

PONTIFICIA UNIVERSIDAD CATÓLICA DEL PERÚ
FACULTAD DE CIENCIAS E INGENIERÍA



PONTIFICIA
UNIVERSIDAD
CATÓLICA
DEL PERÚ

ANEXOS

**“DISEÑO GEOMÉTRICO Y MEDICIÓN DE NIVELES DE SERVICIO
ESPERADO DEL TRAMO CRITICO DE LA RUTA N° LM-122”**

Tesis para optar el Título de Ingeniero Civil, que presenta el bachiller:

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Lima, febrero del 2017

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ANEXO 1

Estos son los cuadros detallados del conteo realizado en la semana del 18 al 24 de mayo 2015.

**CUADRO N° 1 CONTEO Y CLASIFICACIÓN DE TRAFICO
ESTACIÓN DE CONTEO N° 01 LOCALIDAD TANTA**

Fecha **Lunes 18 DE MAYO DEL 2015**

Horas	Sentido	Motocicleta	Auto	Pick Up	Bus 2E	C-2E	C-3E	TO TAL	Porcentaje
00-01 Horas	E	0	0	0	0	0	0	0	1.16%
	S	0	0	0	0	0	0	0	1.39%
	E+S	0	0	0	0	0	0	0	2.55%
01-02 Horas	E	0	0	0	0	0	0	0	0.00%
	S	0	0	0	0	0	0	0	0.00%
	E+S	0	0	0	0	0	0	0	0.00%
02-03 Horas	E	0	0	0	0	0	0	0	0.00%
	S	0	0	0	0	0	0	0	0.00%
	E+S	0	0	0	0	0	0	0	0.00%
03-04 Horas	E	0	0	0	0	0	0	0	0.00%
	S	0	0	0	0	0	0	0	0.00%
	E+S	0	0	0	0	0	0	0	0.00%
04-05 Horas	E	0	0	0	0	0	0	0	0.00%
	S	0	0	0	0	0	0	0	0.00%
	E+S	0	0	0	0	0	0	0	0.00%
05-06 Horas	E	0	0	0	0	0	0	0	0.00%
	S	0	0	0	0	0	0	0	0.00%
	E+S	0	0	0	0	0	0	0	0.00%
06-07 Horas	E	0	0	0	0	0	0	0	0.00%
	S	0	0	0	0	0	0	0	0.00%
	E+S	0	0	0	0	0	0	0	0.00%
07-08 Horas	E	2	2	3	0	0	0	7	38.89%
	S	1	0	0	0	0	0	1	10.00%
	E+S	3	2	3	0	0	0	8	48.89%
08-09 Horas	E	0	0	0	0	0	0	0	0.00%
	S	0	0	0	0	0	0	0	0.00%
	E+S	0	0	0	0	0	0	0	0.00%
09-10 Horas	E	0	0	0	0	0	0	0	0.00%
	S	0	0	0	0	0	0	0	0.00%
	E+S	0	0	0	0	0	0	0	0.00%
10-11 Horas	E	0	0	0	0	0	0	0	0.00%
	S	1	0	0	0	0	0	1	10.00%
	E+S	1	0	0	0	0	0	1	10.00%
11-12 Horas	E	2	0	0	0	0	0	2	11.11%

	S	1	0	0	0	0	0	1	10.00%
	E+S	3	0	0	0	0	0	3	21.11%

12-13 Horas	E	0	0	0	0	0	0	0	0.00%
	S	0	0	0	0	0	0	0	0.00%
	E+S	0	0	0	0	0	0	0	0.00%
13-14 Horas	E	1	0	0	0	0	0	1	5.56%
	S	2	0	0	0	0	0	2	20.00%
	E+S	3	0	0	0	0	0	3	25.56%
14-15 Horas	E	0	0	0	0	0	0	0	0.00%
	S	0	0	0	0	0	0	0	0.00%
	E+S	0	0	0	0	0	0	0	0.00%
15-16 Horas	E	0	0	0	0	0	0	0	0.00%
	S	0	0	0	0	0	0	0	0.00%
	E+S	0	0	0	0	0	0	0	0.00%
16-17 Horas	E	0	0	0	0	0	0	0	0.00%
	S	0	0	0	0	0	0	0	0.00%
	E+S	0	0	0	0	0	0	0	0.00%
17-18 Horas	E	0	0	0	0	0	0	0	0.00%
	S	0	2	0	0	0	0	2	20.00%
	E+S	0	2	0	0	0	0	2	20.00%
18-19 Horas	E	0	0	0	0	0	0	0	0.00%
	S	0	2	0	0	0	0	2	20.00%
	E+S	0	2	0	0	0	0	2	20.00%
19-20 Horas	E	2	0	2	0	0	0	4	22.22%
	S	1	0	0	0	0	0	1	10.00%
	E+S	3	0	2	0	0	0	5	32.22%
20-21 Horas	E	0	0	0	2	0	0	2	11.11%
	S	0	0	0	0	0	0	0	0.00%
	E+S	0	0	0	2	0	0	2	11.11%
21-22 Horas	E	0	0	0	0	0	0	0	0.00%
	S	0	0	0	0	0	0	0	0.00%
	E+S	0	0	0	0	0	0	0	0.00%
22-23 Horas	E	0	0	0	0	0	0	0	0.00%
	S	0	0	0	0	0	0	0	0.00%
	E+S	0	0	0	0	0	0	0	0.00%
23-24 Horas	E	0	0	0	0	0	0	0	0.00%
	S	0	0	0	0	0	0	0	0.00%
	E+S	0	0	0	0	0	0	0	0.00%
TOTAL	E	7	2	5	2	2	0	18	100.00%
	S	6	4	0	0	0	0	10	100.00%
	E+S	13	6	5	2	0	0	28	

CUADRO N° 2 CONTEO Y CLASIFICACIÓN DE TRAFICO

ESTACION DE CONTEO N° 01 LOCALIDAD TANTA

Fecha Martes 19 DE MAYO DEL 2015

Horas	Sentido	Motocicleta	Auto	Pick Up	Bus 2E	C-2E	C-3E	TO TAL	Porcentaje
00-01 Horas	E	0	0	0	0	0	0	0	1.16%
	S	0	0	0	0	0	0	0	1.39%
	E+S	0	0	0	0	0	0	0	2.55%
01-02 Horas	E	0	0	0	0	0	0	0	0.00%
	S	0	0	0	0	0	0	0	0.00%
	E+S	0	0	0	0	0	0	0	0.00%
02-03 Horas	E	0	1	0	0	0	0	1	4.00%
	S	0	0	0	0	0	0	0	0.00%
	E+S	0	1	0	0	0	0	1	4.00%
03-04 Horas	E	0	0	0	0	0	0	0	0.00%
	S	0	0	0	0	0	0	0	0.00%
	E+S	0	0	0	0	0	0	0	0.00%
04-05 Horas	E	0	0	0	0	0	0	0	0.00%
	S	0	2	0	0	0	0	2	18.18%
	E+S	0	2	0	0	0	0	2	18.18%
05-06 Horas	E	0	0	0	0	0	0	0	0.00%
	S	0	0	0	0	0	0	0	0.00%
	E+S	0	0	0	0	0	0	0	0.00%
06-07 Horas	E	1	0	2	0	0	0	3	12.00%
	S	1	0	0	0	0	0	1	9.09%
	E+S	2	0	2	0	0	0	4	21.09%
07-08 Horas	E	2	2	1	0	0	0	5	20.00%
	S	1	0	0	0	0	0	1	9.09%
	E+S	3	2	1	0	0	0	6	29.09%
08-09 Horas	E	0	0	2	2	0	0	4	16.00%
	S	0	0	0	0	0	0	0	0.00%
	E+S	0	0	2	2	0	0	4	16.00%
09-10 Horas	E	1	0	1	0	0	0	2	8.00%
	S	1	0	0	0	0	0	1	9.09%
	E+S	2	0	1	0	0	0	3	17.09%
10-11 Horas	E	0	0	0	0	0	0	0	0.00%
	S	1	0	0	0	0	0	1	9.09%
	E+S	1	0	0	0	0	0	1	9.09%
11-12 Horas	E	2	0	0	0	0	0	2	8.00%
	S	1	0	0	0	0	0	1	9.09%
	E+S	3	0	0	0	0	0	3	17.09%

12-13 Horas	E	0	0	0	0	0	0	0	0.00%
	S	0	0	0	0	0	0	0	0.00%
	E+S	0	0	0	0	0	0	0	0.00%
13-14 Horas	E	1	0	0	0	0	0	1	4.00%
	S	2	0	0	0	0	0	2	18.18%
	E+S	3	0	0	0	0	0	3	22.18%
14-15 Horas	E	0	0	0	0	0	0	0	0.00%
	S	0	0	0	0	0	0	0	0.00%
	E+S	0	0	0	0	0	0	0	0.00%
15-16 Horas	E	0	0	0	0	0	0	0	0.00%
	S	0	0	0	0	0	0	0	0.00%
	E+S	0	0	0	0	0	0	0	0.00%
16-17 Horas	E	0	0	0	0	0	0	0	0.00%
	S	0	0	0	0	0	0	0	0.00%
	E+S	0	0	0	0	0	0	0	0.00%
17-18 Horas	E	0	2	0	0	0	0	2	8.00%
	S	0	0	0	0	0	0	0	0.00%
	E+S	0	2	0	0	0	0	2	8.00%
18-19 Horas	E	0	2	0	0	0	0	2	8.00%
	S	0	0	0	1	0	0	1	9.09%
	E+S	0	2	0	1	0	0	3	17.09%
19-20 Horas	E	2	0	0	0	0	0	2	8.00%
	S	1	0	2	0	0	0	3	27.27%
	E+S	3	0	2	0	0	0	5	35.27%
20-21 Horas	E	0	0	0	2	0	0	2	8.00%
	S	0	0	0	0	0	0	0	0.00%
	E+S	0	0	0	2	0	0	2	8.00%
21-22 Horas	E	0	0	0	0	0	0	0	0.00%
	S	0	0	0	0	0	0	0	0.00%
	E+S	0	0	0	0	0	0	0	0.00%
22-23 Horas	E	0	0	0	0	0	0	0	0.00%
	S	0	0	0	0	0	0	0	0.00%
	E+S	0	0	0	0	0	0	0	0.00%
23-24 Horas	E	0	0	0	0	0	0	0	0.00%
	S	0	0	0	0	0	0	0	0.00%
	E+S	0	0	0	0	0	0	0	0.00%
TOTAL	E	9	6	6	4	0	0	25	100.00%
	S	8	0	2	1	0	0	11	100.00%
	E+S	17	6	8	5	0	0	36	

CUADRO N° 3 CONTEO Y CLASIFICACIÓN DE TRAFICO

ESTACION DE CONTEO N° 01 LOCALIDAD DE TANTA

Fecha **Miercoles 20 mayo 2015**

Horas	Sentido	Motocicleta	Auto	Pick Up	Bus 2E	C-2E	C-3E	TOTAL	Porcentaje
00-01 Horas	E	0	0	0	0	0	0	0	1.16%
	S	0	0	0	0	0	0	0	1.39%
	E+S	0	0	0	0	0	0	0	2.55%
01-02 Horas	E	0	0	0	0	0	0	0	0.00%
	S	0	0	0	0	0	0	0	0.00%
	E+S	0	0	0	0	0	0	0	0.00%
02-03 Horas	E	0	0	0	0	0	0	0	0.00%
	S	0	0	0	0	0	0	0	0.00%
	E+S	0	0	0	0	0	0	0	0.00%
03-04 Horas	E	0	0	0	0	0	0	0	0.00%
	S	0	0	0	0	0	0	0	0.00%
	E+S	0	0	0	0	0	0	0	0.00%
04-05 Horas	E	0	0	0	0	0	0	0	0.00%
	S	0	0	0	0	0	0	0	0.00%
	E+S	0	0	0	0	0	0	0	0.00%
05-06 Horas	E	0	0	0	0	0	0	0	0.00%
	S	0	0	0	0	0	0	0	0.00%
	E+S	0	0	0	0	0	0	0	0.00%
06-07 Horas	E	0	0	0	0	0	0	0	0.00%
	S	0	0	0	0	0	0	0	0.00%
	E+S	0	0	0	0	0	0	0	0.00%
07-08 Horas	E	2	2	3	0	0	0	7	43.75%
	S	1	0	0	0	0	0	1	10.00%
	E+S	3	2	3	0	0	0	8	53.75%
08-09 Horas	E	0	0	0	0	0	0	0	0.00%
	S	0	0	0	0	0	0	0	0.00%
	E+S	0	0	0	0	0	0	0	0.00%
09-10 Horas	E	0	0	0	0	0	0	0	0.00%
	S	0	0	0	0	0	0	0	0.00%
	E+S	0	0	0	0	0	0	0	0.00%
10-11 Horas	E	0	0	0	0	0	0	0	0.00%
	S	1	0	0	0	0	0	1	10.00%
	E+S	1	0	0	0	0	0	1	10.00%
11-12 Horas	E	2	0	0	0	0	0	2	12.50%
	S	1	0	0	0	0	0	1	10.00%
	E+S	3	0	0	0	0	0	3	22.50%
12-13 Horas	E	0	0	0	0	0	0	0	0.00%

	S	0	0	0	0	0	0	0	0.00%
	E+S	0	0	0	0	0	0	0	0.00%
13-14 Horas	E	1	0	0	0	0	0	1	6.25%
	S	2	0	0	0	0	0	2	20.00%
	E+S	3	0	0	0	0	0	3	26.25%
14-15 Horas	E	0	0	0	0	0	0	0	0.00%
	S	0	0	0	0	0	0	0	0.00%
	E+S	0	0	0	0	0	0	0	0.00%
15-16 Horas	E	0	0	0	0	0	0	0	0.00%
	S	0	0	0	0	0	0	0	0.00%
	E+S	0	0	0	0	0	0	0	0.00%
16-17 Horas	E	0	0	0	0	0	0	0	0.00%
	S	0	0	0	0	0	0	0	0.00%
	E+S	0	0	0	0	0	0	0	0.00%
17-18 Horas	E	0	0	0	0	0	0	0	0.00%
	S	0	2	0	0	0	0	2	20.00%
	E+S	0	2	0	0	0	0	2	20.00%
18-19 Horas	E	0	0	0	0	0	0	0	0.00%
	S	0	2	0	0	0	0	2	20.00%
	E+S	0	2	0	0	0	0	2	20.00%
19-20 Horas	E	2	0	2	0	0	0	4	25.00%
	S	1	0	0	0	0	0	1	10.00%
	E+S	3	0	2	0	0	0	5	35.00%
20-21 Horas	E	0	0	0	2	0	0	2	12.50%
	S	0	0	0	0	0	0	0	0.00%
	E+S	0	0	0	2	0	0	2	12.50%
21-22 Horas	E	0	0	0	0	0	0	0	0.00%
	S	0	0	0	0	0	0	0	0.00%
	E+S	0	0	0	0	0	0	0	0.00%
22-23 Horas	E	0	0	0	0	0	0	0	0.00%
	S	0	0	0	0	0	0	0	0.00%
	E+S	0	0	0	0	0	0	0	0.00%
23-24 Horas	E	0	0	0	0	0	0	0	0.00%
	S	0	0	0	0	0	0	0	0.00%
	E+S	0	0	0	0	0	0	0	0.00%
TOTAL	E	7	2	5	2	0	0	16	100.00 %
	S	6	4	0	0	0	0	10	100.00 %
	E+S	13	6	5	2	0	0	26	

CUADRO N° 4 CONTEO Y CLASIFICACIÓN DE TRAFICO

ESTACION DE CONTEO N° 01 LOCALIDAD DE TANTA

Fecha Jueves 21 MAYO 2015

Horas	Sentido	Motocicleta	Auto	Pick Up	Bus 2E	C-2E	C-3E	TOTAL	Porcentaje
00-01 Horas	E	0	0	0	0	0	0	0	1.16%
	S	0	0	0	0	0	0	0	1.39%
	E+S	0	0	0	0	0	0	0	2.55%
01-02 Horas	E	0	0	0	0	0	0	0	0.00%
	S	0	0	0	0	0	0	0	0.00%
	E+S	0	0	0	0	0	0	0	0.00%
02-03 Horas	E	0	0	0	0	0	0	0	0.00%
	S	0	0	0	0	0	0	0	0.00%
	E+S	0	0	0	0	0	0	0	0.00%
03-04 Horas	E	0	0	0	0	0	0	0	0.00%
	S	0	0	0	0	0	0	0	0.00%
	E+S	0	0	0	0	0	0	0	0.00%
04-05 Horas	E	0	0	0	0	0	0	0	0.00%
	S	0	0	0	0	0	0	0	0.00%
	E+S	0	0	0	0	0	0	0	0.00%
05-06 Horas	E	0	0	0	0	0	0	0	0.00%
	S	0	0	0	0	0	0	0	0.00%
	E+S	0	0	0	0	0	0	0	0.00%
06-07 Horas	E	1	0	0	0	2	0	0	0.00%
	S	1	0	0	0	1	0	0	0.00%
	E+S	2	0	0	0	0	0	0	0.00%
07-08 Horas	E	2	1	0	0	0	0	3	16.67%
	S	1	2	2	0	0	0	5	83.33%
	E+S	3	3	2	0	0	0	7	100.00%
08-09 Horas	E	0	0	0	2	0	0	2	11.11%
	S	0	0	1	0	0	0	1	16.67%
	E+S	0	0	1	2	0	0	3	27.78%
09-10 Horas	E	0	0	0	0	0	0	0	0.00%
	S	0	0	0	0	0	0	0	0.00%
	E+S	0	0	0	0	0	0	0	0.00%
10-11 Horas	E	0	0	0	0	0	0	0	0.00%
	S	1	0	0	0	0	0	1	16.67%
	E+S	1	0	0	0	0	0	1	16.67%
11-12 Horas	E	2	0	0	0	0	0	2	11.11%
	S	1	0	0	0	0	0	1	16.67%
	E+S	3	0	0	0	0	0	3	27.78%

12-13 Horas	E	0	0	0	0	0	0	0	0.00%
	S	0	0	0	0	0	0	0	0.00%
	E+S	0	0	0	0	0	0	0	0.00%
13-14 Horas	E	1	0	0	0	2	0	3	16.67 %
	S	2	0	0	0	1	0	3	50.00 %
	E+S	3	0	0	0	3	0	6	66.67 %
14-15 Horas	E	0	0	0	0	0	0	0	0.00%
	S	0	0	0	0	0	0	0	0.00%
	E+S	0	0	0	0	0	0	0	0.00%
15-16 Horas	E	0	1	0	0	0	0	1	5.56%
	S	0	1	2	0	0	0	3	50.00 %
	E+S	0	2	2	0	0	0	4	55.56 %
16-17 Horas	E	1	0	0	0	0	0	1	5.56%
	S	1	0	0	0	0	0	1	16.67 %
	E+S	2	0	0	0	0	0	2	22.22 %
17-18 Horas	E	0	2	0	1	0	0	3	16.67 %
	S	0	0	0	0	0	0	0	0.00%
	E+S	0	2	0	1	0	0	3	16.67 %
18-19 Horas	E	0	0	0	0	0	0	0	0.00%
	S	0	0	0	0	0	0	0	0.00%
	E+S	0	0	0	0	0	0	0	0.00%
19-20 Horas	E	2	0	0	0	0	0	2	11.11 %
	S	1	0	2	0	0	0	3	50.00 %
	E+S	3	0	2	0	0	0	5	61.11 %
20-21 Horas	E	0	0	0	2	0	0	2	11.11 %
	S	0	0	0	0	0	0	0	0.00%
	E+S	0	0	0	2	0	0	2	11.11 %
21-22 Horas	E	0	0	0	0	0	0	0	0.00%
	S	0	0	0	0	0	0	0	0.00%
	E+S	0	0	0	0	0	0	0	0.00%
22-23 Horas	E	0	0	0	0	0	0	0	0.00%
	S	0	0	0	0	0	0	0	0.00%
	E+S	0	0	0	0	0	0	0	0.00%

23-24 Horas	E	0	0	0	0	0	0	0	0.00%
	S	0	0	0	0	0	0	0	0.00%
	E+S	0	0	0	0	0	0	0	0.00%
TOTAL	E	5	2	5	2	4	0	18	100.00 %
	S	5	0	0	0	1	0	6	100.00 %
	E+S	10	2	5	2	5	0	24	

CUADRO N° 5 CONTEO Y CLASIFICACIÓN DE TRAFICO

ESTACION DE CONTEO N° 01 LOCALIDAD DE TANTA

Fecha **Viernes 22 de mayo 2015**

Horas	Sentido	Motocicleta	Auto	Pick Up	Bus 2E	C-2E	C-3E	TOTAL	Porcentaje
00-01 Horas	E	0	0	0	0	0	0	0	1.16%
	S	0	0	0	0	0	0	0	1.39%
	E+S	0	0	0	0	0	0	0	2.55%
01-02 Horas	E	0	0	0	0	0	0	0	0.00%
	S	0	0	0	0	0	0	0	0.00%
	E+S	0	0	0	0	0	0	0	0.00%
02-03 Horas	E	0	0	0	0	0	0	0	0.00%
	S	0	0	0	0	0	0	0	0.00%
	E+S	0	0	0	0	0	0	0	0.00%
03-04 Horas	E	0	0	0	0	0	0	0	0.00%
	S	0	0	0	0	0	0	0	0.00%
	E+S	0	0	0	0	0	0	0	0.00%
04-05 Horas	E	0	0	0	0	0	0	0	0.00%
	S	0	0	0	0	0	0	0	0.00%
	E+S	0	0	0	0	0	0	0	0.00%
05-06 Horas	E	0	0	0	0	0	0	0	0.00%
	S	0	0	0	0	0	0	0	0.00%
	E+S	0	0	0	0	0	0	0	0.00%
06-07 Horas	E	0	0	0	0	0	0	0	0.00%
	S	0	0	0	0	0	0	0	0.00%
	E+S	0	0	0	0	0	0	0	0.00%
07-08 Horas	E	2	0	2	2	0	0	6	35.29%
	S	2	2	1	0	0	0	5	21.74%
	E+S	4	2	3	2	0	0	11	57.03%
08-09 Horas	E	0	0	0	0	0	0	0	0.00%
	S	0	0	0	0	0	0	0	0.00%
	E+S	0	0	0	0	0	0	0	0.00%
09-10 Horas	E	0	0	0	0	0	0	0	0.00%
	S	0	0	0	0	0	0	0	0.00%

	E+S	0	0	0	0	0	0	0	0.00%
10-11 Horas	E	0	1	1	0	0	0	2	11.76%
	S	0	1	1	0	0	0	2	8.70%
	E+S	0	2	2	0	0	0	4	20.46%
11-12 Horas	E	0	0	0	0	0	0	0	0.00%
	S	3	0	0	0	0	0	3	13.04%
	E+S	3	0	0	0	0	0	3	13.04%

12-13 Horas	E	0	0	0	0	0	0	0	0.00%
	S	0	0	0	0	0	0	0	0.00%
	E+S	0	0	0	0	0	0	0	0.00%
13-14 Horas	E	1	0	0	0	0	0	1	5.88%
	S	2	0	0	0	0	0	2	8.70%
	E+S	3	0	0	0	0	0	3	14.58%
14-15 Horas	E	0	0	0	0	1	0	1	5.88%
	S	0	0	0	0	1	0	1	4.35%
	E+S	0	0	0	0	2	0	2	10.23%
15-16 Horas	E	0	0	0	0	0	0	0	0.00%
	S	0	0	0	0	0	0	0	0.00%
	E+S	0	0	0	0	0	0	0	0.00%
16-17 Horas	E	0	0	0	0	0	0	0	0.00%
	S	0	0	0	0	0	0	0	0.00%
	E+S	0	0	0	0	0	0	0	0.00%
17-18 Horas	E	2	2	0	0	0	0	4	23.53%
	S	2	0	0	0	0	0	2	8.70%
	E+S	4	2	0	0	0	0	6	32.23%
18-19 Horas	E	0	0	0	0	0	0	0	0.00%
	S	0	2	0	0	0	0	2	8.70%
	E+S	0	2	0	0	0	0	2	8.70%
19-20 Horas	E	2	0	0	0	0	0	2	11.76%
	S	1	0	2	0	0	0	3	13.04%
	E+S	3	0	2	0	0	0	5	24.81%
20-21 Horas	E	0	0	0	0	0	0	0	0.00%
	S	0	0	0	2	0	0	2	8.70%
	E+S	0	0	0	2	0	0	2	8.70%
21-22 Horas	E	0	0	0	0	1	0	1	5.88%
	S	0	0	0	0	1	0	1	4.35%
	E+S	0	0	0	0	2	0	2	10.23%
22-23 Horas	E	0	0	0	0	0	0	0	0.00%
	S	0	0	0	0	0	0	0	0.00%
	E+S	0	0	0	0	0	0	0	0.00%

23-24 Horas	E	0	0	0	0	0	0	0	0.00%
	S	0	0	0	0	0	0	0	0.00%
	E+S	0	0	0	0	0	0	0	0.00%
TOTAL	E	7	3	3	2	2	0	17	100.00%
	S	10	5	4	2	2	0	23	100.00%
	E+S	17	8	7	4	4	0	40	

CUADRO N° 6 CONTEO Y CLASIFICACIÓN DE TRAFICO

ESTACION DE CONTEO N° 01 LOCALIDAD DE TANTA

Fecha **Sábado 23 MAYO 2015**

Horas	Sentido	Motocicleta	Auto	Pick Up	Bus 2E	C-2E	C-3E	TOTAL	Porcentaje
00-01 Horas	E	0	0	0	0	0	0	0	1.16%
	S	0	0	0	0	0	0	0	1.39%
	E+S	0	0	0	0	0	0	0	2.55%
01-02 Horas	E	0	0	0	0	0	0	0	0.00%
	S	0	0	0	0	0	0	0	0.00%
	E+S	0	0	0	0	0	0	0	0.00%
02-03 Horas	E	0	0	0	0	0	0	0	0.00%
	S	0	0	0	0	0	0	0	0.00%
	E+S	0	0	0	0	0	0	0	0.00%
03-04 Horas	E	0	0	0	0	0	0	0	0.00%
	S	0	0	0	0	0	0	0	0.00%
	E+S	0	0	0	0	0	0	0	0.00%
04-05 Horas	E	0	0	0	0	0	0	0	0.00%
	S	0	0	0	0	0	0	0	0.00%
	E+S	0	0	0	0	0	0	0	0.00%
05-06 Horas	E	0	0	0	0	0	0	0	0.00%
	S	0	0	0	0	0	0	0	0.00%
	E+S	0	0	0	0	0	0	0	0.00%
06-07 Horas	E	0	0	0	0	0	0	0	0.00%
	S	0	0	0	0	0	0	0	0.00%
	E+S	0	0	0	0	0	0	0	0.00%
07-08 Horas	E	2	1	2	0	0	0	5	25.00%
	S	1	1	2	0	0	0	4	17.39%
	E+S	3	2	4	0	0	0	9	42.39%
08-09 Horas	E	0	1	0	1	0	0	2	10.00%
	S	0	1	0	1	0	0	2	8.70%
	E+S	0	2	0	2	0	0	4	18.70%
09-10 Horas	E	0	0	0	0	1	0	1	5.00%
	S	0	0	0	0	1	0	1	4.35%
	E+S	0	0	0	0	2	0	2	9.35%

10-11 Horas	E	0	0	0	0	0	0	0	0.00%
	S	1	0	0	0	0	0	1	4.35%
	E+S	1	0	0	0	0	0	1	4.35%
11-12 Horas	E	2	0	0	0	0	0	2	10.00%
	S	1	0	0	0	0	0	1	4.35%
	E+S	3	0	0	0	0	0	3	14.35%

12-13 Horas	E	0	0	0	0	1	0	1	5.00%
	S	0	0	0	0	1	0	1	4.35%
	E+S	0	0	0	0	2	0	2	9.35%
13-14 Horas	E	1	0	0	0	0	0	1	5.00%
	S	2	0	0	0	0	0	2	8.70%
	E+S	3	0	0	0	0	0	3	13.70%
14-15 Horas	E	0	0	2	0	0	0	2	10.00%
	S	0	0	2	0	0	0	2	8.70%
	E+S	0	0	4	0	0	0	4	18.70%
15-16 Horas	E	0	0	0	0	0	0	0	0.00%
	S	0	0	0	0	0	0	0	0.00%
	E+S	0	0	0	0	0	0	0	0.00%
16-17 Horas	E	0	2	0	0	0	0	2	10.00%
	S	0	2	0	0	0	0	2	8.70%
	E+S	0	4	0	0	0	0	4	18.70%
17-18 Horas	E	0	0	0	0	0	0	0	0.00%
	S	0	2	0	0	0	0	2	8.70%
	E+S	0	2	0	0	0	0	2	8.70%
18-19 Horas	E	0	0	0	0	0	0	0	0.00%
	S	0	2	0	0	0	0	2	8.70%
	E+S	0	2	0	0	0	0	2	8.70%
19-20 Horas	E	2	0	2	0	0	0	4	20.00%
	S	1	0	0	0	0	0	1	4.35%
	E+S	3	0	2	0	0	0	5	24.35%
20-21 Horas	E	0	0	0	0	0	0	0	0.00%
	S	0	0	0	2	0	0	2	8.70%
	E+S	0	0	0	2	0	0	2	8.70%
21-22 Horas	E	0	0	0	0	0	0	0	0.00%
	S	0	0	0	0	0	0	0	0.00%
	E+S	0	0	0	0	0	0	0	0.00%
22-23 Horas	E	0	0	0	0	0	0	0	0.00%
	S	0	0	0	0	0	0	0	0.00%
	E+S	0	0	0	0	0	0	0	0.00%
23-24 Horas	E	0	0	0	0	0	0	0	0.00%

	S	0	0	0	0	0	0	0	0.00%
	E+S	0	0	0	0	0	0	0	0.00%
TOTAL	E	7	4	6	1	2	0	20	100.00%
	S	6	8	4	3	2	0	23	100.00%
	E+S	13	12	10	4	4	0	43	

CUADRO N° 7 CONTEO Y CLASIFICACIÓN DE TRAFICO

ESTACION DE CONTEO N° 01 LOCALIDAD DE TANTA

Fecha Domingo 24 MAYO 2015

Horas	Sentido	Motocicleta	Auto	Pick Up	Bus 2E	C-2E	C-3E	TOTAL	Porcentaje
00-01 Horas	E	0	0	0	0	0	0	0	1.16%
	S	0	0	0	0	0	0	0	1.39%
	E+S	0	0	0	0	0	0	0	2.55%
01-02 Horas	E	0	0	0	0	0	0	0	0.00%
	S	0	0	0	0	0	0	0	0.00%
	E+S	0	0	0	0	0	0	0	0.00%
02-03 Horas	E	0	0	0	0	0	0	0	0.00%
	S	0	0	0	0	0	0	0	0.00%
	E+S	0	0	0	0	0	0	0	0.00%
03-04 Horas	E	0	0	0	0	0	0	0	0.00%
	S	0	0	0	0	0	0	0	0.00%
	E+S	0	0	0	0	0	0	0	0.00%
04-05 Horas	E	0	0	0	0	0	0	0	0.00%
	S	0	0	0	0	0	0	0	0.00%
	E+S	0	0	0	0	0	0	0	0.00%
05-06 Horas	E	0	0	0	0	0	0	0	0.00%
	S	0	0	0	0	0	0	0	0.00%
	E+S	0	0	0	0	0	0	0	0.00%
06-07 Horas	E	0	1	1	0	0	0	2	8.00%
	S	0	1	1	0	0	0	2	9.52%
	E+S	0	2	2	0	0	0	4	17.52%
07-08 Horas	E	2	2	3	0	0	0	7	28.00%
	S	2	0	0	0	0	0	2	9.52%
	E+S	4	2	3	0	0	0	7	37.52%
08-09 Horas	E	0	0	0	0	2	0	2	8.00%
	S	0	0	0	0	2	0	2	9.52%
	E+S	0	0	0	0	4	0	4	17.52%
09-10 Horas	E	0	0	0	0	0	0	0	0.00%
	S	0	0	0	0	0	0	0	0.00%
	E+S	0	0	0	0	0	0	0	0.00%
10-11 Horas	E	0	0	0	0	0	0	0	0.00%
	S	1	0	0	0	0	0	1	4.76%
	E+S	1	0	0	0	0	0	1	4.76%
	E	2	0	0	0	0	0	2	8.00%

11-12 Horas	S	1	0	0	0	0	0	1	4.76%
	E+S	3	0	0	0	0	0	3	12.76%

12-13 Horas	E	0	0	0	0	0	0	0	0.00%
	S	0	0	0	0	0	0	0	0.00%
	E+S	0	0	0	0	0	0	0	0.00%
13-14 Horas	E	1	0	0	0	0	0	1	4.00%
	S	2	0	0	0	0	0	2	9.52%
	E+S	3	0	0	0	0	0	3	13.52%
14-15 Horas	E	0	0	0	0	0	0	0	0.00%
	S	0	0	0	0	0	0	0	0.00%
	E+S	0	0	0	0	0	0	0	0.00%
15-16 Horas	E	2	0	0	0	0	0	2	8.00%
	S	2	0	0	0	0	0	2	9.52%
	E+S	4	0	0	0	0	0	4	17.52%
16-17 Horas	E	0	0	0	0	2	0	2	8.00%
	S	0	0	0	0	2	0	2	9.52%
	E+S	0	0	0	0	4	0	4	17.52%
17-18 Horas	E	0	0	0	0	0	0	0	0.00%
	S	0	2	0	0	0	0	2	9.52%
	E+S	0	2	0	0	0	0	2	9.52%
18-19 Horas	E	0	0	1	0	0	0	1	4.00%
	S	0	2	1	0	0	0	3	14.29%
	E+S	0	2	2	0	0	0	4	18.29%
19-20 Horas	E	2	0	2	0	0	0	4	16.00%
	S	1	0	0	0	0	0	1	4.76%
	E+S	3	0	2	0	0	0	5	20.76%
20-21 Horas	E	0	0	0	2	0	0	2	8.00%
	S	0	0	0	0	0	0	0	0.00%
	E+S	0	0	0	2	0	0	2	8.00%
21-22 Horas	E	0	2	0	0	0	0	2	8.00%
	S	0	1	0	0	0	0	1	4.76%
	E+S	0	3	0	0	0	0	3	12.76%
22-23 Horas	E	0	0	0	0	0	0	0	0.00%
	S	0	0	0	0	0	0	0	0.00%
	E+S	0	0	0	0	0	0	0	0.00%
23-24 Horas	E	0	0	0	0	0	0	0	0.00%
	S	0	0	0	0	0	0	0	0.00%
	E+S	0	0	0	0	0	0	0	0.00%
TOTAL	E	9	4	6	2	4	0	25	100.00%
	S	9	6	2	0	4	0	21	100.00%
	E+S	18	10	8	2	8	0	46	

ANEXO 2: CUADRO DE LONGITUDES DE SEGMENTOS DE LA PRIMERA ALTERNATIVA

CUADRO DE TANGENTES DE LA PRIMERA ALTERNATIVA

Nº	Longitud	Orientación	P.K. inicial	P.K. final
1	117.104m	N17° 13' 47"W	0+000.00m	0+117.10m
3	377.557m	N38° 46' 12"E	0+263.71m	0+641.27m
5	236.428m	N53° 37' 33"E	0+693.12m	0+929.55m
7	258.479m	N29° 35' 21"E	1+013.46m	1+271.93m
9	115.778m	S18° 37' 32"E	1+524.94m	1+640.72m
11	105.557m	S89° 24' 16"E	1+784.55m	1+890.10m
13	209.823m	S61° 59' 37"E	1+961.86m	2+171.69m
15	238.648m	S41° 28' 31"E	2+243.31m	2+481.96m
17	123.038m	S77° 07' 08"W	2+714.24m	2+837.28m
19	201.692m	S87° 31' 24"E	3+112.17m	3+313.86m
21	156.941m	N8° 23' 06"E	3+491.95m	3+648.89m
23	205.231m	N31° 57' 52"W	3+789.74m	3+994.97m
25	265.806m	N48° 06' 03"W	4+037.21m	4+303.02m
27	263.304m	N40° 42' 15"W	4+328.84m	4+592.14m
29	352.709m	N27° 45' 11"W	4+637.35m	4+990.06m
31	221.527m	S57° 26' 34"E	5+244.93m	5+466.46m
33	99.657m	S14° 58' 47"E	5+577.63m	5+677.28m
35	273.418m	S86° 25' 50"E	5+864.34m	6+137.76m
37	151.215m	S61° 51' 31"E	6+223.53m	6+374.74m
39	157.129m	S16° 13' 40"E	6+534.03m	6+691.16m
41	76.434m	S15° 51' 26"W	6+775.15m	6+851.59m
43	108.647m	S66° 21' 32"E	7+044.08m	7+152.73m
45	76.242m	S39° 25' 35"E	7+223.24m	7+299.48m
47	80.785m	S81° 41' 18"E	7+410.12m	7+490.91m
49	71.104m	S51° 08' 20"E	7+570.89m	7+641.99m
51	81.310m	N75° 59' 27"E	7+780.40m	7+861.71m
53	410.222m	S89° 51' 49"E	7+911.09m	8+321.31m
55	399.623m	S86° 10' 53"E	8+330.95m	8+730.58m
57	152.800m	S67° 38' 00"E	8+779.13m	8+931.93m
59	542.770m	S53° 00' 40"W	9+247.78m	9+790.55m
61	152.471m	S0° 06' 22"W	9+975.22m	10+127.69m
63	228.885m	S88° 34' 24"E	10+312.99m	10+541.88m
65	303.420m	N53° 32' 21"E	10+641.07m	10+944.49m
67	111.891m	N7° 43' 55"W	11+158.36m	11+270.25m
69	129.347m	N52° 15' 41"E	11+410.49m	11+539.84m
71	293.237m	N5° 34' 43"E	11+702.79m	11+996.03m
73	93.550m	N35° 40' 03"W	12+104.01m	12+197.56m

CUADRO DE CURVAS CIRCULARES DE LA PRIMERA ALTERNATIVA

Nº	Longitud	Radio	P.K. inicial	P.K. final	Ángulo de incremento	Cuerda	Orientación inicial	Orientación final
2	146.607m	150.000m	0+117.10m	0+263.71m	55.9996 (g)	140.841m	N17° 13' 47"W	N38° 46' 12"E
4	51.857m	200.000m	0+641.27m	0+693.12m	14.8558 (g)	51.711m	N38° 46' 12"E	N53° 37' 33"E
6	83.903m	200.000m	0+929.55m	1+013.46m	24.0365 (g)	83.289m	N53° 37' 33"E	N29° 35' 21"E
12	71.761m	150.000m	1+890.10m	1+961.86m	27.4107 (g)	71.079m	S89° 24' 16"E	S61° 59' 37"E
14	71.623m	200.000m	2+171.69m	2+243.31m	20.5185 (g)	71.241m	S61° 59' 37"E	S41° 28' 31"E
22	140.846m	200.000m	3+648.89m	3+789.74m	40.3493 (g)	137.953m	N8° 23' 06"E	N31° 57' 52"W
24	42.245m	150.000m	3+994.97m	4+037.21m	16.1364 (g)	42.106m	N31° 57' 52"W	N48° 06' 03"W
26	25.819m	200.000m	4+303.02m	4+328.84m	7.3967 (g)	25.801m	N48° 06' 03"W	N40° 42' 15"W
28	45.207m	200.000m	4+592.14m	4+637.35m	12.9510 (g)	45.111m	N40° 42' 15"W	N27° 45' 11"W
32	111.168m	150.000m	5+466.46m	5+577.63m	42.4631 (g)	108.641m	S57° 26' 34"E	S14° 58' 47"E
34	187.058m	150.000m	5+677.28m	5+864.34m	71.4508 (g)	175.170m	S14° 58' 47"E	S86° 25' 50"E
36	85.772m	200.000m	6+137.76m	6+223.53m	24.5718 (g)	85.116m	S86° 25' 50"E	S61° 51' 31"E
38	159.282m	200.000m	6+374.74m	6+534.03m	45.6310 (g)	155.106m	S61° 51' 31"E	S16° 13' 40"E
40	83.998m	150.000m	6+691.16m	6+775.15m	32.0850 (g)	82.905m	S16° 13' 40"E	S15° 51' 26"W
44	70.509m	150.000m	7+152.73m	7+223.24m	26.9326 (g)	69.862m	S66° 21' 32"E	S39° 25' 35"E
46	110.642m	150.000m	7+299.48m	7+410.12m	42.2620 (g)	108.150m	S39° 25' 35"E	S81° 41' 18"E
48	79.979m	150.000m	7+490.91m	7+570.89m	30.5496 (g)	79.035m	S81° 41' 18"E	S51° 08' 20"E
50	138.414m	150.000m	7+641.99m	7+780.40m	52.8702 (g)	133.555m	S51° 08' 20"E	N75° 59' 27"E
52	49.377m	200.000m	7+861.71m	7+911.09m	14.1456 (g)	49.252m	N75° 59' 27"E	S89° 51' 49"E
54	9.640m	150.000m	8+321.31m	8+330.95m	3.6822 (g)	9.638m	S89° 51' 49"E	S86° 10' 53"E
56	48.558m	150.000m	8+730.58m	8+779.13m	18.5478 (g)	48.346m	S86° 10' 53"E	S67° 38' 00"E
58	315.846m	150.000m	8+931.93m	9+247.78m	120.6445 (g)	260.647m	S67° 38' 00"E	S53° 00' 40"W
60	184.673m	200.000m	9+790.55m	9+975.22m	52.9048 (g)	178.182m	S53° 00' 40"W	S0° 06' 22"W
64	99.189m	150.000m	10+541.88m	10+641.07m	37.8876 (g)	97.392m	S88° 34' 24"E	N53° 32' 21"E
66	213.876m	200.000m	10+944.49m	11+158.36m	61.2710 (g)	203.830m	N53° 32' 21"E	N7° 43' 55"W
70	162.954m	200.000m	11+539.84m	11+702.79m	46.6829 (g)	158.484m	N52° 15' 41"E	N5° 34' 43"E
72	107.982m	150.000m	11+996.03m	12+104.01m	41.2461 (g)	105.666m	N5° 34' 43"E	N35° 40' 03"W

CUADRO DE CURVAS DE TRANSICION DE LA PRIMERA ALTERNATIVA

Nº	Longitud	Radio	A	P.K. inicial	P.K. final	Ángulo de incremento	Longitud de cuerda	Orientación inicial	Orientación final
8	46.000m		64.343m	1+271.93m	1+317.93m	14.6423 (g)		N29° 35' 21"E	N44° 13' 53"E
	161.008m	90.000m		1+317.93m	1+478.94m	102.5006 (g)	140.380m	N44° 13' 53"E	S33° 16' 04"E
10	46.000m		64.343m	1+478.94m	1+524.94m	14.6423 (g)		S33° 16' 04"E	S18° 37' 32"E
	45.000m		60.000m	1+640.72m	1+685.72m	16.1144 (g)		S18° 37' 32"E	S34° 44' 24"E
16	53.826m	80.000m		1+685.72m	1+739.55m	38.5499 (g)	52.816m	S34° 44' 24"E	S73° 17' 24"E
	45.000m		60.000m	1+739.55m	1+784.55m	16.1144 (g)		S73° 17' 24"E	S89° 24' 16"E
18	46.000m		64.343m	2+481.96m	2+527.96m	14.6423 (g)		S41° 28' 31"E	S26° 49' 59"E
	140.287m	90.000m		2+527.96m	2+668.24m	89.3096 (g)	126.510m	S26° 49' 59"E	S62° 28' 36"W
20	46.000m		64.343m	2+668.24m	2+714.24m	14.6423 (g)		S62° 28' 36"W	S77° 07' 08"W
	45.000m		60.000m	2+837.28m	2+882.28m	16.1144 (g)		S77° 07' 08"W	S61° 00' 16"W
22	184.884m	80.000m		2+882.28m	3+067.17m	132.4133 (g)	146.401m	S61° 00' 16"W	S71° 24' 32"E
	45.000m		60.000m	3+067.17m	3+112.17m	16.1144 (g)		S71° 24' 32"E	S87° 31' 24"E
24	46.000m		64.343m	3+313.86m	3+359.86m	14.6423 (g)		S87° 31' 24"E	N77° 50' 04"E
	86.091m	90.000m		3+359.86m	3+445.95m	54.8073 (g)	82.846m	N77° 50' 04"E	N23° 01' 38"E
26	46.000m		64.343m	3+445.95m	3+491.95m	14.6423 (g)		N23° 01' 38"E	N8° 23' 06"E
	45.000m		60.000m	4+990.06m	5+035.06m	16.1144 (g)		N27° 45' 11"W	N11° 38' 19"W
28	164.873m	80.000m		5+035.06m	5+199.93m	118.0814 (g)	137.205m	N11° 38' 19"W	S73° 33' 26"E
	45.000m		60.000m	5+199.93m	5+244.93m	16.1144 (g)		S73° 33' 26"E	S57° 26' 34"E
30	49.000m		70.000m	6+851.59m	6+900.59m	14.0375 (g)		S15° 51' 26"W	S1° 49' 11"W
	94.494m	100.000m		6+900.59m	6+995.08m	54.1413 (g)	91.018m	S1° 49' 11"W	S52° 19' 17"E
32	49.000m		70.000m	6+995.08m	7+044.08m	14.0375 (g)		S52° 19' 17"E	S66° 21' 32"E
	46.000m		64.343m	10+127.69m	10+173.69m	14.6423 (g)		S0° 06' 22"W	S14° 32' 10"E
34	93.297m	90.000m		10+173.69m	10+266.99m	59.3949 (g)	89.176m	S14° 32' 10"E	S73° 55' 51"E
	46.000m		64.343m	10+266.99m	10+312.99m	14.6423 (g)		S73° 55' 51"E	S88° 34' 24"E
36	46.000m		64.343m	11+270.25m	11+316.25m	14.6423 (g)		N7° 43' 55"W	N6° 54' 38"E
	48.237m	90.000m		11+316.25m	11+364.49m	30.7087 (g)	47.662m	N6° 54' 38"E	N37° 37' 09"E
38	46.000m		64.343m	11+364.49m	11+410.49m	14.6423 (g)		N37° 37' 09"E	N52° 15' 41"E

ANEXO 3: CUADRO DE LONGITUDES DE SEGMENTOS DE LA SEGUNDA ALTERNATIVA

CUADRO DE TANGENTES DE LA SEGUNDA ALTERNATIVA

Nº	Longitud	Orientación	P.K. inicial	P.K. final
1	57.780m	N20° 26' 20"W	0+000.00m	0+057.78m
3	373.052m	N38° 56' 36"E	0+265.06m	0+638.12m
5	253.404m	N49° 56' 22"E	0+676.50m	0+929.90m
7	260.950m	N30° 08' 35"E	0+981.73m	1+242.68m
9	191.574m	S25° 35' 37"E	1+461.18m	1+652.76m
11	135.883m	S85° 24' 00"E	1+781.26m	1+917.15m
13	160.977m	S42° 17' 37"E	2+067.62m	2+228.59m
15	147.435m	S78° 30' 53"W	2+442.27m	2+589.71m
17	299.193m	S70° 29' 46"W	2+617.70m	2+916.89m
19	386.774m	S42° 12' 08"W	2+990.96m	3+377.74m
21	191.079m	N61° 22' 00"E	3+647.31m	3+838.39m
23	90.185m	N6° 11' 35"E	3+960.42m	4+050.61m
25	174.822m	N76° 33' 46"E	4+193.86m	4+368.68m
27	363.779m	S83° 56' 17"E	4+436.75m	4+800.53m
29	233.450m	N25° 35' 17"W	5+061.85m	5+295.30m
31	397.158m	N53° 35' 45"W	5+393.06m	5+790.22m
33	143.047m	S65° 00' 31"E	6+070.61m	6+213.66m
35	229.595m	S38° 40' 06"E	6+305.60m	6+535.20m
37	341.203m	S48° 52' 30"E	6+570.83m	6+912.03m
39	94.299m	S29° 02' 03"W	7+065.81m	7+160.11m
41	86.163m	S27° 19' 37"E	7+283.81m	7+369.97m
43	310.407m	N83° 01' 31"W	7+588.53m	7+898.93m
45	142.381m	S50° 40' 51"E	8+150.10m	8+292.48m
47	170.425m	S11° 55' 23"E	8+393.95m	8+564.37m
49	212.412m	S78° 11' 38"W	8+735.20m	8+947.61m
51	279.940m	S87° 11' 32"W	8+979.02m	9+258.96m
53	263.798m	S63° 55' 24"E	9+514.96m	9+778.76m
55	243.380m	N57° 49' 43"E	9+929.42m	10+172.80m
57	159.550m	S89° 11' 00"E	10+259.16m	10+418.71m
59	375.209m	N23° 16' 57"E	10+564.90m	10+940.11m
61	490.478m	S12° 01' 43"E	11+187.14m	11+677.61m
63	446.408m	N9° 42' 43"E	11+943.58m	12+389.99m
65	252.220m	N29° 13' 12"W	12+491.92m	12+744.14m
67	149.636m	N48° 13' 53"W	12+810.50m	12+960.14m
69	292.097m	S71° 04' 01"E	13+224.58m	13+516.68m
71	225.369m	S89° 26' 13"E	13+580.80m	13+806.17m
73	90.053m	N70° 16' 42"E	13+876.98m	13+967.03m
75	80.163m	S76° 53' 01"E	14+053.00m	14+133.16m
77	113.130m	S88° 40' 34"E	14+174.33m	14+287.46m

79	174.730m	S80° 35' 40"E	14+315.67m	14+490.40m
81	179.200m	S72° 04' 15"W	14+748.56m	14+927.76m
83	175.537m	S44° 29' 16"W	14+999.97m	15+175.51m
85	70.918m	S6° 58' 15"W	15+273.73m	15+344.65m
87	182.773m	S43° 00' 11"W	15+470.42m	15+653.19m
89	164.290m	S47° 05' 04"E	15+840.70m	16+004.99m
91	288.232m	N0° 54' 12"W	16+236.84m	16+525.07m
93	206.492m	N29° 31' 01"E	16+604.71m	16+811.21m
95	476.791m	N69° 17' 23"E	16+915.33m	17+392.12m
97	145.114m	N63° 48' 32"W	17+740.57m	17+885.69m
99	251.724m	N74° 25' 51"W	17+913.49m	18+165.22m
101	308.582m	N72° 47' 15"W	18+170.95m	18+479.54m
103	198.929m	N14° 35' 51"E	18+646.55m	18+845.48m
105	151.397m	S77° 42' 23"E	19+012.92m	19+164.32m
107	96.179m	N38° 21' 29"E	19+310.75m	19+406.93m
109	175.568m	N75° 57' 45"E	19+505.38m	19+680.95m
111	133.666m	S70° 02' 37"W	19+953.82m	20+087.48m
113	147.027m	S24° 49' 19"W	20+205.87m	20+352.90m
115	200.526m	S77° 49' 51"E	20+560.15m	20+760.67m
117	72.260m	N66° 48' 00"E	20+884.14m	20+956.40m
119	115.439m	N86° 24' 29"E	21+024.84m	21+140.28m

CUADRO DE CURVAS CIRCULARES DE LA SEGUNDA ALTERNATIVA

N°	Radio	Longitud	P.K. inicial	P.K. final	Ángulo de incremento	Orientación inicial	Orientación final	Longitud de
2	200.000m	207.283m	0+057.78m	0+265.06m	59.3823 (g)	N20° 26' 20"W	N38° 56' 36"E	198.130m
4	200.000m	38.384m	0+638.12m	0+676.50m	10.9961 (g)	N38° 56' 36"E	N49° 56' 22"E	38.325m
6	150.000m	51.827m	0+929.90m	0+981.73m	19.7963 (g)	N49° 56' 22"E	N30° 08' 35"E	51.569m
12	200.000m	150.470m	1+917.15m	2+067.62m	43.1064 (g)	S85° 24' 00"E	S42° 17' 37"E	146.946m
16	200.000m	27.991m	2+589.71m	2+617.70m	8.0187 (g)	S78° 30' 53"W	S70° 29' 46"W	27.968m
18	150.000m	74.073m	2+916.89m	2+990.96m	28.2938 (g)	S70° 29' 46"W	S42° 12' 08"W	73.323m
26	200.000m	68.065m	4+368.68m	4+436.75m	19.4992 (g)	N76° 33' 46"E	S83° 56' 17"E	67.737m
30	200.000m	97.765m	5+295.30m	5+393.06m	28.0077 (g)	N25° 35' 17"W	N53° 35' 45"W	96.795m
34	200.000m	91.945m	6+213.66m	6+305.60m	26.3403 (g)	S65° 00' 31"E	S38° 40' 06"E	91.137m
36	200.000m	35.628m	6+535.20m	6+570.83m	10.2067 (g)	S38° 40' 06"E	S48° 52' 30"E	35.581m
46	150.000m	101.468m	8+292.48m	8+393.95m	38.7579 (g)	S50° 40' 51"E	S11° 55' 23"E	99.544m
50	200.000m	31.410m	8+947.61m	8+979.02m	8.9983 (g)	S78° 11' 38"W	S87° 11' 32"W	31.378m
56	150.000m	86.363m	10+172.80m	10+259.16m	32.9881 (g)	N57° 49' 43"E	S89° 11' 00"E	85.175m
64	150.000m	101.924m	12+389.99m	12+491.92m	38.9320 (g)	N9° 42' 43"E	N29° 13' 12"W	99.974m
66	200.000m	66.362m	12+744.14m	12+810.50m	19.0114 (g)	N29° 13' 12"W	N48° 13' 53"W	66.058m
70	200.000m	64.123m	13+516.68m	13+580.80m	18.3699 (g)	S71° 04' 01"E	S89° 26' 13"E	63.849m
72	200.000m	70.808m	13+806.17m	13+876.98m	20.2849 (g)	S89° 26' 13"E	N70° 16' 42"E	70.439m
74	150.000m	85.970m	13+967.03m	14+053.00m	32.8381 (g)	N70° 16' 42"E	S76° 53' 01"E	84.798m
76	200.000m	41.164m	14+133.16m	14+174.33m	11.7926 (g)	S76° 53' 01"E	S88° 40' 34"E	41.091m
78	200.000m	28.211m	14+287.46m	14+315.67m	8.0818 (g)	S88° 40' 34"E	S80° 35' 40"E	28.188m
82	150.000m	72.213m	14+927.76m	14+999.97m	27.5833 (g)	S72° 04' 15"W	S44° 29' 16"W	71.518m
84	150.000m	98.219m	15+175.51m	15+273.73m	37.5170 (g)	S44° 29' 16"W	S6° 58' 15"W	96.474m
86	200.000m	125.776m	15+344.65m	15+470.42m	36.0323 (g)	S6° 58' 15"W	S43° 00' 11"W	123.714m
92	150.000m	79.641m	16+525.07m	16+604.71m	30.4204 (g)	N0° 54' 12"W	N29° 31' 01"E	78.708m
94	150.000m	104.125m	16+811.21m	16+915.33m	39.7727 (g)	N29° 31' 01"E	N69° 17' 23"E	102.047m
96	150.000m	348.451m	17+392.12m	17+740.57m	133.0986 (g)	N69° 17' 23"E	N63° 48' 32"W	275.221m
98	150.000m	27.808m	17+885.69m	17+913.49m	10.6218 (g)	N63° 48' 32"W	N74° 25' 51"W	27.768m
100	200.000m	5.736m	18+165.22m	18+170.95m	1.6432 (g)	N74° 25' 51"W	N72° 47' 15"W	5.736m
108	150.000m	98.448m	19+406.93m	19+505.38m	37.6045 (g)	N38° 21' 29"E	N75° 57' 45"E	96.691m
112	150.000m	118.390m	20+087.48m	20+205.87m	45.2217 (g)	S70° 02' 37"W	S24° 49' 19"W	115.341m
116	200.000m	123.462m	20+760.67m	20+884.14m	35.3692 (g)	S77° 49' 51"E	N66° 48' 00"E	121.511m
118	200.000m	68.445m	20+956.40m	21+024.84m	19.6082 (g)	N66° 48' 00"E	N86° 24' 29"E	68.112m

CUADRO DE CURVAS TRANSICION DE LA SEGUNDA ALTERNATIVA

Nº	Longitud	Radio	A	P.K. inicial	P.K. final	Angulo de incremento	Longitud de cuerda	Orientación inicial	Orientación final
8	45.000m		60.000m	1+242.68m	1+287.68m	16.1144 (g)		N30° 08' 35"E	N46° 15' 27"E
	128.504m	80.000m		1+287.68m	1+416.18m	92.0342 (g)	115.128m	N46° 15' 27"E	S41° 42' 29"E
	45.000m		60.000m	1+416.18m	1+461.18m	16.1144 (g)		S41° 42' 29"E	S25° 35' 37"E
10	45.000m		60.000m	1+652.76m	1+697.76m	16.1144 (g)		S25° 35' 37"E	S41° 42' 29"E
	38.505m	80.000m		1+697.76m	1+736.26m	27.5775 (g)	38.135m	S41° 42' 29"E	S69° 17' 08"E
	45.000m		60.000m	1+736.26m	1+781.26m	16.1144 (g)		S69° 17' 08"E	S85° 24' 00"E
14	45.000m		60.000m	2+228.59m	2+273.59m	16.1144 (g)		S42° 17' 37"E	S26° 10' 46"E
	123.680m	80.000m		2+273.59m	2+397.27m	88.5796 (g)	111.726m	S26° 10' 46"E	S62° 24' 01"W
	45.000m		60.000m	2+397.27m	2+442.27m	16.1144 (g)		S62° 24' 01"W	S78° 30' 53"W
20	45.000m		60.000m	3+377.74m	3+422.74m	16.1144 (g)		S42° 12' 08"W	S26° 05' 16"W
	179.569m	80.000m		3+422.74m	3+602.31m	128.6066 (g)	144.176m	S26° 05' 16"W	N77° 28' 52"E
	45.000m		60.000m	3+602.31m	3+647.31m	16.1144 (g)		N77° 28' 52"E	N61° 22' 00"E
22	45.000m		60.000m	3+838.39m	3+883.39m	16.1144 (g)		N61° 22' 00"E	N45° 15' 08"E
	32.037m	80.000m		3+883.39m	3+915.42m	22.9448 (g)	31.823m	N45° 15' 08"E	N22° 18' 27"E
	45.000m		60.000m	3+915.42m	3+960.42m	16.1144 (g)		N22° 18' 27"E	N6° 11' 35"E
24	45.000m		60.000m	4+050.61m	4+095.61m	16.1144 (g)		N6° 11' 35"E	N22° 18' 27"E
	53.255m	80.000m		4+095.61m	4+148.86m	38.1408 (g)	52.277m	N22° 18' 27"E	N60° 26' 54"E
	45.000m		60.000m	4+148.86m	4+193.86m	16.1144 (g)		N60° 26' 54"E	N76° 33' 46"E
28	49.000m		70.000m	4+800.53m	4+849.53m	14.0375 (g)		S83° 56' 17"E	N82° 01' 28"E
	163.320m	100.000m		4+849.53m	5+012.85m	93.5752 (g)	145.764m	N82° 01' 28"E	N11° 33' 03"W
	49.000m		70.000m	5+012.85m	5+061.85m	14.0375 (g)		N11° 33' 03"W	N25° 35' 17"W
32	45.000m		60.000m	5+790.22m	5+835.22m	16.1144 (g)		N53° 35' 45"W	N37° 28' 53"W
	190.392m	80.000m		5+835.22m	6+025.61m	136.3584 (g)	148.536m	N37° 28' 53"W	S81° 07' 23"E
	45.000m		60.000m	6+025.61m	6+070.61m	16.1144 (g)		S81° 07' 23"E	S65° 00' 31"E
38	45.000m		60.000m	6+912.03m	6+957.03m	16.1144 (g)		S48° 52' 30"E	S32° 45' 38"E
	63.782m	80.000m		6+957.03m	7+020.81m	45.6802 (g)	62.106m	S32° 45' 38"E	S12° 55' 11"W
	45.000m		60.000m	7+020.81m	7+065.81m	16.1144 (g)		S12° 55' 11"W	S29° 02' 03"W
40	45.000m		60.000m	7+160.11m	7+205.11m	16.1144 (g)		S29° 02' 03"W	S12° 55' 11"W
	33.695m	80.000m		7+205.11m	7+238.81m	24.1321 (g)	33.446m	S12° 55' 11"W	S11° 12' 45"E
	45.000m		60.000m	7+238.81m	7+283.81m	16.1144 (g)		S11° 12' 45"E	S27° 19' 37"E
42	45.000m		60.000m	7+369.97m	7+414.97m	16.1144 (g)		S27° 19' 37"E	S11° 12' 45"E
	128.558m	80.000m		7+414.97m	7+543.53m	92.0727 (g)	115.165m	S11° 12' 45"E	S80° 51' 37"W
	45.000m		60.000m	7+543.53m	7+588.53m	16.1144 (g)		S80° 51' 37"W	N83° 01' 31"W
44	45.000m		60.000m	7+898.93m	7+943.93m	16.1144 (g)		N83° 01' 31"W	S80° 51' 37"W
	161.166m	80.000m		7+943.93m	8+105.10m	115.4266 (g)	135.262m	S80° 51' 37"W	S34° 33' 59"E
	45.000m		60.000m	8+105.10m	8+150.10m	16.1144 (g)		S34° 33' 59"E	S50° 40' 51"E
48	45.000m		60.000m	8+564.37m	8+609.37m	16.1144 (g)		S11° 55' 23"E	S4° 11' 29"W
	80.827m	80.000m		8+609.37m	8+690.20m	57.8880 (g)	77.433m	S4° 11' 29"W	S62° 04' 46"W
	45.000m		60.000m	8+690.20m	8+735.20m	16.1144 (g)		S62° 04' 46"W	S78° 11' 38"W
52	45.000m		60.000m	9+258.96m	9+303.96m	16.1144 (g)		S87° 11' 32"W	S71° 04' 40"W
	165.997m	80.000m		9+303.96m	9+469.96m	118.8867 (g)	137.780m	S71° 04' 40"W	S47° 48' 32"E
	45.000m		60.000m	9+469.96m	9+514.96m	16.1144 (g)		S47° 48' 32"E	S63° 55' 24"E
54	49.000m		70.000m	9+778.76m	9+827.76m	14.0375 (g)		S63° 55' 24"E	S77° 57' 39"E
	52.662m	100.000m		9+827.76m	9+880.42m	30.1730 (g)	52.055m	S77° 57' 39"E	N71° 51' 58"E
	49.000m		70.000m	9+880.42m	9+929.42m	14.0375 (g)		N71° 51' 58"E	N57° 49' 43"E
58	46.000m		62.530m	10+418.71m	10+464.71m	15.5036 (g)		S89° 11' 00"E	N75° 18' 47"E
	54.189m	85.000m		10+464.71m	10+518.90m	36.5272 (g)	53.276m	N75° 18' 47"E	N38° 47' 09"E
	46.000m		62.530m	10+518.90m	10+564.90m	15.5036 (g)		N38° 47' 09"E	N23° 16' 57"E
60	45.000m		60.000m	10+940.11m	10+985.11m	16.1144 (g)		N23° 16' 57"E	N39° 23' 49"E
	157.024m	80.000m		10+985.11m	11+142.14m	112.4600 (g)	133.004m	N39° 23' 49"E	S28° 08' 35"E
	45.000m		60.000m	11+142.14m	11+187.14m	16.1144 (g)		S28° 08' 35"E	S12° 01' 43"E
62	45.000m		60.000m	11+677.61m	11+722.61m	16.1144 (g)		S12° 01' 43"E	S28° 08' 35"E
	175.972m	80.000m		11+722.61m	11+898.58m	126.0303 (g)	142.580m	S28° 08' 35"E	N25° 49' 35"E
	45.000m		60.000m	11+898.58m	11+943.58m	16.1144 (g)		N25° 49' 35"E	N9° 42' 43"E
68	45.000m		60.000m	12+960.14m	13+005.14m	16.1144 (g)		N48° 13' 53"W	N32° 07' 01"W
	174.443m	80.000m		13+005.14m	13+179.58m	124.9355 (g)	141.880m	N32° 07' 01"W	S87° 10' 53"E
	45.000m		60.000m	13+179.58m	13+224.58m	16.1144 (g)		S87° 10' 53"E	S71° 04' 01"E
80	45.000m		60.000m	14+490.40m	14+535.40m	16.1144 (g)		S80° 35' 40"E	S64° 28' 48"E
	168.161m	80.000m		14+535.40m	14+703.56m	120.4365 (g)	138.868m	S64° 28' 48"E	S55° 57' 23"W
	45.000m		60.000m	14+703.56m	14+748.56m	16.1144 (g)		S55° 57' 23"W	S72° 04' 15"W
88	46.000m		64.343m	15+653.19m	15+699.19m	14.6423 (g)		S43° 00' 11"W	S28° 21' 39"W
	95.509m	90.000m		15+699.19m	15+794.70m	60.8031 (g)	91.090m	S28° 21' 39"W	S32° 26' 32"E
	46.000m		64.343m	15+794.70m	15+840.70m	14.6423 (g)		S32° 26' 32"E	S47° 05' 04"E
90	45.000m		60.000m	16+004.99m	16+049.99m	16.1144 (g)		S47° 05' 04"E	S63° 11' 56"E
	141.846m	80.000m		16+049.99m	16+191.84m	101.5900 (g)	123.982m	S63° 11' 56"E	N15° 12' 40"E
	45.000m		60.000m	16+191.84m	16+236.84m	16.1144 (g)		N15° 12' 40"E	N0° 54' 12"W
102	45.000m		60.000m	18+479.54m	18+524.54m	16.1144 (g)		N72° 47' 15"W	N56° 40' 23"W
	77.013m	80.000m		18+524.54m	18+601.55m	55.1563 (g)	74.073m	N56° 40' 23"W	N1° 31' 01"W
	45.000m		60.000m	18+601.55m	18+646.55m	16.1144 (g)		N1° 31' 01"W	N14° 35' 51"E
104	45.000m		60.000m	18+845.48m	18+890.48m	16.1144 (g)		N14° 35' 51"E	N30° 42' 43"E
	77.447m	80.000m		18+890.48m	18+967.92m	55.4673 (g)	74.458m	N30° 42' 43"E	N86° 10' 45"E
	45.000m		60.000m	18+967.92m	19+012.92m	16.1144 (g)		N86° 10' 45"E	S77° 42' 23"E
106	46.000m		64.343m	19+164.32m	19+210.32m	14.6423 (g)		S77° 42' 23"E	N87° 39' 05"E
	54.430m	90.000m		19+210.32m	19+264.75m	34.6512 (g)	53.604m	N87° 39' 05"E	N53° 00' 01"E
	46.000m		64.343m	19+264.75m	19+310.75m	14.6423 (g)		N53° 00' 01"E	N38° 21' 29"E
110	45.000m		58.095m	19+680.95m	19+725.95m	17.1887 (g)		N75° 57' 45"E	S86° 50' 55"E
	182.871m	75.000m		19+725.95m	19+908.82m	139.7035 (g)	140.821m	S86° 50' 55"E	S52° 51' 17"W
	45.000m		58.095m	19+908.82m	19+953.82m	17.1887 (g)		S52° 51' 17"W	S70° 02' 37"W
114	46.000m		64.343m	20+352.90m	20+398.90m	14.6423 (g)		S24° 49' 19"W	S10° 10' 47"W
	115.247m	90.000m		20+398.90m	20+514.15m	73.3683 (g)	107.533m	S24° 49' 19"W	S63° 11' 19"E
	46.000m		64.343m	20+514.15m	20+560.15m	14.6423 (g)		S63° 11' 19"E	S77° 49' 51"E

ANEXO 4: CUADRO DE LONGITUDES DE SEGMENTOS DE LA SEGUNDA ALTERNATIVA

CUADRO DE TANGENTES DE LA TERCERA ALTERNATIVA

Nº	Longitud	Orientación	P.K. inicial	P.K. final
1	133.694m	S76° 15' 53"E	0+000.00m	0+133.69m
3	788.386m	N58° 32' 40"E	0+241.79m	1+030.18m
5	286.034m	N86° 25' 47"E	1+103.18m	1+389.22m
7	205.962m	N48° 47' 09"W	1+623.01m	1+828.97m
9	77.366m	N87° 48' 42"W	1+931.14m	2+008.51m
11	111.735m	N10° 22' 07"W	2+161.64m	2+273.38m
13	145.756m	N37° 32' 49"W	2+344.53m	2+490.29m
15	79.743m	S46° 49' 20"W	2+668.81m	2+748.55m
17	150.218m	N11° 59' 00"W	2+962.77m	3+112.99m
19	185.694m	N17° 04' 46"E	3+214.44m	3+400.13m
21	172.494m	S41° 29' 52"E	3+614.67m	3+787.17m
23	166.010m	S32° 01' 59"E	3+820.20m	3+986.21m
25	115.723m	S55° 25' 24"E	4+067.86m	4+183.59m
27	94.102m	S32° 28' 31"E	4+263.69m	4+357.79m
29	218.318m	S51° 35' 07"E	4+424.50m	4+642.82m
31	190.506m	S63° 32' 19"E	4+684.54m	4+875.05m
33	162.026m	S56° 00' 57"E	4+901.31m	5+063.33m
35	71.540m	S41° 11' 07"E	5+115.10m	5+186.64m
37	100.490m	S64° 06' 55"E	5+266.68m	5+367.17m
39	66.848m	S17° 36' 06"W	5+541.53m	5+608.38m
41	207.659m	S20° 48' 09"E	5+708.92m	5+916.58m
43	72.321m	S74° 42' 10"W	6+112.60m	6+184.92m
45	127.915m	S16° 06' 49"W	6+338.31m	6+466.22m
47	133.032m	S29° 54' 52"E	6+584.52m	6+717.56m
49	109.199m	S45° 30' 19"W	6+867.86m	6+977.06m
51	158.050m	S81° 42' 32"E	7+199.68m	7+357.73m
53	112.342m	N20° 45' 03"W	7+568.95m	7+681.29m
55	185.005m	N28° 50' 23"E	7+811.12m	7+996.12m
57	226.941m	N50° 12' 14"E	8+070.70m	8+297.64m
66	312.370m	S65° 31' 52"E	9+209.81m	9+522.18m
68	82.356m	N80° 37' 55"E	9+610.76m	9+693.12m
70	441.640m	N87° 50' 47"E	9+718.30m	10+159.94m
72	151.803m	S85° 27' 18"E	10+177.48m	10+329.28m
74	267.326m	S81° 46' 14"E	10+342.14m	10+609.47m
76	188.382m	S73° 18' 57"E	10+638.98m	10+827.36m
78	213.955m	S52° 23' 51"W	11+095.78m	11+309.73m
80	148.164m	S39° 02' 50"W	11+356.33m	11+504.50m
82	110.607m	S57° 00' 49"W	11+567.21m	11+677.82m

84	141.447m	S8° 54' 15"W	11+803.77m	11+945.21m
86	157.330m	S85° 33' 19"E	12+159.08m	12+316.41m
88	358.034m	N53° 49' 21"E	12+458.20m	12+816.24m
90	78.138m	N10° 38' 29"W	12+951.25m	13+029.38m
92	142.257m	N44° 34' 15"E	13+162.11m	13+304.37m
94	142.368m	N14° 51' 33"E	13+408.08m	13+550.45m
96	142.965m	N6° 01' 39"W	13+623.36m	13+766.32m
98	168.591m	N16° 26' 59"W	13+802.70m	13+971.29m

CUADRO DE CURVAS CIRCULARES DE LA TERCERA ALTERNATIVA

Nº	Longitud	Radio	P.K. inicial	P.K. final	Ángulo de increment	Longitud de cuerda	Orientación inicial	Orientación final
4	73.004m	150.000m	1+030.18m	1+103.18m	27.8854 (g)	72.285m	N58° 32' 40"E	N86° 25' 47"E
8	102.170m	150.000m	1+828.97m	1+931.14m	39.0259 (g)	100.206m	N48° 47' 09"W	N87° 48' 42"W
12	71.153m	150.000m	2+273.38m	2+344.53m	27.1784 (g)	70.488m	N10° 22' 07"W	N37° 32' 49"W
18	101.448m	200.000m	3+112.99m	3+214.44m	29.0626 (g)	100.363m	N11° 59' 00"W	N17° 04' 46"E
22	33.038m	200.000m	3+787.17m	3+820.20m	9.4648 (g)	33.001m	S41° 29' 52"E	S32° 01' 59"E
24	81.647m	200.000m	3+986.21m	4+067.86m	23.3903 (g)	81.082m	S32° 01' 59"E	S55° 25' 24"E
26	80.104m	200.000m	4+183.59m	4+263.69m	22.9481 (g)	79.570m	S55° 25' 24"E	S32° 28' 31"E
28	66.707m	200.000m	4+357.79m	4+424.50m	19.1102 (g)	66.398m	S32° 28' 31"E	S51° 35' 07"E
30	41.725m	200.000m	4+642.82m	4+684.54m	11.9534 (g)	41.650m	S51° 35' 07"E	S63° 32' 19"E
32	26.260m	200.000m	4+875.05m	4+901.31m	7.5228 (g)	26.241m	S63° 32' 19"E	S56° 00' 57"E
34	51.769m	200.000m	5+063.33m	5+115.10m	14.8306 (g)	51.624m	S56° 00' 57"E	S41° 11' 07"E
36	80.041m	200.000m	5+186.64m	5+266.68m	22.9299 (g)	79.507m	S41° 11' 07"E	S64° 06' 55"E
40	100.542m	150.000m	5+608.38m	5+708.92m	38.4043 (g)	98.671m	S17° 36' 06"W	S20° 48' 09"E
44	153.386m	150.000m	6+184.92m	6+338.31m	58.5891 (g)	146.790m	S74° 42' 10"W	S16° 06' 49"W
54	129.827m	150.000m	7+681.29m	7+811.12m	49.5904 (g)	125.813m	N20° 45' 03"W	N28° 50' 23"E
56	74.575m	200.000m	7+996.12m	8+070.70m	21.3642 (g)	74.144m	N28° 50' 23"E	N50° 12' 14"E
59	72.174m	113.084m	8+342.64m	8+414.81m	36.5682 (g)	70.955m	N34° 05' 22"E	N2° 28' 43"W
61	99.952m	178.198m	8+538.42m	8+638.37m	32.1376 (g)	98.647m	N29° 21' 02"W	N61° 29' 18"W
63	61.529m	88.037m	8+729.87m	8+791.39m	40.0439 (g)	60.284m	N46° 25' 28"W	N6° 22' 50"W
65	51.709m	150.000m	9+158.10m	9+209.81m	19.7512 (g)	51.453m	S85° 16' 56"E	S65° 31' 52"E
67	88.585m	150.000m	9+522.18m	9+610.76m	33.8370 (g)	87.303m	S65° 31' 52"E	N80° 37' 55"E
69	25.183m	200.000m	9+693.12m	9+718.30m	7.2145 (g)	25.167m	N80° 37' 55"E	N87° 50' 47"E
71	17.537m	150.000m	10+159.94m	10+177.48m	6.6987 (g)	17.527m	N87° 50' 47"E	S85° 27' 18"E
73	12.861m	200.000m	10+329.28m	10+342.14m	3.6844 (g)	12.859m	S85° 27' 18"E	S81° 46' 14"E
75	29.512m	200.000m	10+609.47m	10+638.98m	8.4545 (g)	29.485m	S81° 46' 14"E	S73° 18' 57"E
79	46.601m	200.000m	11+309.73m	11+356.33m	13.3501 (g)	46.495m	S52° 23' 51"W	S39° 02' 50"W
81	62.714m	200.000m	11+504.50m	11+567.21m	17.9662 (g)	62.457m	S39° 02' 50"W	S57° 00' 49"W
83	125.950m	150.000m	11+677.82m	11+803.77m	48.1095 (g)	122.283m	S57° 00' 49"W	S8° 54' 15"W
87	141.798m	200.000m	12+316.41m	12+458.20m	40.6221 (g)	138.847m	S85° 33' 19"E	N53° 49' 21"E
93	103.713m	200.000m	13+304.37m	13+408.08m	29.7115 (g)	102.555m	N44° 34' 15"E	N14° 51' 33"E
95	72.908m	200.000m	13+550.45m	13+623.36m	20.8866 (g)	72.505m	N14° 51' 33"E	N6° 01' 39"W
97	36.380m	200.000m	13+766.32m	13+802.70m	10.4222 (g)	36.330m	N6° 01' 39"W	N16° 26' 59"W

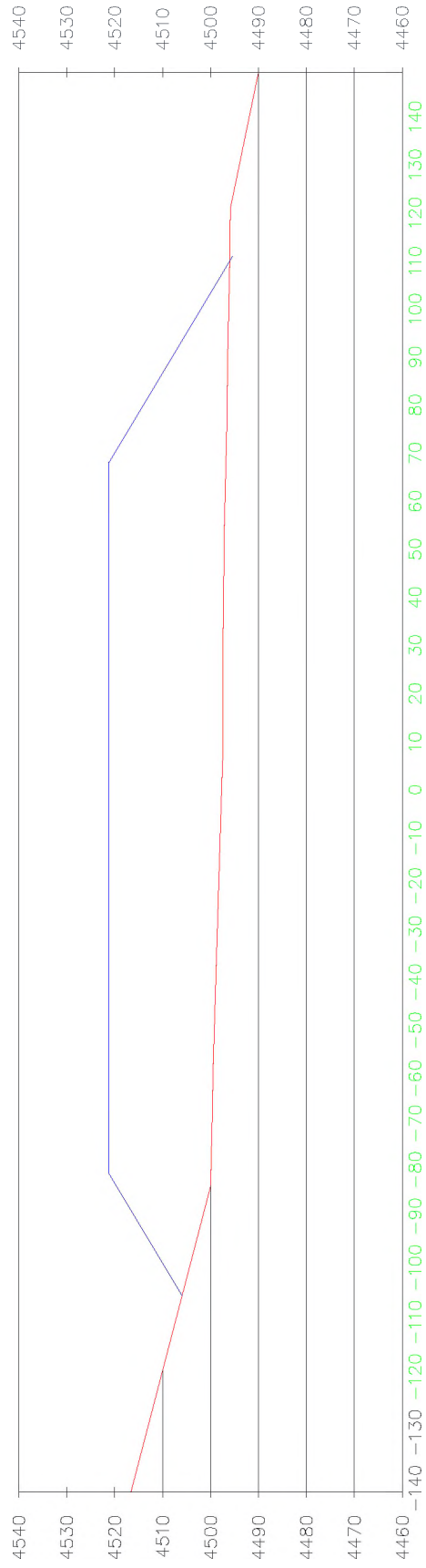
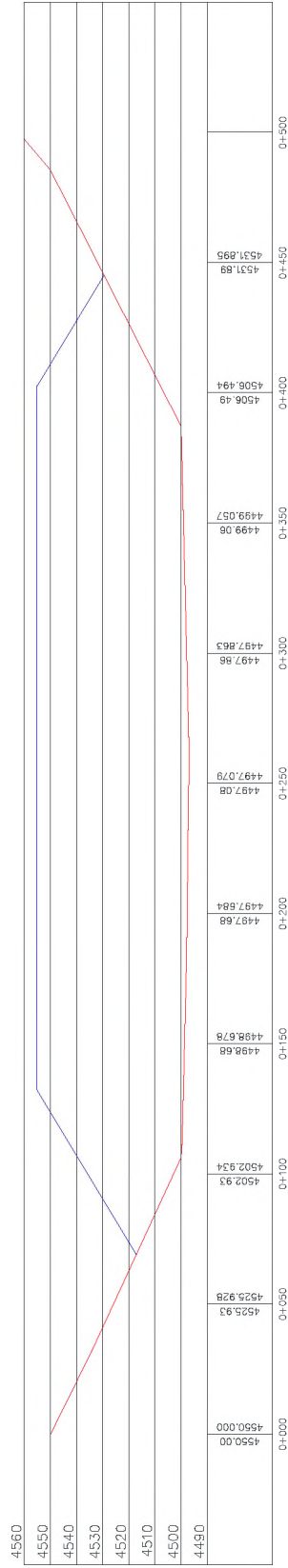
CUADRO DE CURVAS TRANSICION DE LA TERCERA ALTERNATIVA

Nº	Longitud	Radio	A	P.K. inicial	P.K. final	Ángulo de incremento	Longitud de cuerda	Orientación inicial	Orientación final
2	45.000m		60.000m	0+133.69m	0+178.69m	16.1144 (g)		S76° 15' 53"E	N87° 37' 15"E
	18.098m	80.000m		0+178.69m	0+196.79m	12.9619 (g)	18.060m	N87° 37' 15"E	N74° 39' 32"E
	45.000m		60.000m	0+196.79m	0+241.79m	16.1144 (g)		N74° 39' 32"E	N58° 32' 40"E
6	45.000m		60.000m	1+389.22m	1+434.22m	16.1144 (g)		N86° 25' 47"E	N70° 18' 55"E
	143.797m	80.000m		1+434.22m	1+578.01m	102.9868 (g)	125.206m	N70° 18' 55"E	N32° 40' 17"W
10	45.000m		60.000m	1+578.01m	1+623.01m	16.1144 (g)		N32° 40' 17"W	N48° 47' 09"W
	63.131m	80.000m		2+053.51m	2+053.51m	16.1144 (g)		N87° 48' 42"W	N71° 41' 50"W
14	45.000m		60.000m	2+053.51m	2+116.64m	45.2143 (g)	61.506m	N71° 41' 50"W	N26° 28' 59"W
	88.526m	80.000m		2+116.64m	2+161.64m	16.1144 (g)		N26° 28' 59"W	N10° 22' 07"W
16	45.000m		60.000m	2+490.29m	2+535.29m	16.1144 (g)		N37° 32' 49"W	N53° 39' 41"W
	88.526m	80.000m		2+535.29m	2+623.81m	63.4019 (g)	84.078m	N53° 39' 41"W	S62° 56' 12"W
20	45.000m		60.000m	2+623.81m	2+668.81m	16.1144 (g)		S62° 56' 12"W	S46° 49' 20"W
	45.000m		60.000m	2+748.55m	2+793.55m	16.1144 (g)		S46° 49' 20"W	S62° 56' 12"W
20	124.220m	80.000m		2+793.55m	2+917.77m	88.9657 (g)	112.111m	S62° 56' 12"W	N28° 05' 52"W
	45.000m		60.000m	2+917.77m	2+962.77m	16.1144 (g)		N28° 05' 52"W	N11° 59' 00"W
38	45.000m		60.000m	3+400.13m	3+445.13m	16.1144 (g)		N17° 04' 46"E	N33° 11' 38"E
	124.538m	80.000m		3+445.13m	3+569.67m	89.1940 (g)	112.338m	N33° 11' 38"E	S57° 36' 44"E
42	45.000m		60.000m	3+569.67m	3+614.67m	16.1144 (g)		S57° 36' 44"E	S41° 29' 52"E
	82.361m	90.000m		5+367.17m	5+413.17m	14.6423 (g)	79.517m	S64° 06' 55"E	S49° 28' 23"E
46	46.000m		64.343m	5+413.17m	5+495.53m	52.4324 (g)		S49° 28' 23"E	S2° 57' 34"W
	46.000m		64.343m	5+495.53m	5+541.53m	14.6423 (g)		S2° 57' 34"W	S17° 36' 06"W
46	46.000m		64.343m	5+916.58m	5+962.58m	14.6423 (g)		S20° 48' 09"E	S6° 09' 37"E
	104.020m	90.000m		5+962.58m	6+066.60m	66.2210 (g)	98.326m	S6° 09' 37"E	S60° 03' 38"W
48	46.000m		64.343m	6+066.60m	6+112.60m	14.6423 (g)		S60° 03' 38"W	S74° 42' 10"W
	46.000m		64.343m	6+466.22m	6+512.22m	14.6423 (g)		S16° 06' 49"W	S1° 28' 17"W
50	26.301m	90.000m		6+512.22m	6+538.52m	16.7436 (g)	26.207m	S1° 28' 17"W	S15° 16' 20"E
	46.000m		64.343m	6+538.52m	6+584.52m	14.6423 (g)		S15° 16' 20"E	S29° 54' 52"E
52	45.000m		60.000m	6+717.56m	6+762.56m	16.1144 (g)		S29° 54' 52"E	S13° 48' 00"E
	60.306m	80.000m		6+762.56m	6+822.86m	43.1907 (g)	58.888m	S13° 48' 00"E	S29° 23' 27"W
54	45.000m		60.000m	6+822.86m	6+867.86m	16.1144 (g)		S29° 23' 27"W	S45° 30' 19"W
	45.000m		60.000m	6+977.06m	7+022.06m	16.1144 (g)		S45° 30' 19"W	S29° 23' 27"W
54	132.624m	80.000m		7+022.06m	7+154.68m	94.9851 (g)	117.950m	S29° 23' 27"W	S65° 35' 40"E
	45.000m		60.000m	7+154.68m	7+199.68m	16.1144 (g)		S65° 35' 40"E	S81° 42' 32"E
56	45.000m		60.000m	7+357.73m	7+402.73m	16.1144 (g)		S81° 42' 32"E	N82° 10' 36"E
	121.214m	80.000m		7+402.73m	7+523.95m	86.8130 (g)	109.947m	N82° 10' 36"E	N4° 38' 11"W
58	45.000m		60.000m	7+523.95m	7+568.95m	16.1144 (g)		N4° 38' 11"W	N20° 45' 03"W
	45.000m		60.000m	8+297.64m	8+342.64m	16.1144 (g)		N50° 12' 14"E	N34° 05' 22"E
60	75.620m		92.474m	8+414.81m	8+490.43m	19.1571 (g)		N2° 28' 43"W	N21° 38' 09"W
	47.988m		92.474m	8+490.43m	8+538.42m	7.7148 (g)		N21° 38' 09"W	N29° 21' 02"W
62	30.254m		73.425m	8+638.37m	8+668.63m	4.8638 (g)		N61° 29' 18"W	N66° 21' 07"W
	61.239m		73.425m	8+668.63m	8+729.87m	19.9276 (g)		N66° 21' 07"W	N46° 25' 28"W
64	231.081m		142.631m	8+791.39m	9+022.48m	75.1960 (g)		N6° 22' 50"W	N68° 48' 55"E
	135.624m		142.631m	9+022.48m	9+158.10m	25.9023 (g)		N68° 48' 55"E	S85° 16' 56"E
77	49.000m		70.000m	10+827.36m	10+876.36m	14.0375 (g)		S73° 18' 57"E	S59° 16' 43"E
	170.411m	100.000m		10+876.36m	11+046.78m	97.6385 (g)	150.527m	S59° 16' 43"E	S38° 21' 36"W
85	49.000m		70.000m	11+046.78m	11+095.78m	14.0375 (g)		S38° 21' 36"W	S52° 23' 51"W
	49.000m		70.000m	11+945.21m	11+994.21m	14.0375 (g)		S8° 54' 15"W	S5° 08' 00"E
89	115.863m	100.000m		11+994.21m	12+110.08m	66.3845 (g)	109.490m	S5° 08' 00"E	S71° 31' 04"E
	49.000m		70.000m	12+110.08m	12+159.08m	14.0375 (g)		S71° 31' 04"E	S85° 33' 19"E
91	45.000m		60.000m	12+816.24m	12+861.24m	16.1144 (g)		N53° 49' 21"E	N37° 42' 29"E
	45.009m	80.000m		12+861.24m	12+906.25m	32.2350 (g)	44.417m	N37° 42' 29"E	N5° 28' 23"E
91	45.000m		60.000m	12+906.25m	12+951.25m	16.1144 (g)		N5° 28' 23"E	N10° 38' 29"W
	46.000m		64.343m	13+029.38m	13+075.38m	14.6423 (g)		N10° 38' 29"W	N4° 00' 03"E
	40.727m	90.000m		13+075.38m	13+116.11m	25.9276 (g)	40.380m	N4° 00' 03"E	N29° 55' 43"E
	46.000m		64.343m	13+116.11m	13+162.11m	14.6423 (g)		N29° 55' 43"E	N44° 34' 15"E

ANEXO 5: LOCALIZACIÓN DE BOTADEROS

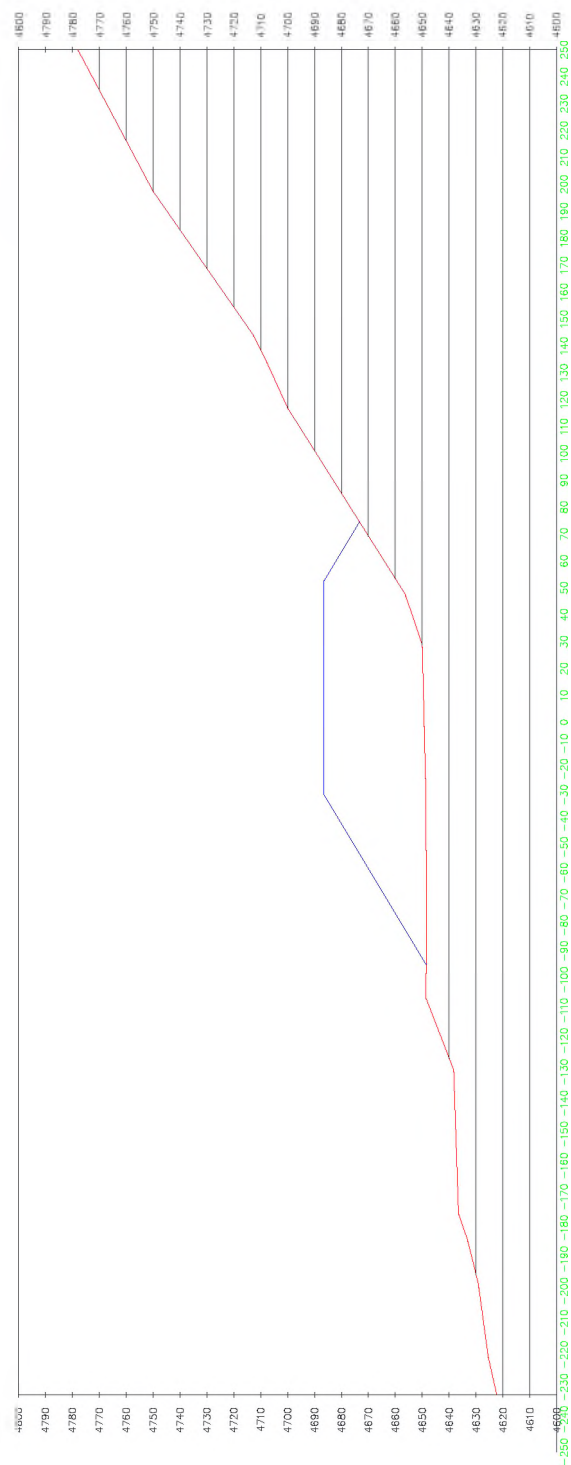
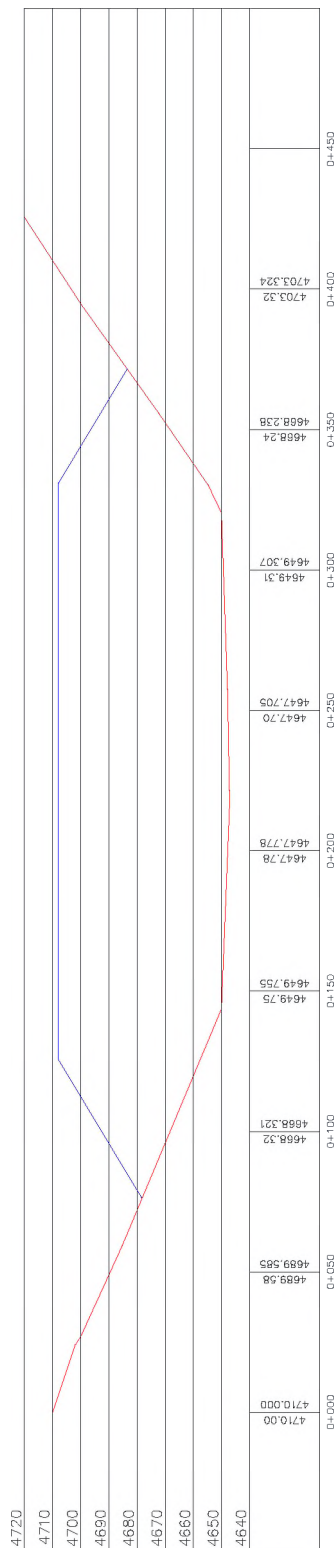
BOTADERO 1

A continuación se muestran las secciones del botadero 1. La línea roja representa la superficie del terreno y la línea azul el perfil del terreno después de la operación.



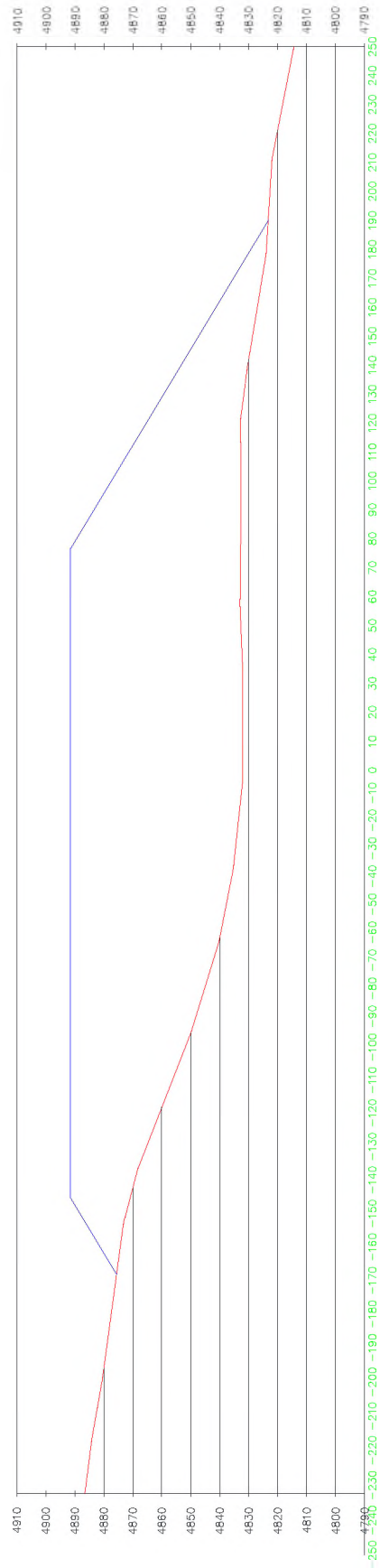
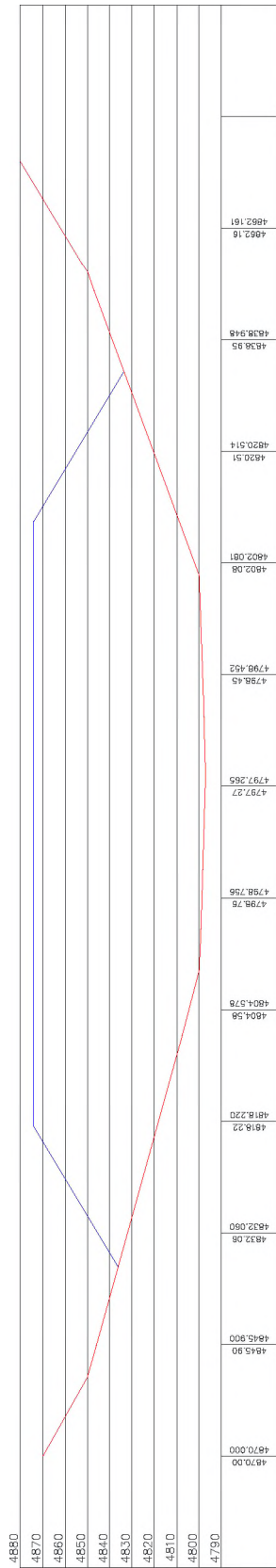
BOTADERO 2

A continuación se muestran las secciones del botadero 2. La línea roja representa la superficie del terreno y la línea azul el perfil del terreno después de la operación.



BOTADERO 3

A continuación se muestran las secciones del botadero 3. La línea roja representa la superficie del terreno y la línea azul el perfil del terreno después de la operación.



BOTADERO 4

A continuación se muestran las secciones del botadero 4. La línea roja representa la superficie del terreno y la línea azul el perfil del terreno después de la operación.

