

ACCESOS A PRESA DE KHOTIA-KHOTA

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1 INTRODUCCIÓN

En el presente informe se describen las características principales de los accesos a la presa de Khotia-Khota.

2 ACCESO A PIE DE PRESA

Se ha dimensionado un vial de acceso al pie de presa de una longitud de 139,13 m, situado en la ladera derecha para acceder a pie de presa desde un camino existente.

2.1 Sección

2.1.1 Anchura

El ancho de calzada es de 3,00 m, siendo el ancho de cada carril de 1,50 m. El bombeo se realizará con una pendiente hacia el exterior del 2%.

2.1.2 Material del firme

El firme se realizará mediante una capa de 30 cm de espesor de zahorra artificial, procedente de machaqueo. No se asfaltará la capa de rodadura.

2.1.3 Taludes

El talud de desmonte adoptado es 1H:3V y el talud de terraplén es 3H:2V. En ambos casos se ha considerado la necesidad de efectuar tratamientos de sostenimiento del terreno mediante bulones y malla electrosoldada.

2.1.4 Cunetas

Las cunetas tendrán diseño triangular de 0'15 m. de profundidad, con talud interior de 2H:1V.

2.2 Trazado en planta y en alzado

Se ha tenido por objetivo minimizar al máximo posible los movimientos de tierras, adaptándose la traza y su perfil longitudinal al perfil del terreno de forma que el impacto sobre el medio por el que discurre sea mínimo.

El criterio de diseño, por tanto, ha sido el de ajustar al máximo la rasante al terreno y encajar el trazado en el terreno.

3 ACCESO A CORONACIÓN

Además, se ha proyectado un camino a partir del p.k. 0+100,83 del vial de acceso, por la misma ladera, con una longitud de 62,4 m y que permite el acceso a coronación desde el estribo derecho.

3.1 Sección

3.1.1 Anchura

El ancho de calzada es de 3,00 m, siendo el ancho de cada carril de 1,50 m. El bombeo se realizará con una pendiente hacia el exterior del 2%.

3.1.2 Material del firme

El firme se realizará mediante una capa de 30 cm de espesor de zahorra artificial, procedente de machaqueo. No se asfaltará la capa de rodadura.

3.1.3 Taludes

El talud de desmonte adoptado es 1H:3V y el talud de terraplén es 3H:2V. En ambos casos se ha considerado la necesidad de efectuar tratamientos de sostenimiento del terreno mediante bulones y malla electrosoldada.

3.1.4 Cunetas

Las cunetas tendrán diseño triangular de 0'15 m. de profundidad, con talud interior de 2H:1V.

3.2 Trazado en planta y en alzado

Se ha tenido por objetivo minimizar al máximo posible los movimientos de tierras, adaptándose la traza y su perfil longitudinal al perfil del terreno de forma que el impacto sobre el medio por el que discurre sea mínimo. La máxima pendiente adoptada es del 10,12%.

El criterio de diseño, por tanto, ha sido el de ajustar al máximo la rasante al terreno y encajar el trazado en el terreno.

Anexo 1. Listado de Definición Geométrica de los Ejes

Acceso a pie de presa

| P.K. | DESPLAZAMIENTO DEL VERTICE | COORDENADA X | COORDENADA Y | COORDENADA Z | CÓDIGO |
|--------|----------------------------|--------------|--------------|--------------|----------|
| 0 | -2,88 | 569.456,06 | 8.216.492,27 | 4.490,50 | 99 |
| 0 | -2,55 | 569.456,35 | 8.216.492,11 | 4.489,51 | 60 |
| 0 | -2,25 | 569.456,61 | 8.216.491,97 | 4.489,36 | 59 |
| 0 | -1,95 | 569.456,87 | 8.216.491,82 | 4.489,51 | PF |
| 0 | -1,50 | 569.457,26 | 8.216.491,60 | 4.489,81 | Carril 1 |
| 0 | 0,00 | 569.458,58 | 8.216.490,87 | 4.489,81 | Eje |
| 0 | 1,50 | 569.459,89 | 8.216.490,14 | 4.489,81 | Carril 2 |
| 0 | 1,95 | 569.460,28 | 8.216.489,92 | 4.489,51 | PF |
| 0 | 3,23 | 569.461,40 | 8.216.489,30 | 4.488,66 | 79 |
| 10 | -3,13 | 569.460,71 | 8.216.501,13 | 4.490,04 | 99 |
| 10 | -2,55 | 569.461,21 | 8.216.500,85 | 4.488,31 | 60 |
| 10 | -2,25 | 569.461,47 | 8.216.500,71 | 4.488,16 | 59 |
| 10 | -1,95 | 569.461,73 | 8.216.500,56 | 4.488,31 | PF |
| 10 | -1,50 | 569.462,13 | 8.216.500,34 | 4.488,61 | Carril 1 |
| 10 | 0,00 | 569.463,44 | 8.216.499,61 | 4.488,61 | Eje |
| 10 | 1,50 | 569.464,75 | 8.216.498,88 | 4.488,61 | Carril 2 |
| 10 | 1,95 | 569.465,14 | 8.216.498,66 | 4.488,31 | PF |
| 10 | 3,09 | 569.466,14 | 8.216.498,11 | 4.487,55 | 79 |
| 19,723 | -2,66 | 569.465,84 | 8.216.509,40 | 4.487,47 | 99 |
| 19,723 | -2,55 | 569.465,94 | 8.216.509,35 | 4.487,14 | 60 |
| 19,723 | -2,25 | 569.466,20 | 8.216.509,20 | 4.486,99 | 59 |
| 19,723 | -1,95 | 569.466,46 | 8.216.509,06 | 4.487,14 | PF |
| 19,723 | -1,50 | 569.466,85 | 8.216.508,84 | 4.487,44 | Carril 1 |
| 19,723 | 0,00 | 569.468,16 | 8.216.508,11 | 4.487,44 | Eje |
| 19,723 | 1,50 | 569.469,47 | 8.216.507,38 | 4.487,44 | Carril 2 |
| 19,723 | 1,95 | 569.469,87 | 8.216.507,16 | 4.487,14 | PF |
| 19,723 | 6,94 | 569.474,22 | 8.216.504,74 | 4.483,82 | 79 |
| 20 | -2,67 | 569.465,98 | 8.216.509,68 | 4.487,47 | 99 |
| 20 | -2,55 | 569.466,09 | 8.216.509,62 | 4.487,11 | 60 |
| 20 | -2,25 | 569.466,35 | 8.216.509,47 | 4.486,96 | 59 |
| 20 | -1,95 | 569.466,61 | 8.216.509,32 | 4.487,11 | PF |
| 20 | -1,50 | 569.467,00 | 8.216.509,10 | 4.487,41 | Carril 1 |
| 20 | 0,00 | 569.468,30 | 8.216.508,35 | 4.487,41 | Eje |
| 20 | 1,50 | 569.469,60 | 8.216.507,60 | 4.487,41 | Carril 2 |
| 20 | 1,95 | 569.469,99 | 8.216.507,38 | 4.487,11 | PF |
| 20 | 6,92 | 569.474,30 | 8.216.504,90 | 4.483,80 | 79 |
| 27,882 | -3,02 | 569.471,62 | 8.216.516,64 | 4.487,58 | 99 |
| 27,882 | -2,55 | 569.471,90 | 8.216.516,27 | 4.486,17 | 60 |
| 27,882 | -2,25 | 569.472,08 | 8.216.516,03 | 4.486,02 | 59 |
| 27,882 | -1,95 | 569.472,27 | 8.216.515,79 | 4.486,17 | PF |
| 27,882 | -1,50 | 569.472,54 | 8.216.515,43 | 4.486,47 | Carril 1 |
| 27,882 | 0,00 | 569.473,46 | 8.216.514,24 | 4.486,47 | Eje |

| P.K. | DESPLAZAMIENTO DEL VERTICE | COORDENADA X | COORDENADA Y | COORDENADA Z | CÓDIGO |
|--------|-------------------------------|--------------|--------------|--------------|----------|
| 27,882 | 1,50 | 569.474,37 | 8.216.513,05 | 4.486,47 | Carril 2 |
| 27,882 | 1,95 | 569.474,64 | 8.216.512,70 | 4.486,17 | PF |
| 27,882 | 4,59 | 569.476,25 | 8.216.510,60 | 4.484,41 | 79 |
| 30 | -3,08 | 569.473,26 | 8.216.517,97 | 4.487,55 | 99 |
| 30 | -2,55 | 569.473,58 | 8.216.517,56 | 4.485,97 | 60 |
| 30 | -2,25 | 569.473,76 | 8.216.517,32 | 4.485,82 | 59 |
| 30 | -1,95 | 569.473,95 | 8.216.517,08 | 4.485,97 | PF |
| 30 | -1,50 | 569.474,22 | 8.216.516,72 | 4.486,27 | Carril 1 |
| 30 | 0,00 | 569.475,13 | 8.216.515,53 | 4.486,27 | Eje |
| 30 | 1,50 | 569.476,05 | 8.216.514,34 | 4.486,27 | Carril 2 |
| 30 | 1,95 | 569.476,32 | 8.216.513,99 | 4.485,97 | PF |
| 30 | 4,16 | 569.477,67 | 8.216.512,23 | 4.484,50 | 79 |
| 40 | -3,33 | 569.481,04 | 8.216.524,26 | 4.487,64 | 99 |
| 40 | -2,55 | 569.481,51 | 8.216.523,65 | 4.485,32 | 60 |
| 40 | -2,25 | 569.481,69 | 8.216.523,41 | 4.485,17 | 59 |
| 40 | -1,95 | 569.481,88 | 8.216.523,17 | 4.485,32 | PF |
| 40 | -1,50 | 569.482,15 | 8.216.522,82 | 4.485,62 | Carril 1 |
| 40 | 0,00 | 569.483,06 | 8.216.521,63 | 4.485,62 | Eje |
| 40 | 1,50 | 569.483,98 | 8.216.520,44 | 4.485,62 | Carril 2 |
| 40 | 1,95 | 569.484,25 | 8.216.520,08 | 4.485,32 | PF |
| 40 | 4,64 | 569.485,89 | 8.216.517,95 | 4.483,53 | 79 |
| 43,765 | -4,98 | 569.483,02 | 8.216.527,87 | 4.492,57 | 99 |
| 43,765 | -2,55 | 569.484,50 | 8.216.525,94 | 4.485,29 | 60 |
| 43,765 | -2,25 | 569.484,68 | 8.216.525,71 | 4.485,14 | 59 |
| 43,765 | -1,95 | 569.484,86 | 8.216.525,47 | 4.485,29 | PF |
| 43,765 | -1,50 | 569.485,14 | 8.216.525,11 | 4.485,59 | Carril 1 |
| 43,765 | 0,00 | 569.486,05 | 8.216.523,92 | 4.485,59 | Eje |
| 43,765 | 1,50 | 569.486,96 | 8.216.522,73 | 4.485,59 | Carril 2 |
| 43,765 | 1,95 | 569.487,24 | 8.216.522,38 | 4.485,29 | PF |
| 43,765 | 5,80 | 569.489,58 | 8.216.519,32 | 4.482,73 | 79 |
| 45,764 | -4,88 | 569.485,12 | 8.216.529,21 | 4.492,33 | 99 |
| 45,764 | -2,55 | 569.486,35 | 8.216.527,23 | 4.485,34 | 60 |
| 45,764 | -2,25 | 569.486,51 | 8.216.526,97 | 4.485,19 | 59 |
| 45,764 | -1,95 | 569.486,67 | 8.216.526,72 | 4.485,34 | PF |
| 45,764 | -1,50 | 569.486,90 | 8.216.526,33 | 4.485,64 | Carril 1 |
| 45,764 | 0,00 | 569.487,69 | 8.216.525,06 | 4.485,64 | Eje |
| 45,764 | 1,50 | 569.488,48 | 8.216.523,78 | 4.485,64 | Carril 2 |
| 45,764 | 1,95 | 569.488,72 | 8.216.523,40 | 4.485,34 | PF |
| 45,764 | 6,20 | 569.490,96 | 8.216.519,79 | 4.482,51 | 79 |
| 47,666 | -4,57 | 569.486,90 | 8.216.529,94 | 4.491,48 | 99 |
| 47,666 | -2,55 | 569.487,96 | 8.216.528,23 | 4.485,42 | 60 |
| 47,666 | -2,25 | 569.488,12 | 8.216.527,97 | 4.485,27 | 59 |
| 47,666 | -1,95 | 569.488,28 | 8.216.527,72 | 4.485,42 | PF |
| 47,666 | -1,50 | 569.488,52 | 8.216.527,34 | 4.485,72 | Carril 1 |
| 47,666 | 0,00 | 569.489,31 | 8.216.526,06 | 4.485,72 | Eje |

| P.K. | DESPLAZAMIENTO DEL VERTICE | COORDENADA X | COORDENADA Y | COORDENADA Z | CÓDIGO |
|--------|----------------------------|--------------|--------------|--------------|----------|
| 47,666 | 1,50 | 569.490,10 | 8.216.524,79 | 4.485,72 | Carril 2 |
| 47,666 | 1,95 | 569.490,34 | 8.216.524,40 | 4.485,42 | PF |
| 47,666 | 7,10 | 569.493,05 | 8.216.520,03 | 4.481,98 | 79 |
| 50 | -4,44 | 569.488,45 | 8.216.530,88 | 4.491,23 | 99 |
| 50 | -2,55 | 569.489,63 | 8.216.529,40 | 4.485,57 | 60 |
| 50 | -2,25 | 569.489,82 | 8.216.529,17 | 4.485,42 | 59 |
| 50 | -1,95 | 569.490,00 | 8.216.528,93 | 4.485,57 | PF |
| 50 | -1,50 | 569.490,28 | 8.216.528,58 | 4.485,87 | Carril 1 |
| 50 | 0,00 | 569.491,22 | 8.216.527,40 | 4.485,87 | Eje |
| 50 | 1,50 | 569.492,15 | 8.216.526,23 | 4.485,87 | Carril 2 |
| 50 | 1,95 | 569.492,43 | 8.216.525,88 | 4.485,57 | PF |
| 50 | 8,53 | 569.496,53 | 8.216.520,73 | 4.481,18 | 79 |
| 55,256 | -4,06 | 569.491,59 | 8.216.533,59 | 4.490,51 | 99 |
| 55,256 | -2,55 | 569.492,80 | 8.216.532,69 | 4.485,99 | 60 |
| 55,256 | -2,25 | 569.493,05 | 8.216.532,51 | 4.485,84 | 59 |
| 55,256 | -1,95 | 569.493,29 | 8.216.532,33 | 4.485,99 | PF |
| 55,256 | -1,50 | 569.493,65 | 8.216.532,07 | 4.486,29 | Carril 1 |
| 55,256 | 0,00 | 569.494,85 | 8.216.531,18 | 4.486,29 | Eje |
| 55,256 | 1,50 | 569.496,06 | 8.216.530,28 | 4.486,29 | Carril 2 |
| 55,256 | 1,95 | 569.496,42 | 8.216.530,02 | 4.485,99 | PF |
| 55,256 | 6,50 | 569.500,09 | 8.216.527,31 | 4.482,95 | 79 |
| 60 | -3,50 | 569.494,86 | 8.216.537,07 | 4.489,21 | 99 |
| 60 | -2,55 | 569.495,62 | 8.216.536,51 | 4.486,37 | 60 |
| 60 | -2,25 | 569.495,86 | 8.216.536,33 | 4.486,22 | 59 |
| 60 | -1,95 | 569.496,10 | 8.216.536,15 | 4.486,37 | PF |
| 60 | -1,50 | 569.496,47 | 8.216.535,88 | 4.486,67 | Carril 1 |
| 60 | 0,00 | 569.497,67 | 8.216.534,99 | 4.486,67 | Eje |
| 60 | 1,50 | 569.498,88 | 8.216.534,10 | 4.486,67 | Carril 2 |
| 60 | 1,95 | 569.499,24 | 8.216.533,83 | 4.486,37 | PF |
| 60 | 4,45 | 569.501,25 | 8.216.532,35 | 4.484,70 | 79 |
| 61,22 | -3,24 | 569.495,79 | 8.216.537,90 | 4.488,54 | 99 |
| 61,22 | -2,55 | 569.496,35 | 8.216.537,49 | 4.486,46 | 60 |
| 61,22 | -2,25 | 569.496,59 | 8.216.537,31 | 4.486,31 | 59 |
| 61,22 | -1,95 | 569.496,83 | 8.216.537,13 | 4.486,46 | PF |
| 61,22 | -1,50 | 569.497,19 | 8.216.536,86 | 4.486,76 | Carril 1 |
| 61,22 | 0,00 | 569.498,40 | 8.216.535,97 | 4.486,76 | Eje |
| 61,22 | 1,50 | 569.499,60 | 8.216.535,08 | 4.486,76 | Carril 2 |
| 61,22 | 1,95 | 569.499,97 | 8.216.534,81 | 4.486,46 | PF |
| 61,22 | 4,22 | 569.501,79 | 8.216.533,47 | 4.484,95 | 79 |
| 65,731 | -2,77 | 569.498,11 | 8.216.540,98 | 4.487,49 | 99 |
| 65,731 | -2,55 | 569.498,31 | 8.216.540,89 | 4.486,82 | 60 |
| 65,731 | -2,25 | 569.498,58 | 8.216.540,77 | 4.486,67 | 59 |
| 65,731 | -1,95 | 569.498,86 | 8.216.540,65 | 4.486,82 | PF |
| 65,731 | -1,50 | 569.499,27 | 8.216.540,47 | 4.487,12 | Carril 1 |
| 65,731 | 0,00 | 569.500,65 | 8.216.539,87 | 4.487,12 | Eje |

| P.K. | DESPLAZAMIENTO DEL VERTICE | COORDENADA X | COORDENADA Y | COORDENADA Z | CÓDIGO |
|--------|-------------------------------|--------------|--------------|--------------|----------|
| 65,731 | 1,50 | 569.502,02 | 8.216.539,27 | 4.487,12 | Carril 2 |
| 65,731 | 1,95 | 569.502,44 | 8.216.539,09 | 4.486,82 | PF |
| 70 | -3,05 | 569.499,55 | 8.216.545,01 | 4.488,63 | 99 |
| 70 | -2,55 | 569.500,01 | 8.216.544,80 | 4.487,12 | 60 |
| 70 | -2,25 | 569.500,29 | 8.216.544,69 | 4.486,97 | 59 |
| 70 | -1,95 | 569.500,56 | 8.216.544,57 | 4.487,12 | PF |
| 70 | -1,50 | 569.500,98 | 8.216.544,39 | 4.487,42 | Carril 1 |
| 70 | 0,00 | 569.502,35 | 8.216.543,79 | 4.487,42 | Eje |
| 70 | 1,50 | 569.503,73 | 8.216.543,19 | 4.487,42 | Carril 2 |
| 70 | 1,95 | 569.504,14 | 8.216.543,01 | 4.487,12 | PF |
| 70 | 2,25 | 569.504,41 | 8.216.542,89 | 4.486,97 | 59 |
| 70 | 2,55 | 569.504,69 | 8.216.542,77 | 4.487,12 | 60 |
| 70 | 2,63 | 569.504,76 | 8.216.542,74 | 4.487,35 | 99 |
| 80 | -2,99 | 569.503,60 | 8.216.554,15 | 4.488,44 | 99 |
| 80 | -2,55 | 569.504,00 | 8.216.553,97 | 4.487,13 | 60 |
| 80 | -2,25 | 569.504,28 | 8.216.553,85 | 4.486,98 | 59 |
| 80 | -1,95 | 569.504,55 | 8.216.553,73 | 4.487,13 | PF |
| 80 | -1,50 | 569.504,97 | 8.216.553,56 | 4.487,43 | Carril 1 |
| 80 | 0,00 | 569.506,34 | 8.216.552,96 | 4.487,43 | Eje |
| 80 | 1,50 | 569.507,72 | 8.216.552,36 | 4.487,43 | Carril 2 |
| 80 | 1,95 | 569.508,13 | 8.216.552,18 | 4.487,13 | PF |
| 80 | 2,11 | 569.508,28 | 8.216.552,11 | 4.487,02 | 79 |
| 80,86 | -3,01 | 569.503,93 | 8.216.554,94 | 4.488,45 | 99 |
| 80,86 | -2,55 | 569.504,35 | 8.216.554,76 | 4.487,08 | 60 |
| 80,86 | -2,25 | 569.504,62 | 8.216.554,64 | 4.486,93 | 59 |
| 80,86 | -1,95 | 569.504,90 | 8.216.554,52 | 4.487,08 | PF |
| 80,86 | -1,50 | 569.505,31 | 8.216.554,34 | 4.487,38 | Carril 1 |
| 80,86 | 0,00 | 569.506,68 | 8.216.553,75 | 4.487,38 | Eje |
| 80,86 | 1,50 | 569.508,06 | 8.216.553,15 | 4.487,38 | Carril 2 |
| 80,86 | 1,95 | 569.508,47 | 8.216.552,97 | 4.487,08 | PF |
| 80,86 | 2,02 | 569.508,54 | 8.216.552,94 | 4.487,04 | 79 |
| 84,88 | -3,08 | 569.506,13 | 8.216.559,01 | 4.488,37 | 99 |
| 84,88 | -2,55 | 569.506,56 | 8.216.558,71 | 4.486,79 | 60 |
| 84,88 | -2,25 | 569.506,81 | 8.216.558,54 | 4.486,64 | 59 |
| 84,88 | -1,95 | 569.507,05 | 8.216.558,36 | 4.486,79 | PF |
| 84,88 | -1,50 | 569.507,42 | 8.216.558,11 | 4.487,09 | Carril 1 |
| 84,88 | 0,00 | 569.508,65 | 8.216.557,25 | 4.487,09 | Eje |
| 84,88 | 1,50 | 569.509,88 | 8.216.556,38 | 4.487,09 | Carril 2 |
| 84,88 | 1,95 | 569.510,24 | 8.216.556,13 | 4.486,79 | PF |
| 84,88 | 2,22 | 569.510,46 | 8.216.555,97 | 4.486,61 | 79 |
| 90 | -3,00 | 569.509,13 | 8.216.563,16 | 4.487,72 | 99 |
| 90 | -2,55 | 569.509,50 | 8.216.562,90 | 4.486,38 | 60 |
| 90 | -2,25 | 569.509,74 | 8.216.562,73 | 4.486,23 | 59 |
| 90 | -1,95 | 569.509,99 | 8.216.562,56 | 4.486,38 | PF |
| 90 | -1,50 | 569.510,36 | 8.216.562,30 | 4.486,68 | Carril 1 |

| P.K. | DESPLAZAMIENTO DEL VERTICE | COORDENADA X | COORDENADA Y | COORDENADA Z | CÓDIGO |
|---------|-------------------------------|--------------|--------------|--------------|----------|
| 90 | 0,00 | 569.511,59 | 8.216.561,44 | 4.486,68 | Eje |
| 90 | 1,50 | 569.512,82 | 8.216.560,58 | 4.486,68 | Carril 2 |
| 90 | 1,95 | 569.513,18 | 8.216.560,32 | 4.486,38 | PF |
| 90 | 3,61 | 569.514,54 | 8.216.559,37 | 4.485,27 | 79 |
| 100 | -2,88 | 569.514,97 | 8.216.571,28 | 4.486,71 | 99 |
| 100 | -2,55 | 569.515,24 | 8.216.571,09 | 4.485,73 | 60 |
| 100 | -2,25 | 569.515,49 | 8.216.570,92 | 4.485,58 | 59 |
| 100 | -1,95 | 569.515,73 | 8.216.570,75 | 4.485,73 | PF |
| 100 | -1,50 | 569.516,10 | 8.216.570,49 | 4.486,03 | Carril 1 |
| 100 | 0,00 | 569.517,33 | 8.216.569,63 | 4.486,03 | Eje |
| 100 | 1,50 | 569.518,56 | 8.216.568,76 | 4.486,03 | Carril 2 |
| 100 | 1,95 | 569.518,92 | 8.216.568,51 | 4.485,73 | PF |
| 100 | 4,14 | 569.520,72 | 8.216.567,25 | 4.484,27 | 79 |
| 104,762 | -2,83 | 569.517,75 | 8.216.575,15 | 4.486,56 | 99 |
| 104,762 | -2,55 | 569.517,97 | 8.216.574,99 | 4.485,73 | 60 |
| 104,762 | -2,25 | 569.518,22 | 8.216.574,82 | 4.485,58 | 59 |
| 104,762 | -1,95 | 569.518,46 | 8.216.574,64 | 4.485,73 | PF |
| 104,762 | -1,50 | 569.518,83 | 8.216.574,39 | 4.486,03 | Carril 1 |
| 104,762 | 0,00 | 569.520,06 | 8.216.573,52 | 4.486,03 | Eje |
| 104,762 | 1,50 | 569.521,29 | 8.216.572,66 | 4.486,03 | Carril 2 |
| 104,762 | 1,95 | 569.521,66 | 8.216.572,41 | 4.485,73 | PF |
| 104,762 | 2,11 | 569.521,79 | 8.216.572,32 | 4.485,63 | 79 |
| 110 | -2,82 | 569.519,83 | 8.216.579,12 | 4.486,80 | 99 |
| 110 | -2,55 | 569.520,08 | 8.216.579,03 | 4.486,00 | 60 |
| 110 | -2,25 | 569.520,36 | 8.216.578,93 | 4.485,85 | 59 |
| 110 | -1,95 | 569.520,64 | 8.216.578,82 | 4.486,00 | PF |
| 110 | -1,50 | 569.521,07 | 8.216.578,67 | 4.486,30 | Carril 1 |
| 110 | 0,00 | 569.522,48 | 8.216.578,16 | 4.486,30 | Eje |
| 110 | 1,50 | 569.523,89 | 8.216.577,64 | 4.486,30 | Carril 2 |
| 110 | 1,95 | 569.524,31 | 8.216.577,49 | 4.486,00 | PF |
| 110 | 2,46 | 569.524,78 | 8.216.577,32 | 4.485,66 | 79 |
| 113,134 | -2,88 | 569.520,49 | 8.216.581,72 | 4.487,24 | 99 |
| 113,134 | -2,55 | 569.520,81 | 8.216.581,66 | 4.486,25 | 60 |
| 113,134 | -2,25 | 569.521,11 | 8.216.581,60 | 4.486,10 | 59 |
| 113,134 | -1,95 | 569.521,40 | 8.216.581,55 | 4.486,25 | PF |
| 113,134 | -1,50 | 569.521,84 | 8.216.581,46 | 4.486,55 | Carril 1 |
| 113,134 | 0,00 | 569.523,31 | 8.216.581,17 | 4.486,55 | Eje |
| 113,134 | 1,50 | 569.524,79 | 8.216.580,89 | 4.486,55 | Carril 2 |
| 113,134 | 1,95 | 569.525,23 | 8.216.580,80 | 4.486,25 | PF |
| 113,134 | 2,96 | 569.526,22 | 8.216.580,60 | 4.485,57 | 79 |
| 120 | -2,94 | 569.521,74 | 8.216.588,48 | 4.487,96 | 99 |
| 120 | -2,55 | 569.522,13 | 8.216.588,40 | 4.486,77 | 60 |
| 120 | -2,25 | 569.522,42 | 8.216.588,34 | 4.486,62 | 59 |
| 120 | -1,95 | 569.522,72 | 8.216.588,29 | 4.486,77 | PF |
| 120 | -1,50 | 569.523,16 | 8.216.588,20 | 4.487,07 | Carril 1 |

| P.K. | DESPLAZAMIENTO DEL VERTICE | COORDENADA X | COORDENADA Y | COORDENADA Z | CÓDIGO |
|---------|-------------------------------|--------------|--------------|--------------|----------|
| 120 | 0,00 | 569.524,63 | 8.216.587,91 | 4.487,07 | Eje |
| 120 | 1,50 | 569.526,10 | 8.216.587,62 | 4.487,07 | Carril 2 |
| 120 | 1,95 | 569.526,54 | 8.216.587,54 | 4.486,77 | PF |
| 120 | 2,28 | 569.526,87 | 8.216.587,47 | 4.486,56 | 79 |
| 123,229 | -2,92 | 569.522,38 | 8.216.591,64 | 4.487,99 | 99 |
| 123,229 | -2,55 | 569.522,75 | 8.216.591,57 | 4.486,89 | 60 |
| 123,229 | -2,25 | 569.523,04 | 8.216.591,51 | 4.486,74 | 59 |
| 123,229 | -1,95 | 569.523,34 | 8.216.591,45 | 4.486,89 | PF |
| 123,229 | -1,50 | 569.523,78 | 8.216.591,37 | 4.487,19 | Carril 1 |
| 123,229 | 0,00 | 569.525,25 | 8.216.591,08 | 4.487,19 | Eje |
| 123,229 | 1,50 | 569.526,72 | 8.216.590,79 | 4.487,19 | Carril 2 |
| 123,229 | 1,95 | 569.527,16 | 8.216.590,71 | 4.486,89 | PF |
| 123,229 | 3,23 | 569.528,42 | 8.216.590,46 | 4.486,04 | 79 |
| 127,269 | -3,10 | 569.522,52 | 8.216.595,07 | 4.488,48 | 99 |
| 127,269 | -2,55 | 569.523,07 | 8.216.595,07 | 4.486,84 | 60 |
| 127,269 | -2,25 | 569.523,37 | 8.216.595,08 | 4.486,69 | 59 |
| 127,269 | -1,95 | 569.523,67 | 8.216.595,08 | 4.486,84 | PF |
| 127,269 | -1,50 | 569.524,12 | 8.216.595,08 | 4.487,14 | Carril 1 |
| 127,269 | 0,00 | 569.525,62 | 8.216.595,10 | 4.487,14 | Eje |
| 127,269 | 1,50 | 569.527,12 | 8.216.595,11 | 4.487,14 | Carril 2 |
| 127,269 | 1,95 | 569.527,57 | 8.216.595,11 | 4.486,84 | PF |
| 127,269 | 3,97 | 569.529,58 | 8.216.595,13 | 4.485,50 | 79 |
| 130 | -3,11 | 569.522,49 | 8.216.597,80 | 4.488,37 | 99 |
| 130 | -2,55 | 569.523,04 | 8.216.597,80 | 4.486,70 | 60 |
| 130 | -2,25 | 569.523,34 | 8.216.597,81 | 4.486,55 | 59 |
| 130 | -1,95 | 569.523,64 | 8.216.597,81 | 4.486,70 | PF |
| 130 | -1,50 | 569.524,09 | 8.216.597,81 | 4.487,00 | Carril 1 |
| 130 | 0,00 | 569.525,59 | 8.216.597,83 | 4.487,00 | Eje |
| 130 | 1,50 | 569.527,09 | 8.216.597,84 | 4.487,00 | Carril 2 |
| 130 | 1,95 | 569.527,54 | 8.216.597,85 | 4.486,70 | PF |
| 130 | 2,79 | 569.528,39 | 8.216.597,85 | 4.486,14 | 79 |
| 139,13 | -3,04 | 569.522,47 | 8.216.606,93 | 4.487,17 | 99 |
| 139,13 | -2,55 | 569.522,96 | 8.216.606,93 | 4.485,70 | 60 |
| 139,13 | -2,25 | 569.523,26 | 8.216.606,94 | 4.485,55 | 59 |
| 139,13 | -1,95 | 569.523,56 | 8.216.606,94 | 4.485,70 | PF |
| 139,13 | -1,50 | 569.524,01 | 8.216.606,94 | 4.486,00 | Carril 1 |
| 139,13 | 0,00 | 569.525,51 | 8.216.606,96 | 4.486,00 | Eje |
| 139,13 | 1,50 | 569.527,01 | 8.216.606,97 | 4.486,00 | Carril 2 |
| 139,13 | 1,95 | 569.527,46 | 8.216.606,97 | 4.485,70 | PF |
| 139,13 | 3,19 | 569.528,70 | 8.216.606,99 | 4.484,87 | 79 |

Acceso a coronación de presa

| P.K. | DESPLAZAMIENTO DEL VERTICE | COORDENADA X | COORDENADA Y | COORDENADA Z | CÓDIGO |
|--------|----------------------------|--------------|--------------|--------------|----------|
| 0 | -2,28 | 569.514,30 | 8.216.571,24 | 4.486,93 | 99 |
| 0 | -1,90 | 569.514,68 | 8.216.571,23 | 4.485,80 | 60 |
| 0 | -1,60 | 569.514,98 | 8.216.571,22 | 4.485,65 | 59 |
| 0 | -1,30 | 569.515,28 | 8.216.571,21 | 4.485,80 | PF |
| 0 | 0,00 | 569.516,58 | 8.216.571,17 | 4.486,00 | Eje |
| 0 | 1,00 | 569.517,58 | 8.216.571,14 | 4.486,00 | Carril 2 |
| 0 | 1,30 | 569.517,88 | 8.216.571,14 | 4.485,80 | PF |
| 0 | 1,60 | 569.518,18 | 8.216.571,13 | 4.485,65 | 59 |
| 0 | 1,90 | 569.518,48 | 8.216.571,12 | 4.485,80 | 60 |
| 0 | 2,05 | 569.518,63 | 8.216.571,11 | 4.486,25 | 99 |
| 10 | -2,50 | 569.514,36 | 8.216.581,24 | 4.488,90 | 99 |
| 10 | -1,90 | 569.514,96 | 8.216.581,22 | 4.487,10 | 60 |
| 10 | -1,60 | 569.515,26 | 8.216.581,21 | 4.486,95 | 59 |
| 10 | -1,30 | 569.515,56 | 8.216.581,20 | 4.487,10 | PF |
| 10 | 0,00 | 569.516,86 | 8.216.581,17 | 4.487,30 | Eje |
| 10 | 1,00 | 569.517,86 | 8.216.581,14 | 4.487,30 | Carril 2 |
| 10 | 1,30 | 569.518,16 | 8.216.581,13 | 4.487,10 | PF |
| 10 | 1,60 | 569.518,46 | 8.216.581,12 | 4.486,95 | 59 |
| 10 | 1,90 | 569.518,76 | 8.216.581,11 | 4.487,10 | 60 |
| 10 | 2,03 | 569.518,89 | 8.216.581,11 | 4.487,50 | 99 |
| 17,641 | -2,32 | 569.514,75 | 8.216.588,87 | 4.489,36 | 99 |
| 17,641 | -1,90 | 569.515,18 | 8.216.588,86 | 4.488,09 | 60 |
| 17,641 | -1,60 | 569.515,48 | 8.216.588,85 | 4.487,94 | 59 |
| 17,641 | -1,30 | 569.515,78 | 8.216.588,84 | 4.488,09 | PF |
| 17,641 | 0,00 | 569.517,08 | 8.216.588,81 | 4.488,29 | Eje |
| 17,641 | 1,00 | 569.518,07 | 8.216.588,78 | 4.488,29 | Carril 2 |
| 17,641 | 1,30 | 569.518,37 | 8.216.588,77 | 4.488,09 | PF |
| 20 | -2,37 | 569.514,70 | 8.216.591,09 | 4.489,82 | 99 |
| 20 | -1,90 | 569.515,17 | 8.216.591,11 | 4.488,40 | 60 |
| 20 | -1,60 | 569.515,47 | 8.216.591,12 | 4.488,25 | 59 |
| 20 | -1,30 | 569.515,77 | 8.216.591,12 | 4.488,40 | PF |
| 20 | 0,00 | 569.517,07 | 8.216.591,16 | 4.488,60 | Eje |
| 20 | 1,00 | 569.518,07 | 8.216.591,20 | 4.488,60 | Carril 2 |
| 20 | 1,30 | 569.518,37 | 8.216.591,20 | 4.488,40 | PF |
| 30 | -2,51 | 569.513,11 | 8.216.600,32 | 4.491,54 | 99 |
| 30 | -1,90 | 569.513,70 | 8.216.600,49 | 4.489,70 | 60 |
| 30 | -1,60 | 569.513,99 | 8.216.600,57 | 4.489,55 | 59 |
| 30 | -1,30 | 569.514,27 | 8.216.600,66 | 4.489,70 | PF |
| 30 | 0,00 | 569.515,52 | 8.216.601,02 | 4.489,90 | Eje |
| 30 | 1,00 | 569.516,48 | 8.216.601,29 | 4.489,90 | Carril 2 |
| 30 | 1,30 | 569.516,77 | 8.216.601,38 | 4.489,70 | PF |
| 30 | 1,60 | 569.517,06 | 8.216.601,46 | 4.489,55 | 59 |

| P.K. | DESPLAZAMIENTO DEL VERTICE | COORDENADA X | COORDENADA Y | COORDENADA Z | CÓDIGO |
|--------|----------------------------|--------------|--------------|--------------|----------|
| 30 | 1,90 | 569.517,35 | 8.216.601,54 | 4.489,70 | 60 |
| 30 | 1,92 | 569.517,36 | 8.216.601,55 | 4.489,74 | 99 |
| 37,483 | -2,68 | 569.510,40 | 8.216.606,76 | 4.493,02 | 99 |
| 37,483 | -1,90 | 569.511,09 | 8.216.607,12 | 4.490,67 | 60 |
| 37,483 | -1,60 | 569.511,36 | 8.216.607,25 | 4.490,52 | 59 |
| 37,483 | -1,30 | 569.511,63 | 8.216.607,39 | 4.490,67 | PF |
| 37,483 | 0,00 | 569.512,79 | 8.216.607,97 | 4.490,87 | Eje |
| 37,483 | 1,00 | 569.513,68 | 8.216.608,42 | 4.490,87 | Carril 2 |
| 37,483 | 1,30 | 569.513,95 | 8.216.608,56 | 4.490,67 | PF |
| 37,483 | 1,60 | 569.514,22 | 8.216.608,69 | 4.490,52 | 59 |
| 37,483 | 1,71 | 569.514,32 | 8.216.608,74 | 4.490,58 | 60 |
| 40 | -2,62 | 569.509,32 | 8.216.609,04 | 4.493,16 | 99 |
| 40 | -1,90 | 569.509,96 | 8.216.609,36 | 4.491,00 | 60 |
| 40 | -1,60 | 569.510,23 | 8.216.609,50 | 4.490,85 | 59 |
| 40 | -1,30 | 569.510,50 | 8.216.609,63 | 4.491,00 | PF |
| 40 | 0,00 | 569.511,66 | 8.216.610,22 | 4.491,20 | Eje |
| 40 | 1,00 | 569.512,55 | 8.216.610,67 | 4.491,20 | Carril 2 |
| 40 | 1,30 | 569.512,82 | 8.216.610,80 | 4.491,00 | PF |
| 40 | 1,60 | 569.513,08 | 8.216.610,94 | 4.490,85 | 59 |
| 40 | 1,74 | 569.513,21 | 8.216.611,00 | 4.490,92 | 60 |
| 50 | -2,66 | 569.504,77 | 8.216.617,94 | 4.494,50 | 99 |
| 50 | -1,90 | 569.505,45 | 8.216.618,29 | 4.492,22 | 60 |
| 50 | -1,60 | 569.505,72 | 8.216.618,42 | 4.492,07 | 59 |
| 50 | -1,30 | 569.505,98 | 8.216.618,56 | 4.492,22 | PF |
| 50 | 0,00 | 569.507,14 | 8.216.619,14 | 4.492,42 | Eje |
| 50 | 1,00 | 569.508,04 | 8.216.619,59 | 4.492,42 | Carril 2 |
| 50 | 1,30 | 569.508,31 | 8.216.619,73 | 4.492,22 | PF |
| 50 | 1,60 | 569.508,57 | 8.216.619,87 | 4.492,07 | 59 |
| 50 | 1,90 | 569.508,84 | 8.216.620,00 | 4.492,22 | 60 |
| 50 | 2,01 | 569.508,94 | 8.216.620,05 | 4.492,55 | 99 |
| 57,393 | -2,63 | 569.501,46 | 8.216.624,55 | 4.494,80 | 99 |
| 57,393 | -1,90 | 569.502,11 | 8.216.624,88 | 4.492,60 | 60 |
| 57,393 | -1,60 | 569.502,38 | 8.216.625,02 | 4.492,45 | 59 |
| 57,393 | -1,30 | 569.502,65 | 8.216.625,16 | 4.492,60 | PF |
| 57,393 | 0,00 | 569.503,81 | 8.216.625,74 | 4.492,80 | Eje |
| 57,393 | 1,00 | 569.504,70 | 8.216.626,19 | 4.492,80 | Carril 2 |
| 57,393 | 1,30 | 569.504,97 | 8.216.626,33 | 4.492,60 | PF |
| 57,393 | 1,60 | 569.505,24 | 8.216.626,46 | 4.492,45 | 59 |
| 57,393 | 1,90 | 569.505,51 | 8.216.626,60 | 4.492,60 | 60 |
| 57,393 | 2,10 | 569.505,69 | 8.216.626,69 | 4.493,21 | 99 |