357,723 | 354,052 | -3,671 | -0,01206387 |
| 5620     | 357,567 | 353,811 | -3,756 | -0,01206387 |
| 5639,893 | 355,921 | 353,571 | -2,35  | -0,01206387 |
| 5640     | 356,005 | 353,571 | -2,434 | 0,00462291  |
| 5660     | 355,886 | 353,664 | -2,222 | 0,00462291  |
| 5680     | 355,889 | 353,756 | -2,133 | 0,00462291  |
| 5690     | 356,377 | 353,803 | -2,574 | 0,00462291  |
| 5700     | 357,182 | 354,178 | -3,004 | 0,0375072   |
| 5720     | 357,767 | 354,928 | -2,839 | 0,0375072   |
| 5734,722 | 357,774 | 355,48  | -2,294 | 0,0375072   |
| 5740     | 357,758 | 355,496 | -2,262 | 0,003       |
| 5760     | 357,751 | 355,556 | -2,195 | 0,003       |
| 5780     | 357,732 | 355,616 | -2,116 | 0,003       |

|          |         |         |        |             |
|----------|---------|---------|--------|-------------|
| 5795,305 | 357,751 | 355,662 | -2,089 | 0,003       |
| 5800     | 357,888 | 355,708 | -2,18  | 0,00974923  |
| 5820     | 358,524 | 355,903 | -2,621 | 0,00974923  |
| 5840     | 358,504 | 356,098 | -2,406 | 0,00974923  |
| 5858,538 | 358,5   | 356,278 | -2,222 | 0,00974923  |
| 5860     | 358,823 | 356,285 | -2,538 | 0,0044599   |
| 5880     | 359,264 | 356,374 | -2,89  | 0,0044599   |
| 5900     | 359,104 | 356,463 | -2,641 | 0,0044599   |
| 5907,241 | 358,686 | 356,495 | -2,19  | 0,0044599   |
| 5920     | 358,767 | 356,432 | -2,335 | -0,005      |
| 5940     | 358,705 | 356,332 | -2,373 | -0,005      |
| 5960     | 358,736 | 356,232 | -2,504 | -0,005      |
| 5980     | 358,717 | 356,132 | -2,585 | -0,005      |
| 6000     | 358,843 | 356,032 | -2,811 | -0,005      |
| 6020     | 358,182 | 355,932 | -2,25  | -0,005      |
| 6040     | 358,241 | 355,832 | -2,409 | -0,005      |
| 6060     | 358,254 | 355,732 | -2,522 | -0,005      |
| 6080     | 357,762 | 355,632 | -2,13  | -0,005      |
| 6100     | 357,84  | 355,532 | -2,308 | -0,005      |
| 6120     | 357,784 | 355,432 | -2,352 | -0,005      |
| 6140     | 357,73  | 355,332 | -2,398 | -0,005      |
| 6160     | 357,831 | 355,232 | -2,599 | -0,005      |
| 6180     | 357,702 | 355,132 | -2,57  | -0,005      |
| 6200     | 357,777 | 355,032 | -2,745 | -0,005      |
| 6220     | 357,657 | 354,932 | -2,725 | -0,005      |
| 6240     | 357,833 | 354,832 | -3,001 | -0,005      |
| 6260     | 357,721 | 354,732 | -2,989 | -0,005      |
| 6280     | 357,441 | 354,632 | -2,809 | -0,005      |
| 6300     | 357,427 | 354,532 | -2,895 | -0,005      |
| 6320     | 357,348 | 354,432 | -2,916 | -0,005      |
| 6340     | 357,234 | 354,332 | -2,902 | -0,005      |
| 6360     | 357,139 | 354,232 | -2,907 | -0,005      |
| 6380     | 356,559 | 354,132 | -2,427 | -0,005      |
| 6400     | 356,576 | 354,032 | -2,544 | -0,005      |
| 6410     | 356,529 | 353,982 | -2,547 | -0,005      |
| 6420     | 356,558 | 353,517 | -3,041 | -0,04650633 |
| 6440     | 356,698 | 352,586 | -4,112 | -0,04650633 |
| 6452,106 | 354,204 | 352,023 | -2,181 | -0,04650633 |
| 6460     | 354,228 | 351,939 | -2,289 | -0,01064965 |
| 6480     | 354,205 | 351,726 | -2,479 | -0,01064965 |
| 6500     | 354,186 | 351,513 | -2,673 | -0,01064965 |
| 6520     | 354,202 | 351,3   | -2,902 | -0,01064965 |
| 6540     | 354,155 | 351,087 | -3,068 | -0,01064965 |
| 6557,59  | 354,112 | 350,9   | -3,211 | -0,01064965 |
| 6560     | 354,097 | 350,805 | -3,292 | -0,03959231 |
| 6580     | 352,477 | 350,013 | -2,464 | -0,03959231 |
| 6600     | 352,173 | 349,221 | -2,952 | -0,03959231 |
| 6620     | 351,337 | 348,429 | -2,908 | -0,03959231 |
| 6640     | 350,539 | 347,637 | -2,902 | -0,03959231 |
| 6660     | 349,243 | 346,845 | -2,398 | -0,03959231 |
| 6660,077 | 349,244 | 346,842 | -2,402 | -0,03959231 |

|          |         |         |        |             |
|----------|---------|---------|--------|-------------|
| 6680     | 349,269 | 346,655 | -2,614 | -0,00942364 |
| 6700     | 349,265 | 346,466 | -2,799 | -0,00942364 |
| 6720     | 348,821 | 346,278 | -2,543 | -0,00942364 |
| 6740     | 348,733 | 346,089 | -2,644 | -0,00942364 |
| 6760     | 348,557 | 345,901 | -2,656 | -0,00942364 |
| 6780     | 347,978 | 345,712 | -2,266 | -0,00942364 |
| 6800     | 347,96  | 345,524 | -2,436 | -0,00942364 |
| 6820     | 348,194 | 345,335 | -2,859 | -0,00942364 |
| 6827,736 | 347,612 | 345,262 | -2,35  | -0,00942364 |
| 6840     | 347,802 | 345,116 | -2,686 | -0,01195777 |
| 6860     | 348,104 | 344,877 | -3,227 | -0,01195777 |
| 6880     | 347,346 | 344,637 | -2,709 | -0,01195777 |
| 6900     | 347,054 | 344,398 | -2,656 | -0,01195777 |
| 6904,482 | 346,455 | 344,345 | -2,11  | -0,01195777 |
| 6920     | 346,364 | 343,848 | -2,516 | -0,03200859 |
| 6940     | 346,377 | 343,208 | -3,169 | -0,03200859 |
| 6960     | 346,281 | 342,568 | -3,713 | -0,03200859 |
| 6977,354 | 344,096 | 342,012 | -2,084 | -0,03200859 |
| 6980     | 346,06  | 342,088 | -3,972 | 0,0286722   |
| 7000     | 346,66  | 342,662 | -3,998 | 0,0286722   |
| 7020     | 346,638 | 343,235 | -3,403 | 0,0286722   |
| 7040     | 346,515 | 343,808 | -2,707 | 0,0286722   |
| 7060     | 346,536 | 344,382 | -2,154 | 0,0286722   |
| 7060,034 | 346,536 | 344,383 | -2,154 | 0,0286722   |
| 7080     | 346,532 | 344,283 | -2,249 | -0,005      |
| 7100     | 346,329 | 344,183 | -2,146 | -0,005      |
| 7120     | 346,355 | 344,083 | -2,272 | -0,005      |
| 7140     | 346,371 | 343,983 | -2,388 | -0,005      |
| 7160     | 346,163 | 343,883 | -2,28  | -0,005      |
| 7180     | 346,164 | 343,783 | -2,381 | -0,005      |
| 7200     | 346,164 | 343,683 | -2,481 | -0,005      |
| 7220     | 345,932 | 343,583 | -2,349 | -0,005      |
| 7240     | 345,942 | 343,483 | -2,459 | -0,005      |
| 7260     | 345,937 | 343,383 | -2,554 | -0,005      |
| 7280     | 345,97  | 343,283 | -2,687 | -0,005      |
| 7300     | 345,955 | 343,183 | -2,772 | -0,005      |
| 7320     | 345,94  | 343,083 | -2,857 | -0,005      |
| 7340     | 345,604 | 342,983 | -2,621 | -0,005      |
| 7360     | 345,627 | 342,883 | -2,744 | -0,005      |
| 7380     | 345,37  | 342,783 | -2,587 | -0,005      |
| 7400     | 345,378 | 342,683 | -2,695 | -0,005      |
| 7420     | 345,118 | 342,583 | -2,535 | -0,005      |
| 7440     | 345,117 | 342,483 | -2,634 | -0,005      |
| 7460     | 345,143 | 342,383 | -2,76  | -0,005      |
| 7480     | 344,918 | 342,283 | -2,635 | -0,005      |
| 7500     | 344,911 | 342,183 | -2,728 | -0,005      |
| 7520     | 344,975 | 342,083 | -2,892 | -0,005      |
| 7540     | 344,676 | 341,983 | -2,693 | -0,005      |
| 7560     | 344,691 | 341,883 | -2,808 | -0,005      |
| 7580     | 344,432 | 341,783 | -2,649 | -0,005      |
| 7600     | 344,443 | 341,683 | -2,76  | -0,005      |

|          |         |         |        |             |
|----------|---------|---------|--------|-------------|
| 7620     | 344,628 | 341,583 | -3,045 | -0,005      |
| 7640     | 344,25  | 341,483 | -2,767 | -0,005      |
| 7660     | 344,08  | 341,383 | -2,697 | -0,005      |
| 7680     | 344     | 341,283 | -2,717 | -0,005      |
| 7700     | 343,769 | 341,183 | -2,586 | -0,005      |
| 7710     | 343,652 | 341,133 | -2,519 | -0,005      |
| 7720     | 343,582 | 340,707 | -2,875 | -0,04262278 |
| 7740     | 343,401 | 339,854 | -3,547 | -0,04262278 |
| 7760     | 341,271 | 339,002 | -2,269 | -0,04262278 |
| 7760,64  | 341,082 | 338,975 | -2,108 | -0,04262278 |
| 7780     | 342,499 | 338,845 | -3,654 | -0,0067135  |
| 7800     | 342,466 | 338,71  | -3,756 | -0,0067135  |
| 7820     | 342,333 | 338,576 | -3,757 | -0,0067135  |
| 7840     | 342,194 | 338,442 | -3,752 | -0,0067135  |
| 7860     | 342,09  | 338,308 | -3,782 | -0,0067135  |
| 7880     | 342,006 | 338,173 | -3,833 | -0,0067135  |
| 7900     | 341,973 | 338,039 | -3,934 | -0,0067135  |
| 7920     | 342,071 | 337,905 | -4,166 | -0,0067135  |
| 7940     | 341,782 | 337,77  | -4,012 | -0,0067135  |
| 7960     | 341,671 | 337,636 | -4,035 | -0,0067135  |
| 7980     | 341,511 | 337,502 | -4,009 | -0,0067135  |
| 8000     | 341,39  | 337,368 | -4,022 | -0,0067135  |
| 8020     | 341,11  | 337,233 | -3,877 | -0,0067135  |
| 8040     | 340,906 | 337,099 | -3,807 | -0,0067135  |
| 8060     | 340,845 | 336,965 | -3,88  | -0,0067135  |
| 8080     | 340,699 | 336,831 | -3,868 | -0,0067135  |
| 8096,196 | 338,718 | 336,722 | -1,997 | -0,0067135  |
| 8100     | 341,058 | 336,878 | -4,18  | 0,04104002  |
| 8120     | 340,868 | 337,699 | -3,169 | 0,04104002  |
| 8140     | 340,879 | 338,52  | -2,359 | 0,04104002  |
| 8147,79  | 340,814 | 338,839 | -1,975 | 0,04104002  |
| 8160     | 341,053 | 338,876 | -2,177 | 0,003       |
| 8180     | 341,276 | 338,936 | -2,34  | 0,003       |
| 8200     | 341,258 | 338,996 | -2,262 | 0,003       |
| 8220     | 341,308 | 339,056 | -2,252 | 0,003       |
| 8240     | 341,696 | 339,116 | -2,58  | 0,003       |
| 8260     | 341,801 | 339,176 | -2,625 | 0,003       |
| 8280     | 341,952 | 339,236 | -2,716 | 0,003       |
| 8294,299 | 342,255 | 339,279 | -2,977 | 0,003       |
| 8300     | 342,276 | 339,463 | -2,813 | 0,03223839  |
| 8320     | 342,596 | 340,107 | -2,489 | 0,03223839  |
| 8340     | 343,213 | 340,752 | -2,461 | 0,03223839  |
| 8360     | 343,921 | 341,397 | -2,524 | 0,03223839  |
| 8380     | 344,579 | 342,042 | -2,537 | 0,03223839  |
| 8397,599 | 344,621 | 342,609 | -2,012 | 0,03223839  |
| 8400     | 344,541 | 342,551 | -1,99  | -0,02429886 |
| 8415,725 | 344,192 | 342,169 | -2,024 | -0,02429886 |
| 8420     | 345,066 | 342,147 | -2,919 | -0,005      |
| 8440     | 344,635 | 342,047 | -2,588 | -0,005      |
| 8460     | 344,68  | 341,947 | -2,733 | -0,005      |
| 8480     | 344,703 | 341,847 | -2,856 | -0,005      |

|          |         |         |        |             |
|----------|---------|---------|--------|-------------|
| 8500     | 344,456 | 341,747 | -2,709 | -0,005      |
| 8520     | 344,451 | 341,647 | -2,804 | -0,005      |
| 8540     | 344,36  | 341,547 | -2,813 | -0,005      |
| 8560     | 344,195 | 341,447 | -2,748 | -0,005      |
| 8580     | 344,185 | 341,347 | -2,838 | -0,005      |
| 8600     | 344,086 | 341,247 | -2,839 | -0,005      |
| 8620     | 343,737 | 341,147 | -2,59  | -0,005      |
| 8636,767 | 343,776 | 341,063 | -2,713 | -0,005      |
| 8640     | 343,805 | 341,001 | -2,804 | -0,01915524 |
| 8660     | 343,266 | 340,618 | -2,648 | -0,01915524 |
| 8672,895 | 342,425 | 340,371 | -2,053 | -0,01915524 |
| 8680     | 342,45  | 340,336 | -2,114 | -0,005      |
| 8700     | 342,634 | 340,236 | -2,398 | -0,005      |
| 8720     | 342,523 | 340,136 | -2,387 | -0,005      |
| 8740     | 342,492 | 340,036 | -2,456 | -0,005      |
| 8760     | 343,211 | 339,936 | -3,275 | -0,005      |
| 8760,621 | 343,187 | 339,933 | -3,254 | -0,005      |
| 8780     | 341,592 | 339,558 | -2,034 | -0,01936005 |
| 8791,184 | 341,291 | 339,341 | -1,95  | -0,01936005 |
| 8800     | 341,326 | 339,292 | -2,034 | -0,00552134 |
| 8820     | 341,287 | 339,182 | -2,105 | -0,00552134 |
| 8840     | 341,333 | 339,071 | -2,262 | -0,00552134 |
| 8860     | 341,334 | 338,961 | -2,373 | -0,00552134 |
| 8880     | 341,651 | 338,851 | -2,8   | -0,00552134 |
| 8891,06  | 340,758 | 338,79  | -1,969 | -0,00552134 |
| 8900     | 341,115 | 338,634 | -2,481 | -0,01738521 |
| 8920     | 340,658 | 338,286 | -2,372 | -0,01738521 |
| 8940     | 340,679 | 337,939 | -2,74  | -0,01738521 |
| 8960     | 340,573 | 337,591 | -2,982 | -0,01738521 |
| 8980     | 340,014 | 337,243 | -2,771 | -0,01738521 |
| 9000     | 339,066 | 336,896 | -2,17  | -0,01738521 |
| 9020     | 338,987 | 336,548 | -2,439 | -0,01738521 |
| 9037,782 | 338,244 | 336,239 | -2,006 | -0,01738521 |
| 9040     | 338,222 | 336,138 | -2,084 | -0,04546045 |
| 9060     | 338,298 | 335,229 | -3,069 | -0,04546045 |
| 9080     | 337,256 | 334,32  | -2,936 | -0,04546045 |
| 9100     | 335,559 | 333,41  | -2,149 | -0,04546045 |
| 9108,317 | 335,437 | 333,032 | -2,405 | -0,04546045 |
| 9120     | 335,608 | 332,974 | -2,634 | -0,005      |
| 9140     | 335,524 | 332,874 | -2,65  | -0,005      |
| 9160     | 335,309 | 332,774 | -2,535 | -0,005      |
| 9180     | 335,282 | 332,674 | -2,608 | -0,005      |
| 9200     | 335,248 | 332,574 | -2,674 | -0,005      |
| 9220     | 335,223 | 332,474 | -2,749 | -0,005      |
| 9240     | 335,195 | 332,374 | -2,821 | -0,005      |
| 9260     | 335,141 | 332,274 | -2,867 | -0,005      |
| 9280     | 335,067 | 332,174 | -2,893 | -0,005      |
| 9300     | 335,032 | 332,074 | -2,958 | -0,005      |
| 9320     | 334,996 | 331,974 | -3,022 | -0,005      |
| 9340     | 334,964 | 331,874 | -3,09  | -0,005      |
| 9360     | 334,926 | 331,774 | -3,152 | -0,005      |

|           |         |         |        |             |
|-----------|---------|---------|--------|-------------|
| 9380      | 334,88  | 331,674 | -3,206 | -0,005      |
| 9400      | 335,001 | 331,574 | -3,427 | -0,005      |
| 9405,439  | 333,751 | 331,547 | -2,204 | -0,005      |
| 9420      | 333,407 | 331,466 | -1,941 | -0,00550773 |
| 9440      | 333,405 | 331,356 | -2,049 | -0,00550773 |
| 9460      | 333,369 | 331,246 | -2,123 | -0,00550773 |
| 9480      | 333,314 | 331,136 | -2,178 | -0,00550773 |
| 9500      | 333,282 | 331,026 | -2,256 | -0,00550773 |
| 9520      | 333,26  | 330,916 | -2,344 | -0,00550773 |
| 9540      | 333,215 | 330,805 | -2,41  | -0,00550773 |
| 9560      | 333,176 | 330,695 | -2,481 | -0,00550773 |
| 9580      | 333,144 | 330,585 | -2,559 | -0,00550773 |
| 9600      | 333,126 | 330,475 | -2,651 | -0,00550773 |
| 9620      | 333,087 | 330,365 | -2,722 | -0,00550773 |
| 9640      | 333,063 | 330,255 | -2,808 | -0,00550773 |
| 9660      | 333,015 | 330,145 | -2,87  | -0,00550773 |
| 9680      | 332,987 | 330,034 | -2,953 | -0,00550773 |
| 9700      | 332,959 | 329,924 | -3,035 | -0,00550773 |
| 9720      | 332,921 | 329,814 | -3,107 | -0,00550773 |
| 9737,264  | 331,519 | 329,719 | -1,8   | -0,00550773 |
| 9740      | 332,397 | 329,705 | -2,692 | -0,005      |
| 9760      | 331,689 | 329,605 | -2,084 | -0,005      |
| 9780      | 331,484 | 329,505 | -1,979 | -0,005      |
| 9800      | 331,425 | 329,405 | -2,02  | -0,005      |
| 9820      | 331,525 | 329,305 | -2,22  | -0,005      |
| 9840      | 331,296 | 329,205 | -2,091 | -0,005      |
| 9860      | 331,247 | 329,105 | -2,142 | -0,005      |
| 9880      | 331,202 | 329,005 | -2,197 | -0,005      |
| 9900      | 331,217 | 328,905 | -2,312 | -0,005      |
| 9920      | 331,233 | 328,805 | -2,428 | -0,005      |
| 9940      | 331,122 | 328,705 | -2,417 | -0,005      |
| 9960      | 331,023 | 328,605 | -2,418 | -0,005      |
| 9980      | 330,964 | 328,505 | -2,459 | -0,005      |
| 10000     | 330,924 | 328,405 | -2,519 | -0,005      |
| 10020     | 330,899 | 328,305 | -2,594 | -0,005      |
| 10040     | 330,83  | 328,205 | -2,625 | -0,005      |
| 10060     | 330,754 | 328,105 | -2,649 | -0,005      |
| 10080     | 330,668 | 328,005 | -2,663 | -0,005      |
| 10100     | 330,635 | 327,905 | -2,73  | -0,005      |
| 10110     | 330,686 | 327,855 | -2,831 | -0,005      |
| 10120     | 329,756 | 327,263 | -2,493 | -0,05927155 |
| 10140     | 329,562 | 326,077 | -3,485 | -0,05927155 |
| 10160     | 329,506 | 324,892 | -4,614 | -0,05927155 |
| 10180     | 325,792 | 323,706 | -2,086 | -0,05927155 |
| 10200     | 324,603 | 322,521 | -2,082 | -0,05927155 |
| 10203,019 | 324,434 | 322,342 | -2,092 | -0,05927155 |
| 10220     | 324,465 | 322,257 | -2,208 | -0,005      |
| 10240     | 324,178 | 322,157 | -2,021 | -0,005      |
| 10260     | 323,866 | 322,057 | -1,809 | -0,005      |
| 10280     | 324,543 | 321,957 | -2,586 | -0,005      |
| 10282,277 | 324,588 | 321,946 | -2,642 | -0,005      |

|           |         |         |        |             |
|-----------|---------|---------|--------|-------------|
| 10300     | 324,092 | 320,899 | -3,193 | -0,05904842 |
| 10313,116 | 322,014 | 320,125 | -1,89  | -0,05904842 |
| 10320     | 323,174 | 320,043 | -3,131 | -0,01182016 |
| 10340     | 322,409 | 319,807 | -2,602 | -0,01182016 |
| 10352,905 | 322,021 | 319,654 | -2,367 | -0,01182016 |
| 10360     | 321,792 | 319,535 | -2,257 | -0,01686441 |
| 10380     | 320,896 | 319,197 | -1,699 | -0,01686441 |
| 10380,793 | 320,834 | 319,184 | -1,65  | -0,01686441 |

### R1B-1

| Distancia | C. Terreno | C. Rasante | C. Roja | Pendiente   |
|-----------|------------|------------|---------|-------------|
| 0         | 378,931    | 374,91     | -4,021  | 0,0635      |
| 20        | 378,923    | 376,18     | -2,743  | 0,0635      |
| 30        | 378,895    | 376,815    | -2,08   | 0,0635      |
| 40        | 378,82     | 376,372    | -2,448  | -0,04425154 |
| 53,615    | 377,85     | 375,77     | -2,08   | -0,04425154 |
| 60        | 378,228    | 375,652    | -2,576  | -0,01846165 |
| 80        | 377,566    | 375,283    | -2,283  | -0,01846165 |
| 82,594    | 377,578    | 375,235    | -2,343  | -0,01846165 |
| 100       | 377,639    | 375,287    | -2,352  | 0,00299673  |
| 120       | 377,754    | 375,347    | -2,407  | 0,00299673  |
| 140       | 377,924    | 375,407    | -2,517  | 0,00299673  |
| 160       | 378,008    | 375,467    | -2,541  | 0,00299673  |
| 180       | 378,057    | 375,527    | -2,53   | 0,00299673  |
| 195,05    | 378,23     | 375,572    | -2,658  | 0,00299673  |
| 200       | 378,581    | 375,663    | -2,918  | 0,01829686  |
| 220       | 379,159    | 376,029    | -3,13   | 0,01829686  |
| 240       | 379,076    | 376,394    | -2,681  | 0,01829686  |
| 260       | 379,078    | 376,76     | -2,318  | 0,01829686  |
| 280       | 379,375    | 377,126    | -2,249  | 0,01829686  |
| 300       | 379,947    | 377,492    | -2,455  | 0,01829686  |
| 300,15    | 379,952    | 377,495    | -2,457  | 0,01829686  |
| 320       | 380,672    | 378,102    | -2,57   | 0,03057411  |
| 340       | 381,158    | 378,713    | -2,444  | 0,03057411  |
| 360       | 381,713    | 379,325    | -2,388  | 0,03057411  |
| 380       | 382,159    | 379,936    | -2,222  | 0,03057411  |
| 400       | 383,346    | 380,548    | -2,798  | 0,03057411  |
| 406,907   | 384,556    | 380,759    | -3,797  | 0,03057411  |
| 420       | 384,499    | 380,798    | -3,701  | 0,00300004  |
| 440       | 383,86     | 380,858    | -3,002  | 0,00300004  |
| 460       | 383,64     | 380,918    | -2,721  | 0,00300004  |
| 480       | 383,674    | 380,978    | -2,696  | 0,00300004  |
| 500       | 383,678    | 381,038    | -2,64   | 0,00300004  |
| 520       | 383,787    | 381,098    | -2,688  | 0,00300004  |
| 540       | 383,789    | 381,158    | -2,631  | 0,00300004  |
| 560       | 383,81     | 381,218    | -2,592  | 0,00300004  |
| 580       | 383,834    | 381,278    | -2,555  | 0,00300004  |
| 600       | 383,855    | 381,338    | -2,516  | 0,00300004  |
| 620       | 383,875    | 381,398    | -2,477  | 0,00300004  |
| 640       | 383,843    | 381,458    | -2,385  | 0,00300004  |
| 660       | 383,896    | 381,518    | -2,378  | 0,00300004  |
| 680       | 383,89     | 381,578    | -2,312  | 0,00300004  |
| 700       | 383,915    | 381,638    | -2,277  | 0,00300004  |

|          |         |         |        |            |
|----------|---------|---------|--------|------------|
| 720      | 384,022 | 381,698 | -2,324 | 0,00300004 |
| 735,236  | 384,088 | 381,744 | -2,344 | 0,00300004 |
| 740      | 384,437 | 382,185 | -2,252 | 0,09253695 |
| 751,543  | 385,352 | 383,253 | -2,099 | 0,09253695 |
| 760      | 385,578 | 383,289 | -2,289 | 0,00424517 |
| 780      | 385,541 | 383,374 | -2,167 | 0,00424517 |
| 800      | 385,564 | 383,459 | -2,106 | 0,00424517 |
| 820      | 385,826 | 383,544 | -2,282 | 0,00424517 |
| 821,976  | 385,864 | 383,552 | -2,312 | 0,00424517 |
| 840      | 386,069 | 383,675 | -2,394 | 0,00681185 |
| 860      | 386,133 | 383,811 | -2,322 | 0,00681185 |
| 880      | 386,143 | 383,947 | -2,196 | 0,00681185 |
| 900      | 386,161 | 384,083 | -2,078 | 0,00681185 |
| 920      | 386,424 | 384,22  | -2,204 | 0,00681185 |
| 940      | 386,576 | 384,356 | -2,22  | 0,00681185 |
| 960      | 386,679 | 384,492 | -2,186 | 0,00681185 |
| 980      | 386,932 | 384,628 | -2,304 | 0,00681185 |
| 1000     | 386,94  | 384,765 | -2,175 | 0,00681185 |
| 1020     | 387,257 | 384,901 | -2,356 | 0,00681185 |
| 1040     | 387,447 | 385,037 | -2,41  | 0,00681185 |
| 1060     | 387,371 | 385,173 | -2,198 | 0,00681185 |
| 1070,073 | 387,422 | 385,242 | -2,18  | 0,00681185 |
| 1080     | 388,799 | 386,394 | -2,405 | 0,11604096 |
| 1081,207 | 388,798 | 386,534 | -2,264 | 0,11604096 |
| 1100     | 388,834 | 386,59  | -2,243 | 0,00299909 |
| 1120     | 388,868 | 386,65  | -2,218 | 0,00299909 |
| 1140     | 388,96  | 386,71  | -2,249 | 0,00299909 |
| 1160     | 388,983 | 386,77  | -2,212 | 0,00299909 |
| 1180     | 389,03  | 386,83  | -2,199 | 0,00299909 |
| 1200     | 389,056 | 386,89  | -2,166 | 0,00299909 |
| 1220     | 389,106 | 386,95  | -2,155 | 0,00299909 |
| 1240     | 389,111 | 387,01  | -2,101 | 0,00299909 |
| 1260     | 389,151 | 387,07  | -2,081 | 0,00299909 |
| 1269,931 | 389,586 | 387,1   | -2,486 | 0,00299909 |
| 1276,085 | 389,985 | 387,742 | -2,243 | 0,10432239 |
| 1280     | 389,983 | 387,754 | -2,229 | 0,00299597 |
| 1300     | 389,994 | 387,814 | -2,181 | 0,00299597 |
| 1320     | 389,988 | 387,874 | -2,114 | 0,00299597 |
| 1328,155 | 390,162 | 387,898 | -2,264 | 0,00299597 |
| 1340     | 390,558 | 388,004 | -2,554 | 0,00899104 |
| 1360     | 390,598 | 388,184 | -2,414 | 0,00899104 |
| 1380     | 391,347 | 388,364 | -2,983 | 0,00899104 |
| 1400     | 391,227 | 388,544 | -2,683 | 0,00899104 |
| 1420     | 391,296 | 388,724 | -2,572 | 0,00899104 |
| 1440     | 391,356 | 388,904 | -2,452 | 0,00899104 |
| 1460     | 391,465 | 389,083 | -2,381 | 0,00899104 |
| 1480     | 391,518 | 389,263 | -2,255 | 0,00899104 |
| 1500     | 391,546 | 389,443 | -2,103 | 0,00899104 |
| 1507,111 | 391,897 | 389,507 | -2,39  | 0,00899104 |
| 1520     | 392,007 | 389,631 | -2,376 | 0,00963382 |
| 1540     | 392,003 | 389,824 | -2,179 | 0,00963382 |
| 1550,396 | 392,099 | 389,924 | -2,175 | 0,00963382 |
| 1560     | 392,607 | 390,002 | -2,606 | 0,00807595 |
| 1580     | 392,614 | 390,163 | -2,451 | 0,00807595 |
| 1600     | 392,842 | 390,325 | -2,517 | 0,00807595 |
| 1620     | 392,855 | 390,486 | -2,369 | 0,00807595 |

|          |         |         |        |             |
|----------|---------|---------|--------|-------------|
| 1640     | 393,087 | 390,648 | -2,439 | 0,00807595  |
| 1660     | 393,171 | 390,809 | -2,362 | 0,00807595  |
| 1680     | 393,421 | 390,971 | -2,451 | 0,00807595  |
| 1700     | 393,414 | 391,132 | -2,282 | 0,00807595  |
| 1720     | 393,441 | 391,294 | -2,147 | 0,00807595  |
| 1740     | 393,585 | 391,455 | -2,13  | 0,00807595  |
| 1760     | 393,705 | 391,617 | -2,088 | 0,00807595  |
| 1777,614 | 393,859 | 391,759 | -2,1   | 0,00807595  |
| 1780     | 393,989 | 391,783 | -2,206 | 0,00989788  |
| 1800     | 394,623 | 391,981 | -2,643 | 0,00989788  |
| 1820     | 394,651 | 392,179 | -2,472 | 0,00989788  |
| 1840     | 394,669 | 392,376 | -2,292 | 0,00989788  |
| 1860     | 395,139 | 392,574 | -2,565 | 0,00989788  |
| 1880     | 395,337 | 392,772 | -2,564 | 0,00989788  |
| 1900     | 395,345 | 392,97  | -2,374 | 0,00989788  |
| 1920     | 395,401 | 393,168 | -2,233 | 0,00989788  |
| 1940     | 395,531 | 393,366 | -2,165 | 0,00989788  |
| 1960     | 395,874 | 393,564 | -2,31  | 0,00989788  |
| 1980     | 395,958 | 393,762 | -2,196 | 0,00989788  |
| 2000     | 395,936 | 393,96  | -1,976 | 0,00989788  |
| 2020     | 396,241 | 394,158 | -2,083 | 0,00989788  |
| 2040     | 396,605 | 394,356 | -2,248 | 0,00989788  |
| 2060     | 396,93  | 394,554 | -2,376 | 0,00989788  |
| 2079,699 | 397,436 | 394,749 | -2,687 | 0,00989788  |
| 2080     | 397,445 | 394,764 | -2,681 | 0,049436    |
| 2100     | 398,134 | 395,753 | -2,381 | 0,049436    |
| 2120     | 399,23  | 396,741 | -2,489 | 0,049436    |
| 2136,702 | 399,667 | 397,567 | -2,1   | 0,049436    |
| 2140     | 399,714 | 397,577 | -2,137 | 0,00307131  |
| 2160     | 400,021 | 397,639 | -2,382 | 0,00307131  |
| 2180     | 400,098 | 397,7   | -2,398 | 0,00307131  |
| 2200     | 400,163 | 397,761 | -2,401 | 0,00307131  |
| 2220     | 400,279 | 397,823 | -2,457 | 0,00307131  |
| 2240     | 400,335 | 397,884 | -2,45  | 0,00307131  |
| 2260     | 400,339 | 397,946 | -2,394 | 0,00307131  |
| 2280     | 400,319 | 398,007 | -2,312 | 0,00307131  |
| 2300     | 400,304 | 398,069 | -2,236 | 0,00307131  |
| 2320     | 400,313 | 398,13  | -2,183 | 0,00307131  |
| 2340     | 400,321 | 398,191 | -2,13  | 0,00307131  |
| 2360     | 400,332 | 398,253 | -2,079 | 0,00307131  |
| 2380     | 400,329 | 398,314 | -2,015 | 0,00307131  |
| 2387,735 | 400,328 | 398,338 | -1,99  | 0,00307131  |
| 2400     | 400,259 | 397,87  | -2,388 | -0,03813671 |
| 2420     | 399,96  | 397,108 | -2,852 | -0,03813671 |
| 2440     | 399,428 | 396,345 | -3,084 | -0,03813671 |
| 2460     | 398,081 | 395,582 | -2,499 | -0,03813671 |
| 2479,143 | 396,753 | 394,852 | -1,901 | -0,03813671 |
| 2480     | 396,762 | 394,848 | -1,915 | -0,00499797 |
| 2500     | 396,685 | 394,748 | -1,937 | -0,00499797 |
| 2520     | 396,625 | 394,648 | -1,977 | -0,00499797 |
| 2540     | 396,648 | 394,548 | -2,1   | -0,00499797 |
| 2560     | 396,611 | 394,448 | -2,163 | -0,00499797 |
| 2580     | 396,598 | 394,348 | -2,25  | -0,00499797 |
| 2584,786 | 396,602 | 394,324 | -2,278 | -0,00499797 |
| 2600     | 396,579 | 394,37  | -2,209 | 0,00300086  |
| 2620     | 396,649 | 394,43  | -2,219 | 0,00300086  |

|          |         |         |        |             |
|----------|---------|---------|--------|-------------|
| 2640     | 396,694 | 394,49  | -2,204 | 0,00300086  |
| 2660     | 396,807 | 394,55  | -2,257 | 0,00300086  |
| 2680     | 396,828 | 394,61  | -2,219 | 0,00300086  |
| 2700     | 396,515 | 394,67  | -1,845 | 0,00300086  |
| 2720     | 397,185 | 394,73  | -2,455 | 0,00300086  |
| 2740     | 397,062 | 394,79  | -2,272 | 0,00300086  |
| 2760     | 397,042 | 394,85  | -2,193 | 0,00300086  |
| 2780     | 397,068 | 394,91  | -2,159 | 0,00300086  |
| 2800     | 397,106 | 394,97  | -2,137 | 0,00300086  |
| 2820     | 397,234 | 395,03  | -2,204 | 0,00300086  |
| 2840     | 397,315 | 395,09  | -2,225 | 0,00300086  |
| 2853,709 | 397,329 | 395,131 | -2,198 | 0,00300086  |
| 2860     | 397,406 | 395,174 | -2,232 | 0,0068189   |
| 2880     | 397,528 | 395,31  | -2,218 | 0,0068189   |
| 2900     | 397,769 | 395,447 | -2,323 | 0,0068189   |
| 2920     | 397,984 | 395,583 | -2,401 | 0,0068189   |
| 2940     | 398,087 | 395,719 | -2,367 | 0,0068189   |
| 2960     | 398,254 | 395,856 | -2,398 | 0,0068189   |
| 2980     | 398,396 | 395,992 | -2,404 | 0,0068189   |
| 3000     | 398,498 | 396,129 | -2,37  | 0,0068189   |
| 3020     | 398,658 | 396,265 | -2,393 | 0,0068189   |
| 3040     | 398,81  | 396,401 | -2,409 | 0,0068189   |
| 3060     | 398,851 | 396,538 | -2,313 | 0,0068189   |
| 3080     | 398,939 | 396,674 | -2,265 | 0,0068189   |
| 3100     | 399,009 | 396,81  | -2,198 | 0,0068189   |
| 3120     | 398,986 | 396,947 | -2,039 | 0,0068189   |
| 3140     | 399,03  | 397,083 | -1,947 | 0,0068189   |
| 3157,717 | 398,954 | 397,204 | -1,75  | 0,0068189   |
| 3160     | 398,951 | 397,193 | -1,759 | -0,00499187 |
| 3180     | 398,898 | 397,093 | -1,805 | -0,00499187 |
| 3200     | 398,835 | 396,993 | -1,842 | -0,00499187 |
| 3220     | 398,826 | 396,893 | -1,933 | -0,00499187 |
| 3240     | 398,744 | 396,793 | -1,95  | -0,00499187 |
| 3260     | 398,64  | 396,693 | -1,947 | -0,00499187 |
| 3280     | 398,53  | 396,594 | -1,936 | -0,00499187 |
| 3300     | 398,382 | 396,494 | -1,888 | -0,00499187 |
| 3320     | 398,253 | 396,394 | -1,859 | -0,00499187 |
| 3340     | 398,117 | 396,294 | -1,823 | -0,00499187 |
| 3360     | 398,084 | 396,194 | -1,889 | -0,00499187 |
| 3380     | 398,366 | 396,094 | -2,271 | -0,00499187 |
| 3400     | 398,358 | 395,995 | -2,363 | -0,00499187 |
| 3420     | 398,288 | 395,895 | -2,393 | -0,00499187 |
| 3440     | 398,239 | 395,795 | -2,444 | -0,00499187 |
| 3459,808 | 397,446 | 395,696 | -1,75  | -0,00499187 |
| 3460     | 397,441 | 395,692 | -1,749 | -0,021186   |
| 3480     | 397,111 | 395,268 | -1,843 | -0,021186   |
| 3500     | 396,73  | 394,844 | -1,885 | -0,021186   |
| 3520     | 396,308 | 394,421 | -1,887 | -0,021186   |
| 3540     | 396,021 | 393,997 | -2,024 | -0,021186   |
| 3560     | 395,745 | 393,573 | -2,171 | -0,021186   |
| 3565,963 | 395,66  | 393,447 | -2,213 | -0,021186   |
| 3578,914 | 394,281 | 392,531 | -1,75  | -0,07072813 |
| 3580     | 394,629 | 392,519 | -2,11  | -0,0106643  |
| 3600     | 394,956 | 392,306 | -2,649 | -0,0106643  |
| 3620     | 394,362 | 392,093 | -2,269 | -0,0106643  |
| 3640     | 394,213 | 391,88  | -2,333 | -0,0106643  |

|          |         |         |        |             |
|----------|---------|---------|--------|-------------|
| 3660     | 394,16  | 391,666 | -2,494 | -0,0106643  |
| 3680     | 393,321 | 391,453 | -1,868 | -0,0106643  |
| 3700     | 393,012 | 391,24  | -1,772 | -0,0106643  |
| 3703,723 | 392,95  | 391,2   | -1,75  | -0,0106643  |
| 3720     | 392,645 | 390,859 | -1,785 | -0,02092227 |
| 3740     | 392,176 | 390,441 | -1,735 | -0,02092227 |
| 3760     | 391,806 | 390,023 | -1,784 | -0,02092227 |
| 3760,409 | 391,764 | 390,014 | -1,75  | -0,02092227 |
| 3780     | 392,074 | 389,837 | -2,238 | -0,00903948 |
| 3800     | 391,634 | 389,656 | -1,977 | -0,00903948 |
| 3809,195 | 391,323 | 389,573 | -1,75  | -0,00903948 |
| 3820     | 391,328 | 389,504 | -1,824 | -0,00634378 |
| 3840     | 391,319 | 389,378 | -1,942 | -0,00634378 |
| 3860     | 391,291 | 389,251 | -2,04  | -0,00634378 |
| 3880     | 391,308 | 389,124 | -2,184 | -0,00634378 |
| 3900     | 391,347 | 388,997 | -2,35  | -0,00634378 |
| 3920     | 390,855 | 388,87  | -1,985 | -0,00634378 |
| 3940     | 390,839 | 388,743 | -2,095 | -0,00634378 |
| 3960     | 390,296 | 388,616 | -1,68  | -0,00634378 |
| 3980     | 390,026 | 388,489 | -1,537 | -0,00634378 |
| 4000     | 390,073 | 388,363 | -1,711 | -0,00634378 |
| 4012,859 | 390,031 | 388,281 | -1,75  | -0,00634378 |
| 4020     | 390,021 | 388,174 | -1,847 | -0,01496032 |
| 4040     | 389,451 | 387,875 | -1,576 | -0,01496032 |
| 4060     | 389,415 | 387,576 | -1,839 | -0,01496032 |
| 4080     | 389,39  | 387,277 | -2,113 | -0,01496032 |
| 4100     | 389,119 | 386,977 | -2,141 | -0,01496032 |
| 4115,798 | 388,491 | 386,741 | -1,75  | -0,01496032 |
| 4120     | 388,49  | 386,68  | -1,809 | -0,0144945  |
| 4140     | 388,512 | 386,39  | -2,121 | -0,0144945  |
| 4160     | 388,634 | 386,1   | -2,534 | -0,0144945  |
| 4173,751 | 387,651 | 385,901 | -1,75  | -0,0144945  |
| 4180     | 387,658 | 385,765 | -1,893 | -0,02179969 |
| 4200     | 387,695 | 385,329 | -2,366 | -0,02179969 |
| 4220     | 387,307 | 384,893 | -2,414 | -0,02179969 |
| 4240     | 386,127 | 384,457 | -1,67  | -0,02179969 |
| 4254,165 | 385,898 | 384,148 | -1,75  | -0,02179969 |
| 4260     | 385,834 | 384,104 | -1,73  | -0,00749628 |
| 4280     | 385,616 | 383,954 | -1,662 | -0,00749628 |
| 4300     | 385,474 | 383,804 | -1,67  | -0,00749628 |
| 4320     | 385,457 | 383,654 | -1,802 | -0,00749628 |
| 4340     | 385,459 | 383,505 | -1,954 | -0,00749628 |
| 4351,013 | 385,462 | 383,422 | -2,04  | -0,00749628 |

### R1B-1-1

| Distancia | C. Terreno | C. Rasante | C. Roja | Pendiente   |
|-----------|------------|------------|---------|-------------|
| 0         | 397,369    | 395,019    | -2,35   | 0,00299999  |
| 20        | 397,395    | 395,079    | -2,316  | 0,00299999  |
| 40        | 396,994    | 395,139    | -1,855  | 0,00299999  |
| 41,638    | 396,977    | 395,144    | -1,833  | 0,00299999  |
| 60        | 396,777    | 395,011    | -1,766  | -0,00727373 |
| 80        | 396,698    | 394,865    | -1,833  | -0,00727373 |
| 100       | 396,603    | 394,72     | -1,883  | -0,00727373 |

|         |         |         |        |             |
|---------|---------|---------|--------|-------------|
| 120     | 396,526 | 394,574 | -1,951 | -0,00727373 |
| 125,284 | 396,301 | 394,536 | -1,765 | -0,00727373 |
| 140     | 396,352 | 394,437 | -1,914 | -0,00670933 |
| 160     | 396,233 | 394,303 | -1,93  | -0,00670933 |
| 180     | 396,144 | 394,169 | -1,975 | -0,00670933 |
| 200     | 395,952 | 394,035 | -1,917 | -0,00670933 |
| 204,366 | 395,771 | 394,005 | -1,766 | -0,00670933 |
| 220     | 395,754 | 393,922 | -1,833 | -0,00534874 |
| 240     | 395,666 | 393,815 | -1,851 | -0,00534874 |
| 243,472 | 395,6   | 393,796 | -1,804 | -0,00534874 |
| 260     | 395,56  | 393,675 | -1,886 | -0,00736256 |
| 273,999 | 395,424 | 393,571 | -1,853 | -0,00736256 |
| 280     | 395,382 | 393,541 | -1,841 | -0,005      |
| 300     | 395,365 | 393,441 | -1,924 | -0,005      |
| 320     | 395,271 | 393,341 | -1,93  | -0,005      |
| 340     | 395,179 | 393,241 | -1,938 | -0,005      |
| 360     | 395,059 | 393,141 | -1,917 | -0,005      |
| 380     | 394,963 | 393,041 | -1,922 | -0,005      |
| 400     | 394,813 | 392,941 | -1,872 | -0,005      |
| 417,716 | 394,642 | 392,853 | -1,789 | -0,005      |
| 420     | 394,626 | 392,835 | -1,791 | -0,0077493  |
| 440     | 394,478 | 392,68  | -1,798 | -0,0077493  |
| 460     | 394,313 | 392,525 | -1,788 | -0,0077493  |
| 480     | 394,221 | 392,37  | -1,85  | -0,0077493  |
| 480,093 | 394,22  | 392,37  | -1,85  | -0,0077493  |
| 500     | 394,08  | 392,27  | -1,81  | -0,005      |
| 520     | 393,953 | 392,17  | -1,783 | -0,005      |
| 540     | 393,893 | 392,07  | -1,823 | -0,005      |
| 560     | 393,86  | 391,97  | -1,89  | -0,005      |
| 580     | 393,78  | 391,87  | -1,91  | -0,005      |
| 600     | 393,64  | 391,77  | -1,87  | -0,005      |
| 620     | 393,561 | 391,67  | -1,891 | -0,005      |
| 640     | 393,48  | 391,57  | -1,91  | -0,005      |
| 660     | 393,45  | 391,47  | -1,98  | -0,005      |
| 680     | 393,423 | 391,37  | -2,053 | -0,005      |
| 700     | 393,284 | 391,27  | -2,014 | -0,005      |
| 720     | 393,085 | 391,17  | -1,915 | -0,005      |
| 740     | 393,041 | 391,07  | -1,971 | -0,005      |
| 760     | 392,844 | 390,97  | -1,874 | -0,005      |
| 780     | 392,681 | 390,87  | -1,811 | -0,005      |
| 800     | 392,595 | 390,77  | -1,825 | -0,005      |
| 820     | 392,569 | 390,67  | -1,899 | -0,005      |
| 840     | 392,596 | 390,57  | -2,026 | -0,005      |
| 860     | 392,496 | 390,47  | -2,026 | -0,005      |
| 880     | 392,406 | 390,37  | -2,036 | -0,005      |
| 900     | 392,276 | 390,27  | -2,006 | -0,005      |
| 920     | 392,214 | 390,17  | -2,044 | -0,005      |
| 940     | 392,063 | 390,07  | -1,993 | -0,005      |
| 951,635 | 391,998 | 390,012 | -1,987 | -0,005      |
| 960     | 391,967 | 389,96  | -2,007 | -0,00621939 |
| 980     | 391,833 | 389,835 | -1,997 | -0,00621939 |

|          |         |         |        |             |
|----------|---------|---------|--------|-------------|
| 1000     | 391,716 | 389,711 | -2,005 | -0,00621939 |
| 1020     | 391,646 | 389,587 | -2,059 | -0,00621939 |
| 1040     | 391,537 | 389,462 | -2,074 | -0,00621939 |
| 1060     | 391,436 | 389,338 | -2,098 | -0,00621939 |
| 1080     | 390,969 | 389,213 | -1,755 | -0,00621939 |
| 1081,2   | 390,881 | 389,206 | -1,675 | -0,00621939 |
| 1100     | 391,184 | 389,112 | -2,072 | -0,005      |
| 1120     | 391,052 | 389,012 | -2,04  | -0,005      |
| 1140     | 390,952 | 388,912 | -2,04  | -0,005      |
| 1160     | 390,841 | 388,812 | -2,029 | -0,005      |
| 1180     | 390,718 | 388,712 | -2,006 | -0,005      |
| 1198,716 | 390,535 | 388,618 | -1,917 | -0,005      |
| 1200     | 390,585 | 388,622 | -1,963 | 0,003       |
| 1220     | 390,472 | 388,682 | -1,79  | 0,003       |
| 1240     | 390,605 | 388,742 | -1,862 | 0,003       |
| 1260     | 390,492 | 388,802 | -1,69  | 0,003       |
| 1265,589 | 390,497 | 388,819 | -1,678 | 0,003       |
| 1280     | 390,276 | 388,583 | -1,693 | -0,01640454 |
| 1300     | 390,218 | 388,255 | -1,964 | -0,01640454 |
| 1303,699 | 390,174 | 388,194 | -1,98  | -0,01640454 |
| 1320     | 390,272 | 388,243 | -2,029 | 0,003       |
| 1340     | 390,17  | 388,303 | -1,867 | 0,003       |
| 1360     | 390,286 | 388,363 | -1,923 | 0,003       |
| 1375,526 | 390,122 | 388,409 | -1,713 | 0,003       |
| 1380     | 390,111 | 388,387 | -1,724 | -0,00499999 |
| 1400     | 390,12  | 388,287 | -1,833 | -0,00499999 |
| 1412,034 | 389,951 | 388,227 | -1,725 | -0,00499999 |
| 1420     | 389,437 | 387,552 | -1,885 | -0,08475624 |
| 1433,025 | 388,519 | 386,448 | -2,071 | -0,08475624 |
| 1440     | 389,059 | 386,017 | -3,042 | -0,06181457 |
| 1460     | 387,911 | 384,78  | -3,13  | -0,06181457 |
| 1474,792 | 385,444 | 383,866 | -1,578 | -0,06181457 |
| 1480     | 385,416 | 383,84  | -1,576 | -0,00500001 |
| 1500     | 385,607 | 383,74  | -1,868 | -0,00500001 |
| 1502,099 | 385,571 | 383,729 | -1,842 | -0,00500001 |
| 1520     | 386,845 | 384,688 | -2,157 | 0,0535429   |
| 1520,948 | 387,03  | 384,739 | -2,291 | 0,0535429   |

### R1B-1-2

| Distancia | C. Terreno | C. Rasante | C. Roja | Pendiente  |
|-----------|------------|------------|---------|------------|
| 0         | 378,183    | 375,569    | -2,614  | 0,00609739 |
| 20        | 378,198    | 375,691    | -2,507  | 0,00609739 |
| 40        | 378,244    | 375,813    | -2,431  | 0,00609739 |
| 60        | 378,274    | 375,935    | -2,34   | 0,00609739 |
| 80        | 378,298    | 376,056    | -2,242  | 0,00609739 |
| 100       | 378,356    | 376,178    | -2,177  | 0,00609739 |
| 120       | 378,425    | 376,3      | -2,124  | 0,00609739 |
| 140       | 378,5      | 376,422    | -2,077  | 0,00609739 |
| 160       | 378,584    | 376,544    | -2,039  | 0,00609739 |

|         |         |         |        |            |
|---------|---------|---------|--------|------------|
| 180     | 378,656 | 376,666 | -1,99  | 0,00609739 |
| 200     | 378,867 | 376,788 | -2,079 | 0,00609739 |
| 220     | 378,786 | 376,91  | -1,876 | 0,00609739 |
| 240     | 378,864 | 377,032 | -1,832 | 0,00609739 |
| 252,001 | 378,761 | 377,105 | -1,656 | 0,00609739 |
| 260     | 378,993 | 377,155 | -1,838 | 0,00618731 |
| 280     | 379,031 | 377,278 | -1,752 | 0,00618731 |
| 300     | 379,26  | 377,402 | -1,858 | 0,00618731 |
| 320     | 379,335 | 377,526 | -1,809 | 0,00618731 |
| 340     | 379,567 | 377,65  | -1,917 | 0,00618731 |
| 360     | 379,647 | 377,773 | -1,873 | 0,00618731 |
| 380     | 379,735 | 377,897 | -1,838 | 0,00618731 |
| 400     | 379,877 | 378,021 | -1,856 | 0,00618731 |
| 420     | 379,999 | 378,145 | -1,854 | 0,00618731 |
| 440     | 379,98  | 378,268 | -1,712 | 0,00618731 |
| 460     | 379,984 | 378,392 | -1,591 | 0,00618731 |
| 462,683 | 379,999 | 378,409 | -1,59  | 0,00618731 |
| 480     | 380,964 | 378,574 | -2,39  | 0,00953797 |
| 500     | 380,984 | 378,765 | -2,22  | 0,00953797 |
| 520     | 381,183 | 378,955 | -2,227 | 0,00953797 |
| 540     | 381,279 | 379,146 | -2,133 | 0,00953797 |
| 560     | 381,329 | 379,337 | -1,992 | 0,00953797 |
| 580     | 381,428 | 379,528 | -1,9   | 0,00953797 |
| 594,932 | 381,4   | 379,67  | -1,73  | 0,00953797 |
| 600     | 381,437 | 379,685 | -1,752 | 0,003      |
| 620     | 381,806 | 379,745 | -2,06  | 0,003      |
| 640     | 382,129 | 379,805 | -2,323 | 0,003      |
| 660     | 382,383 | 379,865 | -2,517 | 0,003      |
| 680     | 382,477 | 379,925 | -2,551 | 0,003      |
| 700     | 382,416 | 379,985 | -2,431 | 0,003      |
| 720     | 381,686 | 380,045 | -1,641 | 0,003      |
| 740     | 381,824 | 380,105 | -1,719 | 0,003      |
| 760     | 381,934 | 380,165 | -1,769 | 0,003      |
| 762,099 | 382,024 | 380,172 | -1,852 | 0,003      |

#### R1B-1-4

| Distancia | C. Terreno | C. Rasante | C. Roja | Pendiente  |
|-----------|------------|------------|---------|------------|
| 0         | 391,204    | 388,146    | -3,058  | 0,048      |
| 20        | 390,756    | 389,106    | -1,65   | 0,048      |
| 40        | 391,041    | 389,206    | -1,834  | 0,00501481 |
| 60        | 391,066    | 389,307    | -1,759  | 0,00501481 |
| 79,424    | 391,079    | 389,404    | -1,675  | 0,00501481 |
| 80        | 391,097    | 389,412    | -1,685  | 0,0131344  |
| 100       | 391,837    | 389,674    | -2,162  | 0,0131344  |
| 120       | 391,94     | 389,937    | -2,003  | 0,0131344  |
| 137,668   | 391,845    | 390,169    | -1,676  | 0,0131344  |
| 140       | 391,909    | 390,212    | -1,697  | 0,01853044 |
| 160       | 392,511    | 390,583    | -1,929  | 0,01853044 |
| 180       | 392,971    | 390,953    | -2,018  | 0,01853044 |

|         |         |         |        |             |
|---------|---------|---------|--------|-------------|
| 200     | 393,153 | 391,324 | -1,829 | 0,01853044  |
| 202,912 | 393,153 | 391,378 | -1,775 | 0,01853044  |
| 220     | 392,557 | 390,065 | -2,492 | -0,07684591 |
| 240     | 390,943 | 388,528 | -2,415 | -0,07684591 |
| 255,745 | 388,893 | 387,318 | -1,575 | -0,07684591 |
| 260     | 388,652 | 387,057 | -1,594 | -0,06122449 |
| 280     | 387,845 | 385,833 | -2,012 | -0,06122449 |
| 300     | 387,688 | 385,356 | -2,332 | -0,02385    |
| 305,552 | 385,844 | 384,269 | -1,575 | -0,1957853  |

### R1B-1-6

| Distancia | C. Terreno | C. Rasante | C. Roja | Pendiente  |
|-----------|------------|------------|---------|------------|
| 0         | 394,65     | 392,18     | -2,47   | 0,01775465 |
| 20        | 394,668    | 392,535    | -2,133  | 0,01775465 |
| 40        | 394,974    | 392,89     | -2,083  | 0,01775465 |
| 60        | 395,317    | 393,245    | -2,071  | 0,01775465 |
| 80        | 395,296    | 393,6      | -1,696  | 0,01775465 |
| 91,641    | 395,508    | 393,807    | -1,701  | 0,01775465 |
| 100       | 395,749    | 393,832    | -1,916  | 0,003      |
| 120       | 395,667    | 393,892    | -1,775  | 0,003      |
| 140       | 395,996    | 393,952    | -2,043  | 0,003      |
| 160       | 396,374    | 394,012    | -2,362  | 0,003      |
| 180       | 396,414    | 394,072    | -2,341  | 0,003      |
| 200       | 396,465    | 394,132    | -2,333  | 0,003      |

### R1B-2

| Distancia | C. Terreno | C. Rasante | C. Roja | Pendiente   |
|-----------|------------|------------|---------|-------------|
| 0         | 378,931    | 374,44     | -4,491  | 0,08476667  |
| 20        | 378,871    | 376,135    | -2,736  | 0,08476667  |
| 30        | 378,883    | 376,983    | -1,9    | 0,08476667  |
| 40        | 378,889    | 376,87     | -2,019  | -0,01133628 |
| 60        | 379,083    | 376,643    | -2,44   | -0,01133628 |
| 80        | 378,757    | 376,416    | -2,341  | -0,01133628 |
| 94,395    | 378,153    | 376,253    | -1,9    | -0,01133628 |
| 100       | 378,593    | 376,225    | -2,368  | -0,005      |
| 120       | 378,206    | 376,125    | -2,081  | -0,005      |
| 140       | 378,218    | 376,025    | -2,193  | -0,005      |
| 160       | 378,199    | 375,925    | -2,274  | -0,005      |
| 180       | 378,143    | 375,825    | -2,318  | -0,005      |
| 200       | 378,127    | 375,725    | -2,402  | -0,005      |
| 220       | 378,071    | 375,625    | -2,446  | -0,005      |
| 240       | 377,987    | 375,525    | -2,462  | -0,005      |
| 260       | 377,94     | 375,425    | -2,515  | -0,005      |
| 280       | 377,825    | 375,325    | -2,5    | -0,005      |
| 300       | 377,664    | 375,225    | -2,439  | -0,005      |
| 320       | 377,639    | 375,125    | -2,514  | -0,005      |
| 340       | 377,549    | 375,025    | -2,524  | -0,005      |
| 360       | 377,521    | 374,925    | -2,596  | -0,005      |

|          |         |         |        |             |
|----------|---------|---------|--------|-------------|
| 380      | 377,371 | 374,825 | -2,546 | -0,005      |
| 400      | 377,399 | 374,725 | -2,674 | -0,005      |
| 420      | 377,61  | 374,625 | -2,985 | -0,005      |
| 440      | 376,841 | 374,525 | -2,316 | -0,005      |
| 450      | 377,066 | 374,475 | -2,591 | -0,005      |
| 460      | 377,881 | 374,756 | -3,125 | 0,02809443  |
| 480      | 378,191 | 375,318 | -2,873 | 0,02809443  |
| 500      | 378,221 | 375,88  | -2,341 | 0,02809443  |
| 520      | 379,223 | 376,442 | -2,781 | 0,02809443  |
| 540      | 379,496 | 377,003 | -2,493 | 0,02809443  |
| 560      | 379,568 | 377,565 | -2,003 | 0,02809443  |
| 580      | 380,552 | 378,127 | -2,425 | 0,02809443  |
| 600      | 380,95  | 378,689 | -2,261 | 0,02809443  |
| 604,406  | 380,9   | 378,813 | -2,087 | 0,02809443  |
| 620      | 380,653 | 378,735 | -1,918 | -0,005      |
| 640      | 380,67  | 378,635 | -2,035 | -0,005      |
| 660      | 381,249 | 378,535 | -2,714 | -0,005      |
| 680      | 380,877 | 378,435 | -2,442 | -0,005      |
| 700      | 380,678 | 378,335 | -2,343 | -0,005      |
| 720      | 380,881 | 378,235 | -2,646 | -0,005      |
| 740      | 380,476 | 378,135 | -2,341 | -0,005      |
| 760      | 380,421 | 378,035 | -2,386 | -0,005      |
| 780      | 380,35  | 377,935 | -2,415 | -0,005      |
| 800      | 380,339 | 377,835 | -2,504 | -0,005      |
| 820      | 380,262 | 377,735 | -2,527 | -0,005      |
| 840      | 380,246 | 377,635 | -2,611 | -0,005      |
| 860      | 380,21  | 377,535 | -2,675 | -0,005      |
| 880      | 380,236 | 377,435 | -2,801 | -0,005      |
| 900      | 380,244 | 377,335 | -2,909 | -0,005      |
| 910      | 380,268 | 377,285 | -2,983 | -0,005      |
| 920      | 379,955 | 376,711 | -3,244 | -0,05735717 |
| 940      | 378,02  | 375,564 | -2,456 | -0,05735717 |
| 960      | 376,974 | 374,417 | -2,557 | -0,05735717 |
| 980      | 376,928 | 373,27  | -3,658 | -0,05735717 |
| 985,404  | 374,86  | 372,96  | -1,9   | -0,05735717 |
| 1000     | 374,824 | 372,418 | -2,406 | -0,03714487 |
| 1020     | 373,9   | 371,675 | -2,225 | -0,03714487 |
| 1030,74  | 373,176 | 371,276 | -1,9   | -0,03714487 |
| 1040     | 373,102 | 371,07  | -2,032 | -0,02221337 |
| 1060     | 372,481 | 370,626 | -1,855 | -0,02221337 |
| 1063,378 | 372,451 | 370,551 | -1,9   | -0,02221337 |
| 1080     | 372,443 | 370,358 | -2,085 | -0,01158554 |
| 1100     | 372,017 | 370,127 | -1,89  | -0,01158554 |
| 1104,55  | 371,974 | 370,074 | -1,9   | -0,01158554 |
| 1120     | 371,99  | 369,914 | -2,076 | -0,01038054 |
| 1140     | 371,604 | 369,706 | -1,898 | -0,01038054 |
| 1146,07  | 371,543 | 369,643 | -1,9   | -0,01038054 |
| 1160     | 371,627 | 369,554 | -2,073 | -0,0063959  |
| 1180     | 371,624 | 369,426 | -2,198 | -0,0063959  |
| 1190     | 371,657 | 369,362 | -2,295 | -0,0063959  |
| 1200     | 371,636 | 368,976 | -2,661 | -0,03863322 |

|          |         |         |        |             |
|----------|---------|---------|--------|-------------|
| 1220     | 370,821 | 368,203 | -2,618 | -0,03863322 |
| 1227,352 | 369,819 | 367,919 | -1,9   | -0,03863322 |
| 1240     | 369,79  | 367,856 | -1,934 | -0,005      |
| 1260     | 369,745 | 367,756 | -1,989 | -0,005      |
| 1280     | 369,963 | 367,656 | -2,307 | -0,005      |
| 1300     | 370,113 | 367,556 | -2,557 | -0,005      |
| 1320     | 370,105 | 367,456 | -2,649 | -0,005      |
| 1340     | 370,163 | 367,356 | -2,808 | -0,005      |
| 1360     | 370,089 | 367,256 | -2,833 | -0,005      |
| 1380     | 370,07  | 367,156 | -2,914 | -0,005      |
| 1400     | 370,086 | 367,056 | -3,03  | -0,005      |
| 1420     | 369,045 | 366,956 | -2,089 | -0,005      |
| 1440     | 369,029 | 366,856 | -2,173 | -0,005      |
| 1460     | 368,995 | 366,756 | -2,239 | -0,005      |
| 1480     | 368,99  | 366,656 | -2,334 | -0,005      |
| 1500     | 368,936 | 366,556 | -2,38  | -0,005      |
| 1520     | 368,916 | 366,237 | -2,679 | -0,01596194 |
| 1540     | 368,898 | 365,917 | -2,981 | -0,01596194 |
| 1560     | 369,047 | 365,598 | -3,449 | -0,01596194 |
| 1569,541 | 367,346 | 365,446 | -1,901 | -0,01596194 |
| 1580     | 368,562 | 365,393 | -3,169 | -0,00500004 |
| 1600     | 368,413 | 365,293 | -3,12  | -0,00500004 |
| 1620     | 368,153 | 365,193 | -2,959 | -0,00500004 |
| 1640     | 368,068 | 365,093 | -2,975 | -0,00500004 |
| 1660     | 368,117 | 364,993 | -3,124 | -0,00500004 |
| 1680     | 368,112 | 364,893 | -3,219 | -0,00500004 |
| 1700     | 367,699 | 364,793 | -2,906 | -0,00500004 |
| 1720     | 367,339 | 364,693 | -2,645 | -0,00500004 |
| 1730     | 367,229 | 364,643 | -2,586 | -0,00500004 |
| 1740     | 367,23  | 364,673 | -2,557 | 0,0029484   |
| 1760     | 367,216 | 364,732 | -2,484 | 0,0029484   |
| 1780     | 367,163 | 364,791 | -2,372 | 0,0029484   |
| 1800     | 367,329 | 364,85  | -2,479 | 0,0029484   |
| 1820     | 367,126 | 364,909 | -2,217 | 0,0029484   |
| 1840     | 366,915 | 364,968 | -1,947 | 0,0029484   |
| 1860     | 366,916 | 365,027 | -1,889 | 0,0029484   |
| 1880     | 367,104 | 365,086 | -2,018 | 0,0029484   |
| 1900     | 367,082 | 365,145 | -1,937 | 0,0029484   |
| 1920     | 367,343 | 365,204 | -2,139 | 0,0029484   |
| 1940     | 367,345 | 365,263 | -2,082 | 0,0029484   |
| 1960     | 367,411 | 365,322 | -2,089 | 0,0029484   |
| 1980     | 367,412 | 365,381 | -2,031 | 0,0029484   |
| 1990     | 367,636 | 365,41  | -2,226 | 0,0029484   |
| 2000     | 367,659 | 365,484 | -2,175 | 0,00741314  |
| 2020     | 367,814 | 365,632 | -2,182 | 0,00741314  |
| 2040     | 367,869 | 365,781 | -2,088 | 0,00741314  |
| 2060     | 367,905 | 365,929 | -1,976 | 0,00741314  |
| 2066,211 | 367,875 | 365,975 | -1,9   | 0,00741314  |
| 2080     | 368,061 | 366,035 | -2,026 | 0,0043346   |
| 2100     | 368,207 | 366,121 | -2,085 | 0,0043346   |
| 2120     | 368,222 | 366,208 | -2,014 | 0,0043346   |

|          |         |         |        |             |
|----------|---------|---------|--------|-------------|
| 2140     | 368,533 | 366,295 | -2,238 | 0,0043346   |
| 2160     | 368,712 | 366,382 | -2,33  | 0,0043346   |
| 2180     | 368,642 | 366,468 | -2,174 | 0,0043346   |
| 2200     | 368,924 | 366,555 | -2,369 | 0,0043346   |
| 2220     | 369,158 | 366,642 | -2,517 | 0,0043346   |
| 2240     | 369,207 | 366,728 | -2,479 | 0,0043346   |
| 2260     | 369,236 | 366,815 | -2,421 | 0,0043346   |
| 2280     | 369,315 | 366,902 | -2,413 | 0,0043346   |
| 2300     | 369,43  | 366,988 | -2,442 | 0,0043346   |
| 2320     | 369,433 | 367,075 | -2,358 | 0,0043346   |
| 2340     | 369,47  | 367,162 | -2,308 | 0,0043346   |
| 2360     | 369,523 | 367,248 | -2,275 | 0,0043346   |
| 2380     | 369,57  | 367,335 | -2,235 | 0,0043346   |
| 2400     | 369,673 | 367,422 | -2,251 | 0,0043346   |
| 2420     | 370,251 | 367,482 | -2,769 | 0,003       |
| 2440     | 370,235 | 367,542 | -2,693 | 0,003       |
| 2460     | 370,251 | 367,602 | -2,649 | 0,003       |
| 2480     | 370,208 | 367,662 | -2,546 | 0,003       |
| 2500     | 370,231 | 367,722 | -2,509 | 0,003       |
| 2520     | 370,696 | 367,782 | -2,914 | 0,003       |
| 2540     | 370,343 | 367,842 | -2,502 | 0,003       |
| 2560     | 370,279 | 367,902 | -2,377 | 0,003       |
| 2580     | 370,228 | 367,962 | -2,266 | 0,003       |
| 2600     | 370,29  | 368,022 | -2,268 | 0,003       |
| 2620     | 370,067 | 368,082 | -1,985 | 0,003       |
| 2640     | 370,37  | 368,142 | -2,228 | 0,003       |
| 2660     | 370,171 | 368,202 | -1,969 | 0,003       |
| 2680     | 370,123 | 368,262 | -1,861 | 0,003       |
| 2699,848 | 369,971 | 368,321 | -1,65  | 0,003       |
| 2700     | 369,97  | 368,319 | -1,651 | -0,01482118 |
| 2720     | 369,611 | 368,023 | -1,589 | -0,01482118 |
| 2740     | 369,345 | 367,726 | -1,618 | -0,01482118 |
| 2753,851 | 369,171 | 367,521 | -1,65  | -0,01482118 |
| 2760     | 369,157 | 367,477 | -1,68  | -0,00712355 |
| 2780     | 369,116 | 367,335 | -1,782 | -0,00712355 |
| 2800     | 368,987 | 367,192 | -1,795 | -0,00712355 |
| 2820     | 368,817 | 367,05  | -1,768 | -0,00712355 |
| 2840     | 368,756 | 366,907 | -1,849 | -0,00712355 |
| 2860     | 368,643 | 366,765 | -1,878 | -0,00712355 |
| 2880     | 368,407 | 366,622 | -1,785 | -0,00712355 |
| 2900     | 368,384 | 366,48  | -1,904 | -0,00712355 |
| 2909,251 | 368,064 | 366,414 | -1,65  | -0,00712355 |
| 2920     | 368,064 | 366,305 | -1,759 | -0,01012012 |
| 2940     | 368,034 | 366,103 | -1,931 | -0,01012012 |
| 2960     | 367,727 | 365,9   | -1,826 | -0,01012012 |
| 2980     | 367,607 | 365,698 | -1,909 | -0,01012012 |
| 3000     | 367,369 | 365,496 | -1,873 | -0,01012012 |
| 3020     | 367,405 | 365,293 | -2,112 | -0,01012012 |
| 3034,919 | 367,008 | 365,142 | -1,866 | -0,01012012 |
| 3040     | 367,018 | 365,117 | -1,902 | -0,00500001 |
| 3060     | 367,022 | 365,017 | -2,005 | -0,00500001 |

|          |         |         |        |             |
|----------|---------|---------|--------|-------------|
| 3080     | 366,752 | 364,917 | -1,835 | -0,00500001 |
| 3100     | 366,833 | 364,817 | -2,016 | -0,00500001 |
| 3120     | 366,477 | 364,717 | -1,76  | -0,00500001 |
| 3125,749 | 366,47  | 364,688 | -1,782 | -0,00500001 |

### R1B-2-1

| Distancia | C. Terreno | C. Rasante | C. Roja | Pendiente   |
|-----------|------------|------------|---------|-------------|
| 0         | 367,245    | 364,797    | -2,448  | 0,01361657  |
| 20        | 366,887    | 365,069    | -1,818  | 0,01361657  |
| 30        | 366,88     | 365,205    | -1,675  | 0,01361657  |
| 40        | 366,872    | 365,14     | -1,732  | -0,00656263 |
| 60        | 366,745    | 365,009    | -1,737  | -0,00656263 |
| 80        | 366,688    | 364,877    | -1,81   | -0,00656263 |
| 100       | 366,532    | 364,746    | -1,786  | -0,00656263 |
| 120       | 366,492    | 364,615    | -1,878  | -0,00656263 |
| 140       | 366,356    | 364,484    | -1,872  | -0,00656263 |
| 151,521   | 366,083    | 364,408    | -1,675  | -0,00656263 |
| 160       | 366,172    | 364,366    | -1,806  | -0,005      |
| 180       | 366,34     | 364,266    | -2,074  | -0,005      |
| 200       | 366,26     | 364,166    | -2,094  | -0,005      |
| 220       | 366,1      | 364,066    | -2,034  | -0,005      |
| 240       | 366,044    | 364,126    | -1,918  | 0,003       |
| 260       | 366,152    | 364,186    | -1,966  | 0,003       |
| 280       | 366,055    | 364,246    | -1,809  | 0,003       |
| 300       | 366,191    | 364,306    | -1,885  | 0,003       |
| 320       | 366,163    | 364,366    | -1,798  | 0,003       |
| 340       | 366,471    | 364,426    | -2,046  | 0,003       |
| 360       | 366,409    | 364,486    | -1,923  | 0,003       |
| 380       | 366,441    | 364,546    | -1,895  | 0,003       |
| 400       | 366,557    | 364,606    | -1,952  | 0,003       |
| 420       | 366,452    | 364,666    | -1,786  | 0,003       |
| 440       | 366,471    | 364,726    | -1,746  | 0,003       |
| 446,531   | 366,54     | 364,745    | -1,795  | 0,003       |
| 460       | 366,99     | 365,174    | -1,816  | 0,03182186  |
| 480       | 367,494    | 365,81     | -1,683  | 0,03182186  |
| 500       | 368,326    | 366,447    | -1,879  | 0,03182186  |
| 520       | 368,903    | 367,083    | -1,82   | 0,03182186  |
| 540       | 369,992    | 367,72     | -2,272  | 0,03182186  |
| 560       | 370,286    | 368,356    | -1,93   | 0,03182186  |
| 580       | 371,649    | 368,992    | -2,656  | 0,03182186  |
| 600       | 371,943    | 369,629    | -2,314  | 0,03182186  |
| 601,833   | 371,865    | 369,687    | -2,178  | 0,03182186  |
| 620       | 373,285    | 371,059    | -2,225  | 0,07553159  |
| 640       | 375,476    | 372,57     | -2,906  | 0,07553159  |
| 660       | 375,818    | 374,081    | -1,738  | 0,07553159  |
| 661,129   | 375,914    | 374,166    | -1,748  | 0,07553159  |

### R1B-2-2

| Distancia | C. Terreno | C. Rasante | C. Roja | Pendiente   |
|-----------|------------|------------|---------|-------------|
| 0         | 376,841    | 374,58     | -2,261  | -0,03820388 |
| 16,569    | 375,622    | 373,947    | -1,675  | -0,03820388 |
| 20        | 375,751    | 373,923    | -1,828  | -0,00698422 |
| 40        | 375,839    | 373,783    | -2,056  | -0,00698422 |
| 60        | 376,113    | 373,644    | -2,47   | -0,00698422 |
| 80        | 375,201    | 373,504    | -1,697  | -0,00698422 |
| 100       | 375,114    | 373,364    | -1,75   | -0,00698422 |
| 120       | 374,824    | 373,225    | -1,599  | -0,00698422 |
| 140       | 374,852    | 373,125    | -1,727  | -0,005      |
| 160       | 374,802    | 373,025    | -1,778  | -0,005      |
| 180       | 374,834    | 372,925    | -1,909  | -0,005      |
| 200       | 374,803    | 372,825    | -1,979  | -0,005      |
| 210       | 374,815    | 372,775    | -2,041  | -0,005      |
| 220       | 374,832    | 373,159    | -1,673  | 0,03846455  |
| 235,289   | 375,407    | 373,747    | -1,66   | 0,03846455  |

#### R1B-2-4

| Distancia | C. Terreno | C. Rasante | C. Roja | Pendiente   |
|-----------|------------|------------|---------|-------------|
| 0         | 367,245    | 364,797    | -2,448  | 0,00399139  |
| 20        | 367,051    | 364,877    | -2,174  | 0,00399139  |
| 34,825    | 366,586    | 364,936    | -1,65   | 0,00399139  |
| 40        | 366,547    | 364,885    | -1,662  | -0,00980773 |
| 60        | 366,55     | 364,689    | -1,861  | -0,00980773 |
| 80        | 366,557    | 364,493    | -2,064  | -0,00980773 |
| 100       | 366,35     | 364,297    | -2,053  | -0,00980773 |
| 120       | 366,324    | 364,101    | -2,224  | -0,00980773 |
| 140       | 366,347    | 363,904    | -2,442  | -0,00980773 |
| 153,677   | 365,476    | 363,77     | -1,706  | -0,00980773 |
| 160       | 365,41     | 363,737    | -1,673  | -0,00526876 |
| 180       | 365,37     | 363,632    | -1,738  | -0,00526876 |
| 200       | 365,434    | 363,526    | -1,908  | -0,00526876 |
| 220       | 365,417    | 363,421    | -1,997  | -0,00526876 |
| 240       | 365,296    | 363,316    | -1,98   | -0,00526876 |
| 260       | 365,279    | 363,21     | -2,069  | -0,00526876 |
| 280       | 365,29     | 363,105    | -2,185  | -0,00526876 |
| 300       | 365,261    | 362,999    | -2,262  | -0,00526876 |
| 320       | 365,221    | 362,894    | -2,327  | -0,00526876 |
| 340       | 365,323    | 362,789    | -2,535  | -0,00526876 |
| 360       | 365,069    | 362,683    | -2,386  | -0,00526876 |
| 380       | 364,722    | 362,578    | -2,145  | -0,00526876 |
| 400       | 364,757    | 362,473    | -2,284  | -0,00526876 |
| 420       | 364,783    | 362,367    | -2,416  | -0,00526876 |
| 440       | 364,8      | 362,519    | -2,281  | 0,00757186  |
| 460       | 364,912    | 362,67     | -2,242  | 0,00757186  |
| 480       | 365,096    | 362,821    | -2,275  | 0,00757186  |
| 500       | 365,109    | 362,973    | -2,136  | 0,00757186  |
| 520       | 365,116    | 363,124    | -1,991  | 0,00757186  |
| 540       | 365,129    | 363,276    | -1,853  | 0,00757186  |

|         |         |         |        |            |
|---------|---------|---------|--------|------------|
| 560     | 365,171 | 363,427 | -1,744 | 0,00757186 |
| 580     | 365,191 | 363,579 | -1,612 | 0,00757186 |
| 600     | 365,355 | 363,73  | -1,625 | 0,00757186 |
| 620     | 365,956 | 363,882 | -2,074 | 0,00757186 |
| 627,562 | 366,17  | 363,939 | -2,231 | 0,00757186 |

### R1B-3

| Distancia | C. Terreno | C. Rasante | C. Roja | Pendiente  |
|-----------|------------|------------|---------|------------|
| 0         | 390,406    | 386,68     | -3,726  | 0,04263333 |
| 20        | 390,417    | 387,533    | -2,884  | 0,04263333 |
| 30        | 390,385    | 387,959    | -2,426  | 0,04263333 |
| 40        | 390,333    | 387,909    | -2,424  | -0,005     |
| 60        | 390,361    | 387,809    | -2,552  | -0,005     |
| 80        | 390,174    | 387,709    | -2,465  | -0,005     |
| 100       | 389,882    | 387,609    | -2,273  | -0,005     |
| 120       | 389,865    | 387,509    | -2,356  | -0,005     |
| 140       | 389,56     | 387,409    | -2,151  | -0,005     |
| 160       | 389,603    | 387,309    | -2,294  | -0,005     |
| 180       | 389,418    | 387,209    | -2,209  | -0,005     |
| 200       | 389,484    | 387,109    | -2,375  | -0,005     |
| 220       | 389,5      | 387,009    | -2,491  | -0,005     |
| 240       | 389,544    | 386,909    | -2,635  | -0,005     |
| 260       | 389,757    | 386,969    | -2,788  | 0,003      |
| 280       | 389,786    | 387,029    | -2,757  | 0,003      |
| 300       | 389,81     | 387,089    | -2,721  | 0,003      |
| 320       | 389,967    | 387,149    | -2,818  | 0,003      |
| 340       | 389,929    | 387,209    | -2,72   | 0,003      |
| 360       | 389,937    | 387,269    | -2,668  | 0,003      |
| 380       | 389,931    | 387,329    | -2,602  | 0,003      |
| 400       | 389,83     | 387,389    | -2,441  | 0,003      |
| 420       | 389,709    | 387,449    | -2,26   | 0,003      |
| 430       | 389,648    | 387,479    | -2,169  | 0,003      |
| 440       | 389,505    | 387,047    | -2,458  | -0,0431828 |
| 460       | 389,309    | 386,184    | -3,125  | -0,0431828 |
| 480       | 388,278    | 385,32     | -2,958  | -0,0431828 |
| 500       | 387,487    | 384,456    | -3,031  | -0,0431828 |
| 520       | 387,653    | 383,593    | -4,06   | -0,0431828 |
| 527,122   | 385,435    | 383,285    | -2,15   | -0,0431828 |
| 540       | 386,399    | 383,324    | -3,075  | 0,00300145 |
| 560       | 386,144    | 383,384    | -2,76   | 0,00300145 |
| 580       | 386,035    | 383,444    | -2,591  | 0,00300145 |
| 600       | 386,028    | 383,504    | -2,524  | 0,00300145 |
| 620       | 386,033    | 383,564    | -2,469  | 0,00300145 |
| 640       | 386,054    | 383,624    | -2,43   | 0,00300145 |
| 660       | 386,085    | 383,684    | -2,401  | 0,00300145 |
| 680       | 386,101    | 383,744    | -2,357  | 0,00300145 |
| 700       | 386,116    | 383,804    | -2,312  | 0,00300145 |
| 720       | 386,107    | 383,864    | -2,243  | 0,00300145 |
| 740       | 386,159    | 383,924    | -2,235  | 0,00300145 |

|          |         |         |        |             |
|----------|---------|---------|--------|-------------|
| 760      | 386,251 | 383,984 | -2,267 | 0,00300145  |
| 780      | 386,238 | 384,044 | -2,194 | 0,00300145  |
| 800      | 386,239 | 383,944 | -2,295 | -0,005      |
| 820      | 386,214 | 383,844 | -2,37  | -0,005      |
| 840      | 386,227 | 383,744 | -2,483 | -0,005      |
| 860      | 386,263 | 383,644 | -2,619 | -0,005      |
| 880      | 386,29  | 383,544 | -2,746 | -0,005      |
| 900      | 386,311 | 383,444 | -2,867 | -0,005      |
| 920      | 386,34  | 383,344 | -2,996 | -0,005      |
| 940      | 386,659 | 383,244 | -3,415 | -0,005      |
| 960      | 386,682 | 383,144 | -3,538 | -0,005      |
| 980      | 386,679 | 383,044 | -3,635 | -0,005      |
| 1000     | 386,675 | 382,944 | -3,731 | -0,005      |
| 1020     | 386,671 | 382,844 | -3,827 | -0,005      |
| 1040     | 385,008 | 382,744 | -2,264 | -0,005      |
| 1060     | 384,858 | 382,149 | -2,709 | -0,0297387  |
| 1067,708 | 384,07  | 381,92  | -2,15  | -0,0297387  |
| 1080     | 384,129 | 381,756 | -2,373 | -0,01332945 |
| 1100     | 384,091 | 381,49  | -2,601 | -0,01332945 |
| 1120     | 383,636 | 381,223 | -2,413 | -0,01332945 |
| 1122,699 | 383,337 | 381,187 | -2,15  | -0,01332945 |
| 1140     | 383,378 | 380,954 | -2,424 | -0,01344698 |
| 1160     | 383,098 | 380,685 | -2,412 | -0,01344698 |
| 1163,526 | 382,788 | 380,638 | -2,15  | -0,01344698 |
| 1180     | 382,817 | 380,457 | -2,36  | -0,01099439 |
| 1200     | 382,495 | 380,237 | -2,258 | -0,01099439 |
| 1208,458 | 382,294 | 380,144 | -2,15  | -0,01099439 |
| 1220     | 382,311 | 379,97  | -2,341 | -0,01506199 |
| 1240     | 381,95  | 379,669 | -2,281 | -0,01506199 |
| 1260     | 381,85  | 379,368 | -2,483 | -0,01506199 |
| 1280     | 381,132 | 379,066 | -2,066 | -0,01506199 |
| 1300     | 381,491 | 378,765 | -2,726 | -0,01506199 |
| 1320     | 380,614 | 378,464 | -2,15  | -0,01506199 |
| 1323,715 | 380,558 | 378,408 | -2,15  | -0,01506199 |
| 1340     | 381,142 | 378,327 | -2,816 | -0,00499881 |
| 1360     | 381,081 | 378,227 | -2,855 | -0,00499881 |
| 1380     | 380,801 | 378,127 | -2,675 | -0,00499881 |
| 1400     | 380,831 | 378,027 | -2,804 | -0,00499881 |
| 1420     | 380,814 | 377,927 | -2,887 | -0,00499881 |
| 1440     | 380,788 | 377,827 | -2,961 | -0,00499881 |
| 1460     | 380,727 | 377,727 | -3,001 | -0,00499881 |
| 1480     | 380,701 | 377,627 | -3,074 | -0,00499881 |
| 1500     | 380,688 | 377,527 | -3,161 | -0,00499881 |
| 1520     | 380,698 | 377,427 | -3,272 | -0,00499881 |
| 1540     | 380,587 | 377,327 | -3,261 | -0,00499881 |
| 1560     | 380,661 | 377,227 | -3,434 | -0,00499881 |
| 1580     | 380,672 | 377,127 | -3,545 | -0,00499881 |
| 1600     | 380,662 | 377,027 | -3,635 | -0,00499881 |
| 1620     | 380,471 | 376,927 | -3,544 | -0,00499881 |
| 1640     | 380,492 | 376,827 | -3,665 | -0,00499881 |
| 1660     | 380,19  | 376,727 | -3,463 | -0,00499881 |

|          |         |         |        |             |
|----------|---------|---------|--------|-------------|
| 1680     | 379,29  | 376,627 | -2,663 | -0,00499881 |
| 1700     | 377,695 | 375,329 | -2,366 | -0,06488272 |
| 1720     | 376,376 | 374,032 | -2,344 | -0,06488272 |
| 1722,677 | 376,008 | 373,858 | -2,15  | -0,06488272 |
| 1740     | 375,874 | 373,749 | -2,124 | -0,00626637 |
| 1760     | 375,849 | 373,624 | -2,225 | -0,00626637 |
| 1780     | 375,868 | 373,499 | -2,369 | -0,00626637 |
| 1800     | 375,779 | 373,373 | -2,405 | -0,00626637 |
| 1820     | 375,503 | 373,248 | -2,255 | -0,00626637 |
| 1840     | 375,721 | 373,123 | -2,599 | -0,00626637 |
| 1860     | 375,707 | 372,997 | -2,71  | -0,00626637 |
| 1880     | 375,491 | 372,872 | -2,618 | -0,00626637 |
| 1900     | 375,231 | 372,747 | -2,484 | -0,00626637 |
| 1920     | 374,927 | 372,622 | -2,306 | -0,00626637 |
| 1940     | 375,034 | 372,496 | -2,538 | -0,00626637 |
| 1960     | 374,566 | 372,371 | -2,195 | -0,00626637 |
| 1980     | 374,548 | 372,246 | -2,303 | -0,00626637 |
| 2000     | 374,574 | 372,12  | -2,454 | -0,00626637 |
| 2020     | 374,425 | 371,995 | -2,43  | -0,00626637 |
| 2040     | 374,439 | 371,87  | -2,57  | -0,00626637 |
| 2060     | 374,433 | 371,744 | -2,689 | -0,00626637 |
| 2080     | 374,393 | 371,619 | -2,774 | -0,00626637 |
| 2100     | 374,385 | 371,494 | -2,892 | -0,00626637 |
| 2120     | 374,471 | 371,368 | -3,103 | -0,00626637 |
| 2132,803 | 373,438 | 371,288 | -2,15  | -0,00626637 |
| 2140     | 374,945 | 371,455 | -3,49  | 0,02314703  |
| 2160     | 374,941 | 371,918 | -3,024 | 0,02314703  |
| 2170     | 374,879 | 372,149 | -2,73  | 0,02314703  |
| 2180     | 374,895 | 372,179 | -2,716 | 0,003       |
| 2200     | 374,865 | 372,239 | -2,626 | 0,003       |
| 2220     | 374,848 | 372,299 | -2,549 | 0,003       |
| 2240     | 374,727 | 372,359 | -2,368 | 0,003       |
| 2260     | 374,611 | 372,419 | -2,192 | 0,003       |
| 2280     | 374,735 | 372,479 | -2,256 | 0,003       |
| 2300     | 374,769 | 372,539 | -2,23  | 0,003       |
| 2320     | 374,703 | 372,599 | -2,104 | 0,003       |
| 2340     | 374,9   | 372,659 | -2,241 | 0,003       |
| 2360     | 374,954 | 372,719 | -2,235 | 0,003       |
| 2380     | 375,222 | 372,779 | -2,443 | 0,003       |
| 2400     | 375,337 | 372,839 | -2,498 | 0,003       |
| 2420     | 375,352 | 372,899 | -2,453 | 0,003       |
| 2440     | 375,468 | 372,959 | -2,509 | 0,003       |
| 2460     | 375,524 | 373,019 | -2,505 | 0,003       |
| 2480     | 375,652 | 373,079 | -2,573 | 0,003       |
| 2500     | 375,827 | 373,139 | -2,688 | 0,003       |
| 2520     | 375,752 | 373,199 | -2,553 | 0,003       |
| 2540     | 376,035 | 373,259 | -2,776 | 0,003       |
| 2560     | 376,062 | 373,319 | -2,743 | 0,003       |
| 2580     | 376,104 | 373,379 | -2,725 | 0,003       |
| 2600     | 376,341 | 373,439 | -2,902 | 0,003       |
| 2620     | 376,145 | 373,576 | -2,568 | 0,00685405  |

|          |         |         |        |             |
|----------|---------|---------|--------|-------------|
| 2640     | 376,416 | 373,713 | -2,703 | 0,00685405  |
| 2660     | 376,5   | 373,85  | -2,65  | 0,00685405  |
| 2680     | 376,508 | 373,987 | -2,521 | 0,00685405  |
| 2700     | 376,718 | 374,124 | -2,594 | 0,00685405  |
| 2720     | 376,795 | 374,261 | -2,534 | 0,00685405  |
| 2740     | 376,867 | 374,399 | -2,469 | 0,00685405  |
| 2760     | 376,765 | 374,536 | -2,23  | 0,00685405  |
| 2780     | 376,971 | 374,673 | -2,298 | 0,00685405  |
| 2800     | 377,125 | 374,81  | -2,315 | 0,00685405  |
| 2820     | 377,183 | 374,947 | -2,237 | 0,00685405  |
| 2840     | 377,295 | 375,084 | -2,211 | 0,00685405  |
| 2860     | 377,369 | 375,221 | -2,148 | 0,00685405  |
| 2880     | 377,499 | 375,358 | -2,141 | 0,00685405  |
| 2900     | 377,571 | 375,495 | -2,076 | 0,00685405  |
| 2920     | 377,679 | 375,632 | -2,047 | 0,00685405  |
| 2940     | 377,795 | 375,769 | -2,025 | 0,00685405  |
| 2960     | 377,985 | 375,906 | -2,079 | 0,00685405  |
| 2970     | 378,125 | 375,975 | -2,15  | 0,00685405  |
| 2980     | 378,206 | 376,02  | -2,187 | 0,00445292  |
| 3000     | 378,288 | 376,109 | -2,179 | 0,00445292  |
| 3020     | 378,365 | 376,198 | -2,167 | 0,00445292  |
| 3040     | 378,51  | 376,287 | -2,223 | 0,00445292  |
| 3060     | 378,48  | 376,376 | -2,104 | 0,00445292  |
| 3080     | 378,889 | 376,465 | -2,424 | 0,00445292  |
| 3100     | 378,97  | 376,554 | -2,417 | 0,00445292  |
| 3120     | 379,105 | 376,643 | -2,462 | 0,00445292  |
| 3140     | 379,189 | 376,732 | -2,457 | 0,00445292  |
| 3160     | 379,36  | 376,821 | -2,539 | 0,00445292  |
| 3180     | 379,463 | 376,91  | -2,553 | 0,00445292  |
| 3200     | 379,612 | 376,999 | -2,613 | 0,00445292  |
| 3220     | 379,688 | 377,088 | -2,6   | 0,00445292  |
| 3237,016 | 379,314 | 377,164 | -2,15  | 0,00445292  |
| 3240     | 379,82  | 377,184 | -2,636 | 0,00667313  |
| 3260     | 379,95  | 377,317 | -2,633 | 0,00667313  |
| 3280     | 380,127 | 377,451 | -2,676 | 0,00667313  |
| 3300     | 380,174 | 377,584 | -2,59  | 0,00667313  |
| 3320     | 380,348 | 377,718 | -2,63  | 0,00667313  |
| 3340     | 380,469 | 377,851 | -2,617 | 0,00667313  |
| 3360     | 380,545 | 377,985 | -2,561 | 0,00667313  |
| 3380     | 380,538 | 378,118 | -2,42  | 0,00667313  |
| 3400     | 380,572 | 378,252 | -2,32  | 0,00667313  |
| 3420     | 380,635 | 378,385 | -2,25  | 0,00667313  |
| 3440     | 380,721 | 378,519 | -2,202 | 0,00667313  |
| 3460     | 380,802 | 378,652 | -2,15  | 0,00667313  |
| 3470,113 | 380,823 | 378,72  | -2,103 | 0,00672402  |
| 3480     | 379,164 | 376,797 | -2,367 | -0,19453853 |
| 3500     | 374,633 | 372,906 | -1,727 | -0,19453853 |
| 3512,629 | 372,449 | 370,449 | -2     | -0,19453853 |
| 3520     | 372,003 | 369,476 | -2,527 | -0,13201821 |
| 3540     | 369,329 | 366,836 | -2,493 | -0,13201821 |
| 3553,487 | 367,055 | 365,055 | -2     | -0,13201821 |

|          |         |         |        |             |
|----------|---------|---------|--------|-------------|
| 3560     | 366,638 | 364,482 | -2,155 | -0,08791396 |
| 3580     | 366,185 | 362,724 | -3,461 | -0,08791396 |
| 3588,635 | 363,965 | 361,965 | -2     | -0,08791396 |
| 3600     | 364,073 | 362,192 | -1,881 | 0,02000691  |
| 3620     | 364,659 | 362,593 | -2,066 | 0,02000691  |
| 3620,474 | 364,682 | 362,602 | -2,08  | 0,02000691  |
| 3635,983 | 367,205 | 364,765 | -2,44  | 0,13946741  |
| 3640     | 367,407 | 364,923 | -2,484 | 0,03922222  |
| 3660     | 367,707 | 365,707 | -2     | 0,03922222  |
| 3680     | 368,964 | 365,96  | -3,005 | 0,01262579  |
| 3700     | 368,857 | 366,212 | -2,645 | 0,01262579  |
| 3720     | 368,98  | 366,465 | -2,515 | 0,01262579  |
| 3740     | 369,188 | 366,717 | -2,471 | 0,01262579  |
| 3760     | 369,119 | 366,97  | -2,149 | 0,01262579  |
| 3762,251 | 369,189 | 366,998 | -2,191 | 0,01262579  |
| 3780     | 370,736 | 368,025 | -2,711 | 0,05785622  |
| 3800     | 371,351 | 369,182 | -2,169 | 0,05785622  |
| 3818,684 | 372,587 | 370,263 | -2,324 | 0,05785622  |
| 3820     | 372,773 | 370,529 | -2,244 | 0,20206676  |
| 3832,135 | 374,681 | 372,981 | -1,7   | 0,20206676  |
| 3840     | 375,296 | 373,385 | -1,91  | 0,05142417  |
| 3860     | 376,615 | 374,414 | -2,201 | 0,05142417  |
| 3880     | 377,572 | 375,442 | -2,129 | 0,05142417  |
| 3880,128 | 377,579 | 375,449 | -2,13  | 0,05142417  |
| 3900     | 378,519 | 376,452 | -2,067 | 0,05046825  |
| 3920     | 379,486 | 377,461 | -2,025 | 0,05046825  |
| 3940     | 380,33  | 378,471 | -1,859 | 0,05046825  |
| 3960     | 381,15  | 379,48  | -1,67  | 0,05046825  |
| 3980     | 381,471 | 379,665 | -1,806 | 0,00924633  |
| 4000     | 381,793 | 379,85  | -1,944 | 0,00924633  |
| 4020     | 381,789 | 380,035 | -1,754 | 0,00924633  |
| 4024,458 | 381,746 | 380,076 | -1,67  | 0,00924633  |
| 4040     | 382,29  | 380,404 | -1,885 | 0,02111623  |
| 4060     | 383     | 380,827 | -2,173 | 0,02111623  |
| 4080     | 383,511 | 381,249 | -2,262 | 0,02111623  |
| 4090     | 383,577 | 381,46  | -2,117 | 0,02111623  |
| 4100     | 383,661 | 381,496 | -2,165 | 0,00361028  |
| 4120     | 383,813 | 381,568 | -2,245 | 0,00361028  |
| 4140     | 383,943 | 381,641 | -2,302 | 0,00361028  |
| 4160     | 384,078 | 381,713 | -2,365 | 0,00361028  |
| 4180     | 384,262 | 381,785 | -2,477 | 0,00361028  |
| 4200     | 384,394 | 381,857 | -2,536 | 0,00361028  |
| 4220     | 384,514 | 381,929 | -2,584 | 0,00361028  |
| 4240     | 384,689 | 382,002 | -2,688 | 0,00361028  |
| 4260     | 384,685 | 382,074 | -2,611 | 0,00361028  |
| 4280     | 384,663 | 382,146 | -2,517 | 0,00361028  |
| 4300     | 384,679 | 382,218 | -2,461 | 0,00361028  |
| 4320     | 384,72  | 382,29  | -2,429 | 0,00361028  |
| 4340     | 384,692 | 382,363 | -2,329 | 0,00361028  |
| 4360     | 384,572 | 382,435 | -2,137 | 0,00361028  |
| 4380     | 384,5   | 382,507 | -1,993 | 0,00361028  |

|          |         |         |        |            |
|----------|---------|---------|--------|------------|
| 4400     | 384,608 | 382,579 | -2,029 | 0,00361028 |
| 4420     | 384,604 | 382,651 | -1,953 | 0,00361028 |
| 4440     | 384,666 | 382,724 | -1,943 | 0,00361028 |
| 4460     | 384,573 | 382,796 | -1,777 | 0,00361028 |
| 4480     | 384,639 | 382,868 | -1,771 | 0,00361028 |
| 4500     | 384,649 | 382,94  | -1,709 | 0,00361028 |
| 4503,541 | 384,623 | 382,953 | -1,67  | 0,00361028 |

### R1B-3-1

| Distancia | C. Terreno | C. Rasante | C. Roja | Pendiente  |
|-----------|------------|------------|---------|------------|
| 0         | 387,57     | 383,918    | -3,651  | 0,02269935 |
| 20        | 387,607    | 384,372    | -3,234  | 0,02269935 |
| 40        | 387,623    | 384,826    | -2,797  | 0,02269935 |
| 60        | 387,608    | 385,28     | -2,327  | 0,02269935 |
| 80        | 387,699    | 385,734    | -1,965  | 0,02269935 |
| 90,408    | 387,671    | 385,971    | -1,701  | 0,02269935 |
| 100       | 387,876    | 386,015    | -1,86   | 0,00466609 |
| 120       | 388,293    | 386,109    | -2,184  | 0,00466609 |
| 140       | 388,339    | 386,202    | -2,137  | 0,00466609 |
| 160       | 388,379    | 386,295    | -2,084  | 0,00466609 |
| 180       | 388,409    | 386,389    | -2,02   | 0,00466609 |
| 200       | 388,511    | 386,482    | -2,029  | 0,00466609 |
| 220       | 388,675    | 386,575    | -2,099  | 0,00466609 |
| 240       | 388,82     | 386,669    | -2,151  | 0,00466609 |
| 260       | 388,963    | 386,762    | -2,201  | 0,00466609 |
| 280       | 388,704    | 386,855    | -1,848  | 0,00466609 |
| 285,49    | 388,581    | 386,881    | -1,7    | 0,00466609 |
| 300       | 388,734    | 387,02     | -1,714  | 0,00959241 |
| 320       | 388,996    | 387,212    | -1,784  | 0,00959241 |
| 340       | 389,22     | 387,404    | -1,816  | 0,00959241 |
| 360       | 389,546    | 387,596    | -1,95   | 0,00959241 |
| 380       | 389,653    | 387,788    | -1,866  | 0,00959241 |
| 381,428   | 389,624    | 387,801    | -1,823  | 0,00959241 |
| 400       | 391,132    | 388,491    | -2,64   | 0,03715276 |
| 420       | 391,418    | 389,234    | -2,183  | 0,03715276 |
| 440       | 391,641    | 389,977    | -1,663  | 0,03715276 |
| 441       | 391,665    | 390,015    | -1,65   | 0,03715276 |
| 460       | 392,217    | 390,197    | -2,02   | 0,00959819 |
| 480       | 392,295    | 390,389    | -1,906  | 0,00959819 |
| 500       | 392,402    | 390,581    | -1,822  | 0,00959819 |
| 520       | 392,506    | 390,773    | -1,733  | 0,00959819 |
| 535,245   | 392,572    | 390,919    | -1,653  | 0,00959819 |
| 540       | 392,588    | 390,937    | -1,651  | 0,0038028  |
| 560       | 392,682    | 391,013    | -1,668  | 0,0038028  |
| 580       | 392,784    | 391,089    | -1,694  | 0,0038028  |
| 600       | 392,857    | 391,165    | -1,691  | 0,0038028  |
| 620       | 392,941    | 391,241    | -1,7    | 0,0038028  |
| 640       | 393,016    | 391,317    | -1,699  | 0,0038028  |
| 640,823   | 393,022    | 391,321    | -1,701  | 0,0038028  |

### R1B-3-2

| Distancia | C. Terreno | C. Rasante | C. Roja | Pendiente   |
|-----------|------------|------------|---------|-------------|
| 0         | 380,991    | 378,171    | -2,82   | 0,00853833  |
| 20        | 380,798    | 378,342    | -2,457  | 0,00853833  |
| 40        | 380,765    | 378,513    | -2,252  | 0,00853833  |
| 60        | 380,607    | 378,683    | -1,924  | 0,00853833  |
| 71,911    | 380,559    | 378,785    | -1,774  | 0,00853833  |
| 80        | 380,605    | 378,745    | -1,861  | -0,00499875 |
| 100       | 380,424    | 378,645    | -1,779  | -0,00499875 |
| 120       | 380,398    | 378,545    | -1,854  | -0,00499875 |
| 140       | 380,199    | 378,445    | -1,754  | -0,00499875 |
| 160       | 380,151    | 378,345    | -1,806  | -0,00499875 |
| 180       | 380,168    | 378,245    | -1,923  | -0,00499875 |
| 192,141   | 380,127    | 378,184    | -1,943  | -0,00499875 |
| 200       | 380,207    | 378,208    | -2      | 0,00300106  |
| 220       | 380,187    | 378,268    | -1,92   | 0,00300106  |
| 240       | 380,262    | 378,328    | -1,934  | 0,00300106  |
| 247,788   | 380,203    | 378,351    | -1,852  | 0,00300106  |
| 260       | 380,091    | 378,218    | -1,873  | -0,01090363 |
| 280       | 380,105    | 378        | -2,105  | -0,01090363 |
| 300       | 379,553    | 377,782    | -1,772  | -0,01090363 |
| 310,336   | 379,279    | 377,669    | -1,61   | -0,01090363 |
| 320       | 379,523    | 377,55     | -1,973  | -0,01227567 |
| 340       | 379,347    | 377,305    | -2,043  | -0,01227567 |
| 360       | 378,922    | 377,059    | -1,863  | -0,01227567 |
| 380       | 378,533    | 376,814    | -1,719  | -0,01227567 |
| 390,576   | 378,34     | 376,684    | -1,656  | -0,01227567 |
| 400       | 378,09     | 376,383    | -1,706  | -0,03189013 |
| 420       | 377,827    | 375,746    | -2,081  | -0,03189013 |
| 437,393   | 376,843    | 375,191    | -1,652  | -0,03189013 |
| 440       | 376,827    | 375,145    | -1,682  | -0,01764474 |
| 460       | 376,831    | 374,792    | -2,039  | -0,01764474 |
| 480       | 376,148    | 374,439    | -1,709  | -0,01764474 |
| 500       | 375,868    | 374,086    | -1,782  | -0,01764474 |
| 510,956   | 375,877    | 373,893    | -1,984  | -0,01764474 |

### R1B-3-3

| Distancia | C. Terreno | C. Rasante | C. Roja | Pendiente  |
|-----------|------------|------------|---------|------------|
| 0         | 381,159    | 379,03     | -2,129  | 0,01303312 |
| 20        | 381,692    | 379,291    | -2,402  | 0,01303312 |
| 40        | 381,548    | 379,551    | -1,996  | 0,01303312 |
| 43,658    | 381,657    | 379,599    | -2,058  | 0,01303312 |
| 44,956    | 381,78     | 379,644    | -2,136  | 0,03466872 |
| 54,78     | 382,802    | 381,087    | -1,715  | 0,14688518 |
| 60        | 383,009    | 381,103    | -1,906  | 0,00301943 |
| 80        | 383,1      | 381,163    | -1,937  | 0,00301943 |
| 89,886    | 383,319    | 381,193    | -2,126  | 0,00301943 |
| 100       | 383,808    | 381,542    | -2,266  | 0,03446744 |
| 120       | 384,676    | 382,231    | -2,445  | 0,03446744 |

|         |         |         |        |             |
|---------|---------|---------|--------|-------------|
| 140     | 384,837 | 382,92  | -1,916 | 0,03446744  |
| 160     | 385,915 | 383,61  | -2,306 | 0,03446744  |
| 179,942 | 386,067 | 384,297 | -1,77  | 0,03446744  |
| 180     | 386,068 | 384,297 | -1,77  | 0,005155    |
| 200     | 386,287 | 384,4   | -1,886 | 0,005155    |
| 220     | 386,902 | 384,503 | -2,398 | 0,005155    |
| 240     | 387,224 | 384,607 | -2,617 | 0,005155    |
| 260     | 387,157 | 384,71  | -2,448 | 0,005155    |
| 280     | 387,563 | 384,813 | -2,75  | 0,005155    |
| 300     | 386,794 | 384,916 | -1,878 | 0,005155    |
| 320     | 386,952 | 385,019 | -1,933 | 0,005155    |
| 340     | 386,956 | 385,122 | -1,834 | 0,005155    |
| 360     | 387,087 | 385,225 | -1,862 | 0,005155    |
| 380     | 387,595 | 385,328 | -2,267 | 0,005155    |
| 400     | 387,725 | 385,431 | -2,294 | 0,005155    |
| 420     | 388,046 | 385,534 | -2,512 | 0,005155    |
| 440     | 388,046 | 385,638 | -2,408 | 0,005155    |
| 460     | 387,732 | 385,741 | -1,991 | 0,005155    |
| 480     | 387,596 | 385,844 | -1,753 | 0,005155    |
| 500     | 388,18  | 385,947 | -2,233 | 0,005155    |
| 520     | 388,456 | 386,05  | -2,406 | 0,005155    |
| 540     | 386,024 | 384,14  | -1,884 | -0,09549564 |
| 544,776 | 385,584 | 383,684 | -1,9   | -0,09549564 |
| 560     | 385,508 | 383,28  | -2,227 | -0,02651549 |
| 580     | 385,494 | 382,75  | -2,744 | -0,02651549 |
| 600     | 384,798 | 382,22  | -2,578 | -0,02651549 |
| 620     | 383,649 | 381,689 | -1,96  | -0,02651549 |
| 633,856 | 383,139 | 381,322 | -1,817 | -0,02651549 |
| 640     | 383,178 | 380,818 | -2,36  | -0,08207711 |
| 660     | 382,841 | 379,176 | -3,665 | -0,08207711 |
| 665,034 | 380,581 | 378,763 | -1,818 | -0,08207711 |
| 680     | 382,894 | 379,891 | -3,003 | 0,07533956  |
| 688,594 | 382,834 | 380,538 | -2,296 | 0,07533956  |
| 700     | 382,588 | 380,578 | -2,009 | 0,00352767  |
| 720     | 382,571 | 380,649 | -1,923 | 0,00352767  |
| 740     | 382,59  | 380,719 | -1,871 | 0,00352767  |
| 760     | 382,649 | 380,79  | -1,859 | 0,00352767  |
| 780     | 382,648 | 380,86  | -1,787 | 0,00352767  |
| 800     | 382,638 | 380,931 | -1,707 | 0,00352767  |
| 800,566 | 382,583 | 380,933 | -1,65  | 0,00352767  |
| 820     | 383,623 | 381,151 | -2,472 | 0,01120577  |
| 840     | 383,62  | 381,375 | -2,245 | 0,01120577  |
| 860     | 383,764 | 381,599 | -2,165 | 0,01120577  |
| 880     | 384,065 | 381,823 | -2,242 | 0,01120577  |
| 900     | 384,057 | 382,047 | -2,01  | 0,01120577  |
| 920     | 384,278 | 382,271 | -2,006 | 0,01120577  |
| 940     | 384,638 | 382,495 | -2,143 | 0,01120577  |
| 960     | 384,639 | 382,72  | -1,919 | 0,01120577  |
| 980     | 384,958 | 382,944 | -2,015 | 0,01120577  |
| 1000    | 385,024 | 383,168 | -1,857 | 0,01120577  |
| 1020    | 385,134 | 383,392 | -1,742 | 0,01120577  |

|          |         |         |        |            |
|----------|---------|---------|--------|------------|
| 1040     | 385,436 | 383,616 | -1,82  | 0,01120577 |
| 1041,424 | 385,513 | 383,632 | -1,881 | 0,01120577 |

### R1B-3-4

| Distancia | C. Terreno | C. Rasante | C. Roja | Pendiente   |
|-----------|------------|------------|---------|-------------|
| 0         | 377,003    | 374,71     | -2,293  | -0,01887623 |
| 20        | 376,915    | 374,332    | -2,583  | -0,01887623 |
| 40        | 375,903    | 373,955    | -1,948  | -0,01887623 |
| 49,957    | 375,577    | 373,767    | -1,81   | -0,01887623 |
| 60        | 375,519    | 373,717    | -1,803  | -0,00500092 |
| 80        | 375,512    | 373,617    | -1,895  | -0,00500092 |
| 100       | 375,493    | 373,517    | -1,976  | -0,00500092 |
| 120       | 375,443    | 373,417    | -2,027  | -0,00500092 |
| 140       | 375,42     | 373,317    | -2,103  | -0,00500092 |
| 160       | 375,42     | 373,217    | -2,203  | -0,00500092 |
| 180       | 375,426    | 373,117    | -2,31   | -0,00500092 |
| 200       | 375,36     | 373,017    | -2,344  | -0,00500092 |
| 220       | 375,395    | 372,917    | -2,478  | -0,00500092 |
| 240       | 375,349    | 372,817    | -2,533  | -0,00500092 |
| 260       | 375,347    | 372,717    | -2,63   | -0,00500092 |
| 280       | 375,302    | 372,617    | -2,686  | -0,00500092 |
| 300       | 375,316    | 372,517    | -2,8    | -0,00500092 |
| 320       | 375,233    | 372,417    | -2,817  | -0,00500092 |
| 340       | 375,28     | 372,317    | -2,963  | -0,00500092 |
| 360       | 375,24     | 372,216    | -3,024  | -0,00500092 |
| 370,098   | 374,984    | 372,166    | -2,818  | -0,00500092 |
| 379,116   | 373,876    | 371,751    | -2,125  | -0,04601907 |
| 380       | 373,871    | 371,746    | -2,126  | -0,00597077 |
| 400       | 373,751    | 371,626    | -2,124  | -0,00597077 |
| 420       | 373,531    | 371,507    | -2,024  | -0,00597077 |
| 440       | 373,409    | 371,387    | -2,021  | -0,00597077 |
| 460       | 373,217    | 371,268    | -1,949  | -0,00597077 |
| 480       | 373,07     | 371,149    | -1,922  | -0,00597077 |
| 500       | 372,902    | 371,029    | -1,873  | -0,00597077 |
| 520       | 372,768    | 370,91     | -1,858  | -0,00597077 |
| 540       | 372,627    | 370,79     | -1,836  | -0,00597077 |
| 560       | 372,505    | 370,671    | -1,834  | -0,00597077 |
| 580       | 372,433    | 370,552    | -1,882  | -0,00597077 |
| 600       | 372,242    | 370,432    | -1,81   | -0,00597077 |
| 620       | 372,12     | 370,313    | -1,808  | -0,00597077 |
| 640       | 371,936    | 370,193    | -1,743  | -0,00597077 |
| 660       | 371,904    | 370,074    | -1,831  | -0,00597077 |
| 680       | 371,852    | 369,954    | -1,898  | -0,00597077 |
| 700       | 371,791    | 369,835    | -1,956  | -0,00597077 |
| 720       | 371,887    | 369,716    | -2,171  | -0,00597077 |
| 740       | 371,617    | 369,596    | -2,021  | -0,00597077 |
| 760       | 371,503    | 369,477    | -2,026  | -0,00597077 |
| 780       | 371,47     | 369,357    | -2,112  | -0,00597077 |
| 800       | 371,298    | 369,238    | -2,06   | -0,00597077 |

|          |         |         |        |             |
|----------|---------|---------|--------|-------------|
| 816,415  | 370,74  | 367,728 | -3,012 | -0,09198903 |
| 820      | 370,811 | 367,34  | -3,471 | -0,10822873 |
| 840      | 369,375 | 366,355 | -3,02  | -0,04925    |
| 860      | 365,797 | 363,492 | -2,305 | -0,14315    |
| 880      | 365,477 | 362,593 | -2,884 | -0,04495    |
| 888,859  | 362,767 | 361,067 | -1,7   | -0,17225421 |
| 900      | 362,49  | 360,145 | -2,345 | -0,08278701 |
| 920      | 360,744 | 358,489 | -2,255 | -0,08278701 |
| 926,993  | 359,786 | 357,91  | -1,876 | -0,08278701 |
| 940      | 359,712 | 357,176 | -2,536 | -0,05642856 |
| 960      | 357,995 | 356,047 | -1,948 | -0,05642856 |
| 980      | 356,614 | 354,919 | -1,695 | -0,05642856 |
| 980,512  | 356,613 | 354,89  | -1,723 | -0,05642856 |
| 1000     | 356,558 | 353,941 | -2,618 | -0,04870391 |
| 1019,051 | 354,851 | 353,013 | -1,838 | -0,04870391 |
| 1020     | 354,847 | 352,999 | -1,848 | -0,01470901 |
| 1037,883 | 354,785 | 352,736 | -2,049 | -0,01470901 |
| 1040     | 354,764 | 352,615 | -2,149 | -0,05705706 |
| 1054,866 | 353,522 | 351,767 | -1,755 | -0,05705706 |
| 1060     | 353,501 | 351,69  | -1,811 | -0,01494654 |
| 1080     | 353,43  | 351,391 | -2,039 | -0,01494654 |
| 1100     | 353,333 | 351,092 | -2,241 | -0,01494654 |
| 1120     | 353,248 | 350,793 | -2,454 | -0,01494654 |
| 1140     | 352,275 | 350,495 | -1,78  | -0,01494654 |
| 1140,17  | 352,272 | 350,492 | -1,78  | -0,01494654 |
| 1160     | 352,221 | 350,393 | -1,829 | -0,00500226 |
| 1180     | 352,174 | 350,293 | -1,881 | -0,00500226 |
| 1200     | 352,188 | 350,193 | -1,995 | -0,00500226 |
| 1220     | 352,152 | 350,093 | -2,06  | -0,00500226 |
| 1240     | 352,181 | 349,993 | -2,188 | -0,00500226 |
| 1260     | 352,178 | 349,893 | -2,286 | -0,00500226 |
| 1280     | 352,159 | 349,793 | -2,367 | -0,00500226 |
| 1300     | 352,163 | 349,692 | -2,471 | -0,00500226 |
| 1310,893 | 351,966 | 349,638 | -2,328 | -0,00500226 |
| 1320     | 353,043 | 350,16  | -2,883 | 0,05736667  |
| 1336,169 | 353,053 | 351,088 | -1,965 | 0,05736667  |
| 1340     | 353,062 | 351,099 | -1,963 | 0,00299412  |
| 1360     | 353,076 | 351,159 | -1,916 | 0,00299412  |
| 1380     | 353,106 | 351,219 | -1,887 | 0,00299412  |
| 1400     | 353,08  | 351,279 | -1,8   | 0,00299412  |
| 1420     | 353,142 | 351,339 | -1,803 | 0,00299412  |
| 1440     | 352,666 | 350,631 | -2,035 | -0,03540033 |
| 1445,254 | 352,145 | 350,445 | -1,7   | -0,03540033 |
| 1460     | 353,027 | 350,808 | -2,219 | 0,02463593  |
| 1480     | 353,001 | 351,301 | -1,7   | 0,02463593  |
| 1500     | 353,016 | 351,201 | -1,815 | -0,00499937 |
| 1520     | 353,003 | 351,101 | -1,902 | -0,00499937 |
| 1540     | 352,987 | 351,001 | -1,986 | -0,00499937 |
| 1543,008 | 352,984 | 350,986 | -1,998 | -0,00499937 |
| 1560     | 352,048 | 349,912 | -2,136 | -0,06320382 |
| 1569,826 | 351,091 | 349,291 | -1,8   | -0,06320382 |

|          |         |         |        |             |
|----------|---------|---------|--------|-------------|
| 1580     | 350,974 | 349,24  | -1,734 | -0,00500038 |
| 1600     | 351,056 | 349,14  | -1,916 | -0,00500038 |
| 1620     | 350,871 | 349,04  | -1,831 | -0,00500038 |
| 1640     | 350,603 | 348,94  | -1,663 | -0,00500038 |
| 1660     | 350,483 | 348,84  | -1,643 | -0,00500038 |
| 1680     | 350,445 | 348,74  | -1,705 | -0,00500038 |
| 1700     | 350,637 | 348,64  | -1,997 | -0,00500038 |
| 1720     | 350,544 | 348,54  | -2,004 | -0,00500038 |
| 1740     | 350,608 | 348,44  | -2,168 | -0,00500038 |
| 1760     | 350,685 | 348,34  | -2,345 | -0,00500038 |
| 1780     | 350,671 | 348,24  | -2,431 | -0,00500038 |
| 1800     | 350,491 | 348,14  | -2,351 | -0,00500038 |
| 1820     | 350,401 | 348,04  | -2,361 | -0,00500038 |
| 1840     | 349,876 | 347,94  | -1,936 | -0,00500038 |
| 1860     | 349,719 | 347,84  | -1,879 | -0,00500038 |
| 1880     | 349,666 | 347,74  | -1,926 | -0,00500038 |
| 1900     | 349,655 | 347,64  | -2,015 | -0,00500038 |
| 1910     | 349,783 | 347,59  | -2,193 | -0,00500038 |
| 1920     | 350,031 | 347,42  | -2,611 | -0,01701185 |
| 1940     | 348,598 | 347,08  | -1,518 | -0,01701185 |
| 1960     | 349,059 | 346,739 | -2,32  | -0,01701185 |
| 1980     | 349,038 | 346,399 | -2,639 | -0,01701185 |
| 1996,234 | 347,693 | 346,123 | -1,57  | -0,01701185 |
| 2000     | 347,685 | 346,104 | -1,581 | -0,00499693 |
| 2020     | 347,721 | 346,004 | -1,716 | -0,00499693 |
| 2040     | 347,438 | 345,904 | -1,534 | -0,00499693 |
| 2060     | 347,461 | 345,804 | -1,657 | -0,00499693 |
| 2080     | 347,454 | 345,704 | -1,75  | -0,00499693 |
| 2095,695 | 347,6   | 345,626 | -1,974 | -0,00499693 |

### R1B-3-5

| Distancia | C. Terreno | C. Rasante | C. Roja | Pendiente  |
|-----------|------------|------------|---------|------------|
| 0         | 375,527    | 372,947    | -2,58   | 0,01359891 |
| 20        | 375,701    | 373,219    | -2,482  | 0,01359891 |
| 40        | 375,805    | 373,491    | -2,314  | 0,01359891 |
| 60        | 375,93     | 373,763    | -2,168  | 0,01359891 |
| 80        | 376,046    | 374,035    | -2,011  | 0,01359891 |
| 100       | 376,174    | 374,307    | -1,868  | 0,01359891 |
| 111,406   | 376,227    | 374,462    | -1,765  | 0,01359891 |
| 120       | 376,292    | 374,504    | -1,789  | 0,00486701 |
| 140       | 376,417    | 374,601    | -1,816  | 0,00486701 |
| 160       | 376,542    | 374,699    | -1,844  | 0,00486701 |
| 180       | 376,667    | 374,796    | -1,871  | 0,00486701 |
| 200       | 376,793    | 374,893    | -1,9    | 0,00486701 |
| 220       | 376,771    | 374,991    | -1,78   | 0,00486701 |
| 220,097   | 376,756    | 374,991    | -1,765  | 0,00486701 |
| 240       | 377,19     | 375,15     | -2,04   | 0,0079704  |
| 260       | 377,317    | 375,309    | -2,008  | 0,0079704  |
| 280       | 377,406    | 375,468    | -1,938  | 0,0079704  |

|          |         |         |        |            |
|----------|---------|---------|--------|------------|
| 300      | 377,519 | 375,628 | -1,891 | 0,0079704  |
| 320      | 377,625 | 375,787 | -1,838 | 0,0079704  |
| 340      | 377,727 | 375,947 | -1,78  | 0,0079704  |
| 348,431  | 377,779 | 376,014 | -1,765 | 0,0079704  |
| 360      | 377,831 | 376,049 | -1,783 | 0,003      |
| 380      | 377,946 | 376,109 | -1,838 | 0,003      |
| 400      | 378,035 | 376,169 | -1,866 | 0,003      |
| 420      | 378,28  | 376,229 | -2,052 | 0,003      |
| 440      | 378,319 | 376,289 | -2,031 | 0,003      |
| 448,082  | 378,338 | 376,313 | -2,025 | 0,003      |
| 460      | 378,415 | 376,417 | -1,998 | 0,00872311 |
| 480      | 378,565 | 376,591 | -1,974 | 0,00872311 |
| 500      | 378,712 | 376,766 | -1,946 | 0,00872311 |
| 520      | 378,826 | 376,94  | -1,886 | 0,00872311 |
| 540      | 378,945 | 377,115 | -1,831 | 0,00872311 |
| 542,449  | 378,901 | 377,136 | -1,765 | 0,00872311 |
| 560      | 379,287 | 377,342 | -1,945 | 0,01175457 |
| 580      | 379,439 | 377,577 | -1,862 | 0,01175457 |
| 600      | 379,626 | 377,812 | -1,814 | 0,01175457 |
| 620      | 379,79  | 378,048 | -1,742 | 0,01175457 |
| 634,158  | 379,914 | 378,214 | -1,7   | 0,01175457 |
| 640      | 379,969 | 378,26  | -1,709 | 0,00788315 |
| 660      | 380,162 | 378,418 | -1,744 | 0,00788315 |
| 680      | 380,409 | 378,575 | -1,833 | 0,00788315 |
| 700      | 380,673 | 378,733 | -1,94  | 0,00788315 |
| 720      | 380,866 | 378,891 | -1,975 | 0,00788315 |
| 740      | 381,007 | 379,048 | -1,959 | 0,00788315 |
| 754,179  | 381,104 | 379,16  | -1,944 | 0,00788315 |
| 760      | 381,164 | 379,211 | -1,953 | 0,00876193 |
| 780      | 381,294 | 379,386 | -1,908 | 0,00876193 |
| 800      | 381,413 | 379,562 | -1,851 | 0,00876193 |
| 820      | 381,525 | 379,737 | -1,788 | 0,00876193 |
| 840      | 381,665 | 379,912 | -1,753 | 0,00876193 |
| 860      | 381,844 | 380,087 | -1,756 | 0,00876193 |
| 870,347  | 381,878 | 380,178 | -1,7   | 0,00876193 |
| 880      | 382,046 | 380,208 | -1,838 | 0,00311258 |
| 900      | 382,263 | 380,27  | -1,993 | 0,00311258 |
| 920      | 382,327 | 380,333 | -1,995 | 0,00311258 |
| 940      | 382,307 | 380,395 | -1,912 | 0,00311258 |
| 960      | 382,37  | 380,457 | -1,913 | 0,00311258 |
| 980      | 382,417 | 380,519 | -1,897 | 0,00311258 |
| 1000     | 382,442 | 380,582 | -1,86  | 0,00311258 |
| 1020     | 382,532 | 380,644 | -1,888 | 0,00311258 |
| 1040     | 382,42  | 380,706 | -1,714 | 0,00311258 |
| 1060     | 382,498 | 380,768 | -1,73  | 0,00311258 |
| 1080     | 382,524 | 380,831 | -1,693 | 0,00311258 |
| 1100     | 382,587 | 380,893 | -1,694 | 0,00311258 |
| 1117,123 | 382,689 | 380,946 | -1,743 | 0,00311258 |
| 1120     | 382,717 | 381,013 | -1,704 | 0,0231706  |
| 1128,512 | 382,8   | 381,21  | -1,59  | 0,0231706  |

### R1B-3-5-2

| Distancia | C. Terreno | C. Rasante | C. Roja | Pendiente  |
|-----------|------------|------------|---------|------------|
| 0         | 377,207    | 375,022    | -2,185  | 0,00604056 |
| 20        | 377,168    | 375,142    | -2,026  | 0,00604056 |
| 40        | 377,301    | 375,263    | -2,038  | 0,00604056 |
| 60        | 377,433    | 375,384    | -2,049  | 0,00604056 |
| 80        | 377,339    | 375,505    | -1,834  | 0,00604056 |
| 88,81     | 377,237    | 375,558    | -1,679  | 0,00604056 |
| 100       | 377,321    | 375,592    | -1,729  | 0,003      |
| 120       | 377,276    | 375,652    | -1,625  | 0,003      |
| 140       | 377,313    | 375,712    | -1,601  | 0,003      |
| 150,823   | 377,334    | 375,744    | -1,59   | 0,003      |
| 160       | 377,463    | 375,698    | -1,765  | -0,005     |
| 180       | 377,366    | 375,598    | -1,768  | -0,005     |
| 186,154   | 377,287    | 375,567    | -1,72   | -0,005     |

### R1B-3-5-4

| Distancia | C. Terreno | C. Rasante | C. Roja | Pendiente  |
|-----------|------------|------------|---------|------------|
| 0         | 379,001    | 377,168    | -1,833  | 0,00641769 |
| 20        | 379,174    | 377,296    | -1,878  | 0,00641769 |
| 40        | 379,333    | 377,425    | -1,909  | 0,00641769 |
| 60        | 379,355    | 377,553    | -1,802  | 0,00641769 |
| 80        | 379,449    | 377,681    | -1,768  | 0,00641769 |
| 100       | 379,474    | 377,81     | -1,665  | 0,00641769 |
| 120       | 379,642    | 377,938    | -1,704  | 0,00641769 |
| 132,359   | 379,744    | 378,017    | -1,727  | 0,00641769 |
| 140       | 379,828    | 378,072    | -1,756  | 0,00718384 |
| 160       | 380,011    | 378,216    | -1,795  | 0,00718384 |
| 180       | 380,194    | 378,36     | -1,835  | 0,00718384 |
| 200       | 380,158    | 378,503    | -1,654  | 0,00718384 |
| 220       | 380,445    | 378,647    | -1,798  | 0,00718384 |
| 231,112   | 380,798    | 378,727    | -2,071  | 0,00718384 |

### R1B-3-6

| Distancia | C. Terreno | C. Rasante | C. Roja | Pendiente   |
|-----------|------------|------------|---------|-------------|
| 0         | 366,529    | 363,56     | -2,969  | -0,00681811 |
| 20        | 365,851    | 363,424    | -2,428  | -0,00681811 |
| 32,707    | 364,937    | 363,337    | -1,6    | -0,00681811 |
| 40        | 364,948    | 362,737    | -2,211  | -0,08225011 |
| 50,555    | 363,469    | 361,869    | -1,6    | -0,08225011 |
| 60        | 363,27     | 361,768    | -1,503  | -0,01074399 |
| 80        | 363,315    | 361,553    | -1,763  | -0,01074399 |
| 86,389    | 363,284    | 361,484    | -1,8    | -0,01074399 |
| 98,72     | 361,7      | 360,05     | -1,65   | -0,11629227 |
| 100       | 361,69     | 360,019    | -1,671  | -0,02427249 |
| 120       | 361,608    | 359,533    | -2,074  | -0,02427249 |
| 140       | 361,174    | 359,048    | -2,126  | -0,02427249 |

|         |         |         |        |             |
|---------|---------|---------|--------|-------------|
| 160     | 360,758 | 358,563 | -2,195 | -0,02427249 |
| 173,908 | 359,875 | 358,225 | -1,65  | -0,02427249 |
| 180     | 359,874 | 358,116 | -1,758 | -0,01792456 |
| 200     | 359,9   | 357,757 | -2,143 | -0,01792456 |
| 220     | 359,204 | 357,399 | -1,805 | -0,01792456 |
| 240     | 359,157 | 357,04  | -2,117 | -0,01792456 |
| 259,991 | 358,292 | 356,682 | -1,61  | -0,01792456 |
| 260     | 358,292 | 356,682 | -1,61  | -0,00500181 |
| 280     | 358,286 | 356,582 | -1,704 | -0,00500181 |
| 300     | 358,301 | 356,482 | -1,82  | -0,00500181 |
| 320     | 358,308 | 356,382 | -1,926 | -0,00500181 |
| 334,564 | 358,31  | 356,309 | -2,001 | -0,00500181 |
| 340     | 358,303 | 356,355 | -1,948 | 0,00854649  |
| 360     | 358,612 | 356,526 | -2,086 | 0,00854649  |
| 380     | 358,745 | 356,697 | -2,048 | 0,00854649  |
| 400     | 358,72  | 356,868 | -1,852 | 0,00854649  |
| 420     | 359,026 | 357,039 | -1,987 | 0,00854649  |
| 440     | 358,963 | 357,21  | -1,753 | 0,00854649  |
| 449,816 | 358,942 | 357,294 | -1,648 | 0,00854649  |
| 460     | 358,966 | 357,326 | -1,641 | 0,00309779  |
| 480     | 359,104 | 357,388 | -1,716 | 0,00309779  |
| 500     | 359,439 | 357,449 | -1,99  | 0,00309779  |
| 520     | 359,487 | 357,511 | -1,976 | 0,00309779  |
| 538,589 | 359,427 | 357,569 | -1,858 | 0,00309779  |
| 540     | 359,456 | 357,582 | -1,874 | 0,00926244  |
| 560     | 359,642 | 357,767 | -1,874 | 0,00926244  |
| 580     | 359,987 | 357,953 | -2,035 | 0,00926244  |
| 600     | 360,015 | 358,138 | -1,877 | 0,00926244  |
| 620     | 360,133 | 358,323 | -1,81  | 0,00926244  |
| 640     | 360,17  | 358,508 | -1,661 | 0,00926244  |
| 646,336 | 360,177 | 358,567 | -1,61  | 0,00926244  |

#### R1B-4

| Distancia | C. Terreno | C. Rasante | C. Roja | Pendiente   |
|-----------|------------|------------|---------|-------------|
| 0         | 373,88     | 370,57     | -3,31   | 0,061334    |
| 20        | 374,226    | 371,797    | -2,429  | 0,061334    |
| 30        | 374,51     | 372,41     | -2,1    | 0,061334    |
| 40        | 375,12     | 372,652    | -2,468  | 0,02417106  |
| 60        | 375,626    | 373,135    | -2,491  | 0,02417106  |
| 80        | 376,061    | 373,619    | -2,443  | 0,02417106  |
| 100       | 376,202    | 374,102    | -2,1    | 0,02417106  |
| 120       | 375,64     | 372,655    | -2,985  | -0,07233865 |
| 140       | 374,707    | 371,208    | -3,499  | -0,07233865 |
| 160       | 372,71     | 369,762    | -2,949  | -0,07233865 |
| 180       | 370,945    | 368,315    | -2,63   | -0,07233865 |
| 200       | 369,711    | 366,868    | -2,843  | -0,07233865 |
| 201,868   | 368,833    | 366,733    | -2,1    | -0,07233865 |
| 220       | 368,177    | 365,955    | -2,221  | -0,04288474 |
| 240       | 367,839    | 365,098    | -2,741  | -0,04288474 |

|         |         |         |        |             |
|---------|---------|---------|--------|-------------|
| 260     | 367,015 | 364,24  | -2,775 | -0,04288474 |
| 260,629 | 366,983 | 364,213 | -2,77  | -0,04288474 |
| 280     | 366,72  | 364,116 | -2,604 | -0,005      |
| 300     | 366,697 | 364,016 | -2,681 | -0,005      |
| 320     | 366,698 | 363,916 | -2,782 | -0,005      |
| 340     | 366,721 | 363,816 | -2,905 | -0,005      |
| 360     | 366,701 | 363,716 | -2,985 | -0,005      |
| 380     | 366,675 | 363,616 | -3,058 | -0,005      |
| 400     | 366,699 | 363,516 | -3,183 | -0,005      |
| 415,353 | 366,397 | 363,439 | -2,958 | -0,005      |
| 420     | 366,331 | 363,457 | -2,875 | 0,00367623  |
| 440     | 366,346 | 363,53  | -2,816 | 0,00367623  |
| 460     | 366,367 | 363,604 | -2,764 | 0,00367623  |
| 480     | 366,426 | 363,677 | -2,748 | 0,00367623  |
| 500     | 366,428 | 363,751 | -2,677 | 0,00367623  |
| 520     | 366,405 | 363,824 | -2,581 | 0,00367623  |
| 540     | 366,498 | 363,898 | -2,6   | 0,00367623  |
| 560     | 366,468 | 363,971 | -2,496 | 0,00367623  |
| 580     | 366,498 | 364,045 | -2,454 | 0,00367623  |
| 600     | 366,599 | 364,118 | -2,481 | 0,00367623  |
| 620     | 366,43  | 364,192 | -2,238 | 0,00367623  |
| 640     | 366,741 | 364,265 | -2,476 | 0,00367623  |
| 660     | 366,855 | 364,339 | -2,516 | 0,00367623  |
| 680     | 366,863 | 364,412 | -2,451 | 0,00367623  |
| 700     | 366,826 | 364,486 | -2,341 | 0,00367623  |
| 720     | 366,777 | 364,559 | -2,217 | 0,00367623  |
| 740     | 367,874 | 364,633 | -3,241 | 0,00367623  |
| 747,078 | 366,9   | 364,659 | -2,241 | 0,00367623  |
| 760     | 368,025 | 364,215 | -3,81  | -0,03433758 |
| 780     | 365,758 | 363,528 | -2,23  | -0,03433758 |
| 784,98  | 365,755 | 363,357 | -2,397 | -0,03433758 |
| 800     | 365,726 | 363,112 | -2,614 | -0,01637036 |
| 820     | 365,699 | 362,784 | -2,915 | -0,01637036 |
| 840     | 366,291 | 362,457 | -3,834 | -0,01637036 |
| 860     | 364,636 | 362,129 | -2,506 | -0,01637036 |
| 875,083 | 364,354 | 361,882 | -2,472 | -0,01637036 |
| 880     | 364,352 | 361,815 | -2,537 | -0,01361967 |
| 900     | 364,4   | 361,543 | -2,857 | -0,01361967 |
| 920     | 364,339 | 361,271 | -3,069 | -0,01361967 |
| 940     | 364,142 | 360,998 | -3,143 | -0,01361967 |
| 960     | 364,382 | 360,726 | -3,657 | -0,01361967 |
| 965,647 | 362,749 | 360,649 | -2,1   | -0,01361967 |
| 980     | 363,972 | 361,187 | -2,785 | 0,03746348  |
| 1000    | 364,036 | 361,936 | -2,1   | 0,03746348  |
| 1020    | 364,022 | 361,782 | -2,24  | -0,00770632 |
| 1040    | 363,945 | 361,628 | -2,318 | -0,00770632 |
| 1060    | 363,934 | 361,474 | -2,46  | -0,00770632 |
| 1080    | 363,586 | 361,319 | -2,266 | -0,00770632 |
| 1100    | 363,54  | 361,165 | -2,374 | -0,00770632 |
| 1120    | 363,262 | 361,011 | -2,251 | -0,00770632 |
| 1140    | 363,227 | 360,857 | -2,37  | -0,00770632 |

|          |         |         |        |             |
|----------|---------|---------|--------|-------------|
| 1160     | 363,144 | 360,703 | -2,441 | -0,00770632 |
| 1180     | 363,034 | 360,549 | -2,485 | -0,00770632 |
| 1200     | 362,95  | 360,395 | -2,555 | -0,00770632 |
| 1220     | 362,837 | 360,241 | -2,596 | -0,00770632 |
| 1240     | 362,954 | 360,086 | -2,868 | -0,00770632 |
| 1260     | 362,852 | 359,932 | -2,919 | -0,00770632 |
| 1280     | 362,771 | 359,778 | -2,992 | -0,00770632 |
| 1300     | 362,654 | 359,624 | -3,03  | -0,00770632 |
| 1319,865 | 361,571 | 359,471 | -2,1   | -0,00770632 |
| 1320     | 361,605 | 359,474 | -2,131 | 0,02268647  |
| 1340     | 362,329 | 359,928 | -2,402 | 0,02268647  |
| 1347,539 | 362,254 | 360,099 | -2,155 | 0,02268647  |
| 1360     | 362,316 | 359,976 | -2,339 | -0,00985046 |
| 1380     | 362,051 | 359,779 | -2,272 | -0,00985046 |
| 1400     | 362,023 | 359,582 | -2,441 | -0,00985046 |
| 1420     | 361,738 | 359,385 | -2,353 | -0,00985046 |
| 1440     | 361,584 | 359,188 | -2,396 | -0,00985046 |
| 1460     | 361,413 | 358,991 | -2,422 | -0,00985046 |
| 1480     | 361,299 | 358,794 | -2,505 | -0,00985046 |
| 1500     | 361,183 | 358,597 | -2,586 | -0,00985046 |
| 1520     | 361,067 | 358,4   | -2,667 | -0,00985046 |
| 1540     | 361,006 | 358,203 | -2,803 | -0,00985046 |
| 1560     | 360,806 | 358,006 | -2,8   | -0,00985046 |
| 1580     | 360,245 | 357,809 | -2,436 | -0,00985046 |
| 1600     | 359,843 | 357,709 | -2,134 | -0,005      |
| 1620     | 359,757 | 357,609 | -2,148 | -0,005      |
| 1640     | 359,665 | 357,509 | -2,156 | -0,005      |
| 1660     | 359,605 | 357,409 | -2,196 | -0,005      |
| 1680     | 359,525 | 357,309 | -2,216 | -0,005      |
| 1700     | 359,453 | 357,209 | -2,244 | -0,005      |
| 1720     | 359,351 | 357,109 | -2,242 | -0,005      |
| 1740     | 359,309 | 357,009 | -2,3   | -0,005      |
| 1760     | 359,209 | 356,909 | -2,3   | -0,005      |
| 1780     | 359,227 | 356,809 | -2,418 | -0,005      |
| 1800     | 359,352 | 356,268 | -3,084 | -0,02702511 |
| 1809,268 | 358,118 | 356,018 | -2,1   | -0,02702511 |
| 1820     | 358,687 | 356,153 | -2,534 | 0,01262489  |
| 1840     | 358,506 | 356,406 | -2,1   | 0,01262489  |
| 1860     | 358,434 | 356,292 | -2,142 | -0,00571011 |
| 1880     | 358,304 | 356,178 | -2,126 | -0,00571011 |
| 1900     | 358,344 | 356,063 | -2,281 | -0,00571011 |
| 1920     | 358,228 | 355,949 | -2,279 | -0,00571011 |
| 1940     | 358,147 | 355,835 | -2,312 | -0,00571011 |
| 1960     | 358,167 | 355,721 | -2,446 | -0,00571011 |
| 1980     | 357,962 | 355,607 | -2,355 | -0,00571011 |
| 2000     | 357,947 | 355,492 | -2,454 | -0,00571011 |
| 2020     | 357,921 | 355,378 | -2,543 | -0,00571011 |
| 2040     | 357,921 | 355,264 | -2,657 | -0,00571011 |
| 2060     | 357,686 | 355,15  | -2,537 | -0,00571011 |
| 2080     | 357,552 | 355,036 | -2,516 | -0,00571011 |
| 2100     | 357,448 | 354,921 | -2,527 | -0,00571011 |

|      |         |         |        |             |
|------|---------|---------|--------|-------------|
| 2120 | 357,263 | 354,807 | -2,456 | -0,00571011 |
| 2140 | 357,239 | 354,693 | -2,546 | -0,00571011 |
| 2160 | 356,969 | 354,579 | -2,39  | -0,00571011 |
| 2180 | 356,892 | 354,465 | -2,427 | -0,00571011 |
| 2200 | 356,899 | 354,35  | -2,548 | -0,00571011 |
| 2220 | 356,605 | 354,236 | -2,368 | -0,00571011 |
| 2240 | 356,561 | 354,122 | -2,439 | -0,00571011 |
| 2260 | 356,531 | 354,008 | -2,523 | -0,00571011 |
| 2280 | 356,262 | 353,894 | -2,368 | -0,00571011 |
| 2300 | 356,264 | 353,779 | -2,484 | -0,00571011 |
| 2320 | 356,097 | 353,665 | -2,431 | -0,00571011 |
| 2340 | 355,69  | 353,551 | -2,139 | -0,00571011 |
| 2360 | 355,574 | 353,437 | -2,138 | -0,00571011 |
| 2380 | 355,423 | 353,323 | -2,1   | -0,00571011 |
| 2400 | 355,466 | 353,208 | -2,258 | -0,00571011 |
| 2420 | 355,254 | 353,094 | -2,16  | -0,00571011 |
| 2440 | 355,165 | 352,98  | -2,186 | -0,00571011 |
| 2460 | 355,112 | 352,866 | -2,247 | -0,00571011 |
| 2480 | 354,74  | 352,752 | -1,988 | -0,00571011 |
| 2500 | 354,73  | 352,637 | -2,093 | -0,00571011 |
| 2520 | 354,767 | 352,523 | -2,244 | -0,00571011 |
| 2540 | 354,755 | 352,409 | -2,346 | -0,00571011 |
| 2560 | 354,818 | 352,295 | -2,523 | -0,00571011 |
| 2580 | 354,385 | 352,181 | -2,205 | -0,00571011 |
| 2600 | 354,264 | 352,066 | -2,197 | -0,00571011 |
| 2620 | 354,219 | 351,952 | -2,267 | -0,00571011 |
| 2640 | 354,177 | 351,838 | -2,339 | -0,00571011 |
| 2660 | 354,125 | 351,724 | -2,402 | -0,00571011 |
| 2680 | 354,098 | 351,609 | -2,489 | -0,00571011 |
| 2700 | 353,931 | 351,495 | -2,436 | -0,00571011 |
| 2710 | 354,453 | 351,438 | -3,014 | -0,00571011 |
| 2720 | 354,197 | 351,468 | -2,729 | 0,003       |
| 2740 | 354,06  | 351,528 | -2,532 | 0,003       |
| 2760 | 353,993 | 351,588 | -2,405 | 0,003       |
| 2780 | 353,899 | 351,648 | -2,251 | 0,003       |
| 2800 | 353,795 | 351,708 | -2,087 | 0,003       |
| 2810 | 353,759 | 351,738 | -2,02  | 0,003       |
| 2820 | 353,444 | 351,662 | -1,782 | -0,00762182 |
| 2840 | 353,387 | 351,51  | -1,877 | -0,00762182 |
| 2860 | 353,399 | 351,357 | -2,042 | -0,00762182 |
| 2880 | 353,323 | 351,205 | -2,118 | -0,00762182 |
| 2900 | 353,045 | 351,052 | -1,993 | -0,00762182 |
| 2920 | 352,996 | 350,9   | -2,096 | -0,00762182 |
| 2940 | 352,899 | 350,747 | -2,152 | -0,00762182 |
| 2960 | 352,811 | 350,595 | -2,216 | -0,00762182 |
| 2980 | 352,458 | 350,442 | -2,015 | -0,00762182 |
| 3000 | 352,472 | 350,29  | -2,181 | -0,00762182 |
| 3020 | 352,191 | 350,138 | -2,053 | -0,00762182 |
| 3040 | 352,032 | 349,985 | -2,047 | -0,00762182 |
| 3060 | 351,968 | 349,833 | -2,135 | -0,00762182 |
| 3080 | 351,775 | 349,68  | -2,095 | -0,00762182 |

|          |         |         |        |             |
|----------|---------|---------|--------|-------------|
| 3100     | 351,74  | 349,528 | -2,212 | -0,00762182 |
| 3120     | 351,709 | 349,375 | -2,333 | -0,00762182 |
| 3140     | 351,465 | 349,223 | -2,242 | -0,00762182 |
| 3160     | 351,443 | 349,071 | -2,372 | -0,00762182 |
| 3180     | 351,192 | 348,918 | -2,274 | -0,00762182 |
| 3200     | 351,102 | 348,766 | -2,337 | -0,00762182 |
| 3220     | 351,081 | 348,613 | -2,468 | -0,00762182 |
| 3240     | 350,842 | 348,461 | -2,381 | -0,00762182 |
| 3260     | 350,815 | 348,308 | -2,507 | -0,00762182 |
| 3280     | 350,463 | 348,156 | -2,307 | -0,00762182 |
| 3300     | 350,413 | 348,004 | -2,409 | -0,00762182 |
| 3320     | 350,227 | 347,851 | -2,376 | -0,00762182 |
| 3340     | 349,991 | 347,699 | -2,292 | -0,00762182 |
| 3360     | 350,001 | 347,546 | -2,455 | -0,00762182 |
| 3380     | 349,759 | 347,394 | -2,365 | -0,00762182 |
| 3400     | 349,727 | 347,241 | -2,486 | -0,00762182 |
| 3420     | 349,531 | 347,089 | -2,442 | -0,00762182 |
| 3440     | 349,328 | 346,936 | -2,392 | -0,00762182 |
| 3460     | 349,378 | 346,836 | -2,541 | -0,005      |
| 3480     | 348,805 | 346,736 | -2,068 | -0,005      |
| 3500     | 348,785 | 346,636 | -2,149 | -0,005      |
| 3520     | 348,723 | 346,536 | -2,187 | -0,005      |
| 3540     | 348,527 | 346,436 | -2,09  | -0,005      |
| 3560     | 348,874 | 346,336 | -2,538 | -0,005      |
| 3580     | 348,464 | 346,236 | -2,228 | -0,005      |
| 3590     | 348,43  | 346,186 | -2,243 | -0,005      |
| 3600     | 348,449 | 346,219 | -2,23  | 0,00324598  |
| 3620     | 348,473 | 346,284 | -2,189 | 0,00324598  |
| 3640     | 348,521 | 346,349 | -2,172 | 0,00324598  |
| 3660     | 348,48  | 346,414 | -2,066 | 0,00324598  |
| 3680     | 348,577 | 346,479 | -2,098 | 0,00324598  |
| 3700     | 348,593 | 346,544 | -2,05  | 0,00324598  |
| 3720     | 348,614 | 346,608 | -2,005 | 0,00324598  |
| 3740     | 348,655 | 346,673 | -1,982 | 0,00324598  |
| 3760     | 348,68  | 346,738 | -1,942 | 0,00324598  |
| 3780     | 348,753 | 346,803 | -1,95  | 0,00324598  |
| 3800     | 348,693 | 346,868 | -1,825 | 0,00324598  |
| 3820     | 348,738 | 346,933 | -1,805 | 0,00324598  |
| 3840     | 348,968 | 346,998 | -1,97  | 0,00324598  |
| 3860     | 348,912 | 347,063 | -1,849 | 0,00324598  |
| 3880     | 348,731 | 347,128 | -1,603 | 0,00324598  |
| 3900     | 348,793 | 347,193 | -1,601 | 0,00324598  |
| 3905,637 | 348,811 | 347,211 | -1,6   | 0,00324598  |

### R1B-4-1

| Distancia | C. Terreno | C. Rasante | C. Roja | Pendiente  |
|-----------|------------|------------|---------|------------|
| 0         | 359,282    | 356,15     | -3,132  | 0,01934493 |
| 20        | 358,962    | 356,537    | -2,425  | 0,01934493 |
| 40        | 358,673    | 356,924    | -1,749  | 0,01934493 |

|         |         |         |        |             |
|---------|---------|---------|--------|-------------|
| 48,85   | 359,008 | 357,095 | -1,913 | 0,01934493  |
| 60      | 360,354 | 357,802 | -2,552 | 0,06341743  |
| 80      | 361,293 | 359,07  | -2,223 | 0,06341743  |
| 100     | 362,149 | 360,339 | -1,81  | 0,06341743  |
| 120     | 363,77  | 361,607 | -2,163 | 0,06341743  |
| 132,644 | 364,699 | 362,409 | -2,29  | 0,06341743  |
| 140     | 365,764 | 363,368 | -2,396 | 0,13034142  |
| 146,615 | 365,93  | 364,23  | -1,7   | 0,13034142  |
| 160     | 365,986 | 364,186 | -1,8   | -0,00327892 |
| 160,644 | 365,984 | 364,184 | -1,8   | -0,00327892 |
| 180     | 365,984 | 364,073 | -1,911 | -0,00573287 |
| 200     | 365,971 | 363,958 | -2,013 | -0,00573287 |
| 220     | 365,968 | 363,844 | -2,124 | -0,00573287 |
| 240     | 365,964 | 363,729 | -2,235 | -0,00573287 |
| 260     | 365,945 | 363,614 | -2,331 | -0,00573287 |
| 280     | 365,969 | 363,5   | -2,469 | -0,00573287 |
| 300     | 365,953 | 363,385 | -2,568 | -0,00573287 |
| 320     | 365,637 | 363,27  | -2,367 | -0,00573287 |
| 340     | 365,239 | 363,156 | -2,083 | -0,00573287 |
| 360     | 365,794 | 363,041 | -2,753 | -0,00573287 |
| 380     | 364,754 | 362,926 | -1,828 | -0,00573287 |
| 386,36  | 364,69  | 362,89  | -1,8   | -0,00573287 |
| 396,625 | 364,841 | 362,839 | -2,002 | -0,00496834 |
| 400     | 365,023 | 363,185 | -1,837 | 0,10263685  |
| 402,617 | 365,154 | 363,454 | -1,7   | 0,10263685  |
| 420     | 365,125 | 363,367 | -1,758 | -0,00499927 |
| 440     | 365,014 | 363,267 | -1,747 | -0,00499927 |
| 460     | 364,882 | 363,167 | -1,715 | -0,00499927 |
| 480     | 364,782 | 363,067 | -1,715 | -0,00499927 |
| 500     | 364,762 | 362,967 | -1,795 | -0,00499927 |
| 520     | 364,538 | 362,867 | -1,671 | -0,00499927 |
| 540     | 364,497 | 362,767 | -1,73  | -0,00499927 |
| 560     | 364,393 | 362,667 | -1,726 | -0,00499927 |
| 580     | 364,404 | 362,567 | -1,836 | -0,00499927 |
| 600     | 364,319 | 362,467 | -1,852 | -0,00499927 |
| 620     | 364,224 | 362,367 | -1,856 | -0,00499927 |
| 640     | 364,117 | 362,267 | -1,849 | -0,00499927 |
| 660     | 364,188 | 362,167 | -2,02  | -0,00499927 |
| 680     | 364,445 | 362,067 | -2,378 | -0,00499927 |
| 700     | 363,892 | 361,967 | -1,925 | -0,00499927 |
| 712,462 | 363,797 | 361,905 | -1,892 | -0,00499927 |

### R1B-4-2

| Distancia | C. Terreno | C. Rasante | C. Roja | Pendiente   |
|-----------|------------|------------|---------|-------------|
| 0         | 363,97     | 361,19     | -2,78   | 0,0565754   |
| 20        | 363,972    | 362,322    | -1,65   | 0,0565754   |
| 40        | 363,993    | 362,222    | -1,771  | -0,00499999 |
| 60        | 364,017    | 362,122    | -1,895  | -0,00499999 |
| 80        | 364,029    | 362,022    | -2,007  | -0,00499999 |

|         |         |         |        |             |
|---------|---------|---------|--------|-------------|
| 100     | 364,052 | 361,922 | -2,131 | -0,00499999 |
| 120     | 364,072 | 361,822 | -2,25  | -0,00499999 |
| 140     | 364,091 | 361,722 | -2,369 | -0,00499999 |
| 153,939 | 364,1   | 361,652 | -2,448 | -0,00499999 |
| 160     | 364,1   | 361,67  | -2,43  | 0,003       |
| 180     | 364,133 | 361,73  | -2,403 | 0,003       |
| 200     | 364,161 | 361,79  | -2,371 | 0,003       |
| 220     | 364,309 | 361,85  | -2,459 | 0,003       |
| 240     | 364,18  | 361,91  | -2,27  | 0,003       |
| 260     | 364,186 | 361,97  | -2,216 | 0,003       |
| 280     | 364,206 | 362,03  | -2,176 | 0,003       |
| 300     | 364,223 | 362,09  | -2,133 | 0,003       |
| 320     | 364,228 | 362,15  | -2,078 | 0,003       |
| 340     | 364,26  | 362,21  | -2,05  | 0,003       |
| 360     | 364,257 | 362,27  | -1,987 | 0,003       |
| 380     | 364,261 | 362,33  | -1,931 | 0,003       |
| 396,535 | 364,322 | 362,38  | -1,942 | 0,003       |
| 400     | 364,323 | 362,362 | -1,961 | -0,005      |
| 420     | 364,298 | 362,262 | -2,036 | -0,005      |
| 440     | 364,2   | 362,162 | -2,038 | -0,005      |
| 460     | 364,039 | 362,062 | -1,977 | -0,005      |
| 480     | 363,673 | 361,962 | -1,711 | -0,005      |
| 500     | 363,647 | 361,862 | -1,785 | -0,005      |
| 520     | 363,66  | 361,762 | -1,898 | -0,005      |
| 540     | 363,634 | 361,662 | -1,972 | -0,005      |
| 550     | 363,652 | 361,612 | -2,04  | -0,005      |
| 560     | 363,661 | 361,562 | -2,099 | -0,005      |
| 580     | 363,606 | 361,462 | -2,144 | -0,005      |
| 600     | 363,614 | 361,362 | -2,252 | -0,005      |
| 603,271 | 363,606 | 361,346 | -2,26  | -0,005      |
| 620     | 363,615 | 361,397 | -2,219 | 0,00302316  |
| 640     | 363,61  | 361,457 | -2,153 | 0,00302316  |
| 660     | 363,577 | 361,517 | -2,06  | 0,00302316  |
| 680     | 363,592 | 361,578 | -2,014 | 0,00302316  |
| 700     | 363,583 | 361,638 | -1,945 | 0,00302316  |
| 720     | 363,591 | 361,699 | -1,892 | 0,00302316  |
| 740     | 363,563 | 361,759 | -1,804 | 0,00302316  |
| 760     | 363,602 | 361,82  | -1,782 | 0,00302316  |
| 780     | 363,626 | 361,88  | -1,746 | 0,00302316  |
| 800     | 363,655 | 361,941 | -1,715 | 0,00302316  |
| 820     | 363,637 | 362,001 | -1,636 | 0,00302316  |
| 831,172 | 363,685 | 362,035 | -1,65  | 0,00302316  |
| 840     | 363,565 | 361,533 | -2,032 | -0,05684154 |
| 849,923 | 362,694 | 360,969 | -1,724 | -0,05684154 |
| 859,36  | 362,719 | 360,922 | -1,797 | -0,00499997 |

### R1B-4-3

| Distancia | C. Terreno | C. Rasante | C. Roja | Pendiente   |
|-----------|------------|------------|---------|-------------|
| 0         | 354,306    | 351,45     | -2,856  | -0,03192464 |

|         |         |         |        |             |
|---------|---------|---------|--------|-------------|
| 15,286  | 352,919 | 350,962 | -1,957 | -0,03192464 |
| 20      | 353,496 | 351,35  | -2,146 | 0,08226853  |
| 25,46   | 353,877 | 351,799 | -2,078 | 0,08226853  |
| 40      | 353,877 | 351,843 | -2,034 | 0,00300168  |
| 60      | 353,885 | 351,903 | -1,982 | 0,00300168  |
| 80      | 353,924 | 351,963 | -1,961 | 0,00300168  |
| 100     | 353,932 | 352,023 | -1,909 | 0,00300168  |
| 120     | 353,939 | 352,083 | -1,857 | 0,00300168  |
| 140     | 353,94  | 352,143 | -1,798 | 0,00300168  |
| 160     | 354,242 | 352,203 | -2,039 | 0,00300168  |
| 166,048 | 353,921 | 352,221 | -1,7   | 0,00300168  |
| 180     | 355,215 | 353,427 | -1,788 | 0,08643922  |
| 200     | 355,718 | 353,514 | -2,204 | 0,00436429  |
| 220     | 355,887 | 353,602 | -2,285 | 0,00436429  |
| 240     | 355,984 | 353,689 | -2,295 | 0,00436429  |
| 260     | 355,856 | 353,776 | -2,079 | 0,00436429  |
| 280     | 355,871 | 353,863 | -2,007 | 0,00436429  |
| 300     | 355,751 | 353,951 | -1,8   | 0,00436429  |
| 320     | 355,78  | 354,038 | -1,742 | 0,00436429  |
| 330     | 355,495 | 353,805 | -1,69  | -0,0233     |
| 340     | 355,453 | 353,755 | -1,698 | -0,0049987  |
| 360     | 355,437 | 353,655 | -1,782 | -0,0049987  |
| 380     | 355,852 | 353,555 | -2,297 | -0,0049987  |
| 400     | 356,196 | 353,455 | -2,741 | -0,0049987  |
| 420     | 356,055 | 353,355 | -2,7   | -0,0049987  |
| 440     | 355,679 | 353,255 | -2,424 | -0,0049987  |
| 460     | 355,533 | 353,155 | -2,377 | -0,0049987  |
| 480     | 355,442 | 353,055 | -2,387 | -0,0049987  |
| 500     | 355,353 | 352,955 | -2,398 | -0,0049987  |
| 520     | 355,271 | 352,855 | -2,416 | -0,0049987  |
| 540     | 355,136 | 352,755 | -2,38  | -0,0049987  |
| 560     | 354,75  | 352,655 | -2,095 | -0,0049987  |
| 580     | 354,698 | 352,555 | -2,143 | -0,0049987  |
| 600     | 354,64  | 352,455 | -2,185 | -0,0049987  |
| 620     | 354,591 | 352,355 | -2,236 | -0,0049987  |
| 628,878 | 354,591 | 352,311 | -2,28  | -0,0049987  |
| 640     | 354,558 | 352,344 | -2,214 | 0,00299971  |
| 660     | 354,5   | 352,404 | -2,096 | 0,00299971  |
| 680     | 354,486 | 352,464 | -2,022 | 0,00299971  |
| 700     | 354,436 | 352,524 | -1,912 | 0,00299971  |
| 720     | 354,201 | 352,584 | -1,617 | 0,00299971  |
| 740     | 354,3   | 352,644 | -1,656 | 0,00299971  |
| 740,889 | 354,297 | 352,647 | -1,65  | 0,00299971  |

#### R1B-4-4

| Distancia | C. Terreno | C. Rasante | C. Roja | Pendiente |
|-----------|------------|------------|---------|-----------|
| 0         | 354,306    | 351,45     | -2,856  | 0,003     |
| 20        | 354,053    | 351,51     | -2,543  | 0,003     |
| 40        | 354,014    | 351,57     | -2,444  | 0,003     |

|         |         |         |        |             |
|---------|---------|---------|--------|-------------|
| 60      | 354,003 | 351,63  | -2,373 | 0,003       |
| 80      | 354,042 | 351,69  | -2,352 | 0,003       |
| 100     | 354,163 | 351,75  | -2,413 | 0,003       |
| 120     | 354,136 | 351,81  | -2,326 | 0,003       |
| 140     | 354,119 | 351,87  | -2,249 | 0,003       |
| 160     | 354,143 | 351,93  | -2,213 | 0,003       |
| 180     | 354,178 | 351,99  | -2,188 | 0,003       |
| 200     | 354,168 | 352,05  | -2,118 | 0,003       |
| 220     | 354,185 | 352,11  | -2,075 | 0,003       |
| 240     | 354,18  | 352,17  | -2,01  | 0,003       |
| 260     | 354,317 | 352,23  | -2,087 | 0,003       |
| 280     | 354,095 | 352,29  | -1,805 | 0,003       |
| 286,779 | 354,075 | 352,31  | -1,765 | 0,003       |
| 300     | 354,094 | 352,244 | -1,849 | -0,00499999 |
| 320     | 354,064 | 352,144 | -1,92  | -0,00499999 |
| 340     | 354,037 | 352,044 | -1,993 | -0,00499999 |
| 360     | 354,033 | 351,944 | -2,088 | -0,00499999 |
| 380     | 354,015 | 351,844 | -2,17  | -0,00499999 |
| 390     | 354,004 | 351,794 | -2,21  | -0,00499999 |
| 400     | 353,982 | 351,484 | -2,498 | -0,0310691  |
| 417,394 | 352,855 | 350,943 | -1,912 | -0,0310691  |
| 420     | 353,233 | 351,045 | -2,187 | 0,03916607  |
| 440     | 353,826 | 351,829 | -1,998 | 0,03916607  |
| 450     | 353,81  | 352,22  | -1,59  | 0,03916607  |
| 460     | 353,808 | 352,126 | -1,682 | -0,00940685 |
| 480     | 353,664 | 351,938 | -1,726 | -0,00940685 |
| 500     | 353,434 | 351,75  | -1,684 | -0,00940685 |
| 520     | 353,41  | 351,562 | -1,849 | -0,00940685 |
| 540     | 353,095 | 351,374 | -1,721 | -0,00940685 |
| 560     | 352,974 | 351,185 | -1,789 | -0,00940685 |
| 580     | 352,984 | 350,997 | -1,986 | -0,00940685 |
| 586,856 | 352,814 | 350,933 | -1,881 | -0,00940685 |

### R1B-5

| Distancia | C. Terreno | C. Rasante | C. Roja | Pendiente  |
|-----------|------------|------------|---------|------------|
| 0         | 388,244    | 384,62     | -3,624  | 0,06334417 |
| 20        | 388,169    | 385,887    | -2,282  | 0,06334417 |
| 30        | 388,17     | 386,52     | -1,65   | 0,06334417 |
| 40        | 388,164    | 386,47     | -1,694  | -0,005     |
| 60        | 388,208    | 386,37     | -1,838  | -0,005     |
| 80        | 388,199    | 386,27     | -1,929  | -0,005     |
| 100       | 387,852    | 386,17     | -1,682  | -0,005     |
| 120       | 388,167    | 386,07     | -2,097  | -0,005     |
| 140       | 388,16     | 385,97     | -2,19   | -0,005     |
| 160       | 387,983    | 385,87     | -2,113  | -0,005     |
| 180       | 387,949    | 385,77     | -2,179  | -0,005     |
| 200       | 387,933    | 385,67     | -2,263  | -0,005     |
| 220       | 387,909    | 385,57     | -2,339  | -0,005     |
| 240       | 387,457    | 385,47     | -1,987  | -0,005     |

|         |         |         |        |             |
|---------|---------|---------|--------|-------------|
| 260     | 387,045 | 385,37  | -1,675 | -0,005      |
| 280     | 386,579 | 384,018 | -2,561 | -0,06760126 |
| 300     | 385,183 | 382,666 | -2,516 | -0,06760126 |
| 320     | 383,441 | 381,314 | -2,126 | -0,06760126 |
| 335,033 | 381,888 | 380,298 | -1,59  | -0,06760126 |
| 340     | 381,797 | 380,081 | -1,716 | -0,04375592 |
| 360     | 381,766 | 379,206 | -2,561 | -0,04375592 |
| 379,347 | 379,949 | 378,359 | -1,59  | -0,04375592 |
| 380     | 380,224 | 378,374 | -1,85  | 0,02249838  |
| 400     | 381,263 | 378,824 | -2,44  | 0,02249838  |
| 420     | 381,391 | 379,274 | -2,117 | 0,02249838  |
| 440     | 381,329 | 379,724 | -1,605 | 0,02249838  |
| 445,574 | 381,439 | 379,849 | -1,59  | 0,02249838  |
| 460     | 382,475 | 380,389 | -2,086 | 0,03743267  |
| 480     | 383,04  | 381,138 | -1,902 | 0,03743267  |
| 493,43  | 383,386 | 381,64  | -1,746 | 0,03743267  |
| 500     | 383,476 | 381,66  | -1,816 | 0,00299999  |
| 520     | 383,529 | 381,72  | -1,809 | 0,00299999  |
| 540     | 383,575 | 381,78  | -1,795 | 0,00299999  |
| 560     | 383,541 | 381,84  | -1,701 | 0,00299999  |
| 580     | 383,629 | 381,9   | -1,729 | 0,00299999  |
| 584,355 | 383,799 | 381,913 | -1,886 | 0,00299999  |

### R1B-6

| Distancia | C. Terreno | C. Rasante | C. Roja | Pendiente   |
|-----------|------------|------------|---------|-------------|
| 0         | 356,234    | 353,592    | -2,642  | 0,09935     |
| 20        | 357,344    | 355,579    | -1,765  | 0,09935     |
| 40        | 358,147    | 355,957    | -2,19   | 0,01888781  |
| 55,102    | 358,007    | 356,242    | -1,765  | 0,01888781  |
| 60        | 358,229    | 356,468    | -1,762  | 0,04611357  |
| 70        | 358,694    | 356,929    | -1,765  | 0,04611357  |
| 80        | 359,485    | 357,557    | -1,929  | 0,06275     |
| 90        | 359,949    | 358,184    | -1,765  | 0,06275     |
| 100       | 360,142    | 358,249    | -1,893  | 0,0065      |
| 120       | 360,144    | 358,379    | -1,765  | 0,0065      |
| 140       | 359,035    | 357,153    | -1,882  | -0,06132107 |
| 149,582   | 358,24     | 356,565    | -1,675  | -0,06132107 |
| 160       | 357,956    | 356,281    | -1,675  | -0,02726051 |
| 180       | 357,834    | 356,173    | -1,662  | -0,00542353 |
| 200       | 357,735    | 356,064    | -1,671  | -0,00542353 |
| 220       | 357,681    | 355,956    | -1,726  | -0,00542353 |
| 240       | 357,59     | 355,847    | -1,743  | -0,00542353 |
| 260       | 357,521    | 355,739    | -1,782  | -0,00542353 |
| 280       | 357,482    | 355,63     | -1,852  | -0,00542353 |
| 300       | 357,357    | 355,522    | -1,835  | -0,00542353 |
| 320       | 357,219    | 355,413    | -1,806  | -0,00542353 |
| 330       | 357,119    | 355,359    | -1,76   | -0,00542353 |
| 340       | 357,053    | 355,029    | -2,024  | -0,03300077 |
| 360       | 357,02     | 354,369    | -2,651  | -0,03300077 |

|         |         |         |        |             |
|---------|---------|---------|--------|-------------|
| 366,484 | 355,83  | 354,155 | -1,675 | -0,03300077 |
| 380     | 357,595 | 355,325 | -2,27  | 0,08656407  |
| 400     | 357,465 | 355,703 | -1,762 | 0,01890004  |
| 413,492 | 357,533 | 355,958 | -1,575 | 0,01890004  |
| 420     | 359,531 | 356,906 | -2,626 | 0,14564396  |
| 423,283 | 359,471 | 357,384 | -2,087 | 0,14564396  |
| 440     | 359,439 | 357,434 | -2,005 | 0,00299435  |
| 450     | 359,039 | 357,464 | -1,575 | 0,00299435  |
| 460     | 358,911 | 357,413 | -1,498 | -0,00506667 |
| 480     | 358,916 | 357,312 | -1,604 | -0,00506667 |
| 500     | 358,965 | 357,211 | -1,754 | -0,00506667 |
| 510     | 358,735 | 357,16  | -1,575 | -0,00506667 |
| 520     | 358,718 | 357,088 | -1,63  | -0,00722222 |
| 540     | 358,742 | 356,943 | -1,798 | -0,00722222 |
| 560     | 358,708 | 356,799 | -1,909 | -0,00722222 |
| 580     | 358,673 | 356,654 | -2,018 | -0,00722222 |
| 600     | 358,68  | 356,51  | -2,17  | -0,00722222 |
| 620     | 358,409 | 356,577 | -1,831 | 0,003375    |
| 640     | 358,425 | 356,645 | -1,78  | 0,003375    |
| 660     | 358,436 | 356,712 | -1,723 | 0,003375    |
| 680     | 358,355 | 356,78  | -1,575 | 0,003375    |
| 689,297 | 358,395 | 356,82  | -1,575 | 0,00430246  |
| 700     | 358,655 | 357,073 | -1,582 | 0,0236206   |
| 711,1   | 358,91  | 357,335 | -1,575 | 0,0236206   |

### R1B-7

| Distancia | C. Terreno | C. Rasante | C. Roja | Pendiente   |
|-----------|------------|------------|---------|-------------|
| 0         | 386,488    | 382,751    | -3,737  | 0,07875     |
| 20        | 386,427    | 384,326    | -2,101  | 0,07875     |
| 40        | 386,487    | 384,386    | -2,101  | 0,00301322  |
| 58,497    | 386,387    | 384,442    | -1,945  | 0,00301322  |
| 60        | 386,335    | 384,369    | -1,966  | -0,04854131 |
| 70,734    | 385,793    | 383,848    | -1,945  | -0,04854131 |
| 80        | 385,828    | 383,802    | -2,026  | -0,00498872 |
| 100       | 385,655    | 383,702    | -1,953  | -0,00498872 |
| 109,187   | 383,991    | 382,046    | -1,945  | -0,18025471 |
| 120       | 383,565    | 381,27     | -2,294  | -0,07172747 |
| 140       | 382,023    | 379,836    | -2,187  | -0,07172747 |
| 156,742   | 380,485    | 378,635    | -1,85   | -0,07172747 |
| 160       | 380,519    | 378,49     | -2,029  | -0,0446096  |
| 180       | 379,358    | 377,597    | -1,761  | -0,0446096  |
| 200       | 379,157    | 376,705    | -2,452  | -0,0446096  |
| 212,313   | 378,016    | 376,156    | -1,86   | -0,0446096  |
| 220       | 377,901    | 375,944    | -1,956  | -0,02753094 |
| 240       | 377,728    | 375,394    | -2,334  | -0,02753094 |
| 260       | 377,672    | 374,843    | -2,829  | -0,02753094 |
| 273,081   | 376,333    | 374,483    | -1,85   | -0,02753094 |
| 280       | 376,394    | 374,309    | -2,085  | -0,02519699 |
| 300       | 376,106    | 373,805    | -2,301  | -0,02519699 |

|         |         |         |        |             |
|---------|---------|---------|--------|-------------|
| 320     | 375,221 | 373,301 | -1,92  | -0,02519699 |
| 340     | 375,095 | 372,797 | -2,298 | -0,02519699 |
| 360     | 374,082 | 372,293 | -1,789 | -0,02519699 |
| 380     | 374,094 | 371,789 | -2,305 | -0,02519699 |
| 400     | 373,479 | 371,285 | -2,194 | -0,02519699 |
| 420     | 373,134 | 370,781 | -2,353 | -0,02519699 |
| 434,767 | 372,266 | 370,409 | -1,857 | -0,02519699 |
| 440     | 372,238 | 370,383 | -1,855 | -0,00499635 |
| 460     | 372,157 | 370,283 | -1,874 | -0,00499635 |
| 480     | 372,312 | 370,183 | -2,129 | -0,00499635 |
| 498,339 | 369,909 | 367,93  | -1,979 | -0,12285294 |
| 500     | 370,217 | 367,983 | -2,234 | 0,03165526  |
| 520     | 371,378 | 368,616 | -2,762 | 0,03165526  |
| 540     | 371,369 | 369,249 | -2,12  | 0,03165526  |
| 560     | 372,236 | 369,882 | -2,354 | 0,03165526  |
| 580     | 372,366 | 370,515 | -1,851 | 0,03165526  |
| 600     | 373,239 | 371,339 | -1,899 | 0,0412186   |
| 620     | 374,306 | 372,164 | -2,142 | 0,0412186   |
| 629,007 | 374,42  | 372,535 | -1,885 | 0,0412186   |
| 640     | 375,492 | 373,213 | -2,278 | 0,06171031  |
| 660     | 376,553 | 374,448 | -2,105 | 0,06171031  |
| 680     | 378,543 | 375,682 | -2,861 | 0,06171031  |
| 700     | 379,321 | 376,916 | -2,405 | 0,06171031  |
| 720     | 379,543 | 376,981 | -2,563 | 0,00323056  |
| 740     | 379,724 | 377,045 | -2,679 | 0,00323056  |
| 760     | 379,69  | 377,11  | -2,58  | 0,00323056  |
| 780     | 379,601 | 377,174 | -2,426 | 0,00323056  |
| 800     | 379,566 | 377,239 | -2,326 | 0,00323056  |
| 820     | 379,466 | 377,304 | -2,163 | 0,00323056  |
| 840     | 379,465 | 377,368 | -2,097 | 0,00323056  |
| 860     | 379,592 | 377,433 | -2,16  | 0,00323056  |
| 880     | 379,607 | 377,498 | -2,11  | 0,00323056  |
| 900     | 379,768 | 377,562 | -2,206 | 0,00323056  |
| 920     | 379,69  | 377,627 | -2,064 | 0,00323056  |
| 940     | 380,094 | 377,691 | -2,403 | 0,00323056  |
| 960     | 379,826 | 377,756 | -2,07  | 0,00323056  |
| 980     | 379,832 | 377,821 | -2,011 | 0,00323056  |
| 1000    | 379,839 | 377,885 | -1,954 | 0,00323056  |
| 1020    | 379,87  | 377,95  | -1,921 | 0,00323056  |
| 1040    | 379,894 | 378,014 | -1,88  | 0,00323056  |
| 1060    | 379,845 | 378,079 | -1,766 | 0,00323056  |
| 1080    | 379,619 | 377,954 | -1,665 | -0,0062437  |
| 1100    | 379,62  | 377,829 | -1,791 | -0,0062437  |
| 1120    | 379,633 | 377,704 | -1,928 | -0,0062437  |
| 1140    | 379,605 | 377,58  | -2,025 | -0,0062437  |
| 1160    | 379,359 | 377,455 | -1,904 | -0,0062437  |
| 1180    | 379,135 | 377,33  | -1,805 | -0,0062437  |
| 1200    | 379,055 | 377,205 | -1,85  | -0,0062437  |
| 1220    | 378,973 | 377,08  | -1,893 | -0,0062437  |
| 1240    | 378,853 | 376,955 | -1,898 | -0,0062437  |
| 1260    | 378,822 | 376,83  | -1,992 | -0,0062437  |

|          |         |         |        |             |
|----------|---------|---------|--------|-------------|
| 1280     | 378,774 | 376,705 | -2,068 | -0,0062437  |
| 1300     | 378,521 | 376,581 | -1,941 | -0,0062437  |
| 1302,164 | 378,332 | 376,567 | -1,765 | -0,0062437  |
| 1320     | 378,62  | 376,445 | -2,175 | -0,00686807 |
| 1340     | 378,62  | 376,307 | -2,312 | -0,00686807 |
| 1360     | 378,384 | 376,17  | -2,214 | -0,00686807 |
| 1380     | 378,166 | 376,032 | -2,133 | -0,00686807 |
| 1400     | 378,062 | 375,895 | -2,167 | -0,00686807 |
| 1420     | 378,06  | 375,758 | -2,303 | -0,00686807 |
| 1440     | 377,562 | 375,62  | -1,942 | -0,00686807 |
| 1441,65  | 377,374 | 375,609 | -1,765 | -0,00686807 |
| 1442,406 | 377,56  | 375,615 | -1,945 | 0,00793651  |
| 1450,708 | 378,674 | 376,588 | -2,086 | 0,11720068  |
| 1460     | 378,687 | 376,616 | -2,071 | 0,00300233  |
| 1480     | 378,798 | 376,676 | -2,122 | 0,00300233  |
| 1500     | 378,831 | 376,736 | -2,095 | 0,00300233  |
| 1520     | 378,842 | 376,796 | -2,046 | 0,00300233  |
| 1540     | 378,931 | 376,856 | -2,075 | 0,00300233  |
| 1560     | 379,009 | 376,916 | -2,093 | 0,00300233  |
| 1580     | 378,968 | 376,976 | -1,992 | 0,00300233  |
| 1600     | 379,024 | 377,036 | -1,988 | 0,00300233  |
| 1612,249 | 379     | 377,073 | -1,927 | 0,00300233  |
| 1620     | 379,021 | 377,096 | -1,924 | 0,00299884  |
| 1640     | 378,93  | 377,156 | -1,773 | 0,00299884  |
| 1660     | 379,06  | 377,216 | -1,844 | 0,00299884  |
| 1680     | 379,312 | 377,276 | -2,036 | 0,00299884  |
| 1700     | 379,247 | 377,336 | -1,911 | 0,00299884  |
| 1720     | 379,25  | 377,396 | -1,854 | 0,00299884  |
| 1740     | 379,193 | 377,456 | -1,737 | 0,00299884  |
| 1760     | 379,379 | 377,516 | -1,863 | 0,00299884  |
| 1780     | 379,547 | 377,576 | -1,971 | 0,00299884  |
| 1800     | 379,504 | 377,636 | -1,868 | 0,00299884  |
| 1820     | 379,659 | 377,696 | -1,963 | 0,00299884  |
| 1830     | 379,51  | 377,726 | -1,784 | 0,00299884  |
| 1840     | 379,406 | 377,621 | -1,785 | -0,01054269 |
| 1860     | 379,197 | 377,41  | -1,787 | -0,01054269 |
| 1873,727 | 378,965 | 377,265 | -1,7   | -0,01054269 |
| 1880     | 379,132 | 377,329 | -1,803 | 0,01021329  |
| 1900     | 379,863 | 377,533 | -2,329 | 0,01021329  |
| 1920     | 380,062 | 377,738 | -2,325 | 0,01021329  |
| 1940     | 380,521 | 377,942 | -2,579 | 0,01021329  |
| 1960     | 380,366 | 378,146 | -2,22  | 0,01021329  |
| 1980     | 380,538 | 378,35  | -2,187 | 0,01021329  |
| 2000     | 380,608 | 378,555 | -2,053 | 0,01021329  |
| 2020     | 380,777 | 378,759 | -2,018 | 0,01021329  |
| 2040     | 380,775 | 378,963 | -1,812 | 0,01021329  |
| 2060     | 380,917 | 379,167 | -1,749 | 0,01021329  |
| 2068,865 | 380,868 | 379,258 | -1,61  | 0,01021329  |

### R1B-7-1

| Distancia | C. Terreno | C. Rasante | C. Roja | Pendiente  |
|-----------|------------|------------|---------|------------|
| 0         | 371,506    | 368,099    | -3,407  | 0,03333505 |
| 20        | 371,514    | 368,766    | -2,748  | 0,03333505 |
| 40        | 372,03     | 369,432    | -2,597  | 0,03333505 |
| 53,096    | 371,784    | 369,869    | -1,915  | 0,03333505 |
| 60        | 371,77     | 369,914    | -1,856  | 0,00650875 |
| 80        | 371,905    | 370,044    | -1,861  | 0,00650875 |
| 100       | 372,133    | 370,174    | -1,959  | 0,00650875 |
| 120       | 372,121    | 370,304    | -1,816  | 0,00650875 |
| 130       | 372,135    | 370,37     | -1,765  | 0,00650875 |
| 140       | 372,387    | 370,45     | -1,936  | 0,00806335 |
| 160       | 372,62     | 370,611    | -2,009  | 0,00806335 |
| 180       | 372,645    | 370,773    | -1,873  | 0,00806335 |
| 200       | 373,364    | 370,934    | -2,43   | 0,00806335 |
| 220       | 373,547    | 371,095    | -2,452  | 0,00806335 |
| 240       | 373,559    | 371,256    | -2,302  | 0,00806335 |
| 260       | 373,615    | 371,418    | -2,197  | 0,00806335 |
| 268,827   | 373,634    | 371,489    | -2,145  | 0,00806335 |
| 280       | 373,628    | 371,579    | -2,049  | 0,00806335 |
| 300       | 373,679    | 371,74     | -1,939  | 0,00806335 |
| 320       | 373,705    | 371,902    | -1,803  | 0,00806335 |
| 340       | 373,754    | 372,063    | -1,691  | 0,00806335 |
| 342,628   | 373,784    | 372,084    | -1,7    | 0,00806335 |
| 360       | 375,072    | 372,514    | -2,558  | 0,02476983 |
| 380       | 375,078    | 373,01     | -2,068  | 0,02476983 |
| 400       | 375,164    | 373,07     | -2,094  | 0,003      |
| 420       | 375,076    | 373,13     | -1,947  | 0,003      |
| 440       | 375,132    | 373,19     | -1,942  | 0,003      |
| 460       | 375,235    | 373,25     | -1,986  | 0,003      |
| 469,783   | 375,204    | 373,279    | -1,925  | 0,003      |
| 480       | 375,209    | 373,31     | -1,899  | 0,003      |
| 500       | 375,177    | 373,37     | -1,808  | 0,003      |
| 520       | 375,251    | 373,43     | -1,821  | 0,003      |
| 540       | 375,22     | 373,49     | -1,73   | 0,003      |
| 550       | 375,22     | 373,52     | -1,701  | 0,003      |
| 560       | 375,287    | 373,581    | -1,706  | 0,006155   |
| 571,82    | 375,304    | 373,654    | -1,65   | 0,006155   |
| 580       | 375,794    | 373,846    | -1,948  | 0,0234631  |
| 600       | 376,282    | 374,315    | -1,967  | 0,0234631  |
| 610       | 376,25     | 374,55     | -1,7    | 0,0234631  |
| 620       | 376,375    | 374,593    | -1,782  | 0,00426963 |
| 640       | 376,351    | 374,678    | -1,673  | 0,00426963 |
| 660       | 376,455    | 374,763    | -1,691  | 0,00426963 |
| 680       | 376,525    | 374,849    | -1,676  | 0,00426963 |
| 700       | 376,609    | 374,934    | -1,675  | 0,00426963 |
| 716,805   | 376,656    | 375,006    | -1,65   | 0,00426963 |
| 720       | 376,631    | 375,015    | -1,616  | 0,003      |
| 740       | 376,703    | 375,075    | -1,628  | 0,003      |
| 760       | 376,76     | 375,135    | -1,624  | 0,003      |

|        |         |         |        |            |
|--------|---------|---------|--------|------------|
| 780    | 376,801 | 375,195 | -1,605 | 0,003      |
| 800    | 377,447 | 375,549 | -1,898 | 0,01770267 |
| 812,57 | 377,332 | 375,772 | -1,56  | 0,01770267 |

### R1B-8

| Distancia | C. Terreno | C. Rasante | C. Roja | Pendiente  |
|-----------|------------|------------|---------|------------|
| 0         | 346,699    | 342,542    | -4,157  | 0,0567505  |
| 20        | 346,769    | 343,677    | -3,092  | 0,0567505  |
| 30        | 346,798    | 344,245    | -2,553  | 0,0567505  |
| 40        | 346,875    | 344,556    | -2,319  | 0,0311495  |
| 60        | 346,972    | 345,179    | -1,793  | 0,0311495  |
| 80        | 346,954    | 345,239    | -1,715  | 0,003      |
| 100       | 347,011    | 345,299    | -1,712  | 0,003      |
| 120       | 347,02     | 345,359    | -1,661  | 0,003      |
| 140       | 347,085    | 345,419    | -1,666  | 0,003      |
| 160       | 347,122    | 345,319    | -1,803  | -0,005     |
| 170       | 347,201    | 345,269    | -1,932  | -0,005     |
| 180       | 347,218    | 345,327    | -1,891  | 0,00581895 |
| 200       | 347,16     | 345,444    | -1,717  | 0,00581895 |
| 220       | 347,238    | 345,56     | -1,678  | 0,00581895 |
| 227,055   | 347,251    | 345,601    | -1,65   | 0,00581895 |
| 240       | 348,044    | 345,793    | -2,251  | 0,01483107 |
| 260       | 348,197    | 346,09     | -2,108  | 0,01483107 |
| 280       | 348,27     | 346,386    | -1,884  | 0,01483107 |
| 300       | 348,113    | 346,446    | -1,667  | 0,00300001 |
| 306,614   | 348,126    | 346,466    | -1,66   | 0,00300001 |
| 320       | 348,41     | 346,588    | -1,822  | 0,00910859 |
| 340       | 348,654    | 346,77     | -1,884  | 0,00910859 |
| 360       | 348,761    | 346,952    | -1,808  | 0,00910859 |
| 380       | 348,805    | 347,135    | -1,671  | 0,00910859 |
| 393,557   | 348,958    | 347,258    | -1,7    | 0,00910859 |
| 400       | 349,081    | 347,28     | -1,801  | 0,00335877 |
| 420       | 349,107    | 347,347    | -1,76   | 0,00335877 |
| 440       | 349,252    | 347,414    | -1,838  | 0,00335877 |
| 460       | 349,356    | 347,481    | -1,875  | 0,00335877 |
| 480       | 349,408    | 347,548    | -1,86   | 0,00335877 |
| 500       | 349,465    | 347,616    | -1,849  | 0,00335877 |
| 520       | 349,534    | 347,683    | -1,851  | 0,00335877 |
| 530       | 349,366    | 347,716    | -1,65   | 0,00335877 |
| 540       | 349,695    | 347,832    | -1,864  | 0,01153931 |
| 560       | 349,958    | 348,062    | -1,895  | 0,01153931 |
| 580       | 350,039    | 348,293    | -1,746  | 0,01153931 |
| 594,191   | 350,107    | 348,457    | -1,65   | 0,01153931 |
| 600       | 350,315    | 348,617    | -1,698  | 0,02748774 |
| 620       | 350,916    | 349,166    | -1,75   | 0,02748774 |
| 640       | 350,947    | 349,227    | -1,719  | 0,00303836 |
| 660       | 350,962    | 349,288    | -1,674  | 0,00303836 |
| 674,822   | 350,983    | 349,333    | -1,65   | 0,00303836 |
| 680       | 351,173    | 349,435    | -1,738  | 0,01972292 |

|         |         |         |        |             |
|---------|---------|---------|--------|-------------|
| 700     | 351,783 | 349,83  | -1,953 | 0,01972292  |
| 720     | 351,874 | 350,224 | -1,65  | 0,01972292  |
| 740     | 351,909 | 349,919 | -1,99  | -0,01524304 |
| 760     | 351,373 | 349,614 | -1,759 | -0,01524304 |
| 763,17  | 351,316 | 349,566 | -1,75  | -0,01524304 |
| 780     | 351,395 | 349,751 | -1,644 | 0,01099108  |
| 790,822 | 351,46  | 349,87  | -1,59  | 0,01099108  |
| 800     | 351,672 | 350,031 | -1,641 | 0,01756027  |
| 803,013 | 351,674 | 350,084 | -1,59  | 0,01756027  |

### R1B-9

| Distancia | C. Terreno | C. Rasante | C. Roja | Pendiente   |
|-----------|------------|------------|---------|-------------|
| 0         | 373,497    | 370,44     | -3,057  | -0,02969286 |
| 20        | 372,774    | 369,846    | -2,928  | -0,02969286 |
| 40        | 372,256    | 369,252    | -3,004  | -0,02969286 |
| 60        | 371,554    | 368,658    | -2,896  | -0,02969286 |
| 80        | 371,024    | 368,065    | -2,96   | -0,02969286 |
| 100       | 370,246    | 367,471    | -2,775  | -0,02969286 |
| 120       | 369,53     | 366,877    | -2,653  | -0,02969286 |
| 140       | 368,902    | 366,283    | -2,619  | -0,02969286 |
| 160       | 367,735    | 364,831    | -2,904  | -0,07257969 |
| 180       | 366        | 363,38     | -2,621  | -0,07257969 |
| 182,133   | 365,691    | 363,225    | -2,466  | -0,07257969 |
| 200       | 365,947    | 363,136    | -2,811  | -0,00499506 |
| 220       | 366,247    | 363,036    | -3,211  | -0,00499506 |
| 240       | 366,142    | 362,936    | -3,206  | -0,00499506 |
| 250       | 366,237    | 362,886    | -3,351  | -0,00499506 |
| 260       | 366,167    | 362,422    | -3,745  | -0,04642194 |
| 278,521   | 364,286    | 361,562    | -2,724  | -0,04642194 |
| 280       | 364,484    | 361,607    | -2,877  | 0,03023447  |
| 300       | 365,138    | 362,211    | -2,926  | 0,03023447  |
| 320       | 365,385    | 362,816    | -2,569  | 0,03023447  |
| 340       | 365,993    | 363,421    | -2,572  | 0,03023447  |
| 360       | 367,119    | 364,025    | -3,093  | 0,03023447  |
| 380       | 367,67     | 364,63     | -3,04   | 0,03023447  |
| 400       | 368,055    | 365,235    | -2,82   | 0,03023447  |
| 420       | 368,381    | 365,84     | -2,541  | 0,03023447  |
| 440       | 368,978    | 366,444    | -2,534  | 0,03023447  |
| 457,522   | 369,9      | 366,974    | -2,926  | 0,03023447  |
| 460       | 370,001    | 367,15     | -2,851  | 0,07119424  |
| 480       | 371,174    | 368,574    | -2,6    | 0,07119424  |
| 500       | 372,732    | 369,998    | -2,734  | 0,07119424  |
| 520       | 373,92     | 371,422    | -2,498  | 0,07119424  |
| 522,752   | 374,022    | 371,618    | -2,404  | 0,07119424  |
| 540       | 374,271    | 371,532    | -2,739  | -0,00499242 |
| 560       | 374,322    | 371,432    | -2,89   | -0,00499242 |
| 580       | 374,217    | 371,332    | -2,885  | -0,00499242 |
| 600       | 374,272    | 371,232    | -3,04   | -0,00499242 |
| 617,696   | 373,568    | 371,144    | -2,424  | -0,00499242 |

|          |         |         |        |             |
|----------|---------|---------|--------|-------------|
| 620      | 373,317 | 370,796 | -2,52  | -0,15084051 |
| 640      | 370,335 | 367,78  | -2,555 | -0,15084051 |
| 653,091  | 369,128 | 365,805 | -3,323 | -0,15084051 |
| 660      | 368,927 | 365,985 | -2,942 | 0,02604396  |
| 680      | 369,24  | 366,506 | -2,734 | 0,02604396  |
| 700      | 369,476 | 367,027 | -2,449 | 0,02604396  |
| 720      | 369,908 | 367,548 | -2,36  | 0,02604396  |
| 740      | 370,531 | 368,068 | -2,463 | 0,02604396  |
| 760      | 371,22  | 368,589 | -2,63  | 0,02604396  |
| 780      | 372,376 | 369,11  | -3,265 | 0,02604396  |
| 800      | 373,078 | 369,631 | -3,447 | 0,02604396  |
| 820      | 373,231 | 370,152 | -3,079 | 0,02604396  |
| 828,026  | 372,711 | 370,361 | -2,35  | 0,02604396  |
| 840      | 372,186 | 369,478 | -2,708 | -0,07374278 |
| 860      | 371,094 | 368,003 | -3,091 | -0,07374278 |
| 861,453  | 370,246 | 367,896 | -2,35  | -0,07374278 |
| 880      | 372,1   | 369,39  | -2,71  | 0,08054243  |
| 900      | 373,961 | 371,001 | -2,96  | 0,08054243  |
| 908,869  | 374,807 | 371,715 | -3,092 | 0,08054243  |
| 920      | 375,135 | 371,748 | -3,387 | 0,00300092  |
| 940      | 375,215 | 371,808 | -3,407 | 0,00300092  |
| 960      | 375,43  | 371,868 | -3,562 | 0,00300092  |
| 980      | 375,473 | 371,928 | -3,544 | 0,00300092  |
| 1000     | 375,496 | 371,988 | -3,507 | 0,00300092  |
| 1020     | 375,488 | 372,048 | -3,439 | 0,00300092  |
| 1040     | 375,513 | 372,109 | -3,405 | 0,00300092  |
| 1060     | 375,458 | 372,169 | -3,29  | 0,00300092  |
| 1080     | 375,394 | 372,229 | -3,165 | 0,00300092  |
| 1100     | 374,861 | 372,289 | -2,573 | 0,00300092  |
| 1120     | 374,829 | 372,349 | -2,481 | 0,00300092  |
| 1137,799 | 374,839 | 372,402 | -2,437 | 0,00300092  |
| 1140     | 374,789 | 372,389 | -2,4   | -0,00608925 |
| 1160     | 374,725 | 372,267 | -2,458 | -0,00608925 |
| 1180     | 374,719 | 372,145 | -2,574 | -0,00608925 |
| 1200     | 374,684 | 372,023 | -2,66  | -0,00608925 |
| 1220     | 374,648 | 371,901 | -2,746 | -0,00608925 |
| 1240     | 374,582 | 371,78  | -2,802 | -0,00608925 |
| 1260     | 374,585 | 371,658 | -2,927 | -0,00608925 |
| 1280     | 374,574 | 371,536 | -3,037 | -0,00608925 |
| 1300     | 374,565 | 371,414 | -3,151 | -0,00608925 |
| 1320     | 374,452 | 371,293 | -3,16  | -0,00608925 |
| 1335,196 | 373,55  | 371,2   | -2,35  | -0,00608925 |
| 1340     | 374,287 | 371,176 | -3,111 | -0,00500051 |
| 1360     | 374,42  | 371,076 | -3,344 | -0,00500051 |
| 1380     | 374,3   | 370,976 | -3,324 | -0,00500051 |
| 1400     | 374,145 | 370,876 | -3,269 | -0,00500051 |
| 1420     | 373,876 | 370,776 | -3,1   | -0,00500051 |
| 1440     | 373,741 | 370,676 | -3,065 | -0,00500051 |
| 1460     | 373,66  | 370,576 | -3,084 | -0,00500051 |
| 1480     | 373,41  | 370,476 | -2,934 | -0,00500051 |
| 1481,381 | 373,393 | 370,469 | -2,924 | -0,00500051 |

|          |         |         |        |             |
|----------|---------|---------|--------|-------------|
| 1500     | 372,724 | 369,284 | -3,44  | -0,063664   |
| 1510     | 371,315 | 368,647 | -2,668 | -0,063664   |
| 1520     | 371,12  | 368,597 | -2,523 | -0,005      |
| 1540     | 371,024 | 368,497 | -2,527 | -0,005      |
| 1560     | 371,032 | 368,397 | -2,635 | -0,005      |
| 1570     | 371,096 | 368,347 | -2,749 | -0,005      |
| 1580     | 371,269 | 368,733 | -2,536 | 0,03859193  |
| 1600     | 372,05  | 369,505 | -2,545 | 0,03859193  |
| 1620     | 373,049 | 370,277 | -2,772 | 0,03859193  |
| 1640     | 374,01  | 371,048 | -2,961 | 0,03859193  |
| 1660     | 374,493 | 371,82  | -2,672 | 0,03859193  |
| 1664,683 | 374,376 | 372,001 | -2,375 | 0,03859193  |
| 1680     | 374,128 | 371,834 | -2,294 | -0,01087476 |
| 1700     | 373,921 | 371,617 | -2,304 | -0,01087476 |
| 1720     | 373,771 | 371,399 | -2,371 | -0,01087476 |
| 1740     | 373,706 | 371,182 | -2,524 | -0,01087476 |
| 1760     | 373,681 | 370,964 | -2,717 | -0,01087476 |
| 1780     | 373,635 | 370,747 | -2,888 | -0,01087476 |
| 1800     | 373,528 | 370,529 | -2,998 | -0,01087476 |
| 1820     | 372,526 | 370,312 | -2,214 | -0,01087476 |
| 1825,698 | 372,457 | 370,25  | -2,207 | -0,01087476 |
| 1840     | 372,849 | 370,178 | -2,67  | -0,00500103 |
| 1860     | 372,574 | 370,078 | -2,495 | -0,00500103 |
| 1880     | 372,574 | 369,978 | -2,596 | -0,00500103 |
| 1900     | 372,419 | 369,878 | -2,541 | -0,00500103 |
| 1920     | 372,566 | 369,778 | -2,788 | -0,00500103 |
| 1940     | 372,46  | 369,678 | -2,781 | -0,00500103 |
| 1960     | 372,302 | 369,578 | -2,724 | -0,00500103 |
| 1980     | 372,231 | 369,478 | -2,753 | -0,00500103 |
| 2000     | 372,223 | 369,378 | -2,845 | -0,00500103 |
| 2020     | 371,97  | 369,278 | -2,692 | -0,00500103 |
| 2040     | 371,86  | 369,178 | -2,682 | -0,00500103 |
| 2060     | 371,871 | 369,078 | -2,792 | -0,00500103 |
| 2080     | 371,69  | 368,978 | -2,712 | -0,00500103 |
| 2100     | 371,54  | 368,878 | -2,662 | -0,00500103 |
| 2120     | 371,601 | 368,778 | -2,823 | -0,00500103 |
| 2127,036 | 371,588 | 368,743 | -2,845 | -0,00500103 |
| 2140     | 372,721 | 369,135 | -3,586 | 0,0302092   |
| 2160     | 372,575 | 369,739 | -2,836 | 0,0302092   |
| 2180     | 372,516 | 370,343 | -2,173 | 0,0302092   |
| 2200     | 372,424 | 370,194 | -2,23  | -0,00746009 |
| 2220     | 372,32  | 370,045 | -2,275 | -0,00746009 |
| 2240     | 372,242 | 369,895 | -2,346 | -0,00746009 |
| 2260     | 372,188 | 369,746 | -2,441 | -0,00746009 |
| 2280     | 372,045 | 369,597 | -2,448 | -0,00746009 |
| 2300     | 371,809 | 369,448 | -2,361 | -0,00746009 |
| 2320     | 371,618 | 369,299 | -2,32  | -0,00746009 |
| 2340     | 371,483 | 369,149 | -2,334 | -0,00746009 |
| 2360     | 371,216 | 369     | -2,216 | -0,00746009 |
| 2380     | 370,996 | 368,851 | -2,145 | -0,00746009 |
| 2400     | 370,801 | 368,702 | -2,099 | -0,00746009 |

|          |         |         |        |             |
|----------|---------|---------|--------|-------------|
| 2410,024 | 370,816 | 368,627 | -2,189 | -0,00746009 |
| 2420     | 370,598 | 367,673 | -2,925 | -0,0956716  |
| 2440     | 369,199 | 365,759 | -3,44  | -0,0956716  |
| 2460     | 366,527 | 363,846 | -2,681 | -0,0956716  |
| 2470     | 365,156 | 362,889 | -2,267 | -0,0956716  |
| 2480     | 364,899 | 362,647 | -2,252 | -0,02422192 |
| 2500     | 364,392 | 362,162 | -2,229 | -0,02422192 |
| 2520     | 364,376 | 361,678 | -2,698 | -0,02422192 |
| 2521,441 | 364,377 | 361,643 | -2,734 | -0,02422192 |
| 2540     | 364,346 | 361,55  | -2,795 | -0,00500066 |
| 2560     | 364,333 | 361,45  | -2,882 | -0,00500066 |
| 2580     | 364,366 | 361,35  | -3,016 | -0,00500066 |
| 2600     | 364,496 | 361,25  | -3,246 | -0,00500066 |
| 2620     | 364,397 | 361,15  | -3,247 | -0,00500066 |
| 2640     | 364,515 | 361,05  | -3,464 | -0,00500066 |
| 2660     | 364,638 | 360,95  | -3,688 | -0,00500066 |
| 2680     | 364,599 | 360,85  | -3,749 | -0,00500066 |
| 2700     | 364,307 | 360,75  | -3,557 | -0,00500066 |
| 2720     | 364,167 | 360,65  | -3,517 | -0,00500066 |
| 2740     | 363,539 | 360,55  | -2,989 | -0,00500066 |
| 2760     | 363,432 | 360,45  | -2,982 | -0,00500066 |
| 2780     | 363,455 | 360,35  | -3,105 | -0,00500066 |
| 2800     | 363,441 | 360,25  | -3,191 | -0,00500066 |
| 2820     | 363,451 | 360,15  | -3,301 | -0,00500066 |
| 2830     | 363,402 | 360,1   | -3,302 | -0,00500066 |
| 2840     | 362,804 | 359,67  | -3,134 | -0,04301679 |
| 2860     | 361,686 | 358,809 | -2,877 | -0,04301679 |
| 2880     | 360,66  | 357,949 | -2,711 | -0,04301679 |
| 2900     | 359,705 | 357,089 | -2,616 | -0,04301679 |
| 2920     | 359,323 | 356,228 | -3,095 | -0,04301679 |
| 2940     | 358,711 | 355,368 | -3,343 | -0,04301679 |
| 2960     | 356,917 | 354,508 | -2,409 | -0,04301679 |
| 2960,112 | 356,916 | 354,503 | -2,413 | -0,04301679 |
| 2980     | 356,887 | 353,874 | -3,012 | -0,03161593 |
| 3000     | 356,514 | 353,242 | -3,272 | -0,03161593 |
| 3006,228 | 355,372 | 353,045 | -2,327 | -0,03161593 |
| 3020     | 355,389 | 352,772 | -2,617 | -0,0198512  |
| 3040     | 355,38  | 352,375 | -3,005 | -0,0198512  |
| 3060     | 354,328 | 351,978 | -2,35  | -0,0198512  |
| 3063,756 | 354,173 | 351,903 | -2,27  | -0,0198512  |
| 3080     | 354,142 | 351,64  | -2,502 | -0,01618695 |
| 3100     | 354,119 | 351,316 | -2,803 | -0,01618695 |
| 3120     | 353,687 | 350,993 | -2,695 | -0,01618695 |
| 3140     | 353,777 | 350,669 | -3,108 | -0,01618695 |
| 3160     | 352,993 | 350,345 | -2,648 | -0,01618695 |
| 3180     | 352,928 | 350,021 | -2,906 | -0,01618695 |
| 3200     | 352,671 | 349,698 | -2,973 | -0,01618695 |
| 3205,228 | 352,719 | 349,613 | -3,106 | -0,01618695 |
| 3220     | 352,511 | 349,539 | -2,972 | -0,00500018 |
| 3240     | 352,488 | 349,439 | -3,049 | -0,00500018 |
| 3260     | 352,182 | 349,339 | -2,843 | -0,00500018 |

|      |         |         |        |             |
|------|---------|---------|--------|-------------|
| 3280 | 352,123 | 349,239 | -2,884 | -0,00500018 |
| 3300 | 351,869 | 349,139 | -2,73  | -0,00500018 |
| 3320 | 351,845 | 349,039 | -2,806 | -0,00500018 |
| 3340 | 351,828 | 348,939 | -2,889 | -0,00500018 |
| 3360 | 351,505 | 348,839 | -2,666 | -0,00500018 |
| 3380 | 351,109 | 348,739 | -2,37  | -0,00500018 |
| 3400 | 351,129 | 348,639 | -2,49  | -0,00500018 |
| 3420 | 351,065 | 348,539 | -2,526 | -0,00500018 |
| 3440 | 350,799 | 348,439 | -2,36  | -0,00500018 |
| 3460 | 351,016 | 348,339 | -2,677 | -0,00500018 |
| 3480 | 350,945 | 348,239 | -2,706 | -0,00500018 |
| 3500 | 350,794 | 348,139 | -2,655 | -0,00500018 |
| 3520 | 350,85  | 348,039 | -2,811 | -0,00500018 |
| 3540 | 350,595 | 347,939 | -2,656 | -0,00500018 |
| 3560 | 350,628 | 347,839 | -2,789 | -0,00500018 |
| 3580 | 350,366 | 347,739 | -2,627 | -0,00500018 |
| 3600 | 350,286 | 347,639 | -2,647 | -0,00500018 |
| 3620 | 350,131 | 347,539 | -2,592 | -0,00500018 |
| 3640 | 350,06  | 347,439 | -2,621 | -0,00500018 |
| 3660 | 349,82  | 347,339 | -2,481 | -0,00500018 |
| 3680 | 349,745 | 347,239 | -2,506 | -0,00500018 |
| 3700 | 349,647 | 347,139 | -2,508 | -0,00500018 |
| 3720 | 349,645 | 347,039 | -2,606 | -0,00500018 |
| 3740 | 349,45  | 346,939 | -2,511 | -0,00500018 |
| 3760 | 349,435 | 346,839 | -2,596 | -0,00500018 |
| 3780 | 349,374 | 346,739 | -2,635 | -0,00500018 |
| 3800 | 349,038 | 346,639 | -2,399 | -0,00500018 |
| 3820 | 348,95  | 346,539 | -2,411 | -0,00500018 |
| 3840 | 348,797 | 346,439 | -2,358 | -0,00500018 |
| 3860 | 348,82  | 346,339 | -2,481 | -0,00500018 |
| 3880 | 348,89  | 346,239 | -2,651 | -0,00500018 |
| 3900 | 348,958 | 346,139 | -2,819 | -0,00500018 |
| 3920 | 349,028 | 346,039 | -2,989 | -0,00500018 |
| 3940 | 348,966 | 345,939 | -3,027 | -0,00500018 |
| 3960 | 348,712 | 345,839 | -2,873 | -0,00500018 |
| 3980 | 349,005 | 345,739 | -3,266 | -0,00500018 |
| 4000 | 348,619 | 345,639 | -2,98  | -0,00500018 |
| 4020 | 348,663 | 345,539 | -3,124 | -0,00500018 |
| 4040 | 348,442 | 345,439 | -3,003 | -0,00500018 |
| 4060 | 348,367 | 345,339 | -3,028 | -0,00500018 |
| 4080 | 348,367 | 345,239 | -3,128 | -0,00500018 |
| 4100 | 348,302 | 345,139 | -3,163 | -0,00500018 |
| 4120 | 348,343 | 345,039 | -3,304 | -0,00500018 |
| 4140 | 348,402 | 344,939 | -3,463 | -0,00500018 |
| 4160 | 348,099 | 344,839 | -3,26  | -0,00500018 |
| 4180 | 348,134 | 344,739 | -3,395 | -0,00500018 |
| 4200 | 348,185 | 344,639 | -3,546 | -0,00500018 |
| 4220 | 347,403 | 344,539 | -2,864 | -0,00500018 |
| 4240 | 347,124 | 344,439 | -2,685 | -0,00500018 |
| 4260 | 347,082 | 344,339 | -2,743 | -0,00500018 |
| 4280 | 347,074 | 344,239 | -2,835 | -0,00500018 |

|          |         |         |        |             |
|----------|---------|---------|--------|-------------|
| 4300     | 347,061 | 344,139 | -2,922 | -0,00500018 |
| 4320     | 347,086 | 344,039 | -3,047 | -0,00500018 |
| 4340     | 347,064 | 343,939 | -3,125 | -0,00500018 |
| 4360     | 346,586 | 343,839 | -2,748 | -0,00500018 |
| 4380     | 346,572 | 343,739 | -2,833 | -0,00500018 |
| 4400     | 346,54  | 343,639 | -2,902 | -0,00500018 |
| 4420     | 346,537 | 343,539 | -2,998 | -0,00500018 |
| 4440     | 346,552 | 343,439 | -3,113 | -0,00500018 |
| 4460     | 346,57  | 343,339 | -3,231 | -0,00500018 |
| 4480     | 346,488 | 343,239 | -3,249 | -0,00500018 |
| 4500     | 346,363 | 343,139 | -3,224 | -0,00500018 |
| 4520     | 346,295 | 343,039 | -3,256 | -0,00500018 |
| 4540     | 346,16  | 342,939 | -3,221 | -0,00500018 |
| 4560     | 346,066 | 342,839 | -3,227 | -0,00500018 |
| 4580     | 345,875 | 342,739 | -3,136 | -0,00500018 |
| 4600     | 345,657 | 342,639 | -3,018 | -0,00500018 |
| 4620     | 345,539 | 342,539 | -3     | -0,00500018 |
| 4640     | 345,466 | 342,439 | -3,027 | -0,00500018 |
| 4660     | 345,409 | 342,339 | -3,07  | -0,00500018 |
| 4680     | 345,233 | 342,239 | -2,994 | -0,00500018 |
| 4700     | 345,213 | 342,139 | -3,074 | -0,00500018 |
| 4720     | 345,097 | 342,039 | -3,058 | -0,00500018 |
| 4740     | 345,051 | 341,939 | -3,112 | -0,00500018 |
| 4760     | 344,989 | 341,839 | -3,15  | -0,00500018 |
| 4780     | 344,903 | 341,739 | -3,164 | -0,00500018 |
| 4800     | 345,043 | 341,639 | -3,404 | -0,00500018 |
| 4820     | 345,034 | 341,539 | -3,495 | -0,00500018 |
| 4840     | 344,817 | 341,439 | -3,378 | -0,00500018 |
| 4860     | 344,31  | 341,339 | -2,971 | -0,00500018 |
| 4880     | 343,982 | 341,239 | -2,743 | -0,00500018 |
| 4888,167 | 343,949 | 341,198 | -2,751 | -0,00500018 |
| 4900     | 344,111 | 341,234 | -2,877 | 0,00300276  |
| 4920     | 344,391 | 341,294 | -3,097 | 0,00300276  |
| 4940     | 344,316 | 341,354 | -2,963 | 0,00300276  |
| 4960     | 344,311 | 341,414 | -2,898 | 0,00300276  |
| 4980     | 344,279 | 341,474 | -2,805 | 0,00300276  |
| 5000     | 344,3   | 341,534 | -2,767 | 0,00300276  |
| 5020     | 344,201 | 341,594 | -2,607 | 0,00300276  |
| 5040     | 343,827 | 341,654 | -2,173 | 0,00300276  |
| 5060     | 343,753 | 341,714 | -2,039 | 0,00300276  |
| 5070     | 343,716 | 341,744 | -1,972 | 0,00300276  |
| 5080     | 343,681 | 341,694 | -1,987 | -0,005      |
| 5100     | 343,629 | 341,594 | -2,035 | -0,005      |
| 5120     | 344,017 | 341,494 | -2,523 | -0,005      |
| 5140     | 343,994 | 341,394 | -2,6   | -0,005      |
| 5160     | 343,511 | 341,294 | -2,217 | -0,005      |
| 5180     | 343,506 | 341,194 | -2,312 | -0,005      |
| 5200     | 343,497 | 341,094 | -2,403 | -0,005      |
| 5220     | 343,46  | 340,994 | -2,466 | -0,005      |
| 5240     | 343,454 | 340,894 | -2,56  | -0,005      |
| 5250     | 343,45  | 340,844 | -2,606 | -0,005      |

|          |         |         |        |             |
|----------|---------|---------|--------|-------------|
| 5260     | 343,443 | 340,874 | -2,569 | 0,00300066  |
| 5280     | 343,433 | 340,934 | -2,499 | 0,00300066  |
| 5300     | 343,424 | 340,994 | -2,43  | 0,00300066  |
| 5320     | 343,409 | 341,054 | -2,355 | 0,00300066  |
| 5340     | 343,382 | 341,114 | -2,268 | 0,00300066  |
| 5360     | 343,346 | 341,174 | -2,172 | 0,00300066  |
| 5376,639 | 343,442 | 341,224 | -2,218 | 0,00300066  |
| 5380     | 343,355 | 341,207 | -2,148 | -0,00502957 |
| 5400     | 343,087 | 341,107 | -1,981 | -0,00502957 |
| 5420     | 343,113 | 341,006 | -2,107 | -0,00502957 |
| 5440     | 342,953 | 340,905 | -2,048 | -0,00502957 |
| 5460     | 342,958 | 340,805 | -2,153 | -0,00502957 |
| 5480     | 342,811 | 340,704 | -2,107 | -0,00502957 |
| 5500     | 342,809 | 340,604 | -2,205 | -0,00502957 |
| 5520     | 342,952 | 340,503 | -2,449 | -0,00502957 |
| 5540     | 342,991 | 340,402 | -2,588 | -0,00502957 |
| 5560     | 343,011 | 340,302 | -2,71  | -0,00502957 |
| 5580     | 343     | 340,201 | -2,798 | -0,00502957 |
| 5600     | 342,926 | 340,101 | -2,825 | -0,00502957 |
| 5620     | 342,78  | 340     | -2,78  | -0,00502957 |
| 5640     | 342,781 | 339,9   | -2,881 | -0,00498962 |
| 5647,457 | 342,808 | 339,863 | -2,945 | -0,00498962 |
| 5658,513 | 339,961 | 338,161 | -1,8   | -0,15394356 |
| 5660     | 339,936 | 338,137 | -1,799 | -0,01610542 |
| 5672,173 | 339,847 | 337,941 | -1,906 | -0,01610542 |
| 5680     | 338,599 | 336,609 | -1,989 | -0,17011978 |
| 5684,529 | 337,639 | 335,839 | -1,8   | -0,17011978 |
| 5700     | 337,692 | 335,761 | -1,931 | -0,00502454 |
| 5701,645 | 337,597 | 335,753 | -1,844 | -0,00502454 |
| 5711,009 | 335,805 | 334,005 | -1,8   | -0,18667236 |
| 5720     | 335,805 | 333,96  | -1,845 | -0,00501119 |
| 5731,563 | 335,777 | 333,902 | -1,875 | -0,00501119 |
| 5740     | 334,686 | 332,775 | -1,911 | -0,1335769  |
| 5742,785 | 334,503 | 332,403 | -2,1   | -0,1335769  |
| 5760     | 334,329 | 331,627 | -2,702 | -0,04509341 |
| 5766,07  | 333,453 | 331,353 | -2,1   | -0,04509341 |
| 5780     | 333,488 | 331,262 | -2,226 | -0,00652646 |
| 5800     | 333,542 | 331,132 | -2,411 | -0,00652646 |
| 5820     | 333,61  | 331,001 | -2,609 | -0,00652646 |
| 5840     | 333,457 | 330,87  | -2,586 | -0,00652646 |
| 5860     | 333,237 | 330,74  | -2,497 | -0,00652646 |
| 5880     | 332,647 | 330,609 | -2,037 | -0,00652646 |
| 5900     | 332,498 | 330,479 | -2,019 | -0,00652646 |
| 5920     | 332,479 | 330,348 | -2,131 | -0,00652646 |
| 5940     | 332,459 | 330,218 | -2,241 | -0,00652646 |
| 5960     | 332,464 | 330,087 | -2,377 | -0,00652646 |
| 5980     | 332,473 | 329,957 | -2,516 | -0,00652646 |
| 6000     | 332,521 | 329,826 | -2,695 | -0,00652646 |
| 6010     | 332,52  | 329,761 | -2,759 | -0,00652646 |
| 6020     | 332,452 | 329,711 | -2,741 | -0,00498953 |
| 6040     | 332,703 | 329,611 | -3,092 | -0,00498953 |

|          |         |         |        |             |
|----------|---------|---------|--------|-------------|
| 6054,894 | 332,312 | 329,537 | -2,775 | -0,00498953 |
| 6060     | 330,931 | 328,884 | -2,047 | -0,12787099 |
| 6061,033 | 330,652 | 328,752 | -1,9   | -0,12787099 |
| 6080     | 331,982 | 329,501 | -2,481 | 0,03949612  |
| 6100     | 332,321 | 330,291 | -2,03  | 0,03949612  |
| 6112,633 | 333,185 | 330,79  | -2,395 | 0,03949612  |
| 6120     | 333,944 | 331,961 | -1,983 | 0,15895028  |
| 6140     | 337,778 | 335,14  | -2,638 | 0,15895028  |
| 6148,833 | 338,703 | 336,544 | -2,159 | 0,15895028  |
| 6160     | 339,624 | 336,869 | -2,755 | 0,02906644  |
| 6180     | 339,915 | 337,45  | -2,465 | 0,02906644  |
| 6200     | 340,293 | 338,031 | -2,262 | 0,02906644  |
| 6220     | 340,933 | 338,613 | -2,32  | 0,02906644  |
| 6232,641 | 340,88  | 338,98  | -1,9   | 0,02906644  |
| 6240     | 340,847 | 338,943 | -1,903 | -0,00499952 |
| 6260     | 340,79  | 338,843 | -1,946 | -0,00499952 |
| 6280     | 340,715 | 338,743 | -1,971 | -0,00499952 |
| 6300     | 340,656 | 338,643 | -2,013 | -0,00499952 |
| 6320     | 340,584 | 338,543 | -2,04  | -0,00499952 |
| 6340     | 340,538 | 338,443 | -2,095 | -0,00499952 |
| 6360     | 340,415 | 338,343 | -2,071 | -0,00499952 |
| 6380     | 340,255 | 338,243 | -2,012 | -0,00499952 |
| 6400     | 340,262 | 338,143 | -2,119 | -0,00499952 |
| 6420     | 340,272 | 338,043 | -2,229 | -0,00499952 |
| 6440     | 340,37  | 337,943 | -2,427 | -0,00499952 |
| 6460     | 340,558 | 337,843 | -2,715 | -0,00499952 |
| 6480     | 340,575 | 337,743 | -2,832 | -0,00499952 |
| 6500     | 340,385 | 337,643 | -2,742 | -0,00499952 |
| 6520     | 340,266 | 337,543 | -2,722 | -0,00499952 |
| 6540     | 340,165 | 337,443 | -2,722 | -0,00499952 |
| 6560     | 340,076 | 337,343 | -2,732 | -0,00499952 |
| 6580     | 339,975 | 337,243 | -2,732 | -0,00499952 |
| 6600     | 339,884 | 337,143 | -2,741 | -0,00499952 |
| 6620     | 339,792 | 337,043 | -2,748 | -0,00499952 |
| 6640     | 339,735 | 336,943 | -2,791 | -0,00499952 |
| 6646,881 | 338,91  | 336,909 | -2,001 | -0,00499952 |
| 6660     | 339,6   | 336,948 | -2,652 | 0,0029974   |
| 6680     | 339,668 | 337,008 | -2,659 | 0,0029974   |
| 6700     | 339,61  | 337,068 | -2,541 | 0,0029974   |
| 6720     | 339,56  | 337,128 | -2,432 | 0,0029974   |
| 6740     | 339,519 | 337,188 | -2,331 | 0,0029974   |
| 6760     | 339,49  | 337,248 | -2,242 | 0,0029974   |
| 6780     | 339,422 | 337,308 | -2,114 | 0,0029974   |
| 6800     | 339,346 | 337,368 | -1,978 | 0,0029974   |
| 6820     | 339,277 | 337,428 | -1,849 | 0,0029974   |
| 6840     | 339,21  | 337,488 | -1,722 | 0,0029974   |
| 6858,731 | 339,144 | 337,544 | -1,6   | 0,0029974   |
| 6860     | 339,142 | 337,538 | -1,604 | -0,00499857 |
| 6880     | 339,069 | 337,438 | -1,631 | -0,00499857 |
| 6900     | 339,012 | 337,338 | -1,674 | -0,00499857 |
| 6920     | 338,959 | 337,238 | -1,721 | -0,00499857 |

|          |         |         |        |             |
|----------|---------|---------|--------|-------------|
| 6940     | 338,887 | 337,138 | -1,75  | -0,00499857 |
| 6960     | 338,83  | 337,038 | -1,792 | -0,00499857 |
| 6980     | 338,772 | 336,938 | -1,834 | -0,00499857 |
| 7000     | 338,69  | 336,838 | -1,852 | -0,00499857 |
| 7020     | 338,634 | 336,738 | -1,896 | -0,00499857 |
| 7040     | 338,578 | 336,638 | -1,94  | -0,00499857 |
| 7060     | 338,482 | 336,538 | -1,944 | -0,00499857 |
| 7080     | 338,409 | 336,438 | -1,971 | -0,00499857 |
| 7100     | 338,387 | 336,338 | -2,049 | -0,00499857 |
| 7120     | 332,767 | 330,702 | -2,065 | -0,28180723 |
| 7125,741 | 331,34  | 329,084 | -2,256 | -0,28180723 |
| 7140     | 330,716 | 328,999 | -1,716 | -0,00595098 |
| 7160     | 330,704 | 328,88  | -1,824 | -0,00595098 |
| 7180     | 330,684 | 328,761 | -1,923 | -0,00595098 |
| 7200     | 330,61  | 328,642 | -1,968 | -0,00595098 |
| 7220     | 330,075 | 328,523 | -1,552 | -0,00595098 |
| 7240     | 330,213 | 328,404 | -1,809 | -0,00595098 |
| 7244,545 | 330,035 | 328,377 | -1,658 | -0,00595098 |
| 7260     | 331,683 | 329,507 | -2,176 | 0,07312296  |
| 7280     | 332,748 | 330,97  | -1,779 | 0,07312296  |
| 7300     | 334,589 | 332,432 | -2,157 | 0,07312296  |
| 7320     | 336,435 | 333,894 | -2,54  | 0,07312296  |
| 7340     | 337,513 | 335,357 | -2,156 | 0,07312296  |
| 7342,052 | 337,833 | 335,507 | -2,326 | 0,07312296  |

### R1B-9-1

| Distancia | C. Terreno | C. Rasante | C. Roja | Pendiente  |
|-----------|------------|------------|---------|------------|
| 0         | 374,214    | 371,176    | -3,038  | 0,0299986  |
| 20        | 374,006    | 371,776    | -2,23   | 0,0299986  |
| 40        | 374,076    | 372,376    | -1,7    | 0,0299986  |
| 60        | 375,154    | 372,449    | -2,705  | 0,00365777 |
| 80        | 374,922    | 372,522    | -2,399  | 0,00365777 |
| 100       | 374,888    | 372,595    | -2,293  | 0,00365777 |
| 120       | 374,803    | 372,669    | -2,134  | 0,00365777 |
| 140       | 375,386    | 372,742    | -2,645  | 0,00365777 |
| 160       | 375,355    | 372,815    | -2,54   | 0,00365777 |
| 180       | 375,385    | 372,888    | -2,497  | 0,00365777 |
| 200       | 375,415    | 372,961    | -2,454  | 0,00365777 |
| 220       | 375,42     | 373,034    | -2,385  | 0,00365777 |
| 240       | 375,227    | 373,107    | -2,119  | 0,00365777 |
| 260       | 375,193    | 373,181    | -2,013  | 0,00365777 |
| 280       | 375,223    | 373,254    | -1,969  | 0,00365777 |
| 300       | 375,237    | 373,327    | -1,91   | 0,00365777 |
| 320       | 375,286    | 373,4      | -1,886  | 0,00365777 |
| 340       | 375,36     | 373,473    | -1,887  | 0,00365777 |
| 360       | 375,489    | 373,546    | -1,942  | 0,00365777 |
| 380       | 375,542    | 373,62     | -1,923  | 0,00365777 |
| 400       | 375,627    | 373,693    | -1,934  | 0,00365777 |
| 420       | 375,594    | 373,766    | -1,828  | 0,00365777 |

|         |         |         |        |            |
|---------|---------|---------|--------|------------|
| 436,158 | 375,475 | 373,825 | -1,65  | 0,00365777 |
| 440     | 375,84  | 373,849 | -1,991 | 0,0062208  |
| 460     | 375,937 | 373,973 | -1,964 | 0,0062208  |
| 480     | 376,073 | 374,098 | -1,975 | 0,0062208  |
| 500     | 376,157 | 374,222 | -1,935 | 0,0062208  |
| 520     | 376,223 | 374,347 | -1,876 | 0,0062208  |
| 540     | 376,374 | 374,471 | -1,903 | 0,0062208  |
| 560     | 376,465 | 374,595 | -1,869 | 0,0062208  |
| 580     | 376,544 | 374,72  | -1,824 | 0,0062208  |
| 600     | 376,646 | 374,844 | -1,801 | 0,0062208  |
| 620     | 376,693 | 374,969 | -1,724 | 0,0062208  |
| 640     | 376,771 | 375,093 | -1,678 | 0,0062208  |
| 660     | 376,922 | 375,217 | -1,705 | 0,0062208  |
| 680     | 377,078 | 375,342 | -1,736 | 0,0062208  |
| 700     | 377,136 | 375,466 | -1,67  | 0,0062208  |
| 720     | 377,247 | 375,591 | -1,657 | 0,0062208  |
| 740     | 377,35  | 375,715 | -1,634 | 0,0062208  |
| 760     | 377,468 | 375,84  | -1,629 | 0,0062208  |
| 769,44  | 377,571 | 375,898 | -1,673 | 0,0062208  |

### R1B-9-2

| Distancia | C. Terreno | C. Rasante | C. Roja | Pendiente  |
|-----------|------------|------------|---------|------------|
| 0         | 375,46     | 372,199    | -3,261  | 0,01939535 |
| 20        | 374,817    | 372,587    | -2,23   | 0,01939535 |
| 40        | 374,875    | 372,975    | -1,9    | 0,01939535 |
| 60        | 374,847    | 372,875    | -1,972  | -0,005     |
| 80        | 374,81     | 372,775    | -2,035  | -0,005     |
| 100       | 374,755    | 372,675    | -2,08   | -0,005     |
| 120       | 374,727    | 372,575    | -2,152  | -0,005     |
| 140       | 374,713    | 372,475    | -2,239  | -0,005     |
| 160       | 374,553    | 372,375    | -2,178  | -0,005     |
| 180       | 374,565    | 372,275    | -2,291  | -0,005     |
| 200       | 374,543    | 372,175    | -2,368  | -0,005     |
| 220       | 374,544    | 372,075    | -2,47   | -0,005     |
| 240       | 374,485    | 371,975    | -2,51   | -0,005     |
| 260       | 374,39     | 371,875    | -2,515  | -0,005     |
| 280       | 374,363    | 371,775    | -2,588  | -0,005     |
| 300       | 373,968    | 371,675    | -2,293  | -0,005     |
| 320       | 373,944    | 371,575    | -2,369  | -0,005     |
| 340       | 373,837    | 371,475    | -2,362  | -0,005     |
| 360       | 373,771    | 371,375    | -2,397  | -0,005     |
| 380       | 373,667    | 371,275    | -2,392  | -0,005     |
| 400       | 373,628    | 371,175    | -2,453  | -0,005     |
| 420       | 373,5      | 371,075    | -2,425  | -0,005     |
| 440       | 373,424    | 370,975    | -2,449  | -0,005     |
| 460       | 373,334    | 370,875    | -2,459  | -0,005     |
| 480       | 373,261    | 370,775    | -2,486  | -0,005     |
| 500       | 373,181    | 370,675    | -2,506  | -0,005     |
| 520       | 372,606    | 370,575    | -2,031  | -0,005     |

|          |         |         |        |             |
|----------|---------|---------|--------|-------------|
| 540      | 372,911 | 370,475 | -2,436 | -0,005      |
| 560      | 372,862 | 370,375 | -2,487 | -0,005      |
| 580      | 372,805 | 370,275 | -2,53  | -0,005      |
| 600      | 372,751 | 370,175 | -2,576 | -0,005      |
| 620      | 372,681 | 370,075 | -2,606 | -0,005      |
| 640      | 372,629 | 369,975 | -2,654 | -0,005      |
| 660      | 372,557 | 369,875 | -2,682 | -0,005      |
| 680      | 372,472 | 369,775 | -2,697 | -0,005      |
| 700      | 371,52  | 369,675 | -1,845 | -0,005      |
| 720      | 371,513 | 369,575 | -1,938 | -0,005      |
| 740      | 371,507 | 369,475 | -2,032 | -0,005      |
| 760      | 371,431 | 369,375 | -2,056 | -0,005      |
| 780      | 371,337 | 369,275 | -2,063 | -0,005      |
| 800      | 371,272 | 369,175 | -2,097 | -0,005      |
| 820      | 371,169 | 369,075 | -2,094 | -0,005      |
| 840      | 371,084 | 368,975 | -2,109 | -0,005      |
| 860      | 371,015 | 368,875 | -2,14  | -0,005      |
| 880      | 370,933 | 368,775 | -2,158 | -0,005      |
| 900      | 370,868 | 368,675 | -2,194 | -0,005      |
| 920      | 370,777 | 368,575 | -2,202 | -0,005      |
| 940      | 370,219 | 368,475 | -1,744 | -0,005      |
| 960      | 370,491 | 368,343 | -2,148 | -0,00660912 |
| 980      | 370,416 | 368,21  | -2,205 | -0,00660912 |
| 1000     | 370,299 | 368,078 | -2,221 | -0,00660912 |
| 1020     | 370,167 | 367,946 | -2,221 | -0,00660912 |
| 1040     | 370,029 | 367,814 | -2,215 | -0,00660912 |
| 1060     | 369,95  | 367,682 | -2,268 | -0,00660912 |
| 1080     | 369,844 | 367,55  | -2,294 | -0,00660912 |
| 1098,202 | 369,775 | 367,429 | -2,346 | -0,00660912 |
| 1100     | 369,774 | 367,435 | -2,339 | 0,003       |
| 1120     | 369,641 | 367,495 | -2,146 | 0,003       |
| 1140     | 369,568 | 367,555 | -2,014 | 0,003       |
| 1160     | 369,504 | 367,615 | -1,889 | 0,003       |
| 1180     | 369,454 | 367,675 | -1,779 | 0,003       |
| 1200     | 369,517 | 367,735 | -1,782 | 0,003       |
| 1204,934 | 369,594 | 367,749 | -1,845 | 0,003       |

### R1B-9-3

| Distancia | C. Terreno | C. Rasante | C. Roja | Pendiente   |
|-----------|------------|------------|---------|-------------|
| 0         | 374,214    | 371,18     | -3,034  | -0,00501815 |
| 18,732    | 373,036    | 371,086    | -1,95   | -0,00501815 |
| 20        | 372,87     | 370,801    | -2,069  | -0,22481654 |
| 40        | 368,456    | 366,305    | -2,151  | -0,22481654 |
| 41,217    | 368,239    | 366,031    | -2,208  | -0,22481654 |
| 58,75     | 365,688    | 363,329    | -2,359  | -0,15410939 |
| 60        | 365,621    | 363,263    | -2,359  | -0,05319759 |
| 80        | 364,302    | 362,199    | -2,103  | -0,05319759 |
| 86,646    | 363,795    | 361,845    | -1,95   | -0,05319759 |
| 100       | 360,964    | 358,844    | -2,12   | -0,22472667 |

|         |         |         |        |             |
|---------|---------|---------|--------|-------------|
| 114,028 | 359,566 | 357,319 | -2,247 | -0,10871115 |
| 120     | 359,524 | 357,198 | -2,326 | -0,0202339  |
| 140     | 359,172 | 356,793 | -2,378 | -0,0202339  |
| 160     | 358,489 | 356,389 | -2,1   | -0,0202339  |
| 163,45  | 358,283 | 356,319 | -1,964 | -0,0202339  |
| 180     | 358,279 | 356,236 | -2,043 | -0,00499669 |
| 200     | 358,232 | 356,136 | -2,096 | -0,00499669 |
| 220     | 358,224 | 356,036 | -2,187 | -0,00499669 |
| 240     | 358,207 | 355,937 | -2,271 | -0,00499669 |
| 249,507 | 358,205 | 355,889 | -2,316 | -0,00499669 |
| 260     | 357,547 | 353,835 | -3,712 | -0,195777   |
| 265,704 | 354,685 | 352,718 | -1,967 | -0,195777   |
| 280     | 354,615 | 352,471 | -2,143 | -0,0172757  |
| 300     | 354,551 | 352,126 | -2,425 | -0,0172757  |
| 320     | 353,749 | 351,78  | -1,969 | -0,0172757  |
| 323,473 | 353,815 | 351,72  | -2,095 | -0,0172757  |
| 340     | 354,565 | 352,471 | -2,095 | 0,04541982  |
| 347,031 | 355,71  | 352,79  | -2,92  | 0,04541982  |
| 360     | 359,181 | 355,1   | -4,08  | 0,17815316  |
| 370     | 358,832 | 356,882 | -1,95  | 0,17815316  |
| 380     | 358,935 | 356,823 | -2,112 | -0,00589807 |
| 400     | 359,05  | 356,705 | -2,345 | -0,00589807 |
| 420     | 358,931 | 356,587 | -2,344 | -0,00589807 |
| 440     | 358,921 | 356,469 | -2,452 | -0,00589807 |
| 460     | 358,876 | 356,351 | -2,525 | -0,00589807 |
| 480     | 358,932 | 356,233 | -2,699 | -0,00589807 |
| 500     | 358,995 | 356,115 | -2,879 | -0,00589807 |
| 520     | 358,413 | 355,997 | -2,416 | -0,00589807 |
| 540     | 358,424 | 355,879 | -2,545 | -0,00589807 |
| 560     | 358,977 | 355,761 | -3,216 | -0,00589807 |
| 580     | 358,71  | 355,643 | -3,067 | -0,00589807 |
| 600     | 358,698 | 355,525 | -3,173 | -0,00589807 |
| 611,774 | 357,406 | 355,456 | -1,95  | -0,00589807 |
| 620     | 357,368 | 355,36  | -2,009 | -0,01172703 |
| 640     | 357,355 | 355,125 | -2,23  | -0,01172703 |
| 654,24  | 356,979 | 354,958 | -2,021 | -0,01172703 |
| 660     | 356,965 | 354,916 | -2,049 | -0,00726371 |
| 680     | 357,437 | 354,771 | -2,666 | -0,00726371 |
| 700     | 357,762 | 354,626 | -3,136 | -0,00726371 |
| 720     | 358,023 | 354,48  | -3,542 | -0,00726371 |
| 740     | 358,018 | 354,335 | -3,683 | -0,00726371 |
| 760     | 357,719 | 354,19  | -3,529 | -0,00726371 |
| 780     | 357,362 | 354,045 | -3,317 | -0,00726371 |
| 799,345 | 355,854 | 353,904 | -1,95  | -0,00726371 |
| 800     | 356,02  | 353,912 | -2,108 | 0,01175117  |
| 820     | 356,819 | 354,147 | -2,672 | 0,01175117  |
| 840     | 356,801 | 354,382 | -2,419 | 0,01175117  |
| 860     | 356,794 | 354,617 | -2,177 | 0,01175117  |
| 880     | 357,194 | 354,852 | -2,342 | 0,01175117  |
| 900     | 357,471 | 355,087 | -2,385 | 0,01175117  |
| 909,717 | 357,387 | 355,201 | -2,186 | 0,01175117  |

|          |         |         |        |             |
|----------|---------|---------|--------|-------------|
| 920      | 357,304 | 355,111 | -2,193 | -0,00873926 |
| 940      | 357,075 | 354,936 | -2,138 | -0,00873926 |
| 960      | 357,038 | 354,762 | -2,277 | -0,00873926 |
| 980      | 357,029 | 354,587 | -2,442 | -0,00873926 |
| 1000     | 356,976 | 354,412 | -2,564 | -0,00873926 |
| 1020     | 356,922 | 354,237 | -2,685 | -0,00873926 |
| 1040     | 356,908 | 354,062 | -2,845 | -0,00873926 |
| 1060     | 356,812 | 353,888 | -2,925 | -0,00873926 |
| 1080     | 356,385 | 353,713 | -2,672 | -0,00873926 |
| 1100     | 355,95  | 353,538 | -2,412 | -0,00873926 |
| 1111,908 | 355,871 | 353,434 | -2,437 | -0,00873926 |
| 1120     | 356,068 | 353,394 | -2,674 | -0,00500111 |
| 1140     | 355,97  | 353,294 | -2,677 | -0,00500111 |
| 1160     | 355,695 | 353,193 | -2,501 | -0,00500111 |
| 1180     | 355,612 | 353,093 | -2,519 | -0,00500111 |
| 1200     | 355,472 | 352,993 | -2,479 | -0,00500111 |
| 1220     | 355,51  | 352,893 | -2,617 | -0,00500111 |
| 1240     | 355,643 | 352,793 | -2,85  | -0,00500111 |
| 1260     | 355,442 | 352,693 | -2,749 | -0,00500111 |
| 1280     | 355,358 | 352,593 | -2,764 | -0,00500111 |
| 1300     | 355,321 | 352,493 | -2,827 | -0,00500111 |
| 1320     | 355,072 | 352,393 | -2,679 | -0,00500111 |
| 1340     | 355,194 | 352,293 | -2,901 | -0,00500111 |
| 1360     | 354,952 | 352,193 | -2,759 | -0,00500111 |
| 1380     | 354,745 | 352,093 | -2,651 | -0,00500111 |
| 1400     | 354,637 | 351,993 | -2,644 | -0,00500111 |
| 1420     | 354,585 | 351,893 | -2,692 | -0,00500111 |
| 1440     | 354,483 | 351,793 | -2,69  | -0,00500111 |
| 1460     | 354,286 | 351,693 | -2,592 | -0,00500111 |
| 1480     | 354,125 | 351,593 | -2,532 | -0,00500111 |
| 1500     | 354,078 | 351,493 | -2,585 | -0,00500111 |
| 1520     | 354,055 | 351,393 | -2,661 | -0,00500111 |
| 1540     | 354,1   | 351,293 | -2,807 | -0,00500111 |
| 1560     | 354,119 | 351,193 | -2,926 | -0,00500111 |
| 1580     | 354,027 | 351,093 | -2,934 | -0,00500111 |
| 1600     | 353,963 | 350,993 | -2,97  | -0,00500111 |
| 1620     | 353,772 | 350,893 | -2,879 | -0,00500111 |
| 1631,593 | 353,024 | 350,835 | -2,189 | -0,00500111 |
| 1640     | 353,53  | 350,86  | -2,67  | 0,00300646  |
| 1660     | 353,675 | 350,92  | -2,755 | 0,00300646  |
| 1680     | 353,623 | 350,981 | -2,642 | 0,00300646  |
| 1700     | 353,512 | 351,041 | -2,472 | 0,00300646  |
| 1720     | 353,37  | 351,101 | -2,27  | 0,00300646  |
| 1740     | 353,321 | 351,161 | -2,16  | 0,00300646  |
| 1760     | 353,239 | 351,221 | -2,018 | 0,00300646  |
| 1775,949 | 353,119 | 351,269 | -1,85  | 0,00300646  |
| 1780     | 353,096 | 351,249 | -1,847 | -0,00500365 |
| 1800     | 352,988 | 351,149 | -1,839 | -0,00500365 |
| 1820     | 352,881 | 351,049 | -1,832 | -0,00500365 |
| 1840     | 352,873 | 350,949 | -1,925 | -0,00500365 |
| 1860     | 352,673 | 350,848 | -1,824 | -0,00500365 |

|          |         |         |        |             |
|----------|---------|---------|--------|-------------|
| 1880     | 352,549 | 350,748 | -1,8   | -0,00500365 |
| 1900     | 352,555 | 350,648 | -1,907 | -0,00500365 |
| 1920     | 352,346 | 350,548 | -1,798 | -0,00500365 |
| 1940     | 352,338 | 350,448 | -1,89  | -0,00500365 |
| 1960     | 352,226 | 350,348 | -1,878 | -0,00500365 |
| 1980     | 352,185 | 350,248 | -1,937 | -0,00500365 |
| 2000     | 351,526 | 349,246 | -2,28  | -0,05011054 |
| 2007,14  | 351,089 | 348,888 | -2,201 | -0,05011054 |
| 2020     | 351,064 | 348,824 | -2,24  | -0,00499927 |
| 2040     | 350,619 | 348,724 | -1,896 | -0,00499927 |
| 2060     | 350,757 | 348,624 | -2,133 | -0,00499927 |
| 2080     | 350,925 | 348,524 | -2,401 | -0,00499927 |
| 2100     | 350,913 | 348,424 | -2,489 | -0,00499927 |
| 2120     | 350,76  | 348,324 | -2,436 | -0,00499927 |
| 2140     | 350,599 | 348,224 | -2,375 | -0,00499927 |
| 2160     | 350,556 | 348,124 | -2,432 | -0,00499927 |
| 2180     | 350,516 | 348,024 | -2,492 | -0,00499927 |
| 2200     | 350,437 | 347,924 | -2,513 | -0,00499927 |
| 2220     | 350,644 | 347,824 | -2,82  | -0,00499927 |
| 2240     | 350,071 | 347,724 | -2,347 | -0,00499927 |
| 2260     | 349,953 | 347,624 | -2,329 | -0,00499927 |
| 2280     | 349,721 | 347,524 | -2,197 | -0,00499927 |
| 2300     | 349,711 | 347,424 | -2,287 | -0,00499927 |
| 2320     | 349,543 | 347,324 | -2,219 | -0,00499927 |
| 2340     | 349,345 | 347,224 | -2,121 | -0,00499927 |
| 2360     | 349,235 | 347,124 | -2,111 | -0,00499927 |
| 2380     | 349,151 | 347,024 | -2,127 | -0,00499927 |
| 2400     | 348,972 | 346,924 | -2,048 | -0,00499927 |
| 2420     | 348,577 | 346,824 | -1,753 | -0,00499927 |
| 2440     | 347,72  | 345,828 | -1,892 | -0,04979404 |
| 2447,433 | 347,612 | 345,458 | -2,154 | -0,04979404 |
| 2460     | 347,575 | 345,314 | -2,261 | -0,0114563  |
| 2480     | 347,554 | 345,085 | -2,469 | -0,0114563  |
| 2500     | 346,876 | 344,856 | -2,02  | -0,0114563  |
| 2520     | 346,572 | 344,627 | -1,945 | -0,0114563  |
| 2540     | 346,432 | 344,398 | -2,035 | -0,0114563  |
| 2551,306 | 346,033 | 344,268 | -1,765 | -0,0114563  |
| 2560     | 346,061 | 344,145 | -1,916 | -0,01420238 |
| 2580     | 346,074 | 343,86  | -2,213 | -0,01420238 |
| 2600     | 345,697 | 343,576 | -2,12  | -0,01420238 |
| 2620     | 345,428 | 343,292 | -2,136 | -0,01420238 |
| 2640     | 345,553 | 343,008 | -2,544 | -0,01420238 |
| 2660     | 344,933 | 342,724 | -2,209 | -0,01420238 |
| 2680     | 344,591 | 342,44  | -2,151 | -0,01420238 |
| 2700     | 344,182 | 342,156 | -2,026 | -0,01420238 |
| 2720     | 343,92  | 341,872 | -2,048 | -0,01420238 |
| 2740     | 344,041 | 341,588 | -2,453 | -0,01420238 |
| 2760     | 343,339 | 341,304 | -2,035 | -0,01420238 |
| 2780     | 343,324 | 341,02  | -2,304 | -0,01420238 |
| 2800     | 343,381 | 340,92  | -2,461 | -0,005      |
| 2820     | 343,238 | 340,82  | -2,418 | -0,005      |

|          |         |         |        |             |
|----------|---------|---------|--------|-------------|
| 2840     | 343,136 | 340,72  | -2,416 | -0,005      |
| 2860     | 342,695 | 340,62  | -2,075 | -0,005      |
| 2870     | 342,609 | 340,57  | -2,039 | -0,005      |
| 2880     | 342,579 | 340,156 | -2,423 | -0,04138391 |
| 2900     | 341,057 | 339,328 | -1,728 | -0,04138391 |
| 2903,008 | 340,884 | 339,204 | -1,68  | -0,04138391 |
| 2920     | 340,883 | 338,983 | -1,901 | -0,0130167  |
| 2940     | 340,653 | 338,722 | -1,93  | -0,0130167  |
| 2944,57  | 340,343 | 338,663 | -1,68  | -0,0130167  |
| 2960     | 339,236 | 337,418 | -1,817 | -0,08066263 |
| 2980     | 337,49  | 335,805 | -1,684 | -0,08066263 |
| 2981,514 | 337,363 | 335,683 | -1,68  | -0,08066263 |
| 3000     | 337,238 | 335,59  | -1,648 | -0,00501326 |
| 3012,432 | 337,128 | 335,528 | -1,6   | -0,00501326 |
| 3019,037 | 335,471 | 333,871 | -1,6   | -0,25087055 |
| 3020     | 335,578 | 333,874 | -1,704 | 0,00317848  |
| 3040     | 335,87  | 333,938 | -1,932 | 0,00317848  |
| 3060     | 337,17  | 334,001 | -3,169 | 0,00317848  |
| 3070,634 | 335,635 | 334,035 | -1,6   | 0,00317848  |

### R1B-9-3-1

| Distancia | C. Terreno | C. Rasante | C. Roja | Pendiente   |
|-----------|------------|------------|---------|-------------|
| 0         | 357,445    | 355,09     | -2,355  | -0,06055008 |
| 20        | 357,239    | 353,879    | -3,36   | -0,06055008 |
| 31,643    | 354,938    | 353,174    | -1,764  | -0,06055008 |
| 40        | 354,862    | 352,715    | -2,147  | -0,05488942 |
| 58,192    | 353,459    | 351,717    | -1,742  | -0,05488942 |
| 60        | 353,391    | 351,627    | -1,763  | -0,04940159 |
| 80        | 353,287    | 350,639    | -2,647  | -0,04940159 |
| 100       | 351,384    | 349,651    | -1,733  | -0,04940159 |
| 100,522   | 351,321    | 349,626    | -1,696  | -0,04940159 |
| 120       | 352,655    | 349,986    | -2,669  | 0,01850345  |
| 138,156   | 352,007    | 350,322    | -1,685  | 0,01850345  |
| 140       | 352,003    | 350,275    | -1,728  | -0,02540862 |
| 160       | 351,647    | 349,767    | -1,88   | -0,02540862 |
| 180       | 351,367    | 349,259    | -2,109  | -0,02540862 |
| 200       | 350,592    | 348,751    | -1,841  | -0,02540862 |
| 210,159   | 350,174    | 348,492    | -1,682  | -0,02540862 |
| 219,544   | 350,319    | 348,575    | -1,744  | 0,00879056  |
| 220       | 350,337    | 348,572    | -1,765  | -0,00583328 |
| 240       | 350,435    | 348,456    | -1,979  | -0,00583328 |
| 260       | 350,261    | 348,339    | -1,922  | -0,00583328 |
| 280       | 350,055    | 348,222    | -1,833  | -0,00583328 |
| 300       | 349,821    | 348,106    | -1,715  | -0,00583328 |
| 320       | 349,709    | 347,989    | -1,72   | -0,00583328 |
| 340       | 349,645    | 347,872    | -1,772  | -0,00583328 |
| 360       | 350,127    | 347,756    | -2,371  | -0,00583328 |
| 360,124   | 350,131    | 347,755    | -2,376  | -0,00583328 |
| 380       | 350,022    | 347,815    | -2,207  | 0,003       |

|         |         |         |        |             |
|---------|---------|---------|--------|-------------|
| 400     | 349,863 | 347,875 | -1,988 | 0,003       |
| 420     | 349,877 | 347,935 | -1,943 | 0,003       |
| 440     | 349,903 | 347,995 | -1,909 | 0,003       |
| 460     | 349,769 | 348,055 | -1,715 | 0,003       |
| 460,578 | 349,739 | 348,056 | -1,683 | 0,003       |
| 480     | 349,916 | 347,87  | -2,045 | -0,00957751 |
| 500     | 349,835 | 347,679 | -2,156 | -0,00957751 |
| 520     | 349,399 | 347,487 | -1,912 | -0,00957751 |
| 540     | 349,204 | 347,296 | -1,908 | -0,00957751 |
| 551,447 | 348,867 | 347,186 | -1,681 | -0,00957751 |
| 560     | 348,912 | 346,974 | -1,939 | -0,02482761 |
| 580     | 348,683 | 346,477 | -2,206 | -0,02482761 |
| 600     | 347,759 | 345,981 | -1,778 | -0,02482761 |
| 601,473 | 347,63  | 345,944 | -1,686 | -0,02482761 |
| 620     | 347,504 | 345,553 | -1,951 | -0,02108449 |
| 621,607 | 347,499 | 345,519 | -1,98  | -0,02108449 |
| 640     | 347,192 | 344,031 | -3,16  | -0,08089903 |
| 645,497 | 345,475 | 343,587 | -1,888 | -0,08089903 |
| 660     | 345,267 | 343,514 | -1,753 | -0,00500001 |
| 680     | 345,243 | 343,414 | -1,829 | -0,00500001 |
| 700     | 345,197 | 343,314 | -1,883 | -0,00500001 |
| 720     | 345,167 | 343,214 | -1,953 | -0,00500001 |
| 740     | 345,245 | 343,114 | -2,13  | -0,00500001 |
| 750     | 345,506 | 343,064 | -2,442 | -0,00500001 |
| 760     | 345,607 | 342,584 | -3,023 | -0,04800496 |
| 774,717 | 343,627 | 341,878 | -1,749 | -0,04800496 |
| 780     | 344,1   | 342,14  | -1,96  | 0,04961516  |
| 800     | 344,812 | 343,132 | -1,68  | 0,04961516  |
| 820     | 344,743 | 343,032 | -1,711 | -0,005      |
| 840     | 344,731 | 342,932 | -1,798 | -0,005      |
| 860     | 344,744 | 342,832 | -1,912 | -0,005      |
| 880     | 344,771 | 342,732 | -2,039 | -0,005      |
| 900     | 344,798 | 342,632 | -2,165 | -0,005      |
| 909,266 | 344,95  | 342,586 | -2,364 | -0,005      |

### R1B-9-3-2

| Distancia | C. Terreno | C. Rasante | C. Roja | Pendiente   |
|-----------|------------|------------|---------|-------------|
| 0         | 359        | 355,82     | -3,18   | 0,04806667  |
| 20        | 358,948    | 356,781    | -2,167  | 0,04806667  |
| 30        | 358,962    | 357,262    | -1,7    | 0,04806667  |
| 40        | 358,914    | 357,2      | -1,715  | -0,00624167 |
| 60        | 358,854    | 357,075    | -1,779  | -0,00624167 |
| 80        | 358,815    | 356,95     | -1,865  | -0,00624167 |
| 100       | 358,801    | 356,825    | -1,976  | -0,00624167 |
| 120       | 358,716    | 356,7      | -2,016  | -0,00624167 |
| 140       | 358,352    | 356,575    | -1,776  | -0,00624167 |
| 150       | 358,213    | 356,513    | -1,7    | -0,00624167 |
| 160       | 358,11     | 356,404    | -1,706  | -0,01091908 |
| 180       | 357,916    | 356,185    | -1,73   | -0,01091908 |

|         |         |         |        |             |
|---------|---------|---------|--------|-------------|
| 200     | 357,752 | 355,967 | -1,785 | -0,01091908 |
| 220     | 357,649 | 355,749 | -1,901 | -0,01091908 |
| 220,244 | 357,648 | 355,746 | -1,902 | -0,01091908 |
| 240     | 357,616 | 355,647 | -1,969 | -0,00500742 |
| 260     | 357,557 | 355,547 | -2,011 | -0,00500742 |
| 280     | 357,511 | 355,447 | -2,064 | -0,00500742 |
| 300     | 357,46  | 355,347 | -2,113 | -0,00500742 |
| 320     | 357,403 | 355,246 | -2,156 | -0,00500742 |
| 340     | 357,331 | 355,146 | -2,184 | -0,00500742 |
| 340,865 | 357,324 | 355,142 | -2,182 | -0,00500742 |
| 360     | 356,762 | 354,683 | -2,078 | -0,0239655  |
| 364,983 | 356,276 | 354,564 | -1,712 | -0,0239655  |
| 380     | 356,738 | 354,609 | -2,129 | 0,00300203  |
| 400     | 356,716 | 354,669 | -2,047 | 0,00300203  |
| 420     | 356,688 | 354,729 | -1,959 | 0,00300203  |
| 440     | 356,683 | 354,789 | -1,894 | 0,00300203  |
| 460     | 356,72  | 354,849 | -1,871 | 0,00300203  |
| 480     | 356,706 | 354,909 | -1,797 | 0,00300203  |
| 500     | 356,665 | 354,969 | -1,696 | 0,00300203  |
| 520     | 356,638 | 355,029 | -1,609 | 0,00300203  |
| 536,867 | 356,63  | 355,08  | -1,55  | 0,00300203  |
| 540     | 356,625 | 355,064 | -1,561 | -0,00500462 |
| 560     | 356,601 | 354,964 | -1,637 | -0,00500462 |
| 580     | 356,58  | 354,864 | -1,716 | -0,00500462 |
| 600     | 356,536 | 354,764 | -1,772 | -0,00500462 |
| 607,202 | 356,278 | 354,728 | -1,55  | -0,00500462 |
| 613,179 | 355,657 | 354,107 | -1,55  | -0,10389828 |
| 620     | 355,817 | 354,127 | -1,689 | 0,00298742  |
| 640     | 355,883 | 354,187 | -1,695 | 0,00298742  |
| 660     | 355,889 | 354,247 | -1,642 | 0,00298742  |
| 680     | 355,88  | 354,307 | -1,574 | 0,00298742  |
| 687,156 | 355,878 | 354,328 | -1,55  | 0,00298742  |
| 700     | 355,872 | 354,264 | -1,608 | -0,00499058 |
| 720     | 355,856 | 354,164 | -1,692 | -0,00499058 |
| 740     | 355,847 | 354,064 | -1,783 | -0,00499058 |
| 760     | 355,842 | 353,964 | -1,878 | -0,00499058 |
| 779,53  | 355,935 | 353,867 | -2,068 | -0,00499058 |
| 780     | 355,93  | 353,844 | -2,086 | -0,04920678 |
| 790,687 | 354,919 | 353,318 | -1,601 | -0,04920678 |

#### R1B-9-4

| Distancia | C. Terreno | C. Rasante | C. Roja | Pendiente   |
|-----------|------------|------------|---------|-------------|
| 0         | 357,6      | 355,08     | -2,52   | 0,04576847  |
| 20        | 358,177    | 355,995    | -2,182  | 0,04576847  |
| 30        | 358,228    | 356,453    | -1,775  | 0,04576847  |
| 40        | 358,135    | 356,396    | -1,738  | -0,00565892 |
| 60        | 358,059    | 356,283    | -1,776  | -0,00565892 |
| 80        | 358,004    | 356,17     | -1,834  | -0,00565892 |
| 100       | 358,021    | 356,057    | -1,964  | -0,00565892 |

|         |         |         |        |             |
|---------|---------|---------|--------|-------------|
| 120     | 358,22  | 355,944 | -2,276 | -0,00565892 |
| 140     | 358,267 | 355,831 | -2,437 | -0,00565892 |
| 151,941 | 357,403 | 355,763 | -1,64  | -0,00565892 |
| 160     | 357,335 | 355,572 | -1,762 | -0,02365748 |
| 180     | 356,995 | 355,099 | -1,895 | -0,02365748 |
| 200     | 356,859 | 354,626 | -2,233 | -0,02365748 |
| 220     | 356,66  | 354,153 | -2,508 | -0,02365748 |
| 240     | 356,622 | 353,68  | -2,942 | -0,02365748 |
| 253,727 | 354,945 | 353,355 | -1,59  | -0,02365748 |
| 260     | 354,938 | 353,266 | -1,672 | -0,01417644 |
| 280     | 354,913 | 352,983 | -1,93  | -0,01417644 |
| 300     | 354,907 | 352,699 | -2,208 | -0,01417644 |
| 320     | 354,849 | 352,415 | -2,433 | -0,01417644 |
| 335,694 | 353,783 | 352,193 | -1,59  | -0,01417644 |
| 340     | 355,225 | 352,805 | -2,42  | 0,14216336  |
| 349,284 | 355,715 | 354,125 | -1,59  | 0,14216336  |

### R1B-9-5

| Distancia | C. Terreno | C. Rasante | C. Roja | Pendiente   |
|-----------|------------|------------|---------|-------------|
| 0         | 344,811    | 341,424    | -3,387  | 0,08675     |
| 20        | 345,024    | 343,159    | -1,865  | 0,08675     |
| 40        | 345,265    | 343,059    | -2,206  | -0,005      |
| 60        | 344,861    | 342,959    | -1,902  | -0,005      |
| 80        | 344,908    | 342,859    | -2,049  | -0,005      |
| 100       | 344,566    | 342,759    | -1,807  | -0,005      |
| 120       | 344,511    | 342,659    | -1,852  | -0,005      |
| 140       | 344,55     | 342,559    | -1,991  | -0,005      |
| 160       | 344,6      | 342,459    | -2,141  | -0,005      |
| 180       | 344,598    | 342,359    | -2,239  | -0,005      |
| 200       | 344,537    | 342,259    | -2,278  | -0,005      |
| 220       | 344,527    | 342,159    | -2,368  | -0,005      |
| 230       | 344,517    | 342,109    | -2,408  | -0,005      |
| 240       | 344,5      | 342,059    | -2,441  | -0,00499147 |
| 245,827   | 344,489    | 342,03     | -2,459  | -0,00499147 |
| 260       | 343,122    | 341,216    | -1,906  | -0,05746078 |
| 280       | 343,145    | 340,066    | -3,078  | -0,05746078 |
| 300       | 341,067    | 338,917    | -2,15   | -0,05746078 |
| 320       | 340,462    | 337,768    | -2,694  | -0,05746078 |
| 330,215   | 338,881    | 337,181    | -1,7    | -0,05746078 |
| 340       | 338,867    | 336,777    | -2,09   | -0,04127483 |
| 360       | 338,279    | 335,952    | -2,328  | -0,04127483 |
| 380       | 337,445    | 335,126    | -2,319  | -0,04127483 |
| 400       | 336,225    | 334,301    | -1,924  | -0,04127483 |
| 402,099   | 335,914    | 334,214    | -1,7    | -0,04127483 |
| 420       | 335,854    | 334,13     | -1,724  | -0,00470984 |
| 440       | 335,77     | 334,035    | -1,734  | -0,00470984 |
| 460       | 335,677    | 333,941    | -1,736  | -0,00470984 |
| 480       | 335,711    | 333,847    | -1,864  | -0,00470984 |
| 490       | 335,601    | 333,8      | -1,801  | -0,00470984 |

|          |         |         |        |             |
|----------|---------|---------|--------|-------------|
| 500      | 335,525 | 333,696 | -1,829 | -0,01037    |
| 520      | 335,357 | 333,489 | -1,868 | -0,01037    |
| 540      | 335,282 | 333,281 | -2,001 | -0,01037    |
| 560      | 335,095 | 333,074 | -2,021 | -0,01037    |
| 580      | 335,061 | 332,867 | -2,194 | -0,01037    |
| 600      | 334,756 | 332,659 | -2,097 | -0,01037    |
| 620      | 334,779 | 332,452 | -2,327 | -0,01037    |
| 640      | 334,384 | 332,245 | -2,139 | -0,01037    |
| 660      | 334,256 | 332,037 | -2,219 | -0,01037    |
| 680      | 334,228 | 331,83  | -2,398 | -0,01037    |
| 690      | 334,115 | 331,726 | -2,389 | -0,01037    |
| 700      | 334,029 | 331,76  | -2,27  | 0,003354    |
| 720      | 333,81  | 331,827 | -1,983 | 0,003354    |
| 740      | 334,165 | 331,894 | -2,272 | 0,003354    |
| 749,034  | 333,624 | 331,924 | -1,7   | 0,003354    |
| 760      | 334,056 | 331,958 | -2,097 | 0,00314235  |
| 780      | 333,75  | 332,021 | -1,729 | 0,00314235  |
| 800      | 333,702 | 332,084 | -1,618 | 0,00314235  |
| 820      | 333,847 | 332,147 | -1,7   | 0,00314235  |
| 840      | 333,025 | 331,325 | -1,7   | -0,0411     |
| 860      | 332,755 | 330,887 | -1,868 | -0,02191    |
| 880      | 332,576 | 330,449 | -2,128 | -0,02191    |
| 900      | 332,484 | 330,01  | -2,474 | -0,02191    |
| 920      | 332,324 | 329,572 | -2,752 | -0,02191    |
| 940      | 331,08  | 329,134 | -1,946 | -0,02191    |
| 960      | 330,648 | 328,926 | -1,722 | -0,01037778 |
| 980      | 330,626 | 328,719 | -1,907 | -0,01037778 |
| 1000     | 330,446 | 328,511 | -1,935 | -0,01037778 |
| 1020     | 330,088 | 328,304 | -1,784 | -0,01037778 |
| 1030     | 330,375 | 328,2   | -2,175 | -0,01037778 |
| 1040     | 330,577 | 328,507 | -2,07  | 0,03066994  |
| 1060     | 331,203 | 329,12  | -2,083 | 0,03066994  |
| 1080     | 331,994 | 329,733 | -2,261 | 0,03066994  |
| 1087,483 | 332,177 | 329,963 | -2,214 | 0,03066994  |
| 1100     | 333,527 | 331,356 | -2,171 | 0,11129369  |
| 1110     | 333,981 | 332,469 | -1,512 | 0,11129369  |
| 1120     | 334,435 | 332,548 | -1,886 | 0,00794644  |
| 1140     | 334,625 | 332,707 | -1,917 | 0,00794644  |
| 1160     | 334,633 | 332,866 | -1,767 | 0,00794644  |
| 1180     | 334,663 | 333,025 | -1,637 | 0,00794644  |
| 1189,91  | 334,694 | 333,104 | -1,59  | 0,00794644  |

### R1B-9-6

| Distancia | C. Terreno | C. Rasante | C. Roja | Pendiente   |
|-----------|------------|------------|---------|-------------|
| 0         | 353,567    | 351,03     | -2,537  | 0,02323333  |
| 20        | 353,524    | 351,495    | -2,029  | 0,02323333  |
| 30        | 353,532    | 351,727    | -1,805  | 0,02323333  |
| 40        | 353,565    | 351,647    | -1,918  | -0,00797003 |
| 60        | 353,573    | 351,488    | -2,085  | -0,00797003 |

|         |         |         |        |             |
|---------|---------|---------|--------|-------------|
| 80      | 353,488 | 351,328 | -2,16  | -0,00797003 |
| 100     | 353,558 | 351,169 | -2,389 | -0,00797003 |
| 113,814 | 352,864 | 351,059 | -1,805 | -0,00797003 |
| 120     | 352,839 | 351,028 | -1,811 | -0,00500015 |
| 140     | 352,836 | 350,928 | -1,908 | -0,00500015 |
| 160     | 352,851 | 350,828 | -2,023 | -0,00500015 |
| 180     | 352,856 | 350,728 | -2,128 | -0,00500015 |
| 200     | 352,861 | 350,628 | -2,233 | -0,00500015 |
| 220     | 352,849 | 350,528 | -2,321 | -0,00500015 |
| 240     | 352,842 | 350,428 | -2,414 | -0,00500015 |
| 260     | 352,85  | 350,328 | -2,522 | -0,00500015 |
| 280     | 352,836 | 350,228 | -2,607 | -0,00500015 |
| 300     | 352,674 | 350,128 | -2,546 | -0,00500015 |
| 320     | 352,214 | 350,028 | -2,186 | -0,00500015 |
| 340     | 352,196 | 349,928 | -2,268 | -0,00500015 |
| 360     | 352,17  | 349,828 | -2,342 | -0,00500015 |
| 380     | 352,16  | 349,728 | -2,432 | -0,00500015 |
| 400     | 352,157 | 349,628 | -2,529 | -0,00500015 |
| 420     | 352,12  | 349,528 | -2,592 | -0,00500015 |
| 440     | 352,098 | 349,428 | -2,67  | -0,00500015 |
| 460     | 352,07  | 349,328 | -2,742 | -0,00500015 |
| 480     | 352,054 | 349,228 | -2,826 | -0,00500015 |
| 500     | 352,032 | 349,128 | -2,904 | -0,00500015 |
| 520     | 352,002 | 349,028 | -2,974 | -0,00500015 |
| 540     | 351,054 | 348,928 | -2,126 | -0,00500015 |
| 560     | 351,048 | 348,828 | -2,22  | -0,00500015 |
| 580     | 351,045 | 348,728 | -2,317 | -0,00500015 |
| 590     | 351,04  | 348,678 | -2,362 | -0,00500015 |
| 600     | 351,061 | 348,433 | -2,628 | -0,02452603 |
| 616,584 | 349,831 | 348,026 | -1,805 | -0,02452603 |
| 620     | 349,816 | 348,009 | -1,807 | -0,0049985  |
| 640     | 349,777 | 347,909 | -1,868 | -0,0049985  |
| 660     | 349,769 | 347,809 | -1,96  | -0,0049985  |
| 670     | 349,764 | 347,759 | -2,005 | -0,0049985  |
| 680     | 349,774 | 347,573 | -2,201 | -0,01857348 |
| 700     | 349,803 | 347,202 | -2,602 | -0,01857348 |
| 709,088 | 348,838 | 347,033 | -1,805 | -0,01857348 |
| 720     | 350,075 | 347,255 | -2,82  | 0,02036706  |
| 740     | 349,738 | 347,663 | -2,075 | 0,02036706  |
| 753,277 | 349,738 | 347,933 | -1,805 | 0,02036706  |
| 760     | 349,746 | 347,884 | -1,862 | -0,00731362 |
| 780     | 349,692 | 347,738 | -1,955 | -0,00731362 |
| 800     | 349,514 | 347,591 | -1,923 | -0,00731362 |
| 820     | 349,551 | 347,445 | -2,106 | -0,00731362 |
| 840     | 349,557 | 347,299 | -2,258 | -0,00731362 |
| 860     | 349,516 | 347,152 | -2,363 | -0,00731362 |
| 880     | 349,171 | 347,006 | -2,165 | -0,00731362 |
| 900     | 349,127 | 346,86  | -2,267 | -0,00731362 |
| 920     | 349,059 | 346,714 | -2,345 | -0,00731362 |
| 931,301 | 348,386 | 346,631 | -1,755 | -0,00731362 |
| 940     | 348,499 | 346,537 | -1,961 | -0,01075613 |

|          |         |         |        |             |
|----------|---------|---------|--------|-------------|
| 960      | 348,489 | 346,322 | -2,167 | -0,01075613 |
| 980      | 347,997 | 346,107 | -1,89  | -0,01075613 |
| 984,387  | 347,865 | 346,06  | -1,805 | -0,01075613 |
| 1000     | 347,929 | 345,982 | -1,947 | -0,00500046 |
| 1020     | 347,944 | 345,882 | -2,062 | -0,00500046 |
| 1040     | 347,891 | 345,782 | -2,11  | -0,00500046 |
| 1060     | 347,94  | 345,682 | -2,258 | -0,00500046 |
| 1080     | 347,937 | 345,582 | -2,355 | -0,00500046 |
| 1100     | 347,893 | 345,482 | -2,411 | -0,00500046 |
| 1120     | 347,817 | 345,382 | -2,435 | -0,00500046 |
| 1140     | 347,896 | 345,282 | -2,614 | -0,00500046 |
| 1160     | 347,879 | 345,182 | -2,697 | -0,00500046 |
| 1180     | 347,858 | 345,082 | -2,777 | -0,00500046 |
| 1200     | 347,862 | 344,982 | -2,88  | -0,00500046 |
| 1220     | 347,748 | 344,882 | -2,866 | -0,00500046 |
| 1240     | 347,233 | 344,782 | -2,451 | -0,00500046 |
| 1260     | 347,195 | 344,682 | -2,514 | -0,00500046 |
| 1280     | 347,179 | 344,582 | -2,597 | -0,00500046 |
| 1300     | 347,157 | 344,482 | -2,675 | -0,00500046 |
| 1320     | 347,134 | 344,382 | -2,752 | -0,00500046 |
| 1340     | 347,121 | 344,282 | -2,839 | -0,00500046 |
| 1360     | 347,108 | 344,182 | -2,926 | -0,00500046 |
| 1380     | 347,079 | 344,082 | -2,997 | -0,00500046 |
| 1400     | 346,218 | 343,982 | -2,236 | -0,00500046 |
| 1419,747 | 346,223 | 343,883 | -2,34  | -0,00500046 |
| 1420     | 346,222 | 343,884 | -2,338 | 0,00300172  |
| 1440     | 346,195 | 343,944 | -2,251 | 0,00300172  |
| 1460     | 346,184 | 344,004 | -2,18  | 0,00300172  |
| 1480     | 346,164 | 344,064 | -2,1   | 0,00300172  |
| 1500     | 346,145 | 344,124 | -2,021 | 0,00300172  |
| 1520     | 346,111 | 344,184 | -1,927 | 0,00300172  |
| 1540     | 346,107 | 344,244 | -1,863 | 0,00300172  |
| 1560     | 346,104 | 344,304 | -1,8   | 0,00300172  |
| 1580     | 345,838 | 344,204 | -1,634 | -0,00500115 |
| 1600     | 345,712 | 344,104 | -1,608 | -0,00500115 |
| 1620     | 345,707 | 344,004 | -1,703 | -0,00500115 |
| 1640     | 345,591 | 343,904 | -1,687 | -0,00500115 |
| 1660     | 345,491 | 343,804 | -1,687 | -0,00500115 |
| 1680     | 345,404 | 343,704 | -1,701 | -0,00500115 |
| 1700     | 345,312 | 343,604 | -1,709 | -0,00500115 |
| 1720     | 345,212 | 343,504 | -1,708 | -0,00500115 |
| 1740     | 345,13  | 343,404 | -1,726 | -0,00500115 |
| 1760     | 345,029 | 343,304 | -1,726 | -0,00500115 |
| 1780     | 344,927 | 343,204 | -1,723 | -0,00500115 |
| 1800     | 344,814 | 343,104 | -1,71  | -0,00500115 |
| 1820     | 344,73  | 343,004 | -1,726 | -0,00500115 |
| 1840     | 344,65  | 342,904 | -1,746 | -0,00500115 |
| 1860     | 344,618 | 342,804 | -1,814 | -0,00500115 |
| 1880     | 344,502 | 342,704 | -1,798 | -0,00500115 |
| 1900     | 344,662 | 342,604 | -2,059 | -0,00500115 |
| 1920     | 344,604 | 342,504 | -2,1   | -0,00500115 |

|          |         |         |        |             |
|----------|---------|---------|--------|-------------|
| 1940     | 344,538 | 342,404 | -2,134 | -0,00500115 |
| 1960     | 344,576 | 342,304 | -2,272 | -0,00500115 |
| 1980     | 344,612 | 342,204 | -2,409 | -0,00500115 |
| 1987,502 | 344,538 | 342,166 | -2,372 | -0,00500115 |
| 2000     | 343,623 | 341,17  | -2,453 | -0,07970436 |
| 2002,52  | 343,216 | 340,969 | -2,247 | -0,07970436 |
| 2020     | 342,843 | 340,056 | -2,787 | -0,05224287 |
| 2028,246 | 341,165 | 339,625 | -1,54  | -0,05224287 |
| 2040     | 343,015 | 340,207 | -2,809 | 0,04948027  |
| 2060     | 344,014 | 341,196 | -2,818 | 0,04948027  |
| 2080     | 344,096 | 342,186 | -1,911 | 0,04948027  |
| 2082,409 | 344,11  | 342,305 | -1,805 | 0,04948027  |
| 2100     | 345,454 | 342,986 | -2,469 | 0,03869114  |
| 2120     | 345,928 | 343,759 | -2,169 | 0,03869114  |
| 2140     | 346,601 | 344,533 | -2,067 | 0,03869114  |
| 2160     | 347,064 | 345,307 | -1,757 | 0,03869114  |
| 2172,197 | 347,334 | 345,779 | -1,555 | 0,03869114  |

#### R1B-9-6-2

| Distancia | C. Terreno | C. Rasante | C. Roja | Pendiente  |
|-----------|------------|------------|---------|------------|
| 0         | 347,726    | 345,33     | -2,396  | 0,03246667 |
| 20        | 348,099    | 345,979    | -2,119  | 0,03246667 |
| 30        | 348,114    | 346,304    | -1,81   | 0,03246667 |
| 40        | 348,188    | 346,343    | -1,845  | 0,00394199 |
| 60        | 348,224    | 346,422    | -1,802  | 0,00394199 |
| 70,335    | 348,273    | 346,463    | -1,81   | 0,00394199 |
| 80        | 348,851    | 346,628    | -2,222  | 0,01711786 |
| 100       | 348,852    | 346,971    | -1,881  | 0,01711786 |
| 120       | 349,598    | 347,313    | -2,285  | 0,01711786 |
| 140       | 349,524    | 347,656    | -1,868  | 0,01711786 |
| 151,712   | 349,666    | 347,856    | -1,81   | 0,01711786 |
| 160       | 350,566    | 347,999    | -2,568  | 0,01723453 |
| 180       | 350,553    | 348,344    | -2,209  | 0,01723453 |
| 200       | 350,976    | 348,688    | -2,288  | 0,01723453 |
| 220       | 351,419    | 349,033    | -2,386  | 0,01723453 |
| 240       | 351,381    | 349,378    | -2,003  | 0,01723453 |
| 254,935   | 351,781    | 349,635    | -2,146  | 0,01723453 |
| 260       | 353,418    | 350,426    | -2,992  | 0,15614636 |
| 273,027   | 354,62     | 352,46     | -2,16   | 0,15614636 |
| 280       | 354,73     | 352,786    | -1,943  | 0,04678962 |
| 300       | 355,856    | 353,722    | -2,134  | 0,04678962 |
| 320       | 356,438    | 354,658    | -1,78   | 0,04678962 |
| 340       | 357,703    | 355,594    | -2,109  | 0,04678962 |
| 357,939   | 358,243    | 356,433    | -1,81   | 0,04678962 |
| 360       | 358,442    | 356,632    | -1,81   | 0,09658016 |
| 380       | 360,374    | 358,564    | -1,81   | 0,09658016 |
| 400       | 362,305    | 360,495    | -1,81   | 0,09658016 |
| 404,988   | 362,787    | 360,977    | -1,81   | 0,09658016 |
| 420       | 363,434    | 361,408    | -2,026  | 0,02870207 |

|         |         |         |        |             |
|---------|---------|---------|--------|-------------|
| 440     | 363,768 | 361,982 | -1,786 | 0,02870207  |
| 460     | 364,869 | 362,556 | -2,313 | 0,02870207  |
| 480     | 364,94  | 363,13  | -1,81  | 0,02870207  |
| 500     | 365,047 | 363,19  | -1,857 | 0,00299681  |
| 520     | 365,137 | 363,25  | -1,888 | 0,00299681  |
| 540     | 365,27  | 363,31  | -1,96  | 0,00299681  |
| 560     | 365,428 | 363,37  | -2,058 | 0,00299681  |
| 576,436 | 365,528 | 363,419 | -2,109 | 0,00299681  |
| 580     | 365,472 | 363,232 | -2,241 | -0,05252387 |
| 583,766 | 364,789 | 363,034 | -1,755 | -0,05252387 |
| 600     | 364,87  | 363,109 | -1,761 | 0,00463614  |
| 620     | 364,997 | 363,202 | -1,796 | 0,00463614  |
| 640     | 365,046 | 363,295 | -1,751 | 0,00463614  |
| 660     | 365,106 | 363,387 | -1,718 | 0,00463614  |
| 680     | 365,153 | 363,48  | -1,673 | 0,00463614  |
| 700     | 365,263 | 363,573 | -1,69  | 0,00463614  |
| 720     | 365,329 | 363,666 | -1,664 | 0,00463614  |
| 740     | 365,435 | 363,758 | -1,677 | 0,00463614  |
| 760     | 365,509 | 363,851 | -1,658 | 0,00463614  |
| 780     | 365,649 | 363,944 | -1,705 | 0,00463614  |
| 800     | 365,691 | 364,036 | -1,654 | 0,00463614  |
| 820     | 365,798 | 364,129 | -1,669 | 0,00463614  |
| 840     | 365,856 | 364,222 | -1,634 | 0,00463614  |
| 853,387 | 366,068 | 364,284 | -1,784 | 0,00463614  |
| 860     | 366,62  | 364,416 | -2,204 | 0,01997186  |
| 880     | 366,817 | 364,816 | -2,002 | 0,01997186  |
| 900     | 366,913 | 365,215 | -1,698 | 0,01997186  |
| 908,815 | 366,959 | 365,391 | -1,568 | 0,01997186  |

### R1B-9-6-2-2

| Distancia | C. Terreno | C. Rasante | C. Roja | Pendiente   |
|-----------|------------|------------|---------|-------------|
| 0         | 354,887    | 353,08     | -1,807  | -0,00857183 |
| 20        | 354,664    | 352,909    | -1,755  | -0,00857183 |
| 36,546    | 354,746    | 352,767    | -1,979  | -0,00857183 |
| 40        | 354,717    | 352,777    | -1,939  | 0,00306771  |
| 60        | 354,834    | 352,839    | -1,996  | 0,00306771  |
| 80        | 354,687    | 352,9      | -1,787  | 0,00306771  |
| 100       | 355,18     | 352,961    | -2,219  | 0,00306771  |
| 120       | 355,231    | 353,023    | -2,208  | 0,00306771  |
| 140       | 355,233    | 353,084    | -2,149  | 0,00306771  |
| 160       | 355,22     | 353,145    | -2,074  | 0,00306771  |
| 180       | 355,149    | 353,207    | -1,942  | 0,00306771  |
| 183,272   | 354,917    | 353,217    | -1,7    | 0,00306771  |
| 200       | 354,072    | 351,919    | -2,154  | -0,07760285 |
| 206,628   | 353,905    | 351,404    | -2,501  | -0,07760285 |
| 220       | 353,276    | 351,337    | -1,939  | -0,005      |
| 240       | 353,22     | 351,237    | -1,983  | -0,005      |
| 260       | 353,485    | 351,137    | -2,348  | -0,005      |
| 280       | 353,354    | 351,037    | -2,316  | -0,005      |

|         |         |         |        |             |
|---------|---------|---------|--------|-------------|
| 300     | 353,124 | 350,937 | -2,187 | -0,005      |
| 320     | 352,903 | 350,837 | -2,066 | -0,005      |
| 340     | 352,539 | 350,691 | -1,849 | -0,00733719 |
| 360     | 352,217 | 350,544 | -1,674 | -0,00733719 |
| 380     | 352,214 | 350,397 | -1,816 | -0,00733719 |
| 400     | 352,271 | 350,25  | -2,02  | -0,00733719 |
| 414,895 | 352,076 | 350,141 | -1,935 | -0,00733719 |
| 420     | 352,029 | 349,996 | -2,033 | -0,0284959  |
| 440     | 351,274 | 349,426 | -1,849 | -0,0284959  |
| 460     | 351,139 | 349,326 | -1,813 | -0,005      |
| 480     | 351,233 | 349,226 | -2,007 | -0,005      |
| 500     | 351,258 | 349,126 | -2,133 | -0,005      |
| 520     | 350,993 | 349,026 | -1,967 | -0,005      |
| 524,991 | 350,636 | 349,001 | -1,635 | -0,005      |
| 540     | 351,181 | 349,468 | -1,713 | 0,03114317  |
| 560     | 351,917 | 350,091 | -1,826 | 0,03114317  |
| 580     | 352,369 | 350,714 | -1,655 | 0,03114317  |
| 600     | 351,938 | 350,161 | -1,777 | -0,02767338 |
| 620     | 351,333 | 349,607 | -1,726 | -0,02767338 |
| 620,665 | 351,331 | 349,589 | -1,742 | -0,02767338 |

#### R1B-9-7

| Distancia | C. Terreno | C. Rasante | C. Roja | Pendiente   |
|-----------|------------|------------|---------|-------------|
| 0         | 343,301    | 341,127    | -2,174  | -0,01393189 |
| 20        | 343,114    | 340,848    | -2,266  | -0,01393189 |
| 40        | 343,381    | 340,57     | -2,811  | -0,01393189 |
| 60        | 342,96     | 340,291    | -2,669  | -0,01393189 |
| 80        | 342,911    | 340,012    | -2,898  | -0,01393189 |
| 100       | 342,762    | 339,734    | -3,028  | -0,01393189 |
| 120       | 341,672    | 339,455    | -2,217  | -0,01393189 |
| 140       | 341,526    | 339,177    | -2,349  | -0,01393189 |
| 160       | 341,008    | 338,898    | -2,11   | -0,01393189 |
| 180       | 340,72     | 338,619    | -2,101  | -0,01393189 |
| 200       | 340,486    | 338,341    | -2,146  | -0,01393189 |
| 204,782   | 339,974    | 338,274    | -1,7    | -0,01393189 |
| 220       | 339,885    | 337,566    | -2,319  | -0,04653623 |
| 240       | 339,233    | 336,635    | -2,598  | -0,04653623 |
| 260       | 338,752    | 335,704    | -3,047  | -0,04653623 |
| 280       | 337,454    | 334,774    | -2,681  | -0,04653623 |
| 300       | 336,362    | 333,843    | -2,519  | -0,04653623 |
| 317,275   | 335,054    | 333,039    | -2,015  | -0,04653623 |
| 320       | 335,063    | 332,993    | -2,071  | -0,01705912 |
| 340       | 335,05     | 332,651    | -2,399  | -0,01705912 |
| 360       | 334,354    | 332,31     | -2,043  | -0,01705912 |
| 380       | 334,083    | 331,969    | -2,114  | -0,01705912 |
| 400       | 333,439    | 331,628    | -1,811  | -0,01705912 |
| 420       | 333,181    | 331,287    | -1,894  | -0,01705912 |
| 440       | 333,184    | 330,945    | -2,238  | -0,01705912 |
| 460       | 332,401    | 330,604    | -1,796  | -0,01705912 |

|         |         |         |        |             |
|---------|---------|---------|--------|-------------|
| 480     | 332,388 | 330,263 | -2,125 | -0,01705912 |
| 500     | 332,06  | 329,922 | -2,138 | -0,01705912 |
| 520     | 331,771 | 329,581 | -2,191 | -0,01705912 |
| 540     | 332,131 | 329,24  | -2,891 | -0,01705912 |
| 560     | 331,792 | 328,898 | -2,894 | -0,01705912 |
| 580     | 330,197 | 328,557 | -1,64  | -0,01705912 |
| 600     | 330,179 | 328,216 | -1,963 | -0,01705912 |
| 620     | 330,166 | 327,875 | -2,291 | -0,01705912 |
| 640     | 330,158 | 327,534 | -2,624 | -0,01705912 |
| 660     | 329,999 | 327,192 | -2,807 | -0,01705912 |
| 680     | 328,567 | 326,851 | -1,716 | -0,01705912 |
| 700     | 328,521 | 326,51  | -2,011 | -0,01705912 |
| 720     | 328,556 | 326,169 | -2,387 | -0,01705912 |
| 740     | 328,393 | 325,828 | -2,566 | -0,01705912 |
| 748,833 | 327,799 | 325,677 | -2,122 | -0,01705912 |

### R1B-9-8

| Distancia | C. Terreno | C. Rasante | C. Roja | Pendiente   |
|-----------|------------|------------|---------|-------------|
| 0         | 333,337    | 330,726    | -2,611  | -0,05524862 |
| 10,86     | 331,726    | 330,126    | -1,6    | -0,05524862 |
| 20        | 333,98     | 331,916    | -2,064  | 0,19586799  |
| 25,768    | 334,646    | 333,046    | -1,6    | 0,19586799  |
| 40        | 337,482    | 335,21     | -2,272  | 0,15201668  |
| 48,305    | 338,072    | 336,472    | -1,6    | 0,15201668  |
| 60        | 341,15     | 338,912    | -2,238  | 0,20862715  |
| 64,046    | 341,482    | 339,756    | -1,726  | 0,20862715  |
| 80        | 341,716    | 339,804    | -1,912  | 0,00300078  |
| 100       | 341,684    | 339,864    | -1,821  | 0,00300078  |
| 120       | 341,711    | 339,924    | -1,787  | 0,00300078  |
| 140       | 341,744    | 339,984    | -1,76   | 0,00300078  |
| 160       | 341,767    | 340,044    | -1,723  | 0,00300078  |
| 180       | 341,755    | 340,104    | -1,651  | 0,00300078  |
| 200       | 341,764    | 340,164    | -1,6    | 0,00300078  |
| 220       | 341,901    | 340,224    | -1,677  | 0,00300078  |
| 240       | 342,098    | 340,284    | -1,814  | 0,00300078  |
| 260       | 342,774    | 340,901    | -1,873  | 0,03087143  |
| 280       | 343,565    | 341,519    | -2,046  | 0,03087143  |
| 300       | 344,199    | 342,136    | -2,062  | 0,03087143  |
| 310       | 344,276    | 342,445    | -1,831  | 0,03087143  |
| 320       | 344,245    | 342,475    | -1,77   | 0,003       |
| 340       | 344,214    | 342,535    | -1,679  | 0,003       |
| 360       | 344,232    | 342,595    | -1,637  | 0,003       |
| 380       | 344,25     | 342,655    | -1,595  | 0,003       |
| 400       | 344,272    | 342,715    | -1,557  | 0,003       |
| 420       | 344,375    | 342,775    | -1,6    | 0,003       |
| 440       | 344,453    | 342,835    | -1,618  | 0,003       |
| 460       | 344,55     | 342,895    | -1,655  | 0,003       |
| 480       | 344,617    | 342,955    | -1,662  | 0,003       |
| 500       | 344,721    | 343,015    | -1,706  | 0,003       |

|         |         |         |        |            |
|---------|---------|---------|--------|------------|
| 520     | 344,858 | 343,075 | -1,783 | 0,003      |
| 530     | 344,895 | 343,105 | -1,79  | 0,003      |
| 540     | 344,839 | 342,967 | -1,872 | -0,0138    |
| 560     | 344,459 | 342,691 | -1,768 | -0,0138    |
| 570     | 344,331 | 342,553 | -1,778 | -0,0138    |
| 580     | 344,314 | 342,583 | -1,731 | 0,00299975 |
| 600     | 344,352 | 342,643 | -1,709 | 0,00299975 |
| 620     | 344,52  | 342,703 | -1,817 | 0,00299975 |
| 640     | 344,543 | 342,763 | -1,78  | 0,00299975 |
| 660     | 344,564 | 342,823 | -1,741 | 0,00299975 |
| 680     | 344,57  | 342,883 | -1,687 | 0,00299975 |
| 700     | 344,594 | 342,943 | -1,651 | 0,00299975 |
| 720     | 344,635 | 343,003 | -1,632 | 0,00299975 |
| 740     | 344,68  | 343,063 | -1,617 | 0,00299975 |
| 748,348 | 344,934 | 343,088 | -1,846 | 0,00299975 |

### R1B-9-10

| Distancia | C. Terreno | C. Rasante | C. Roja | Pendiente   |
|-----------|------------|------------|---------|-------------|
| 0         | 344,798    | 342,088    | -2,71   | 0,00492308  |
| 20        | 344,516    | 342,186    | -2,33   | 0,00492308  |
| 40        | 344,492    | 342,285    | -2,207  | 0,00492308  |
| 60        | 344,498    | 342,383    | -2,115  | 0,00492308  |
| 80        | 344,48     | 342,482    | -1,999  | 0,00492308  |
| 100       | 344,486    | 342,58     | -1,906  | 0,00492308  |
| 120       | 344,49     | 342,679    | -1,811  | 0,00492308  |
| 130       | 344,493    | 342,728    | -1,765  | 0,00492308  |
| 140       | 344,487    | 342,678    | -1,809  | -0,005      |
| 160       | 344,475    | 342,578    | -1,897  | -0,005      |
| 180       | 344,462    | 342,478    | -1,984  | -0,005      |
| 200       | 344,474    | 342,378    | -2,096  | -0,005      |
| 220       | 344,54     | 342,278    | -2,262  | -0,005      |
| 230       | 344,539    | 342,228    | -2,311  | -0,005      |
| 240       | 343,695    | 341,893    | -1,802  | -0,0334811  |
| 260       | 342,975    | 341,224    | -1,751  | -0,0334811  |
| 280       | 342,306    | 340,554    | -1,752  | -0,0334811  |
| 283,463   | 342,203    | 340,438    | -1,765  | -0,0334811  |
| 300       | 342,1      | 340,276    | -1,824  | -0,00981856 |
| 320       | 341,806    | 340,079    | -1,727  | -0,00981856 |
| 340       | 341,561    | 339,883    | -1,678  | -0,00981856 |
| 345,081   | 341,532    | 339,833    | -1,699  | -0,00981856 |
| 360       | 341,472    | 339,059    | -2,413  | -0,05185809 |
| 380       | 340,01     | 338,022    | -1,988  | -0,05185809 |
| 381,893   | 339,599    | 337,924    | -1,675  | -0,05185809 |
| 400       | 339,377    | 337,348    | -2,029  | -0,03183711 |
| 420       | 338,592    | 336,711    | -1,881  | -0,03183711 |
| 440       | 338,191    | 336,074    | -2,117  | -0,03183711 |
| 460       | 337,259    | 335,437    | -1,822  | -0,03183711 |
| 480       | 337,25     | 334,801    | -2,45   | -0,03183711 |
| 485,42    | 336,482    | 334,628    | -1,854  | -0,03183711 |

|          |         |         |        |             |
|----------|---------|---------|--------|-------------|
| 500      | 336,418 | 334,516 | -1,902 | -0,00770475 |
| 520      | 336,181 | 334,362 | -1,82  | -0,00770475 |
| 540      | 335,824 | 334,207 | -1,617 | -0,00770475 |
| 560      | 335,807 | 334,053 | -1,754 | -0,00770475 |
| 580      | 335,791 | 333,899 | -1,892 | -0,00770475 |
| 600      | 335,758 | 333,745 | -2,013 | -0,00770475 |
| 620      | 335,472 | 333,591 | -1,881 | -0,00770475 |
| 640      | 335,113 | 333,437 | -1,676 | -0,00770475 |
| 660      | 335,526 | 333,446 | -2,08  | 0,00047231  |
| 680      | 335,405 | 333,456 | -1,949 | 0,00047231  |
| 700      | 335,285 | 333,465 | -1,82  | 0,00047231  |
| 711,986  | 335,167 | 333,471 | -1,696 | 0,00047231  |
| 720      | 335,12  | 333,429 | -1,691 | -0,0052937  |
| 740      | 335,003 | 333,323 | -1,68  | -0,0052937  |
| 760      | 334,919 | 333,217 | -1,702 | -0,0052937  |
| 780      | 334,736 | 333,111 | -1,625 | -0,0052937  |
| 800      | 334,703 | 333,005 | -1,698 | -0,0052937  |
| 820      | 334,56  | 332,899 | -1,661 | -0,0052937  |
| 840      | 334,416 | 332,793 | -1,623 | -0,0052937  |
| 860      | 334,376 | 332,687 | -1,689 | -0,0052937  |
| 880      | 334,387 | 332,582 | -1,805 | -0,0052937  |
| 900      | 334,41  | 332,476 | -1,935 | -0,0052937  |
| 920      | 334,344 | 332,37  | -1,974 | -0,0052937  |
| 940      | 334,25  | 332,264 | -1,986 | -0,0052937  |
| 947,36   | 334,259 | 332,225 | -2,034 | -0,0052937  |
| 960      | 334,192 | 332,263 | -1,929 | 0,00299756  |
| 980      | 334,179 | 332,323 | -1,856 | 0,00299756  |
| 1000     | 334,068 | 332,383 | -1,685 | 0,00299756  |
| 1020     | 333,98  | 332,443 | -1,538 | 0,00299756  |
| 1031,762 | 334,028 | 332,478 | -1,55  | 0,00299756  |

### R1B-9-11

| Distancia | C. Terreno | C. Rasante | C. Roja | Pendiente  |
|-----------|------------|------------|---------|------------|
| 0         | 351,202    | 348,825    | -2,377  | 0,02233026 |
| 20        | 351,924    | 349,272    | -2,653  | 0,02233026 |
| 35,378    | 351,58     | 349,615    | -1,965  | 0,02233026 |
| 40        | 351,804    | 349,629    | -2,175  | 0,00300162 |
| 60        | 352,003    | 349,689    | -2,314  | 0,00300162 |
| 80        | 352,193    | 349,749    | -2,444  | 0,00300162 |
| 100       | 352,141    | 349,809    | -2,332  | 0,00300162 |
| 120       | 352,202    | 349,869    | -2,333  | 0,00300162 |
| 140       | 352,32     | 349,929    | -2,391  | 0,00300162 |
| 160       | 352,463    | 349,989    | -2,474  | 0,00300162 |
| 180       | 352,376    | 350,049    | -2,327  | 0,00300162 |
| 200       | 352,382    | 350,109    | -2,273  | 0,00300162 |
| 220       | 352,368    | 350,169    | -2,199  | 0,00300162 |
| 240       | 352,344    | 350,229    | -2,115  | 0,00300162 |
| 260       | 352,339    | 350,289    | -2,05   | 0,00300162 |
| 280       | 352,312    | 350,349    | -1,963  | 0,00300162 |

|                |         |         |        |             |
|----------------|---------|---------|--------|-------------|
| <b>300</b>     | 352,339 | 350,409 | -1,93  | 0,00300162  |
| <b>320</b>     | 352,309 | 350,469 | -1,84  | 0,00300162  |
| <b>340</b>     | 352,355 | 350,529 | -1,825 | 0,00300162  |
| <b>352,207</b> | 352,37  | 350,566 | -1,804 | 0,00300162  |
| <b>360</b>     | 352,394 | 350,015 | -2,379 | -0,07065626 |
| <b>380</b>     | 350,488 | 348,602 | -1,885 | -0,07065626 |
| <b>400</b>     | 349,177 | 347,189 | -1,988 | -0,07065626 |
| <b>420</b>     | 347,959 | 345,776 | -2,183 | -0,07065626 |
| <b>440</b>     | 347,547 | 345,5   | -2,047 | -0,01380662 |
| <b>460</b>     | 347,158 | 345,224 | -1,934 | -0,01380662 |
| <b>480</b>     | 346,854 | 344,948 | -1,906 | -0,01380662 |
| <b>488,373</b> | 346,637 | 344,832 | -1,805 | -0,01380662 |
| <b>500</b>     | 346,904 | 344,774 | -2,13  | -0,00499853 |
| <b>520</b>     | 346,707 | 344,674 | -2,033 | -0,00499853 |
| <b>540</b>     | 346,423 | 344,574 | -1,849 | -0,00499853 |
| <b>560</b>     | 346,618 | 344,474 | -2,144 | -0,00499853 |
| <b>580</b>     | 346,441 | 344,374 | -2,067 | -0,00499853 |
| <b>600</b>     | 345,3   | 343,283 | -2,017 | -0,05456    |
| <b>620</b>     | 344,21  | 342,192 | -2,018 | -0,05456    |
| <b>630</b>     | 343,719 | 341,646 | -2,073 | -0,05456    |
| <b>640</b>     | 343,457 | 341,301 | -2,156 | -0,03450107 |
| <b>660</b>     | 342,747 | 340,611 | -2,136 | -0,03450107 |
| <b>677,071</b> | 341,827 | 340,022 | -1,805 | -0,03450107 |
| <b>680</b>     | 341,824 | 339,932 | -1,893 | -0,0308665  |
| <b>700</b>     | 341,523 | 339,314 | -2,209 | -0,0308665  |
| <b>717,244</b> | 340,587 | 338,782 | -1,805 | -0,0308665  |
| <b>720</b>     | 340,607 | 338,765 | -1,842 | -0,0061065  |
| <b>740</b>     | 340,553 | 338,643 | -1,91  | -0,0061065  |
| <b>760</b>     | 340,519 | 338,521 | -1,998 | -0,0061065  |
| <b>780</b>     | 340,555 | 338,399 | -2,156 | -0,0061065  |
| <b>800</b>     | 340,518 | 338,277 | -2,242 | -0,0061065  |
| <b>820</b>     | 340,504 | 338,155 | -2,349 | -0,0061065  |
| <b>840</b>     | 340,482 | 338,032 | -2,449 | -0,0061065  |
| <b>860</b>     | 340,375 | 337,91  | -2,465 | -0,0061065  |
| <b>880</b>     | 339,754 | 337,788 | -1,966 | -0,0061065  |
| <b>900</b>     | 339,471 | 337,666 | -1,805 | -0,0061065  |
| <b>920</b>     | 339,413 | 337,529 | -1,885 | -0,00687273 |
| <b>940</b>     | 339,386 | 337,391 | -1,995 | -0,00687273 |
| <b>960</b>     | 339,338 | 337,254 | -2,084 | -0,00687273 |
| <b>980</b>     | 339,221 | 337,116 | -2,105 | -0,00687273 |
| <b>1000</b>    | 338,846 | 336,979 | -1,868 | -0,00687273 |
| <b>1010</b>    | 338,838 | 336,91  | -1,928 | -0,00687273 |
| <b>1020</b>    | 338,818 | 336,829 | -1,989 | -0,00808784 |
| <b>1040</b>    | 338,846 | 336,667 | -2,179 | -0,00808784 |
| <b>1060</b>    | 338,77  | 336,506 | -2,264 | -0,00808784 |
| <b>1080</b>    | 338,547 | 336,344 | -2,203 | -0,00808784 |
| <b>1084,68</b> | 338,159 | 336,306 | -1,853 | -0,00808784 |
| <b>1100</b>    | 338,077 | 336,229 | -1,847 | -0,00499676 |
| <b>1120</b>    | 337,975 | 336,13  | -1,846 | -0,00499676 |
| <b>1140</b>    | 337,94  | 336,03  | -1,911 | -0,00499676 |
| <b>1160</b>    | 337,961 | 335,93  | -2,031 | -0,00499676 |

|                 |                |                |               |                    |
|-----------------|----------------|----------------|---------------|--------------------|
| 1180            | 338,056        | 335,83         | -2,226        | -0,00499676        |
| 1200            | 337,949        | 335,73         | -2,22         | -0,00499676        |
| 1220            | 337,556        | 335,63         | -1,926        | -0,00499676        |
| 1240            | 337,542        | 335,53         | -2,012        | -0,00499676        |
| 1260            | 337,509        | 335,43         | -2,079        | -0,00499676        |
| 1270            | 337,381        | 335,38         | -2,001        | -0,00499676        |
| 1280            | 337,067        | 335,275        | -1,792        | -0,01053851        |
| 1300            | 337,067        | 335,064        | -2,003        | -0,01053851        |
| 1320            | 337,036        | 334,853        | -2,183        | -0,01053851        |
| 1340            | 336,477        | 334,642        | -1,835        | -0,01053851        |
| 1360            | 336,423        | 334,432        | -1,992        | -0,01053851        |
| 1380            | 336,441        | 334,221        | -2,22         | -0,01053851        |
| <b>1392,598</b> | <b>335,943</b> | <b>334,088</b> | <b>-1,855</b> | <b>-0,01053851</b> |
| 1400            | 336,165        | 334,026        | -2,14         | -0,00843699        |
| 1420            | 336,038        | 333,857        | -2,181        | -0,00843699        |
| 1440            | 335,829        | 333,688        | -2,141        | -0,00843699        |
| 1460            | 335,531        | 333,519        | -2,012        | -0,00843699        |
| 1480            | 335,447        | 333,351        | -2,097        | -0,00843699        |
| 1500            | 335,114        | 333,182        | -1,933        | -0,00843699        |
| 1520            | 335,19         | 333,013        | -2,177        | -0,00843699        |
| 1540            | 335,105        | 332,844        | -2,26         | -0,00843699        |
| <b>1549,763</b> | <b>334,567</b> | <b>332,762</b> | <b>-1,805</b> | <b>-0,00843699</b> |
| 1560            | 334,656        | 332,49         | -2,167        | -0,02659395        |
| 1580            | 334,46         | 331,958        | -2,502        | -0,02659395        |
| 1600            | 333,279        | 331,426        | -1,853        | -0,02659395        |
| 1620            | 333,245        | 331,315        | -1,93         | -0,00555556        |
| 1640            | 333,27         | 331,204        | -2,067        | -0,00555556        |
| 1660            | 333,249        | 331,093        | -2,156        | -0,00555556        |
| 1680            | 333,257        | 330,982        | -2,275        | -0,00555556        |
| 1690            | 333,241        | 330,926        | -2,315        | -0,00555556        |
| 1700            | 333,243        | 330,96         | -2,283        | 0,00338302         |
| 1720            | 333,242        | 331,027        | -2,215        | 0,00338302         |
| 1740            | 333,245        | 331,095        | -2,15         | 0,00338302         |
| 1760            | 333,251        | 331,163        | -2,089        | 0,00338302         |
| 1780            | 333,238        | 331,23         | -2,007        | 0,00338302         |
| 1800            | 333,233        | 331,298        | -1,935        | 0,00338302         |
| 1820            | 333,204        | 331,366        | -1,839        | 0,00338302         |
| <b>1822,426</b> | <b>333,179</b> | <b>331,374</b> | <b>-1,805</b> | <b>0,00338302</b>  |
| 1840            | 332,854        | 331,018        | -1,836        | -0,02027998        |
| 1860            | 332,861        | 330,612        | -2,249        | -0,02027998        |
| 1880            | 332,836        | 330,672        | -2,164        | 0,00298821         |
| 1900            | 332,838        | 330,732        | -2,107        | 0,00298821         |
| 1920            | 332,783        | 330,791        | -1,991        | 0,00298821         |
| 1940            | 332,771        | 330,851        | -1,92         | 0,00298821         |
| 1960            | 332,808        | 330,911        | -1,897        | 0,00298821         |
| 1980            | 332,767        | 330,971        | -1,796        | 0,00298821         |
| <b>1998,21</b>  | <b>332,637</b> | <b>331,025</b> | <b>-1,612</b> | <b>0,00298821</b>  |
| 2000            | 332,611        | 330,856        | -1,755        | -0,09448641        |
| 2020            | 330,804        | 328,966        | -1,838        | -0,09448641        |
| <b>2020,319</b> | <b>330,748</b> | <b>328,936</b> | <b>-1,812</b> | <b>-0,09448641</b> |
| 2040            | 330,485        | 328,838        | -1,647        | -0,00499746        |

|          |         |         |        |             |
|----------|---------|---------|--------|-------------|
| 2060     | 330,486 | 328,738 | -1,748 | -0,00499746 |
| 2080     | 330,433 | 328,638 | -1,795 | -0,00499746 |
| 2100     | 330,401 | 328,538 | -1,863 | -0,00499746 |
| 2120     | 330,464 | 328,438 | -2,026 | -0,00499746 |
| 2140     | 330,4   | 328,338 | -2,062 | -0,00499746 |
| 2160     | 330,4   | 328,238 | -2,162 | -0,00499746 |
| 2180     | 330,353 | 328,138 | -2,215 | -0,00499746 |
| 2200     | 329,583 | 327,668 | -1,915 | -0,02349368 |
| 2202,389 | 329,377 | 327,612 | -1,765 | -0,02349368 |
| 2220     | 329,546 | 327,491 | -2,054 | -0,00685247 |
| 2240     | 329,393 | 327,354 | -2,039 | -0,00685247 |
| 2260     | 329,378 | 327,217 | -2,161 | -0,00685247 |
| 2280     | 329,367 | 327,08  | -2,286 | -0,00685247 |
| 2300     | 329,319 | 326,943 | -2,376 | -0,00685247 |
| 2320     | 329,337 | 326,806 | -2,531 | -0,00685247 |
| 2340     | 328,533 | 326,669 | -1,864 | -0,00685247 |
| 2360     | 328,35  | 326,532 | -1,818 | -0,00685247 |
| 2380     | 328,37  | 326,395 | -1,975 | -0,00685247 |
| 2400     | 328,401 | 326,258 | -2,143 | -0,00685247 |
| 2420     | 328,058 | 326,121 | -1,937 | -0,00685247 |
| 2440     | 328,087 | 325,984 | -2,103 | -0,00685247 |
| 2460     | 328,056 | 325,847 | -2,209 | -0,00685247 |
| 2480     | 328,05  | 325,71  | -2,34  | -0,00685247 |
| 2500     | 327,533 | 325,573 | -1,961 | -0,00685247 |
| 2520     | 327,334 | 325,436 | -1,899 | -0,00685247 |
| 2525,484 | 327,367 | 325,398 | -1,969 | -0,00685247 |
| 2540     | 327,353 | 325,442 | -1,911 | 0,00300535  |
| 2560     | 327,282 | 325,502 | -1,781 | 0,00300535  |
| 2580     | 327,291 | 325,562 | -1,73  | 0,00300535  |
| 2600     | 327,293 | 325,622 | -1,671 | 0,00300535  |
| 2610     | 327,344 | 325,652 | -1,692 | 0,00300535  |
| 2620     | 327,32  | 325,411 | -1,909 | -0,02410762 |
| 2640     | 327,304 | 324,929 | -2,375 | -0,02410762 |
| 2660     | 327,289 | 324,447 | -2,842 | -0,02410762 |
| 2673,258 | 326,011 | 324,127 | -1,884 | -0,02410762 |
| 2680     | 325,999 | 324,147 | -1,852 | 0,00299863  |
| 2700     | 325,999 | 324,207 | -1,792 | 0,00299863  |
| 2720     | 325,988 | 324,267 | -1,721 | 0,00299863  |
| 2740     | 325,993 | 324,327 | -1,666 | 0,00299863  |
| 2753,628 | 326,018 | 324,368 | -1,65  | 0,00299863  |
| 2760     | 325,998 | 324,178 | -1,82  | -0,02979922 |
| 2780     | 326,096 | 323,582 | -2,514 | -0,02979922 |
| 2797,656 | 324,706 | 323,056 | -1,65  | -0,02979922 |
| 2800     | 324,885 | 323,125 | -1,76  | 0,02930758  |
| 2820     | 325,873 | 323,711 | -2,162 | 0,02930758  |
| 2840     | 325,872 | 324,297 | -1,575 | 0,02930758  |
| 2860     | 325,859 | 324,11  | -1,749 | -0,00936    |
| 2880     | 325,875 | 323,923 | -1,952 | -0,00936    |
| 2900     | 325,879 | 323,735 | -2,144 | -0,00936    |
| 2920     | 325,816 | 323,548 | -2,268 | -0,00936    |
| 2940     | 325,048 | 323,361 | -1,687 | -0,00936    |

|          |         |         |        |             |
|----------|---------|---------|--------|-------------|
| 2960     | 324,874 | 323,089 | -1,785 | -0,01358333 |
| 2980     | 324,975 | 322,818 | -2,158 | -0,01358333 |
| 3000     | 324,376 | 322,546 | -1,83  | -0,01358333 |
| 3020     | 324,421 | 322,61  | -1,811 | 0,00321946  |
| 3040     | 324,413 | 322,675 | -1,738 | 0,00321946  |
| 3060     | 324,405 | 322,739 | -1,665 | 0,00321946  |
| 3080     | 324,455 | 322,804 | -1,652 | 0,00321946  |
| 3099,085 | 324,44  | 322,865 | -1,575 | 0,00321946  |
| 3100     | 324,585 | 322,879 | -1,707 | 0,01490006  |
| 3120     | 325,319 | 323,177 | -2,143 | 0,01490006  |
| 3140     | 325,416 | 323,475 | -1,942 | 0,01490006  |
| 3160     | 325,38  | 323,773 | -1,608 | 0,01490006  |
| 3164,521 | 325,415 | 323,84  | -1,575 | 0,01490006  |
| 3180     | 327,853 | 324,108 | -3,744 | 0,01734408  |
| 3200     | 327,964 | 324,455 | -3,509 | 0,01734408  |
| 3220     | 328,059 | 324,802 | -3,257 | 0,01734408  |
| 3240     | 327,48  | 325,149 | -2,33  | 0,01734408  |
| 3255,849 | 326,999 | 325,424 | -1,575 | 0,01734408  |

#### R1B-9-12

| Distancia | C. Terreno | C. Rasante | C. Roja | Pendiente   |
|-----------|------------|------------|---------|-------------|
| 0         | 331,627    | 329,718    | -1,909  | 0,00330457  |
| 20        | 331,536    | 329,784    | -1,752  | 0,00330457  |
| 40        | 331,768    | 329,85     | -1,918  | 0,00330457  |
| 60        | 332,04     | 329,916    | -2,123  | 0,00330457  |
| 80        | 331,839    | 329,982    | -1,857  | 0,00330457  |
| 90        | 331,715    | 330,015    | -1,7    | 0,00330457  |
| 100       | 331,61     | 329,464    | -2,146  | -0,05519025 |
| 120       | 331,013    | 328,36     | -2,653  | -0,05519025 |
| 140       | 329,314    | 327,256    | -2,058  | -0,05519025 |
| 145,905   | 328,63     | 326,93     | -1,7    | -0,05519025 |
| 160       | 328,596    | 326,646    | -1,95   | -0,0201287  |
| 180       | 328,47     | 326,244    | -2,226  | -0,0201287  |
| 200       | 326,594    | 324,85     | -1,744  | -0,069677   |
| 204,48    | 326,291    | 324,538    | -1,753  | -0,069677   |
| 220       | 326,954    | 324,89     | -2,064  | 0,0226713   |
| 236,899   | 326,973    | 325,273    | -1,7    | 0,0226713   |
| 240       | 327,379    | 325,336    | -2,043  | 0,02021434  |
| 260       | 327,676    | 325,74     | -1,936  | 0,02021434  |
| 275,436   | 327,752    | 326,052    | -1,7    | 0,02021434  |
| 280       | 328,04     | 326,083    | -1,957  | 0,00686382  |
| 300       | 328,487    | 326,221    | -2,266  | 0,00686382  |
| 312,733   | 328,008    | 326,308    | -1,7    | 0,00686382  |
| 320       | 328,655    | 326,372    | -2,283  | 0,00876598  |
| 340       | 328,731    | 326,547    | -2,184  | 0,00876598  |
| 360       | 328,76     | 326,722    | -2,038  | 0,00876598  |
| 380       | 328,845    | 326,898    | -1,947  | 0,00876598  |
| 400       | 328,958    | 327,073    | -1,885  | 0,00876598  |
| 415,859   | 328,962    | 327,212    | -1,75   | 0,00876598  |

|         |         |         |        |            |
|---------|---------|---------|--------|------------|
| 420     | 329,47  | 327,309 | -2,16  | 0,02352436 |
| 440     | 329,842 | 327,78  | -2,062 | 0,02352436 |
| 450     | 329,899 | 328,015 | -1,884 | 0,02352436 |
| 460     | 329,873 | 328,048 | -1,825 | 0,00326023 |
| 480     | 329,931 | 328,113 | -1,818 | 0,00326023 |
| 500     | 329,943 | 328,178 | -1,765 | 0,00326023 |
| 520     | 329,981 | 328,243 | -1,737 | 0,00326023 |
| 540     | 330,051 | 328,309 | -1,742 | 0,00326023 |
| 560     | 330,162 | 328,374 | -1,788 | 0,00326023 |
| 565,285 | 330,001 | 328,391 | -1,61  | 0,00326023 |

### R1B-9-13

| Distancia | C. Terreno | C. Rasante | C. Roja | Pendiente   |
|-----------|------------|------------|---------|-------------|
| 0         | 346,7      | 342,542    | -4,158  | 0,11275     |
| 20        | 346,609    | 344,797    | -1,812  | 0,11275     |
| 40        | 346,517    | 344,695    | -1,822  | -0,00510721 |
| 60        | 346,416    | 344,593    | -1,823  | -0,00510721 |
| 65,426    | 346,37     | 344,565    | -1,805  | -0,00510721 |
| 80        | 346,288    | 344,491    | -1,797  | -0,00510795 |
| 100       | 346,204    | 344,388    | -1,816  | -0,00510795 |
| 120       | 346,189    | 344,286    | -1,903  | -0,00510795 |
| 140       | 346,101    | 344,184    | -1,917  | -0,00510795 |
| 150       | 345,964    | 344,133    | -1,831  | -0,00510795 |
| 160       | 345,945    | 343,853    | -2,093  | -0,02802932 |
| 180       | 345,851    | 343,292    | -2,559  | -0,02802932 |
| 187,104   | 344,898    | 343,093    | -1,805  | -0,02802932 |
| 200       | 344,963    | 343,028    | -1,935  | -0,00506505 |
| 220       | 345,01     | 342,926    | -2,084  | -0,00506505 |
| 240       | 345,007    | 342,825    | -2,182  | -0,00506505 |
| 260       | 344,962    | 342,724    | -2,238  | -0,00506505 |
| 280       | 344,888    | 342,622    | -2,266  | -0,00506505 |
| 300       | 344,802    | 342,521    | -2,281  | -0,00506505 |
| 320       | 344,734    | 342,42     | -2,314  | -0,00506505 |
| 340       | 344,664    | 342,319    | -2,346  | -0,00506505 |
| 348,208   | 344,632    | 342,277    | -2,355  | -0,00506505 |
| 360       | 344,605    | 342,347    | -2,258  | 0,00590228  |
| 380       | 344,518    | 342,465    | -2,053  | 0,00590228  |
| 400       | 344,467    | 342,583    | -1,884  | 0,00590228  |
| 406,66    | 344,436    | 342,622    | -1,814  | 0,00590228  |
| 420       | 344,384    | 342,555    | -1,829  | -0,00499743 |
| 440       | 344,322    | 342,455    | -1,867  | -0,00499743 |
| 460       | 344,346    | 342,355    | -1,991  | -0,00499743 |
| 480       | 344,55     | 342,255    | -2,295  | -0,00499743 |
| 500       | 344,515    | 342,156    | -2,359  | -0,00499743 |
| 520       | 344,5      | 342,056    | -2,444  | -0,00499743 |
| 540       | 344,406    | 341,956    | -2,451  | -0,00499743 |
| 560       | 344,189    | 341,856    | -2,333  | -0,00499743 |
| 580       | 343,989    | 341,756    | -2,234  | -0,00499743 |
| 587,753   | 344,077    | 341,717    | -2,36   | -0,00499743 |

|          |         |         |        |             |
|----------|---------|---------|--------|-------------|
| 600      | 344,034 | 341,635 | -2,399 | -0,00665649 |
| 620      | 343,713 | 341,502 | -2,211 | -0,00665649 |
| 640      | 343,697 | 341,369 | -2,327 | -0,00665649 |
| 660      | 343,674 | 341,236 | -2,438 | -0,00665649 |
| 680      | 343,579 | 341,103 | -2,476 | -0,00665649 |
| 700      | 343,341 | 340,97  | -2,371 | -0,00665649 |
| 720      | 343,369 | 340,837 | -2,533 | -0,00665649 |
| 740      | 343,268 | 340,704 | -2,565 | -0,00665649 |
| 760      | 343,038 | 340,57  | -2,468 | -0,00665649 |
| 780      | 342,406 | 340,437 | -1,969 | -0,00665649 |
| 800      | 342,259 | 340,304 | -1,955 | -0,00665649 |
| 820      | 342,181 | 340,171 | -2,01  | -0,00665649 |
| 840      | 341,93  | 340,038 | -1,892 | -0,00665649 |
| 852,457  | 341,72  | 339,955 | -1,765 | -0,00665649 |
| 860      | 341,853 | 339,917 | -1,936 | -0,00500422 |
| 880      | 341,758 | 339,817 | -1,941 | -0,00500422 |
| 900      | 341,738 | 339,717 | -2,02  | -0,00500422 |
| 920      | 341,728 | 339,617 | -2,111 | -0,00500422 |
| 940      | 341,711 | 339,685 | -2,026 | 0,00338889  |
| 960      | 341,697 | 339,753 | -1,945 | 0,00338889  |
| 980      | 341,651 | 339,82  | -1,83  | 0,00338889  |
| 1000     | 341,584 | 339,888 | -1,696 | 0,00338889  |
| 1010     | 341,678 | 339,922 | -1,756 | 0,00338889  |
| 1020     | 341,614 | 339,525 | -2,089 | -0,03967136 |
| 1040     | 341,596 | 338,732 | -2,864 | -0,03967136 |
| 1060     | 341,776 | 337,938 | -3,838 | -0,03967136 |
| 1068,909 | 339,235 | 337,585 | -1,65  | -0,03967136 |
| 1080     | 340,653 | 337,894 | -2,758 | 0,02788932  |
| 1100     | 340,344 | 338,452 | -1,892 | 0,02788932  |
| 1110     | 340,321 | 338,731 | -1,59  | 0,02788932  |
| 1120     | 340,273 | 338,681 | -1,592 | -0,005      |
| 1140     | 340,2   | 338,581 | -1,619 | -0,005      |
| 1160     | 340,112 | 338,481 | -1,631 | -0,005      |
| 1180     | 340,038 | 338,381 | -1,657 | -0,005      |
| 1200     | 339,862 | 338,281 | -1,581 | -0,005      |
| 1220     | 339,87  | 338,181 | -1,689 | -0,005      |
| 1240     | 340,111 | 338,081 | -2,03  | -0,005      |
| 1260     | 340,085 | 337,981 | -2,104 | -0,005      |
| 1280     | 340,041 | 336,836 | -3,205 | -0,05723607 |
| 1294,943 | 337,571 | 335,981 | -1,59  | -0,05723607 |
| 1300     | 338,133 | 336,283 | -1,85  | 0,05973842  |
| 1311,917 | 338,585 | 336,995 | -1,59  | 0,05973842  |

### R1B-9-15

| Distancia | C. Terreno | C. Rasante | C. Roja | Pendiente   |
|-----------|------------|------------|---------|-------------|
| 0         | 344,798    | 342,088    | -2,71   | 0,02568603  |
| 20        | 344,718    | 342,602    | -2,117  | 0,02568603  |
| 30        | 344,709    | 342,859    | -1,85   | 0,02568603  |
| 40        | 344,776    | 342,618    | -2,158  | -0,02406335 |

|         |         |         |        |             |
|---------|---------|---------|--------|-------------|
| 53,204  | 344,241 | 342,3   | -1,941 | -0,02406335 |
| 60      | 344,102 | 342,226 | -1,876 | -0,0109836  |
| 80      | 344,122 | 342,006 | -2,116 | -0,0109836  |
| 90,643  | 343,739 | 341,889 | -1,85  | -0,0109836  |
| 100     | 344,111 | 340,969 | -3,142 | -0,09834853 |
| 114,985 | 341,345 | 339,495 | -1,85  | -0,09834853 |
| 120     | 341,358 | 339,362 | -1,996 | -0,0265157  |
| 140     | 341,351 | 338,832 | -2,519 | -0,0265157  |
| 156,583 | 340,242 | 338,392 | -1,85  | -0,0265157  |
| 160     | 340,287 | 338,329 | -1,958 | -0,01835919 |
| 180     | 340,321 | 337,962 | -2,359 | -0,01835919 |
| 199,123 | 339,461 | 337,611 | -1,85  | -0,01835919 |
| 200     | 339,462 | 337,604 | -1,858 | -0,00759752 |
| 220     | 339,475 | 337,452 | -2,022 | -0,00759752 |
| 240     | 339,481 | 337,3   | -2,18  | -0,00759752 |
| 260     | 338,998 | 337,148 | -1,85  | -0,00759752 |
| 280     | 338,977 | 336,925 | -2,052 | -0,01116932 |
| 300     | 338,925 | 336,702 | -2,224 | -0,01116932 |
| 320     | 338,457 | 336,478 | -1,978 | -0,01116932 |
| 320,656 | 338,321 | 336,471 | -1,85  | -0,01116932 |
| 332,604 | 336,926 | 335,076 | -1,85  | -0,11675594 |
| 340     | 337,982 | 335,119 | -2,862 | 0,00583711  |
| 360     | 337,994 | 335,236 | -2,758 | 0,00583711  |
| 380     | 337,809 | 335,353 | -2,456 | 0,00583711  |
| 400     | 337,704 | 335,469 | -2,235 | 0,00583711  |
| 420     | 337,511 | 335,586 | -1,924 | 0,00583711  |
| 440     | 337,553 | 335,703 | -1,85  | 0,00583711  |
| 450     | 337,611 | 335,761 | -1,85  | 0,00583711  |
| 460     | 337,635 | 335,676 | -1,959 | -0,00849909 |
| 480     | 337,766 | 335,506 | -2,26  | -0,00849909 |
| 500     | 337,755 | 335,336 | -2,418 | -0,00849909 |
| 520     | 337,067 | 335,166 | -1,901 | -0,00849909 |
| 540     | 336,955 | 334,996 | -1,959 | -0,00849909 |
| 560     | 336,976 | 334,826 | -2,15  | -0,00849909 |
| 580     | 336,944 | 334,656 | -2,288 | -0,00849909 |
| 600     | 336,853 | 334,486 | -2,367 | -0,00849909 |
| 620     | 336,774 | 334,316 | -2,458 | -0,00849909 |
| 640     | 336,133 | 334,146 | -1,986 | -0,00849909 |
| 650     | 335,916 | 334,061 | -1,855 | -0,00849909 |
| 660     | 335,882 | 334,011 | -1,87  | -0,005      |
| 680     | 335,884 | 333,911 | -1,972 | -0,005      |
| 700     | 335,834 | 333,811 | -2,023 | -0,005      |
| 720     | 335,698 | 333,711 | -1,987 | -0,005      |
| 740     | 335,707 | 333,611 | -2,096 | -0,005      |
| 760     | 335,738 | 333,511 | -2,226 | -0,005      |
| 780     | 335,549 | 333,411 | -2,137 | -0,005      |
| 790     | 335,401 | 333,361 | -2,04  | -0,005      |
| 800     | 334,978 | 332,841 | -2,137 | -0,05205605 |
| 820     | 333,816 | 331,8   | -2,016 | -0,05205605 |
| 826,738 | 333,214 | 331,449 | -1,765 | -0,05205605 |
| 840     | 334,1   | 332,017 | -2,083 | 0,04281955  |

|          |         |         |        |             |
|----------|---------|---------|--------|-------------|
| 860      | 335,904 | 332,873 | -3,03  | 0,04281955  |
| 880      | 335,495 | 333,73  | -1,765 | 0,04281955  |
| 900      | 334,612 | 332,801 | -1,811 | -0,0464279  |
| 910      | 334,222 | 332,337 | -1,885 | -0,0464279  |
| 920      | 333,991 | 331,975 | -2,016 | -0,03623146 |
| 940      | 333,877 | 331,25  | -2,628 | -0,03623146 |
| 960      | 332,406 | 330,525 | -1,881 | -0,03623146 |
| 980      | 332,136 | 330,361 | -1,775 | -0,00821156 |
| 1000     | 331,981 | 330,197 | -1,784 | -0,00821156 |
| 1020     | 331,909 | 330,033 | -1,876 | -0,00821156 |
| 1040     | 331,811 | 329,868 | -1,942 | -0,00821156 |
| 1060     | 331,713 | 329,704 | -2,009 | -0,00821156 |
| 1080     | 331,588 | 329,54  | -2,048 | -0,00821156 |
| 1100     | 331,46  | 329,376 | -2,084 | -0,00821156 |
| 1120     | 330,925 | 328,981 | -1,944 | -0,0197241  |
| 1140     | 330,401 | 328,587 | -1,814 | -0,0197241  |
| 1160     | 330,058 | 328,192 | -1,866 | -0,0197241  |
| 1180     | 329,754 | 327,798 | -1,956 | -0,0197241  |
| 1200     | 329,425 | 327,403 | -2,022 | -0,0197241  |
| 1220     | 329,203 | 326,165 | -3,038 | -0,06191779 |
| 1232,369 | 327,164 | 325,399 | -1,765 | -0,06191779 |
| 1240     | 327,08  | 325,251 | -1,829 | -0,01937462 |
| 1250     | 327,008 | 325,057 | -1,951 | -0,01937462 |
| 1260     | 326,948 | 325,007 | -1,94  | -0,005      |
| 1280     | 326,983 | 324,907 | -2,076 | -0,005      |
| 1300     | 326,902 | 324,807 | -2,095 | -0,005      |
| 1320     | 326,962 | 324,707 | -2,255 | -0,005      |
| 1340     | 326,974 | 324,607 | -2,367 | -0,005      |
| 1360     | 326,843 | 324,507 | -2,336 | -0,005      |
| 1380     | 326,614 | 324,407 | -2,207 | -0,005      |
| 1400     | 325,596 | 323,761 | -1,835 | -0,03230585 |
| 1420     | 325,4   | 323,661 | -1,738 | -0,005      |
| 1440     | 325,36  | 323,561 | -1,798 | -0,005      |
| 1460     | 325,338 | 323,461 | -1,876 | -0,005      |
| 1475,238 | 325,434 | 323,385 | -2,049 | -0,005      |
| 1480     | 325,469 | 323,128 | -2,34  | -0,05388891 |
| 1500     | 324,414 | 322,051 | -2,363 | -0,05388891 |
| 1503,669 | 323,553 | 321,853 | -1,7   | -0,05388891 |
| 1520     | 323,938 | 321,902 | -2,036 | 0,003       |
| 1540     | 323,804 | 321,962 | -1,842 | 0,003       |
| 1560     | 323,642 | 321,804 | -1,838 | -0,00788726 |
| 1580     | 323,484 | 321,647 | -1,838 | -0,00788726 |
| 1600     | 323,318 | 321,489 | -1,829 | -0,00788726 |
| 1620     | 323,122 | 321,331 | -1,791 | -0,00788726 |
| 1640     | 323,005 | 321,173 | -1,831 | -0,00788726 |
| 1660     | 322,857 | 321,016 | -1,841 | -0,00788726 |
| 1680     | 322,731 | 320,858 | -1,873 | -0,00788726 |
| 1700     | 322,679 | 320,7   | -1,979 | -0,00788726 |
| 1720     | 322,63  | 320,542 | -2,088 | -0,00788726 |
| 1740     | 322,571 | 320,385 | -2,186 | -0,00788726 |
| 1760     | 322,496 | 320,227 | -2,27  | -0,00788726 |

|          |         |         |        |             |
|----------|---------|---------|--------|-------------|
| 1776,076 | 321,8   | 320,1   | -1,7   | -0,00788726 |
| 1780     | 321,841 | 320,051 | -1,79  | -0,01242621 |
| 1800     | 321,568 | 319,803 | -1,765 | -0,01242621 |
| 1814,475 | 321,54  | 319,623 | -1,917 | -0,01242621 |
| 1820     | 321,482 | 319,639 | -1,842 | 0,003       |
| 1840     | 321,555 | 319,699 | -1,856 | 0,003       |
| 1850     | 321,69  | 319,729 | -1,961 | 0,003       |
| 1860     | 321,925 | 320,226 | -1,699 | 0,04966071  |
| 1880     | 322,986 | 321,219 | -1,766 | 0,04966071  |
| 1900     | 324,223 | 322,212 | -2,011 | 0,04966071  |
| 1920     | 325,478 | 323,206 | -2,272 | 0,04966071  |
| 1940     | 325,427 | 323,366 | -2,061 | 0,00802338  |
| 1960     | 325,6   | 323,527 | -2,073 | 0,00802338  |
| 1974,167 | 325,433 | 323,64  | -1,793 | 0,00802338  |
| 1980     | 325,799 | 324,008 | -1,792 | 0,06298003  |
| 2000     | 327,236 | 325,267 | -1,969 | 0,06298003  |
| 2020     | 328,47  | 326,527 | -1,944 | 0,06298003  |
| 2040     | 329,687 | 327,786 | -1,901 | 0,06298003  |
| 2060     | 330,082 | 328,232 | -1,85  | 0,02228549  |
| 2080     | 330,574 | 328,678 | -1,896 | 0,02228549  |
| 2100     | 330,887 | 329,124 | -1,763 | 0,02228549  |
| 2113,649 | 331,509 | 329,428 | -2,081 | 0,02228549  |

### R1B-9-15-1

| Distancia | C. Terreno | C. Rasante | C. Roja | Pendiente  |
|-----------|------------|------------|---------|------------|
| 0         | 333,554    | 331,565    | -1,989  | 0,08314317 |
| 20        | 335,672    | 333,228    | -2,444  | 0,08314317 |
| 30        | 335,734    | 334,059    | -1,675  | 0,08314317 |
| 40        | 336,181    | 334,141    | -2,04   | 0,00813297 |
| 60        | 336,148    | 334,303    | -1,845  | 0,00813297 |
| 80        | 336,175    | 334,466    | -1,709  | 0,00813297 |
| 88,368    | 336,209    | 334,534    | -1,675  | 0,00813297 |
| 100       | 336,65     | 334,703    | -1,946  | 0,01456512 |
| 120       | 337,407    | 334,995    | -2,413  | 0,01456512 |
| 140       | 337,591    | 335,286    | -2,305  | 0,01456512 |
| 160       | 337,633    | 335,346    | -2,287  | 0,003      |
| 180       | 337,751    | 335,406    | -2,345  | 0,003      |
| 200       | 337,736    | 335,466    | -2,27   | 0,003      |
| 220       | 337,77     | 335,526    | -2,244  | 0,003      |
| 240       | 337,837    | 335,586    | -2,251  | 0,003      |
| 260       | 337,922    | 335,646    | -2,276  | 0,003      |
| 280       | 337,93     | 335,706    | -2,224  | 0,003      |
| 300       | 337,896    | 335,766    | -2,13   | 0,003      |
| 320       | 337,602    | 335,826    | -1,776  | 0,003      |
| 340       | 337,596    | 335,886    | -1,71   | 0,003      |
| 350,658   | 337,593    | 335,918    | -1,675  | 0,003      |
| 360       | 337,873    | 336,02     | -1,853  | 0,01093115 |
| 380       | 337,997    | 336,239    | -1,759  | 0,01093115 |
| 400       | 338,212    | 336,457    | -1,754  | 0,01093115 |

|         |         |         |        |            |
|---------|---------|---------|--------|------------|
| 410     | 338,339 | 336,567 | -1,772 | 0,01093115 |
| 420     | 338,347 | 336,633 | -1,714 | 0,00662995 |
| 440     | 338,647 | 336,766 | -1,881 | 0,00662995 |
| 460     | 338,674 | 336,898 | -1,776 | 0,00662995 |
| 480     | 338,65  | 337,031 | -1,619 | 0,00662995 |
| 497,468 | 338,879 | 337,147 | -1,732 | 0,00662995 |

### H-147

| Distancia | C. Terreno | C. Rasante | C. Roja | Pendiente  |
|-----------|------------|------------|---------|------------|
| 0         | 377,019    | 373,73     | -3,289  | 0,08707692 |
| 16,25     | 377,039    | 375,145    | -1,894  | 0,08707692 |
| 20        | 377,029    | 375,215    | -1,814  | 0,01875542 |
| 40        | 378,076    | 375,59     | -2,486  | 0,01875542 |
| 51,973    | 377,53     | 375,815    | -1,715  | 0,01875542 |

### H-173

| Distancia | C. Terreno | C. Rasante | C. Roja | Pendiente  |
|-----------|------------|------------|---------|------------|
| 0         | 398,839    | 395,707    | -3,132  | 0,16923689 |
| 10,051    | 398,968    | 397,408    | -1,56   | 0,16923689 |
| 20        | 398,948    | 397,474    | -1,475  | 0,006586   |
| 40        | 399,181    | 397,605    | -1,576  | 0,006586   |
| 60        | 399,342    | 397,737    | -1,605  | 0,006586   |
| 80        | 399,582    | 397,869    | -1,713  | 0,006586   |
| 100       | 399,662    | 398        | -1,661  | 0,006586   |
| 120       | 399,807    | 398,132    | -1,675  | 0,006586   |
| 140       | 399,949    | 398,264    | -1,685  | 0,006586   |
| 160       | 399,963    | 398,396    | -1,568  | 0,006586   |
| 167,81    | 400,008    | 398,447    | -1,561  | 0,006586   |

### H-174

| Distancia | C. Terreno | C. Rasante | C. Roja | Pendiente   |
|-----------|------------|------------|---------|-------------|
| 0         | 395,008    | 392,01     | -2,998  | 0,13347714  |
| 11,59     | 395,082    | 393,557    | -1,525  | 0,13347714  |
| 20        | 395,038    | 393,351    | -1,686  | -0,02445153 |
| 27,908    | 394,683    | 393,158    | -1,525  | -0,02445153 |
| 31,854    | 394,077    | 392,551    | -1,526  | -0,15382666 |
| 40        | 394,317    | 392,509    | -1,809  | -0,00521557 |
| 60        | 394,27     | 392,404    | -1,866  | -0,00521557 |
| 80        | 394,092    | 392,3      | -1,792  | -0,00521557 |
| 100       | 393,884    | 392,196    | -1,688  | -0,00521557 |
| 120       | 393,793    | 392,091    | -1,702  | -0,00521557 |
| 140       | 393,738    | 391,987    | -1,751  | -0,00521557 |
| 160       | 393,683    | 391,883    | -1,801  | -0,00521557 |
| 180       | 393,623    | 391,778    | -1,844  | -0,00521557 |
| 200       | 393,567    | 391,674    | -1,893  | -0,00521557 |
| 220       | 393,475    | 391,57     | -1,905  | -0,00521557 |

|         |         |         |        |             |
|---------|---------|---------|--------|-------------|
| 240     | 393,389 | 391,465 | -1,924 | -0,00521557 |
| 260     | 393,078 | 391,361 | -1,717 | -0,00521557 |
| 260,592 | 393,008 | 391,358 | -1,65  | -0,00521557 |
| 264,525 | 392,311 | 390,654 | -1,657 | -0,17899822 |
| 280     | 391,707 | 390,171 | -1,536 | -0,03120712 |
| 300     | 391,034 | 389,547 | -1,487 | -0,03120712 |
| 320     | 390,48  | 388,923 | -1,557 | -0,03120712 |
| 340     | 389,987 | 388,299 | -1,688 | -0,03120712 |
| 343,225 | 389,918 | 388,198 | -1,72  | -0,03120712 |
| 360     | 389,693 | 388,028 | -1,665 | -0,01013609 |
| 380     | 389,534 | 387,825 | -1,709 | -0,01013609 |
| 400     | 389,624 | 387,623 | -2,002 | -0,01013609 |
| 403,702 | 389,335 | 387,585 | -1,75  | -0,01013609 |
| 408,945 | 388,233 | 386,708 | -1,525 | -0,16727065 |
| 415,678 | 389,267 | 387,742 | -1,525 | 0,15357196  |

### H-178

| Distancia | C. Terreno | C. Rasante | C. Roja | Pendiente   |
|-----------|------------|------------|---------|-------------|
| 0         | 390,856    | 388,647    | -2,209  | 0,00299774  |
| 20        | 390,787    | 388,707    | -2,08   | 0,00299774  |
| 40        | 390,732    | 388,767    | -1,965  | 0,00299774  |
| 60        | 390,757    | 388,827    | -1,93   | 0,00299774  |
| 80        | 390,757    | 388,887    | -1,871  | 0,00299774  |
| 100       | 390,88     | 388,947    | -1,933  | 0,00299774  |
| 120       | 390,806    | 389,007    | -1,799  | 0,00299774  |
| 138,104   | 390,785    | 389,061    | -1,724  | 0,00299774  |
| 140       | 390,837    | 389,052    | -1,785  | -0,00499088 |
| 160       | 390,81     | 388,952    | -1,859  | -0,00499088 |
| 180       | 390,827    | 388,852    | -1,976  | -0,00499088 |
| 185,791   | 390,833    | 388,823    | -2,01   | -0,00499088 |
| 200       | 390,912    | 388,914    | -1,998  | 0,00640789  |
| 220       | 390,858    | 389,042    | -1,816  | 0,00640789  |
| 240       | 390,899    | 389,17     | -1,729  | 0,00640789  |
| 260       | 391,2      | 389,299    | -1,901  | 0,00640789  |
| 280       | 391,104    | 389,427    | -1,678  | 0,00640789  |
| 283,327   | 391,098    | 389,448    | -1,65   | 0,00640789  |
| 295,429   | 391,738    | 390,088    | -1,65   | 0,05288382  |
| 300       | 392,764    | 391,114    | -1,65   | 0,22445854  |

### H-181

| Distancia | C. Terreno | C. Rasante | C. Roja | Pendiente   |
|-----------|------------|------------|---------|-------------|
| 0         | 387,57     | 383,918    | -3,652  | 0,60837438  |
| 3,248     | 387,566    | 385,894    | -1,672  | 0,60837438  |
| 15,535    | 387,552    | 385,931    | -1,621  | 0,00301131  |
| 20        | 387,774    | 386,107    | -1,667  | 0,039406    |
| 25,838    | 387,923    | 386,337    | -1,586  | 0,039406    |
| 40        | 387,726    | 386,022    | -1,704  | -0,02224646 |
| 56,09     | 387,224    | 385,664    | -1,56   | -0,02224646 |

|         |         |         |        |             |
|---------|---------|---------|--------|-------------|
| 60      | 387,147 | 385,603 | -1,545 | -0,0157077  |
| 80      | 386,804 | 385,288 | -1,516 | -0,0157077  |
| 100     | 386,621 | 384,974 | -1,647 | -0,0157077  |
| 120     | 386,367 | 384,66  | -1,707 | -0,0157077  |
| 140     | 386,03  | 384,346 | -1,684 | -0,0157077  |
| 155,277 | 385,89  | 384,106 | -1,784 | -0,0157077  |
| 159,956 | 385,323 | 383,763 | -1,56  | -0,07330626 |
| 160     | 385,31  | 383,75  | -1,561 | -0,29849183 |
| 164,73  | 383,962 | 382,338 | -1,624 | -0,29849183 |
| 180     | 383,962 | 382,261 | -1,7   | -0,00501159 |
| 200     | 384,077 | 382,161 | -1,916 | -0,00501159 |
| 210,025 | 384,11  | 382,111 | -1,999 | -0,00501159 |
| 220     | 384,198 | 382,141 | -2,057 | 0,00300941  |
| 240     | 383,896 | 382,201 | -1,695 | 0,00300941  |
| 244,251 | 383,895 | 382,214 | -1,681 | 0,00300941  |
| 260     | 383,716 | 382,033 | -1,682 | -0,01148388 |
| 279,692 | 383,417 | 381,807 | -1,61  | -0,01148388 |
| 280     | 383,42  | 381,805 | -1,615 | -0,00500234 |
| 300     | 383,401 | 381,705 | -1,695 | -0,00500234 |
| 320     | 383,401 | 381,605 | -1,796 | -0,00500234 |
| 320,273 | 383,411 | 381,604 | -1,807 | -0,00500234 |
| 333,696 | 383,63  | 382,07  | -1,56  | 0,03471653  |

### H-185

| Distancia | C. Terreno | C. Rasante | C. Roja | Pendiente   |
|-----------|------------|------------|---------|-------------|
| 0         | 386,851    | 383,249    | -3,602  | 0,13029719  |
| 7,268     | 386,708    | 384,196    | -2,512  | 0,13029719  |
| 20        | 386,313    | 384,234    | -2,079  | 0,00300003  |
| 40        | 386,462    | 384,294    | -2,168  | 0,00300003  |
| 60        | 386,59     | 384,354    | -2,235  | 0,00300003  |
| 80        | 386,471    | 384,414    | -2,057  | 0,00300003  |
| 100       | 386,453    | 384,474    | -1,979  | 0,00300003  |
| 120       | 386,475    | 384,534    | -1,941  | 0,00300003  |
| 140       | 386,503    | 384,594    | -1,909  | 0,00300003  |
| 151,6     | 386,289    | 384,629    | -1,66   | 0,00300003  |
| 160       | 386,261    | 384,587    | -1,674  | -0,00500019 |
| 180       | 386,204    | 384,487    | -1,717  | -0,00500019 |
| 200       | 386,076    | 384,387    | -1,689  | -0,00500019 |
| 220       | 386,061    | 384,287    | -1,774  | -0,00500019 |
| 240       | 385,821    | 384,187    | -1,634  | -0,00500019 |
| 256,796   | 385,773    | 384,103    | -1,67   | -0,00500019 |

### H-193

| Distancia | C. Terreno | C. Rasante | C. Roja | Pendiente   |
|-----------|------------|------------|---------|-------------|
| 0         | 375,81     | 373,246    | -2,564  | -0,01061889 |
| 20        | 375,034    | 373,033    | -2,001  | -0,01061889 |
| 40        | 374,943    | 372,821    | -2,122  | -0,01061889 |
| 60        | 374,972    | 372,608    | -2,364  | -0,01061889 |

|         |         |         |        |             |
|---------|---------|---------|--------|-------------|
| 80      | 374,967 | 372,396 | -2,571 | -0,01061889 |
| 88,013  | 374,076 | 372,311 | -1,765 | -0,01061889 |
| 100     | 374,004 | 372,15  | -1,854 | -0,01340932 |
| 120     | 373,862 | 371,882 | -1,98  | -0,01340932 |
| 140     | 373,703 | 371,614 | -2,089 | -0,01340932 |
| 146,092 | 373,304 | 371,532 | -1,772 | -0,01340932 |
| 160     | 373,344 | 371,375 | -1,969 | -0,01130641 |
| 180     | 373,039 | 371,149 | -1,89  | -0,01130641 |
| 200     | 372,962 | 370,923 | -2,039 | -0,01130641 |
| 220     | 372,911 | 370,697 | -2,214 | -0,01130641 |
| 236,324 | 372,277 | 370,512 | -1,765 | -0,01130641 |
| 240     | 372,292 | 370,523 | -1,769 | 0,003       |
| 260     | 372,445 | 370,583 | -1,862 | 0,003       |
| 280     | 372,526 | 370,643 | -1,883 | 0,003       |
| 300     | 372,539 | 370,703 | -1,836 | 0,003       |
| 307,521 | 372,613 | 370,726 | -1,887 | 0,003       |
| 320     | 373,04  | 370,854 | -2,186 | 0,0103003   |
| 340     | 373,241 | 371,06  | -2,181 | 0,0103003   |
| 360     | 373,436 | 371,266 | -2,17  | 0,0103003   |
| 380     | 373,255 | 371,472 | -1,783 | 0,0103003   |
| 380,471 | 373,242 | 371,477 | -1,765 | 0,0103003   |

#### H-194

| Distancia | C. Terreno | C. Rasante | C. Roja | Pendiente   |
|-----------|------------|------------|---------|-------------|
| 0         | 374,676    | 372,606    | -2,07   | -0,00499583 |
| 20        | 374,469    | 372,506    | -1,963  | -0,00499583 |
| 40        | 374,337    | 372,406    | -1,931  | -0,00499583 |
| 60        | 374,215    | 372,306    | -1,909  | -0,00499583 |
| 80        | 374,062    | 372,206    | -1,855  | -0,00499583 |
| 100       | 373,937    | 372,106    | -1,83   | -0,00499583 |
| 120       | 373,794    | 372,007    | -1,788  | -0,00499583 |
| 137,715   | 373,697    | 371,918    | -1,779  | -0,00499583 |

#### H-225

| Distancia | C. Terreno | C. Rasante | C. Roja | Pendiente  |
|-----------|------------|------------|---------|------------|
| 0         | 371,609    | 369,387    | -2,222  | 0,00378178 |
| 20        | 371,74     | 369,463    | -2,278  | 0,00378178 |
| 40        | 371,519    | 369,538    | -1,981  | 0,00378178 |
| 60        | 371,564    | 369,614    | -1,95   | 0,00378178 |
| 80        | 371,482    | 369,69     | -1,793  | 0,00378178 |
| 100       | 371,487    | 369,765    | -1,722  | 0,00378178 |
| 120       | 371,484    | 369,841    | -1,643  | 0,00378178 |
| 139,088   | 371,503    | 369,913    | -1,59   | 0,00378178 |

#### H-228

| Distancia | C. Terreno | C. Rasante | C. Roja | Pendiente |
|-----------|------------|------------|---------|-----------|
|-----------|------------|------------|---------|-----------|

|         |         |         |        |            |
|---------|---------|---------|--------|------------|
| 0       | 369,176 | 365,51  | -3,666 | 0,10236844 |
| 13,891  | 368,99  | 366,932 | -2,058 | 0,10236844 |
| 20      | 368,961 | 366,959 | -2,002 | 0,00445611 |
| 40      | 368,946 | 367,048 | -1,898 | 0,00445611 |
| 60      | 368,889 | 367,137 | -1,751 | 0,00445611 |
| 80      | 368,805 | 367,227 | -1,579 | 0,00445611 |
| 87,049  | 368,808 | 367,258 | -1,55  | 0,00445611 |
| 100     | 369,179 | 367,441 | -1,738 | 0,01413651 |
| 120     | 369,336 | 367,724 | -1,612 | 0,01413651 |
| 126,592 | 369,367 | 367,817 | -1,55  | 0,01413651 |
| 140     | 370,139 | 368,106 | -2,034 | 0,02152464 |
| 160     | 370,105 | 368,536 | -1,569 | 0,02152464 |
| 161,761 | 370,124 | 368,574 | -1,55  | 0,02152464 |
| 180     | 370,769 | 369,095 | -1,673 | 0,02859037 |
| 184,391 | 370,771 | 369,221 | -1,55  | 0,02859037 |

### H-271

| Distancia | C. Terreno | C. Rasante | C. Roja | Pendiente  |
|-----------|------------|------------|---------|------------|
| 0         | 353,904    | 351,412    | -2,492  | 0,0312123  |
| 20        | 354,154    | 352,036    | -2,118  | 0,0312123  |
| 40        | 354,251    | 352,19     | -2,062  | 0,00767062 |
| 60        | 354,373    | 352,343    | -2,03   | 0,00767062 |
| 80        | 354,622    | 352,496    | -2,126  | 0,00767062 |
| 100       | 354,569    | 352,65     | -1,919  | 0,00767062 |
| 120       | 354,562    | 352,803    | -1,759  | 0,00767062 |
| 140       | 354,935    | 352,957    | -1,978  | 0,00767062 |
| 160       | 354,885    | 353,11     | -1,775  | 0,00767062 |
| 167,544   | 354,868    | 353,168    | -1,7    | 0,00767062 |
| 180       | 355,038    | 353,235    | -1,803  | 0,00541325 |
| 200       | 355,082    | 353,344    | -1,739  | 0,00541325 |
| 220       | 355,19     | 353,452    | -1,738  | 0,00541325 |
| 240       | 355,505    | 353,56     | -1,945  | 0,00541325 |
| 260       | 355,573    | 353,668    | -1,904  | 0,00541325 |
| 280       | 355,706    | 353,777    | -1,929  | 0,00541325 |
| 300       | 355,842    | 353,885    | -1,957  | 0,00541325 |
| 320       | 355,825    | 353,993    | -1,831  | 0,00541325 |
| 330,577   | 356,229    | 354,051    | -2,178  | 0,00541325 |

### H-277

| Distancia | C. Terreno | C. Rasante | C. Roja | Pendiente  |
|-----------|------------|------------|---------|------------|
| 0         | 348,871    | 346,38     | -2,491  | 0,03936795 |
| 20        | 348,851    | 347,167    | -1,683  | 0,03936795 |
| 40        | 348,896    | 347,298    | -1,598  | 0,00651657 |
| 60        | 348,984    | 347,428    | -1,556  | 0,00651657 |
| 80        | 348,993    | 347,558    | -1,435  | 0,00651657 |
| 100       | 349,477    | 347,689    | -1,788  | 0,00651657 |
| 120       | 349,468    | 347,819    | -1,649  | 0,00651657 |
| 130,586   | 349,478    | 347,888    | -1,59   | 0,00651657 |

|         |         |         |        |            |
|---------|---------|---------|--------|------------|
| 140     | 349,83  | 347,956 | -1,874 | 0,00722786 |
| 160     | 350,154 | 348,101 | -2,053 | 0,00722786 |
| 180     | 350,189 | 348,245 | -1,943 | 0,00722786 |
| 200     | 350,322 | 348,39  | -1,932 | 0,00722786 |
| 220     | 350,417 | 348,534 | -1,882 | 0,00722786 |
| 240     | 350,412 | 348,679 | -1,733 | 0,00722786 |
| 260     | 350,477 | 348,823 | -1,654 | 0,00722786 |
| 270,651 | 350,753 | 348,9   | -1,853 | 0,00722786 |

### H-279

| Distancia | C. Terreno | C. Rasante | C. Roja | Pendiente  |
|-----------|------------|------------|---------|------------|
| 0         | 350,72     | 347,79     | -2,93   | 0,04848565 |
| 20        | 350,785    | 348,76     | -2,025  | 0,04848565 |
| 40        | 350,889    | 348,82     | -2,069  | 0,003      |
| 60        | 350,893    | 348,88     | -2,013  | 0,003      |
| 80        | 350,909    | 348,94     | -1,969  | 0,003      |
| 100       | 350,942    | 349        | -1,942  | 0,003      |
| 120       | 350,954    | 349,06     | -1,894  | 0,003      |
| 140       | 350,986    | 349,12     | -1,866  | 0,003      |
| 160       | 351,038    | 349,18     | -1,858  | 0,003      |
| 180       | 351,09     | 349,24     | -1,85   | 0,003      |
| 200       | 351,119    | 349,3      | -1,819  | 0,003      |
| 220       | 351,148    | 349,36     | -1,788  | 0,003      |
| 240       | 351,213    | 349,42     | -1,793  | 0,003      |
| 260       | 351,251    | 349,48     | -1,771  | 0,003      |
| 280       | 351,304    | 349,54     | -1,764  | 0,003      |
| 300       | 351,455    | 349,6      | -1,855  | 0,003      |
| 320       | 351,545    | 349,66     | -1,885  | 0,003      |
| 340       | 351,585    | 349,72     | -1,865  | 0,003      |
| 360       | 351,873    | 349,78     | -2,093  | 0,003      |
| 370       | 352,017    | 349,81     | -2,207  | 0,003      |
| 380       | 352,146    | 349,874    | -2,272  | 0,0064365  |
| 400       | 352,086    | 350,003    | -2,083  | 0,0064365  |
| 420       | 352,115    | 350,132    | -1,983  | 0,0064365  |
| 440       | 352,222    | 350,26     | -1,962  | 0,0064365  |
| 460       | 352,254    | 350,389    | -1,865  | 0,0064365  |
| 480       | 352,163    | 350,518    | -1,645  | 0,0064365  |
| 482,544   | 352,134    | 350,534    | -1,6    | 0,0064365  |

### H-289

| Distancia | C. Terreno | C. Rasante | C. Roja | Pendiente |
|-----------|------------|------------|---------|-----------|
| 0         | 370,78     | 368,564    | -2,216  | -0,005    |
| 20        | 370,787    | 368,464    | -2,323  | -0,005    |
| 40        | 370,71     | 368,364    | -2,346  | -0,005    |
| 60        | 370,164    | 368,264    | -1,9    | -0,005    |
| 80        | 370,166    | 368,164    | -2,002  | -0,005    |
| 100       | 370,186    | 368,064    | -2,122  | -0,005    |
| 120       | 369,38     | 367,964    | -1,416  | -0,005    |

|         |         |         |        |           |
|---------|---------|---------|--------|-----------|
| 140     | 367,255 | 365,079 | -2,176 | -0,14425  |
| 160     | 366,747 | 365,139 | -1,608 | 0,0029902 |
| 180     | 367,11  | 365,199 | -1,911 | 0,0029902 |
| 183,141 | 367,217 | 365,208 | -2,009 | 0,0029902 |

### H-293

| Distancia | C. Terreno | C. Rasante | C. Roja | Pendiente   |
|-----------|------------|------------|---------|-------------|
| 0         | 374,468    | 371,31     | -3,158  | -0,0109682  |
| 20        | 373,423    | 371,091    | -2,332  | -0,0109682  |
| 40        | 372,521    | 370,871    | -1,65   | -0,0109682  |
| 60        | 372,803    | 370,56     | -2,242  | -0,01554659 |
| 80        | 372,706    | 370,249    | -2,456  | -0,01554659 |
| 100       | 372,535    | 369,938    | -2,596  | -0,01554659 |
| 120       | 372,17     | 369,628    | -2,542  | -0,01554659 |
| 140       | 371,483    | 369,317    | -2,167  | -0,01554659 |
| 160       | 370,973    | 369,006    | -1,967  | -0,01554659 |
| 180       | 370,501    | 368,695    | -1,806  | -0,01554659 |
| 200       | 370,262    | 368,384    | -1,878  | -0,01554659 |
| 220       | 369,956    | 368,073    | -1,883  | -0,01554659 |
| 240       | 369,75     | 367,762    | -1,988  | -0,01554659 |
| 260       | 369,371    | 367,451    | -1,92   | -0,01554659 |
| 280       | 369,158    | 367,14     | -2,018  | -0,01554659 |
| 300       | 368,681    | 366,829    | -1,852  | -0,01554659 |
| 320       | 368,39     | 366,518    | -1,872  | -0,01554659 |
| 340       | 368,025    | 366,207    | -1,818  | -0,01554659 |
| 360       | 367,69     | 365,896    | -1,794  | -0,01554659 |
| 380       | 367,435    | 365,585    | -1,85   | -0,01554659 |
| 390       | 367,343    | 365,43     | -1,913  | -0,01554659 |
| 400       | 367,23     | 365,52     | -1,71   | 0,00896363  |
| 412,298   | 367,714    | 365,63     | -2,084  | 0,00896363  |

### H-303

| Distancia | C. Terreno | C. Rasante | C. Roja | Pendiente   |
|-----------|------------|------------|---------|-------------|
| 0,001     | 352,767    | 349,75     | -3,017  | 0,02395104  |
| 20        | 352,773    | 350,229    | -2,544  | 0,02395104  |
| 28,267    | 352,411    | 350,427    | -1,984  | 0,02395104  |
| 40        | 351,975    | 350,186    | -1,789  | -0,02057654 |
| 60        | 351,396    | 349,774    | -1,622  | -0,02057654 |
| 80        | 351,168    | 349,363    | -1,806  | -0,02057654 |
| 100       | 350,689    | 348,951    | -1,738  | -0,02057654 |
| 120       | 350,25     | 348,539    | -1,711  | -0,02057654 |
| 140       | 350,089    | 348,128    | -1,961  | -0,02057654 |
| 160       | 349,469    | 347,716    | -1,753  | -0,02057654 |
| 180       | 349,368    | 347,305    | -2,063  | -0,02057654 |
| 181,354   | 349,352    | 347,277    | -2,075  | -0,02057654 |
| 200       | 349,013    | 347,184    | -1,829  | -0,00499469 |
| 220       | 348,891    | 347,084    | -1,807  | -0,00499469 |
| 240       | 348,589    | 346,984    | -1,605  | -0,00499469 |

|     |         |         |        |             |
|-----|---------|---------|--------|-------------|
| 260 | 348,641 | 346,884 | -1,757 | -0,00499469 |
| 280 | 348,613 | 346,784 | -1,829 | -0,00499469 |

### H-306

| Distancia | C. Terreno | C. Rasante | C. Roja | Pendiente   |
|-----------|------------|------------|---------|-------------|
| 0         | 355,642    | 352,86     | -2,782  | 0,05650665  |
| 2,931     | 355,543    | 353,026    | -2,517  | 0,05650665  |
| 8,369     | 355,491    | 353,333    | -2,158  | 0,05650665  |
| 15,183    | 355,606    | 353,718    | -1,888  | 0,05650665  |
| 20        | 355,59     | 353,99     | -1,6    | 0,05650665  |
| 22,473    | 355,582    | 353,978    | -1,604  | -0,005      |
| 25,591    | 355,548    | 353,962    | -1,586  | -0,005      |
| 27,895    | 355,556    | 353,951    | -1,605  | -0,005      |
| 31,03     | 355,57     | 353,935    | -1,635  | -0,005      |
| 33,374    | 355,566    | 353,923    | -1,643  | -0,005      |
| 36,468    | 355,555    | 353,908    | -1,647  | -0,005      |
| 41,906    | 355,538    | 353,881    | -1,657  | -0,005      |
| 45,326    | 355,522    | 353,864    | -1,658  | -0,005      |
| 47,345    | 355,522    | 353,853    | -1,669  | -0,005      |
| 53,318    | 355,514    | 353,824    | -1,69   | -0,005      |
| 58,222    | 355,505    | 353,799    | -1,706  | -0,005      |
| 63,66     | 355,505    | 353,772    | -1,733  | -0,005      |
| 66,03     | 355,503    | 353,76     | -1,743  | -0,005      |
| 69,098    | 355,501    | 353,745    | -1,756  | -0,005      |
| 70        | 355,498    | 353,74     | -1,758  | -0,005      |
| 71,393    | 355,494    | 353,515    | -1,979  | -0,16140773 |
| 75,797    | 355,6      | 352,804    | -2,796  | -0,16140773 |
| 79,975    | 355,672    | 352,13     | -3,542  | -0,16140773 |
| 85,414    | 352,994    | 351,252    | -1,742  | -0,16140773 |
| 86,57     | 352,959    | 351,066    | -1,893  | -0,16140773 |
| 91,453    | 352,81     | 351,041    | -1,769  | -0,00499998 |
| 96,29     | 352,82     | 351,017    | -1,803  | -0,00499998 |
| 101,729   | 352,826    | 350,99     | -1,836  | -0,00499998 |
| 104,164   | 352,827    | 350,978    | -1,849  | -0,00499998 |
| 107,167   | 352,824    | 350,963    | -1,861  | -0,00499998 |
| 110,076   | 352,816    | 350,948    | -1,868  | -0,00499998 |
| 113,885   | 352,805    | 350,929    | -1,876  | -0,00499998 |
| 118,044   | 352,83     | 350,908    | -1,922  | -0,00499998 |
| 120       | 352,825    | 350,898    | -1,926  | -0,00499998 |
| 125,311   | 352,811    | 350,419    | -2,392  | -0,09026056 |
| 129,587   | 352,869    | 350,033    | -2,836  | -0,09026056 |
| 134,359   | 353,166    | 349,602    | -3,564  | -0,09026056 |
| 139,797   | 350,885    | 349,112    | -1,773  | -0,09026056 |
| 142,299   | 350,721    | 348,886    | -1,835  | -0,09026056 |
| 143,29    | 350,689    | 348,796    | -1,893  | -0,09026056 |
| 145,236   | 350,627    | 348,703    | -1,924  | -0,04816764 |
| 148,165   | 350,609    | 348,561    | -2,048  | -0,04816764 |
| 150,674   | 350,605    | 348,441    | -2,164  | -0,04816764 |
| 156,112   | 350,645    | 348,179    | -2,466  | -0,04816764 |

|         |         |         |        |             |
|---------|---------|---------|--------|-------------|
| 161,365 | 349,559 | 347,926 | -1,634 | -0,04816764 |
| 161,551 | 349,521 | 347,918 | -1,603 | -0,04047424 |
| 167,722 | 349,347 | 347,668 | -1,679 | -0,04047424 |
| 172,428 | 349,343 | 347,478 | -1,865 | -0,04047424 |
| 174,826 | 349,336 | 347,381 | -1,955 | -0,04047424 |
| 177,866 | 349,325 | 347,258 | -2,067 | -0,04047424 |
| 180,433 | 349,328 | 347,154 | -2,174 | -0,04047424 |
| 185,451 | 349,061 | 346,951 | -2,11  | -0,04047424 |
| 188,743 | 348,684 | 346,818 | -1,866 | -0,04047424 |
| 194,956 | 348,253 | 346,566 | -1,687 | -0,04047424 |
| 199,619 | 348,236 | 346,377 | -1,859 | -0,04047424 |
| 205,856 | 348,238 | 346,125 | -2,113 | -0,04047424 |
| 215,407 | 347,546 | 345,738 | -1,808 | -0,04047424 |
| 215,708 | 347,541 | 345,726 | -1,815 | -0,04047424 |
| 221,373 | 347,444 | 345,562 | -1,882 | -0,02901545 |
| 223,47  | 347,392 | 345,501 | -1,891 | -0,02901545 |
| 228,15  | 347,249 | 345,365 | -1,884 | -0,02901545 |
| 232,975 | 347,045 | 345,225 | -1,82  | -0,02901545 |
| 239,577 | 346,771 | 345,034 | -1,737 | -0,02901545 |
| 243,991 | 346,578 | 344,905 | -1,673 | -0,02901545 |
| 248,565 | 346,444 | 344,773 | -1,671 | -0,02901545 |
| 251,003 | 346,367 | 344,702 | -1,665 | -0,02901545 |
| 254,003 | 346,278 | 344,615 | -1,663 | -0,02901545 |
| 256,703 | 346,172 | 344,537 | -1,635 | -0,02901545 |
| 259,442 | 346,063 | 344,457 | -1,606 | -0,02901545 |
| 260     | 346,042 | 344,441 | -1,601 | -0,02901545 |
| 262,43  | 345,951 | 344,209 | -1,742 | -0,09534043 |
| 264,88  | 345,809 | 343,976 | -1,833 | -0,09534043 |
| 270,318 | 345,554 | 343,457 | -2,097 | -0,09534043 |
| 281,022 | 344,052 | 342,437 | -1,616 | -0,09534043 |
| 281,039 | 344,05  | 342,438 | -1,612 | 0,06111144  |
| 290,944 | 345,228 | 343,043 | -2,185 | 0,06111144  |
| 294,599 | 345,393 | 343,266 | -2,127 | 0,06111144  |
| 298,151 | 345,385 | 343,483 | -1,902 | 0,06111144  |
| 300,234 | 345,426 | 343,611 | -1,815 | 0,06111144  |
| 301,814 | 345,441 | 343,707 | -1,734 | 0,06111144  |
| 306,628 | 345,488 | 343,836 | -1,652 | 0,02663437  |
| 309,712 | 345,562 | 343,918 | -1,644 | 0,02663437  |
| 316,299 | 345,785 | 344,093 | -1,692 | 0,02663437  |
| 320,26  | 346,041 | 344,199 | -1,842 | 0,02663437  |
| 324,702 | 346,361 | 344,317 | -2,044 | 0,02663437  |
| 327,18  | 346,386 | 344,383 | -2,003 | 0,02663437  |
| 330,141 | 346,253 | 344,462 | -1,791 | 0,02663437  |
| 332,972 | 346,195 | 344,537 | -1,658 | 0,02663437  |
| 334,381 | 346,175 | 344,575 | -1,6   | 0,02663437  |
| 337,529 | 346,13  | 344,296 | -1,834 | -0,0885088  |
| 342,415 | 346,05  | 343,864 | -2,186 | -0,0885088  |
| 346,456 | 345,916 | 343,506 | -2,41  | -0,0885088  |
| 351,894 | 345,287 | 343,025 | -2,262 | -0,0885088  |
| 358,395 | 344,121 | 342,449 | -1,672 | -0,0885088  |
| 362,771 | 343,744 | 342,062 | -1,682 | -0,0885088  |

|         |         |         |        |             |
|---------|---------|---------|--------|-------------|
| 363,621 | 343,718 | 341,987 | -1,732 | -0,0885088  |
| 366,043 | 343,645 | 341,975 | -1,67  | -0,00500001 |
| 369,077 | 343,585 | 341,959 | -1,626 | -0,00500001 |
| 372,886 | 343,62  | 341,94  | -1,68  | -0,00500001 |
| 376,695 | 343,568 | 341,921 | -1,647 | -0,00500001 |
| 380,504 | 343,549 | 341,902 | -1,647 | -0,00500001 |
| 384,524 | 343,534 | 341,882 | -1,652 | -0,00500001 |
| 389,963 | 343,464 | 341,855 | -1,609 | -0,00500001 |
| 396,529 | 343,447 | 341,822 | -1,625 | -0,00500001 |
| 400,84  | 343,439 | 341,801 | -1,638 | -0,00500001 |
| 404,062 | 343,444 | 341,785 | -1,659 | -0,00500001 |
| 407,166 | 343,441 | 341,769 | -1,672 | -0,00500001 |
| 409,241 | 343,447 | 341,759 | -1,688 | -0,00500001 |
| 410     | 343,448 | 341,755 | -1,693 | -0,00500001 |
| 413,567 | 343,45  | 341,457 | -1,993 | -0,08359983 |
| 418,592 | 343,453 | 341,037 | -2,416 | -0,08359983 |
| 422,783 | 343,45  | 340,686 | -2,764 | -0,08359983 |
| 426,176 | 343,395 | 340,403 | -2,992 | -0,08359983 |
| 430,349 | 341,707 | 340,054 | -1,653 | -0,08359983 |
| 432,607 | 341,812 | 339,865 | -1,947 | -0,08359983 |
| 433,554 | 341,856 | 340,003 | -1,853 | 0,14547015  |
| 435,911 | 342,362 | 340,346 | -2,016 | 0,14547015  |
| 439,028 | 342,873 | 340,799 | -2,074 | 0,14547015  |
| 445,379 | 343,833 | 341,723 | -2,11  | 0,14547015  |
| 448,632 | 343,948 | 342,196 | -1,752 | 0,14547015  |
| 451,074 | 344,034 | 342,184 | -1,85  | -0,00499999 |
| 457,193 | 343,964 | 342,153 | -1,811 | -0,00499999 |
| 460,662 | 343,806 | 342,136 | -1,67  | -0,00499999 |
| 466,1   | 343,902 | 342,109 | -1,793 | -0,00499999 |
| 468,107 | 343,937 | 342,099 | -1,838 | -0,00499999 |
| 471,165 | 343,823 | 342,083 | -1,74  | -0,00499999 |

### H-309

| Distancia | C. Terreno | C. Rasante | C. Roja | Pendiente   |
|-----------|------------|------------|---------|-------------|
| 0         | 353,594    | 350,86     | -2,734  | -0,00500001 |
| 20        | 353,684    | 350,76     | -2,924  | -0,00500001 |
| 25,111    | 353,292    | 350,734    | -2,557  | -0,00500001 |
| 40        | 351,892    | 350,2      | -1,692  | -0,03586456 |
| 53,573    | 351,581    | 349,714    | -1,867  | -0,03586456 |
| 60        | 351,592    | 349,391    | -2,201  | -0,05021664 |
| 79,221    | 350,218    | 348,426    | -1,792  | -0,05021664 |
| 80        | 350,234    | 348,39     | -1,844  | -0,04605401 |
| 100       | 349,309    | 347,469    | -1,84   | -0,04605401 |
| 105,243   | 349,067    | 347,227    | -1,839  | -0,04605401 |
| 120       | 348,86     | 346,577    | -2,283  | -0,0440519  |
| 131,107   | 347,999    | 346,088    | -1,911  | -0,0440519  |
| 140       | 347,963    | 345,786    | -2,177  | -0,03391109 |
| 160       | 346,953    | 345,108    | -1,845  | -0,03391109 |
| 180       | 346,481    | 344,43     | -2,051  | -0,03391109 |

|         |         |         |        |             |
|---------|---------|---------|--------|-------------|
| 183,015 | 346,113 | 344,328 | -1,785 | -0,03391109 |
| 200     | 345,843 | 343,905 | -1,938 | -0,02487458 |
| 220     | 345,159 | 343,408 | -1,751 | -0,02487458 |
| 222,595 | 345,119 | 343,343 | -1,775 | -0,02487458 |
| 240     | 345,354 | 343,256 | -2,098 | -0,005      |
| 260     | 345,171 | 343,156 | -2,015 | -0,005      |
| 280     | 345,177 | 343,056 | -2,121 | -0,005      |
| 300     | 345,013 | 342,956 | -2,057 | -0,005      |
| 320     | 344,879 | 342,856 | -2,022 | -0,005      |
| 340     | 344,785 | 342,756 | -2,028 | -0,005      |
| 352,769 | 344,627 | 342,692 | -1,935 | -0,005      |
| 360     | 344,748 | 342,714 | -2,034 | 0,00299999  |
| 380     | 344,851 | 342,774 | -2,077 | 0,00299999  |
| 400     | 344,791 | 342,834 | -1,957 | 0,00299999  |
| 420     | 344,725 | 342,894 | -1,831 | 0,00299999  |
| 440     | 344,724 | 342,954 | -1,77  | 0,00299999  |
| 450     | 344,704 | 342,984 | -1,72  | 0,00299999  |
| 460     | 344,713 | 342,285 | -2,428 | -0,06989292 |
| 472,575 | 343,594 | 341,406 | -2,188 | -0,06989292 |
| 480     | 344     | 342,216 | -1,783 | 0,10913627  |
| 484,325 | 344,398 | 342,688 | -1,71  | 0,10913627  |

### H-329

| Distancia | C. Terreno | C. Rasante | C. Roja | Pendiente  |
|-----------|------------|------------|---------|------------|
| 0         | 352,997    | 350,2      | -2,797  | 0,07872159 |
| 15,269    | 353,002    | 351,402    | -1,6    | 0,07872159 |
| 20        | 353,05     | 351,429    | -1,621  | 0,00576932 |
| 40        | 353,309    | 351,545    | -1,764  | 0,00576932 |
| 60        | 353,302    | 351,66     | -1,642  | 0,00576932 |
| 80        | 353,386    | 351,775    | -1,611  | 0,00576932 |
| 100       | 353,776    | 351,891    | -1,885  | 0,00576932 |
| 120       | 353,853    | 352,006    | -1,847  | 0,00576932 |
| 140       | 353,892    | 352,122    | -1,77   | 0,00576932 |
| 160       | 353,887    | 352,237    | -1,65   | 0,00576932 |
| 180       | 354,343    | 352,32     | -2,022  | 0,00416667 |
| 200       | 354,488    | 352,404    | -2,084  | 0,00416667 |
| 220       | 354,493    | 352,487    | -2,006  | 0,00416667 |
| 240       | 354,638    | 352,57     | -2,068  | 0,00416667 |
| 260       | 354,902    | 352,654    | -2,249  | 0,00416667 |
| 280       | 355,01     | 352,737    | -2,273  | 0,00416667 |
| 300       | 355,029    | 352,82     | -2,209  | 0,00416667 |
| 320       | 355,042    | 352,904    | -2,139  | 0,00416667 |
| 340       | 355,112    | 352,987    | -2,125  | 0,00416667 |
| 360       | 355,782    | 353,07     | -2,711  | 0,00416667 |
| 380       | 354,898    | 353,154    | -1,744  | 0,00416667 |
| 400       | 354,961    | 353,237    | -1,724  | 0,00416667 |
| 420       | 355,395    | 353,404    | -1,991  | 0,00833596 |
| 440       | 355,427    | 353,57     | -1,856  | 0,00833596 |
| 460       | 355,483    | 353,737    | -1,746  | 0,00833596 |

|         |         |         |        |            |
|---------|---------|---------|--------|------------|
| 480     | 355,746 | 353,904 | -1,842 | 0,00833596 |
| 500     | 356,323 | 354,071 | -2,253 | 0,00833596 |
| 520     | 356,394 | 354,237 | -2,157 | 0,00833596 |
| 540     | 356,448 | 354,404 | -2,044 | 0,00833596 |
| 560     | 356,484 | 354,571 | -1,913 | 0,00833596 |
| 565,308 | 356,493 | 354,615 | -1,878 | 0,00833596 |

### H-337

| Distancia | C. Terreno | C. Rasante | C. Roja | Pendiente  |
|-----------|------------|------------|---------|------------|
| 0         | 347,2      | 344,517    | -2,683  | 0,02891017 |
| 20        | 347,129    | 345,095    | -2,034  | 0,02891017 |
| 30        | 347,17     | 345,384    | -1,786  | 0,02891017 |
| 40        | 347,138    | 345,334    | -1,804  | -0,005     |
| 60        | 347,109    | 345,234    | -1,875  | -0,005     |
| 80        | 347,03     | 345,134    | -1,895  | -0,005     |
| 100       | 346,893    | 345,034    | -1,859  | -0,005     |
| 120       | 346,745    | 344,934    | -1,811  | -0,005     |
| 140       | 346,629    | 344,834    | -1,795  | -0,005     |
| 160       | 346,538    | 344,734    | -1,804  | -0,005     |
| 180       | 346,419    | 344,634    | -1,785  | -0,005     |
| 200       | 346,31     | 344,534    | -1,776  | -0,005     |
| 220       | 346,252    | 344,434    | -1,817  | -0,005     |
| 240       | 346,148    | 344,334    | -1,814  | -0,005     |
| 260       | 345,976    | 344,234    | -1,741  | -0,005     |
| 280       | 345,808    | 344,134    | -1,674  | -0,005     |
| 300       | 345,722    | 344,034    | -1,688  | -0,005     |
| 320       | 345,603    | 343,934    | -1,669  | -0,005     |
| 340       | 345,488    | 343,834    | -1,654  | -0,005     |
| 360       | 345,377    | 343,734    | -1,643  | -0,005     |
| 380       | 345,327    | 343,634    | -1,693  | -0,005     |
| 400       | 345,358    | 343,534    | -1,824  | -0,005     |
| 420       | 345,272    | 343,434    | -1,838  | -0,005     |
| 432,482   | 345,263    | 343,372    | -1,891  | -0,005     |
| 440       | 346,193    | 344,098    | -2,096  | 0,09652735 |
| 451,659   | 346,833    | 345,223    | -1,61   | 0,09652735 |

### H-354

| Distancia | C. Terreno | C. Rasante | C. Roja | Pendiente   |
|-----------|------------|------------|---------|-------------|
| 0         | 332,703    | 329,61     | -3,093  | -0,00500429 |
| 20        | 332,416    | 329,51     | -2,906  | -0,00500429 |
| 40        | 331,218    | 329,41     | -1,809  | -0,00500429 |
| 60        | 331,192    | 329,31     | -1,883  | -0,00500429 |
| 80        | 331,163    | 329,21     | -1,953  | -0,00500429 |
| 83,928    | 331,145    | 329,19     | -1,955  | -0,00500429 |
| 100       | 331,17     | 329,238    | -1,932  | 0,00300202  |
| 120       | 331,166    | 329,298    | -1,868  | 0,00300202  |
| 140       | 331,152    | 329,358    | -1,794  | 0,00300202  |
| 160       | 331,12     | 329,418    | -1,701  | 0,00300202  |

|         |         |         |        |             |
|---------|---------|---------|--------|-------------|
| 180     | 331,166 | 329,478 | -1,688 | 0,00300202  |
| 200     | 331,152 | 329,538 | -1,614 | 0,00300202  |
| 220     | 331,153 | 329,598 | -1,555 | 0,00300202  |
| 240     | 331,169 | 329,659 | -1,511 | 0,00300202  |
| 254,147 | 331,201 | 329,701 | -1,5   | 0,00300202  |
| 260     | 331,22  | 328,876 | -2,345 | -0,1410079  |
| 266,43  | 329,469 | 327,969 | -1,5   | -0,1410079  |
| 273,387 | 330,452 | 328,952 | -1,5   | 0,14129654  |
| 280     | 330,47  | 328,919 | -1,551 | -0,00499329 |
| 297,219 | 330,383 | 328,833 | -1,55  | -0,00499329 |
| 300     | 330,24  | 328,756 | -1,484 | -0,02777515 |
| 320     | 329,704 | 328,2   | -1,503 | -0,02777515 |
| 340     | 329,192 | 327,645 | -1,547 | -0,02777515 |
| 350     | 328,867 | 327,367 | -1,5   | -0,02777515 |
| 360     | 328,891 | 327,317 | -1,574 | -0,00500244 |
| 380     | 328,893 | 327,217 | -1,676 | -0,00500244 |
| 400     | 328,793 | 327,117 | -1,676 | -0,00500244 |
| 403,374 | 328,6   | 327,1   | -1,5   | -0,00500244 |
| 409,901 | 328,227 | 326,727 | -1,5   | -0,05714724 |
| 420     | 328,174 | 326,676 | -1,498 | -0,00500374 |
| 440     | 328,205 | 326,576 | -1,628 | -0,00500374 |
| 460     | 328,164 | 326,476 | -1,688 | -0,00500374 |
| 478,05  | 327,886 | 326,386 | -1,5   | -0,00500374 |
| 480     | 327,818 | 326,291 | -1,528 | -0,04886831 |
| 483,882 | 327,601 | 326,101 | -1,5   | -0,04886831 |
| 500     | 327,58  | 326,037 | -1,543 | -0,00394337 |
| 520     | 327,634 | 325,959 | -1,675 | -0,00394337 |
| 540     | 327,665 | 325,88  | -1,785 | -0,00394337 |
| 560     | 327,509 | 325,801 | -1,708 | -0,00394337 |
| 580     | 327,243 | 325,722 | -1,521 | -0,00394337 |
| 600     | 327,114 | 325,643 | -1,471 | -0,00394337 |
| 611,945 | 327,096 | 325,596 | -1,5   | -0,00394337 |
| 617,218 | 326,675 | 325,175 | -1,5   | -0,0798407  |

### H-359

| Distancia | C. Terreno | C. Rasante | C. Roja | Pendiente   |
|-----------|------------|------------|---------|-------------|
| 0         | 339,494    | 337,244    | -2,25   | 0,02093333  |
| 20        | 339,475    | 337,663    | -1,812  | 0,02093333  |
| 30        | 339,462    | 337,872    | -1,59   | 0,02093333  |
| 40        | 339,458    | 337,822    | -1,636  | -0,00501756 |
| 60        | 339,423    | 337,721    | -1,701  | -0,00501756 |
| 63,881    | 339,33     | 337,702    | -1,628  | -0,00501756 |
| 71,389    | 337,729    | 335,915    | -1,814  | -0,23801279 |
| 75,555    | 337,498    | 335,908    | -1,59   | -0,00168027 |
| 80        | 337,496    | 335,884    | -1,612  | -0,00541715 |
| 100       | 337,498    | 335,776    | -1,722  | -0,00541715 |
| 110,075   | 337,389    | 335,721    | -1,668  | -0,00541715 |
| 120       | 336,195    | 334,604    | -1,591  | -0,11256445 |
| 120,549   | 336,132    | 334,542    | -1,59   | -0,11256445 |

|         |         |         |        |             |
|---------|---------|---------|--------|-------------|
| 140     | 336,157 | 334,445 | -1,712 | -0,00499715 |
| 160     | 336,15  | 334,345 | -1,806 | -0,00499715 |
| 180     | 336,136 | 334,245 | -1,891 | -0,00499715 |
| 200     | 336,137 | 334,145 | -1,992 | -0,00499715 |
| 210     | 336,132 | 334,095 | -2,037 | -0,00499715 |
| 220     | 335,239 | 333,049 | -2,19  | -0,10460161 |
| 237,925 | 332,764 | 331,174 | -1,59  | -0,10460161 |

### H-363

| Distancia | C. Terreno | C. Rasante | C. Roja | Pendiente   |
|-----------|------------|------------|---------|-------------|
| 0         | 356,127    | 353,637    | -2,49   | 0,03271399  |
| 20        | 356,362    | 354,291    | -2,071  | 0,03271399  |
| 40        | 357,019    | 354,946    | -2,073  | 0,03271399  |
| 60        | 357,828    | 355,6      | -2,228  | 0,03271399  |
| 69,267    | 357,973    | 355,903    | -2,07   | 0,03271399  |
| 80        | 359,109    | 357,385    | -1,724  | 0,13807882  |
| 100       | 359,431    | 357,285    | -2,146  | -0,005      |
| 110       | 359,115    | 357,235    | -1,88   | -0,005      |
| 120       | 359,06     | 356,899    | -2,161  | -0,03356667 |
| 140       | 358,489    | 356,228    | -2,261  | -0,03356667 |
| 160       | 357,831    | 355,557    | -2,274  | -0,03356667 |
| 180       | 357,123    | 354,885    | -2,237  | -0,03356667 |
| 200       | 356,324    | 354,214    | -2,11   | -0,03356667 |
| 220       | 355,641    | 353,543    | -2,099  | -0,03356667 |
| 240       | 354,81     | 352,871    | -1,939  | -0,03356667 |
| 260       | 353,987    | 352,2      | -1,787  | -0,03356667 |
| 280       | 353,366    | 351,529    | -1,838  | -0,03356667 |
| 290       | 353,019    | 351,193    | -1,826  | -0,03356667 |
| 300       | 352,828    | 351,098    | -1,729  | -0,00946287 |
| 320       | 352,615    | 350,909    | -1,706  | -0,00946287 |
| 330,791   | 352,624    | 350,807    | -1,817  | -0,00946287 |
| 340       | 351,231    | 349,298    | -1,933  | -0,16385248 |
| 357,797   | 348,032    | 346,382    | -1,65   | -0,16385248 |
| 360       | 348,422    | 346,755    | -1,667  | 0,16922081  |
| 371,696   | 350,384    | 348,734    | -1,65   | 0,16922081  |
| 380       | 350,213    | 348,584    | -1,628  | -0,01801378 |
| 400       | 349,797    | 348,224    | -1,573  | -0,01801378 |
| 410       | 349,694    | 348,044    | -1,65   | -0,01801378 |
| 420       | 349,68     | 347,994    | -1,686  | -0,005      |
| 440       | 349,681    | 347,894    | -1,787  | -0,005      |
| 460       | 349,685    | 347,794    | -1,891  | -0,005      |
| 480       | 349,688    | 347,694    | -1,994  | -0,005      |
| 500       | 349,698    | 347,594    | -2,104  | -0,005      |
| 520       | 349,749    | 347,494    | -2,255  | -0,005      |
| 540       | 349,694    | 347,394    | -2,3    | -0,005      |
| 560       | 349,752    | 347,294    | -2,458  | -0,005      |
| 580       | 348,379    | 346,454    | -1,925  | -0,04198528 |
| 581,055   | 348,06     | 346,41     | -1,65   | -0,04198528 |

### H-365

| Distancia | C. Terreno | C. Rasante | C. Roja | Pendiente   |
|-----------|------------|------------|---------|-------------|
| 0         | 356,234    | 353,592    | -2,642  | 0,03305855  |
| 20        | 355,903    | 354,253    | -1,65   | 0,03305855  |
| 40        | 355,965    | 354,153    | -1,812  | -0,005      |
| 60        | 355,854    | 354,053    | -1,801  | -0,005      |
| 80        | 355,791    | 353,953    | -1,837  | -0,005      |
| 100       | 355,668    | 353,853    | -1,815  | -0,005      |
| 120       | 355,673    | 353,753    | -1,92   | -0,005      |
| 140       | 355,633    | 353,653    | -1,98   | -0,005      |
| 150       | 355,563    | 353,603    | -1,96   | -0,005      |
| 160       | 355,488    | 352,281    | -3,208  | -0,13222396 |
| 171,075   | 352,607    | 350,817    | -1,79   | -0,13222396 |
| 180       | 352,36     | 350,541    | -1,819  | -0,0309028  |
| 200       | 352,015    | 349,923    | -2,093  | -0,0309028  |
| 214,131   | 351,136    | 349,486    | -1,65   | -0,0309028  |
| 220       | 351,127    | 349,457    | -1,671  | -0,005      |
| 236,806   | 351,143    | 349,373    | -1,77   | -0,005      |

### H-373

| Distancia | C. Terreno | C. Rasante | C. Roja | Pendiente   |
|-----------|------------|------------|---------|-------------|
| 0         | 344,746    | 342,713    | -2,033  | 0,003       |
| 20        | 344,531    | 342,773    | -1,758  | 0,003       |
| 40        | 344,435    | 342,833    | -1,602  | 0,003       |
| 60        | 344,482    | 342,893    | -1,589  | 0,003       |
| 80        | 345,252    | 342,953    | -2,299  | 0,003       |
| 100       | 345,239    | 343,013    | -2,226  | 0,003       |
| 120       | 345,284    | 343,073    | -2,211  | 0,003       |
| 140       | 345,318    | 343,133    | -2,185  | 0,003       |
| 152,806   | 344,377    | 342,827    | -1,55   | -0,02389505 |
| 160       | 344,37     | 342,791    | -1,579  | -0,00500045 |
| 180       | 344,398    | 342,691    | -1,707  | -0,00500045 |
| 200       | 344,579    | 342,591    | -1,988  | -0,00500045 |
| 220       | 344,149    | 342,491    | -1,658  | -0,00500045 |
| 240       | 345,098    | 342,811    | -2,287  | 0,01600889  |
| 260       | 345,072    | 343,131    | -1,941  | 0,01600889  |
| 280       | 345,051    | 343,452    | -1,599  | 0,01600889  |
| 292,897   | 345,518    | 343,658    | -1,86   | 0,01600889  |

### H-376

| Distancia | C. Terreno | C. Rasante | C. Roja | Pendiente   |
|-----------|------------|------------|---------|-------------|
| 0         | 330,716    | 328,093    | -2,623  | 0,2252      |
| 10        | 331,945    | 330,345    | -1,6    | 0,2252      |
| 20        | 330,265    | 328,372    | -1,893  | -0,19734059 |
| 29,854    | 328,017    | 326,427    | -1,59   | -0,19734059 |
| 40        | 331,113    | 329,185    | -1,928  | 0,27183126  |
| 60        | 331,117    | 329,245    | -1,872  | 0,003       |

|         |         |         |        |            |
|---------|---------|---------|--------|------------|
| 80      | 331,093 | 329,305 | -1,788 | 0,00300319 |
| 100     | 331,078 | 329,365 | -1,713 | 0,00300319 |
| 120     | 331,08  | 329,425 | -1,654 | 0,00300319 |
| 140     | 331,099 | 329,485 | -1,613 | 0,00300319 |
| 157,563 | 331,182 | 329,538 | -1,644 | 0,00300319 |
| 160     | 331,307 | 329,686 | -1,621 | 0,06072854 |
| 180     | 333,748 | 330,901 | -2,848 | 0,06072854 |
| 197,643 | 333,937 | 331,972 | -1,965 | 0,06072854 |
| 200     | 333,93  | 331,979 | -1,951 | 0,00300153 |
| 220     | 334,003 | 332,039 | -1,964 | 0,00300153 |
| 240     | 334,052 | 332,099 | -1,953 | 0,00300153 |
| 260     | 334,069 | 332,159 | -1,909 | 0,00300153 |
| 280     | 334,07  | 332,219 | -1,851 | 0,00300153 |
| 300     | 334,052 | 332,279 | -1,773 | 0,00300153 |
| 320     | 333,967 | 332,339 | -1,628 | 0,00300153 |
| 340     | 334,076 | 332,399 | -1,677 | 0,00300153 |
| 360     | 334,14  | 332,459 | -1,68  | 0,00300153 |
| 361,226 | 334,171 | 332,463 | -1,708 | 0,00300153 |

### H-392

| Distancia | C. Terreno | C. Rasante | C. Roja | Pendiente   |
|-----------|------------|------------|---------|-------------|
| 0         | 342,203    | 340,438    | -1,765  | 0,05737655  |
| 20        | 344,051    | 341,586    | -2,466  | 0,05737655  |
| 32,888    | 343,975    | 342,325    | -1,65   | 0,05737655  |
| 40        | 343,963    | 342,289    | -1,674  | -0,005      |
| 60        | 343,972    | 342,189    | -1,782  | -0,005      |
| 80        | 343,912    | 342,089    | -1,822  | -0,005      |
| 100       | 343,874    | 341,989    | -1,885  | -0,005      |
| 120       | 343,843    | 341,889    | -1,954  | -0,005      |
| 140       | 343,8      | 341,789    | -2,011  | -0,005      |
| 160       | 343,905    | 341,689    | -2,216  | -0,005      |
| 180       | 343,84     | 341,589    | -2,251  | -0,005      |
| 200       | 343,756    | 341,489    | -2,267  | -0,005      |
| 220       | 343,847    | 341,389    | -2,458  | -0,005      |
| 230       | 343,616    | 341,339    | -2,277  | -0,005      |
| 240       | 343,084    | 340,899    | -2,185  | -0,04408704 |
| 249,647   | 342,222    | 340,473    | -1,749  | -0,04408704 |
| 260       | 342,212    | 340,505    | -1,707  | 0,00308356  |
| 280       | 342,285    | 340,567    | -1,718  | 0,00308356  |
| 300       | 342,491    | 340,629    | -1,863  | 0,00308356  |
| 318,093   | 342,934    | 340,684    | -2,25   | 0,00308356  |
| 320       | 342,982    | 340,873    | -2,109  | 0,09881366  |
| 339,241   | 344,424    | 342,774    | -1,65   | 0,09881366  |

### H-396

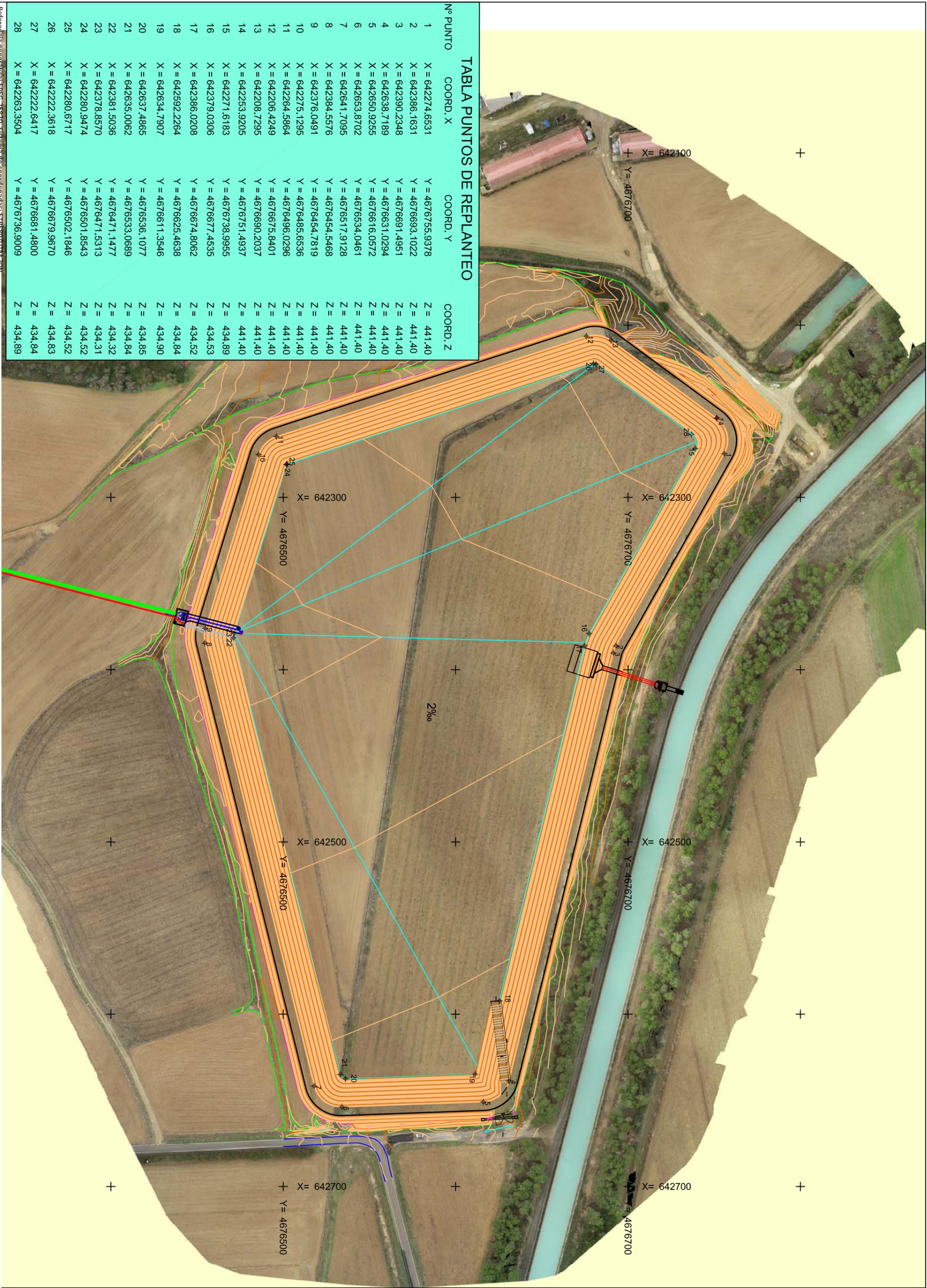
| Distancia | C. Terreno | C. Rasante | C. Roja | Pendiente   |
|-----------|------------|------------|---------|-------------|
| 0         | 337,593    | 335,918    | -1,675  | -0,03232938 |
| 20        | 337,33     | 335,271    | -2,059  | -0,03232938 |

|         |         |         |        |             |
|---------|---------|---------|--------|-------------|
| 34,823  | 337,137 | 334,792 | -2,345 | -0,03232938 |
| 40      | 337,059 | 334,808 | -2,251 | 0,003       |
| 60      | 337,148 | 334,868 | -2,281 | 0,003       |
| 80      | 337,272 | 334,928 | -2,344 | 0,003       |
| 100     | 337,161 | 334,988 | -2,174 | 0,003       |
| 120     | 337,09  | 335,048 | -2,042 | 0,003       |
| 140     | 336,833 | 335,108 | -1,726 | 0,003       |
| 152,762 | 336,796 | 335,146 | -1,65  | 0,003       |

### H-400

| Distancia | C. Terreno | C. Rasante | C. Roja | Pendiente  |
|-----------|------------|------------|---------|------------|
| 0         | 335,916    | 334,08     | -1,836  | -0,005     |
| 20        | 336,055    | 333,98     | -2,075  | -0,005     |
| 30        | 336,84     | 335,29     | -1,55   | 0,131      |
| 40        | 337,242    | 335,437    | -1,805  | 0,01468073 |
| 60        | 337,597    | 335,73     | -1,867  | 0,01468073 |
| 80        | 337,943    | 336,024    | -1,919  | 0,01468073 |
| 100       | 337,945    | 336,318    | -1,628  | 0,01468073 |
| 120       | 338,273    | 336,611    | -1,662  | 0,01468073 |
| 127,066   | 338,403    | 336,715    | -1,688  | 0,01468073 |
| 140       | 339,243    | 337,321    | -1,922  | 0,04687364 |
| 150       | 339,438    | 337,79     | -1,648  | 0,04687364 |
| 160       | 339,603    | 337,82     | -1,783  | 0,003004   |
| 180       | 339,657    | 337,88     | -1,777  | 0,003004   |
| 200       | 339,669    | 337,94     | -1,729  | 0,003004   |
| 213,249   | 339,57     | 337,98     | -1,59   | 0,003004   |
| 220       | 339,878    | 338,198    | -1,68   | 0,03234155 |
| 240       | 340,514    | 338,845    | -1,669  | 0,03234155 |
| 260       | 341,338    | 339,492    | -1,846  | 0,03234155 |
| 277,642   | 342,683    | 341,093    | -1,59   | 0,09074935 |

## PLANOS



**TABLA PUNTOS DE REPLANTEO**

| Nº PUNTO | COORD. X        | COORD. Y         | COORD. Z   |
|----------|-----------------|------------------|------------|
| 1        | X = 642274,6531 | Y = 4676755,9378 | Z = 441,40 |
| 2        | X = 642386,1631 | Y = 4676693,1022 | Z = 441,40 |
| 3        | X = 642390,2348 | Y = 4676691,4951 | Z = 441,40 |
| 4        | X = 642638,7189 | Y = 4676631,0294 | Z = 441,40 |
| 5        | X = 642650,9255 | Y = 4676616,0572 | Z = 441,40 |
| 6        | X = 642653,8702 | Y = 4676534,0461 | Z = 441,40 |
| 7        | X = 642641,7095 | Y = 4676517,9128 | Z = 441,40 |
| 8        | X = 642384,5576 | Y = 4676454,5468 | Z = 441,40 |
| 9        | X = 642376,0491 | Y = 4676454,7819 | Z = 441,40 |
| 10       | X = 642275,1295 | Y = 4676485,6536 | Z = 441,40 |
| 11       | X = 642264,5864 | Y = 4676496,0296 | Z = 441,40 |
| 12       | X = 642206,4249 | Y = 4676675,8401 | Z = 441,40 |
| 13       | X = 642208,7295 | Y = 4676690,2037 | Z = 441,40 |
| 14       | X = 642253,9205 | Y = 4676751,4937 | Z = 441,40 |
| 15       | X = 642271,6183 | Y = 4676738,9955 | Z = 434,89 |
| 16       | X = 642379,0306 | Y = 4676677,4535 | Z = 434,53 |
| 17       | X = 642386,0208 | Y = 4676674,8062 | Z = 434,52 |
| 18       | X = 642592,2264 | Y = 4676625,4638 | Z = 434,84 |
| 19       | X = 642634,7907 | Y = 4676611,3546 | Z = 434,90 |
| 20       | X = 642637,4865 | Y = 4676536,1077 | Z = 434,85 |
| 21       | X = 642635,0062 | Y = 4676533,0689 | Z = 434,84 |
| 22       | X = 642381,5036 | Y = 4676471,1477 | Z = 434,32 |
| 23       | X = 642378,8570 | Y = 4676471,5313 | Z = 434,31 |
| 24       | X = 642280,9474 | Y = 4676501,8543 | Z = 434,52 |
| 25       | X = 642280,6717 | Y = 4676502,1846 | Z = 434,52 |
| 26       | X = 642222,3618 | Y = 4676679,9670 | Z = 434,83 |
| 27       | X = 642222,6417 | Y = 4676681,4800 | Z = 434,84 |
| 28       | X = 642263,3504 | Y = 4676736,9009 | Z = 434,89 |

Referencia geográfica: EPSG: 29830; sistema de coordenadas: ETRS89/UTM 30N

Financiado por la Unión Europea  
NextGenerationEU

Comunidad de Regantes y de los Riegos de Bardenas

PROYECTO DE MODERNIZACIÓN INTEGRAL DE LA COMUNIDAD DE REGANTES Nº V DE LOS RIEGOS DE BARDENAS (ZONA 1) (ZARAGOZA)

Escala: 1/2000  
Tamaño: A3

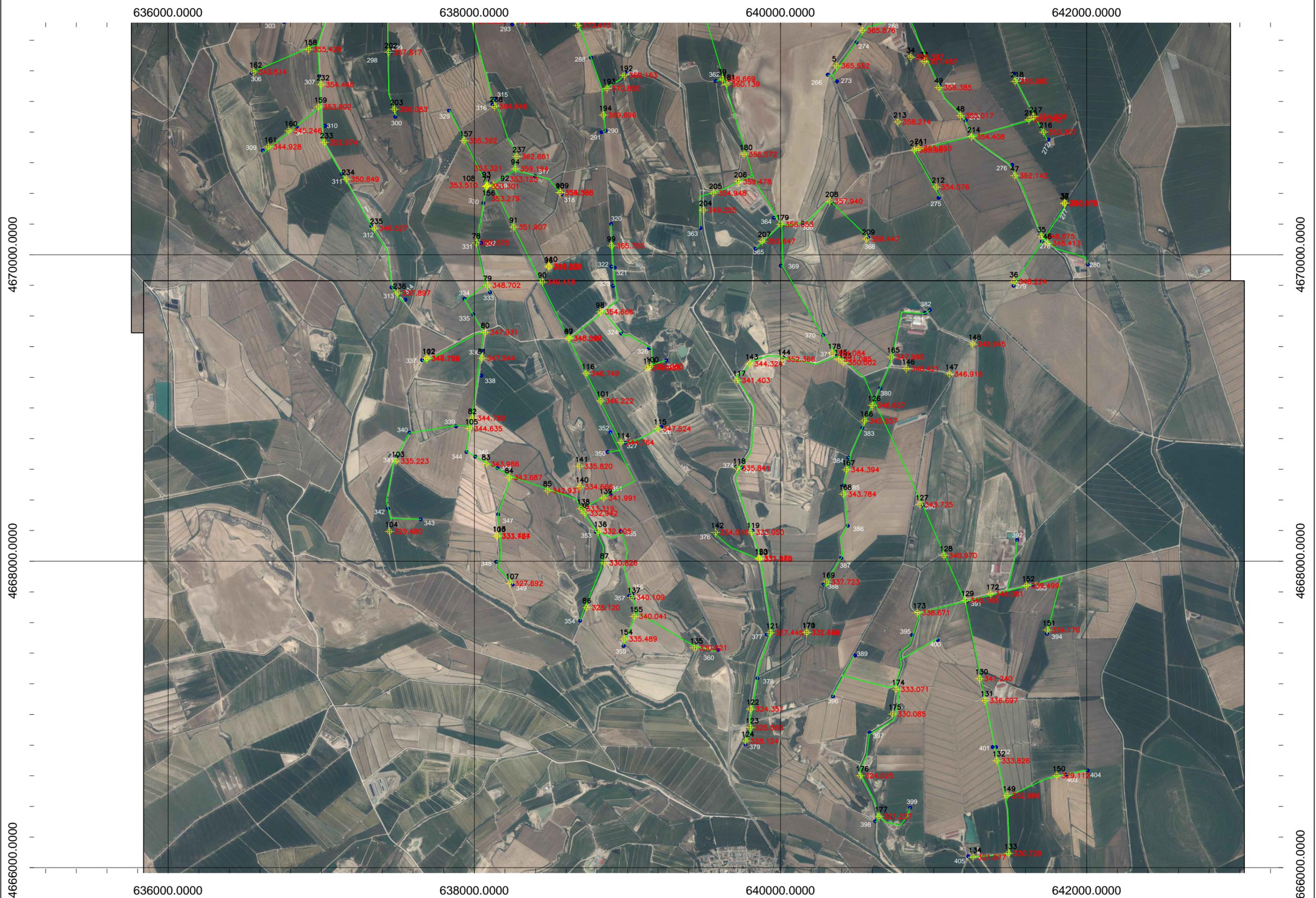
Fecha: ENERO DE 2023

Autor del Proyecto: EL INGENIERO AGRÓNOMO, JOSÉ MIGUEL LAFUZZA DE MARCO  
EL INGENIERO AGRÓNOMO, SAMUEL SARRIA LARRO

Título del plano: PLANOS DE ANEJO Nº 4  
BALSA. REPLANTEO

Plano nº: Hoja nº:





Referencia geográfica: EPSG 25830. Sistema de coordenadas: ETRS89/UTM 30N



PROYECTO DE MODERNIZACIÓN INTEGRAL DE LA  
 COMUNIDAD DE REGANTES Nº V DE LOS RIEGOS  
 DE BARDENAS (ZONA 1) (ZARAGOZA)

Escala:  
 1/22000  
 Tamaño: A3

Fecha:  
 ENERO  
 DE 2023

Autor del Proyecto: EL INGENIERO AGRÓNOMO,  
  
 INGENIERÍA JOSÉ MIGUEL LA LAZA DE MARCO  
 EL INGENIERO AGRÓNOMO,  
  
 SAMUEL SARRÍA LARIO

Título del plano:  
**PLANOS DE ANEJO Nº4.**  
**DIANAS**

Plano nº:  
 Hoja nº:  
**2 de 2**