MARCO SERAFIN REINA CASTRO
TOPOGRAFO PROFESIONAL



INFORME DE GEORREFERENCIACION

CALLE 2B Nº 32-22 LA CORALINA. CEL. 311-8929355-313-2927960 VILLAVICENCIO-META email
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1 - 0 5 0 0 0 1 0 0 1 6

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Villavicencio, Diciembre 2018.

Ingeniero:

FERNANDO ROJAS

Informe Georreferenciacion

1. MATERIALIZACIÓN Y GEORREFERENCIACIÓN

1. La materialización consistió en la construcción de dos mojones elaborados en concreto y con una placa en el centro, tal como se evidencia en las siguientes imágenes:



MOJON-GPS-1-CHARRASCAL
Fuente: Marco Serafín Reina



MOJON-GPS-2-CHARRASCAL
Fuente: Marco Serafín Reina

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2. Una vez materializado los punto se procede a instalar en cada mojón una GPS de precisión (Marca Navcon RTK 3010S), para La Geo-referenciación que consiste en ligar dos puntos de la red Magna Sirgas, para ello se realizó el amarre con el punto Base GPS-MT-T-4, localizada vía que conduce de Villacentro a Etell sector Octava etapa en Villavicencio, Departamento de Meta; este amarre Geodésico se realizó el día 21 de Julio de 2018, con una línea base de 5.80 kilómetros aproximadamente, con una duración de rastreo de una hora en cada uno de los mojones, a fin de cumplir con la regla de 15 minutos al iniciar por diez kilómetros y 5 minutos adicionales por cada kilómetro que separa la estación base de coordenadas conocidas al punto por determinar coordenadas nuevas, referida en el Manual de Procedimientos para levantamientos topográficos de Precisión elaborado por el grupo interno de trabajo control terrestre y clasificación de campo del IGAC.



Foto Mojón GPS-MT-T4



Foto Mojón Punto Base

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2. POLIGONACIÓN

El levantamiento se inició con orientación acimutal a partir de los dos puntos materializados y geo referenciados (**GPS 1-CHARR y GPS 2-CHARR),** los cuales fueron el punto de partida de la poligonal cerrada con contra acimut.

Los deltas que componen la poligonal cerrada, se ubicaron estratégicamente en el predio, los cuales tienen fácil acceso tratando de cubrir la mayor parte del área, para después radiar los detalles formando poligonales auxiliares amarradas a la poligonal principal; se tomaron detalles de cercas, calles, construcciones, postas, entre otros.

Es necesario resaltar que la radiación se calculó a partir de los deltas ajustados.

El equipo utilizado fue una estación total **SOKISHA,** el cual tiene una aproximación de 5 segundos; La poligonal realizada presenta 14 números de deltas y reporta un cierre de 1:10 000, lo cual indica que se cumplió con las especificaciones técnicas indicadas en el manual de levantamientos topográficos planimétrico.

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3. LOCALIZACION

La línea del PROYECTO VIAL, se encuentra ubicadas en los predios Finca Santa Ana, Rancho Luna y vía Caracoli, localizada en la Ciudad de Villavicencio a 6.8 Kilómetros entre Ciudad Porfía y el Caracoli; con las siguientes coordenadas:

LATITUD: N 04° 05' 14"
LONGITUD W 73° 39' 25"
ALTITUD: 423.00 m

.

Presenta una topografía casi plana, no se encuentra en zona de alto riesgo por Ríos, Caños y Erosiones.

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REGISTRO FOTOGRAFICO



MOJON-GPS-1-CHARR **MOJON-GPS-1-CHARR**





MOJON-GPS-2-CHARR **MOJON-GPS-2-CHARR**

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EQUIPO EMPLEADO



1. ESTACION TOPOGRAFICA TOPCON GTS-300
2. DOS JUEGOS DE PRISMAS
3. TRIPODES
4. GPS NAVCON RTK 3010S
5. CARRO

PERSONAL EMPLEADO

1. TOPOGRAFO
2. DOS CADENEROS

INFORMACION A ENTREGAR

1. Plano general de cada uno de los predios con sus respectivos colindantes, distancias y coordenadas.
2. Anexos del cálculo de la georeferenciacion.
3. Medio magnético con la información mencionada.

Atentamente:

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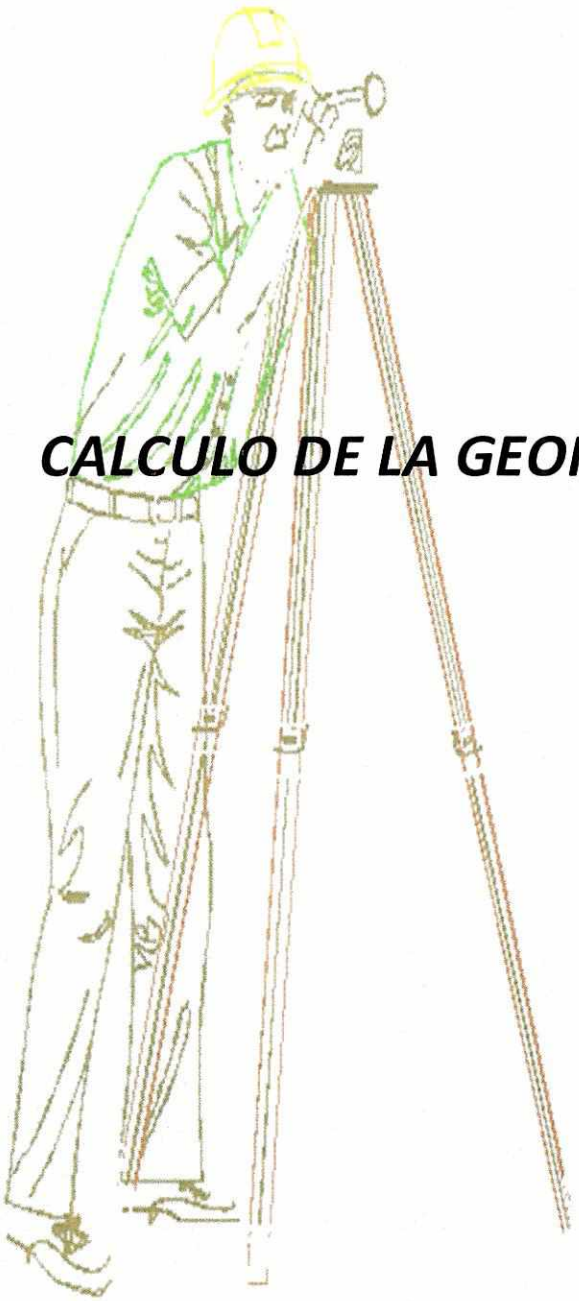
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CALCULO DE LA GEORREFERENCIACION

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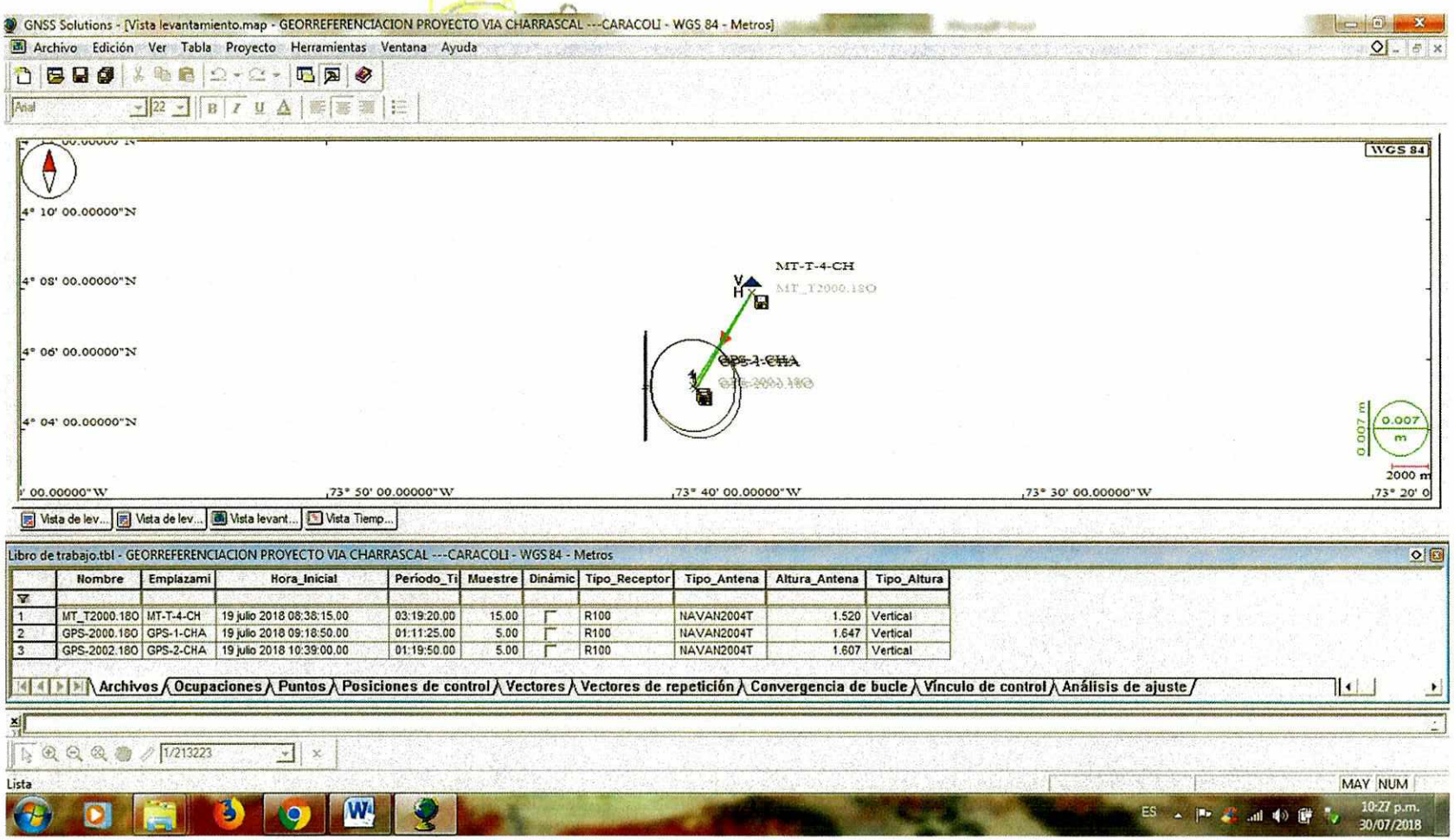
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ARCHIVOS



	Nombre	Emplazami	Hora_Inicial	Período_Ti	Muestre	Dinámic	Tipo_Receptor	Tipo_Antena	Altura_Antena	Tipo_Altura
1	MT_T2000.18O	MT-T-4-CH	19 julio 2018 08:38:15.00	03:19:20.00	15.00	☐	R100	NAVAN2004T	1.520	Vertical
2	GPS-2000.18O	GPS-1-CHA	19 julio 2018 09:18:50.00	01:11:25.00	5.00	☐	R100	NAVAN2004T	1.647	Vertical
3	GPS-2002.18O	GPS-2-CHA	19 julio 2018 10:39:00.00	01:19:50.00	5.00	☐	R100	NAVAN2004T	1.607	Vertical

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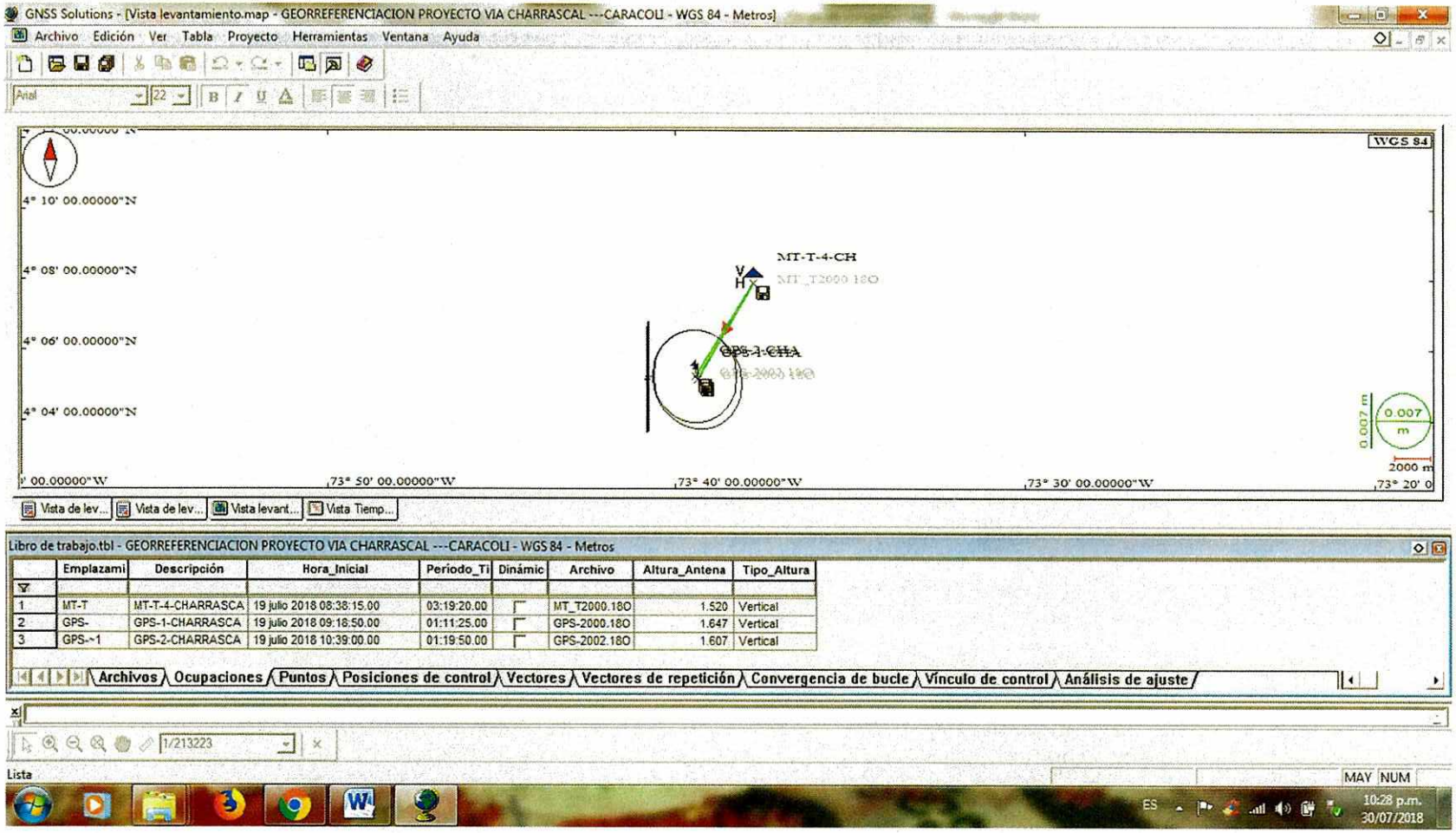
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127

OCUPACIONES



	Emplazami	Descripción	Hora_Inicial	Periodo_Ti	Dinámic	Archivo	Altura_Antena	Tipo_Altura
1	MT-T	MT-T-4-CHARRASCA	19 julio 2018 08:38:15.00	03:19:20.00	☐	MT_T2000.18O	1.520	Vertical
2	GPS-	GPS-1-CHARRASCA	19 julio 2018 09:18:50.00	01:11:25.00	☐	GPS-2000.18O	1.647	Vertical
3	GPS-~1	GPS-2-CHARRASCA	19 julio 2018 10:39:00.00	01:19:50.00	☐	GPS-2002.18O	1.607	Vertical

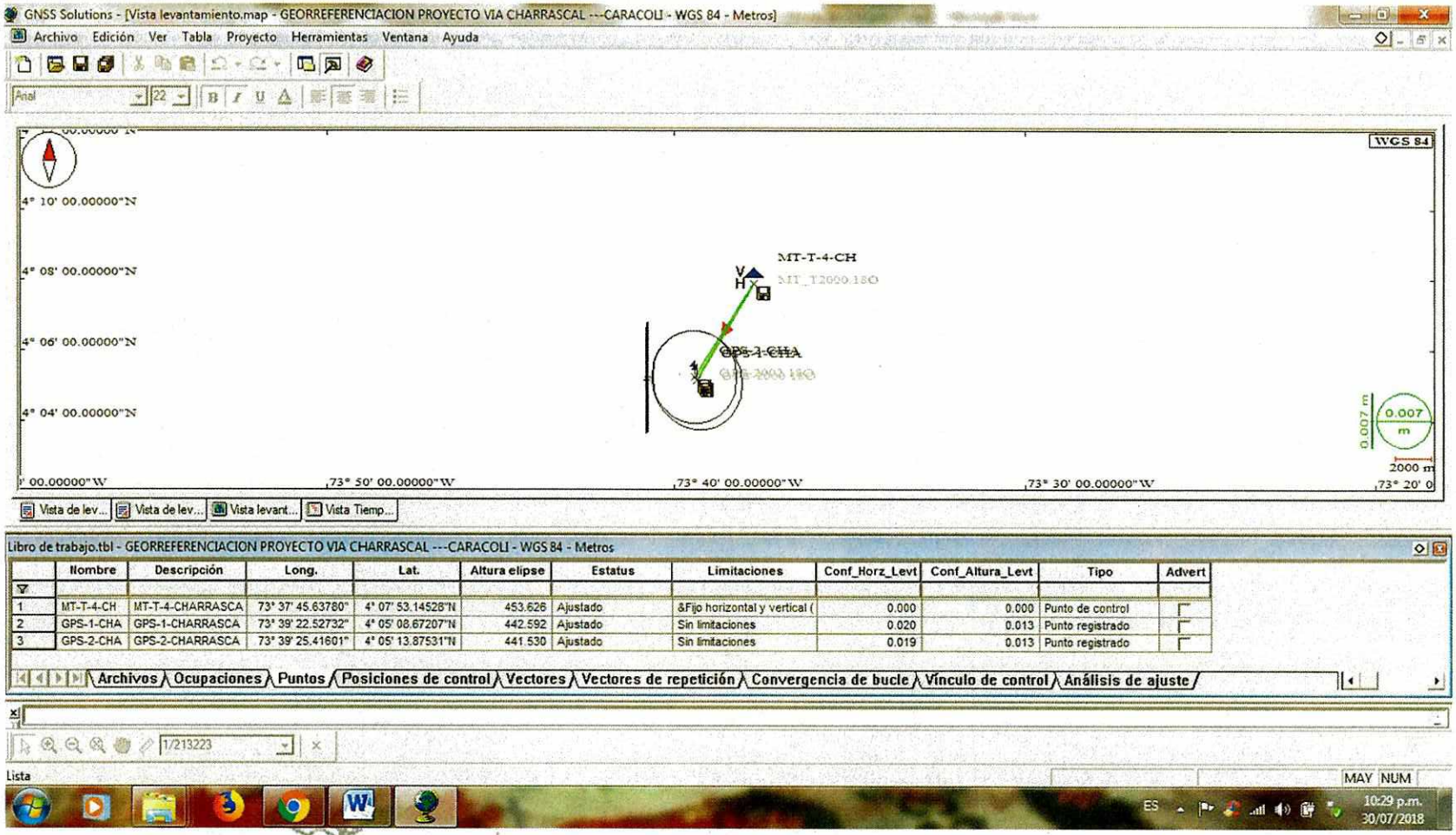
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PUNTOS



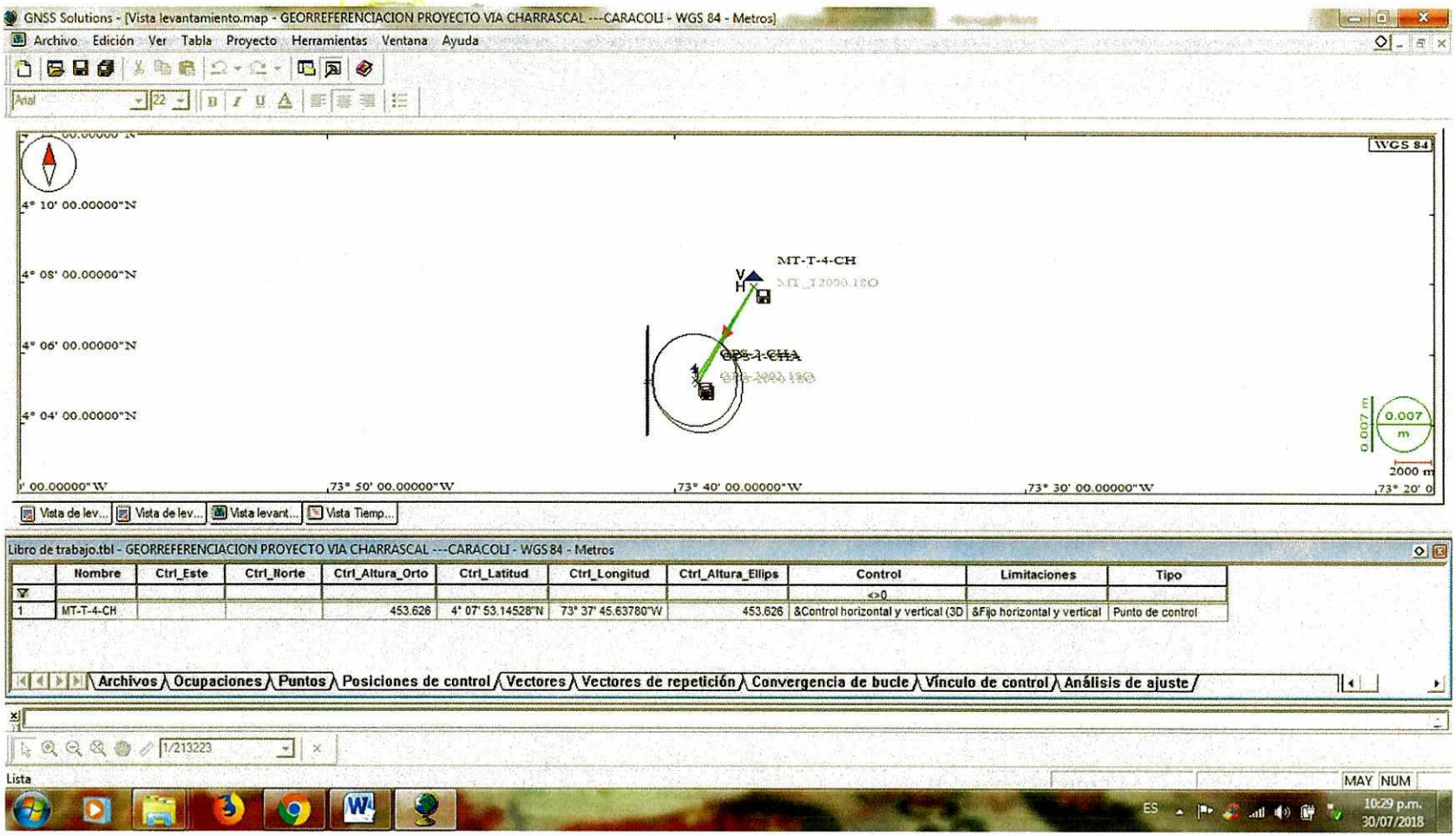
	Nombre	Descripción	Long.	Lat.	Altura elipse	Estatus	Limitaciones	Conf_Horz_Levt	Conf_Altura_Levt	Tipo	Advert
1	MT-T-4-CH	MT-T-4-CHARRASCA	73° 37' 45.63780"	4° 07' 53.14528"N	453.626	Ajustado	&Fijo horizontal y vertical (	0.000	0.000	Punto de control	
2	GPS-1-CHA	GPS-1-CHARRASCA	73° 39' 22.52732"	4° 05' 08.67207"N	442.592	Ajustado	Sin limitaciones	0.020	0.013	Punto registrado	
3	GPS-2-CHA	GPS-2-CHARRASCA	73° 39' 25.41601"	4° 05' 13.87531"N	441.530	Ajustado	Sin limitaciones	0.019	0.013	Punto registrado	

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POSICIONES DE CONTROL

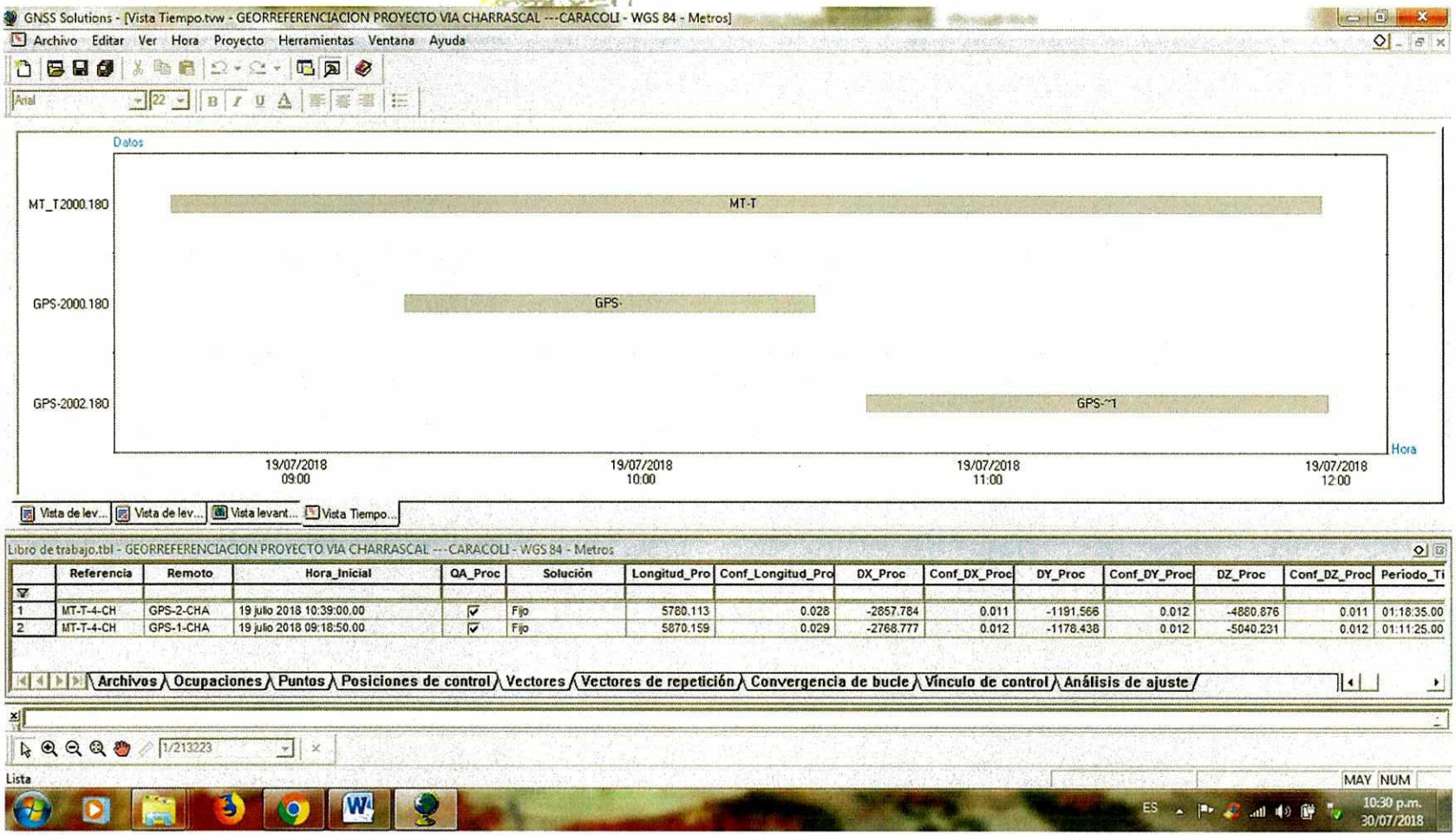


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VECTORES



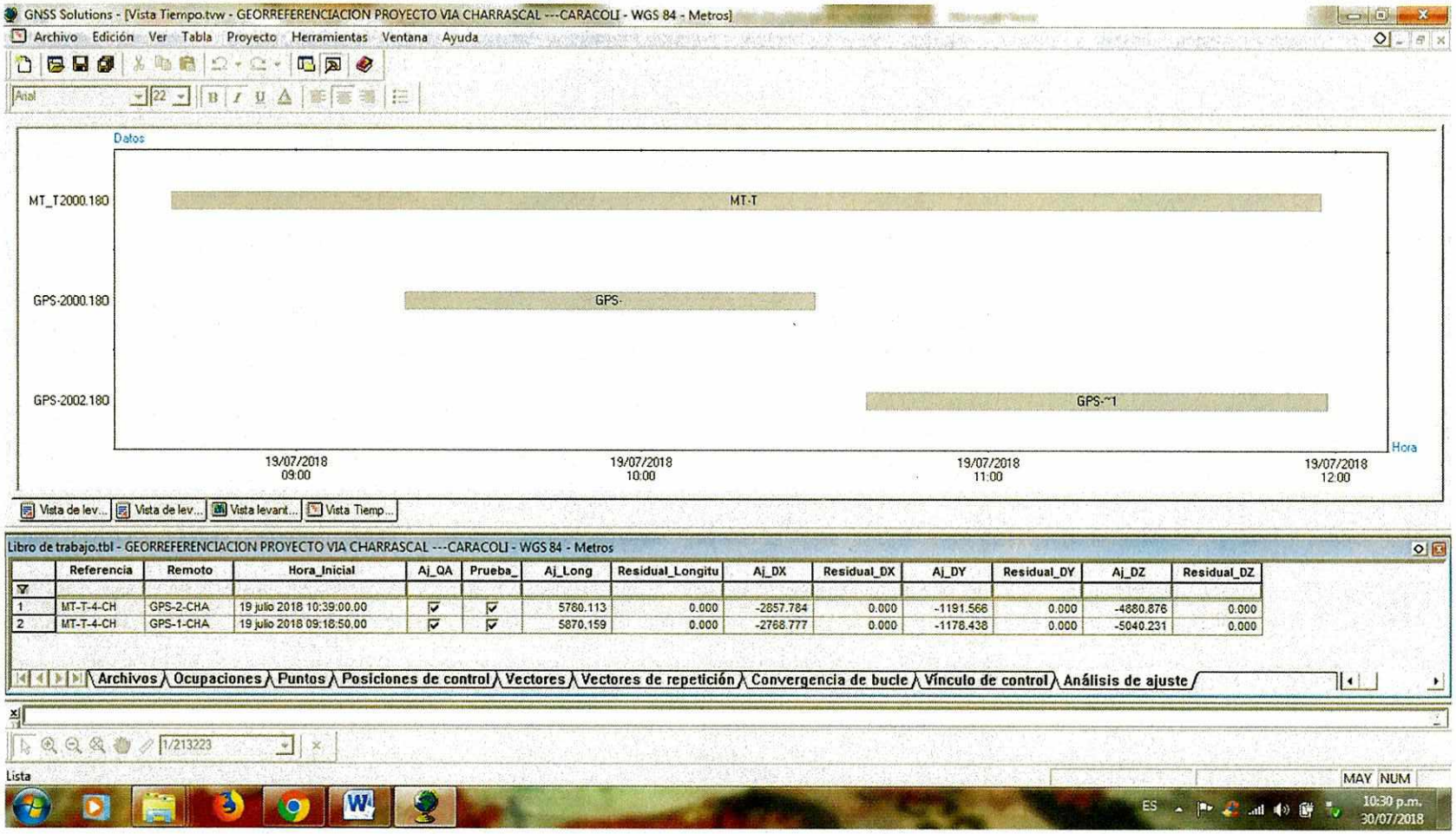
	Referencia	Remoto	Hora_Inicial	QA_Proc	Solución	Longitud_Pro	Conf_Longitud_Pro	DX_Proc	Conf_DX_Proc	DY_Proc	Conf_DY_Proc	DZ_Proc	Conf_DZ_Proc	Periodo_Ti
1	MT-T-4-CH	GPS-2-CHA	19 julio 2018 10:39:00.00	☑	Fijo	5780.113	0.028	-2857.784	0.011	-1191.566	0.012	-4880.676	0.011	01:18:35.00
2	MT-T-4-CH	GPS-1-CHA	19 julio 2018 09:18:50.00	☑	Fijo	5870.159	0.029	-2768.777	0.012	-1178.438	0.012	-5040.231	0.012	01:11:25.00

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ANALISIS DEL AJUSTE



	Referencia	Remoto	Hora_Inicial	Aj_QA	Prueba_	Aj_Long	Residual_Longitu	Aj_DX	Residual_DX	Aj_DY	Residual_DY	Aj_DZ	Residual_DZ
1	MT-T-4-CH	GPS-2-CHA	19 julio 2018 10:39:00.00	☑	☑	5760.113	0.000	-2857.784	0.000	-1191.566	0.000	-4880.876	0.000
2	MT-T-4-CH	GPS-1-CHA	19 julio 2018 09:16:50.00	☑	☑	5870.159	0.000	-2768.777	0.000	-1178.438	0.000	-5040.231	0.000

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VISTA DEL LEVANTAMIENTO

25 JUN. 2019
19-0300010016

04/02/2018 02:19:39 p.m.

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www.spectraprecision.com

Vista de levantamiento

GNSS Solutions
(C) 2012 Trimble Navigation Limited. All rights reserved. Spectra Precision is a Division of Trimble Navigation Limited.
30/07/2018 09:24:54 p.m.
www.spectraprecision.com

Nombre del proyecto: GEORREFERENCIACION PROYECTO VIA CHARRASCAL ---CARACOLI
Sistema de referencia espacial: WGS 84
Zona horaria: (UTC-05:00) Bogotá, Lima, Quito, Rio Branco
Unidades lineales: Metros

Resumen del sistema de coordenadas

Sistema de coordenadas

Nombre:	WGS 84
Tipo:	Geográfico
Nombre de la unidad:	Radianes
Radianes por unidad:	1
Datum vertical:	Elipsoide
Unidad vertical :	Metros
Metros por unidad:	1

Datum

Nombre:	WGS 84
Nombre del elipsoide:	WGS 84
Semieje mayor:	6378137.000 m
Inversa aplastamiento:	298.257223563
DX a WGS84:	0.0000 m
DY a WGS84:	0.0000 m
DY a WGS84:	0.0000 m
RX a WGS84:	-0.000000"
RY a WGS84:	-0.000000"
RZ a WGS84:	-0.000000"
Ppm a WGS84:	0.000000000000

Puntos de control

Nombre de control	Componentes		95% Error	Estado Error
MT-T-4-CH	Long.	73° 37' 45.63780"W	0.000	FIJO
	Lat.	4° 07' 53.14528"N	0.000	FIJO
	Altura elipse	453.626	0.000	FIJO
	Descripción	*MT-T-4-CHARRASCAL*		

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Puntos registrados

Nombre		Componentes	95% Error	Estado
GPS-1-CHA	Long.	73° 39' 22.52732"W	0.011	Ajustado
	Lat.	4° 05' 08.67207"N	0.012	Ajustado
	Altura elipse	442.592	0.013	Ajustado
	Descripción	*GPS-1-CHARRASCAL*		
GPS-2-CHA	Long.	73° 39' 25.41601"W	0.010	Ajustado
	Lat.	4° 05' 13.87531"N	0.011	Ajustado
	Altura elipse	441.530	0.013	Ajustado
	Descripción	*GPS-2-CHARRASCAL*		

Archivos

Nombre	Hora inicial	Muestreo	Generaciones	Tamaño (KB)	Tipo
MT_T2000.18O	18/07/19 08:38:15	15	783	543	L1/L2 GPS
GPS-2000.18O	18/07/19 09:18:50	5	858	631	L1/L2 GPS
GPS-2002.18O	18/07/19 10:39:00	5	959	649	L1/L2 GPS

Ocupaciones

Emplazamiento	Hora inicial	Período de tiempo	Tipo	Archivo
MT-T	19 Julio 2018 08:38:15.00	03:19:20.00	Static	MT_T2000.18O
GPS-2000.18O	19 julio 2018 09:18:50.00	01:11:25.00	Static	GPS-
GPS--~1 2002.18O	19 julio 2018 10:39:00.00	01:19:50.00	Static	GPS-

Procesos

Referencia	Archivo de referencia	Remoto	Archivo del receptor remoto	Modo	NUM
MT-T-4-CH	MT_T2000.18O	GPS-2-CHA	GPS-2002.18O	Estático	1
MT-T-4-CH	MT_T2000.18O	GPS-1-CHA	GPS-2000.18O	Estático	2

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Vectores procesados

Identificador de vector	Vector Longitud	95% Error		Vector Componentes	95% Error	SV	PDOP	QA
Solución								
MT-T-4-CH - GPS-1-CHA	5870.159	0.029	X	-2768.777	0.012	10	1.8	
Fijo								
18/07/19 09:18:50.00			Y	-1178.438	0.012			
+01:11:25.00			Z	-5040.231	0.012			
MT-T-4-CH - GPS-2-CHA	5780.113	0.028	X	-2857.784	0.011	10	1.8	
Fijo								
18/07/19 10:39:00.00			Y	-1191.566	0.012			
+01:18:35.00			Z	-4880.876	0.011			

Vectores ajustados

Identificador de vector	Vector Longitud	Longitud Resid.		Vector Componentes	Resid.	Tau Prueba	QA
MT-T-4-CH - GPS-1-CHA	5870.159	0.000	X	-2768.777	0.000		
18/07/19 09:18:50.00			Y	-1178.438	0.000		
			Z	-5040.231	0.000		
MT-T-4-CH - GPS-2-CHA	5780.113	0.000	X	-2857.784	0.000		
18/07/19 10:39:00.00			Y	-1191.566	0.000		
			Z	-4880.876	0.000		

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CUADRO FINAL DE COORDENADAS MAGNAS SIRGAS WGS84

CUADRO FINAL DE CORDENADAS EN EL SISTEMA MAGNA SIRGAS WGS84 PARA PROYECTO VIA CHARRASCAL EL CARACOLI EPOCA 1995.4						
GEOGRAFICAS				COORDENADAS PLANAS GAUSS KRUGER ORIGEN ESTE		
ID	LATITUD	LONGITUD	ALTURA ELIP	NORTE	ESTE	HMSNM geocol 2004
GPS-MT-T-4	04°07'53,14528"N	73°37'45,63780"W	453.626	948619,295	1049761,126	437,600
GPS 1-CHARRASCAL	04°05'08,67207"N	73°39'22,52732"W	442.592	943565,457	1046775,409	425,566
GPS 2-UNIV.	04°05'13,87531"N	73°39'25,41601"W	441.530	943725,241	1046686,224	424,504

VELOCIDADES DE MOVIMIENTO POR AÑO			
PUNTO	(X)	(Y)	(Z)
GPS-MT-T-4	0,0014	0,0005	0,0116
GPS 1-UNIV.	0,0110	0,0120	0,0130
GPS 2-UNIV.	0,0100	0,0110	0,0130

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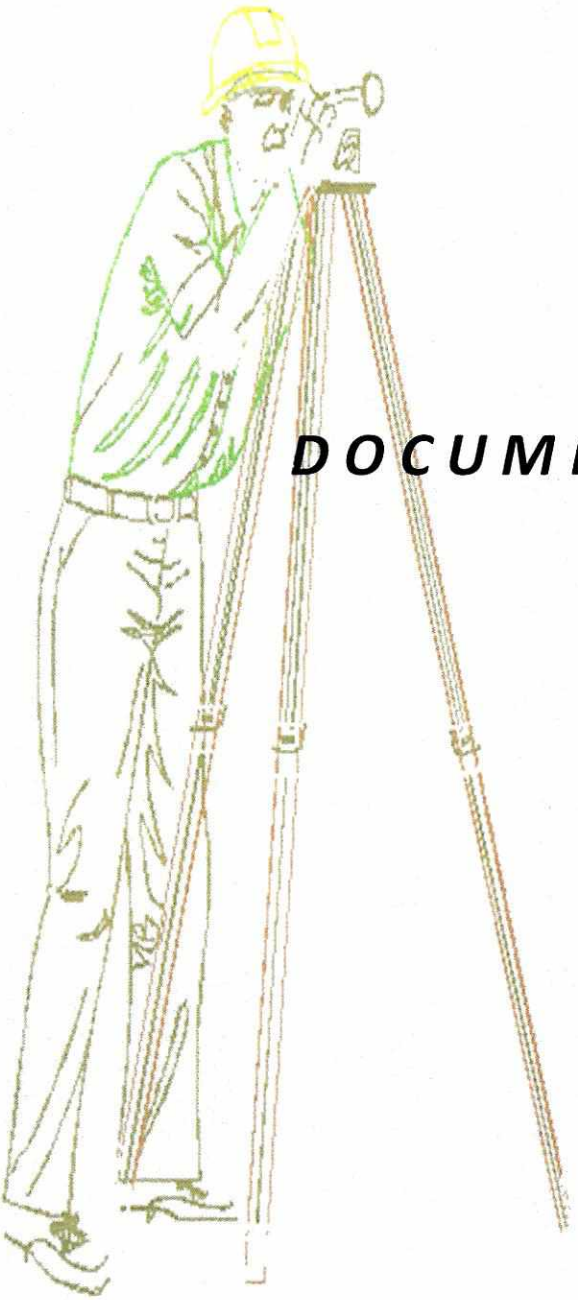
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25 JUN 2019

136

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DOCUMENTOS

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TOPOGRAFIA PLAN PARCIAL BOSQUES DE SANT

1,943565.457,1046775.409,425.566,GPS-1
2,943725.241,1046686.224,424.504,GPS-2
3,943638.342,1047186.799,422.531,PI-6
4,943695.167,1047345.630,420.904,PI-7
5,943954.636,1048070.880,414.277,PI-8
6,943192.461,1048324.952,417.250,PI-12
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9,943497.715,1046806.212,425.070,PI-1
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11,943523.444,1046843.072,425.336,TOPO
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13,943535.799,1046845.662,425.013,TOPO
14,943494.856,1046854.427,425.131,TOPO
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27,943530.176,1046936.272,424.344,TOPO
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35,943546.019,1046999.253,423.949,TOPO
36,943584.304,1046994.267,423.946,TOPO
37,943555.306,1046999.122,424.107,TOPO
38,943573.351,1046996.786,423.976,TOPO
39,943568.903,1046998.877,423.982,EJE
40,943578.554,1047024.891,423.704,EJE
41,943594.116,1047020.754,423.754,TOPO
42,943575.240,1047029.110,423.876,TOPO
43,943606.025,1047020.487,423.646,TOPO
44,943565.163,1047034.788,423.680,TOPO
45,943613.558,1047046.916,423.453,TOPO
46,943577.501,1047060.529,423.624,TOPO
47,943601.552,1047051.795,423.365,TOPO
48,943587.432,1047057.721,423.525,TOPO
49,943590.279,1047056.742,423.531,EJE
50,943601.236,1047086.399,423.202,EJE
51,943613.829,1047085.729,423.178,TOPO
52,943591.318,1047090.208,423.266,TOPO
53,943623.245,1047084.697,423.243,TOPO
54,943579.720,1047093.192,423.291,TOPO
55,943630.716,1047111.746,423.065,TOPO
56,943587.692,1047130.016,423.000,TOPO
57,943621.039,1047118.001,422.972,TOPO
58,943597.524,1047127.016,422.927,TOPO
59,943614.584,1047122.311,422.839,EJE
60,943628.140,1047158.927,422.641,EJE
61,943594.216,1047176.980,422.418,TOPO
62,943645.920,1047158.131,422.576,TOPO
63,943620.198,1047167.350,422.459,TOPO
64,943656.997,1047159.688,422.558,TOPO

Marco Serafin Reina Castro-TOPOGRAFO

19-050001001 6

25 JUN 2019

TOPOGRAFIA PLAN PARCIAL BOSQUES DE SANT

65,943610.393,1047171.749,422.396,TOPO
66,943610.185,1047171.864,422.414,TOPO
67,943607.813,1047204.182,422.247,TOPO
68,943618.642,1047203.121,422.184,TOPO
70,943665.228,1047192.602,422.190,TOPO
71,943654.002,1047190.062,422.301,TOPO
72,943643.214,1047187.778,422.423,TOPO
73,943638.334,1047186.829,422.531,PI6-1
74,943648.587,1047182.490,422.221,TOPO
75,943659.843,1047179.491,422.171,TOPO
76,943629.580,1047189.548,422.252,TOPO
77,943620.713,1047193.588,422.368,TOPO
78,943642.847,1047206.451,422.361,CERCA
79,943633.079,1047208.999,422.162,TOPO
80,943654.540,1047203.259,422.334,CERCA
81,943623.246,1047211.628,422.133,TOPO
82,943666.298,1047199.728,422.262,CERCA
83,943623.316,1047241.534,421.874,TOPO
84,943633.096,1047240.409,421.919,TOPO
85,943678.493,1047229.333,421.903,TOPO
86,943644.842,1047239.552,421.875,TOPO
87,943666.768,1047233.484,421.806,TOPO
88,943646.865,1047240.118,421.834,TOPO
89,943654.884,1047237.702,421.803,TOPO
90,943652.015,1047269.104,421.393,TOPO
91,943662.821,1047268.196,421.373,TOPO
92,943641.210,1047271.382,421.460,TOPO
93,943675.772,1047264.690,421.479,TOPO
94,943631.358,1047273.727,421.549,TOPO
95,943689.265,1047260.519,421.473,TOPO
96,943627.801,1047305.546,421.274,TOPO
97,943693.795,1047295.046,421.586,TOPO
98,943638.404,1047305.066,421.175,TOPO
99,943681.153,1047297.802,421.356,TOPO
100,943657.349,1047303.454,421.167,TOPO
101,943669.043,1047300.364,421.169,TOPO
102,943672.098,1047340.854,420.944,TOPO
103,943686.030,1047340.682,421.188,TOPO
104,943700.380,1047337.558,420.887,TOPO
105,943666.036,1047353.253,420.904,PI-71
106,943666.079,1047353.265,420.883,TOPO
107,943695.168,1047345.702,420.900,TOPO-7
108,943520.074,1046913.127,424.911,PZ-LLUV
109,943544.259,1047030.321,423.607,PZ-LLUV
110,943713.554,1047336.394,421.075,TOPO
111,943725.292,1047364.235,420.547,TOPO
112,943715.689,1047370.871,420.599,TOPO
113,943705.904,1047375.798,420.514,EJE
114,943696.011,1047379.083,420.649,TOPO
115,943686.394,1047382.091,420.653,TOPO
116,943690.431,1047412.309,420.349,TOPO
117,943701.459,1047409.818,420.494,TOPO
118,943717.301,1047407.143,420.342,TOPO
119,943726.826,1047403.431,420.431,TOPO
120,943736.787,1047401.701,420.489,TOPO
121,943728.319,1047436.394,420.279,TOPO
122,943748.721,1047429.938,420.348,TOPO
123,943739.254,1047433.517,420.315,TOPO
124,943715.929,1047440.416,420.324,TOPO
125,943703.893,1047444.736,420.268,TOPO
126,943738.688,1047466.443,420.395,TOPO
127,943714.899,1047474.317,419.663,TOPO
128,943747.699,1047462.045,420.375,TOPO

Marco Serafin Reina Castro-TOPOGRAFO

19-05000100

25 JUN 2019

TOPOGRAFIA PLAN PARCIAL BOSQUES DE SANT

129,943726.715,1047470.197,420.098,TOPO
130,943756.943,1047458.996,420.236,TOPO
131,943740.629,1047496.172,419.581,TOPO
132,943769.077,1047485.815,420.374,TOPO
133,943728.467,1047501.353,419.519,TOPO
134,943758.759,1047489.957,419.474,TOPO
135,943748.866,1047495.722,419.131,TOPO
136,943726.449,1047500.409,419.223,TOPO
137,943758.639,1047522.919,418.650,TOPO
138,943725.560,1047499.699,418.791,TOPO
139,943767.326,1047519.555,418.449,TOPO
140,943725.559,1047499.656,418.803,TOPO
141,943767.274,1047519.500,418.436,TOPO
142,943735.048,1047525.796,418.479,TOPO
143,943776.770,1047518.798,419.574,TOPO
144,943749.600,1047524.313,418.713,TOPO
145,943794.596,1047546.384,420.132,TOPO
146,943784.540,1047549.796,420.141,TOPO-CERC
147,943770.850,1047554.342,420.278,TOPO-CERC
148,943780.960,1047581.545,419.671,TOPO-CERC
149,943760.112,1047558.155,420.052,TOPO-CERC
150,943750.080,1047561.571,419.072,TOPO-CERC
151,943791.479,1047580.630,419.676,TOPO-CERC
152,943801.121,1047580.084,419.611,TOPO-CERC
153,943760.442,1047590.960,419.320,TOPO
154,943818.111,1047605.643,419.259,TOPO
155,943774.532,1047586.142,419.698,TOPO
156,943774.543,1047586.097,419.698,TOPO
157,943808.117,1047609.079,419.354,TOPO
158,943792.391,1047615.646,419.297,TOPO
159,943802.960,1047646.943,418.865,DELT-AUX-8
160,943784.570,1047618.686,419.170,TOPO
161,943773.357,1047620.564,419.150,TOPO
162,943772.848,1047641.912,418.908,TOPO
163,943787.156,1047644.320,418.995,TOPO
164,943807.486,1047660.525,416.947,TOPO
165,943794.208,1047663.007,416.984,TOPO
166,943781.827,1047664.313,416.864,TOPO
167,943782.456,1047682.077,417.791,TOPO
168,943791.466,1047682.237,417.992,TOPO
169,943814.977,1047681.320,417.983,TOPO
170,943825.300,1047683.340,417.811,TOPO
171,943834.687,1047686.110,417.402,TOPO
172,943819.695,1047667.916,416.849,TOPO
173,943826.708,1047667.892,416.913,TOPO
174,943827.456,1047715.939,418.114,TOPO
175,943819.028,1047720.394,418.105,TOPO
176,943838.596,1047715.228,417.688,TOPO
177,943810.009,1047726.088,417.786,TOPO
178,943848.658,1047713.945,416.912,TOPO
179,943816.853,1047757.790,417.959,TOPO
180,943828.382,1047754.596,417.922,TOPO
181,943840.067,1047752.238,417.886,TOPO
182,943849.120,1047748.202,417.886,TOPO
183,943858.254,1047744.649,417.820,TOPO
184,943850.641,1047781.409,417.324,TOPO
185,943877.146,1047764.403,417.725,TOPO
186,943840.949,1047785.181,417.482,TOPO
187,943864.385,1047771.931,417.483,TOPO
188,943830.352,1047790.583,416.566,TOPO
189,943862.171,1047817.099,417.068,CERCA
190,943870.406,1047810.946,416.885,CERCA
191,943879.584,1047804.253,417.265,CERCA

Marco Serafin Reina Castro-TOPOGRAFO

25 JUN 2019

TOPOGRAFIA PLAN PARCIAL BOSQUES DE SANT

192,943856.327,1047821.596,416.715,CERCA
193,943847.678,1047827.854,416.306,CERCA
194,943831.001,1047886.665,416.190,MATA
195,943862.310,1047891.367,417.003,MATA
196,943895.033,1047904.316,417.355,AUX-2
197,943906.724,1047900.021,417.361,AUX-3
198,943918.626,1047899.159,417.114,MATA
199,943939.974,1047884.653,417.263,MATA
200,943894.814,1047913.847,415.700,MATA
201,943901.949,1047919.182,415.430,CANO
202,943901.414,1047920.424,415.380,CANO
203,943893.551,1047915.414,414.175,MATA
204,943889.416,1047919.297,414.627,MATA
205,943887.059,1047922.570,415.482,MATA
206,943837.819,1047979.073,416.343,AUXIL-4
207,943870.580,1047927.458,416.067,MATA
208,943883.645,1047924.672,415.781,MATA
209,943901.404,1047944.164,415.594,MATA
210,943914.115,1047951.839,416.342,MATA
211,943920.060,1047990.072,415.341,MATA
212,943929.818,1047990.425,415.399,MATA
213,943890.701,1047986.109,416.075,MATA
214,943940.128,1047991.264,415.208,MATA
215,943878.846,1047984.509,416.027,MATA
216,943955.153,1048016.932,415.903,MATA
217,943853.533,1048011.618,415.613,MATA
218,943944.711,1048024.264,415.398,MATA
219,943866.978,1048017.835,415.643,MATA
220,943936.143,1048035.272,415.607,MATA
221,943878.537,1048026.085,415.117,MATA
222,943929.963,1048043.681,415.471,MATA
223,943923.167,1048054.865,415.437,MATA
224,943896.426,1048040.762,415.214,MATA
225,943943.272,1048075.686,414.778,CERCA
226,943945.954,1048068.470,415.156,CHUCUA
227,943950.825,1048062.246,415.197,CHUCUA
228,943902.989,1048076.850,415.091,TOPO
229,943963.388,1048062.784,415.104,TOPO
230,943887.744,1048055.680,415.019,TOPO
231,943867.858,1048101.325,414.899,CERCA
232,943865.157,1048093.318,414.702,TOPO
233,943863.652,1048086.602,414.786,TOPO
234,943833.889,1048112.298,415.649,CERCA
235,943829.215,1048102.490,415.552,TOPO
236,943833.053,1048121.655,415.525,TOPO
237,943825.249,1048093.018,415.553,TOPO
238,943832.607,1048129.857,415.445,TOPO
239,943739.166,1048113.746,416.529,TOPO
240,943723.753,1048134.850,416.251,TOPO
241,943714.123,1048152.601,416.397,CERCA
242,943707.251,1048154.898,416.357,CERCA
243,943695.418,1048144.960,416.627,ATX-5
244,943763.858,1048135.972,416.366,CERCA
245,943765.707,1048145.046,416.195,TOPO
246,943770.082,1048157.468,416.149,TOPO
247,943771.015,1048103.630,416.704,TOPO
248,943726.749,1048168.024,416.026,TOPO
249,943769.654,1048116.596,416.663,TOPO
250,943720.969,1048158.312,416.398,TOPO
251,943718.683,1048151.175,416.442,CERCA
252,943716.550,1048140.328,416.170,CERCA
253,943712.052,1048129.613,416.354,CERCA
254,943680.933,1048163.996,416.396,CERCA

Marco Serafin Reina Castro-TOPOGRAFO

19-0500010016

25 JUN 2019

TOPOGRAFIA PLAN PARCIAL BOSQUES DE SANT

255,943682.503,1048173.230,415.981,TOPO
256,943684.836,1048184.933,416.195,TOPO
257,943676.214,1048147.627,416.278,TOPO
258,943677.953,1048156.705,416.314,TOPO
259,943650.386,1048195.680,416.324,TOPO
260,943648.534,1048185.623,416.161,TOPO
261,943643.017,1048167.966,416.372,TOPO
262,943638.891,1048158.355,416.351,CERCA
263,943606.394,1048167.941,416.615,TOPO
264,943610.074,1048177.177,416.480,TOPO
265,943613.660,1048186.917,416.737,CERCA
266,943645.824,1048176.025,416.558,CERCA
267,943582.085,1048197.583,416.705,CERCA
268,943616.589,1048196.494,416.260,CERCA
269,943620.184,1048207.493,416.741,CERCA
270,943577.798,1048188.591,416.481,CERCA
271,943584.474,1048215.287,416.509,CERCA
272,943574.565,1048180.324,416.561,CERCA
273,943582.277,1048205.989,416.864,CERCA
274,943538.388,1048184.876,416.642,CERCA
275,943555.872,1048206.651,416.673,CERCA
276,943542.061,1048201.223,416.676,CERCA
277,943546.169,1048214.392,416.718,CERCA
278,943501.789,1048214.664,416.786,CERCA
279,943504.880,1048224.429,416.742,SINGLA
280,943495.460,1048204.283,416.883,TOPO
281,943492.026,1048194.979,416.961,TOPO
282,943441.990,1048201.045,416.939,TOPO
283,943441.957,1048201.762,417.411,AUX-6
284,943508.083,1048223.375,416.781,SING
285,943509.312,1048227.602,416.851,SING
286,943456.829,1048245.161,416.414,SING-TERMI
287,943451.414,1048254.660,416.061,TOPO-C
288,943445.527,1048209.158,416.929,TOPO-C
289,943446.228,1048220.769,416.814,TOPO-C
290,943427.135,1048262.614,416.155,TOPO-C
291,943445.978,1048233.199,416.728,CERCA
292,943426.955,1048255.092,416.311,CERCA
293,943423.016,1048240.550,416.210,CERCA
294,943419.688,1048229.750,416.079,TOPO
295,943424.472,1048251.030,416.302,TOPO
296,943417.317,1048220.024,416.006,TOPO
297,943393.824,1048260.866,416.262,TOPO
298,943384.157,1048227.242,416.421,TOPO
299,943385.318,1048239.546,416.077,TOPO
300,943387.438,1048251.650,415.797,CERC
301,943397.187,1048268.431,415.449,CERC
302,943318.005,1048257.669,417.176,AUX-7
303,943360.776,1048261.526,415.268,CONST
304,943366.146,1048259.380,415.138,CONST
305,943378.777,1048269.585,414.897,CONST
306,943373.670,1048271.558,414.901,CONST
307,943364.632,1048241.665,416.217,ESCORR
308,943349.580,1048248.676,415.734,ESCORR
309,943333.447,1048255.219,416.408,ESCORR
310,943400.254,1048286.569,415.006,ESCORR
311,943326.332,1048235.494,416.490,ESCORR
312,943331.876,1048227.902,415.611,ESCORR
313,943399.472,1048289.105,415.319,ESCORR
314,943342.371,1048215.479,416.224,ESCORR
315,943395.269,1048284.557,415.399,ESCORR
316,943399.756,1048282.082,414.937,ESCORR
317,943405.982,1048278.559,415.341,ESCORR

Marco Serafin Reina Castro-TOPOGRAFO

19-0500010016

25 JUN 2019

TOPOGRAFIA PLAN PARCIAL BOSQUES DE SANT

318,943325.391,1048283.615,416.960,CERCA
319,943373.449,1048278.635,416.028,CERCA9
320,943327.010,1048288.243,416.991,CERCA9
321,943361.487,1048276.539,416.538,CERCA9
322,943330.352,1048302.223,416.749,CERCA9
323,943331.612,1048314.591,416.607,TOPO
324,943322.261,1048273.734,416.922,CERC
325,943289.076,1048330.807,416.743,TOPO
326,943313.226,1048245.881,417.072,TOPO
327,943285.709,1048317.285,416.866,TOPO
328,943279.056,1048250.796,417.357,TOPO
329,943281.605,1048303.736,417.124,CERCA
330,943279.221,1048267.546,417.256,TOPO
331,943282.278,1048287.563,417.138,CERCA
332,943245.912,1048299.930,417.058,CERCA
333,943234.650,1048319.652,417.193,CERCA
334,943242.432,1048289.590,417.155,TOPO
335,943237.464,1048332.207,416.865,TOPO
336,943239.747,1048279.400,417.298,TOPO
337,943241.611,1048346.624,416.751,TOPO
338,943208.481,1048285.108,417.187,TOPO
339,943211.817,1048352.644,416.893,TOPO
340,943209.764,1048337.588,416.937,TOPO
341,943209.250,1048299.458,417.094,TOPO
342,943210.712,1048311.686,417.015,CERCA
343,943208.001,1048328.417,417.171,CERCA
344,943185.242,1048320.086,417.138,TOPO
345,943191.270,1048334.036,417.194,CERCA
346,943188.778,1048335.192,417.250,CERCA
347,943184.675,1048310.341,417.209,TOPO
348,943183.966,1048297.938,417.358,TOPO
349,943190.111,1048329.239,417.294,CERCAAN
350,943185.658,1048338.774,417.057,CERCAAN
351,943185.769,1048355.518,416.907,TOPO
352,943204.219,1048325.006,417.132,CERCAAN
353,943959.174,1047974.456,415.002,TOPO
354,943968.085,1048008.257,415.273,TOPO
355,943978.520,1048050.688,414.973,TOPO
356,943951.723,1048063.265,414.432,TOPO
357,943946.650,1048069.311,414.393,TOPO
358,943944.128,1048076.041,413.981,TOPO
359,943959.183,1048068.458,414.854,TOPO
360,943980.124,1048083.781,414.712,TOPO
361,943966.071,1048079.165,414.534,TOPO
362,943960.611,1048080.270,414.448,TOPO
363,943949.768,1048084.430,414.200,TOPO
364,943929.031,1048094.610,414.853,TOPO
365,943901.191,1048122.000,414.580,TOPO
366,943898.853,1048105.970,414.712,TOPO
367,943872.614,1048128.524,414.710,TOPO
368,943837.291,1048088.460,414.402,TOPO
369,943841.900,1048100.191,414.404,TOPO
370,943843.470,1048107.845,414.350,TOPO
371,943844.134,1048118.388,414.308,TOPO
372,943845.520,1048130.112,414.288,TOPO
373,943943.845,1047891.988,415.105,CANO
374,943950.182,1047905.661,415.094,CANO
375,943912.295,1047910.002,415.094,CANO
376,943921.590,1047922.333,415.271,CANO
377,943912.946,1047929.542,415.339,CANO
378,943906.589,104736.580,415.402,CANO
379,943890.722,1047929.980,415.410,CANO
380,943899.123,104742.411,415.413,CANO

Marco Serafin Reina Castro-TOPOGRAFO

19-0500010016

25 JUN 2019

TOPOGRAFIA PLAN PARCIAL BOSQUES DE SANT

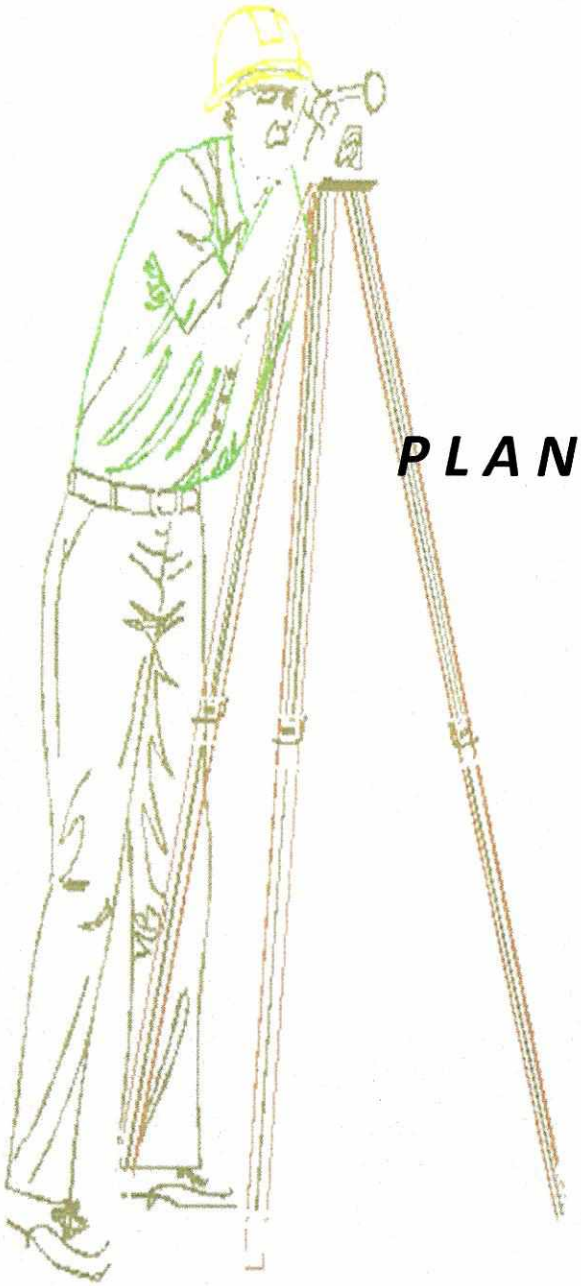
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384,943877.255,1047951.539,415.700,CANO
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386,943894.792,1047948.152,415.902,MATA
387,943929.483,1047949.800,416.253,MATA
388,943944.874,1047943.408,416.150,MATA
389,943960.428,1047936.949,416.102,MATA
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573,943488.802,1046815.435,425.656,CERCAS
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576,943494.494,1046812.081,425.526,SARD
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583,943499.114,1046825.052,425.642,TOPO
585,943501.398,1046828.673,425.606,TOPO

Marco Serafin Reina Castro-TOPOGRAFO

19-0500010016

25 JUN 2019

MARCO SERAFIN REINA CASTRO
TOPOGRAFO PROFESIONAL



PLANOS

CALLE 2B Nº 32-22 LA CORALINA. CEL. 311-8929355-313-2927960 VILLAVICENCIO-META email
marcoreinac@hotmail.com-serafinreinac@gmail.com

25 JUN 2019

146

1046900.00m E | 1047500.00m E | 1048100.00m E | 1048700.00m E | 1049300.00m E | 1049900.00m E

944900.00m N
943800.00m N
943300.00m N

PI-0.0
NORTE= 943493.768
ESTE = 1046814.229

PI-8
NORTE= 943954.636
ESTE = 1048070.880

PI-9
NORTE= 944052.539
ESTE = 1049877.557

PI-12
NORTE= 943192.461
ESTE = 1048324.952

ESCALA :
1 : 4000

DEPTO. META EN COLOMBIA

MPIO. DE VILLAVICENCIO EN EL META

ZONA URBANA DENTRO DEL MUNICIPIO

LOCALIZACION

LEVANTAMIENTO TOPOGRAFICO VIA PLAN PARCIAL BOSQUES DE SANTA ANA MUNICIPIO DE VILLAVICENCIO META

Calle
Construcción en cerramiento
Alumbrado
Vía
Cercas
Postes

MUNICIPIO DE VILLAVICENCIO

SIN | SIN

TOPOGRAFO
TOP. MIGUEL ANGEL GARZON PEDRAZA
TECNICO OPERATIVO

Longitud
4085.43 ml

PLANO DE LOCALIZACION

Diciembre 20 DE 2018

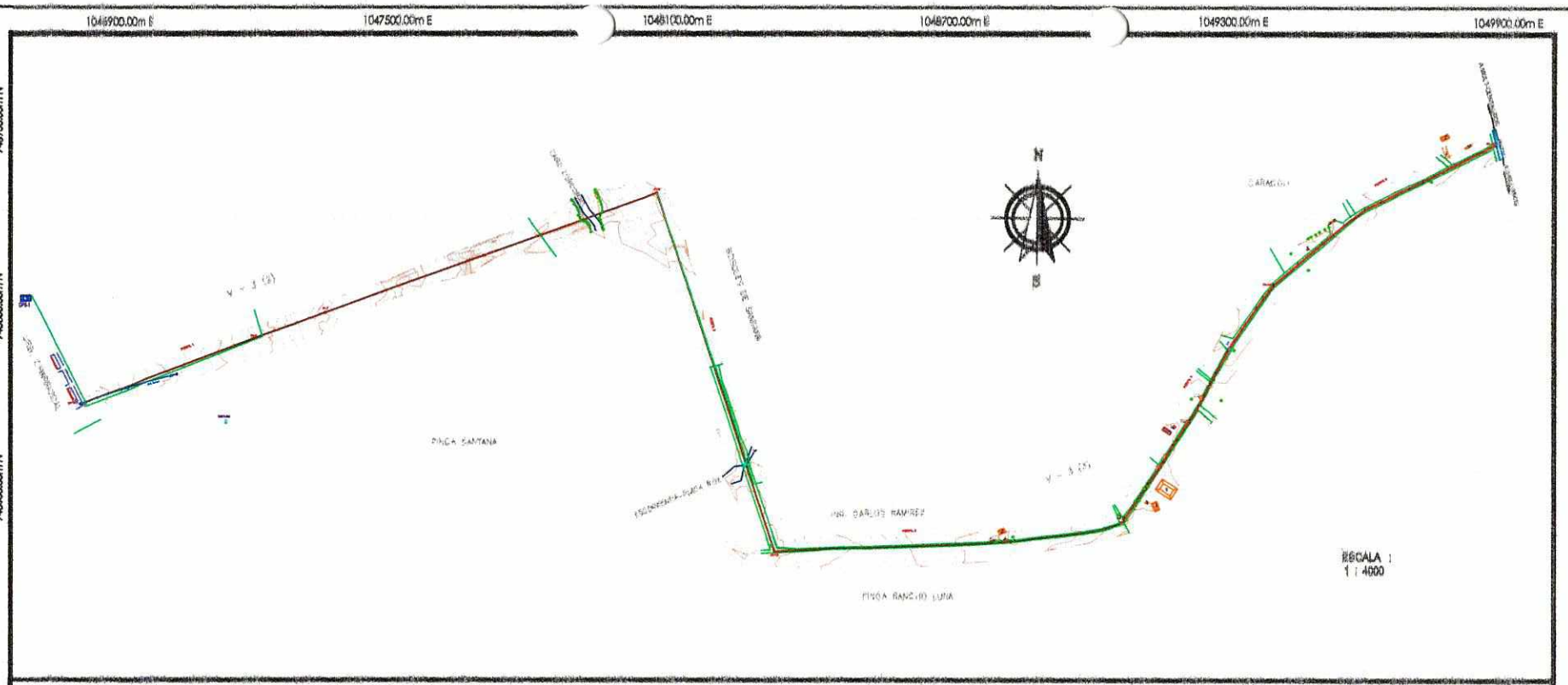
INDICADAS

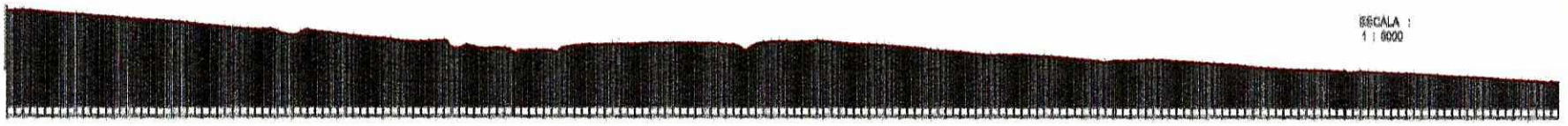
1
8

19-050001-0-0119

25 JUN 2019

147





CUADRO DE COORDENADAS

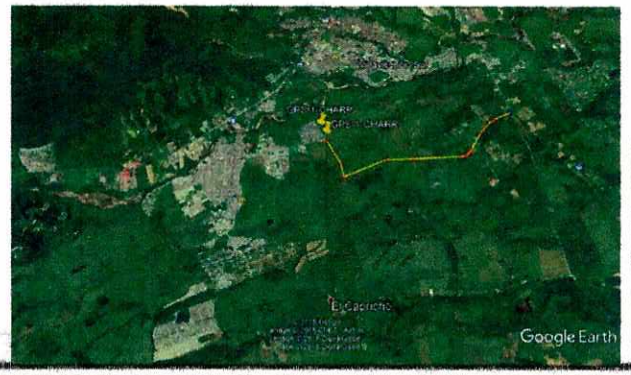
PUNTO	NORTE	ESTE	COTA
GPS-2	943725.241	1046686.224	424.504
GPS-1	943565.487	1046775.409	425.566
PI- 0	943347.721	1046806.206	425.073
PI-6	943838.342	1047186.799	422.530
PI-7	943895.187	1047345.630	42.901
PI-8	943954.635	1048070.880	414.25
PI-5	943173.857	1048198.602	418.154
PI-12	943192.481	1048324.952	417.253
PI-13	943246.556	1049086.550	412.292
PI-14	943753.970	1049410.659	409.700
PI-15	944061.151	1049894.529	407.080

COORDENADAS GEOGRAFICAS Y PLANAS

GPS-MT-1-4 LATITUD = [illegible] LONGITUD = 73° 37' 41.83780" NORTE = 943615.035 ESTE = 1046761.126 H = 437.080

GPS-1-CHAPA LATITUD = [illegible] LONGITUD = 73° 38' 27.32732" NORTE = 943525.457 ESTE = 1046775.409 H = 425.566

GPS-1-CHAPA LATITUD = [illegible] LONGITUD = 73° 38' 15.41601" NORTE = 943575.241 ESTE = 1046686.223 H = 424.504



LEVANTAMIENTO TOPOGRAFICO VIA PLAN PARCIAL BOSQUES DE SANTA ANA MUNICIPIO DE VILLAVICENCIO META



Caño
Construccion en cemento
Alumbrado
Via
Cercas
GPS

MUNICIPIO DE VILLAVICENCIO

SIN | SIN

TOP. MIGUEL ÁNGEL GARZÓN PEDRAZA
TECNICO OPERATIVO

Longitud
4085,43 ml

PLANO GENERAL

Diciembre 20 DE 2018

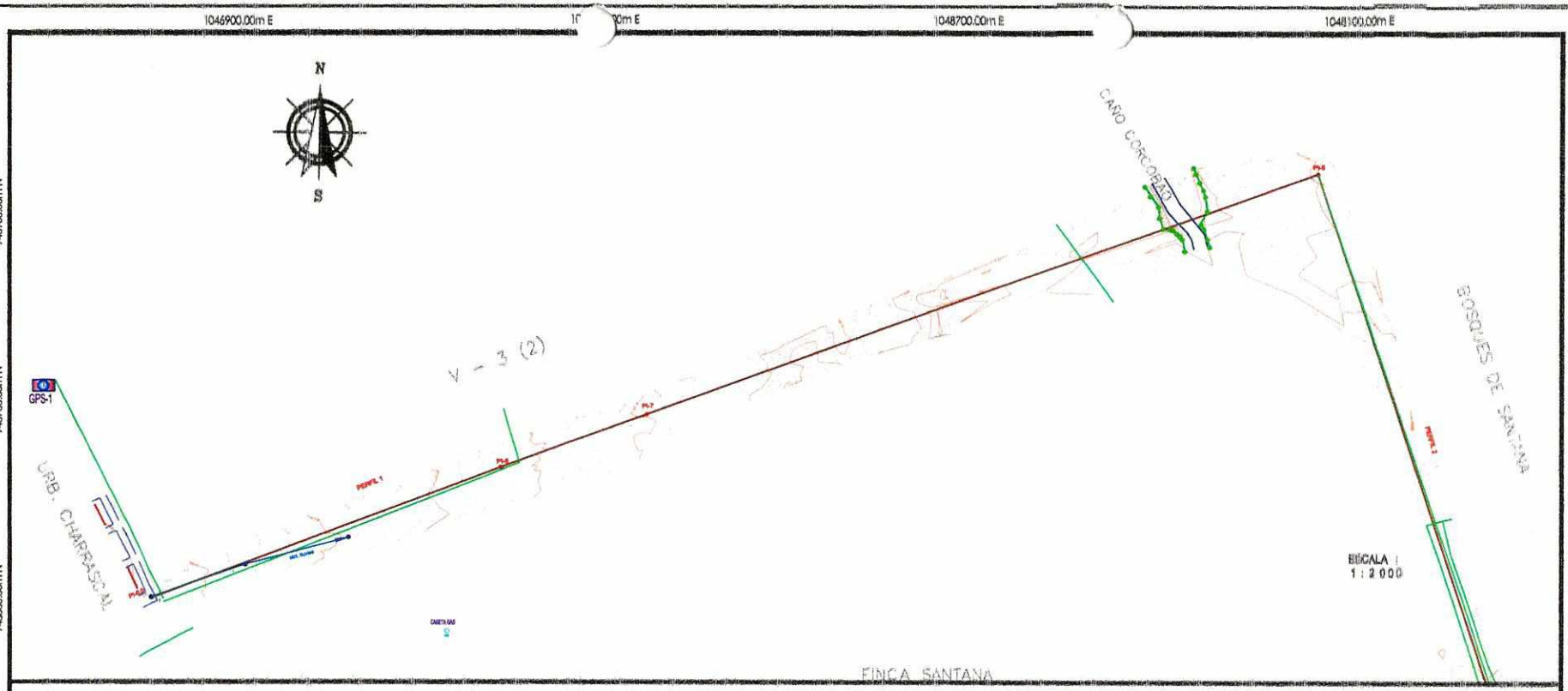
INDICADAS

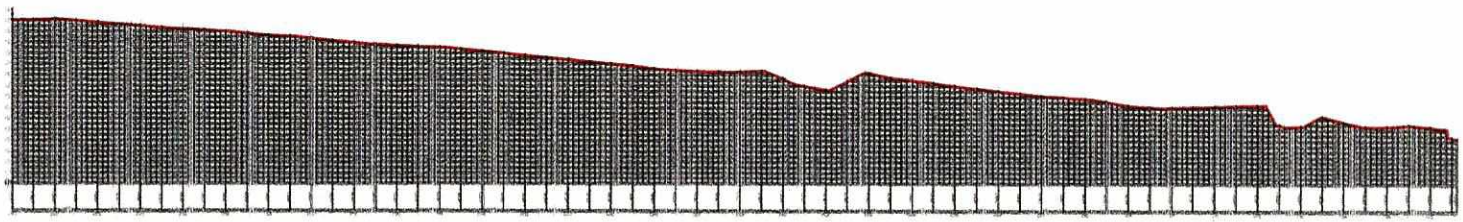
PLANO 2
DE 6

19-0500010016

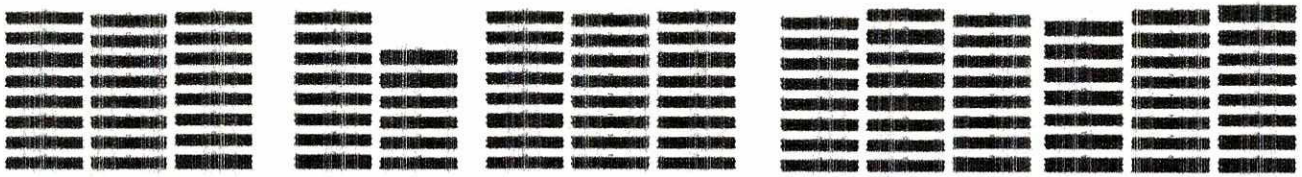
25 JUN 2019

148





SECCIONES



PROYECTO
LEVANTAMIENTO TOPOGRAFICO VIA PLAN PARCIAL BOSQUES DE SANTA ANA MUNICIPIO DE VILLAVICENCIO META



Caño
Construccion en cemento
Alumbrado
Via
Cercas
GPS

MUNICIPIO DE VILLAVICENCIO

SIN	SIN

TOP. MIGUEL ÁNGEL GARZÓN PEDRAZA
TECNICO OPERATIVO

Longitud
4085.43 ml

PLANO 0K+00
1K+344.69

Diciembre 20 DE 2018

INDICADAS

PLANO: 3
DE: 6

19-0 00010016

25 JUN 2019

1048500.00m E 1048700.00m E 10 0m E

943300.00m N

943100.00m N

N

S

V - 3 (3)

ING. CARLOS RAMIREZ

ESCALA :
1:1000

FINCA RANCHO LUNA

PERFIL LONGITUDINAL

ESCALA :
1:1000

SECCIONES

LEVANTAMIENTO TOPOGRAFICO VIA PLAN PARCIAL BOSQUES DE SANTA ANA MUNICIPIO DE VILLAVICENCIO META

Caño
Construccion en cemento
Alumbrado
Via
Cercas
GPS

MUNICIPIO DE VILLAVICENCIO

SIN	SIN

TOP. MIGUEL ÁNGEL GARZÓN PEDRAZA
TÉCNICO OPERATIVO

Longitud
4085.43 ml

PLANO 2K+161.24
2K+924.59

Diciembre 20 DE 2018

INDICADAS

PLANO: 4
DE: 6

19-050001001 6

25 JUN 2019

150

1049100.00m E

1049300.00m E

943700.00m N

943500.00m N

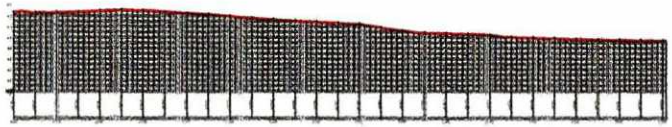
943300.00m N

N

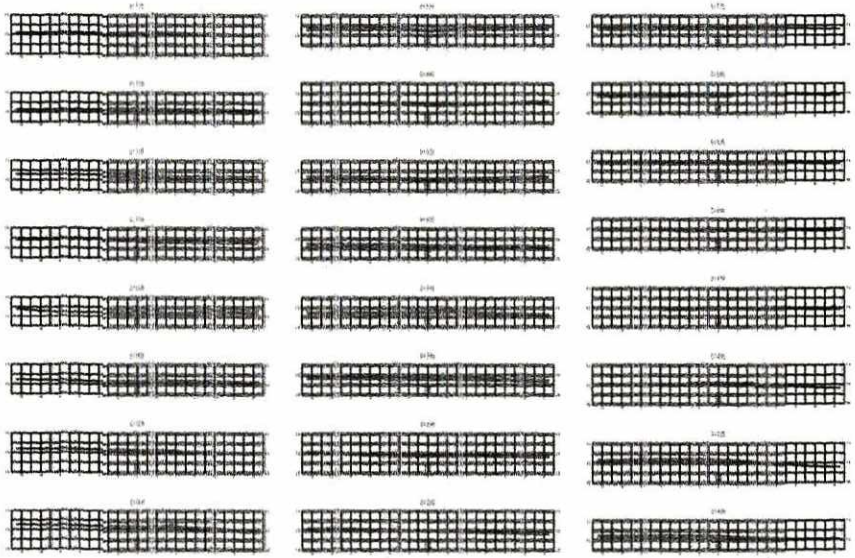
S

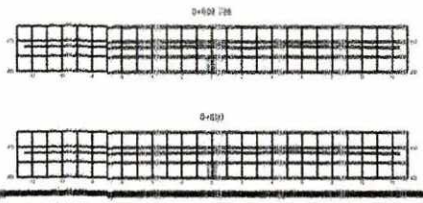
ESCALA :
1 : 1000

PERFIL LONGITUDINAL



ESCALA :
1 : 2000





PROYECTO

LEVANTAMIENTO TOPOGRAFICO VIA PLAN PARCIAL BOSQUES DE SANTA ANA MUNICIPIO DE VILLAVICENCIO META

LOCALIZACION



CONVENCIONES

- Caño
- Construccion en cemento
- Alumbrado
- Via
- Cercas
- GPS

SISTEMA DE REFERENCIA



SOLICITADO

MUNICIPIO DE VILLAVICENCIO

INFORMACION TECNICA	
SIN	SIN

PROFESIONAL RESPONSABLE

TOP. MIGUEL ÁNGEL GARZÓN PEDRAZA
TECNICO OPERATIVO

OBSERVACIONES

Longitud
4085.43 ml

CONTENIDO

PLANO 2K+2161.24
3K+227.32

FECHA

Diciembre 20 DE 2018

ESCALA

INDICADAS

ESCALA GRAFICA

PLANO

5

DE 6

19-0500010016

25 JUN. 2019

1046900.00m E | 1048700.00m E | 1048100.00m E

943900.00m N | 943700.00m N | 943500.00m N

N

S

CARACOLÍ

PI-15

PAVIMENTO

A UNILLANOS

PERFIL 5

PI-14

ESCALA :
1:1000

PERFIL LONGITUDINAL

ESCALA :
1:1250

SECCIONES

LEVANTAMIENTO TOPOGRAFICO VIA PLAN PARCIAL BOSQUES DE SANTA ANA MUNICIPIO DE VILLAVICENCIO META

LOCALIZACION

CONVENCIONES

- Caño
- Construccion en cemento
- Alumbrado
- Via
- Cercas
- GPS

PROPIETARIO

MUNICIPIO DE VILLAVICENCIO

INTERFERENCIA VISUAL	INTERFERENCIA SUBTERRANEA
SIN	SIN

PROFESIONAL RESPONSABLE

TOP. MIGUEL ÁNGEL GARZÓN PEDRAZA
TECNICO OPERATIVO

OBSERVACIONES

Longitud
4085.43 ml

CONTIENE

PLANO 0K+00
1K+344.69

FECHA

Diciembre 20 DE 2018

ESCALA

INDICADAS

ESCALA GRAFICA

PLANO 6
DE 6

19-0000010018

25 JUN 2019