

ANEJO N^o4: TOPOGRAFÍA, CARTOGRAFÍA Y REPLANTEO

PROYECTO DE INFRAESTRUCTURAS DE ALMACENAMIENTO Y RED DE RIEGO DE LOS REGADÍOS TRADICIONALES DE MONTAÑA DE LA COMUNIDAD DE REGANTES DE TORNAVACAS (CÁCERES)



JUNTA DE EXTREMADURA



UNIÓN EUROPEA
Fondo Europeo Agrícola de Desarrollo Rural



OBJETIVOS
DE DESARROLLO
SOSTENIBLE



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1. Introducción

El objetivo de este trabajo es la realización de levantamientos topográficos de las zonas relevantes del "Proyecto de infraestructuras de almacenamiento y red de riego de los regadíos tradicionales de montaña de la comunidad de regantes de Tornavacas (Cáceres)"

Así mismo se ha establecido una red de bases fijas en campo, que sirva de apoyo para la ejecución de las futuras obras.

Para la confección del presente Proyecto de Construcción, se ha dispuesto de la siguiente base cartográfica:

- Cartografía base para la redacción del proyecto del año 2021 que comprende la zona donde se ubica la balsa.
- Cartografía base para la redacción del proyecto del año 2023 que comprende la zona de los tres depósitos.
- Cartografía base obtenida del Instituto Geográfico Español (IGN), siendo un Modelo Digital del Terreno MDT02: Modelo digital del terreno 2ª cobertura con paso de malla de 2m. Para así cubrir toda la zona donde se encuentra la red de riego.

Por tanto, el presente proyecto de construcción conjuga las diferentes cartografías obteniendo finalmente una resultante de la unión de las tres fuentes anteriormente indicadas.

Para poder superponer cartografías con las que trabajar con una sola base cartográfica, ha sido necesario trabajar en el mismo sistema de coordenadas proporcionado por el modelo digital del IGN. Siendo el sistema geodésico el ETRS-89 y la proyección UTM Huso 30.

2. Metodología

Debido a la extensión de la zona a levantar se ha optado por emplear GNSS (Global Navigation Satellite Systems-Sistema Global de Navegación por Satélite).

Empleando GNSS se ha optado por un levantamiento semi-cinemático en tiempo real (RTK) de dos modos: uno con base en la zona y correcciones vía radio, y el segundo mediante el uso del servicio de corrección en tiempo real de las estaciones de la red extremeña de posicionamiento.

Las coordenadas de las bases de levantamiento se han obtenido mediante utilización de los servicios de corrección de la red CORS del IGN. El sistema geodésico empleado ha sido el ETRS89 y proyección UTM huso 30.

3. Instrumentación empleada

A continuación, se detallan las características de los instrumentos utilizados:

- *GNSS Topcon Hiper PRO:*
 - Descripción: Receptor/antena GPS+ integrado con 40 canales
 - Canales de seguimiento: L1 + L2: 20
 - Precisión RTK: 10 mm + 1.5 ppm para L1 + L2
 - Radio Modem UHF interna Tx/Rx
- *GNSS Topcon Legacy E:*
 - Descripción: Receptor modular de 40 canales, antena externa Topcon PG-A3
 - Canales de seguimiento: L1 + L2: 40
 - Precisión RTK: 10 mm + 1.5 ppm para L1 + L2
 - Radio Modem UHF externo Tx/Rx



GPS Topcon Hiper +.

4. Listado de coordenadas de las bases de replanteo

BASE	X	Y	Z
BR1 TORNAVACAS NORTE	270.375,257	4.460.358,193	1.130,78
BR2 TORNAVACAS SUR	270.494,326	4.460.056,520	1.079,55
BR3 DEPÓSITO Nº1	270.260,463	4.460.793,637	1.123,39
BR4 DEPÓSITO Nº2	270.851,057	4.460.854,410	1.120,20
BR5 DEPÓSITO Nº3	271.399,616	4.460.369,063	1.050,42
BR6 DEPÓSITO Nº3	271.427,578	4.460.557,886	1.140,52

Tabla 1: Coordenadas de bases de replanteo

5. Reseña de las bases de replanteo

A continuación, se adjunta la reseña de la Estación utilizada obtenida de la red de posicionamiento extremeña:

ESTACIÓN GNSS DE CORIA: CORI



INSTRUMENTACIÓN UTILIZADA			
Fecha Instalación			23-10-2008
Sensor	LEICA GRX1200GGPRO (GPS+GLO)	Nº Serie Sensor	355903
Antena	LEIAX1202GG	Nº Serie Antena	08060138
Nº IERS DOMES			19392M001
Versión de Firmware			8.71/3.823

COORDENADAS datum ETRS-89 (ETRF00)

CARTESIANAS	4862596,669 m	-555711,633 m	4076613,784 m
GEODÉSICAS	6° 31' 10",71264 W	39° 58' 53",83263 N	298,441 m (1)
UTM huso 29 normal	711791,000 m	4428663,828 m	298,441 m (1)
UTM huso 30 alternativo	199450,558 m	4431652,813 m	244,172 m (2)

NOTA:

(1) Esta es una altura elipsoidal

(2) Esta es una altura ortométrica obtenida a partir del modelo geoidal EGM2008 – REDNAP y las coordenadas estan proyectadas fuera de su huso

SITUACIÓN DEL EQUIPO

Dirección	Ctra. Coria-Navalmoral, Km 1.5
Instalación	Instalaciones de la ITV
Persona contacto	Juan Morillo Barragán
Correo Electrónico	rep@unex.es



<p>BR1 Tornavacas Norte</p>	<p>Provincia: CÁCERES Término Municipal: TORNAVACAS</p>
<p>Sistema de Coordenadas: UTM ETRS89 H30 COORDENADAS X 270.375,257 Y 4.460.358,193 Z 1130,780</p>	<p>SITUACIÓN: Estaca junto a resguardo TIPO DE SEÑAL: Estaca con clavo</p>
<p>FOTOGRAFÍA:</p>	
<p>FOTOGRAFÍA:</p>	

<p>BR2 Tornavacas Sur</p>	<p>Provincia: CÁCERES Término Municipal: TORNAVACAS</p>
<p>Sistema de Coordenadas:</p> <p>UTM ETRS89 H30 COORDENADAS</p> <p>X 270.494,326 Y 4.460.056,520 Z 1079,550</p>	<p>Al sur de la zona de la SITUACIÓN: balsa</p> <p>TIPO DE SEÑAL: Geopunto sobre roca</p>
<p>FOTOGRAFÍA:</p>	
<p>FOTOGRAFÍA:</p>	

<p>BR3 Depósito nº1</p>	<p>Provincia: CÁCERES Término Municipal: TORNAVACAS</p>
<p>Sistema de Coordenadas:</p> <p>UTM ETRS89 H30 COORDENADAS</p> <p>X 270260.463 Y 4.460.793.637 Z 1123.390</p>	<p>SITUACIÓN:</p> <p>Margen derecha camino de acceso a depósito N°1</p> <p>TIPO DE SEÑAL: Geopunto</p>
<p>FOTOGRAFÍA:</p> 	
<p>FOTOGRAFÍA:</p> 	

BR4 Depósito nº2	Provincia: CÁ CERES Término Municipal: TORNAVACAS
Sistema de Coordenadas: UTM ETRS89 H30 COORDENADAS X 270.851.057 Y 4.460.854.410 Z 1120.200	SITUACIÓN: Paso de arroyo TIPO DE SEÑAL: Geopunto
FOTOGRAFÍA: 	
FOTOGRAFÍA: 	

<p>BR5 Depósito nº3</p>	<p>Provincia: CÁCERES Término Municipal: TORNAVACAS</p>
<p>Sistema de Coordenadas:</p> <p>UTM ETRS89 H30 COORDENADAS</p> <p>X 271399.616 Y 4460369.063 Z 1050.424</p>	<p>SITUACIÓN:</p> <p>Camino de hormigón al sur del depósito sur</p> <p>TIPO DE SEÑAL: Geopunto</p>
<p>FOTOGRAFÍA:</p> 	
<p>FOTOGRAFÍA:</p> 	

<p>BR6 Depósito nº3</p>	<p>Provincia: CÁCERES Término Municipal: TORNAVACAS</p>
<p>Sistema de Coordenadas:</p> <p>UTM ETRS89 H30 COORDENADAS</p> <p>X 271.427.578 Y 4.460.557.886 Z 1140.52</p>	<p>SITUACIÓN:</p> <p>Estaca con clavo a resguardo de roca</p> <p>TIPO DE SEÑAL: estaca con clavo</p>
<p>FOTOGRAFÍA:</p> 	
<p>FOTOGRAFÍA:</p> 	

6. Listados de puntos de los taquimétricos

6.1. Taquimétrico de la Balsa

PUNTO Nº	COORDENADA X	COORDENADA Y	COTA
1	270.374,99	4.460.358,55	1.130,75
2	270.361,48	4.460.354,16	1.129,47
3	270.363,22	4.460.342,04	1.127,47
4	270.362,90	4.460.330,97	1.125,31
5	270.367,15	4.460.314,56	1.122,83
6	270.370,88	4.460.301,39	1.121,66
7	270.374,81	4.460.282,85	1.121,74
8	270.376,77	4.460.268,65	1.119,43
9	270.368,13	4.460.257,58	1.116,27
10	270.376,54	4.460.245,18	1.114,40
11	270.367,50	4.460.240,05	1.112,20
12	270.368,16	4.460.227,52	1.109,76
13	270.372,19	4.460.222,59	1.109,41
14	270.377,72	4.460.216,33	1.108,33
15	270.380,44	4.460.207,38	1.107,18
16	270.398,96	4.460.205,62	1.108,11
17	270.390,40	4.460.201,70	1.106,57
18	270.403,41	4.460.198,34	1.106,52
19	270.413,91	4.460.192,01	1.104,83
20	270.419,47	4.460.192,28	1.104,76
21	270.426,80	4.460.197,78	1.106,27
22	270.438,68	4.460.198,88	1.106,08
23	270.447,32	4.460.199,55	1.105,39
24	270.459,11	4.460.203,79	1.105,81
25	270.469,65	4.460.210,18	1.105,52
26	270.476,82	4.460.214,19	1.105,17
27	270.488,09	4.460.219,74	1.105,42
28	270.495,69	4.460.224,35	1.104,62
29	270.508,07	4.460.229,85	1.104,67
30	270.517,94	4.460.234,07	1.104,76
31	270.524,94	4.460.242,09	1.105,71
32	270.524,59	4.460.252,74	1.106,71
33	270.519,61	4.460.262,81	1.107,51

PUNTO Nº	COORDENADA X	COORDENADA Y	COTA
34	270.515,18	4.460.272,44	1.108,36
35	270.509,12	4.460.283,91	1.109,73
36	270.504,95	4.460.300,07	1.109,49
37	270.503,84	4.460.308,98	1.107,86
38	270.492,15	4.460.320,31	1.108,46
39	270.496,77	4.460.332,82	1.109,61
40	270.494,46	4.460.346,30	1.113,46
41	270.481,21	4.460.358,22	1.119,49
42	270.475,45	4.460.365,19	1.120,75
43	270.468,09	4.460.371,97	1.125,10
44	270.455,50	4.460.373,67	1.127,18
45	270.442,09	4.460.378,11	1.129,97
46	270.429,23	4.460.376,27	1.131,04
47	270.402,53	4.460.366,70	1.131,50
48	270.372,20	4.460.343,76	1.128,40
49	270.380,06	4.460.345,48	1.129,08
50	270.388,89	4.460.350,17	1.129,78
51	270.397,75	4.460.352,05	1.129,32
52	270.406,45	4.460.353,41	1.129,13
53	270.415,76	4.460.355,68	1.128,76
54	270.425,82	4.460.359,03	1.127,99
55	270.421,14	4.460.372,18	1.131,16
56	270.436,72	4.460.363,85	1.127,61
57	270.447,33	4.460.366,34	1.126,62
58	270.461,89	4.460.357,90	1.122,61
59	270.453,04	4.460.355,16	1.123,67
60	270.442,89	4.460.352,32	1.124,38
61	270.433,91	4.460.349,33	1.125,17
62	270.427,02	4.460.346,29	1.125,86
63	270.417,37	4.460.341,41	1.127,09
64	270.408,67	4.460.339,70	1.127,37
65	270.398,46	4.460.337,60	1.127,64
66	270.389,60	4.460.335,96	1.127,49
67	270.380,63	4.460.333,64	1.126,85
68	270.369,34	4.460.331,93	1.126,13
69	270.374,46	4.460.317,73	1.124,07
71	270.375,26	4.460.358,19	1.130,78
72	270.383,88	4.460.320,39	1.124,93

PUNTO Nº	COORDENADA X	COORDENADA Y	COTA
73	270.395,65	4.460.322,66	1.125,65
74	270.407,08	4.460.326,48	1.126,07
75	270.412,32	4.460.327,84	1.125,57
76	270.420,53	4.460.329,31	1.125,51
77	270.428,20	4.460.331,14	1.124,69
78	270.436,99	4.460.334,82	1.123,03
79	270.442,60	4.460.337,01	1.121,54
80	270.452,91	4.460.339,75	1.120,45
81	270.460,92	4.460.341,93	1.119,69
82	270.471,87	4.460.344,37	1.118,10
83	270.478,41	4.460.343,75	1.116,66
84	270.466,69	4.460.323,95	1.115,12
85	270.455,38	4.460.323,68	1.117,74
86	270.447,84	4.460.321,28	1.119,16
87	270.438,66	4.460.320,86	1.121,35
88	270.430,62	4.460.317,21	1.122,86
89	270.418,79	4.460.315,38	1.124,09
90	270.411,32	4.460.313,04	1.124,65
91	270.401,65	4.460.310,52	1.124,68
92	270.392,06	4.460.307,21	1.124,20
93	270.383,33	4.460.303,99	1.123,48
94	270.384,29	4.460.289,13	1.122,99
95	270.396,31	4.460.291,66	1.123,55
96	270.406,16	4.460.294,55	1.123,57
97	270.415,71	4.460.298,04	1.123,32
98	270.426,61	4.460.300,15	1.122,07
99	270.435,38	4.460.302,46	1.120,98
100	270.446,82	4.460.303,46	1.119,36
101	270.457,43	4.460.305,69	1.117,59
102	270.468,35	4.460.307,77	1.116,36
103	270.470,58	4.460.293,44	1.116,40
104	270.481,76	4.460.292,98	1.114,10
105	270.484,26	4.460.297,98	1.114,12
106	270.494,59	4.460.293,27	1.112,02
107	270.460,53	4.460.289,50	1.117,47
108	270.449,41	4.460.286,59	1.117,83
109	270.434,26	4.460.283,80	1.119,24
110	270.423,99	4.460.284,27	1.121,41

PUNTO Nº	COORDENADA X	COORDENADA Y	COTA
112	270.402,57	4.460.277,53	1.122,14
113	270.397,52	4.460.277,16	1.122,31
114	270.386,78	4.460.275,59	1.121,39
115	270.387,54	4.460.259,41	1.118,63
116	270.398,82	4.460.260,42	1.119,22
117	270.408,82	4.460.261,94	1.119,33
118	270.418,46	4.460.263,35	1.119,03
119	270.428,00	4.460.267,13	1.118,19
120	270.439,57	4.460.268,36	1.117,09
121	270.449,25	4.460.271,72	1.116,26
122	270.459,53	4.460.275,44	1.115,68
123	270.468,75	4.460.278,76	1.115,58
124	270.474,51	4.460.281,80	1.115,35
125	270.482,42	4.460.282,87	1.113,63
126	270.495,92	4.460.284,36	1.111,82
127	270.505,66	4.460.272,16	1.109,99
128	270.497,01	4.460.270,55	1.110,73
129	270.487,09	4.460.267,16	1.111,65
130	270.477,90	4.460.264,54	1.112,47
131	270.467,91	4.460.261,29	1.112,85
132	270.459,45	4.460.259,84	1.114,26
133	270.452,81	4.460.258,11	1.114,87
134	270.444,60	4.460.255,73	1.114,70
135	270.436,84	4.460.253,94	1.115,62
136	270.428,11	4.460.250,86	1.115,30
137	270.421,85	4.460.247,59	1.115,70
139	270.402,46	4.460.244,63	1.115,77
140	270.394,83	4.460.244,17	1.115,38
141	270.385,21	4.460.241,10	1.114,16
142	270.385,91	4.460.232,30	1.112,45
143	270.398,58	4.460.228,49	1.112,68
144	270.409,38	4.460.231,12	1.113,46
146	270.428,09	4.460.234,63	1.112,72
147	270.435,41	4.460.236,34	1.111,82
148	270.444,12	4.460.238,40	1.112,11
149	270.451,16	4.460.240,43	1.111,49
150	270.459,37	4.460.241,19	1.111,14
151	270.465,80	4.460.242,80	1.111,50

PUNTO Nº	COORDENADA X	COORDENADA Y	COTA
152	270.475,16	4.460.245,26	1.110,31
153	270.484,82	4.460.249,69	1.109,66
154	270.494,50	4.460.254,71	1.109,45
155	270.504,34	4.460.257,07	1.108,80
156	270.514,86	4.460.259,49	1.107,95
157	270.517,83	4.460.248,95	1.106,83
158	270.508,94	4.460.245,26	1.106,93
159	270.499,14	4.460.241,90	1.107,08
160	270.490,98	4.460.238,17	1.107,40
161	270.481,20	4.460.234,68	1.108,40
162	270.473,08	4.460.231,51	1.108,77
163	270.466,61	4.460.228,86	1.108,26
164	270.461,34	4.460.227,42	1.108,84
165	270.451,40	4.460.221,92	1.108,88
166	270.445,74	4.460.221,38	1.108,77
167	270.435,34	4.460.216,80	1.109,16
168	270.425,48	4.460.215,10	1.109,88
169	270.416,90	4.460.214,68	1.110,74
170	270.408,24	4.460.217,47	1.111,78
171	270.400,08	4.460.216,44	1.110,51
172	270.394,89	4.460.213,04	1.109,85
173	270.407,76	4.460.296,62	1.123,60
174	270.409,97	4.460.296,49	1.123,53
175	270.410,40	4.460.291,85	1.123,08
176	270.407,87	4.460.290,92	1.123,15
177	270.409,37	4.460.284,40	1.122,40
178	270.411,92	4.460.284,53	1.122,31
179	270.413,58	4.460.276,84	1.121,31
180	270.411,32	4.460.275,74	1.121,35
181	270.412,95	4.460.271,74	1.120,61
182	270.415,47	4.460.272,10	1.120,49
183	270.416,06	4.460.267,56	1.119,76
184	270.414,11	4.460.267,07	1.119,81
185	270.414,64	4.460.262,33	1.119,05
186	270.417,17	4.460.262,09	1.118,94
187	270.417,08	4.460.259,06	1.118,06
188	270.415,11	4.460.258,37	1.118,14
189	270.415,32	4.460.253,91	1.117,29

PUNTO Nº	COORDENADA X	COORDENADA Y	COTA
190	270.417,35	4.460.253,94	1.117,21
191	270.416,71	4.460.250,14	1.116,53
192	270.414,59	4.460.250,41	1.116,72
193	270.414,04	4.460.245,15	1.115,76
194	270.416,50	4.460.244,89	1.115,60
195	270.415,85	4.460.241,47	1.115,04
196	270.413,64	4.460.241,05	1.115,09
197	270.414,12	4.460.236,94	1.114,30
198	270.416,66	4.460.237,13	1.114,22
199	270.417,72	4.460.232,52	1.113,30
200	270.415,91	4.460.231,58	1.113,22
201	270.418,09	4.460.226,22	1.112,30
202	270.420,49	4.460.226,42	1.112,18
203	270.422,18	4.460.223,10	1.111,51
204	270.420,09	4.460.222,06	1.111,57
205	270.421,16	4.460.218,76	1.110,95
206	270.423,44	4.460.219,38	1.110,86
207	270.423,92	4.460.216,16	1.110,28
208	270.421,43	4.460.215,44	1.110,38
209	270.421,62	4.460.212,57	1.109,70
210	270.424,09	4.460.212,36	1.109,51
211	270.423,62	4.460.209,40	1.108,87
212	270.421,28	4.460.209,23	1.108,99
213	270.420,01	4.460.205,10	1.108,11
214	270.422,49	4.460.204,36	1.107,88
215	270.421,35	4.460.201,59	1.107,30
216	270.418,93	4.460.202,22	1.107,51
217	270.417,92	4.460.198,31	1.106,54
218	270.420,48	4.460.197,48	1.106,33
219	270.420,34	4.460.195,12	1.105,50
220	270.417,73	4.460.194,43	1.105,50
221	270.418,81	4.460.191,71	1.104,66
222	270.421,25	4.460.192,29	1.104,72
223	270.422,83	4.460.188,86	1.103,87
224	270.420,85	4.460.187,33	1.103,60
225	270.423,30	4.460.182,46	1.102,29
226	270.426,10	4.460.183,26	1.102,44
227	270.427,72	4.460.179,77	1.101,35

PUNTO Nº	COORDENADA X	COORDENADA Y	COTA
228	270.425,80	4.460.178,07	1.101,14
229	270.429,76	4.460.173,46	1.099,65
230	270.432,16	4.460.174,93	1.099,90
231	270.433,79	4.460.173,42	1.099,52
232	270.432,74	4.460.170,79	1.099,03
233	270.354,57	4.460.335,56	1.125,12
234	270.350,52	4.460.323,98	1.122,18
235	270.354,81	4.460.312,96	1.120,31
236	270.357,40	4.460.299,02	1.118,57
237	270.343,44	4.460.296,48	1.115,23
238	270.339,68	4.460.309,70	1.116,91
239	270.354,70	4.460.281,54	1.117,32
240	270.340,86	4.460.278,86	1.112,77
241	270.341,77	4.460.264,86	1.110,94
242	270.333,45	4.460.256,77	1.107,81
243	270.330,14	4.460.246,46	1.105,67
244	270.330,19	4.460.231,28	1.103,47
245	270.331,32	4.460.216,78	1.100,22
246	270.337,32	4.460.206,53	1.098,99
247	270.344,21	4.460.195,14	1.098,62
248	270.357,18	4.460.187,05	1.099,04
249	270.367,47	4.460.182,04	1.099,54
250	270.379,72	4.460.182,71	1.100,63
251	270.394,16	4.460.181,79	1.101,09
252	270.408,79	4.460.182,64	1.102,41
253	270.464,87	4.460.195,63	1.104,16
254	270.475,91	4.460.196,29	1.102,88
255	270.488,87	4.460.200,09	1.102,08
256	270.503,47	4.460.204,19	1.101,25
257	270.514,87	4.460.209,84	1.101,07
258	270.527,93	4.460.218,53	1.101,80
259	270.536,08	4.460.229,14	1.103,07
260	270.539,35	4.460.243,41	1.104,26
261	270.538,83	4.460.258,18	1.104,67
262	270.537,97	4.460.270,35	1.104,30
263	270.533,38	4.460.281,60	1.104,88
264	270.532,86	4.460.294,19	1.102,35
265	270.528,31	4.460.316,30	1.097,67

PUNTO Nº	COORDENADA X	COORDENADA Y	COTA
266	270.526,17	4.460.328,35	1.100,47
TORNAVACAS_LLANAS_NORTE	270.375,26	4.460.358,19	1.130,78
TORNAVACAS_LLANAS_SUR	270.494,33	4.460.056,52	1.079,55

6.2. Taquimétrico depósito nº1

PUNTO Nº	COORDENADA X	COORDENADA Y	COTA	
1	270.494,27	4.460.056,48	1.079,70	br2
2	270.494,28	4.460.056,49	1.079,71	br2
3	270.233,20	4.460.862,96	1.148,29	re
4	270.236,87	4.460.860,48	1.148,36	re
5	270.237,84	4.460.863,50	1.150,10	re
6	270.237,88	4.460.863,52	1.150,08	re
7	270.235,72	4.460.867,37	1.150,74	re
8	270.242,26	4.460.868,97	1.153,70	re
9	270.248,20	4.460.871,30	1.155,98	re
10	270.249,14	4.460.875,21	1.158,55	re
11	270.248,85	4.460.880,49	1.160,94	re
12	270.252,77	4.460.886,63	1.165,23	re
13	270.252,93	4.460.892,02	1.167,45	re
14	270.252,94	4.460.891,97	1.167,46	re
15	270.255,36	4.460.899,99	1.171,46	re
16	270.255,14	4.460.900,03	1.171,49	re
17	270.261,09	4.460.906,30	1.176,24	re
18	270.260,78	4.460.910,92	1.178,54	re
19	270.258,44	4.460.914,77	1.179,52	re
20	270.255,66	4.460.920,49	1.179,88	re
21	270.252,73	4.460.925,85	1.180,14	re
22	270.247,46	4.460.934,86	1.181,22	re
23	270.245,86	4.460.936,86	1.181,96	re
24	270.244,51	4.460.938,93	1.181,98	re
25	270.240,32	4.460.944,57	1.180,90	re
26	270.235,85	4.460.950,02	1.179,86	re
27	270.233,37	4.460.951,73	1.179,31	re
28	270.230,67	4.460.954,22	1.177,78	re
29	270.229,73	4.460.959,04	1.175,59	re
30	270.226,01	4.460.961,09	1.173,06	re

PUNTO Nº	COORDENADA X	COORDENADA Y	COTA	
31	270.224,09	4.460.961,92	1.172,20	re
32	270.223,50	4.460.963,00	1.170,94	re
33	270.220,06	4.460.962,40	1.169,43	re
34	270.219,28	4.460.960,14	1.169,15	re
35	270.217,47	4.460.955,44	1.168,46	re
36	270.216,52	4.460.950,93	1.167,19	re
37	270.217,76	4.460.948,43	1.168,72	re
38	270.218,50	4.460.945,26	1.169,46	re
39	270.222,24	4.460.939,75	1.170,56	re
40	270.223,34	4.460.934,68	1.169,99	re
41	270.221,88	4.460.932,73	1.168,75	re
42	270.224,43	4.460.927,40	1.167,52	re
43	270.223,65	4.460.927,57	1.167,40	re
44	270.227,22	4.460.925,46	1.168,36	re
45	270.228,04	4.460.923,62	1.168,94	re
46	270.229,42	4.460.921,63	1.167,30	re
47	270.230,46	4.460.918,47	1.166,01	re
48	270.231,36	4.460.913,36	1.164,22	re
49	270.230,78	4.460.908,48	1.162,00	re
50	270.236,09	4.460.901,40	1.162,10	re
51	270.236,75	4.460.895,15	1.161,38	re
52	270.238,13	4.460.887,84	1.159,61	re
53	270.240,15	4.460.884,89	1.159,29	re
55	270.235,48	4.460.884,46	1.158,60	re
56	270.240,68	4.460.877,92	1.156,71	re
57	270.238,78	4.460.873,22	1.154,32	re
58	270.234,47	4.460.873,26	1.152,72	re
59	270.230,25	4.460.873,95	1.150,17	re
60	270.227,92	4.460.874,38	1.148,65	re
61	270.226,12	4.460.872,62	1.146,92	re
62	270.225,08	4.460.871,60	1.145,94	re
63	270.222,69	4.460.877,88	1.146,51	re
64	270.216,35	4.460.884,72	1.145,29	re
65	270.210,80	4.460.892,01	1.145,30	re
66	270.207,66	4.460.897,84	1.146,00	re
67	270.206,26	4.460.900,37	1.145,79	re
68	270.206,29	4.460.900,28	1.145,75	re
69	270.202,70	4.460.906,19	1.146,56	re

PUNTO Nº	COORDENADA X	COORDENADA Y	COTA	
70	270.200,26	4.460.911,76	1.147,76	re
71	270.200,64	4.460.915,03	1.149,46	re
72	270.200,00	4.460.920,07	1.150,19	re
73	270.198,85	4.460.921,31	1.150,06	re
74	270.194,53	4.460.925,36	1.148,64	re
75	270.194,23	4.460.917,82	1.146,34	re
76	270.190,08	4.460.918,43	1.145,86	re
77	270.188,53	4.460.917,17	1.145,84	re
78	270.188,28	4.460.917,04	1.145,73	re
79	270.193,25	4.460.916,52	1.145,10	re
80	270.191,21	4.460.915,10	1.143,05	re
81	270.189,43	4.460.914,78	1.141,87	re
82	270.190,14	4.460.907,78	1.141,14	re
83	270.188,74	4.460.903,92	1.139,29	re
84	270.191,61	4.460.899,33	1.138,81	re
85	270.193,97	4.460.896,66	1.137,80	re
86	270.196,19	4.460.891,36	1.136,64	re
87	270.196,07	4.460.891,34	1.136,64	re
88	270.198,30	4.460.885,95	1.135,56	re
89	270.201,26	4.460.878,94	1.134,62	re
90	270.203,19	4.460.872,35	1.133,99	re
91	270.203,30	4.460.872,27	1.133,97	re
92	270.203,40	4.460.872,47	1.133,98	re
93	270.205,87	4.460.862,89	1.132,70	re
94	270.211,10	4.460.854,82	1.133,24	re
95	270.211,72	4.460.851,68	1.133,01	re
96	270.209,54	4.460.846,75	1.129,55	re
97	270.204,97	4.460.846,43	1.126,85	re
98	270.200,33	4.460.850,32	1.125,22	re
99	270.197,91	4.460.854,26	1.124,49	re
100	270.196,31	4.460.856,57	1.124,34	re
101	270.195,26	4.460.861,71	1.125,47	re
102	270.193,65	4.460.863,85	1.125,48	re
103	270.191,48	4.460.867,18	1.124,44	re
104	270.187,26	4.460.869,50	1.124,31	re
105	270.185,65	4.460.869,75	1.123,09	re
106	270.182,87	4.460.869,44	1.121,07	re
107	270.180,66	4.460.875,41	1.121,67	re

PUNTO Nº	COORDENADA X	COORDENADA Y	COTA	
108	270.177,81	4.460.880,48	1.122,64	re
109	270.173,81	4.460.884,99	1.122,52	re
110	270.170,41	4.460.888,23	1.122,09	re
111	270.169,60	4.460.887,89	1.121,44	re
112	270.173,15	4.460.875,71	1.118,54	re
113	270.169,02	4.460.875,04	1.118,46	re
114	270.166,30	4.460.875,70	1.118,59	re
115	270.167,92	4.460.873,29	1.118,55	re
116	270.171,75	4.460.873,65	1.118,48	re
117	270.171,71	4.460.877,25	1.118,58	re
118	270.176,25	4.460.873,02	1.118,02	re
119	270.175,18	4.460.868,35	1.117,61	re
120	270.178,92	4.460.865,73	1.116,96	re
121	270.179,40	4.460.858,31	1.116,17	re
122	270.182,15	4.460.858,58	1.116,17	re
123	270.188,51	4.460.846,53	1.116,53	re
124	270.188,70	4.460.846,47	1.116,51	re
125	270.192,03	4.460.846,13	1.116,80	re
126	270.195,93	4.460.836,76	1.116,93	re
127	270.198,86	4.460.836,69	1.117,19	re
128	270.202,84	4.460.826,41	1.117,66	re
129	270.204,95	4.460.827,69	1.117,87	re
130	270.204,83	4.460.827,56	1.117,92	re
131	270.208,72	4.460.823,09	1.118,16	re
132	270.208,15	4.460.820,19	1.118,23	re
133	270.217,62	4.460.817,33	1.119,40	re
134	270.218,63	4.460.819,84	1.119,57	re
135	270.227,90	4.460.818,28	1.121,03	re
136	270.228,11	4.460.815,85	1.121,04	re
137	270.236,23	4.460.813,11	1.121,53	re
138	270.237,77	4.460.814,80	1.121,60	re
139	270.242,56	4.460.808,04	1.121,48	re
140	270.244,57	4.460.809,48	1.121,63	re
141	270.251,84	4.460.796,74	1.121,26	re
142	270.254,06	4.460.797,76	1.121,31	re
143	270.261,52	4.460.789,72	1.121,90	re
144	270.259,82	4.460.787,75	1.122,00	re
145	270.263,97	4.460.781,19	1.122,52	re

PUNTO Nº	COORDENADA X	COORDENADA Y	COTA	
146	270.266,79	4.460.781,24	1.122,67	re
148	270.260,46	4.460.793,64	1.123,39	BR3_GeoPto
500	270.494,33	4.460.056,52	0,00	0-i
501	270.375,26	4.460.358,19	0,00	0
505	270.494,34	4.460.056,55	1.079,87	b-2
506	270.231,00	4.460.875,05	1.150,37	t
507	270.230,51	4.460.877,90	1.150,45	t
508	270.230,12	4.460.882,74	1.152,14	t
509	270.227,21	4.460.885,17	1.150,82	t
510	270.225,74	4.460.891,29	1.152,39	t
511	270.221,74	4.460.897,20	1.152,43	t
512	270.218,33	4.460.902,89	1.152,84	t
513	270.215,25	4.460.906,71	1.151,97	t
514	270.211,60	4.460.911,48	1.152,29	t
515	270.207,10	4.460.913,92	1.151,69	t
516	270.205,70	4.460.917,00	1.152,12	t
517	270.203,26	4.460.921,57	1.152,71	t
518	270.201,63	4.460.926,15	1.151,99	t
519	270.197,52	4.460.927,75	1.149,96	t
520	270.192,81	4.460.936,10	1.149,65	t
521	270.191,58	4.460.938,87	1.148,89	t
522	270.190,03	4.460.942,23	1.147,37	t
523	270.189,29	4.460.945,04	1.146,33	t
524	270.187,88	4.460.949,14	1.145,39	garganta
525	270.186,25	4.460.950,36	1.143,63	garganta
526	270.186,72	4.460.923,67	1.144,06	t
530	270.196,01	4.460.907,13	1.145,17	t
531	270.198,35	4.460.904,14	1.144,33	t
532	270.196,38	4.460.902,02	1.142,92	t
533	270.191,55	4.460.903,59	1.141,79	t
534	270.188,71	4.460.902,97	1.139,43	t
535	270.186,26	4.460.904,02	1.138,71	t
536	270.184,15	4.460.905,62	1.138,18	t
537	270.182,57	4.460.901,59	1.136,91	t
538	270.186,15	4.460.898,74	1.136,83	t
539	270.185,85	4.460.896,22	1.135,29	t
540	270.187,29	4.460.893,85	1.133,07	t
541	270.181,62	4.460.897,25	1.130,52	t

PUNTO Nº	COORDENADA X	COORDENADA Y	COTA	
542	270.177,48	4.460.897,53	1.128,66	t
543	270.172,30	4.460.897,17	1.125,23	garganta
544	270.175,37	4.460.893,16	1.127,69	t
545	270.178,53	4.460.888,98	1.126,33	t

6.3. Taquimétrico depósito nº2

PUNTO Nº	COORDENADA X	COORDENADA Y	COTA	
150	270.851,06	4.460.854,41	1.120,21	BR4_punta
151	270.851,06	4.460.854,41	1.120,20	BR4_punta
152	270.854,10	4.460.862,69	1.122,01	re
153	270.857,21	4.460.859,92	1.122,16	re
154	270.863,93	4.460.855,90	1.121,94	re
155	270.870,08	4.460.854,98	1.122,34	re
156	270.875,82	4.460.850,83	1.122,80	re
157	270.881,31	4.460.844,60	1.122,12	re
158	270.885,49	4.460.839,23	1.122,30	re
159	270.894,40	4.460.830,94	1.123,58	re
160	270.888,48	4.460.838,67	1.123,13	re
161	270.893,38	4.460.838,51	1.125,90	re
162	270.901,58	4.460.825,89	1.123,09	re
163	270.906,61	4.460.828,86	1.124,21	re
164	270.908,86	4.460.834,15	1.124,92	re
165	270.904,66	4.460.841,22	1.127,81	re
166	270.897,31	4.460.849,14	1.130,27	re
167	270.893,37	4.460.856,50	1.132,11	re
168	270.892,22	4.460.859,32	1.132,72	re
169	270.886,59	4.460.863,70	1.131,11	re
170	270.882,35	4.460.867,15	1.129,48	re
171	270.877,61	4.460.871,78	1.129,14	re
172	270.877,58	4.460.871,76	1.129,23	re
173	270.875,63	4.460.874,73	1.129,80	re
174	270.868,78	4.460.880,78	1.129,17	re
175	270.869,95	4.460.881,83	1.129,38	re
176	270.873,94	4.460.877,52	1.129,41	re
177	270.863,46	4.460.883,88	1.128,95	re
178	270.863,81	4.460.888,55	1.129,94	re

PUNTO Nº	COORDENADA X	COORDENADA Y	COTA	
179	270.862,25	4.460.891,18	1.130,77	re
180	270.857,37	4.460.889,81	1.130,38	re
181	270.853,62	4.460.890,02	1.130,09	re
182	270.854,09	4.460.903,19	1.134,78	re
183	270.856,99	4.460.910,51	1.136,59	re
184	270.861,12	4.460.909,62	1.136,77	re
185	270.863,56	4.460.908,62	1.136,50	re
186	270.866,97	4.460.904,81	1.136,58	re
187	270.870,01	4.460.901,27	1.136,29	re
188	270.873,25	4.460.892,34	1.135,39	re
189	270.876,65	4.460.890,96	1.136,82	re
190	270.884,78	4.460.885,01	1.138,05	re
191	270.886,14	4.460.884,04	1.137,56	re
192	270.887,63	4.460.881,53	1.137,76	re
193	270.889,91	4.460.881,19	1.138,64	re
194	270.894,75	4.460.874,15	1.138,09	re
197	270.901,97	4.460.869,14	1.138,16	re
198	270.908,02	4.460.861,17	1.135,18	re
199	270.914,45	4.460.858,46	1.134,27	re
200	270.914,39	4.460.858,42	1.134,25	re
201	270.918,58	4.460.859,10	1.133,81	re
202	270.923,30	4.460.861,20	1.133,44	re
203	270.925,95	4.460.867,87	1.136,30	re
204	270.927,18	4.460.870,59	1.137,43	re
205	270.925,20	4.460.875,93	1.140,33	re
206	270.914,42	4.460.880,07	1.142,72	re
207	270.907,03	4.460.884,39	1.143,62	re
208	270.906,51	4.460.885,35	1.144,24	re
210	270.898,86	4.460.891,74	1.144,75	re
211	270.893,49	4.460.899,44	1.145,12	re
212	270.888,03	4.460.909,98	1.147,03	re
213	270.886,27	4.460.916,89	1.149,29	re
214	270.879,44	4.460.926,62	1.149,32	re
215	270.874,10	4.460.934,19	1.148,75	re
216	270.868,85	4.460.941,79	1.148,28	re
217	270.862,65	4.460.947,46	1.148,70	re
218	270.866,54	4.460.955,02	1.150,18	re
219	270.872,38	4.460.954,66	1.151,64	re

PUNTO Nº	COORDENADA X	COORDENADA Y	COTA	
220	270.876,45	4.460.956,44	1.154,43	re
221	270.878,36	4.460.953,87	1.155,65	re
222	270.880,93	4.460.949,90	1.156,43	re
223	270.884,20	4.460.946,64	1.157,31	re
224	270.889,96	4.460.940,01	1.157,68	re
225	270.896,46	4.460.931,93	1.156,53	re
226	270.902,19	4.460.926,03	1.156,51	re
227	270.911,79	4.460.921,83	1.157,74	re
228	270.915,53	4.460.916,67	1.156,27	re
229	270.920,43	4.460.910,32	1.154,06	re
230	270.927,78	4.460.907,43	1.152,80	re
231	270.931,94	4.460.904,88	1.151,57	re
232	270.932,90	4.460.904,57	1.151,34	re
233	270.938,50	4.460.902,25	1.150,21	re
234	270.950,18	4.460.903,95	1.148,68	re
235	270.951,30	4.460.900,50	1.146,54	re
236	270.953,56	4.460.897,84	1.144,61	re
237	270.953,11	4.460.892,31	1.142,50	re
238	270.953,64	4.460.887,76	1.140,64	re
239	270.957,06	4.460.887,26	1.139,54	re
240	270.961,31	4.460.894,21	1.140,77	re
241	270.959,08	4.460.902,13	1.144,43	re
242	270.958,76	4.460.907,89	1.146,50	re
243	270.961,35	4.460.913,85	1.148,98	re
244	270.965,35	4.460.916,07	1.148,89	re
245	270.963,18	4.460.923,17	1.153,77	re
246	270.963,25	4.460.923,20	1.153,74	re
247	270.963,27	4.460.923,17	1.153,76	re
248	270.956,19	4.460.921,65	1.155,25	re
249	270.946,89	4.460.922,67	1.157,66	re
250	270.937,03	4.460.928,77	1.160,70	re
251	270.926,94	4.460.935,53	1.163,43	re
252	270.917,65	4.460.941,15	1.164,57	re
253	270.916,26	4.460.951,83	1.167,54	re
254	270.923,53	4.460.953,96	1.169,40	re
255	270.923,89	4.460.959,26	1.171,18	re
256	270.926,29	4.460.964,22	1.173,19	re
257	270.928,68	4.460.971,76	1.176,24	re

PUNTO Nº	COORDENADA X	COORDENADA Y	COTA	
258	270.925,21	4.460.973,87	1.176,39	re
259	270.933,94	4.460.975,38	1.177,71	re
260	270.941,75	4.460.971,03	1.175,88	re
261	270.949,31	4.460.967,46	1.174,07	re
262	270.949,29	4.460.967,49	1.174,04	re
263	270.959,46	4.460.961,43	1.171,47	re
264	270.963,61	4.460.959,83	1.171,26	re
265	270.975,01	4.460.960,40	1.170,25	re
266	270.981,16	4.460.961,16	1.169,53	re
267	270.957,95	4.460.950,59	1.167,40	re
268	270.950,81	4.460.942,11	1.165,14	re
269	270.902,92	4.460.942,58	1.161,58	re
270	270.888,06	4.460.956,52	1.161,11	re
271	270.886,18	4.460.968,91	1.162,33	re
272	270.885,63	4.460.975,95	1.163,51	re
273	270.889,03	4.460.979,11	1.165,99	re

6.4. Taquimétrico depósito nº3

PUNTO Nº	COORDENADA X	COORDENADA Y	COTA	
274	271.399,62	4.460.369,06	1.050,42	BR5_punta
276	271.399,61	4.460.369,06	1.050,41	BR5_punta
277	271.427,33	4.460.521,74	1.116,45	re
278	271.436,76	4.460.528,56	1.118,50	re
279	271.446,24	4.460.532,16	1.119,54	re
280	271.455,32	4.460.538,89	1.119,86	re
281	271.455,34	4.460.538,96	1.119,85	re
282	271.460,08	4.460.545,38	1.120,34	re
283	271.466,59	4.460.553,29	1.118,62	re
284	271.470,62	4.460.567,28	1.119,23	re
285	271.475,38	4.460.577,89	1.120,26	re
286	271.480,19	4.460.583,57	1.120,48	re
287	271.487,48	4.460.592,76	1.120,79	re
288	271.482,63	4.460.606,18	1.125,02	re
289	271.480,23	4.460.598,86	1.126,31	re
290	271.473,52	4.460.591,52	1.128,32	re
291	271.473,54	4.460.591,45	1.128,29	re

PUNTO Nº	COORDENADA X	COORDENADA Y	COTA	
292	271.467,72	4.460.590,12	1.130,59	re
293	271.462,61	4.460.590,44	1.132,75	re
294	271.458,86	4.460.586,71	1.132,86	re
295	271.452,35	4.460.583,06	1.134,27	re
296	271.448,36	4.460.575,71	1.134,08	re
297	271.444,14	4.460.573,12	1.135,44	re
298	271.442,88	4.460.566,55	1.135,89	re
299	271.440,71	4.460.562,24	1.137,58	re
300	271.438,37	4.460.559,98	1.138,20	re
301	271.435,08	4.460.559,88	1.139,60	re
302	271.429,88	4.460.557,96	1.140,25	re
303	271.427,58	4.460.557,89	1.140,52	BR6_estaca
305	271.423,07	4.460.556,95	1.138,88	re
306	271.415,75	4.460.554,96	1.136,15	re
307	271.415,67	4.460.561,87	1.138,64	re
308	271.419,33	4.460.567,02	1.140,62	re
309	271.419,32	4.460.566,99	1.140,62	re
310	271.422,07	4.460.569,47	1.141,36	re
311	271.425,75	4.460.570,62	1.141,50	re
312	271.431,52	4.460.572,45	1.140,83	re
313	271.433,92	4.460.576,82	1.140,82	re
314	271.436,29	4.460.582,11	1.141,25	re
315	271.439,97	4.460.585,52	1.141,15	re
316	271.441,99	4.460.588,44	1.140,95	re
317	271.443,92	4.460.592,30	1.141,60	re
318	271.443,37	4.460.597,73	1.143,60	re
319	271.448,56	4.460.604,59	1.143,18	re
320	271.446,93	4.460.615,76	1.146,47	re
321	271.441,30	4.460.611,21	1.148,02	re
322	271.433,21	4.460.606,67	1.148,56	re
323	271.430,27	4.460.600,71	1.147,25	re
324	271.430,27	4.460.600,74	1.147,30	re
325	271.426,64	4.460.593,81	1.145,69	re
326	271.419,58	4.460.586,73	1.144,39	re
327	271.413,96	4.460.584,14	1.143,63	re
328	271.408,37	4.460.578,86	1.141,59	re
329	271.405,10	4.460.573,38	1.139,36	re
330	271.399,58	4.460.570,59	1.137,82	re

PUNTO Nº	COORDENADA X	COORDENADA Y	COTA	
331	271.395,57	4.460.574,92	1.138,28	re
332	271.394,70	4.460.578,62	1.139,74	re
333	271.402,31	4.460.578,65	1.140,60	re
334	271.404,65	4.460.586,41	1.143,64	re
335	271.409,55	4.460.590,23	1.145,10	re
336	271.415,65	4.460.592,60	1.146,12	re
337	271.422,93	4.460.601,29	1.148,58	re
338	271.428,59	4.460.610,34	1.150,87	re
339	271.431,32	4.460.615,87	1.151,59	re
340	271.434,54	4.460.623,69	1.153,32	re
341	271.416,67	4.460.579,97	1.142,74	re
342	271.418,34	4.460.574,48	1.141,91	re
343	271.421,59	4.460.571,34	1.141,56	re
344	271.425,29	4.460.566,13	1.140,94	re
345	271.426,76	4.460.562,44	1.140,58	re
346	271.428,43	4.460.565,01	1.140,91	re
347	271.430,53	4.460.569,74	1.140,84	re
348	271.480,54	4.460.545,49	1.108,45	t
349	271.484,76	4.460.555,07	1.107,59	t
350	271.489,08	4.460.564,43	1.106,86	t
351	271.488,81	4.460.579,05	1.113,49	t
352	271.473,17	4.460.533,98	1.108,68	t
353	271.460,39	4.460.527,76	1.113,35	t

7. Replanteo

A continuación, se adjunta listado de los ejes correspondientes al proyecto:

7.1. Eje Balsa:

Alignment Station and Curve Report

Nombre del proyecto: C:\Proyectos\Tornavacas\Balsa_rev0

Fecha del informe: 17/02/2023 12:02:32

Cliente: Client Company

Descripción de proyecto:

Preparado por: Preparer

<u>Tangent Data</u>			
Description	PT Station	Northing	Easting
Start:	0+00.000	4460242.422	270319.878
End:	2+26.000	4460291.527	270540.479

<u>Tangent Data</u>			
Parameter	Value	Parameter	Value
Length:	226.000	Course:	N 77° 27' 03.1878" E

Alignment: Eje balsa

Description:

<u>Tangent Data</u>			
Description	PT Station	Northing	Easting
Start:	0+00.000	4460311.736	270385.363
End:	0+64.865	4460325.830	270448.678

<u>Tangent Data</u>			
Parameter	Value	Parameter	Value
Length:	64.865	Course:	N 77° 27' 02.5050" E

<u>Curve Point Data</u>			
Description	Station	Northing	Easting
PC:	0+64.865	4460325.830	270448.678
RP:		4460273.677	270460.287

PT: 2+32.720 4460221.524 270471.897

Circular Curve Data

Parameter	Value	Parameter	Value
Delta:	180° 00' 00.9171"	Type:	RIGHT
Radius:	53.430		
Length:	167.855	Tangent:	23575067.556
Mid-Ord:	53.430	External:	23575120.986
Chord:	106.860	Course:	S 12° 32' 58.0917" E

Tangent Data

Description	PT Station	Northing	Easting
Start:	2+32.720	4460221.524	270471.897
End:	2+97.585	4460207.430	270408.581

Tangent Data

Parameter	Value	Parameter	Value
Length:	64.866	Course:	S 77° 27' 02.5050" W

Curve Point Data

Description	Station	Northing	Easting
PC:	2+97.585	4460207.430	270408.581
RP:		4460259.583	270396.972
PT:	4+65.440	4460311.736	270385.363

Circular Curve Data

Parameter	Value	Parameter	Value
Delta:	180° 00' 00.9137"	Type:	RIGHT
Radius:	53.430		
Length:	167.855	Tangent:	23660504.299
Mid-Ord:	53.430	External:	23660557.729
Chord:	106.860	Course:	N 12° 32' 56.9200" W

7.2. Red de riego:

TRAMO: A

Description:

RANGO DE PK: INICIO: 0+000.000, FINAL: 0+255.886

PI Pk	Y	X	DISTANCIA	Direction
0+000.000	4,460,182.542m	270,424.732m		
			35.27m	S81°12'27"W
0+035.268	4,460,177.152m	270,389.879m		
			23.42m	N89°01'44"W
0+058.687	4,460,177.548m	270,366.463m		
			27.34m	N76°34'08"W
0+086.025	4,460,183.898m	270,339.872m		
			21.09m	N48°48'51"W
0+107.120	4,460,197.789m	270,323.997m		
			24.72m	N18°43'33"W
0+131.844	4,460,221.205m	270,316.060m		
			23.09m	N28°46'04"W
0+154.934	4,460,241.445m	270,304.947m		
			19.38m	N55°00'29"W
0+174.312	4,460,252.558m	270,289.072m		
			26.62m	N87°26'10"W
0+200.930	4,460,253.749m	270,262.481m		
			10.35m	N85°36'05"W
0+211.279	4,460,254.542m	270,252.163m		
			16.29m	N87°12'26"W
0+227.570	4,460,255.336m	270,235.891m		
			28.32m	N88°49'50"W
0+255.886	4,460,255.914m	270,207.581m		

TRAMO: A1

Description:

RANGO DE PK: INICIO: 0+000.000, FINAL: 0+010.638

PI Pk	Y	X	DISTANCIA	Direction
0+000.000	4,460,255.914m	270,207.581m		
			10.64m	N41°48'04"W
0+010.638	4,460,263.844m	270,200.491m		

TRAMO: AA

Description:

RANGO DE PK: INICIO: 0+000.000, FINAL: 0+255.006

PI Pk	Y	X	DISTANCIA	Direction
0+000.000	4,460,360.118m	270,965.098m		
			25.23m	N31°37'24"W
0+025.231	4,460,381.603m	270,951.869m		
			13.24m	N14°06'37"W
0+038.471	4,460,394.444m	270,948.641m		
			6.75m	N41°49'13"W
0+045.217	4,460,399.471m	270,944.143m		
			14.03m	N54°12'40"W
0+059.242	4,460,407.673m	270,932.766m		
			4.88m	N49°23'55"W
0+064.121	4,460,410.848m	270,929.062m		
			15.06m	S71°33'54"E
0+079.181	4,460,406.085m	270,943.349m		
			14.90m	S70°16'40"E
0+094.078	4,460,401.058m	270,957.372m		
			17.17m	S65°24'36"E
0+111.246	4,460,393.915m	270,972.983m		
			20.87m	S59°32'04"E
0+132.119	4,460,383.331m	270,990.974m		
			20.47m	S63°06'14"E
0+152.590	4,460,374.071m	271,009.231m		
			11.89m	S57°43'28"E
0+164.481	4,460,367.721m	271,019.285m		
			20.06m	S85°16'13"E
0+184.544	4,460,366.067m	271,039.280m		
			25.29m	S86°33'12"E
0+209.839	4,460,364.546m	271,064.529m		
			45.17m	S78°49'48"E
0+255.006	4,460,355.796m	271,108.840m		

TRAMO: AA1

Description:

RANGO DE PK: INICIO: 0+000.000, FINAL: 0+006.196

PI Pk	Y	X	DISTANCIA	Direction
0+000.000	4,460,355.796m	271,108.840m		
			6.20m	N13°35'16"E
0+006.196	4,460,361.818m	271,110.295m		

TRAMO: AB

Description:

RANGO DE PK: INICIO: 0+000.000, FINAL: 0+214.157

PI Pk	Y	X	DISTANCIA	Direction
0+000.000	4,460,355.796m	271,108.840m		
			24.80m	N82°04'20"E
0+024.796	4,460,359.216m	271,133.399m		
			20.04m	S70°49'09"E
0+044.840	4,460,352.631m	271,152.330m		
			9.88m	S86°08'36"E
0+054.722	4,460,351.966m	271,162.189m		
			17.09m	N75°27'34"E
0+071.809	4,460,356.256m	271,178.729m		
			11.33m	N70°46'51"E
0+083.140	4,460,359.986m	271,189.429m		
			1.01m	N69°02'39"E
0+084.146	4,460,360.346m	271,190.369m		
			22.52m	N69°06'48"E
0+106.667	4,460,368.375m	271,211.409m		
			7.42m	N16°21'29"W
0+114.088	4,460,375.496m	271,209.319m		
			10.61m	N56°25'01"E
0+124.699	4,460,381.365m	271,218.159m		
			4.43m	N56°42'17"E
0+129.125	4,460,383.795m	271,221.859m		
			10.51m	N42°57'28"E
0+139.632	4,460,391.485m	271,229.019m		
			10.14m	N38°47'32"E
0+149.768	4,460,399.385m	271,235.369m		
			4.61m	N0°00'00"E
0+154.378	4,460,403.995m	271,235.369m		

			6.71m	N73°01'37"E
0+161.090	4,460,405.954m	271,241.789m		
			25.40m	N72°48'21"E
0+186.495	4,460,413.464m	271,266.059m		
			27.66m	N83°15'10"E
0+214.157	4,460,416.714m	271,293.529m		

TRAMO: AB1

Description:

RANGO DE PK: INICIO: 0+000.000, FINAL: 0+013.417

PI Pk	Y	X	DISTANCIA	Direction
0+000.000	4,460,416.714m	271,293.529m		
			13.42m	S3°41'20"W
0+013.417	4,460,403.325m	271,292.665m		

TRAMO: AB2

Description:

RANGO DE PK: INICIO: 0+000.000, FINAL: 0+200.310

PI Pk	Y	X	DISTANCIA	Direction
0+000.000	4,460,416.714m	271,293.529m		
			16.10m	S86°04'54"E
0+016.098	4,460,415.614m	271,309.589m		
			23.73m	N35°46'27"E
0+039.824	4,460,434.863m	271,323.459m		
			4.87m	N80°25'18"E
0+044.691	4,460,435.674m	271,328.259m		
			6.27m	N28°09'30"E
0+050.964	4,460,441.204m	271,331.219m		
			7.26m	N28°11'25"E
0+058.225	4,460,447.603m	271,334.649m		
			14.28m	S53°13'35"E
0+072.507	4,460,439.053m	271,346.089m		
			16.35m	S53°15'23"E
0+088.855	4,460,429.273m	271,359.189m		
			7.39m	S5°21'21"E
0+096.247	4,460,421.913m	271,359.879m		
			46.98m	N74°43'17"E
0+143.227	4,460,434.293m	271,405.199m		

			50.70m	N76°15'09"E
0+193.930	4,460,446.342m	271,454.449m		
			6.38m	N58°43'25"E
0+200.310	4,460,449.654m	271,459.902m		

TRAMO: AC

Description:

RANGO DE PK: INICIO: 0+000.000, FINAL: 0+085.215

PI Pk	Y	X	DISTANCIA	Direction
0+000.000	4,460,360.118m	270,965.098m		
			16.80m	S47°28'15"E
0+016.802	4,460,348.761m	270,977.480m		
			12.12m	S45°42'26"E
0+028.926	4,460,340.294m	270,986.158m		
			8.69m	S43°01'30"E
0+037.612	4,460,333.944m	270,992.085m		
			7.49m	S42°42'34"E
0+045.101	4,460,328.441m	270,997.165m		
			11.83m	S42°49'31"E
0+056.934	4,460,319.763m	271,005.208m		
			16.99m	S39°26'24"E
0+073.927	4,460,306.639m	271,016.003m		
			5.59m	S37°18'14"E
0+079.515	4,460,302.194m	271,019.390m		
			5.70m	S8°34'22"E
0+085.215	4,460,296.558m	271,020.240m		

TRAMO: AD

Description:

RANGO DE PK: INICIO: 0+000.000, FINAL: 0+327.078

PI Pk	Y	X	DISTANCIA	Direction
0+000.000	4,460,296.558m	271,020.240m		
			13.52m	S75°12'14"E
0+013.520	4,460,293.105m	271,033.311m		
			12.85m	S85°38'25"E
0+026.375	4,460,292.128m	271,046.129m		
			18.73m	N79°57'45"E
0+045.104	4,460,295.392m	271,064.571m		

			10.95m	N83°31'20"E
0+056.052	4,460,296.628m	271,075.450m		
			20.97m	N75°21'06"E
0+077.026	4,460,301.931m	271,095.742m		
			11.31m	N81°40'57"E
0+088.332	4,460,303.567m	271,106.929m		
			14.93m	N82°59'55"E
0+103.264	4,460,305.387m	271,121.749m		
			21.17m	N84°00'24"E
0+124.429	4,460,307.597m	271,142.799m		
			27.00m	N87°39'55"E
0+151.432	4,460,308.697m	271,169.779m		
			14.90m	S86°57'32"E
0+166.333	4,460,307.907m	271,184.659m		
			15.02m	N67°26'51"E
0+181.351	4,460,313.667m	271,198.529m		
			17.60m	S67°44'20"E
0+198.954	4,460,306.998m	271,214.819m		
			12.53m	S86°58'20"E
0+211.481	4,460,306.337m	271,227.329m		
			27.26m	S51°21'36"E
0+238.738	4,460,289.317m	271,248.619m		
			17.07m	S82°35'39"E
0+255.810	4,460,287.116m	271,265.548m		
			16.34m	S69°37'36"E
0+272.152	4,460,281.427m	271,280.869m		
			9.21m	S65°46'20"E
0+281.364	4,460,277.647m	271,289.269m		
			17.19m	S51°29'43"E
0+298.550	4,460,266.947m	271,302.719m		
			2.74m	S50°55'22"E
0+301.295	4,460,265.216m	271,304.849m		
			25.78m	S47°49'46"E
0+327.078	4,460,247.907m	271,323.959m		

TRAMO: AD1

Description:

RANGO DE PK: INICIO: 0+000.000, FINAL: 0+004.040

PI Pk	Y	X	DISTANCIA	Direction
0+000.000	4,460,247.907m	271,323.959m		
			4.04m	N55°40'28"E
0+004.040	4,460,250.185m	271,327.295m		

TRAMO: AE

Description:

RANGO DE PK: INICIO: 0+000.000, FINAL: 0+239.059

PI Pk	Y	X	DISTANCIA	Direction
0+000.000	4,460,247.907m	271,323.959m		
			20.43m	S34°02'56"E
0+020.433	4,460,230.977m	271,335.399m		
			16.19m	S17°01'23"E
0+036.622	4,460,215.497m	271,340.139m		
			22.91m	S27°20'19"E
0+059.530	4,460,195.148m	271,350.659m		
			25.24m	S29°06'49"E
0+084.769	4,460,173.098m	271,362.939m		
			13.56m	S10°17'03"E
0+098.327	4,460,159.758m	271,365.359m		
			13.79m	S55°31'00"E
0+112.120	4,460,151.949m	271,376.729m		
			23.88m	N89°45'41"E
0+136.000	4,460,152.048m	271,400.609m		
			15.94m	S88°59'37"E
0+151.942	4,460,151.768m	271,416.548m		
			11.43m	N88°26'47"E
0+163.377	4,460,152.078m	271,427.979m		
			9.96m	S30°31'47"E
0+173.337	4,460,143.498m	271,433.039m		
			17.29m	S18°03'30"W
0+190.629	4,460,127.058m	271,427.679m		
			14.65m	S17°23'52"E
0+205.279	4,460,113.079m	271,432.059m		
			11.49m	S56°30'08"E
0+216.766	4,460,106.739m	271,441.639m		
			9.29m	S56°54'41"E

0+226.052	4,460,101.669m	271,449.419m		
			13.01m	S69°28'25"E
0+239.059	4,460,097.109m	271,461.599m		

TRAMO: AE1

Description:

RANGO DE PK: INICIO: 0+000.000, FINAL: 0+002.357

PI Pk	Y	X	DISTANCIA	Direction
0+000.000	4,460,097.109m	271,461.599m		
			2.36m	N7°57'23"E
0+002.357	4,460,099.443m	271,461.925m		

TRAMO: AF

Description:

RANGO DE PK: INICIO: 0+000.000, FINAL: 0+190.805

PI Pk	Y	X	DISTANCIA	Direction
0+000.000	4,460,097.109m	271,461.599m		
			2.28m	S74°44'30"E
0+002.280	4,460,096.509m	271,463.799m		
			8.06m	S85°09'35"E
0+010.339	4,460,095.829m	271,471.829m		
			4.90m	N80°09'04"E
0+015.234	4,460,096.666m	271,476.652m		
			3.41m	N75°32'27"E
0+018.649	4,460,097.519m	271,479.959m		
			8.87m	N64°52'08"E
0+027.517	4,460,101.285m	271,487.987m		
			2.03m	N64°52'08"E
0+029.551	4,460,102.148m	271,489.828m		
			4.90m	N86°29'43"E
0+034.450	4,460,102.448m	271,494.719m		
			6.93m	S88°15'43"E
0+041.383	4,460,102.238m	271,501.648m		
			14.90m	N88°32'14"E
0+056.278	4,460,102.618m	271,516.539m		
			4.84m	S84°11'43"E

0+061.123	4,460,102.128m	271,521.359m		
			9.73m	S76°04'41"E
0+070.849	4,460,099.788m	271,530.799m		
			8.03m	N71°33'54"E
0+078.881	4,460,102.328m	271,538.419m		
			23.60m	S61°15'07"E
0+102.480	4,460,090.978m	271,559.109m		
			11.39m	S60°53'30"E
0+113.868	4,460,085.438m	271,569.059m		
			7.79m	S59°43'02"E
0+121.661	4,460,081.508m	271,575.788m		
			4.54m	S59°42'26"E
0+126.201	4,460,079.218m	271,579.709m		
			10.95m	S80°08'34"E
0+137.148	4,460,077.344m	271,590.494m		
			8.48m	N78°24'13"E
0+145.626	4,460,079.048m	271,598.799m		
			11.17m	N89°56'55"E
0+156.795	4,460,079.058m	271,609.968m		
			10.86m	N79°36'04"E
0+167.654	4,460,081.018m	271,620.649m		
			23.15m	N76°55'10"E
0+190.805	4,460,086.258m	271,643.199m		

TRAMO: AF1

Description:

RANGO DE PK: INICIO: 0+000.000, FINAL: 0+100.085

PI Pk	Y	X	DISTANCIA	Direction
0+000.000	4,460,086.258m	271,643.199m		
			9.36m	N23°21'38"E
0+009.356	4,460,094.847m	271,646.909m		
			18.43m	N3°12'14"E
0+027.785	4,460,113.247m	271,647.939m		
			36.46m	N39°58'16"W
0+064.242	4,460,141.187m	271,624.519m		
			14.19m	N50°53'37"W
0+078.431	4,460,150.137m	271,613.508m		
			21.65m	N49°28'31"W
0+100.085	4,460,164.207m	271,597.049m		

TRAMO: AF2

Description:

RANGO DE PK: INICIO: 0+000.000, FINAL: 0+102.414

PI Pk	Y	X	DISTANCIA	Direction
0+000.000	4,460,086.258m	271,643.199m		
			23.12m	S71°10'28"W
0+023.117	4,460,078.798m	271,621.319m		
			22.12m	S53°11'50"W
0+045.241	4,460,065.544m	271,603.603m		
			24.01m	S56°41'21"W
0+069.251	4,460,052.359m	271,583.538m		
			33.16m	S55°41'30"W
0+102.414	4,460,033.666m	271,556.145m		

TRAMO: AG

Description:

RANGO DE PK: INICIO: 0+000.000, FINAL: 0+060.754

PI Pk	Y	X	DISTANCIA	Direction
0+000.000	4,460,097.109m	271,461.599m		
			9.90m	S5°41'05"W
0+009.899	4,460,087.259m	271,460.618m		
			6.79m	S44°31'21"W
0+016.687	4,460,082.418m	271,455.859m		
			13.93m	S78°21'39"W
0+030.613	4,460,079.609m	271,442.219m		
			9.40m	S58°08'28"W
0+040.009	4,460,074.650m	271,434.239m		
			6.92m	S55°19'21"W
0+046.933	4,460,070.710m	271,428.544m		
			3.60m	S55°19'21"W
0+050.534	4,460,068.661m	271,425.583m		
			10.22m	S55°27'05"W
0+060.754	4,460,062.865m	271,417.165m		

TRAMO: AG1

Description:

RANGO DE PK: INICIO: 0+000.000, FINAL: 0+001.018

PI Pk	Y	X	DISTANCIA	Direction
0+000.000	4,460,062.865m	271,417.165m		
			1.02m	N18°43'54"W
0+001.018	4,460,063.830m	271,416.839m		

TRAMO: AG2

Description:

RANGO DE PK: INICIO: 0+000.000, FINAL: 0+000.935

PI Pk	Y	X	DISTANCIA	Direction
0+000.000	4,460,062.865m	271,417.165m		
			0.93m	S29°12'43"E
0+000.935	4,460,062.049m	271,417.622m		

TRAMO: AG3

Description:

RANGO DE PK: INICIO: 0+000.000, FINAL: 0+201.368

PI Pk	Y	X	DISTANCIA	Direction
0+000.000	4,460,062.865m	271,417.165m		
			7.73m	S39°26'14"W
0+007.725	4,460,056.899m	271,412.258m		
			1.76m	S22°31'14"W
0+009.487	4,460,055.272m	271,411.583m		
			13.84m	S8°47'40"W
0+023.331	4,460,041.590m	271,409.467m		
			17.33m	S0°26'15"E
0+040.662	4,460,024.260m	271,409.599m		
			14.17m	S31°50'07"W
0+054.832	4,460,012.221m	271,402.125m		
			4.66m	S30°02'02"W
0+059.493	4,460,008.187m	271,399.792m		
			9.87m	S18°26'06"W
0+069.366	4,459,998.820m	271,396.670m		
			5.24m	S44°10'54"W

0+074.605	4,459,995.063m	271,393.019m		
			19.41m	S63°26'06"W
0+094.010	4,459,986.385m	271,375.662m		
			13.58m	S71°11'36"W
0+107.590	4,459,982.007m	271,362.807m		
			6.09m	S66°14'23"W
0+113.684	4,459,979.552m	271,357.229m		
			4.21m	S55°44'38"W
0+117.895	4,459,977.182m	271,353.749m		
			2.31m	S9°57'02"W
0+120.210	4,459,974.902m	271,353.349m		
			11.10m	S16°57'21"E
0+131.314	4,459,964.280m	271,356.587m		
			13.82m	S26°28'56"E
0+145.132	4,459,951.912m	271,362.749m		
			6.39m	S9°38'24"W
0+151.521	4,459,945.612m	271,361.679m		
			9.47m	S33°14'13"W
0+160.990	4,459,937.693m	271,356.489m		
			7.92m	S37°02'37"W
0+168.908	4,459,931.373m	271,351.719m		
			11.51m	S32°50'07"W
0+180.417	4,459,921.703m	271,345.479m		
			12.13m	S35°21'08"W
0+192.544	4,459,911.811m	271,338.462m		
			5.56m	S27°14'36"W
0+198.100	4,459,906.872m	271,335.919m		
			3.27m	S27°14'36"W
0+201.368	4,459,903.967m	271,334.423m		

TRAMO: AH

Description:

RANGO DE PK: INICIO: 0+000.000, FINAL: 0+242.662

PI Pk	Y	X	DISTANCIA	Direction
0+000.000	4,460,296.558m	271,020.240m		
			17.19m	S14°10'27"W
0+017.193	4,460,279.888m	271,016.030m		
			11.73m	S24°09'39"E
0+028.920	4,460,269.189m	271,020.830m		

			16.47m	S48°57'49"E
0+045.385	4,460,258.379m	271,033.249m		
			21.86m	S51°22'08"E
0+067.250	4,460,244.729m	271,050.329m		
			10.37m	S5°41'59"E
0+077.621	4,460,234.409m	271,051.359m		
			14.72m	S25°38'36"W
0+092.340	4,460,221.139m	271,044.989m		
			12.85m	S65°03'02"W
0+105.189	4,460,215.719m	271,033.339m		
			22.22m	S70°48'13"W
0+127.405	4,460,208.414m	271,012.358m		
			17.89m	S66°00'49"W
0+145.299	4,460,201.140m	270,996.009m		
			7.35m	S38°19'09"W
0+152.654	4,460,195.370m	270,991.450m		
			7.04m	S7°55'24"E
0+159.690	4,460,188.401m	270,992.419m		
			7.81m	N89°51'12"E
0+167.500	4,460,188.421m	271,000.230m		
			16.57m	S78°11'35"E
0+184.070	4,460,185.030m	271,016.449m		
			22.23m	S79°46'19"E
0+206.303	4,460,181.082m	271,038.329m		
			21.62m	S85°11'28"E
0+227.920	4,460,179.270m	271,059.869m		
			14.74m	S73°51'08"E
0+242.662	4,460,175.170m	271,074.030m		

TRAMO: AH1

Description:

RANGO DE PK: INICIO: 0+000.000, FINAL: 0+003.463

PI Pk	Y	X	DISTANCIA	Direction
0+000.000	4,460,175.170m	271,074.030m		
			3.46m	S34°34'02"W
0+003.463	4,460,172.318m	271,072.064m		

TRAMO: AI

Description:

RANGO DE PK: INICIO: 0+000.000, FINAL: 0+198.007

PI Pk	Y	X	DISTANCIA	Direction
0+000.000	4,460,175.170m	271,074.030m		
			6.67m	S37°23'22"E
0+006.672	4,460,169.869m	271,078.081m		
			9.77m	S23°11'43"E
0+016.447	4,460,160.884m	271,081.931m		
			7.48m	S6°35'04"E
0+023.930	4,460,153.451m	271,082.789m		
			13.31m	S0°30'52"W
0+037.240	4,460,140.141m	271,082.669m		
			13.95m	S14°21'33"W
0+051.195	4,460,126.622m	271,079.209m		
			9.46m	S3°37'54"W
0+060.655	4,460,117.181m	271,078.610m		
			10.46m	S31°35'17"E
0+071.115	4,460,108.271m	271,084.088m		
			14.77m	S44°42'44"E
0+085.885	4,460,097.774m	271,094.480m		
			26.75m	S50°30'05"E
0+112.632	4,460,080.762m	271,115.119m		
			7.75m	S36°30'01"E
0+120.382	4,460,074.531m	271,119.729m		
			12.98m	S52°39'08"E
0+133.358	4,460,066.660m	271,130.044m		
			34.54m	S31°48'43"E
0+167.894	4,460,037.312m	271,148.249m		
			8.52m	S66°41'23"E
0+176.409	4,460,033.942m	271,156.070m		
			21.60m	S62°41'15"E
0+198.007	4,460,024.032m	271,175.259m		

TRAMO: AI1

Description:

RANGO DE PK: INICIO: 0+000.000, FINAL: 0+003.495

PI Pk	Y	X	DISTANCIA	Direction
0+000.000	4,460,024.032m	271,175.259m		
			3.49m	N22°00'25"E
0+003.495	4,460,027.272m	271,176.569m		

TRAMO: AI2

Description:

RANGO DE PK: INICIO: 0+000.000, FINAL: 0+003.869

PI Pk	Y	X	DISTANCIA	Direction
0+000.000	4,460,024.032m	271,175.259m		
			3.87m	S9°02'23"W
0+003.869	4,460,020.211m	271,174.652m		

TRAMO: AJ

Description:

RANGO DE PK: INICIO: 0+000.000, FINAL: 0+155.258

PI Pk	Y	X	DISTANCIA	Direction
0+000.000	4,460,024.032m	271,175.259m		
			8.89m	S50°27'12"E
0+008.889	4,460,018.373m	271,182.114m		
			14.35m	S0°08'37"E
0+023.239	4,460,004.023m	271,182.150m		
			12.11m	S21°47'30"E
0+035.348	4,459,992.778m	271,186.645m		
			37.91m	S44°14'37"E
0+073.253	4,459,965.624m	271,213.092m		
			8.01m	S42°19'17"E
0+081.264	4,459,959.701m	271,218.486m		
			6.26m	S42°19'17"E
0+087.523	4,459,955.073m	271,222.699m		
			3.93m	S26°55'56"E
0+091.451	4,459,951.571m	271,224.478m		

			22.44m	S17°04'52"E
0+113.888	4,459,930.124m	271,231.069m		
			10.04m	S30°59'00"E
0+123.931	4,459,921.514m	271,236.239m		
			10.01m	S47°40'28"E
0+133.941	4,459,914.773m	271,243.640m		
			6.77m	S44°52'39"E
0+140.715	4,459,909.974m	271,248.419m		
			14.54m	S37°40'53"E
0+155.258	4,459,898.463m	271,257.309m		

TRAMO: AJ1

Description:

RANGO DE PK: INICIO: 0+000.000, FINAL: 0+002.419

PI Pk	Y	X	DISTANCIA	Direction
0+000.000	4,459,898.463m	271,257.309m		
			2.42m	N15°35'15"E
0+002.419	4,459,900.794m	271,257.959m		

TRAMO: AJ2

Description:

RANGO DE PK: INICIO: 0+000.000, FINAL: 0+073.248

PI Pk	Y	X	DISTANCIA	Direction
0+000.000	4,459,898.463m	271,257.309m		
			8.05m	S65°53'34"E
0+008.047	4,459,895.177m	271,264.655m		
			6.02m	S59°09'22"E
0+014.070	4,459,892.089m	271,269.826m		
			3.52m	S52°01'36"E
0+017.589	4,459,889.924m	271,272.600m		
			22.94m	S5°28'42"W
0+040.533	4,459,867.084m	271,270.409m		
			12.27m	S29°09'20"W
0+052.808	4,459,856.365m	271,264.429m		
			20.44m	S34°55'07"W
0+073.248	4,459,839.604m	271,252.729m		

TRAMO: AK

Description:

RANGO DE PK: INICIO: 0+000.000, FINAL: 0+227.000

PI Pk	Y	X	DISTANCIA	Direction
0+000.000	4,460,086.258m	271,643.199m		
			15.59m	S12°58'31"W
0+015.588	4,460,071.067m	271,639.699m		
			7.96m	S2°13'47"E
0+023.544	4,460,063.118m	271,640.008m		
			11.32m	S21°40'11"E
0+034.864	4,460,052.598m	271,644.188m		
			18.08m	S55°42'18"W
0+052.948	4,460,042.409m	271,629.248m		
			8.62m	S13°57'20"E
0+061.572	4,460,034.039m	271,631.328m		
			31.09m	S68°34'07"W
0+092.661	4,460,022.679m	271,602.389m		
			22.78m	S12°12'59"E
0+115.437	4,460,000.419m	271,607.208m		
			20.75m	S8°23'40"W
0+136.189	4,459,979.890m	271,604.179m		
			21.61m	S38°15'17"E
0+157.799	4,459,962.920m	271,617.559m		
			69.20m	N56°30'21"E
0+227.000	4,460,001.109m	271,675.269m		

TRAMO: AK1

Description:

RANGO DE PK: INICIO: 0+000.000, FINAL: 0+001.435

PI Pk	Y	X	DISTANCIA	Direction
0+000.000	4,460,001.109m	271,675.269m		
			1.44m	N30°54'55"W
0+001.435	4,460,002.340m	271,674.531m		

TRAMO: AK2

Description:

RANGO DE PK: INICIO: 0+000.000, FINAL: 0+098.440

PI Pk	Y	X	DISTANCIA	Direction
0+000.000	4,460,001.109m	271,675.269m		
			14.69m	S31°33'26"E
0+014.693	4,459,988.589m	271,682.958m		
			47.10m	S14°38'50"E
0+061.793	4,459,943.020m	271,694.868m		
			11.39m	N68°01'58"E
0+073.179	4,459,947.280m	271,705.428m		
			19.89m	S61°17'11"E
0+093.072	4,459,937.722m	271,722.874m		
			2.75m	S61°17'11"E
0+095.824	4,459,936.400m	271,725.288m		
			2.62m	S72°52'52"E
0+098.440	4,459,935.630m	271,727.789m		

TRAMO: AL

Description:

RANGO DE PK: INICIO: 0+000.000, FINAL: 0+470.497

PI Pk	Y	X	DISTANCIA	Direction
0+000.000	4,460,349.630m	270,640.570m		
			17.70m	S71°31'25"E
0+017.702	4,460,344.020m	270,657.359m		
			28.30m	S33°46'33"E
0+045.997	4,460,320.500m	270,673.090m		
			12.81m	S40°34'02"E
0+058.806	4,460,310.770m	270,681.420m		
			15.06m	S54°42'26"E
0+073.863	4,460,302.071m	270,693.710m		
			6.18m	S60°04'20"E
0+080.041	4,460,298.988m	270,699.064m		
			8.01m	S60°04'20"E
0+088.055	4,460,294.990m	270,706.010m		
			10.37m	S76°26'49"E
0+098.424	4,460,292.560m	270,716.090m		
			18.81m	N67°59'22"E

0+117.235	4,460,299.610m	270,733.530m		
			24.35m	S47°56'04"E
0+141.581	4,460,283.299m	270,751.603m		
			23.26m	S38°26'40"E
0+164.844	4,460,265.079m	270,766.068m		
			25.05m	S27°15'24"E
0+189.894	4,460,242.811m	270,777.540m		
			13.22m	S8°19'06"E
0+203.116	4,460,229.728m	270,779.453m		
			27.56m	S3°18'07"E
0+230.678	4,460,202.211m	270,781.040m		
			38.76m	S4°41'55"W
0+269.438	4,460,163.582m	270,777.865m		
			18.48m	S13°14'26"W
0+287.921	4,460,145.590m	270,773.632m		
			10.64m	S5°42'38"W
0+298.557	4,460,135.007m	270,772.574m		
			18.94m	S13°42'00"E
0+317.500	4,460,116.603m	270,777.060m		
			18.95m	S62°12'30"W
0+336.449	4,460,107.768m	270,760.297m		
			14.09m	S34°17'13"W
0+350.539	4,460,096.126m	270,752.359m		
			16.94m	S14°28'13"E
0+367.480	4,460,079.722m	270,756.593m		
			13.89m	S40°21'52"E
0+381.370	4,460,069.139m	270,765.589m		
			18.77m	S68°29'55"E
0+400.139	4,460,062.260m	270,783.051m		
			19.76m	S69°37'25"E
0+419.896	4,460,055.380m	270,801.572m		
			12.80m	S60°15'18"E
0+432.695	4,460,049.030m	270,812.685m		
			32.59m	S57°36'01"E
0+465.285	4,460,031.568m	270,840.201m		
			5.21m	S23°57'45"E
0+470.497	4,460,026.805m	270,842.318m		

TRAMO: AL1

Description:

RANGO DE PK: INICIO: 0+000.000, FINAL: 0+029.844

PI Pk	Y	X	DISTANCIA	Direction
0+000.000	4,460,026.805m	270,842.318m		
			29.84m	N47°22'51"E
0+029.844	4,460,047.014m	270,864.280m		

TRAMO: ALIVIADERO

Description:

RANGO DE PK: INICIO: 0+000.000, FINAL: 0+382.996

PI Pk	Y	X	DISTANCIA	Direction
0+000.000	4,460,265.038m	270,495.254m		
			13.21m	S75°51'02"E
0+013.208	4,460,261.809m	270,508.061m		
			19.84m	S76°09'07"E
0+033.047	4,460,257.061m	270,527.324m		
			9.04m	S70°47'05"E
0+042.088	4,460,254.085m	270,535.861m		
			12.93m	S41°15'07"E
0+054.981	4,460,244.366m	270,544.386m		
			25.09m	S70°47'05"E
0+080.075	4,460,236.107m	270,568.082m		
			27.23m	S66°38'40"E
0+107.304	4,460,225.312m	270,593.080m		
			33.81m	S59°25'15"E
0+141.110	4,460,208.114m	270,622.184m		
			53.98m	S72°53'50"E
0+195.091	4,460,192.239m	270,673.778m		
			35.94m	S83°39'35"E
0+231.029	4,460,188.270m	270,709.497m		
			83.10m	S76°11'06"E
0+314.131	4,460,168.427m	270,790.195m		
			68.86m	N79°20'07"E
0+382.996	4,460,181.171m	270,857.870m		

TRAMO: AM

Description:

RANGO DE PK: INICIO: 0+000.000, FINAL: 0+309.764

PI Pk	Y	X	DISTANCIA	Direction
0+000.000	4,460,026.805m	270,842.318m		
			20.41m	S21°02'26"E
0+020.413	4,460,007.753m	270,849.647m		
			14.57m	S39°28'21"E
0+034.980	4,459,996.508m	270,858.907m		
			16.43m	S49°53'57"E
0+051.411	4,459,985.925m	270,871.475m		
			15.08m	S37°52'30"E
0+066.494	4,459,974.019m	270,880.736m		
			15.43m	S59°02'10"E
0+081.922	4,459,966.081m	270,893.965m		
			14.52m	S59°55'53"E
0+096.444	4,459,958.805m	270,906.532m		
			15.78m	S33°01'26"E
0+112.222	4,459,945.576m	270,915.131m		
			21.33m	S7°07'30"E
0+133.554	4,459,924.409m	270,917.777m		
			25.35m	S7°29'45"W
0+158.906	4,459,899.274m	270,914.470m		
			26.33m	S25°16'40"E
0+185.240	4,459,875.461m	270,925.715m		
			14.69m	S35°50'16"E
0+199.927	4,459,863.555m	270,934.314m		
			30.75m	S18°49'29"E
0+230.676	4,459,834.451m	270,944.236m		
			30.03m	S7°35'41"W
0+260.705	4,459,804.685m	270,940.267m		
			23.64m	S17°55'41"W
0+284.342	4,459,782.195m	270,932.991m		
			25.42m	S46°28'34"W
0+309.764	4,459,764.689m	270,914.558m		

TRAMO: AM1

Description:

RANGO DE PK: INICIO: 0+000.000, FINAL: 0+039.394

PI Pk	Y	X	DISTANCIA	Direction
0+000.000	4,459,764.689m	270,914.558m		
			39.39m	S42°42'42"E
0+039.394	4,459,735.743m	270,941.279m		

TRAMO: AN

Description:

RANGO DE PK: INICIO: 0+000.000, FINAL: 0+205.585

PI Pk	Y	X	DISTANCIA	Direction
0+000.000	4,459,764.689m	270,914.558m		
			14.32m	S3°42'30"E
0+014.318	4,459,750.401m	270,915.484m		
			13.13m	S40°54'52"W
0+027.447	4,459,740.479m	270,906.885m		
			15.08m	S37°52'30"W
0+042.531	4,459,728.573m	270,897.625m		
			17.87m	S51°00'32"W
0+060.402	4,459,717.328m	270,883.734m		
			32.26m	S61°51'30"W
0+092.658	4,459,702.115m	270,855.291m		
			11.70m	S47°17'26"W
0+104.361	4,459,694.177m	270,846.692m		
			11.91m	S0°00'00"E
0+116.267	4,459,682.271m	270,846.692m		
			13.38m	S8°31'51"E
0+129.644	4,459,669.042m	270,848.677m		
			15.23m	S34°22'49"E
0+144.872	4,459,656.474m	270,857.276m		
			17.46m	S24°37'25"W
0+162.335	4,459,640.599m	270,850.000m		
			17.81m	S31°19'43"W
0+180.145	4,459,625.385m	270,840.739m		
			12.71m	S38°39'35"W
0+192.852	4,459,615.463m	270,832.802m		
			12.73m	S13°06'37"E
0+205.585	4,459,603.062m	270,835.690m		

TRAMO: AN1

Description:

RANGO DE PK: INICIO: 0+000.000, FINAL: 0+043.867

PI Pk	Y	X	DISTANCIA	Direction
0+000.000	4,459,603.062m	270,835.690m		
			29.22m	N54°27'45"E
0+029.222	4,459,620.047m	270,859.469m		
			14.64m	N52°38'58"E
0+043.867	4,459,628.931m	270,871.111m		

TRAMO: AO

Description:

RANGO DE PK: INICIO: 0+000.000, FINAL: 0+294.840

PI Pk	Y	X	DISTANCIA	Direction
0+000.000	4,459,603.062m	270,835.690m		
			33.90m	N45°37'14"E
0+033.904	4,459,626.774m	270,859.922m		
			26.11m	N46°50'51"E
0+060.016	4,459,644.634m	270,878.972m		
			20.41m	N13°29'45"E
0+080.423	4,459,664.478m	270,883.734m		
			11.84m	N13°34'14"W
0+092.263	4,459,675.987m	270,880.956m		
			7.39m	N61°16'43"E
0+099.657	4,459,679.540m	270,887.440m		
			20.11m	N80°05'34"E
0+119.767	4,459,683.000m	270,907.250m		
			9.80m	S72°02'48"E
0+129.564	4,459,679.980m	270,916.571m		
			6.33m	N87°27'47"E
0+135.890	4,459,680.260m	270,922.890m		
			15.48m	N52°37'50"E
0+151.368	4,459,689.655m	270,935.191m		
			5.02m	N51°10'34"E
0+156.386	4,459,692.800m	270,939.100m		
			14.19m	N43°37'50"E
0+170.574	4,459,703.070m	270,948.890m		
			9.67m	S60°51'44"E
0+180.248	4,459,698.359m	270,957.340m		
			7.09m	N88°23'03"E

0+187.341	4,459,698.559m	270,964.430m		
			9.68m	S59°59'36"E
0+197.018	4,459,693.720m	270,972.810m		
			5.28m	S48°09'00"E
0+202.294	4,459,690.200m	270,976.740m		
			21.59m	S18°39'43"W
0+223.889	4,459,669.740m	270,969.830m		
			12.59m	S47°44'08"W
0+236.483	4,459,661.270m	270,960.510m		
			8.93m	S21°25'12"E
0+245.409	4,459,652.960m	270,963.770m		
			13.57m	S31°53'57"E
0+258.978	4,459,641.441m	270,970.940m		
			26.17m	S80°13'54"E
0+285.147	4,459,637.001m	270,996.730m		
			9.69m	S88°34'52"E
0+294.840	4,459,636.761m	271,006.420m		

TRAMO: AO1

Description:

RANGO DE PK: INICIO: 0+000.000, FINAL: 0+002.883

PI Pk	Y	X	DISTANCIA	Direction
0+000.000	4,459,636.761m	271,006.420m		
			2.88m	N9°58'35"E
0+002.883	4,459,639.600m	271,006.920m		

TRAMO: AO2

Description:

RANGO DE PK: INICIO: 0+000.000, FINAL: 0+120.067

PI Pk	Y	X	DISTANCIA	Direction
0+000.000	4,459,636.761m	271,006.420m		
			16.45m	S79°52'38"E
0+016.446	4,459,633.870m	271,022.610m		
			17.92m	S44°51'52"E
0+034.364	4,459,621.170m	271,035.250m		
			26.70m	S49°59'09"E
0+061.068	4,459,604.000m	271,055.702m		
			9.59m	S55°18'41"E

0+070.661	4,459,598.541m	271,063.590m		
			9.29m	S52°18'06"E
0+079.950	4,459,592.861m	271,070.940m		
			11.93m	S54°58'05"E
0+091.882	4,459,586.011m	271,080.710m		
			6.08m	S52°57'24"E
0+097.958	4,459,582.351m	271,085.560m		
			6.81m	S8°26'21"E
0+104.772	4,459,575.611m	271,086.560m		
			5.10m	S34°22'32"E
0+109.873	4,459,571.401m	271,089.440m		
			10.19m	N85°17'25"E
0+120.067	4,459,572.238m	271,099.600m		

TRAMO: AP

Description:

RANGO DE PK: INICIO: 0+000.000, FINAL: 0+128.881

PI Pk	Y	X	DISTANCIA	Direction
0+000.000	4,459,603.062m	270,835.690m		
			7.52m	S58°45'36"W
0+007.520	4,459,599.162m	270,829.260m		
			35.93m	S35°40'04"W
0+043.449	4,459,569.973m	270,808.310m		
			30.08m	S59°35'56"W
0+073.525	4,459,554.753m	270,782.371m		
			12.37m	S64°50'36"W
0+085.898	4,459,549.493m	270,771.170m		
			14.78m	S11°16'20"E
0+100.683	4,459,534.994m	270,774.060m		
			25.93m	S77°07'21"W
0+126.615	4,459,529.214m	270,748.781m		
			2.27m	S83°09'21"W
0+128.881	4,459,528.944m	270,746.531m		

TRAMO: AP1

Description:

RANGO DE PK: INICIO: 0+000.000, FINAL: 0+052.789

PI Pk	Y	X	DISTANCIA	Direction
0+000.000	4,459,528.944m	270,746.531m		
			10.93m	N89°41'08"W
0+010.931	4,459,529.004m	270,735.601m		
			14.82m	N83°37'16"W
0+025.754	4,459,530.651m	270,720.869m		
			11.63m	S83°14'58"W
0+037.383	4,459,529.284m	270,709.321m		
			15.41m	S61°30'22"W
0+052.789	4,459,521.935m	270,695.781m		

TRAMO: AQ

Description:

RANGO DE PK: INICIO: 0+000.000, FINAL: 0+066.660

PI Pk	Y	X	DISTANCIA	Direction
0+000.000	4,459,528.944m	270,746.531m		
			11.69m	S56°02'54"E
0+011.693	4,459,522.414m	270,756.230m		
			7.59m	S78°50'30"E
0+019.287	4,459,520.944m	270,763.680m		
			8.04m	S70°35'44"E
0+027.323	4,459,518.274m	270,771.261m		
			7.52m	S25°06'11"E
0+034.843	4,459,511.464m	270,774.451m		
			6.10m	S1°59'41"E
0+040.942	4,459,505.369m	270,774.663m		
			4.41m	S1°59'41"E
0+045.355	4,459,500.959m	270,774.817m		
			9.01m	S11°17'22"E
0+054.364	4,459,492.124m	270,776.581m		
			8.88m	N81°44'28"E
0+063.241	4,459,493.400m	270,785.366m		
			3.42m	S23°54'35"W
0+066.660	4,459,490.275m	270,783.980m		

TRAMO: AQ1

Description:

RANGO DE PK: INICIO: 0+000.000, FINAL: 0+009.146

PI Pk	Y	X	DISTANCIA	Direction
0+000.000	4,459,490.275m	270,783.980m		
			9.15m	N63°17'42"E
0+009.146	4,459,494.385m	270,792.151m		

TRAMO: AR

Description:

RANGO DE PK: INICIO: 0+000.000, FINAL: 0+099.127

PI Pk	Y	X	DISTANCIA	Direction
0+000.000	4,459,490.275m	270,783.980m		
			7.85m	S29°20'15"E
0+007.850	4,459,483.431m	270,787.827m		
			7.17m	N83°38'49"E
0+015.018	4,459,484.225m	270,794.951m		
			59.20m	S88°46'13"E
0+074.221	4,459,482.954m	270,854.140m		
			3.50m	S87°32'45"E
0+077.725	4,459,482.804m	270,857.640m		
			21.40m	S18°48'28"E
0+099.127	4,459,462.545m	270,864.541m		

TRAMO: AR1

Description:

RANGO DE PK: INICIO: 0+000.000, FINAL: 0+006.866

PI Pk	Y	X	DISTANCIA	Direction
0+000.000	4,459,462.545m	270,864.541m		
			6.87m	S13°43'43"E
0+006.866	4,459,455.875m	270,866.170m		

TRAMO: AR2

Description:

RANGO DE PK: INICIO: 0+000.000, FINAL: 0+094.969

PI Pk	Y	X	DISTANCIA	Direction
0+000.000	4,459,462.545m	270,864.541m		
			17.56m	N55°16'42"E
0+017.556	4,459,472.544m	270,878.970m		
			15.05m	N73°28'48"E
0+032.607	4,459,476.824m	270,893.401m		
			31.05m	N70°54'02"E
0+063.657	4,459,486.984m	270,922.741m		
			18.09m	N59°37'24"E
0+081.750	4,459,496.133m	270,938.350m		
			13.22m	S81°13'46"E
0+094.969	4,459,494.117m	270,951.415m		

TRAMO: B

Description:

RANGO DE PK: INICIO: 0+000.000, FINAL: 0+241.271

PI Pk	Y	X	DISTANCIA	Direction
0+000.000	4,460,255.914m	270,207.581m		
			16.19m	S55°48'55"W
0+016.186	4,460,246.820m	270,194.192m		
			15.88m	S36°52'12"W
0+032.061	4,460,234.120m	270,184.667m		
			32.44m	S56°18'36"W
0+064.496	4,460,216.128m	270,157.679m		
			24.62m	S61°46'58"W
0+089.118	4,460,204.486m	270,135.983m		
			17.04m	S64°13'50"W
0+106.158	4,460,197.078m	270,120.637m		
			32.39m	S85°18'51"W
0+138.546	4,460,194.432m	270,088.358m		
			36.68m	S79°34'45"W
0+175.224	4,460,187.798m	270,052.284m		
			10.13m	S79°34'45"W
0+185.355	4,460,185.966m	270,042.321m		
			20.82m	S62°47'53"W
0+206.178	4,460,176.447m	270,023.801m		
			21.51m	S81°08'21"W

0+227.691	4,460,173.133m	270,002.545m		
			13.58m	N85°47'42"W
0+241.271	4,460,174.129m	269,989.001m		

TRAMO: B1

Description:

RANGO DE PK: INICIO: 0+000.000, FINAL: 0+004.774

PI Pk	Y	X	DISTANCIA	Direction
0+000.000	4,460,174.129m	269,989.001m		
			4.77m	N14°40'55"E
0+004.774	4,460,178.747m	269,990.211m		

TRAMO: C

Description:

RANGO DE PK: INICIO: 0+000.000, FINAL: 0+098.930

PI Pk	Y	X	DISTANCIA	Direction
0+000.000	4,460,174.129m	269,989.001m		
			7.89m	S14°40'55"W
0+007.889	4,460,166.498m	269,987.002m		
			9.80m	S46°41'44"W
0+017.687	4,460,159.778m	269,979.872m		
			4.37m	S32°51'12"W
0+022.056	4,460,156.108m	269,977.502m		
			21.74m	N76°10'34"W
0+043.795	4,460,161.302m	269,956.392m		
			18.64m	N62°31'32"W
0+062.433	4,460,169.901m	269,939.856m		
			19.45m	N54°41'20"W
0+081.887	4,460,181.146m	269,923.981m		
			17.04m	N60°32'24"W
0+098.930	4,460,189.528m	269,909.141m		

TRAMO: C1

Description:

RANGO DE PK: INICIO: 0+000.000, FINAL: 0+004.798

PI Pk	Y	X	DISTANCIA	Direction
0+000.000	4,460,189.528m	269,909.141m		
			4.80m	N90°00'00"E
0+004.798	4,460,189.528m	269,913.940m		

TRAMO: D

Description:

RANGO DE PK: INICIO: 0+000.000, FINAL: 0+179.186

PI Pk	Y	X	DISTANCIA	Direction
0+000.000	4,460,189.528m	269,909.142m		
			5.75m	S67°02'21"W
0+005.751	4,460,187.284m	269,903.846m		
			3.24m	S59°02'10"W
0+008.991	4,460,185.617m	269,901.068m		
			2.94m	S38°25'05"W
0+011.929	4,460,183.315m	269,899.242m		
			4.73m	S7°43'19"W
0+016.655	4,460,178.632m	269,898.607m		
			6.53m	S18°26'06"E
0+023.181	4,460,172.441m	269,900.671m		
			5.79m	S53°54'54"E
0+028.976	4,460,169.028m	269,905.354m		
			6.56m	S51°52'54"E
0+035.534	4,460,164.979m	269,910.513m		
			8.28m	S56°51'10"E
0+043.812	4,460,160.453m	269,917.444m		
			11.58m	S38°05'54"E
0+055.392	4,460,151.340m	269,924.589m		
			13.02m	S39°25'58"E
0+068.409	4,460,141.286m	269,932.857m		
			6.59m	S38°28'49"E
0+075.000	4,460,136.127m	269,936.959m		
			4.25m	S30°00'40"E
0+079.253	4,460,132.444m	269,939.086m		
			3.29m	S15°09'15"E

0+082.542	4,460,129.269m	269,939.946m		
			4.50m	S1°41'05"E
0+087.042	4,460,124.771m	269,940.078m		
			8.68m	S7°52'59"W
0+095.723	4,460,116.172m	269,938.887m		
			9.36m	S8°31'51"W
0+105.087	4,460,106.912m	269,937.498m		
			5.77m	S4°36'00"E
0+110.861	4,460,101.157m	269,937.961m		
			2.85m	S21°48'05"E
0+113.710	4,460,098.511m	269,939.020m		
			4.92m	S7°15'32"E
0+118.631	4,460,093.629m	269,939.641m		
			11.92m	S3°03'10"E
0+130.555	4,460,081.723m	269,940.276m		
			3.74m	S4°51'52"W
0+134.299	4,460,077.993m	269,939.959m		
			13.61m	S8°18'41"W
0+147.905	4,460,064.530m	269,937.992m		
			8.99m	S6°16'03"E
0+156.892	4,460,055.596m	269,938.973m		
			5.67m	S8°35'01"W
0+162.565	4,460,049.986m	269,938.127m		
			2.81m	S19°47'56"W
0+165.377	4,460,047.341m	269,937.174m		
			5.10m	S48°21'59"W
0+170.475	4,460,043.954m	269,933.364m		
			4.60m	S50°07'52"W
0+175.077	4,460,041.004m	269,929.832m		
			4.11m	S56°49'17"W
0+179.186	4,460,038.755m	269,926.392m		

TRAMO: D1

Description:

RANGO DE PK: INICIO: 0+000.000, FINAL: 0+001.191

PI Pk	Y	X	DISTANCIA	Direction
0+000.000	4,460,038.755m	269,926.392m		
			1.19m	N33°15'13"W
0+001.191	4,460,039.751m	269,925.739m		

TRAMO: D2

Description:

RANGO DE PK: INICIO: 0+000.000, FINAL: 0+189.834

PI Pk	Y	X	DISTANCIA	Direction
0+000.000	4,460,038.755m	269,926.392m		
			9.74m	S50°24'14"W
0+009.737	4,460,032.549m	269,918.890m		
			5.61m	N44°32'41"W
0+015.350	4,460,036.549m	269,914.952m		
			5.39m	N65°19'23"W
0+020.736	4,460,038.798m	269,910.057m		
			21.73m	N87°13'33"W
0+042.467	4,460,039.850m	269,888.353m		
			6.20m	S80°43'27"W
0+048.668	4,460,038.851m	269,882.232m		
			7.28m	S5°08'22"W
0+055.953	4,460,031.595m	269,881.579m		
			12.60m	S7°13'48"E
0+068.552	4,460,019.097m	269,883.165m		
			7.13m	S61°34'32"W
0+075.685	4,460,015.701m	269,876.891m		
			16.83m	N63°00'25"W
0+092.516	4,460,023.340m	269,861.894m		
			32.41m	N55°22'33"W
0+124.926	4,460,041.755m	269,835.224m		
			10.08m	N41°28'01"W
0+135.007	4,460,049.310m	269,828.548m		
			5.13m	N22°58'46"W
0+140.137	4,460,054.032m	269,826.546m		
			10.04m	S62°21'14"W
0+150.172	4,460,049.375m	269,817.656m		

			9.40m	S54°09'44"W
0+159.572	4,460,043.872m	269,810.036m		
			11.27m	S64°23'52"W
0+170.838	4,460,039.003m	269,799.876m		
			11.76m	S81°43'27"W
0+182.602	4,460,037.310m	269,788.234m		
			1.48m	N90°00'00"W
0+184.084	4,460,037.310m	269,786.753m		
			5.75m	S84°15'23"W
0+189.834	4,460,036.735m	269,781.032m		

TRAMO: DESAGUE

Description:

RANGO DE PK: INICIO: 0+000.000, FINAL: 0+382.046

PI Pk	Y	X	DISTANCIA	Direction
0+000.000	4,460,262.148m	270,493.365m		
			79.12m	S70°47'05"E
0+079.125	4,460,236.107m	270,568.082m		
			27.23m	S66°38'40"E
0+106.354	4,460,225.312m	270,593.080m		
			33.81m	S59°25'15"E
0+140.159	4,460,208.114m	270,622.184m		
			53.98m	S72°53'50"E
0+194.140	4,460,192.239m	270,673.778m		
			35.94m	S83°39'35"E
0+230.079	4,460,188.270m	270,709.497m		
			83.10m	S76°11'06"E
0+313.181	4,460,168.427m	270,790.195m		
			68.86m	N79°20'07"E
0+382.046	4,460,181.171m	270,857.870m		

TRAMO: DESAGUE 1

Description:

RANGO DE PK: INICIO: 0+000.000, FINAL: 0+056.873

PI Pk	Y	X	DISTANCIA	Direction
0+000.000	4,460,897.443m	270,187.337m		

			56.87m	S12°06'16"W
0+056.873	4,460,841.834m	270,175.411m		

TRAMO: DESAGUE 2

Description:

RANGO DE PK: INICIO: 0+000.000, FINAL: 0+057.845

PI Pk	Y	X	DISTANCIA	Direction
0+000.000	4,460,894.148m	270,895.410m		
			11.42m	N30°09'04"W
0+011.420	4,460,904.023m	270,889.674m		
			12.15m	N33°16'30"W
0+023.573	4,460,914.183m	270,883.006m		
			7.14m	N36°52'12"W
0+030.716	4,460,919.898m	270,878.720m		
			7.32m	N29°53'56"W
0+038.041	4,460,926.248m	270,875.069m		
			8.20m	N45°47'05"W
0+046.237	4,460,931.963m	270,869.195m		
			3.52m	N54°09'44"W
0+049.761	4,460,934.027m	270,866.337m		
			7.34m	N78°54'23"W
0+057.096	4,460,935.438m	270,859.139m		
			0.75m	N78°52'36"W
0+057.845	4,460,935.582m	270,858.405m		

TRAMO: DESAGUE 3

Description:

RANGO DE PK: INICIO: 0+000.000, FINAL: 0+171.639

PI Pk	Y	X	DISTANCIA	Direction
0+000.000	4,460,558.111m	271,448.191m		
			11.49m	S37°04'51"W
0+011.486	4,460,548.947m	271,441.265m		
			11.06m	S30°12'25"E
0+022.548	4,460,539.388m	271,446.830m		
			46.81m	N89°15'18"E
0+069.357	4,460,539.996m	271,493.635m		

			24.96m	S85°08'08"E
0+094.317	4,460,537.880m	271,518.506m		
			27.62m	S73°18'03"E
0+121.941	4,460,529.942m	271,544.964m		
			26.19m	S81°52'12"E
0+148.133	4,460,526.238m	271,570.894m		
			23.51m	S64°01'50"E
0+171.639	4,460,515.945m	271,592.026m		

TRAMO: E

Description:

RANGO DE PK: INICIO: 0+000.000, FINAL: 0+342.736

PI Pk	Y	X	DISTANCIA	Direction
0+000.000	4,460,255.914m	270,207.581m		
			15.12m	S32°10'08"E
0+015.124	4,460,243.112m	270,215.633m		
			19.90m	S21°26'52"W
0+035.023	4,460,224.591m	270,208.357m		
			9.91m	S26°33'54"W
0+044.933	4,460,215.727m	270,203.926m		
			15.40m	S19°03'28"W
0+060.329	4,460,201.175m	270,198.898m		
			20.17m	S4°30'50"W
0+080.500	4,460,181.067m	270,197.311m		
			7.64m	S14°02'10"W
0+088.136	4,460,173.658m	270,195.459m		
			4.18m	S18°26'06"W
0+092.319	4,460,169.690m	270,194.136m		
			13.03m	S12°54'27"W
0+105.349	4,460,156.990m	270,191.225m		
			5.45m	S14°02'10"W
0+110.803	4,460,151.698m	270,189.903m		
			15.49m	S7°51'12"W
0+126.294	4,460,136.352m	270,187.786m		
			12.26m	S13°44'11"W
0+138.551	4,460,124.446m	270,184.875m		
			10.88m	S4°11'06"E
0+149.428	4,460,113.598m	270,185.669m		
			6.62m	S2°17'26"E

0+156.048	4,460,106.983m	270,185.934m		
			25.97m	S31°04'38"E
0+182.018	4,460,084.741m	270,199.339m		
			36.83m	S37°07'01"E
0+218.849	4,460,055.372m	270,221.564m		
			16.52m	S54°46'57"E
0+235.365	4,460,045.847m	270,235.058m		
			12.55m	S71°33'54"E
0+247.916	4,460,041.878m	270,246.964m		
			30.55m	S65°25'58"E
0+278.462	4,460,029.178m	270,274.746m		
			36.83m	S37°07'01"W
0+315.293	4,459,999.809m	270,252.521m		
			27.44m	S7°08'15"W
0+342.736	4,459,972.579m	270,249.111m		

TRAMO: E1

Description:

RANGO DE PK: INICIO: 0+000.000, FINAL: 0+009.682

PI Pk	Y	X	DISTANCIA	Direction
0+000.000	4,459,972.579m	270,249.111m		
			9.68m	N82°08'48"E
0+009.682	4,459,973.902m	270,258.702m		

TRAMO: F

Description:

RANGO DE PK: INICIO: 0+000.000, FINAL: 0+218.846

PI Pk	Y	X	DISTANCIA	Direction
0+000.000	4,459,972.579m	270,249.111m		
			9.72m	S85°34'27"W
0+009.719	4,459,971.829m	270,239.421m		
			4.46m	S32°22'22"W
0+014.183	4,459,968.059m	270,237.031m		
			30.13m	S54°40'32"W
0+044.309	4,459,950.640m	270,212.452m		
			15.80m	S57°29'19"W

0+060.104	4,459,942.151m	270,199.132m		
			18.14m	S47°49'47"W
0+078.246	4,459,929.971m	270,185.685m		
			8.81m	S40°10'59"W
0+087.055	4,459,923.241m	270,180.002m		
			60.40m	S60°53'36"W
0+147.453	4,459,893.862m	270,127.232m		
			10.50m	S18°33'21"E
0+157.948	4,459,883.911m	270,130.571m		
			14.57m	S53°25'50"E
0+172.516	4,459,875.232m	270,142.272m		
			18.57m	S2°18'55"W
0+191.081	4,459,856.682m	270,141.522m		
			25.29m	S63°38'15"E
0+216.371	4,459,845.452m	270,164.181m		
			2.47m	S37°08'40"E
0+218.846	4,459,843.480m	270,165.675m		

TRAMO: F1

Description:

RANGO DE PK: INICIO: 0+000.000, FINAL: 0+027.432

PI Pk	Y	X	DISTANCIA	Direction
0+000.000	4,459,843.480m	270,165.675m		
			7.97m	S35°16'21"W
0+007.972	4,459,836.971m	270,161.072m		
			14.73m	S52°52'59"W
0+022.705	4,459,828.081m	270,149.324m		
			4.73m	S85°30'22"W
0+027.432	4,459,827.711m	270,144.611m		

TRAMO: G

Description:

RANGO DE PK: INICIO: 0+000.000, FINAL: 0+121.994

PI Pk	Y	X	DISTANCIA	Direction
0+000.000	4,459,843.480m	270,165.675m		
			16.92m	N64°12'34"E

0+016.922	4,459,850.842m	270,180.912m		
			12.86m	S79°06'34"E
0+029.783	4,459,848.412m	270,193.542m		
			17.30m	S23°36'58"E
0+047.082	4,459,832.562m	270,200.472m		
			15.66m	S23°29'15"E
0+062.739	4,459,818.203m	270,206.712m		
			34.10m	S22°55'06"E
0+096.841	4,459,786.793m	270,219.992m		
			25.15m	S33°11'30"E
0+121.994	4,459,765.743m	270,233.762m		

TRAMO: G1

Description:

RANGO DE PK: INICIO: 0+000.000, FINAL: 0+003.172

PI Pk	Y	X	DISTANCIA	Direction
0+000.000	4,459,765.743m	270,233.762m		
			3.17m	S23°24'07"W
0+003.172	4,459,762.832m	270,232.502m		

TRAMO: H

Description:

RANGO DE PK: INICIO: 0+000.000, FINAL: 0+105.225

PI Pk	Y	X	DISTANCIA	Direction
0+000.000	4,459,765.743m	270,233.762m		
			11.90m	S26°59'45"E
0+011.896	4,459,755.143m	270,239.162m		
			21.53m	S30°06'55"E
0+033.421	4,459,736.524m	270,249.962m		
			14.66m	S36°27'24"E
0+048.079	4,459,724.734m	270,258.672m		
			25.98m	S46°37'17"E
0+074.055	4,459,706.894m	270,277.552m		
			31.17m	S33°08'24"E
0+105.225	4,459,680.794m	270,294.592m		

TRAMO: H1

Description:

RANGO DE PK: INICIO: 0+000.000, FINAL: 0+005.431

PI Pk	Y	X	DISTANCIA	Direction
0+000.000	4,459,680.794m	270,294.592m		
			5.43m	N42°32'46"E
0+005.431	4,459,684.795m	270,298.264m		

TRAMO: I

Description:

RANGO DE PK: INICIO: 0+000.000, FINAL: 0+231.969

PI Pk	Y	X	DISTANCIA	Direction
0+000.000	4,459,972.579m	270,249.111m		
			14.88m	S66°03'14"E
0+014.881	4,459,966.539m	270,262.712m		
			13.39m	S41°32'53"E
0+028.269	4,459,956.520m	270,271.591m		
			5.27m	S41°36'56"E
0+033.539	4,459,952.580m	270,275.091m		
			8.20m	S24°07'33"E
0+041.735	4,459,945.100m	270,278.441m		
			12.09m	S30°43'43"E
0+053.823	4,459,934.709m	270,284.618m		
			28.59m	S2°07'16"W
0+082.418	4,459,906.134m	270,283.559m		
			17.73m	S0°51'18"W
0+100.147	4,459,888.407m	270,283.295m		
			30.36m	S12°34'59"E
0+130.510	4,459,858.773m	270,289.909m		
			16.95m	S34°11'10"E
0+147.462	4,459,844.750m	270,299.434m		
			22.28m	S37°16'41"E
0+169.740	4,459,827.023m	270,312.928m		
			13.14m	S71°12'00"E
0+182.876	4,459,822.790m	270,325.364m		
			20.00m	S72°17'03"E
0+202.875	4,459,816.704m	270,344.414m		
			11.95m	S62°18'02"E
0+214.828	4,459,811.148m	270,354.997m		

			17.14m	S72°38'14"E
0+231.969	4,459,806.033m	270,371.357m		

TRAMO: I1

Description:

RANGO DE PK: INICIO: 0+000.000, FINAL: 0+020.647

PI Pk	Y	X	DISTANCIA	Direction
0+000.000	4,459,806.033m	270,371.357m		
			20.65m	S18°13'26"W
0+020.647	4,459,786.421m	270,364.900m		

TRAMO: J

Description:

RANGO DE PK: INICIO: 0+000.000, FINAL: 0+176.396

PI Pk	Y	X	DISTANCIA	Direction
0+000.000	4,459,806.033m	270,371.357m		
			41.11m	S74°00'45"E
0+041.107	4,459,794.711m	270,410.874m		
			12.01m	S82°24'19"E
0+053.118	4,459,793.123m	270,422.780m		
			33.64m	S70°42'36"E
0+086.757	4,459,782.011m	270,454.530m		
			21.68m	S66°15'02"E
0+108.437	4,459,773.279m	270,474.374m		
			14.20m	S56°55'33"E
0+122.634	4,459,765.532m	270,486.271m		
			53.76m	S49°09'21"E
0+176.396	4,459,730.372m	270,526.941m		

TRAMO: J1

Description:

RANGO DE PK: INICIO: 0+000.000, FINAL: 0+066.741

PI Pk	Y	X	DISTANCIA	Direction
0+000.000	4,459,730.372m	270,526.941m		
			45.30m	N88°15'16"E
0+045.301	4,459,731.752m	270,572.221m		

			17.70m	S30°11'28"E
0+062.999	4,459,716.454m	270,581.121m		
			3.74m	S30°11'28"E
0+066.741	4,459,713.219m	270,583.003m		

TRAMO: K

Description:

RANGO DE PK: INICIO: 0+000.000, FINAL: 0+186.602

PI Pk	Y	X	DISTANCIA	Direction
0+000.000	4,459,680.794m	270,294.592m		
			8.78m	S53°42'24"E
0+008.784	4,459,675.595m	270,301.672m		
			20.71m	S62°18'10"E
0+029.496	4,459,665.968m	270,320.010m		
			16.29m	S60°34'46"E
0+045.789	4,459,657.964m	270,334.202m		
			7.18m	S35°11'32"E
0+052.972	4,459,652.094m	270,338.342m		
			10.11m	S2°21'35"W
0+063.077	4,459,641.997m	270,337.925m		
			26.54m	S15°42'12"W
0+089.620	4,459,616.445m	270,330.741m		
			25.75m	S24°21'59"E
0+115.373	4,459,592.986m	270,341.366m		
			11.60m	S24°54'19"E
0+126.972	4,459,582.466m	270,346.251m		
			22.70m	S34°52'56"E
0+149.670	4,459,563.846m	270,359.232m		
			13.93m	S34°24'30"E
0+163.596	4,459,552.357m	270,367.101m		
			23.01m	S42°23'34"E
0+186.602	4,459,535.366m	270,382.612m		

TRAMO: K1

Description:

RANGO DE PK: INICIO: 0+000.000, FINAL: 0+004.388

PI Pk	Y	X	DISTANCIA	Direction
0+000.000	4,459,535.366m	270,382.612m		
			4.39m	N55°35'08"E
0+004.388	4,459,537.846m	270,386.231m		

TRAMO: L

Description:

RANGO DE PK: INICIO: 0+000.000, FINAL: 0+193.374

PI Pk	Y	X	DISTANCIA	Direction
0+000.000	4,459,730.372m	270,526.941m		
			13.85m	S39°26'10"W
0+013.853	4,459,719.672m	270,518.141m		
			7.33m	S62°17'00"W
0+021.185	4,459,716.262m	270,511.650m		
			3.90m	S6°46'16"W
0+025.082	4,459,712.392m	270,511.191m		
			9.99m	S40°27'14"E
0+035.070	4,459,704.793m	270,517.671m		
			22.34m	S63°55'39"E
0+057.413	4,459,694.973m	270,537.741m		
			4.89m	S7°17'27"E
0+062.302	4,459,690.123m	270,538.361m		
			11.53m	S46°20'20"W
0+073.831	4,459,682.163m	270,530.021m		
			17.65m	S75°25'40"W
0+091.478	4,459,677.723m	270,512.941m		
			36.66m	S52°21'31"W
0+128.139	4,459,655.334m	270,483.911m		
			11.05m	S59°00'02"W
0+139.187	4,459,649.644m	270,474.441m		
			5.70m	N88°29'33"W
0+144.889	4,459,649.793m	270,468.741m		
			10.24m	S66°05'15"W
0+155.128	4,459,645.644m	270,459.382m		
			12.82m	S14°43'42"E
0+167.948	4,459,633.244m	270,462.641m		

			8.10m	S19°41'14"W
0+176.052	4,459,625.614m	270,459.911m		
			7.81m	S64°21'13"W
0+183.861	4,459,622.234m	270,452.871m		
			9.51m	N62°55'18"W
0+193.374	4,459,626.564m	270,444.402m		

TRAMO: L1

Description:

RANGO DE PK: INICIO: 0+000.000, FINAL: 0+002.100

PI Pk	Y	X	DISTANCIA	Direction
0+000.000	4,459,626.564m	270,444.402m		
			2.10m	N15°52'25"E
0+002.100	4,459,628.584m	270,444.976m		

TRAMO: LLENADO 1 DETALLE

Description:

RANGO DE PK: INICIO: 0+000.000, FINAL: 0+073.481

PI Pk	Y	X	DISTANCIA	Direction
0+000.000	4,460,276.523m	270,306.147m		
			73.48m	S78°28'01"E
0+073.481	4,460,261.832m	270,378.144m		

TRAMO: LLENADO 2 DETALLE

Description:

RANGO DE PK: INICIO: 0+000.000, FINAL: 0+053.987

PI Pk	Y	X	DISTANCIA	Direction
0+000.000	4,460,345.004m	270,498.282m		
			53.99m	S29°23'20"W
0+053.987	4,460,297.964m	270,471.789m		

TRAMO: M

Description:

RANGO DE PK: INICIO: 0+000.000, FINAL: 0+094.093

PI Pk	Y	X	DISTANCIA	Direction
0+000.000	4,459,535.366m	270,382.612m		
			23.21m	S7°58'24"E
0+023.214	4,459,512.377m	270,385.832m		
			19.99m	S20°52'05"E
0+043.206	4,459,493.696m	270,392.953m		
			18.79m	S31°41'03"E
0+061.995	4,459,477.708m	270,402.822m		
			27.52m	S29°47'20"E
0+089.511	4,459,453.828m	270,416.492m		
			4.58m	S29°40'59"E
0+094.093	4,459,449.846m	270,418.761m		

TRAMO: M1

Description:

RANGO DE PK: INICIO: 0+000.000, FINAL: 0+003.471

PI Pk	Y	X	DISTANCIA	Direction
0+000.000	4,459,449.846m	270,418.761m		
			3.47m	N53°43'19"E
0+003.471	4,459,451.900m	270,421.559m		

TRAMO: M2

Description:

RANGO DE PK: INICIO: 0+000.000, FINAL: 0+001.761

PI Pk	Y	X	DISTANCIA	Direction
0+000.000	4,459,449.846m	270,418.761m		
			1.76m	S52°13'09"W
0+001.761	4,459,448.767m	270,417.369m		

TRAMO: N

Description:

RANGO DE PK: INICIO: 0+000.000, FINAL: 0+160.611

PI Pk	Y	X	DISTANCIA	Direction
0+000.000	4,459,449.846m	270,418.761m		
			8.80m	S33°17'01"E
0+008.803	4,459,442.487m	270,423.592m		
			8.06m	S46°15'11"E
0+016.864	4,459,436.913m	270,429.415m		
			2.61m	S46°15'11"E
0+019.475	4,459,435.108m	270,431.302m		
			17.75m	S31°38'19"E
0+037.222	4,459,419.998m	270,440.611m		
			11.04m	S10°36'00"E
0+048.261	4,459,409.148m	270,442.642m		
			9.28m	S3°20'15"W
0+057.536	4,459,399.889m	270,442.102m		
			13.18m	S14°30'14"E
0+070.714	4,459,387.130m	270,445.402m		
			5.26m	S52°36'18"E
0+075.973	4,459,383.937m	270,449.580m		
			9.86m	S73°58'04"E
0+085.838	4,459,381.212m	270,459.061m		
			10.07m	N82°13'57"E
0+095.903	4,459,382.572m	270,469.034m		
			10.83m	S74°46'11"E
0+106.731	4,459,379.728m	270,479.481m		
			18.33m	S78°53'43"E
0+125.061	4,459,376.197m	270,497.469m		
			17.68m	S65°28'17"E
0+142.740	4,459,368.859m	270,513.552m		
			11.91m	S62°35'32"E
0+154.647	4,459,363.377m	270,524.122m		
			5.96m	S62°31'32"E
0+160.611	4,459,360.626m	270,529.414m		

TRAMO: N1

Description:

RANGO DE PK: INICIO: 0+000.000, FINAL: 0+004.358

PI Pk	Y	X	DISTANCIA	Direction
0+000.000	4,459,360.626m	270,529.414m		
			4.36m	N29°03'17"E
0+004.358	4,459,364.436m	270,531.531m		

TRAMO: N2

Description:

RANGO DE PK: INICIO: 0+000.000, FINAL: 0+003.724

PI Pk	Y	X	DISTANCIA	Direction
0+000.000	4,459,360.626m	270,529.414m		
			3.72m	S31°26'49"W
0+003.724	4,459,357.449m	270,527.471m		

TRAMO: O

Description:

RANGO DE PK: INICIO: 0+000.000, FINAL: 0+208.678

PI Pk	Y	X	DISTANCIA	Direction
0+000.000	4,459,360.626m	270,529.414m		
			17.40m	S71°24'17"E
0+017.396	4,459,355.079m	270,545.901m		
			25.50m	S73°20'25"E
0+042.896	4,459,347.768m	270,570.331m		
			30.22m	S55°58'30"E
0+073.113	4,459,330.860m	270,595.375m		
			6.91m	S16°35'52"W
0+080.022	4,459,324.239m	270,593.401m		
			11.19m	S47°06'06"W
0+091.216	4,459,316.619m	270,585.201m		
			17.38m	S48°18'58"W
0+108.592	4,459,305.063m	270,572.224m		
			13.40m	S74°14'56"W
0+121.994	4,459,301.425m	270,559.325m		

			19.59m	S81°14'06"W
0+141.587	4,459,298.440m	270,539.962m		
			9.67m	S74°23'51"W
0+151.253	4,459,295.840m	270,530.651m		
			5.03m	S74°12'16"W
0+156.283	4,459,294.470m	270,525.811m		
			5.74m	S36°42'40"W
0+162.021	4,459,289.870m	270,522.381m		
			13.71m	S18°40'17"W
0+175.732	4,459,276.881m	270,517.992m		
			10.54m	S64°53'33"W
0+186.269	4,459,272.410m	270,508.451m		
			10.48m	S72°44'53"W
0+196.750	4,459,269.301m	270,498.441m		
			9.23m	S63°26'06"W
0+205.979	4,459,265.174m	270,490.186m		
			2.70m	S64°26'24"W
0+208.678	4,459,264.010m	270,487.752m		

TRAMO: O1

Description:

RANGO DE PK: INICIO: 0+000.000, FINAL: 0+002.175

PI Pk	Y	X	DISTANCIA	Direction
0+000.000	4,459,264.010m	270,487.752m		
			2.18m	N18°26'06"W
0+002.175	4,459,266.073m	270,487.064m		

TRAMO: P

Description:

RANGO DE PK: INICIO: 0+000.000, FINAL: 0+112.287

PI Pk	Y	X	DISTANCIA	Direction
0+000.000	4,459,264.010m	270,487.752m		
			9.74m	S57°42'21"W
0+009.740	4,459,258.806m	270,479.519m		
			9.65m	S74°44'42"W
0+019.393	4,459,256.266m	270,470.206m		

			9.07m	S60°47'19"W
0+028.460	4,459,251.841m	270,462.292m		
			18.79m	S53°35'50"W
0+047.252	4,459,240.689m	270,447.167m		
			13.13m	S62°44'58"W
0+060.384	4,459,234.676m	270,435.492m		
			7.03m	S85°22'03"W
0+067.412	4,459,234.108m	270,428.487m		
			16.98m	N72°11'26"W
0+084.391	4,459,239.302m	270,412.322m		
			19.63m	N65°42'41"W
0+104.021	4,459,247.376m	270,394.429m		
			4.56m	N68°11'55"W
0+108.581	4,459,249.069m	270,390.195m		
			3.71m	S71°02'32"W
0+112.287	4,459,247.866m	270,386.691m		

TRAMO: P1

Description:

RANGO DE PK: INICIO: 0+000.000, FINAL: 0+003.970

PI Pk	Y	X	DISTANCIA	Direction
0+000.000	4,459,247.866m	270,386.691m		
			3.97m	N26°44'09"W
0+003.970	4,459,251.411m	270,384.905m		

TRAMO: Q

Description:

RANGO DE PK: INICIO: 0+000.000, FINAL: 0+090.449

PI Pk	Y	X	DISTANCIA	Direction
0+000.000	4,459,247.866m	270,386.691m		
			18.94m	S5°21'46"W
0+018.939	4,459,229.010m	270,384.921m		
			17.26m	S14°48'50"W
0+036.203	4,459,212.319m	270,380.506m		
			9.51m	S30°38'37"W
0+045.711	4,459,204.139m	270,375.660m		

			7.38m	S14°32'04"W
0+053.091	4,459,196.995m	270,373.808m		
			9.95m	S28°36'38"W
0+063.037	4,459,188.264m	270,369.046m		
			8.81m	S57°15'53"W
0+071.844	4,459,183.501m	270,361.637m		
			8.80m	S68°50'19"W
0+080.639	4,459,180.326m	270,353.435m		
			3.98m	S86°11'09"W
0+084.617	4,459,180.062m	270,349.466m		
			5.83m	N86°25'25"W
0+090.449	4,459,180.425m	270,343.646m		

TRAMO: Q1

Description:

RANGO DE PK: INICIO: 0+000.000, FINAL: 0+013.950

PI Pk	Y	X	DISTANCIA	Direction
0+000.000	4,459,180.425m	270,343.646m		
			13.95m	S1°59'12"W
0+013.950	4,459,166.484m	270,343.162m		

TRAMO: R

Description:

RANGO DE PK: INICIO: 0+000.000, FINAL: 0+219.221

PI Pk	Y	X	DISTANCIA	Direction
0+000.000	4,459,180.425m	270,343.646m		
			11.86m	S62°40'35"W
0+011.856	4,459,174.983m	270,333.112m		
			3.18m	S78°35'35"W
0+015.039	4,459,174.354m	270,329.992m		
			17.01m	S54°32'40"W
0+032.047	4,459,164.488m	270,316.138m		
			5.25m	S29°51'09"E
0+037.298	4,459,159.934m	270,318.752m		
			4.34m	S2°30'24"W
0+041.642	4,459,155.594m	270,318.562m		

			3.74m	N82°19'28"W
0+045.386	4,459,156.094m	270,314.852m		
			3.31m	S34°10'12"W
0+048.697	4,459,153.354m	270,312.992m		
			5.03m	N45°14'30"W
0+053.725	4,459,156.894m	270,309.422m		
			6.43m	S32°14'04"W
0+060.156	4,459,151.454m	270,305.992m		
			2.24m	S0°00'00"E
0+062.396	4,459,149.214m	270,305.992m		
			12.35m	S26°51'20"W
0+074.748	4,459,138.194m	270,300.412m		
			1.81m	S2°31'51"E
0+076.560	4,459,136.384m	270,300.492m		
			13.81m	S52°47'59"E
0+090.370	4,459,128.035m	270,311.492m		
			23.15m	S40°21'22"E
0+113.519	4,459,110.394m	270,326.482m		
			13.61m	S25°04'50"E
0+127.128	4,459,098.068m	270,332.251m		
			15.44m	S21°11'39"E
0+142.566	4,459,083.675m	270,337.832m		
			6.63m	S9°43'07"E
0+149.200	4,459,077.135m	270,338.952m		
			8.83m	S44°02'12"E
0+158.033	4,459,070.785m	270,345.092m		
			3.67m	S59°23'03"E
0+161.705	4,459,068.915m	270,348.252m		
			11.76m	S85°24'52"E
0+173.463	4,459,067.975m	270,359.972m		
			4.66m	N73°39'58"E
0+178.121	4,459,069.285m	270,364.442m		
			5.37m	S75°53'05"E
0+183.493	4,459,067.975m	270,369.651m		
			3.34m	S26°29'46"E
0+186.834	4,459,064.985m	270,371.142m		
			19.20m	S5°13'47"W
0+206.033	4,459,045.866m	270,369.392m		
			13.19m	S9°09'44"W
0+219.221	4,459,032.846m	270,367.292m		

TRAMO: R1

Description:

RANGO DE PK: INICIO: 0+000.000, FINAL: 0+013.247

PI Pk	Y	X	DISTANCIA	Direction
0+000.000	4,459,032.846m	270,367.292m		
			13.25m	N74°16'54"W
0+013.247	4,459,036.434m	270,354.540m		

TRAMO: S

Description:

RANGO DE PK: INICIO: 0+000.000, FINAL: 0+025.364

PI Pk	Y	X	DISTANCIA	Direction
0+000.000	4,459,032.846m	270,367.292m		
			25.36m	S79°30'15"E
0+025.364	4,459,028.225m	270,392.232m		

TRAMO: S1

Description:

RANGO DE PK: INICIO: 0+000.000, FINAL: 0+104.312

PI Pk	Y	X	DISTANCIA	Direction
0+000.000	4,459,028.225m	270,392.232m		
			5.39m	N87°39'46"E
0+005.394	4,459,028.445m	270,397.622m		
			23.10m	N53°45'01"E
0+028.496	4,459,042.105m	270,416.252m		
			8.03m	N54°31'43"E
0+036.526	4,459,046.765m	270,422.792m		
			23.26m	N57°01'18"E
0+059.784	4,459,059.425m	270,442.302m		
			39.45m	N59°53'36"E
0+099.235	4,459,079.214m	270,476.432m		
			5.08m	N59°11'28"E
0+104.312	4,459,081.814m	270,480.792m		

TRAMO: SALIDA DETALLE

Description:

RANGO DE PK: INICIO: 0+000.000, FINAL: 0+048.913

PI Pk	Y	X	DISTANCIA	Direction
0+000.000	4,460,228.438m	270,414.823m		
			48.91m	S12°33'07"E
0+048.913	4,460,180.694m	270,425.453m		

TRAMO: T

Description:

RANGO DE PK: INICIO: 0+000.000, FINAL: 0+071.710

PI Pk	Y	X	DISTANCIA	Direction
0+000.000	4,459,028.225m	270,392.232m		
			56.01m	S4°59'54"W
0+056.011	4,458,972.427m	270,387.352m		
			15.70m	S73°36'30"E
0+071.710	4,458,967.997m	270,402.412m		

TRAMO: T1

Description:

RANGO DE PK: INICIO: 0+000.000, FINAL: 0+022.111

PI Pk	Y	X	DISTANCIA	Direction
0+000.000	4,458,967.997m	270,402.412m		
			22.11m	S87°52'41"W
0+022.111	4,458,967.178m	270,380.317m		

TRAMO: T1-A

Description:

RANGO DE PK: INICIO: 0+000.000, FINAL: 0+351.660

PI Pk	Y	X	DISTANCIA	Direction
0+000.000	4,461,166.834m	270,186.811m		
			40.04m	S67°40'17"E
0+040.044	4,461,151.620m	270,223.853m		
			20.16m	S48°59'27"E
0+060.205	4,461,138.391m	270,239.066m		

			30.30m	S53°52'50"E
0+090.503	4,461,120.532m	270,263.540m		
			22.58m	S31°49'39"E
0+113.080	4,461,101.349m	270,275.447m		
			20.77m	S9°09'44"E
0+133.850	4,461,080.844m	270,278.754m		
			35.08m	S2°09'40"W
0+168.932	4,461,045.787m	270,277.431m		
			30.61m	S6°12'12"W
0+199.539	4,461,015.360m	270,274.124m		
			25.55m	S21°15'02"W
0+225.088	4,460,991.547m	270,264.863m		
			27.24m	S29°03'17"W
0+252.329	4,460,967.734m	270,251.634m		
			24.55m	S27°15'19"W
0+276.883	4,460,945.906m	270,240.389m		
			38.46m	S26°33'54"W
0+315.339	4,460,911.510m	270,223.191m		
			36.32m	S14°28'13"W
0+351.660	4,460,876.342m	270,214.116m		

TRAMO: T1-B

Description:

RANGO DE PK: INICIO: 0+000.000, FINAL: 0+029.667

PI Pk	Y	X	DISTANCIA	Direction
0+000.000	4,460,975.124m	270,872.930m		
			29.67m	S60°15'39"W
0+029.667	4,460,960.408m	270,847.171m		

TRAMO: T2-A

Description:

RANGO DE PK: INICIO: 0+000.000, FINAL: 0+009.194

PI Pk	Y	X	DISTANCIA	Direction
0+000.000	4,460,876.342m	270,214.116m		
			9.19m	N29°57'34"W
0+009.194	4,460,884.307m	270,209.524m		

TRAMO: T2-B

Description:

RANGO DE PK: INICIO: 0+000.000, FINAL: 0+684.981

PI Pk	Y	X	DISTANCIA	Direction
0+000.000	4,460,876.342m	270,214.116m		
			6.03m	S14°28'13"W
0+006.033	4,460,870.500m	270,212.608m		
			45.00m	S24°18'16"E
0+051.032	4,460,829.489m	270,231.129m		
			23.14m	S59°02'10"E
0+074.173	4,460,817.583m	270,250.973m		
			26.93m	S27°49'27"E
0+101.099	4,460,793.771m	270,263.540m		
			21.21m	S3°34'35"E
0+122.307	4,460,772.604m	270,264.863m		
			26.98m	S11°18'36"E
0+149.289	4,460,746.145m	270,270.155m		
			29.20m	S13°05'31"E
0+178.491	4,460,717.703m	270,276.770m		
			26.75m	S8°31'51"E
0+205.245	4,460,691.244m	270,280.738m		
			31.76m	S1°11'37"W
0+237.002	4,460,659.494m	270,280.077m		
			11.55m	S23°37'46"E
0+248.554	4,460,648.911m	270,284.707m		
			13.91m	S25°20'46"E
0+262.461	4,460,636.343m	270,290.660m		
			10.08m	S66°48'05"E
0+272.536	4,460,632.374m	270,299.921m		
			5.69m	S54°27'44"E
0+278.226	4,460,629.067m	270,304.551m		
			17.80m	S48°00'46"E
0+296.024	4,460,617.161m	270,317.780m		
			10.98m	S21°55'47"E
0+307.005	4,460,606.974m	270,321.881m		
			21.82m	S14°02'10"W
0+328.823	4,460,585.808m	270,316.589m		
			25.07m	S7°16'30"W
0+353.896	4,460,560.937m	270,313.414m		
			21.27m	S5°42'38"W

0+375.168	4,460,539.770m	270,311.298m		
			24.43m	S4°58'11"E
0+399.602	4,460,515.428m	270,313.414m		
			42.37m	S9°20'41"E
0+441.968	4,460,473.624m	270,320.294m		
			27.34m	S14°34'27"E
0+469.306	4,460,447.166m	270,327.173m		
			27.76m	S7°40'00"W
0+497.071	4,460,419.649m	270,323.469m		
			30.76m	S3°56'43"W
0+527.836	4,460,388.957m	270,321.352m		
			26.46m	S11°32'05"E
0+554.299	4,460,363.028m	270,326.644m		
			26.74m	S4°23'47"E
0+581.041	4,460,336.365m	270,328.694m		
			36.60m	S6°13'33"E
0+617.637	4,460,299.985m	270,332.662m		
			16.45m	S6°26'25"E
0+634.090	4,460,283.636m	270,334.508m		
			15.14m	S21°51'26"E
0+649.228	4,460,269.586m	270,340.143m		
			35.75m	S87°53'57"E
0+684.981	4,460,268.276m	270,375.872m		

TRAMO: T2-C

Description:

RANGO DE PK: INICIO: 0+000.000, FINAL: 0+031.423

PI Pk	Y	X	DISTANCIA	Direction
0+000.000	4,460,960.408m	270,847.171m		
			31.42m	S57°35'47"E
0+031.423	4,460,943.569m	270,873.701m		

TRAMO: T2-D

Description:

RANGO DE PK: INICIO: 0+000.000, FINAL: 0+796.535

PI Pk	Y	X	DISTANCIA	Direction
0+000.000	4,460,960.408m	270,847.171m		
			12.35m	S51°06'56"W
0+012.353	4,460,952.653m	270,837.555m		
			18.00m	S48°34'35"W
0+030.348	4,460,940.747m	270,824.061m		
			36.59m	S40°36'05"W
0+066.939	4,460,912.966m	270,800.249m		
			46.08m	S42°12'26"W
0+113.017	4,460,878.834m	270,769.292m		
			20.28m	S30°34'45"W
0+133.301	4,460,861.372m	270,758.974m		
			28.45m	S30°08'29"W
0+161.754	4,460,836.765m	270,744.686m		
			20.84m	S40°21'52"W
0+182.589	4,460,820.890m	270,731.192m		
			14.76m	S53°44'46"W
0+197.354	4,460,812.159m	270,719.286m		
			9.56m	S48°21'59"W
0+206.912	4,460,805.809m	270,712.142m		
			16.29m	S43°01'30"W
0+223.198	4,460,793.903m	270,701.030m		
			25.76m	S33°41'24"W
0+248.955	4,460,772.472m	270,686.742m		
			26.42m	S32°44'07"W
0+275.377	4,460,750.247m	270,672.455m		
			22.91m	S14°02'10"W
0+298.286	4,460,728.021m	270,666.899m		
			28.33m	S11°18'36"E
0+326.617	4,460,700.240m	270,672.455m		
			25.06m	S10°57'15"W
0+351.680	4,460,675.634m	270,667.692m		
			32.69m	S29°03'17"W
0+384.369	4,460,647.059m	270,651.817m		
			20.28m	S30°34'45"W
0+404.652	4,460,629.596m	270,641.498m		
			16.84m	S8°07'48"W
0+421.490	4,460,612.928m	270,639.117m		

			23.51m	S11°41'22"E
0+444.997	4,460,589.909m	270,643.880m		
			39.81m	S4°34'26"E
0+484.811	4,460,550.221m	270,647.055m		
			13.21m	S32°44'07"W
0+498.022	4,460,539.109m	270,639.911m		
			36.55m	S34°22'49"W
0+534.569	4,460,508.946m	270,619.273m		
			22.56m	S39°17'22"W
0+557.131	4,460,491.484m	270,604.986m		
			20.96m	S37°18'14"W
0+578.087	4,460,474.815m	270,592.286m		
			20.97m	S60°31'27"W
0+599.058	4,460,464.496m	270,574.030m		
			21.37m	S58°40'17"W
0+620.430	4,460,453.383m	270,555.773m		
			16.07m	S57°05'41"W
0+636.502	4,460,444.652m	270,542.280m		
			18.53m	S43°15'51"W
0+655.033	4,460,431.158m	270,529.579m		
			26.39m	S15°42'31"W
0+681.418	4,460,405.758m	270,522.436m		
			20.61m	S15°38'32"W
0+702.025	4,460,385.915m	270,516.879m		
			36.50m	S23°21'21"W
0+738.525	4,460,352.405m	270,502.409m		
			58.01m	S29°08'43"W
0+796.535	4,460,301.740m	270,474.157m		

TRAMO: T3-A

Description:

RANGO DE PK: INICIO: 0+000.000, FINAL: 0+052.778

PI Pk	Y	X	DISTANCIA	Direction
0+000.000	4,460,943.569m	270,873.701m		
			7.33m	S26°05'57"E
0+007.329	4,460,936.987m	270,876.925m		
			19.41m	S26°33'54"E
0+026.735	4,460,919.630m	270,885.604m		
			11.51m	S32°13'44"E

0+038.245	4,460,909.893m	270,891.742m		
			6.58m	S33°10'43"E
0+044.820	4,460,904.390m	270,895.341m		
			7.58m	S35°54'35"E
0+052.399	4,460,898.252m	270,899.786m		
			0.38m	S36°23'32"E
0+052.778	4,460,897.947m	270,900.010m		

TRAMO: T3-B

Description:

RANGO DE PK: INICIO: 0+000.000, FINAL: 0+767.628

PI Pk	Y	X	DISTANCIA	Direction
0+000.000	4,460,943.569m	270,873.701m		
			14.20m	S58°46'10"E
0+014.202	4,460,936.205m	270,885.845m		
			13.76m	S62°49'08"E
0+027.958	4,460,929.921m	270,898.082m		
			10.08m	S66°48'05"E
0+038.033	4,460,925.953m	270,907.342m		
			8.60m	N90°00'00"E
0+046.632	4,460,925.953m	270,915.941m		
			10.26m	S88°09'09"E
0+056.890	4,460,925.622m	270,926.194m		
			18.19m	N88°57'30"E
0+075.083	4,460,925.953m	270,944.384m		
			18.05m	N76°13'06"E
0+093.131	4,460,930.252m	270,961.913m		
			9.64m	N59°02'10"E
0+102.774	4,460,935.213m	270,970.181m		
			14.81m	N60°34'21"E
0+117.583	4,460,942.489m	270,983.080m		
			10.36m	N73°18'03"E
0+127.942	4,460,945.466m	270,993.002m		
			9.60m	S88°01'30"E
0+137.539	4,460,945.135m	271,002.593m		
			6.32m	S42°52'44"E
0+143.857	4,460,940.505m	271,006.892m		
			9.61m	S26°33'54"E
0+153.471	4,460,931.906m	271,011.192m		

			11.09m	S17°21'14"E
0+164.559	4,460,921.322m	271,014.499m		
			7.95m	S16°55'39"E
0+172.510	4,460,913.716m	271,016.814m		
			8.11m	S11°46'06"E
0+180.618	4,460,905.778m	271,018.468m		
			11.80m	S11°18'36"E
0+192.423	4,460,894.202m	271,020.783m		
			14.14m	S10°47'03"E
0+206.564	4,460,880.312m	271,023.429m		
			17.33m	S23°37'46"E
0+223.891	4,460,864.437m	271,030.374m		
			15.98m	S24°26'38"E
0+239.876	4,460,849.885m	271,036.989m		
			17.60m	S25°36'08"E
0+257.480	4,460,834.010m	271,044.595m		
			19.78m	S38°12'40"E
0+277.263	4,460,818.465m	271,056.832m		
			48.95m	S67°46'02"E
0+326.212	4,460,799.944m	271,102.142m		
			26.69m	S66°31'21"E
0+352.899	4,460,789.313m	271,126.620m		
			7.60m	S53°57'46"E
0+360.501	4,460,784.840m	271,132.767m		
			12.55m	S34°41'43"E
0+373.051	4,460,774.521m	271,139.911m		
			17.41m	S24°13'40"E
0+390.460	4,460,758.646m	271,147.055m		
			21.37m	S15°04'07"E
0+411.832	4,460,738.009m	271,152.611m		
			29.83m	S25°12'04"E
0+441.659	4,460,711.021m	271,165.311m		
			23.34m	S35°18'40"E
0+465.004	4,460,691.971m	271,178.805m		
			20.21m	S45°00'00"E
0+485.209	4,460,677.684m	271,193.093m		
			19.60m	S68°37'46"E
0+504.813	4,460,670.540m	271,211.349m		
			19.33m	S70°49'16"E
0+524.143	4,460,664.190m	271,229.605m		
			25.60m	S82°52'30"E
0+549.740	4,460,661.015m	271,255.005m		

			20.10m	S80°54'35"E
0+569.836	4,460,657.840m	271,274.849m		
			18.26m	N90°00'00"E
0+588.093	4,460,657.840m	271,293.105m		
			17.46m	N90°00'00"E
0+605.555	4,460,657.840m	271,310.568m		
			11.36m	S77°54'19"E
0+616.920	4,460,655.459m	271,321.680m		
			14.04m	S42°42'34"E
0+630.963	4,460,645.140m	271,331.205m		
			46.88m	S35°25'38"E
0+677.844	4,460,606.939m	271,358.381m		
			17.84m	S57°43'28"E
0+695.681	4,460,597.414m	271,373.462m		
			71.95m	S63°33'57"E
0+767.628	4,460,565.386m	271,437.886m		

TRAMO: TOMA

Description:

RANGO DE PK: INICIO: 0+000.000, FINAL: 0+030.187

PI Pk	Y	X	DISTANCIA	Direction
0+000.000	4,460,212.677m	270,422.945m		
			30.19m	S3°23'37"E
0+030.187	4,460,182.542m	270,424.732m		

TRAMO: TOMA RIEGO D1

Description:

RANGO DE PK: INICIO: 0+000.000, FINAL: 0+011.941

PI Pk	Y	X	DISTANCIA	Direction
0+000.000	4,460,889.943m	270,189.347m		
			11.94m	S56°35'11"W
0+011.941	4,460,883.368m	270,179.380m		

TRAMO: TOMA RIEGO D2

Description:

RANGO DE PK: INICIO: 0+000.000, FINAL: 0+033.650

PI Pk	Y	X	DISTANCIA	Direction
0+000.000	4,460,877.152m	270,897.381m		
			33.65m	S48°51'17"W
0+033.650	4,460,855.011m	270,872.041m		

TRAMO: TOMA RIEGO D3

Description:

RANGO DE PK: INICIO: 0+000.000, FINAL: 0+031.550

PI Pk	Y	X	DISTANCIA	Direction
0+000.000	4,460,572.910m	271,458.559m		
			10.03m	N69°26'13"E
0+010.028	4,460,576.432m	271,467.948m		
			8.20m	N68°24'17"E
0+018.223	4,460,579.448m	271,475.568m		
			13.33m	N58°08'59"E
0+031.550	4,460,586.481m	271,486.888m		

TRAMO: U

Description:

RANGO DE PK: INICIO: 0+000.000, FINAL: 0+152.149

PI Pk	Y	X	DISTANCIA	Direction
0+000.000	4,458,967.997m	270,402.412m		
			42.65m	N83°07'59"E
0+042.655	4,458,973.097m	270,444.761m		
			7.73m	N80°20'30"E
0+050.386	4,458,974.394m	270,452.383m		
			10.52m	N80°15'00"E
0+060.908	4,458,976.176m	270,462.752m		
			19.38m	N79°50'16"E
0+080.291	4,458,979.596m	270,481.832m		
			13.65m	N76°18'36"E
0+093.939	4,458,982.826m	270,495.092m		
			13.47m	N72°00'30"E

0+107.407	4,458,986.985m	270,507.901m		
			22.21m	N70°02'26"E
0+129.620	4,458,994.568m	270,528.780m		
			22.53m	N71°57'35"E
0+152.149	4,459,001.545m	270,550.202m		

TRAMO: U1

Description:

RANGO DE PK: INICIO: 0+000.000, FINAL: 0+009.584

PI Pk	Y	X	DISTANCIA	Direction
0+000.000	4,459,001.545m	270,550.202m		
			9.58m	S24°16'18"E
0+009.584	4,458,992.808m	270,554.141m		

TRAMO: V

Description:

RANGO DE PK: INICIO: 0+000.000, FINAL: 0+195.915

PI Pk	Y	X	DISTANCIA	Direction
0+000.000	4,459,001.545m	270,550.202m		
			29.31m	N74°31'07"E
0+029.314	4,459,009.370m	270,578.452m		
			21.87m	N69°38'48"E
0+051.184	4,459,016.976m	270,598.957m		
			29.75m	N65°42'51"E
0+080.937	4,459,029.213m	270,626.077m		
			12.43m	N61°23'22"E
0+093.369	4,459,035.167m	270,636.991m		
			11.99m	N65°33'22"E
0+105.358	4,459,040.128m	270,647.905m		
			64.63m	N63°37'11"E
0+169.984	4,459,068.843m	270,705.801m		
			25.93m	N52°32'57"E
0+195.915	4,459,084.611m	270,726.387m		

TRAMO: V1

Description:

RANGO DE PK: INICIO: 0+000.000, FINAL: 0+003.988

PI Pk	Y	X	DISTANCIA	Direction
0+000.000	4,459,084.611m	270,726.387m		
			3.99m	S42°06'19"E
0+003.988	4,459,081.652m	270,729.061m		

TRAMO: V2

Description:

RANGO DE PK: INICIO: 0+000.000, FINAL: 0+089.911

PI Pk	Y	X	DISTANCIA	Direction
0+000.000	4,459,084.611m	270,726.387m		
			30.29m	N58°23'33"E
0+030.290	4,459,100.486m	270,752.184m		
			27.88m	N62°40'35"E
0+058.167	4,459,113.282m	270,776.951m		
			31.74m	N57°41'03"E
0+089.911	4,459,130.251m	270,803.778m		

TRAMO: W

Description:

RANGO DE PK: INICIO: 0+000.000, FINAL: 0+289.697

PI Pk	Y	X	DISTANCIA	Direction
0+000.000	4,460,182.542m	270,424.732m		
			60.66m	N75°49'43"E
0+060.655	4,460,197.392m	270,483.541m		
			33.46m	N67°41'38"E
0+094.115	4,460,210.092m	270,514.498m		
			28.06m	N28°44'23"E
0+122.179	4,460,234.699m	270,527.991m		
			43.26m	N22°05'39"E
0+165.440	4,460,274.783m	270,544.263m		
			17.75m	N26°33'54"E
0+183.189	4,460,290.658m	270,552.201m		

			32.88m	N60°20'27"E
0+216.072	4,460,306.930m	270,580.776m		
			18.31m	N60°06'04"E
0+234.384	4,460,316.058m	270,596.651m		
			17.18m	N49°41'09"E
0+251.560	4,460,327.171m	270,609.748m		
			38.14m	N53°55'15"E
0+289.697	4,460,349.630m	270,640.570m		

TRAMO: W1

Description:

RANGO DE PK: INICIO: 0+000.000, FINAL: 0+008.998

PI Pk	Y	X	DISTANCIA	Direction
0+000.000	4,460,349.630m	270,640.570m		
			9.00m	S39°29'21"E
0+008.998	4,460,342.686m	270,646.292m		

TRAMO: X

Description:

RANGO DE PK: INICIO: 0+000.000, FINAL: 0+220.601

PI Pk	Y	X	DISTANCIA	Direction
0+000.000	4,460,349.630m	270,640.570m		
			28.77m	N50°11'22"W
0+028.770	4,460,368.050m	270,618.470m		
			31.76m	N33°15'37"E
0+060.532	4,460,394.609m	270,635.890m		
			23.50m	N31°42'32"E
0+084.029	4,460,414.599m	270,648.240m		
			19.02m	N45°57'31"E
0+103.046	4,460,427.819m	270,661.910m		
			57.28m	S76°59'40"E
0+160.325	4,460,414.928m	270,717.720m		
			21.67m	N29°35'37"E
0+181.991	4,460,433.768m	270,728.420m		
			12.74m	N56°11'56"E
0+194.736	4,460,440.858m	270,739.010m		

			25.87m	N11°21'01"W
0+220.601	4,460,466.217m	270,733.920m		

TRAMO: X1

Description:

RANGO DE PK: INICIO: 0+000.000, FINAL: 0+020.476

PI Pk	Y	X	DISTANCIA	Direction
0+000.000	4,460,466.217m	270,733.920m		
			20.48m	N1°27'24"E
0+020.476	4,460,486.687m	270,734.440m		

TRAMO: Y

Description:

RANGO DE PK: INICIO: 0+000.000, FINAL: 0+106.570

PI Pk	Y	X	DISTANCIA	Direction
0+000.000	4,460,466.217m	270,733.920m		
			8.93m	S58°36'25"E
0+008.927	4,460,461.567m	270,741.540m		
			16.92m	S58°36'44"E
0+025.842	4,460,452.757m	270,755.980m		
			8.41m	S58°36'56"E
0+034.253	4,460,448.377m	270,763.160m		
			27.03m	S79°59'14"E
0+061.284	4,460,443.677m	270,789.780m		
			45.29m	N77°22'23"E
0+106.570	4,460,453.577m	270,833.970m		

TRAMO: Y1

Description:

RANGO DE PK: INICIO: 0+000.000, FINAL: 0+017.671

PI Pk	Y	X	DISTANCIA	Direction
0+000.000	4,460,453.577m	270,833.970m		
			6.09m	N50°11'40"W
0+006.092	4,460,457.477m	270,829.290m		

			11.58m	N34°27'40"E
0+017.671	4,460,467.024m	270,835.842m		

TRAMO: Z

Description:

RANGO DE PK: INICIO: 0+000.000, FINAL: 0+193.883

PI Pk	Y	X	DISTANCIA	Direction
0+000.000	4,460,453.577m	270,833.970m		
			18.63m	S6°17'10"E
0+018.632	4,460,435.057m	270,836.010m		
			13.27m	S4°04'59"W
0+031.904	4,460,421.819m	270,835.064m		
			23.78m	S12°44'38"E
0+055.680	4,460,398.628m	270,840.309m		
			17.29m	S36°09'15"E
0+072.970	4,460,384.668m	270,850.510m		
			39.43m	S69°28'10"E
0+112.404	4,460,370.838m	270,887.440m		
			16.92m	N80°24'15"E
0+129.321	4,460,373.658m	270,904.120m		
			17.14m	N84°56'41"E
0+146.458	4,460,375.168m	270,921.190m		
			13.13m	S88°20'19"E
0+159.583	4,460,374.787m	270,934.309m		
			14.83m	S71°31'44"E
0+174.418	4,460,370.087m	270,948.380m		
			19.46m	S59°11'39"E
0+193.883	4,460,360.118m	270,965.098m		