

PROYECTO DE CONSTRUCCIÓN DE LA RED DE ABASTECIMIENTO DE AGUA POTABLE DE LA POBLACIÓN DE “LOS MOLARES” (SEVILLA)

Autor: Andrés León Fernández

Tutor: Jaime Navarro Casas

ANEJO 03: CARTOGRAFÍA Y TOPOGRAFÍA



Departamento de
Construcciones
Arquitectónicas 1



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1.- INTRODUCCIÓN

El objeto del presente anejo es la recopilación de la documentación y datos necesarios para la elaboración de la cartografía y la topografía del proyecto.

2.- CARTOGRAFÍA

Para la redacción de este proyecto se han consultado y utilizado varias bases cartográficas puestas a disposición por el Instituto de Estadística y Cartografía de Andalucía de la Consejería de Economía y Conocimiento, la Red de Información Ambiental de Andalucía (REDIAM) de la Consejería de Medio Ambiente y Ordenación del Territorio pertenecientes a la Junta de Andalucía y el Instituto Geográfico Nacional (IGN).

La documentación cartográfica utilizada es:

- Modelo Digital del Terreno de Andalucía generado a partir de vuelos fotogramétricos (2008-2009).
- Base Cartográfica de Andalucía (2013).
- Mapa Topográfico Vectorial de Andalucía 1:10.000 (2007).
- Mapa Topográfico Ráster de Andalucía 1:10.000 (2001).
- Cartografía Urbana Vectorial de “Los Molares” 1:1.000 (2004).
- Mapa Topográfico de Andalucía (2013).
- Ortofotografías en Color 0,5 metros de resolución (2010-2011).

3.- TOPOGRAFÍA

Para el caso que nos ocupa, se ha obtenido un levantamiento topográfico a partir de las mediciones realizadas en puntos en la Cartografía Urbana Vectorial de “Los Molares” 1:1000 (2004) descargada del Instituto de Estadística y Cartografía de Andalucía.

Tras realizar un filtrado de los puntos mediante un Sistema de Información Geográfica (SIG) se ha obtenido una nube de 988 puntos con sus cotas en msnm y a los que se les ha calculado sus coordenadas geográficas en Dátum ETRS89, con proyección UTM huso 30, cuyos datos se aportan en el siguiente apéndice.

Además del Apéndice se aporta un plano en el que se observa la situación de cada uno de los puntos sobre el mapa.

APÉNDICE Nº 1: LISTADO DE PUNTOS

NUMERO	COORD_X	COORD_Y	COORD_Z
1	257870.97	4115930.30	73.60
2	258164.58	4115832.94	85.40
3	258921.32	4116070.58	86.50
4	258600.93	4116008.26	92.70
5	258556.00	4115372.08	68.90
6	259053.07	4115329.95	92.70
7	258325.89	4115742.69	88.50
8	258183.43	4115904.09	81.40
9	258201.13	4115870.55	82.80
10	258245.49	4115725.07	88.80
11	258236.23	4115756.63	87.50
12	258267.36	4115749.64	87.60
13	258191.73	4115794.80	84.70
14	258233.03	4115735.75	88.20
15	258293.67	4115793.81	87.50
16	258314.36	4115795.09	88.30
17	258319.91	4115761.46	88.30
18	258345.23	4115770.11	89.40
19	258259.94	4115827.89	85.50
20	258242.52	4115843.85	84.40
21	258204.55	4115835.16	83.50
22	258224.23	4115818.47	84.40
23	258126.09	4115837.95	80.80
24	258132.05	4115896.37	80.10
25	258107.00	4115767.98	77.80
26	258042.28	4115880.00	77.10
27	258158.99	4115859.09	81.20
28	258153.10	4115793.78	82.30
29	257871.08	4116001.78	73.80
30	257848.97	4116027.23	73.50
31	257744.57	4116048.73	72.40
32	257804.33	4116115.20	72.80
33	257662.26	4116046.33	72.10
34	257901.86	4116050.17	73.30
35	257932.07	4116092.65	73.50
36	257951.35	4116131.74	73.70
37	257961.18	4116159.54	73.40
38	257864.88	4116164.14	72.70
39	257842.66	4116057.80	72.90
40	257654.78	4115783.73	68.30
41	257818.81	4115883.46	74.50
42	257919.75	4115963.15	74.80
43	257946.01	4116013.29	74.60
44	257986.30	4116086.73	74.70
45	258022.27	4116151.01	74.60
46	257894.90	4115918.35	74.80
47	257916.40	4115884.99	75.90
48	257862.77	4115848.35	75.80
49	258087.67	4116116.62	75.80

NUMERO	COORD_X	COORD_Y	COORD_Z
50	257977.49	4115882.77	76.50
51	257993.90	4115929.46	76.70
52	258199.21	4116136.42	76.80
53	258095.87	4115921.23	79.70
54	257645.49	4116014.60	72.10
55	257716.33	4116140.65	72.50
56	257671.20	4116160.28	72.60
57	257652.33	4115940.75	70.50
58	257657.96	4115988.77	71.80
59	257698.76	4115959.44	71.70
60	257723.60	4115925.91	72.50
61	257747.07	4115961.58	72.80
62	257845.44	4116132.00	72.90
63	257805.55	4116165.09	72.60
64	257772.71	4116134.16	72.50
65	257833.06	4116091.89	72.50
66	257793.58	4116053.86	72.60
67	257758.62	4116091.78	72.70
68	257709.42	4116065.65	72.50
69	257690.35	4116027.66	72.20
70	257765.01	4116014.08	72.50
71	257759.55	4115891.34	73.40
72	257795.84	4115921.59	73.60
73	257833.47	4115937.36	73.60
74	257865.05	4115965.47	73.90
75	257831.00	4115990.85	73.70
76	257870.97	4116021.95	73.80
77	257904.92	4116068.32	73.60
78	257917.24	4116140.00	73.20
79	257894.73	4116112.79	72.20
80	258250.54	4116135.79	77.50
81	258174.36	4116104.27	76.60
82	258105.52	4116070.66	76.50
83	258036.69	4116040.61	75.50
84	258047.26	4115993.63	76.40
85	258106.82	4116028.49	77.50
86	258182.99	4116057.97	77.60
87	258147.64	4115971.08	79.60
88	258290.14	4115955.35	83.50
89	258240.26	4115934.68	82.60
90	257921.33	4116172.98	73.40
91	258373.94	4116129.43	82.30
92	257675.34	4116104.71	72.80
93	258255.09	4116080.35	79.50
94	257650.98	4116068.58	72.40
95	258193.74	4116041.35	79.40
96	257681.13	4116001.04	72.20
97	258135.24	4115990.76	79.20
98	257754.71	4115977.91	72.60

NUMERO	COORD_X	COORD_Y	COORD_Z
99	257717.33	4115989.70	72.80
100	257788.92	4115966.64	72.90
101	258077.56	4115937.45	78.90
102	257832.74	4115952.80	73.60
103	257801.48	4115947.91	73.50
104	258073.66	4115892.76	80.30
105	257863.00	4115887.31	75.70
106	257703.43	4115877.59	72.60
107	258069.72	4115864.63	78.50
108	258076.45	4115837.39	78.90
109	258153.65	4115817.16	82.10
110	258224.78	4115791.54	85.70
111	258104.48	4115794.09	79.40
112	258128.23	4115755.06	80.40
113	258280.84	4115766.52	87.70
114	258286.23	4115772.08	88.60
115	258273.38	4115730.72	87.80
116	258210.26	4115729.88	87.70
117	258148.13	4115735.39	81.40
118	258234.89	4115705.98	88.10
119	258268.04	4115708.15	87.80
120	258299.07	4115714.21	87.10
121	258347.07	4115715.71	88.40
122	258345.00	4115378.05	65.70
123	258348.51	4115351.49	65.70
124	258299.77	4115373.48	65.50
125	258236.46	4115475.52	68.60
126	258343.22	4115558.94	71.80
127	258314.69	4115625.97	82.80
128	258208.67	4115686.34	86.70
129	258266.84	4115650.92	85.90
130	258289.22	4115362.01	65.30
131	258280.23	4115608.88	82.50
132	258223.37	4115600.40	82.80
133	258349.44	4115577.76	72.70
134	258317.32	4115553.23	71.50
135	258276.34	4115508.24	69.90
136	258277.95	4115699.22	87.60
137	258241.36	4115668.07	86.50
138	258300.99	4115584.54	76.10
139	258302.68	4115569.47	74.80
140	258305.93	4115411.02	66.20
141	258121.40	4115608.70	81.40
142	258083.91	4115631.67	81.50
143	258116.57	4115636.49	82.40
144	258133.78	4115665.72	82.50
145	258171.94	4115656.61	84.10
146	258145.64	4115607.66	82.30
147	258129.75	4115570.88	79.20

NUMERO	COORD_X	COORD_Y	COORD_Z
148	258160.76	4115579.69	79.60
149	257918.35	4115352.67	63.10
150	257971.09	4115364.02	63.50
151	257943.02	4115379.55	63.30
152	257984.05	4115380.63	63.60
153	257911.97	4115397.26	63.50
154	257956.96	4115417.19	64.10
155	258006.66	4115404.71	64.30
156	258036.75	4115377.74	64.10
157	257974.23	4115319.87	61.90
158	257932.29	4115283.60	61.60
159	257899.51	4115316.66	62.20
160	258043.98	4115268.89	62.50
161	257987.42	4115255.59	61.90
162	258031.94	4115259.56	62.60
163	258095.18	4115278.87	62.60
164	258085.83	4115258.81	62.70
165	258102.23	4115246.60	63.10
166	258280.85	4115250.06	64.40
167	258272.10	4115295.62	64.50
168	258180.87	4115297.90	63.80
169	258228.42	4115309.13	64.10
170	258174.18	4115332.08	63.90
171	258137.25	4115287.93	63.30
172	258118.96	4115267.62	63.30
173	258162.90	4115277.02	63.70
174	258205.52	4115252.54	63.90
175	258199.88	4115285.39	64.20
176	258259.90	4115347.00	64.70
177	258232.48	4115342.57	64.40
178	258205.88	4115337.46	64.30
179	258130.87	4115423.13	66.10
180	258078.68	4115395.05	64.70
181	258118.96	4115320.26	63.10
182	258077.85	4115309.89	62.80
183	258052.08	4115280.39	62.50
184	258059.95	4115297.30	62.70
185	257987.22	4115276.28	62.30
186	257954.99	4115277.80	62.10
187	258013.94	4115290.30	62.40
188	257960.94	4115265.58	61.90
189	258097.05	4115427.16	66.40
190	258060.45	4115440.29	66.10
191	258146.44	4115433.75	66.90
192	258177.70	4115447.38	67.60
193	258160.04	4115458.73	68.60
194	258173.72	4115399.78	65.10
195	258246.67	4115382.93	64.90
196	258220.78	4115348.50	64.40

NUMERO	COORD_X	COORD_Y	COORD_Z
197	258209.90	4115363.72	64.60
198	258277.69	4115341.85	64.80
199	258146.68	4115252.52	63.60
200	258063.10	4115329.46	63.30
201	258145.69	4115347.20	63.80
202	258118.89	4115383.79	64.80
203	258105.00	4115409.48	65.50
204	258283.42	4115319.75	64.50
205	258094.34	4115619.69	80.60
206	258056.93	4115627.58	79.50
207	258031.95	4115619.81	78.70
208	258143.31	4115639.71	83.10
209	258160.14	4115556.76	78.90
210	258124.68	4115504.17	72.80
211	258123.26	4115523.65	75.50
212	258098.97	4115506.04	72.20
213	258123.09	4115466.00	69.30
214	258173.05	4115524.11	77.10
215	258044.19	4115410.86	65.20
216	257840.26	4115644.25	65.50
217	257817.66	4115691.74	65.50
218	257631.27	4115602.05	66.50
219	257660.58	4115559.91	66.50
220	257632.91	4115558.17	65.60
221	257685.35	4115540.40	66.70
222	257704.90	4115508.65	66.80
223	257728.87	4115487.47	65.60
224	257665.63	4115515.55	65.80
225	257637.08	4115528.79	65.60
226	257694.77	4115489.47	65.70
227	257685.82	4115576.55	65.80
228	257766.71	4115435.02	64.40
229	257737.37	4115457.88	64.50
230	257812.46	4115598.57	64.90
231	257782.66	4115638.12	64.70
232	257694.89	4115610.75	64.50
233	257654.68	4115634.33	64.80
234	257725.73	4115650.27	64.50
235	257682.95	4115672.21	64.60
236	257648.18	4115689.63	64.90
237	257724.83	4115699.18	64.90
238	257774.95	4115678.21	64.90
239	257634.63	4115498.68	64.80
240	257775.96	4115406.46	63.50
241	257787.42	4115526.70	63.60
242	257750.35	4115602.32	63.90
243	257774.08	4115568.00	63.90
244	257901.06	4115281.23	63.40
245	257860.70	4115383.52	62.50

NUMERO	COORD_X	COORD_Y	COORD_Z
246	257746.78	4115368.16	62.60
247	257665.11	4115347.24	61.90
248	257677.33	4115317.50	61.10
249	257640.06	4115302.69	61.50
250	257618.72	4115290.40	61.30
251	257713.07	4115307.56	61.60
252	257702.82	4115348.83	61.60
253	257686.41	4115379.69	62.10
254	257738.23	4115336.82	61.70
255	257822.10	4115329.99	61.70
256	257779.87	4115319.02	61.50
257	257784.54	4115344.69	61.90
258	257889.22	4115345.62	62.40
259	257735.38	4115305.82	61.30
260	257686.56	4115292.32	61.30
261	257638.50	4115282.11	61.10
262	257702.78	4115271.33	60.40
263	257644.52	4115261.97	60.20
264	257772.24	4115274.92	59.70
265	257745.31	4115292.88	60.50
266	257738.88	4115263.70	59.70
267	257831.62	4115267.95	60.40
268	257823.67	4115303.42	60.70
269	257853.84	4115300.18	61.80
270	257879.49	4115300.12	61.90
271	257875.95	4115271.46	62.70
272	257876.91	4115327.56	62.20
273	257888.82	4115275.57	61.80
274	258324.20	4115257.28	63.90
275	257845.62	4115433.21	63.80
276	258157.08	4115360.98	63.90
277	257820.13	4115416.12	62.40
278	257801.58	4115465.66	62.70
279	257884.10	4115681.26	66.50
280	258152.62	4115704.50	82.50
281	258350.83	4115696.50	86.10
282	258339.96	4115682.16	85.70
283	258247.40	4115690.67	88.30
284	258160.46	4115684.64	83.40
285	258245.75	4115677.01	87.10
286	258258.68	4115673.50	86.90
287	258275.65	4115680.98	86.50
288	258291.35	4115679.03	86.50
289	258337.24	4115663.83	85.70
290	258351.86	4115647.32	84.40
291	258305.14	4115651.49	84.90
292	258223.08	4115660.70	85.90
293	258209.90	4115647.65	85.40
294	258125.10	4115625.44	82.60

NUMERO	COORD_X	COORD_Y	COORD_Z
295	258160.09	4115640.51	83.90
296	258226.46	4115628.00	85.40
297	258264.22	4115637.46	84.60
298	258250.54	4115627.13	83.80
299	258307.62	4115641.13	82.90
300	258341.78	4115626.02	83.30
301	258254.22	4115618.38	82.70
302	258211.19	4115607.56	83.10
303	258194.50	4115612.85	83.90
304	258195.36	4115624.95	84.50
305	258171.99	4115615.57	83.40
306	258163.48	4115599.72	82.90
307	258200.24	4115594.19	80.60
308	258210.48	4115593.73	80.60
309	258195.03	4115591.34	78.50
310	258234.07	4115603.11	82.20
311	258244.15	4115595.88	80.20
312	258315.72	4115593.77	73.20
313	258337.40	4115597.78	74.40
314	258360.45	4115597.16	74.10
315	258250.50	4115586.31	78.70
316	258254.63	4115578.21	76.90
317	258202.76	4115577.30	78.70
318	258171.16	4115556.70	78.90
319	258237.45	4115567.97	77.50
320	258302.13	4115552.07	72.40
321	258317.41	4115559.80	71.90
322	258291.10	4115550.47	73.10
323	258283.50	4115540.56	73.10
324	258273.26	4115547.83	73.10
325	258258.76	4115535.81	73.60
326	258223.74	4115532.30	76.50
327	258208.53	4115548.90	77.50
328	258130.47	4115533.62	76.60
329	258108.26	4115530.57	76.10
330	258230.51	4115515.74	73.90
331	258290.36	4115531.40	70.80
332	258340.95	4115502.37	69.80
333	258312.25	4115504.97	69.90
334	258295.69	4115497.25	69.80
335	258228.78	4115499.48	71.80
336	258134.65	4115500.92	73.60
337	258127.91	4115494.03	72.90
338	258125.68	4115482.55	70.90
339	258163.39	4115493.70	72.50
340	258168.72	4115477.55	70.80
341	258183.64	4115482.80	69.30
342	258181.52	4115494.40	72.90
343	258308.65	4115485.94	69.30

NUMERO	COORD_X	COORD_Y	COORD_Z
344	258342.44	4115469.92	68.60
345	258311.22	4115469.46	68.10
346	258263.76	4115458.19	67.60
347	258203.29	4115463.02	68.70
348	258178.51	4115469.05	69.10
349	258137.79	4115473.55	70.50
350	258139.61	4115458.35	69.10
351	258246.66	4115444.94	67.20
352	258271.57	4115445.85	67.20
353	258291.85	4115448.61	67.10
354	258341.53	4115423.01	66.60
355	258208.86	4115431.32	66.90
356	258118.38	4115438.87	67.30
357	258129.48	4115411.00	65.80
358	258190.53	4115415.67	65.70
359	258263.76	4115416.74	66.30
360	258313.49	4115417.11	66.10
361	258277.68	4115393.17	65.70
362	258204.58	4115389.61	64.90
363	258141.38	4115387.88	64.50
364	258031.40	4115388.42	63.40
365	257653.76	4115390.62	61.90
366	258168.60	4115373.35	64.30
367	258182.27	4115375.21	64.40
368	258202.18	4115378.31	64.80
369	258313.78	4115381.16	65.50
370	258323.69	4115362.29	65.70
371	258191.69	4115357.66	64.50
372	258093.88	4115359.73	63.80
373	258066.79	4115359.60	63.80
374	258010.08	4115355.31	62.70
375	257995.71	4115362.70	63.40
376	257945.52	4115352.01	62.90
377	257829.96	4115357.67	61.80
378	257626.09	4115357.55	61.30
379	257626.13	4115330.87	61.20
380	257913.31	4115337.81	62.20
381	258027.43	4115328.18	62.50
382	258036.18	4115337.60	62.90
383	258185.24	4115343.79	64.20
384	258349.42	4115320.63	65.10
385	258262.94	4115317.45	64.60
386	257906.54	4115326.50	62.40
387	258021.77	4115303.91	62.20
388	258039.11	4115301.88	62.50
389	258080.63	4115293.99	62.80
390	258179.09	4115281.90	63.90
391	258030.77	4115284.26	62.50
392	258010.08	4115279.22	62.40

NUMERO	COORD_X	COORD_Y	COORD_Z
393	257978.23	4115285.62	61.60
394	257920.49	4115271.92	61.70
395	258052.54	4115255.31	62.80
396	258067.78	4115266.09	62.80
397	258158.48	4115256.88	63.60
398	258177.52	4115263.65	63.80
399	258124.65	4115249.08	63.30
400	258588.36	4115730.53	82.60
401	258524.17	4115711.47	85.30
402	258537.26	4115944.16	92.40
403	258567.64	4115911.33	91.30
404	258572.82	4115988.13	92.50
405	258502.30	4115907.24	91.50
406	258585.50	4115785.36	86.30
407	258485.94	4115808.70	91.10
408	258468.63	4115842.47	91.10
409	258549.74	4115742.16	86.60
410	258406.03	4115747.59	90.30
411	258376.61	4115732.45	89.50
412	258373.71	4115778.07	90.50
413	258424.93	4115778.83	91.30
414	258440.16	4115838.43	91.30
415	258472.75	4115760.50	89.90
416	258479.47	4115735.26	88.80
417	258490.53	4115711.02	86.50
418	258557.01	4115969.01	92.30
419	258563.27	4115947.66	92.30
420	258584.19	4115974.58	92.70
421	258548.18	4115926.32	91.50
422	258585.10	4115952.10	91.90
423	258574.55	4115934.78	91.80
424	258589.21	4115938.19	91.40
425	258527.34	4115927.85	92.30
426	258487.99	4115985.22	91.50
427	258493.62	4115945.91	91.30
428	258505.80	4115937.45	91.10
429	258545.25	4115905.33	91.10
430	258483.25	4115916.10	91.30
431	258473.77	4115822.08	91.40
432	258477.52	4115867.01	91.30
433	258518.37	4115869.69	91.50
434	258475.82	4115896.74	91.40
435	258514.83	4115923.11	91.50
436	258529.95	4115905.31	91.30
437	258603.33	4115884.34	88.80
438	258640.81	4115857.10	86.60
439	258656.68	4115926.54	87.90
440	258650.02	4115892.64	87.10
441	258654.45	4115947.54	88.60

NUMERO	COORD_X	COORD_Y	COORD_Z
442	258636.87	4115892.67	88.10
443	258646.78	4115916.69	87.90
444	258579.11	4115810.78	87.30
445	258575.26	4115748.92	85.70
446	258561.79	4115728.93	83.90
447	258508.06	4115808.74	90.50
448	258529.43	4115813.45	89.90
449	258593.28	4115913.37	90.10
450	258621.65	4115844.53	86.70
451	258548.85	4115833.21	89.60
452	258547.17	4115791.53	87.90
453	258426.99	4115736.97	90.10
454	258759.82	4115696.14	81.60
455	258694.28	4115730.52	80.80
456	258636.83	4115753.63	81.30
457	258733.72	4116039.83	87.10
458	258694.00	4116119.37	86.70
459	258644.07	4116096.62	88.40
460	258819.36	4115987.30	88.10
461	258748.72	4115844.32	83.30
462	258753.68	4115729.92	82.30
463	258975.24	4115695.37	82.30
464	258820.06	4116024.28	88.50
465	258892.56	4115702.56	81.90
466	258585.82	4116015.87	92.30
467	258657.12	4116022.15	89.90
468	258945.75	4115713.90	82.20
469	258876.71	4115763.02	82.50
470	258901.67	4115727.58	82.20
471	258950.72	4115688.76	82.50
472	258896.32	4115692.84	82.20
473	258754.91	4115715.78	82.20
474	258815.49	4115718.75	83.30
475	258838.17	4115740.69	83.30
476	258811.68	4115820.73	82.80
477	258790.44	4115844.93	83.10
478	258762.07	4115902.62	84.10
479	258784.35	4115880.22	83.80
480	258774.09	4115955.16	86.40
481	258751.00	4116030.23	86.90
482	258671.23	4116111.43	87.20
483	258758.08	4116107.38	86.70
484	258705.81	4116016.63	87.40
485	258679.28	4115925.90	87.40
486	258694.58	4115893.36	84.80
487	258662.94	4115833.78	83.60
488	258628.98	4115817.19	85.30
489	258607.55	4115791.03	85.50
490	258645.30	4115800.23	83.30

NUMERO	COORD_X	COORD_Y	COORD_Z
491	258747.41	4116008.66	86.70
492	258861.77	4116021.04	88.30
493	258858.21	4115980.28	87.70
494	258655.53	4116000.73	89.60
495	258616.56	4116006.83	91.40
496	258624.63	4116111.87	88.60
497	258616.26	4115743.20	81.80
498	258601.14	4115804.20	86.30
499	258628.64	4115839.48	86.10
500	258559.81	4115723.57	83.40
501	258738.23	4115749.40	81.90
502	258728.72	4115727.44	82.20
503	258712.82	4115717.72	80.90
504	258650.31	4115726.78	81.60
505	258630.67	4115715.20	81.70
506	258765.79	4115792.72	82.70
507	258779.87	4115731.41	83.40
508	258853.02	4115715.68	82.60
509	258872.21	4115720.29	82.50
510	258864.78	4115825.65	82.70
511	258823.45	4115975.00	87.80
512	258800.18	4115954.36	86.50
513	258865.83	4115873.78	83.40
514	258904.35	4115892.43	83.50
515	258947.14	4115901.35	83.50
516	258984.72	4115928.72	83.70
517	259021.53	4115962.44	83.60
518	259011.62	4115893.08	82.50
519	259042.80	4115927.76	82.60
520	259066.14	4115980.12	82.60
521	259084.25	4115909.80	81.40
522	259061.46	4115846.16	81.20
523	259103.83	4115832.77	81.10
524	258974.88	4115755.63	81.60
525	259051.44	4115751.95	82.10
526	258448.01	4116155.00	83.40
527	258437.97	4115799.05	91.80
528	258389.03	4115815.29	91.90
529	258479.82	4116033.46	91.90
530	258520.85	4115972.61	92.50
531	259046.80	4115685.97	82.90
532	259013.38	4115703.76	82.90
533	259060.82	4115717.61	82.60
534	259104.30	4115725.49	82.60
535	258564.03	4116045.03	92.30
536	258552.06	4116011.10	93.10
537	258958.44	4116111.65	86.50
538	258961.02	4116031.92	86.50
539	258991.15	4116081.66	86.80

NUMERO	COORD_X	COORD_Y	COORD_Z
540	259045.87	4116097.76	86.60
541	258918.96	4116040.28	87.80
542	258889.92	4116020.65	88.40
543	259068.31	4115806.86	81.30
544	259053.75	4115878.60	81.60
545	259025.36	4115824.80	81.70
546	258976.55	4115852.51	82.50
547	258959.44	4115794.78	82.20
548	258902.38	4115818.20	82.60
549	258919.98	4115748.85	82.10
550	258577.12	4115704.00	81.10
551	258680.87	4116139.24	86.20
552	258701.05	4116138.61	86.50
553	258794.19	4116144.25	84.60
554	259022.00	4116141.32	85.90
555	258987.51	4116113.62	85.60
556	258733.58	4116116.00	86.50
557	258702.94	4116099.67	86.70
558	258595.76	4116093.38	89.20
559	258659.86	4116063.80	88.70
560	258636.61	4116070.64	89.50
561	258684.99	4116091.93	86.80
562	258707.12	4116077.20	87.10
563	258715.15	4116072.53	87.30
564	258731.70	4116060.80	87.20
565	258747.48	4116083.35	87.30
566	258772.68	4116084.81	86.80
567	258900.10	4116049.84	87.70
568	258788.11	4116057.46	87.60
569	258764.79	4116047.90	87.20
570	258749.08	4116057.53	87.60
571	258719.34	4116050.62	87.20
572	258688.69	4116054.18	87.70
573	258674.03	4116028.91	88.70
574	258650.85	4116045.38	89.90
575	258635.70	4116047.34	90.60
576	258593.18	4116046.99	91.30
577	258632.70	4116020.62	90.70
578	258670.54	4116000.79	88.20
579	258721.16	4115995.69	86.50
580	258761.16	4116019.29	86.90
581	258772.06	4116012.38	87.70
582	258785.81	4116000.58	87.80
583	258803.40	4115986.14	87.90
584	258766.89	4115976.02	86.40
585	258751.60	4115983.28	86.10
586	258728.35	4115974.21	86.10
587	258696.58	4115977.77	86.90
588	258664.75	4115973.79	88.10

NUMERO	COORD_X	COORD_Y	COORD_Z
589	258640.87	4115969.60	89.40
590	258624.81	4115983.91	90.50
591	258606.38	4115980.70	91.90
592	258591.30	4115957.33	92.50
593	258602.61	4115958.58	91.40
594	258616.01	4115948.18	90.50
595	258626.63	4115958.03	91.40
596	258662.30	4115959.77	87.90
597	258700.07	4115949.30	86.10
598	258717.25	4115952.51	85.70
599	258754.46	4115949.23	85.30
600	258744.06	4115941.41	84.80
601	258784.83	4115923.90	85.90
602	258738.54	4115917.76	84.30
603	258713.13	4115913.92	84.70
604	258653.50	4115910.64	87.70
605	258645.61	4115928.02	88.90
606	258628.86	4115905.68	88.90
607	258631.37	4115922.86	89.10
608	258550.66	4115910.85	91.60
609	258540.05	4115914.62	92.10
610	258451.59	4115880.22	91.40
611	258493.55	4115894.67	91.50
612	258495.16	4115878.75	91.80
613	258530.42	4115881.47	91.30
614	258538.23	4115896.27	91.30
615	258564.14	4115893.55	90.90
616	258540.26	4115877.21	90.80
617	258582.08	4115897.46	89.90
618	258626.76	4115873.37	87.70
619	258648.13	4115874.49	86.70
620	258701.40	4115874.63	84.10
621	258736.94	4115889.71	83.80
622	258805.99	4115868.85	83.70
623	258742.80	4115868.01	83.60
624	258725.21	4115861.94	83.20
625	258699.23	4115848.05	83.50
626	258688.06	4115843.93	83.50
627	258673.68	4115859.71	84.30
628	258668.73	4115850.28	84.90
629	258616.22	4115870.18	87.40
630	258598.42	4115864.10	88.50
631	258572.37	4115849.37	88.80
632	258585.43	4115873.18	89.20
633	258529.16	4115851.82	90.80
634	258499.00	4115860.40	91.30
635	258490.90	4115854.75	91.30
636	258491.60	4115841.69	91.60
637	258510.38	4115842.32	91.10

NUMERO	COORD_X	COORD_Y	COORD_Z
638	258478.75	4115875.83	91.30
639	258488.31	4115828.73	91.40
640	258511.91	4115827.61	90.90
641	258550.31	4115811.06	88.50
642	258610.99	4115820.91	86.60
643	258677.93	4115821.05	82.90
644	258693.50	4115827.40	83.10
645	258714.17	4115813.92	82.20
646	258743.98	4115815.81	83.10
647	258762.62	4115824.61	83.10
648	258826.09	4115815.81	82.90
649	258838.73	4115783.66	82.60
650	258805.11	4115774.62	83.20
651	258774.97	4115797.80	82.80
652	258747.11	4115787.81	82.80
653	258727.59	4115793.23	82.50
654	258705.25	4115781.33	81.80
655	258684.39	4115797.90	82.10
656	258661.44	4115795.00	82.60
657	258650.77	4115780.38	82.40
658	258515.30	4115775.43	88.90
659	258478.12	4115793.04	91.30
660	258457.36	4115770.06	90.60
661	258485.59	4115761.68	89.30
662	258564.63	4115763.01	86.30
663	258601.87	4115768.25	83.90
664	258661.44	4115755.82	81.80
665	258678.30	4115770.96	82.10
666	258748.11	4115760.49	82.60
667	258787.49	4115768.54	83.10
668	258854.92	4115744.17	82.80
669	258797.21	4115739.70	83.70
670	258663.92	4115746.08	81.50
671	258517.82	4115737.84	86.20
672	258450.01	4115733.71	89.20
673	258443.16	4115715.43	88.20
674	258415.44	4115723.09	88.80
675	258371.87	4115714.15	86.40
676	258392.63	4115703.73	87.30
677	258414.68	4115700.11	85.40
678	258604.11	4115696.30	80.60
679	258672.87	4115704.97	79.90
680	258701.44	4115691.64	80.70
681	258715.87	4115697.68	80.90
682	258722.92	4115709.54	81.40
683	258745.73	4115698.82	81.70
684	258769.68	4115711.44	81.90
685	258796.73	4115702.49	83.30
686	258822.06	4115699.35	83.10

NUMERO	COORD_X	COORD_Y	COORD_Z
687	258852.45	4115699.35	82.20
688	258911.40	4115706.16	82.10
689	259081.97	4115681.78	82.90
690	258612.78	4115360.45	66.80
691	258562.56	4115366.83	67.70
692	258547.63	4115342.01	66.40
693	258494.01	4115352.07	66.50
694	258424.99	4115378.40	66.90
695	258374.58	4115377.49	66.10
696	258419.35	4115556.06	74.30
697	258416.24	4115504.79	71.50
698	258374.19	4115505.56	69.40
699	258470.45	4115414.43	69.10
700	258441.50	4115421.39	68.20
701	258454.09	4115497.76	70.90
702	258396.39	4115530.89	72.50
703	258488.63	4115568.86	76.40
704	258449.84	4115558.29	75.20
705	258521.11	4115516.00	73.40
706	258551.81	4115487.27	71.20
707	258562.42	4115429.58	69.50
708	258683.70	4115418.09	71.30
709	258674.05	4115381.48	70.10
710	258544.76	4115391.98	69.10
711	258495.14	4115474.54	70.90
712	258489.02	4115435.68	69.30
713	258562.65	4115594.98	76.60
714	258560.10	4115638.18	77.90
715	258503.52	4115617.52	77.30
716	258375.09	4115660.92	85.10
717	258442.13	4115665.57	84.60
718	258448.35	4115337.43	65.50
719	258381.84	4115338.63	64.90
720	258362.58	4115298.27	64.10
721	258448.56	4115282.99	64.60
722	258505.36	4115312.04	65.40
723	258558.10	4115301.40	65.70
724	258620.39	4115327.13	66.70
725	258672.05	4115350.40	66.90
726	258717.87	4115346.23	67.90
727	258758.71	4115325.79	67.50
728	258634.32	4115411.18	69.90
729	258574.90	4115380.35	68.90
730	258536.19	4115376.26	69.10
731	258487.72	4115368.63	68.70
732	258395.08	4115502.09	70.10
733	258566.62	4115462.98	70.50
734	258534.96	4115452.55	70.10
735	258500.47	4115414.23	69.10

NUMERO	COORD_X	COORD_Y	COORD_Z
736	258562.91	4115413.37	69.30
737	258454.05	4115382.36	67.60
738	258489.61	4115506.44	72.40
739	258458.35	4115618.63	78.90
740	258441.85	4115586.24	77.20
741	258434.06	4115569.15	77.40
742	258532.27	4115585.46	76.70
743	258383.74	4115631.52	83.20
744	258393.09	4115407.88	66.90
745	258452.32	4115400.51	67.90
746	258439.42	4115395.81	66.70
747	258490.13	4115494.65	71.90
748	258469.52	4115478.77	71.10
749	258534.58	4115506.87	72.90
750	258842.70	4115656.98	80.30
751	258788.31	4115652.73	79.70
752	258911.28	4115441.45	82.40
753	258799.82	4115527.31	80.10
754	258697.53	4115499.02	81.20
755	258599.37	4115561.37	75.20
756	258692.76	4115592.27	78.40
757	258917.89	4115682.00	82.50
758	258844.70	4115553.78	81.10
759	258904.52	4115649.77	83.60
760	258620.37	4115429.40	70.20
761	258603.38	4115474.71	74.40
762	258623.38	4115494.30	77.30
763	258828.49	4115267.27	67.80
764	258872.36	4115598.33	82.10
765	258866.46	4115629.70	82.90
766	258987.11	4115438.32	85.50
767	258911.52	4115521.22	83.10
768	258955.40	4115630.82	84.40
769	258739.92	4115651.76	80.10
770	258761.76	4115642.86	79.70
771	258793.98	4115608.84	80.20
772	258852.51	4115605.94	81.30
773	258842.98	4115576.87	81.10
774	258833.76	4115561.91	81.10
775	258878.66	4115530.77	81.90
776	258869.18	4115497.25	82.70
777	258829.01	4115523.09	81.90
778	258868.14	4115442.40	81.10
779	258740.75	4115491.16	81.50
780	258787.35	4115447.10	77.20
781	258767.49	4115459.85	79.50
782	258732.52	4115441.03	74.30
783	258628.83	4115481.90	77.20
784	258597.65	4115489.18	74.70

NUMERO	COORD_X	COORD_Y	COORD_Z
785	258588.34	4115555.97	74.70
786	258661.85	4115589.01	77.60
787	258739.69	4115506.40	81.90
788	258659.87	4115505.93	79.70
789	258964.35	4115476.18	84.20
790	258915.30	4115609.44	83.80
791	258881.92	4115669.31	81.90
792	258816.28	4115658.06	80.10
793	258661.52	4115656.94	79.70
794	258897.74	4115629.75	83.40
795	258637.76	4115617.15	77.20
796	258921.62	4115480.74	84.30
797	259075.59	4115467.16	85.30
798	258938.99	4115595.23	83.60
799	258972.10	4115663.99	83.30
800	258976.38	4115613.42	83.70
801	258923.68	4115547.92	82.70
802	258929.63	4115506.50	83.50
803	258877.61	4115653.24	82.50
804	258881.16	4115609.02	83.10
805	258942.85	4115449.14	85.20
806	258670.38	4115553.19	79.40
807	258930.80	4115650.55	83.90
808	258548.25	4115253.93	64.60
809	258484.98	4115270.97	64.40
810	258411.88	4115301.41	64.60
811	258674.15	4115258.57	65.60
812	258616.43	4115286.96	65.60
813	258673.13	4115320.38	66.60
814	258767.90	4115279.37	66.40
815	259091.64	4115628.42	83.60
816	259042.34	4115645.09	83.50
817	259045.38	4115593.44	83.90
818	259012.04	4115552.64	83.90
819	258963.78	4115525.93	83.90
820	258979.70	4115578.57	83.90
821	259011.91	4115625.29	83.90
822	259071.02	4115531.46	84.70
823	259023.96	4115498.72	84.60
824	259067.91	4115432.16	86.80
825	259070.66	4115281.54	90.90
826	259089.02	4115330.94	90.60
827	259059.33	4115249.88	90.90
828	259089.65	4115247.17	91.50
829	259041.80	4115235.20	87.50
830	259078.54	4115406.54	87.70
831	258454.77	4115363.71	67.40
832	258467.08	4115388.14	68.30
833	258401.05	4115689.23	85.30

NUMERO	COORD_X	COORD_Y	COORD_Z
834	258376.45	4115688.42	86.70
835	258440.77	4115695.86	86.10
836	258480.83	4115685.51	85.10
837	258556.43	4115668.81	79.50
838	258623.94	4115681.20	80.90
839	258655.23	4115682.25	79.40
840	258676.22	4115682.19	79.80
841	258693.72	4115675.44	80.50
842	258706.05	4115682.13	80.40
843	258770.66	4115682.71	80.80
844	258806.48	4115682.60	80.50
845	258991.58	4115679.16	82.70
846	258949.41	4115658.56	83.80
847	258801.19	4115644.66	80.10
848	258751.76	4115663.39	80.40
849	258725.24	4115666.41	80.10
850	258715.70	4115643.03	79.40
851	258696.22	4115647.10	79.40
852	258679.42	4115661.29	79.70
853	258677.15	4115642.57	78.80
854	258640.86	4115663.79	78.70
855	258625.28	4115643.73	78.50
856	258592.54	4115663.44	79.20
857	258594.40	4115648.38	79.30
858	258576.49	4115644.43	78.20
859	258510.78	4115647.62	79.60
860	258491.41	4115665.95	83.60
861	258459.08	4115642.04	78.90
862	258446.00	4115647.51	83.90
863	258392.38	4115638.48	83.70
864	258404.95	4115622.49	82.40
865	258408.09	4115615.22	82.30
866	258466.06	4115622.60	78.70
867	258532.06	4115626.73	77.70
868	258574.39	4115621.38	77.30
869	258636.97	4115634.05	78.10
870	258649.76	4115624.28	78.40
871	258716.69	4115629.93	79.30
872	258720.07	4115621.08	79.20
873	258708.32	4115615.50	78.80
874	258778.39	4115638.94	80.10
875	258767.29	4115615.33	79.70
876	258743.85	4115616.08	79.70
877	258801.54	4115624.92	80.30
878	258836.37	4115635.68	80.20
879	258828.81	4115615.15	80.50
880	258823.28	4115599.31	80.50
881	258801.36	4115591.23	80.50
882	258671.39	4115610.77	77.90

NUMERO	COORD_X	COORD_Y	COORD_Z
883	258602.78	4115608.50	77.10
884	258495.54	4115603.27	77.50
885	258476.06	4115593.15	77.80
886	258467.98	4115593.61	77.10
887	258450.13	4115589.31	76.90
888	258422.74	4115588.97	78.30
889	258382.21	4115596.65	74.70
890	258421.81	4115576.97	80.20
891	258431.81	4115576.27	76.90
892	258564.98	4115571.49	74.90
893	258583.82	4115574.93	75.60
894	258606.73	4115581.38	77.20
895	258625.34	4115576.50	77.10
896	258720.71	4115576.85	78.80
897	258762.81	4115581.03	79.70
898	258810.49	4115578.71	80.10
899	258798.86	4115569.40	80.30
900	258864.52	4115585.69	81.90
901	258866.61	4115568.00	81.80
902	258898.42	4115566.96	82.40
903	258902.43	4115586.56	82.60
904	258882.54	4115544.90	81.90
905	258862.59	4115554.49	81.80
906	258806.07	4115553.10	80.40
907	258814.33	4115543.09	81.70
908	258772.58	4115541.12	79.80
909	258747.34	4115558.16	79.40
910	258691.34	4115551.00	81.40
911	258642.55	4115542.51	80.60
912	258610.05	4115535.13	76.80
913	258571.61	4115547.05	74.20
914	258548.69	4115547.11	74.40
915	258526.95	4115548.04	75.10
916	258366.62	4115526.28	71.20
917	258388.14	4115514.41	71.50
918	258469.61	4115531.73	74.40
919	258503.16	4115532.20	74.40
920	258547.59	4115532.84	73.80
921	258560.50	4115526.09	73.10
922	258572.31	4115528.53	73.80
923	258575.33	4115511.49	73.40
924	258598.30	4115521.26	75.10
925	258618.25	4115513.01	77.90
926	258666.62	4115520.28	80.70
927	258713.38	4115531.97	79.30
928	258820.90	4115511.90	80.70
929	258894.64	4115530.16	82.70
930	258849.74	4115491.93	81.60
931	258805.49	4115504.67	81.90

NUMERO	COORD_X	COORD_Y	COORD_Z
932	258788.57	4115504.67	81.10
933	258775.95	4115483.33	81.90
934	258628.42	4115513.10	77.90
935	258579.40	4115487.22	72.50
936	258410.52	4115495.49	70.50
937	258370.52	4115482.99	68.70
938	258370.05	4115458.25	67.90
939	258414.13	4115468.43	69.10
940	258456.93	4115458.54	69.90
941	258506.01	4115459.17	70.40
942	258646.45	4115472.55	77.50
943	258687.33	4115475.45	79.40
944	258727.92	4115463.53	79.10
945	258708.73	4115460.57	76.30
946	258791.71	4115480.75	82.10
947	258799.56	4115468.71	81.50
948	258823.40	4115456.67	81.20
949	258828.05	4115479.53	82.20
950	258857.89	4115457.13	82.40
951	258895.16	4115474.93	82.90
952	258876.38	4115468.07	82.20
953	258925.86	4115464.29	83.40
954	259027.57	4115457.25	85.30
955	258933.13	4115431.41	83.10
956	258884.63	4115434.67	81.80
957	258858.93	4115434.78	80.20
958	258816.19	4115434.55	78.10
959	258750.25	4115434.55	74.50
960	258432.97	4115453.52	68.20
961	258439.14	4115447.59	69.70
962	258415.64	4115445.32	67.90
963	258392.38	4115447.47	67.70
964	258370.34	4115435.55	67.40
965	258371.80	4115408.43	66.70
966	258509.73	4115403.72	69.10
967	258545.49	4115403.71	69.10
968	258570.62	4115405.28	69.10
969	258585.62	4115412.55	69.70
970	258637.32	4115404.00	70.10
971	258654.18	4115410.51	70.10
972	258958.95	4115424.12	83.40
973	259006.98	4115412.31	84.40
974	259030.65	4115421.39	86.30
975	259049.26	4115398.34	85.50
976	259033.79	4115377.63	86.80
977	259013.26	4115393.10	85.20
978	258690.76	4115379.03	68.60
979	258637.67	4115381.00	69.90
980	258598.70	4115382.28	69.70

NUMERO	COORD_X	COORD_Y	COORD_Z
981	258508.39	4115375.72	69.10
982	258492.23	4115384.15	69.10
983	258420.67	4115401.43	67.10
984	258374.96	4115356.46	65.90
985	258478.53	4115363.49	67.50
986	259077.55	4115352.49	89.10
987	259058.70	4115316.76	89.30
988	258712.93	4115289.79	66.30

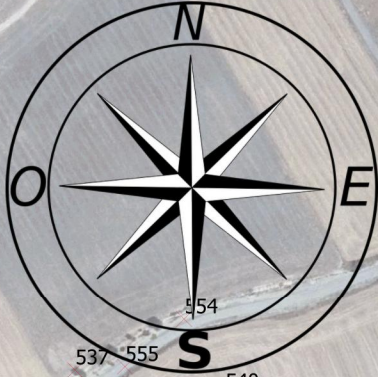
PLANOS



Leyenda

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 Puntos topográficos





Leyenda

Curvas de Nivel

