

MEMÒRIA DE TOPOGRAFIA

L'AIXECAMENT TOPOGRÀFIC DEL PROJECTE I DIRECCIÓ DE
LES OBRES DEL NOU POLIESPORTIU CANÒDROM, SITUAT AL
C.DE CAN ROS, 26,AL BARRI DEL CONGRÉS I ELS INDIANS,
AL DISTRICTE DE SANT ANDREU, A BARCELONA

Exp. 600.2023.017L01CD78
CLAU: 2113-00



**Ajuntament
de Barcelona**

BIMSA, Barcelona d'Infraestructures Municipals

Barcelona, Febrer 2026



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MEMÒRIA DE TOPOGRAFIA

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MEMÒRIA DESCRIPTIVA

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L'AIXECAMENT TOPOGRÀFIC DEL PROJECTE I DIRECCIÓ DE LES OBRES DEL NOU POLIESPORTIU CANÒDROM, SITUAT AL C.DE CAN ROS, 26,AL BARRI DEL CONGRÉS I ELS INDIANS, AL DISTRICTE DE SANT ANDREU, A BARCELONA

El treball que fa referència aquesta memòria, té per objectiu l'aixecament topogràfic a escala 1/400, per la realització del projecte **“Aixecament topogràfic del projecte i direcció de les obres del Nou Poliesportiu Canòdrom, situat al C. De Can Ros, 26, al barri del Congrés i els Indians, al Districte de Sant Andreu, a Barcelona”**.

Els treballs de topografia necessaris per a l'execució del present projecte, així com la manera en que han estat efectuats i els aparells emprats per a la seva realització, es descriuen tot seguit d'acord amb el següent índex:

1. Característiques del treball
2. Establiment de Bases de Replanteig.
3. Procés per determinar les coordenades “X”, “Y” i “Z” de les Bases de Replanteig.
4. Presa de dades i ampliació de detalls.
5. Treballs de gabinet.
6. Documentació que s'entrega.
7. Aparells emprats.
8. Observacions.

1. CARACTERÍSTIQUES DEL TREBALL

- **Municipi:** Barcelona
- **Comarca:** Barcelonès
- **Sistema de coordenades:** U.T.M. 31N (transformació de 7 paràmetres proporcionats per l'Institut Cartogràfic i Geològic de Catalunya)
- **Canvi de Dàtum:** ETRS89.
- **Geoide:** EGM08D595 de l'Institut Cartogràfic i Geològic de Catalunya
- **Presa de dades:** Febrer de 2026

2. ESTABLIMENT DE LES BASES DE REPLANTEIG

No s'han establert bases de replanteig, ja que ens hem enllaçat de l'avantprojecte entregat per BIMSA.

3. PROCÉS PER DETERMINAR “X”, “Y” I “Z” DE LES BASES

Per enllaçar la nostra Xarxa amb el Sistema Oficial (U.T.M.), ens vàrem enllaçar amb el sistema UTM ajust 08 de l'Institut Cartogràfic i Geològic de Catalunya utilitzant la tecnologia VRS. Els paràmetres es poden consultar a la pàgina web de l'ICGC. Ens hem enllaçat amb l'avantprojecte entregat per BIMSA, mitjançant l'aixecament topogràfic dels registres del plànol presentat. Obtenint precisions d'error per sota del centímetre.

• Radiacions:

Utilitzant el mètode d'Intersecció amb les bases anteriors, s'han pres pel mètode de radiació, tots els punts necessaris per definir els elements presents en l'àmbit d'actuació. S'han pres un total aproximat d'uns 450 punts en camp.

4. PRESA DE DADES I AMPLIACIÓ DE DETALLS

Recolzant-nos en les Bases de Replanteig establertes, s'han pres les dades sol·licitades per la Direcció de Projecte.

Aixecament taquimètric de detall realitzat:

Barcelona, Febrer de 2026.

5. TREBALLS DE GABINET

5.1. Càlculs

Una vegada finalitzada la presa de dades al camp, es van realitzar els treballs de gabinet. Els càlculs i les compensacions es van fer amb els següents programes.

- Trimble Geomatic Office: Càlcul de GPS, transformació de Datum, projecció a UTM 31N.
- Cremer Comander: Edició, codificació, transformació de Helmert y càlcul de l'anivellació.
- Gdintp: Càlcul de les ondulacions del geoide.

Per una millor comprensió, la totalitat dels punts radiats tenen un codi que identifica allò que delimiten o representen: murs, talús, etc.

• 5.2. Treballs gràfics

Es van a realitzar, amb els programes Autocad, MDT V7.5, i Cartomap.

A partir d'un núvol de punts codificats i els croquis realitzats al camp s'ha delineat el plànol en 2D i 3D i posteriorment s'ha corbat.

6. DOCUMENTACIÓ QUE S'ENTREGA

- Memòria
- Llistat de les Bases de replanteig.
- Ressenyes de les Bases de Replanteig.
- Plànols de les dades sol·licitades.
- Tour virtual
- Certificat de calibració
- Dades en suport informàtic:

'2113-Nou Poliesportiu Canòdrom-2D.dwg'	Topogràfic
'2113-Nou Poliesportiu Canòdrom-3D.dwg'	3D
'2113-Nou Poliesportiu Canòdrom-Contorn.dwg'	3D
'2113-Nou Poliesportiu Canòdrom-PUNTS.asc'	Arxiu ASCII
'2113-Memoria'	PDF

7. APARELLS EMPRATS

Pels treballs de camp s'ha utilitzat:

- Estacions Totals LEICA TCRP1203+
- GPS: Topcon Hiper SR.
- Els treballs de gabinet s'han realitzat amb ordinador i impressora HEWLETT-PACKARD

8. OBSERVACIONS

En els plànols s'adjunta l'avantprojecte entregat per BIMSA, en forma de bloc.

Barcelona, Febrer de 2026



Othmar Brunner

Geoinformáticos, S.L.P

COORDENADES DELS PUNTS

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Relació dels punts:

S'adjuntaran les coordenades de tots els punts de forma digital, a l'arxiu anomenat "2113-Nou Poliesportiu Canòdrom-PUNTS.asc".

També s'adjunten en l'Annex.

PLÀNOLS

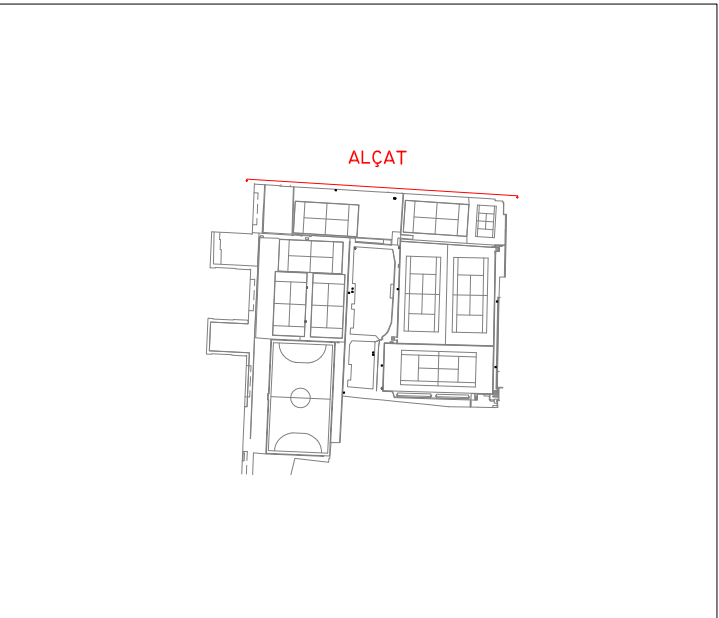
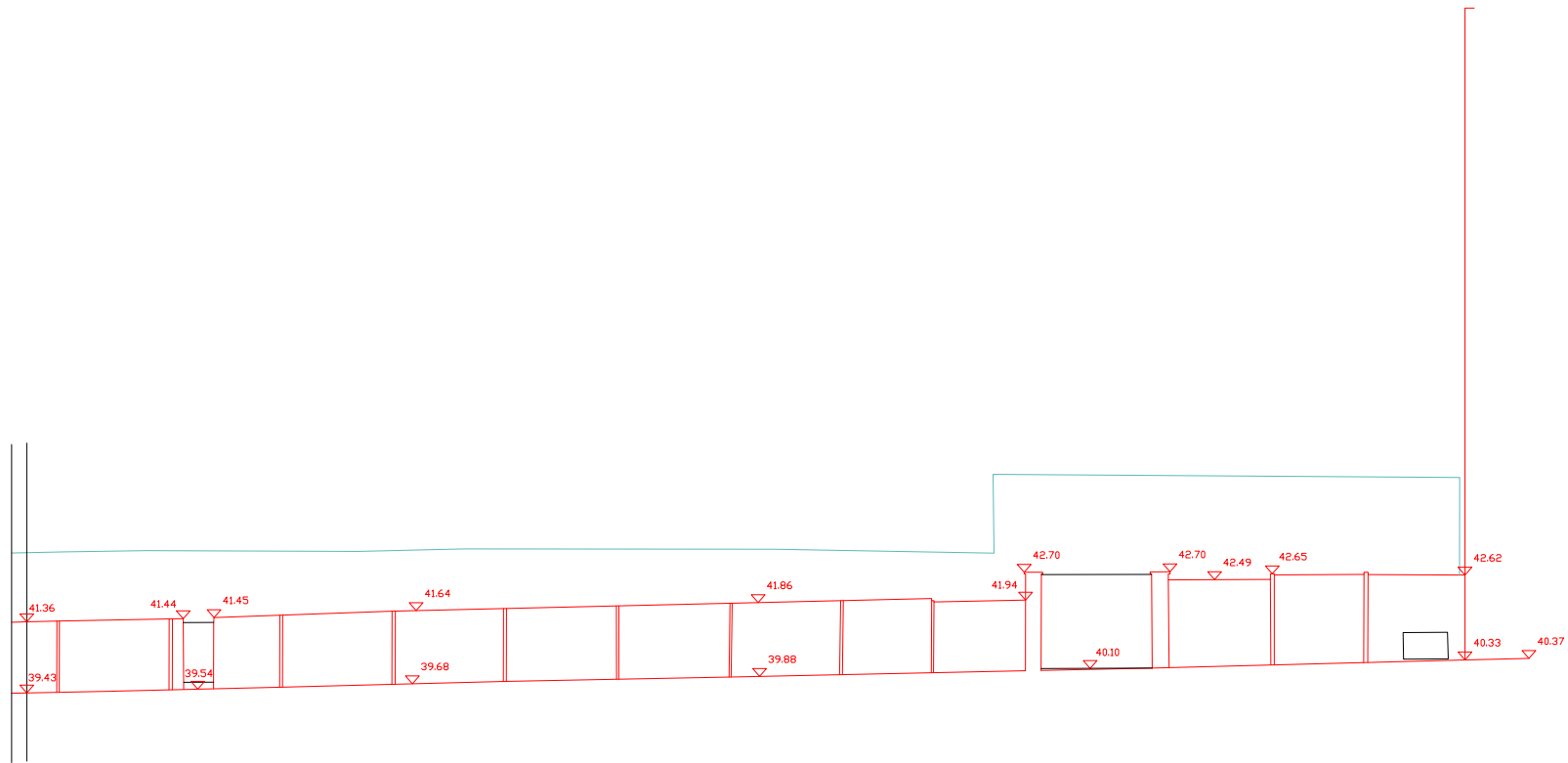
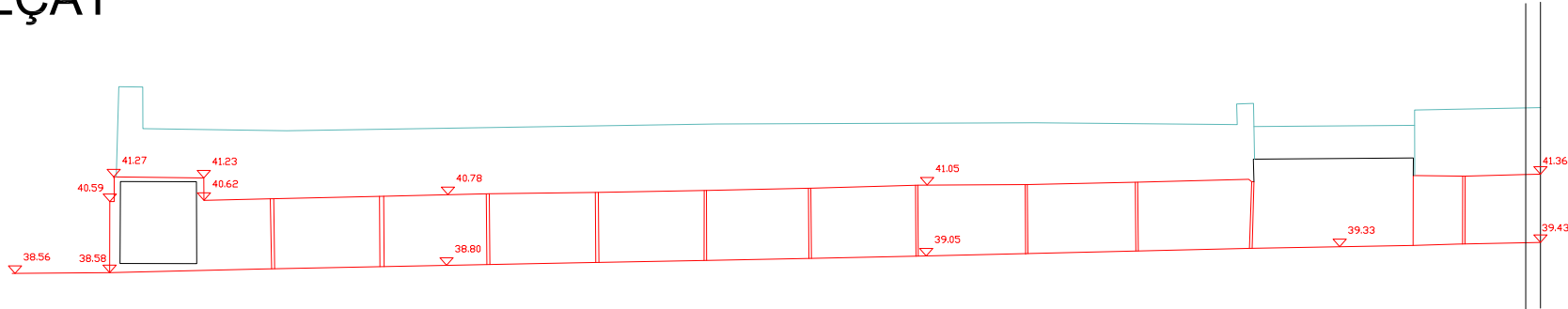


PLANTA

LLEENDA:

EP	REGISTRE LLUM	GAS	REGISTRE GAS
AG	REGISTRE AIGÜA	P	PAPELERA
TC	REGISTRE TELECOMUNICACIONS	FANAL	FANAL
REG	REGISTRE REG	ESCOSELL I ARBRE	ESCOSELL I ARBRE
PARCS	REGISTRE PARCS I JARDINS	Clav.	REGISTRE CLAVEGUERAM
TR	REGISTRE NO IDENTIFICAT	FANAL	FANAL
EMBORNAL	EMBORNAL	SENYAL	SENYAL

ALÇAT



REPORTATGE FOTOGRÀFIC

FOTOGRAFIA 1



FOTOGRAFIA 3



FOTOGRAFIA 2



FOTOGRAFIA 4



FOTOGRAFIA 5



FOTOGRAFIA 7



FOTOGRAFIA 6



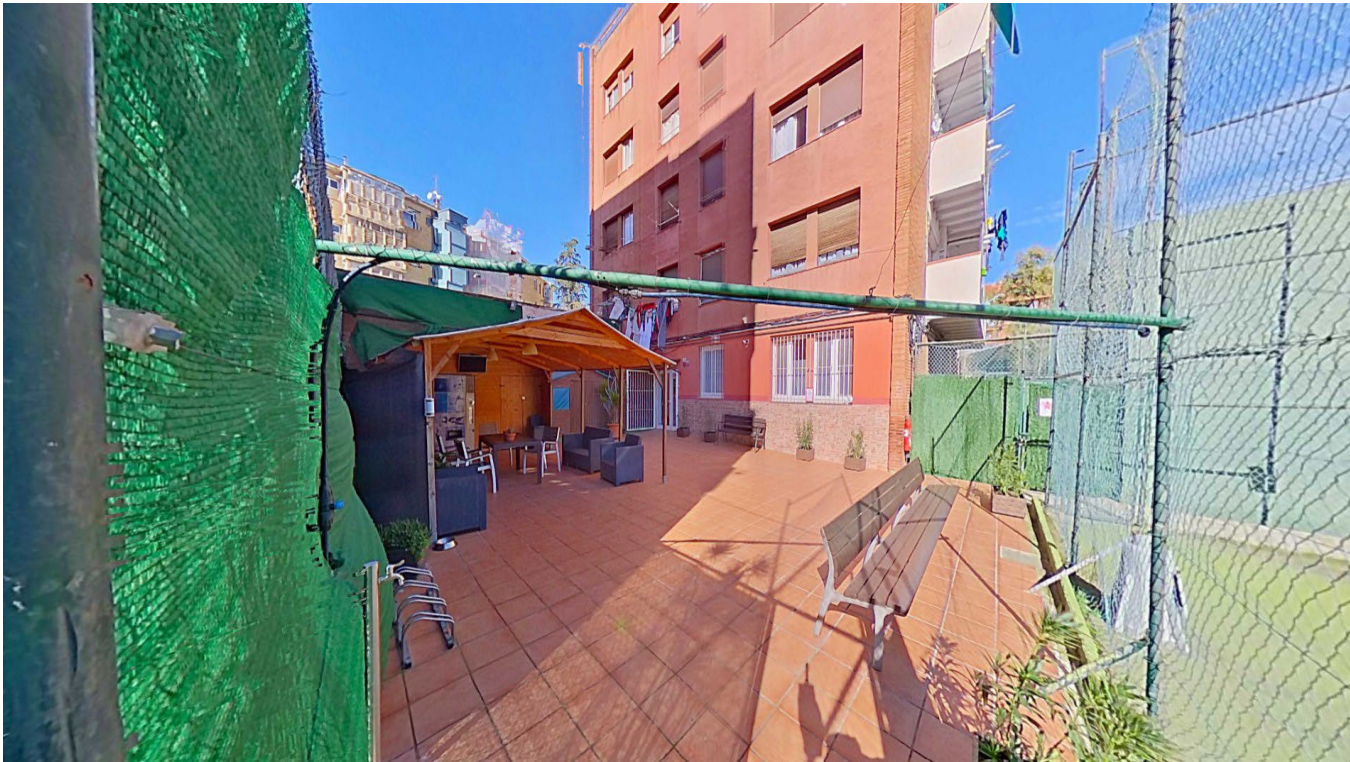
FOTOGRAFIA 8



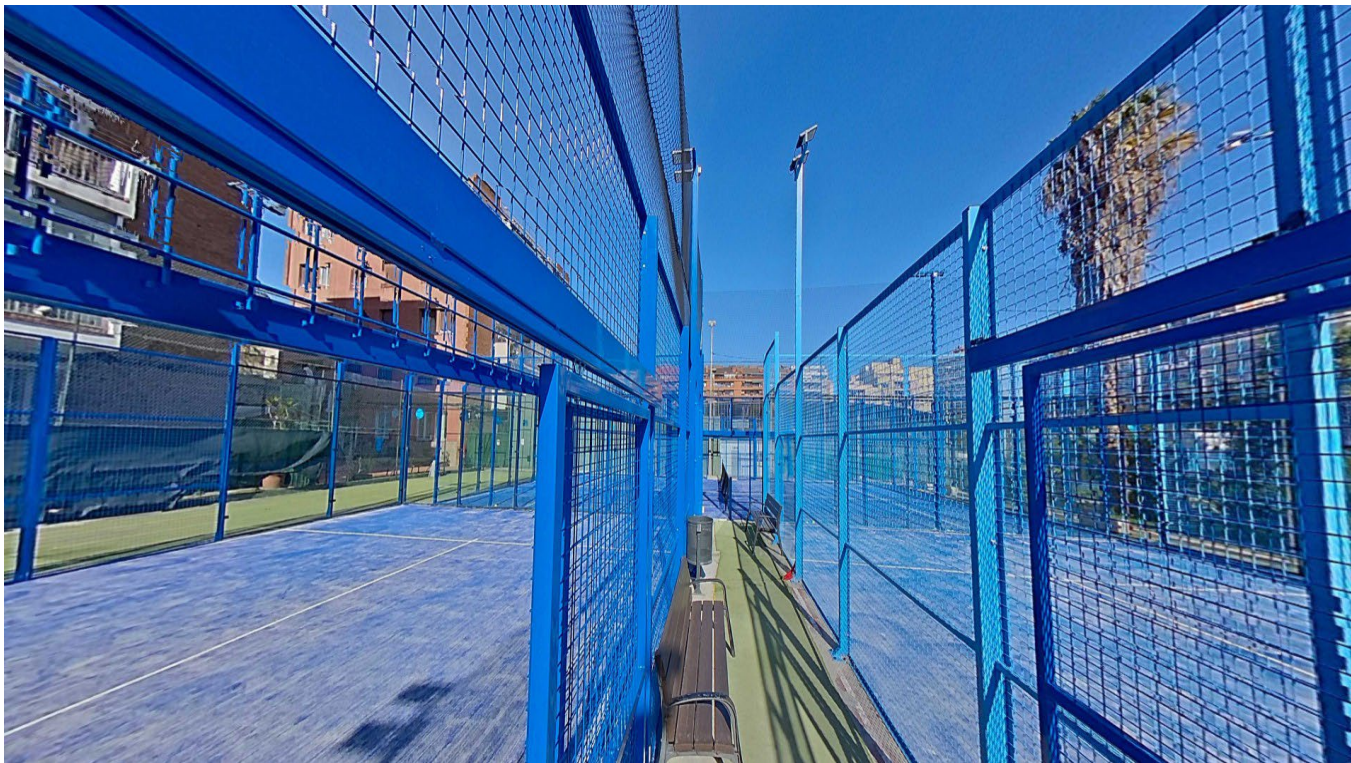
FOTOGRAFIA 9



FOTOGRAFIA 11



FOTOGRAFIA 10



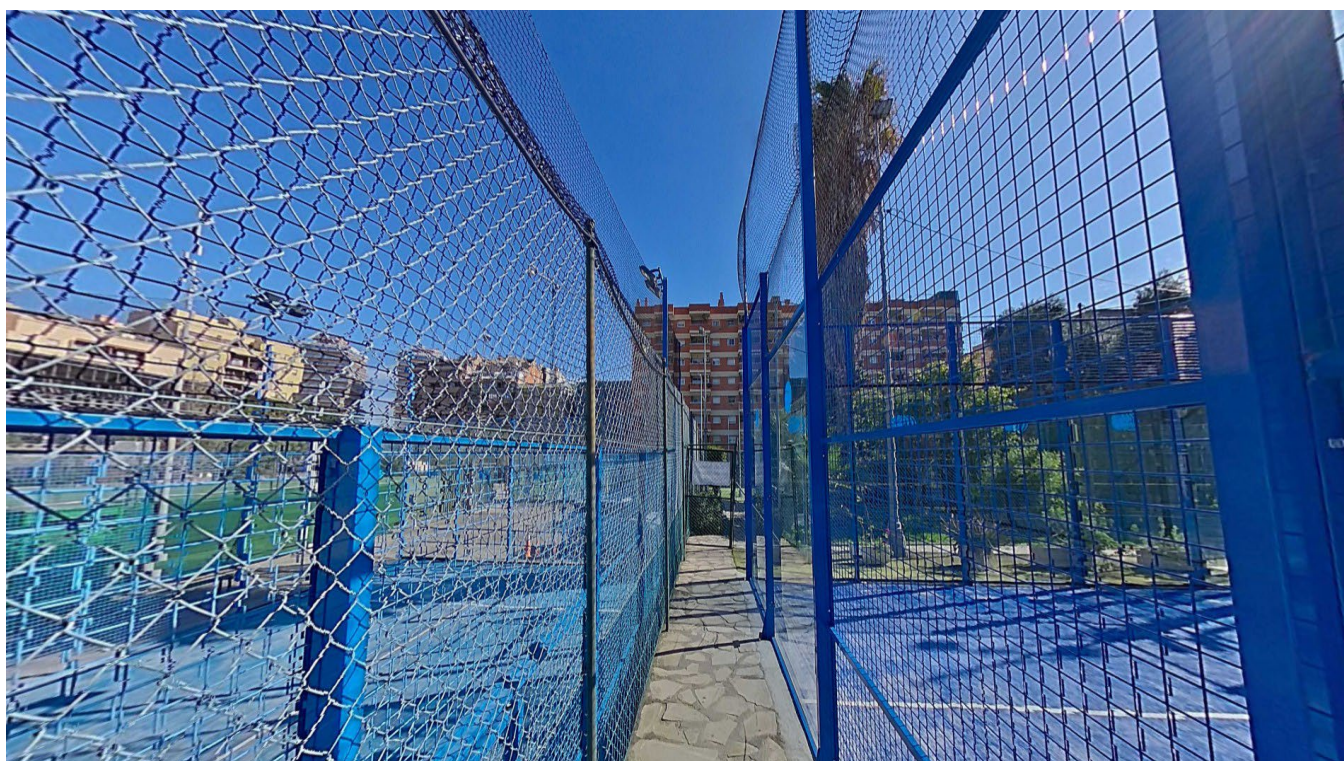
FOTOGRAFIA 12



FOTOGRAFIA 13



FOTOGRAFIA 14





PLANTA

LLEENDA:

EP	REGISTRE LLUM	GAS	REGISTRE GAS
AG	REGISTRE AIGÜA	P	PAPELERA
TC	REGISTRE TELECOMUNICACIONS	FANAL	FANAL
REG	REGISTRE REG	ESCOSELL I ARBRE	ESCOSELL I ARBRE
PARCS	REGISTRE PARCS I JARDINS	Clav.	REGISTRE CLAVEGUERAM
TR	REGISTRE NO IDENTIFICAT	FANAL	FANAL
EMBORNAL	EMBORNAL	SENYAL	SENYAL

TOUR VIRTUAL

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Link Tour virtual:

<https://www.geoinformaticos.com/material/Tour/2113/>

ANNEX

NOM X Y Z

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255,431761.425,4586437.899,39.670
256,431755.632,4586417.694,40.310
257,431762.646,4586412.026,39.440
258,431763.002,4586409.988,38.270
259,431762.802,4586409.994,38.270
260,431762.775,4586409.164,38.270
261,431762.975,4586409.157,38.270
262,431762.936,4586407.945,38.410
263,431762.942,4586408.144,38.280
264,431749.779,4586440.365,40.290
265,431758.462,4586439.764,39.960
266,431758.845,4586440.604,40.060
267,431760.914,4586439.423,39.820
268,431761.101,4586439.213,39.750
269,431761.114,4586439.413,39.750
270,431762.957,4586439.271,39.690
271,431763.739,4586439.221,39.690
272,431763.434,4586438.402,39.580
273,431761.198,4586441.003,39.320
274,431760.988,4586440.816,39.840
275,431750.141,4586441.846,39.320

276,431749.376,4586441.746,39.350	332,431797.397,4586448.885,39.040	390,431792.289,4586390.182,38.790	445,431790.537,4586391.364,38.740
277,431750.066,4586441.930,39.350	333,431797.121,4586444.314,38.860	391,431792.289,4586390.195,38.580	446,431792.109,4586391.248,38.850
278,431740.326,4586447.525,39.320	334,431797.167,4586444.118,39.050	392,431792.089,4586390.194,38.800	447,431721.967,4586390.232,40.700
279,431743.343,4586456.623,39.310	335,431797.231,4586439.293,39.050	393,431792.390,4586389.768,38.750	448,431722.052,4586392.127,40.700
280,431742.783,4586456.963,39.310	337,431797.031,4586439.297,38.800	394,431793.631,4586389.786,38.720	449,431764.008,4586441.374,38.820
281,431748.169,4586456.633,39.310	338,431797.027,4586439.097,37.530	395,431793.649,4586389.111,38.730	450,431706.916,4586432.063,40.590
282,431756.299,4586456.118,39.300	339,431797.227,4586439.093,37.740	396,431794.503,4586389.138,38.750	451,431794.023,4586438.470,38.250
283,431759.745,4586455.722,39.300	340,431796.197,4586438.799,37.520	397,431794.572,4586388.365,38.760	452,431762.771,4586409.047,38.610
284,431759.976,4586455.922,39.300	341,431795.316,4586438.452,37.510	398,431793.172,4586388.346,38.750	453,431762.805,4586410.087,38.610
285,431764.384,4586455.635,39.300	342,431794.029,4586438.879,37.530	399,431794.628,4586387.750,39.050	454,431762.770,4586409.002,39.470
286,431764.711,4586455.617,39.300	343,431793.799,4586438.750,38.770	400,431793.167,4586387.771,38.800	455,431762.806,4586410.123,39.470
287,431764.911,4586455.604,38.800	344,431793.813,4586439.369,38.790	401,431794.960,4586394.179,37.460	456,431763.810,4586441.434,39.500
288,431762.468,4586454.171,39.240	345,431793.793,4586438.467,38.250	402,431763.236,4586423.530,39.420	
289,431758.520,4586440.971,39.960	346,431794.165,4586438.468,38.230	403,431763.436,4586423.529,38.250	
290,431750.666,4586451.912,39.310	347,431794.148,4586437.266,38.290	404,431770.867,4586423.719,38.240	
291,431750.751,4586451.987,39.300	348,431794.212,4586437.227,37.500	405,431778.509,4586423.573,38.250	
292,431757.621,4586448.418,39.290	349,431795.299,4586437.250,37.490	406,431786.015,4586423.380,38.240	
293,431763.921,4586443.353,39.330	350,431793.809,4586437.264,38.240	407,431778.236,4586411.592,38.270	
294,431761.379,4586443.517,39.320	351,431792.988,4586438.802,38.770	408,431774.914,4586407.716,38.270	
295,431763.869,4586442.541,39.420	352,431792.149,4586439.064,38.770	409,431778.150,4586408.528,38.270	
296,431764.069,4586442.528,39.440	353,431792.971,4586438.512,38.260	410,431778.132,4586407.754,38.290	
297,431764.073,4586442.584,38.800	354,431792.976,4586438.598,38.770	411,431778.127,4586407.554,38.370	
298,431763.898,4586441.429,39.500	355,431794.024,4586438.526,37.570	412,431775.943,4586400.081,38.390	
299,431763.088,4586441.479,39.520	356,431793.810,4586439.229,38.770	413,431761.371,4586392.801,39.630	
300,431767.943,4586442.234,38.810	357,431793.686,4586435.125,38.240	414,431762.042,4586392.571,39.490	
301,431767.822,4586441.081,38.820	358,431793.917,4586436.087,38.240	415,431761.945,4586390.880,39.580	
302,431763.977,4586440.408,38.250	359,431794.118,4586436.150,37.490	416,431762.916,4586391.165,39.480	
303,431763.980,4586440.494,38.820	360,431796.825,4586429.106,37.500	417,431762.931,4586392.361,39.500	
304,431769.072,4586455.119,38.820	362,431797.025,4586429.100,37.750	418,431763.076,4586391.880,39.910	
306,431765.438,4586453.470,38.790	363,431795.369,4586429.146,37.450	419,431763.194,4586391.365,40.310	
307,431765.512,4586453.385,38.790	364,431795.151,4586422.634,37.480	420,431773.518,4586390.861,39.490	
308,431764.843,4586443.407,38.790	365,431793.869,4586422.639,37.460	421,431773.556,4586392.050,39.500	
309,431764.758,4586443.332,38.780	366,431793.669,4586422.652,38.240	422,431774.439,4586392.220,39.500	
310,431775.213,4586447.723,38.800	367,431793.474,4586423.100,38.240	423,431774.418,4586392.623,38.390	
311,431781.069,4586454.400,38.800	368,431794.532,4586421.366,37.460	424,431775.328,4586391.990,39.500	
312,431785.582,4586452.038,38.790	369,431794.763,4586422.764,37.450	425,431775.313,4586390.795,39.490	
313,431785.668,4586452.113,38.790	370,431793.248,4586411.123,38.240	426,431774.305,4586390.515,39.290	
314,431785.501,4586454.364,38.790	371,431793.387,4586407.320,38.220	427,431776.135,4586391.532,39.910	
315,431776.759,4586454.869,38.800	372,431793.383,4586407.120,38.350	428,431776.209,4586390.989,40.310	
316,431793.895,4586453.320,38.810	373,431793.584,4586407.205,37.460	429,431773.103,4586391.682,39.910	
317,431793.914,4586453.804,38.810	374,431786.882,4586407.348,38.370	430,431773.041,4586391.114,40.300	
318,431793.021,4586453.654,38.810	375,431794.037,4586400.583,37.460	431,431785.043,4586390.664,40.330	
319,431796.419,4586453.178,38.830	376,431794.716,4586399.210,37.460	432,431785.008,4586391.258,39.920	
320,431791.012,4586446.771,38.800	377,431793.106,4586392.092,38.370	433,431785.483,4586391.698,39.520	
321,431784.988,4586441.976,38.790	378,431793.321,4586393.145,37.470	434,431786.378,4586391.900,39.520	
322,431784.913,4586442.061,38.810	379,431794.945,4586393.121,37.470	435,431785.482,4586390.513,39.510	
323,431784.969,4586441.134,38.810	380,431794.192,4586393.610,37.470	436,431786.275,4586390.443,39.530	
324,431784.941,4586439.790,38.820	381,431793.288,4586391.697,38.550	437,431787.438,4586390.166,39.540	
325,431778.925,4586439.517,38.800	382,431794.923,4586391.673,38.540	438,431788.289,4586390.103,38.820	
326,431780.164,4586439.798,38.800	384,431792.307,4586392.116,38.560	439,431788.298,4586391.391,38.790	
327,431778.876,4586439.434,38.260	385,431793.157,4586391.089,38.550	440,431787.447,4586391.383,39.530	
328,431768.172,4586440.599,38.820	386,431794.915,4586391.064,38.540	441,431788.371,4586392.027,38.780	
329,431796.401,4586452.612,38.810	387,431794.900,4586390.093,38.550	442,431787.466,4586392.053,39.530	
330,431796.512,4586448.906,38.820	388,431793.633,4586390.177,38.560	443,431786.321,4586389.930,38.940	
331,431797.197,4586448.890,38.840	389,431792.392,4586390.195,38.570	444,431790.357,4586391.971,38.750	

Certificado de Verificación y Control

Emitido por Servicio Técnico Autorizado de Leica Geosystems

Certificado N° 036449

Instrumento: ESTACIÓN TOTAL
Modelo: TCRP1203+R400
N° Serie: 241400

Expedido a: GEOINFORMATICOS, SL
Fecha revisión: 31-03-2025
Próxima revisión: 30-03-2026
Técnico: 5000

Identificación de patrones

Estación Total Leica, modelo TCA2003, número de serie 442095 con certificado CEM número CEM24004723.

Incertidumbre asociada a los patrones e instrumento objeto

La incertidumbre expandida resultante, asociada a las desviaciones halladas, está expresada para un factor de cobertura $k = 2$, aproximadamente equivalente a un nivel de confianza del 95%. Siguiendo lo establecido en el documento GUM "Guide to the expression of Uncertainty in Measurement", en su versión española 3ª edición de 2009, publicada por el CEM.

Procedimientos de verificación

Patrones: Procedimiento descrito en documentación interna de Leica Geosystems PCP LG 09-20 basado en el documento DI-039 para la calibración de colimadores ópticos desarrollado por el CEM.
Instrumento: Procedimiento descrito en documentación interna de Leica Geosystems S.L., P.V. IT LG 09-20, P.A. IT LG 09-20.

Condiciones ambientales

Temperatura durante la revisión 20°C +/- 5°C.
Los resultados se refieren al momento y condiciones en que se efectuaron las mediciones.

Certificado

Por la presente, certificamos que el producto descrito ha sido testado de acuerdo con los procedimientos del Servicio Técnico de Instop S.L.U., obteniendo los siguientes resultados:

- ☒ Conforme Los resultados del ensayo cumplen con las especificaciones del producto.
☐ No Conforme Los resultados del ensayo no cumplen con las especificaciones del producto.

El equipo utilizado para la prueba tiene trazabilidad con los estándares nacionales.

N° de Certificado 036449

Lecturas

Entrada:

	1	2	3	4	5
Error Angular (gon)					
Colimación Horizontal	0.0014	0.0017	0.0015	0.0013	0.0014
Índice Vertical	0.0037	0.0042	0.0040	0.0039	0.0040
Error Distancia (mm)					
Normal (prisma)	0.6	0.6	0.5	0.6	0.6
Normal (cualquier superficie)	0.9	0.8	0.8	0.9	0.8

Salida:

	1	2	3	4	5
Error Angular (gon)					
Colimación Horizontal	0.0007	0.0007	0.0009	0.0008	0.0007
Índice Vertical	0.0005	0.0006	0.0005	0.0005	0.0004
Error Distancia (mm)					
Normal (prisma)	0.6	0.5	0.5	0.5	0.6
Normal (cualquier superficie)	0.7	0.8	0.8	0.8	0.9

Precisión Calculada

	Entrada	Tolerancia	Salida	Incertidumbre
Precisión Angular (gon)				
Horizontal	0.0002	0.0010	0.0001	0.0011
Vertical	0.0003	0.0010	0.0001	0.0010
Precisión Distancia (mm)				
Normal (prisma)	0.1	1mm + 1.5ppm	0.1	0.57
Normal (cualquier superficie)	0.1	2mm + 2ppm	0.1	0.57

Valores

Los valores reflejados en la Precisión Calculada (entrada y salida) son el resultado del cálculo de la Desviación Estándar del promedio de las Lecturas.



Josep Colón Ortega - Ingeniero Técnico Industrial