HORIZONTAL ALIGNMENT LISTING

This data is listed with a 2d visualization. The attached file .xml is used for this alignment implementation in IFC.

The columns for the horizontal alignment are :

Element: Type of horizontal geometrical element

Linear: straight alignment

Circular: arc

Clothoid: transition curve, in this case a clothoid

PK debut: Element start kilometrical point

Y début/X début: Element start geographical coordinates (Y,X) – [RGF 93 CC49]

PK fin: Element end kilometrical point

Y fin/X fin: Element end geographical coordinates (Y,X)

Longueur: Element Length

Rayon: Radius

Dévers: Cant value measured from the lower rail

RP constant: Clothoide constant

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Elément** | **PK** | **Y** | **X** | **PK** | **Y** | **X** | **Longueur** | **Rayon** | **Dévers** | **Constante** |
| **Début** | **Début** | **Début** | **Fin** | **Fin** | **Fin** | **RP** |
| Circular | 0 | 8195246,24 | 1671754,925 | 93,0762812 | 8195311,013 | 1671821,765 | 93,0763 | -6256,5344 | 70 |  |
| Circular | 93,0762812 | 8195311,013 | 1671821,765 | 112,7294972 | 8195324,816 | 1671835,754 | 19,6532 | -6253,9994 | 70 |  |
| Clothoid | 112,7294972 | 8195324,816 | 1671835,754 | 172,7295007 | 8195367,331 | 1671878,092 | 60 |  |  | 499,8935 |
| Circular | 172,7295007 | 8195367,331 | 1671878,092 | 227,5178898 | 8195406,938 | 1671915,946 | 54,7884 | -2500 |  |  |
| Circular | 227,5178898 | 8195406,938 | 1671915,946 | 279,8459819 | 8195445,311 | 1671951,523 | 52,3281 | -6246,18 |  |  |
| Clothoid | 279,8459819 | 8195445,311 | 1671951,523 | 295,8526196 | 8195457,103 | 1671962,346 | 16,0066 |  |  | 316,1967 |
| Clothoid | 295,8526196 | 8195457,103 | 1671962,346 | 319,8459817 | 8195474,771 | 1671978,58 | 23,9934 |  |  | 316,1967 |
| Circular | 319,8459817 | 8195474,771 | 1671978,58 | 394,2505075 | 8195529,011 | 1672029,511 | 74,4045 | 4167 |  |  |
| Clothoid | 394,2505075 | 8195529,011 | 1672029,511 | 454,2505069 | 8195572,182 | 1672071,179 | 60 |  |  | 500,02 |
| Linear | 454,2505069 | 8195572,182 | 1672071,179 | 572,8433764 | 8195657,315 | 1672153,742 | 118,5929 |  |  |  |
| Clothoid | 572,8433764 | 8195657,315 | 1672153,742 | 662,8438653 | 8195724,364 | 1672213,691 | 90,0005 |  |  | 182,4834 |
| Circular | 662,8438653 | 8195724,364 | 1672213,691 | 1219,552099 | 8196227,301 | 1672161,271 | 556,7082 | -370 | 160 |  |
| Clothoid | 1219,552099 | 8196227,301 | 1672161,271 | 1309,552588 | 8196280,547 | 1672088,785 | 90,0005 |  |  | 182,4834 |
| Linear | 1309,552588 | 8196280,547 | 1672088,785 | 1321,697144 | 8196287,334 | 1672078,714 | 12,1446 |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |

VERTICAL ALIGNMENT LISTING :

The columns for the vertical alignment are :

Element: Type of horizontal geometrical element

Linear: straight alignment

Circular: arc

PK debut: Element start kilometrical point

Z début: Element start elevation/altitude (NGF French reference level) of the lower rail

Pente début: start gradient

PK fin: Element end kilometrical point

Z fin: Element end elevation/altitude (NGF French reference level) of the lower rail

Longueur: Element Length

Rayon Vertical : vertical radius

Rupture de pente : Vertical bend

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Element** | **PK** | **Z** | **Pente** | **PK** | **Z** | **Pente** | **Longueur** | **Rayon** | **Rupture** |
| **Début** | **Début** | **Début** | **Fin** | **Fin** | **Fin** | **Vertical** | **de Pente** |
| Linear | 000,0000000 | 60,8870198 | 0,0055995 | 0+93,0759602 | 61,4082 | 0,0055995 | 93,076 | 0 | -0,000902 |
| Linear | 093,0759602 | 61,4082 | 0,0065015 | 1+42,7259602 | 61,731 | 0,0065015 | 49,65 | 0 | 0,0040003 |
| Linear | 142,7259602 | 61,731 | 0,0025013 | 2+95,8490812 | 62,114 | 0,0025013 | 153,1231 | 0 | 0,004005 |
| Linear | 295,8490812 | 62,114 | -0,0015037 | 3+86,8052468 | 61,9772277 | -0,0015037 | 90,9562 |  |  |
| Circular | 386,8052468 | 61,9772277 | -0,0015037 | 4+93,4838127 | 60,190596 | -0,0319997 | 106,6786 | 3500 |  |
| Linear | 493,4838127 | 60,190596 | -0,0319997 | 5+81,1547056 | 57,3851557 | -0,0319997 | 87,6709 |  |  |
| Circular | 581,1547056 | 57,3851557 | -0,0319997 | 8+05,0416989 | 57,3852791 | 0,0320008 | 223,887 | -3500 |  |
| Linear | 805,0416989 | 57,3852791 | 0,0320008 | 10+23,1557777 | 64,3650996 | 0,0320008 | 218,1141 |  |  |
| Circular | 1023,1557777 | 64,3650996 | 0,0320008 | 10+98,2273509 | 65,9615662 | 0,010536 | 75,0716 | 3500 |  |
| Linear | 1098,2273509 | 65,9615662 | 0,010536 | 13+09,7781136 | 68,1904588 | 0,010536 | 211,5508 |  |  |

CANT ALIGNMENT LISTING

The columns for the cant table are :

Element: Type of **horizontal** geometrical element

Linear: straight alignment

Circular: arc

Clothoid: transition curve, in this case a clothoid

Start station: Element start kilometrical point

End station: Element end kilometrical point

Start Cant: cant value at the beginning of the horizontal geometric element. Measured from the lower rail

End Cant: cant value at the end of the horizontal geometric element. Measured from the lower rail

**!To be noticed, that the elevation/altitude of the lower rail is the one marked at the vertical alignment listing**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Element** | **Start Station** | **End Station** | **Speed** | **Start Cant** | **End Cant** |
| **(kph)** | **(mm)** | **(mm)** |
| Circular | 000,0000000 | 083,0762812 | 100 | 70 | 70 |
| Linear | 083,0762812 | 103,0762812 | 100 | 70 | 70 |
| Circular | 103,0762812 | 112,7294972 | 100 | 70 | 70 |
| Clothoid | 112,7294972 | 172,7295007 | 100 | 70 | 0 |
| Circular | 172,7295007 | 217,5178898 | 100 | 0 | 0 |
| Linear | 217,5178898 | 237,5178898 | 100 | 0 | 0 |
| Circular | 237,5178898 | 279,8459819 | 100 | 0 | 0 |
| Clothoid | 279,8459819 | 295,8526196 | 100 | 0 | 0 |
| Clothoid | 295,8526196 | 319,8459817 | 100 | 0 | 0 |
| Circular | 319,8459817 | 394,2505075 | 100 | 0 | 0 |
| Clothoid | 394,2505075 | 454,2505069 | 100 | 0 | 0 |
| Linear | 454,2505069 | 572,8433764 | 100 | 0 | 0 |
| Clothoid | 572,8433764 | 662,8438653 | 100 | 0 | 160 |
| Circular | 662,8438653 | 1219,5520993 | 100 | 160 | 160 |
| Clothoid | 1219,5520993 | 1309,5525881 | 100 | 160 | 0 |
| Linear | 1309,5525881 | 1321,6971442 | 100 | 0 | 0 |