



URBHAUS LEAN SERVICES, S.L.

CIF. B95798641

Avenida Ribera de Axpe, 34

48950 ERANDIO

BIZKAIA

ANEJO N.º 2: CARTOGRAFIA Y TOPOGRAFIA

2.ERANSKINA: KARTOGRAFIA ETA TOPOGRAFIA

PROYECTO DE RENOVACIÓN DE LA ESTACIÓN DE AFORO DEL LEITZARAN (ANDOAIN)
LEITZARANGO AFORALEKUA (ANDOAIN) BERRITZEKO PROIEKTUA

ANEJO N.º 2: CARTOGRAFIA Y TOPOGRAFIA
2.ERANSKINA: KARTOGRAFIA ETA TOPOGRAFIA

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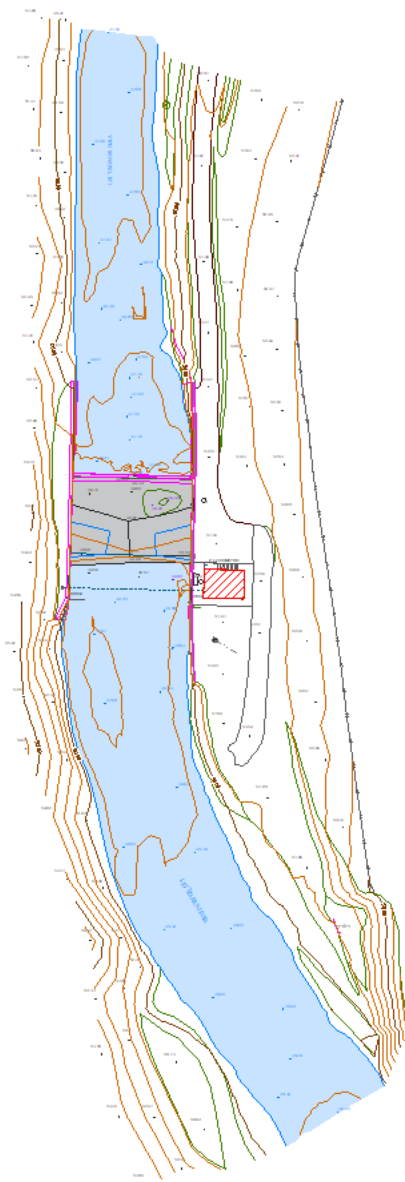
ANEJO I: MEMORIA DEL LEVANTAMIENTO TOPOGRÁFICO DE "GAROA, INGENIERÍA
CARTOGRÁFICA"

ANEJO II: PLANO DEL LEVANTAMIENTO TOPOGRÁFICO

1. INTRODUCCIÓN

Para la realización del presente proyecto la empresa “Garoa, ingeniería cartográfica” ha llevado a cabo un levantamiento topográfico de la totalidad del ámbito de actuación.

A continuación, se muestra el levantamiento topográfico efectuado. En los capítulos siguientes se adjunta el listado de los puntos tomados en dicho levantamiento topográfico, un anejo en el que se adjunta la memoria realizada por la empresa “Garoa, ingeniería cartográfica” y un plano del levantamiento realizado con los puntos topográficos tomados.



2. DATOS DEL LEVANTAMIENTO

2.1. LISTADO DE PUNTOS

Se expone el listado de puntos obtenidos para el levantamiento taquimétrico realizado:

Nombre	Coord. X	Coord. Y	Coord. Z
5000	579983,600	4784438,044	49,410
5001	579981,526	4784443,543	49,320
5002	579977,030	4784454,471	49,320
5003	579975,635	4784458,465	49,320
5004	579975,540	4784459,883	49,320
5005	579975,137	4784462,768	49,320
5006	579975,076	4784465,688	49,320
5007	579974,687	4784469,333	49,310
5008	579974,774	4784472,172	49,310
5009	579974,945	4784478,713	49,310
5010	579974,806	4784482,457	49,300
5011	579974,894	4784485,825	49,310
5012	579974,946	4784487,299	49,310
5013	579974,973	4784487,428	49,480
5014	579974,954	4784487,525	49,560
5015	579974,963	4784487,702	49,610
5016	579974,976	4784487,916	49,590
5017	579975,000	4784488,092	49,490
5018	579975,024	4784488,234	49,310
5019	579975,137	4784490,600	49,310
5020	579973,142	4784490,970	49,310
5021	579975,082	4784491,209	49,600
5022	579974,235	4784491,233	49,560
5023	579973,628	4784491,248	49,520
5024	579972,484	4784491,278	49,450
5025	579971,297	4784491,310	49,380
5026	579969,889	4784491,354	49,310
5027	579969,730	4784491,749	49,210
5028	579969,636	4784492,294	49,080
5029	579969,606	4784493,202	48,910
5030	579969,525	4784494,725	48,610
5031	579972,265	4784495,396	48,610
5032	579975,170	4784491,854	49,470

Nombre	Coord. X	Coord. Y	Coord. Z
5033	579975,168	4784493,891	49,060
5034	579975,123	4784494,949	48,840
5035	579975,219	4784496,144	48,620
5036	579975,301	4784497,758	48,610
5037	579975,351	4784499,139	48,610
5038	579975,354	4784499,203	48,820
5039	579975,365	4784499,317	48,960
5040	579975,371	4784499,489	49,070
5041	579975,375	4784499,664	49,100
5042	579975,384	4784500,040	48,970
5043	579975,389	4784500,171	48,720
5044	579975,397	4784500,173	48,610
5045	579975,411	4784502,053	48,610
5046	579975,412	4784503,558	48,610
5047	579975,401	4784504,803	48,390
5048	579975,349	4784507,055	48,390
5049	579974,797	4784510,344	48,400
5050	579974,519	4784513,469	48,390
5051	579973,799	4784515,764	48,390
5052	579973,209	4784519,430	48,390
5053	579971,799	4784522,617	48,390
5054	579970,707	4784526,724	48,380
5055	579970,603	4784530,598	48,350
5056	579969,944	4784535,409	48,340
5057	579970,094	4784541,709	48,320
5058	579969,759	4784543,183	48,330
5059	579970,007	4784546,588	48,320
5060	579970,169	4784548,219	48,320
5061	579970,116	4784550,257	48,320
5062	579957,109	4784523,169	48,370
5063	579957,433	4784519,487	48,390
5064	579957,505	4784518,116	48,380
5065	579957,388	4784517,575	48,390

PROYECTO DE RENOVACIÓN DE LA ESTACIÓN DE AFORO DEL LEITZARAN (ANDOAIN)
LEITZARANGO AFORALEKUA (ANDOAIN) BERRITZEKO PROIEKTUA

Nombre	Coord. X	Coord. Y	Coord. Z
5066	579957,521	4784516,045	48,380
5067	579957,429	4784515,610	48,390
5068	579957,432	4784514,780	48,380
5069	579957,486	4784514,185	48,380
5070	579957,514	4784513,298	48,390
5071	579957,570	4784511,107	48,380
5072	579957,275	4784510,259	48,380
5073	579957,016	4784509,742	48,380
5074	579957,202	4784507,398	48,380
5075	579956,686	4784506,728	48,380
5076	579956,808	4784504,188	48,610
5077	579956,563	4784501,185	48,600
5078	579956,422	4784498,268	48,610
5079	579956,473	4784496,550	48,630
5080	579956,419	4784494,998	48,970
5081	579956,377	4784493,812	49,190
5082	579956,294	4784492,901	49,360
5083	579956,267	4784491,718	49,590
5084	579957,052	4784491,689	49,550
5085	579958,019	4784491,665	49,500
5086	579958,901	4784491,640	49,460
5087	579959,727	4784491,611	49,410
5088	579960,559	4784491,590	49,370
5089	579958,753	4784496,100	48,600
5090	579961,021	4784495,543	48,590
5091	579962,507	4784495,157	48,590
5092	579961,791	4784491,563	49,300
5093	579959,936	4784491,419	49,310
5094	579958,457	4784491,310	49,310
5095	579956,205	4784491,128	49,320
5096	579956,213	4784490,230	49,320
5097	579956,203	4784488,573	49,310
5098	579956,140	4784487,168	49,310
5099	579956,062	4784485,259	49,310
5100	579956,069	4784484,812	49,310
5101	579955,993	4784484,155	49,310
5102	579955,633	4784482,751	49,310
5103	579955,147	4784481,520	49,320
5104	579955,113	4784481,025	49,310

Nombre	Coord. X	Coord. Y	Coord. Z
5105	579954,906	4784479,050	49,320
5106	579954,883	4784476,140	49,320
5107	579955,210	4784474,491	49,320
5108	579956,152	4784466,992	49,320
5109	579956,235	4784486,213	52,100
5110	579956,240	4784486,362	52,100
5111	579956,255	4784486,368	49,310
5112	579956,241	4784486,286	50,100
5113	579956,242	4784486,279	51,100
5114	579956,235	4784486,279	52,100
5115	579955,449	4784486,301	55,500
5116	579964,737	4784486,087	55,330
5117	579977,365	4784485,798	55,400
5118	579984,277	4784489,731	55,550
5119	579979,414	4784489,840	57,200
5120	579976,632	4784489,881	56,150
5121	579976,442	4784484,083	56,170
5122	579977,299	4784489,267	53,610
5123	579977,329	4784490,216	53,600
5124	579979,407	4784490,188	53,590
5125	579979,824	4784490,163	53,410
5126	579980,135	4784490,159	53,230
5127	579977,268	4784489,208	52,280
5128	579977,115	4784484,688	53,260
5129	579975,050	4784486,261	51,110
5130	579975,067	4784485,921	51,100
5131	579974,914	4784483,995	51,510
5132	579974,916	4784484,052	51,510
5133	579974,870	4784484,073	49,340
5134	579977,576	4784489,948	56,620
5135	579978,583	4784490,267	57,240
5136	579975,358	4784499,171	51,190
5137	579975,358	4784499,502	51,210
5138	579975,384	4784504,009	51,190
5139	579975,163	4784504,113	51,210
5140	579975,171	4784504,306	51,200
5141	579956,907	4784518,702	49,830
5142	579956,840	4784515,870	50,270
5143	579956,657	4784506,594	51,460

PROYECTO DE RENOVACIÓN DE LA ESTACIÓN DE AFORO DEL LEITZARAN (ANDOAIN)
LEITZARANGO AFORALEKUA (ANDOAIN) BERRITZEKO PROIEKTUA

ANEJO N.º 2: CARTOGRAFIA Y TOPOGRAFIA
2.ERANSKINA: KARTOGRAFIA ETA TOPOGRAFIA

Nombre	Coord. X	Coord. Y	Coord. Z
5144	579956,604	4784504,118	51,780
5145	579956,390	4784496,095	51,780
5146	579956,259	4784491,491	51,780
5147	579956,098	4784485,933	51,790
5148	579956,069	4784484,876	51,760
5149	579956,113	4784484,753	51,700
5150	579956,096	4784484,772	49,320
5151	579955,806	4784484,902	51,950
5152	579956,088	4784484,874	51,950
5153	579956,077	4784484,663	51,950
5154	579954,902	4784486,435	55,850
5155	579955,162	4784486,435	55,850
5156	579955,173	4784486,164	55,850
5157	579956,284	4784493,451	51,290
5158	579956,279	4784493,125	51,280
5159	579963,000	4784491,523	49,240
5160	579964,187	4784491,484	49,180
5161	579965,633	4784491,440	49,110
5162	579966,602	4784491,426	49,150
5163	579967,183	4784491,408	49,180
5164	579968,228	4784491,386	49,220
5165	579969,546	4784491,356	49,290
5166	579975,268	4784498,939	48,100
5167	579975,281	4784499,647	48,030
5168	579972,570	4784498,144	48,050
5169	579970,018	4784497,593	48,090
5170	579967,598	4784497,178	48,100
5171	579966,699	4784496,992	48,090
5172	579966,235	4784496,887	48,110
5173	579965,261	4784496,828	48,070
5174	579963,782	4784497,216	48,100
5175	579962,103	4784497,745	48,110
5176	579958,781	4784498,683	48,080
5177	579957,285	4784499,202	48,090
5178	579956,578	4784499,266	48,060
5179	579956,802	4784499,748	48,110
5180	579956,791	4784501,109	48,100
5181	579956,916	4784502,796	48,110
5182	579959,329	4784502,633	48,130

Nombre	Coord. X	Coord. Y	Coord. Z
5183	579959,330	4784501,069	48,110
5184	579959,531	4784499,314	48,110
5185	579960,902	4784498,921	48,120
5186	579961,305	4784499,989	48,120
5187	579961,527	4784500,693	48,110
5188	579961,806	4784501,879	48,120
5189	579961,999	4784502,709	48,100
5190	579964,017	4784502,332	48,100
5191	579963,971	4784500,866	48,110
5192	579963,975	4784499,228	48,090
5193	579964,349	4784497,803	48,110
5194	579965,681	4784497,857	48,090
5195	579965,723	4784496,907	48,110
5196	579965,845	4784499,410	48,090
5197	579965,922	4784501,257	48,020
5198	579965,870	4784502,548	48,090
5199	579967,921	4784502,612	48,150
5200	579968,048	4784500,995	48,140
5201	579967,689	4784499,486	48,120
5202	579967,569	4784497,251	48,090
5203	579969,301	4784497,929	48,100
5204	579969,233	4784498,608	48,240
5205	579969,131	4784499,283	48,220
5206	579969,220	4784500,045	48,190
5207	579969,390	4784500,826	48,180
5208	579969,642	4784501,642	48,110
5209	579969,844	4784502,629	48,130
5210	579971,694	4784502,508	48,110
5211	579971,914	4784501,257	48,060
5212	579973,597	4784502,127	48,150
5213	579975,153	4784502,367	48,110
5214	579974,932	4784501,174	48,180
5215	579973,871	4784500,825	48,100
5216	579973,770	4784499,509	48,110
5217	579975,003	4784499,631	48,080
5218	579973,256	4784499,174	48,080
5219	579971,834	4784498,507	48,130
5220	579971,574	4784499,322	48,340
5221	579971,565	4784499,851	48,400

PROYECTO DE RENOVACIÓN DE LA ESTACIÓN DE AFORO DEL LEITZARAN (ANDOAIN)
LEITZARANGO AFORALEKUA (ANDOAIN) BERRITZEKO PROIEKTUA

ANEJO N.º 2: CARTOGRAFIA Y TOPOGRAFIA
2.ERANSKINA: KARTOGRAFIA ETA TOPOGRAFIA

Nombre	Coord. X	Coord. Y	Coord. Z
5222	579970,736	4784500,049	48,490
5223	579970,580	4784500,083	48,410
5224	579970,402	4784499,985	48,410
5225	579970,223	4784499,741	48,410
5226	579970,276	4784499,452	48,410
5227	579970,611	4784499,244	48,430
5228	579971,043	4784499,339	48,410
5229	579971,185	4784499,231	48,520
5230	579971,624	4784499,797	48,460
5231	579971,738	4784500,081	48,400
5232	579971,409	4784500,273	48,390
5233	579971,008	4784500,233	48,380
5234	579970,231	4784497,758	48,080
5235	579970,926	4784497,970	48,170
5236	579972,051	4784498,381	48,170
5237	579973,154	4784498,941	48,090
5238	579973,644	4784499,879	48,100
5239	579973,601	4784500,546	48,110
5240	579972,758	4784501,179	48,090
5241	579971,853	4784501,421	48,080
5242	579970,521	4784501,694	48,160
5243	579969,228	4784501,571	48,110
5244	579968,121	4784501,422	48,130
5245	579967,660	4784500,726	48,120
5246	579967,738	4784499,689	48,090
5247	579967,803	4784498,761	48,100
5248	579968,118	4784497,810	48,090
5249	579968,807	4784497,442	48,090
5250	579975,403	4784503,315	48,560
5251	579975,333	4784503,241	48,450
5252	579975,313	4784502,553	48,150
5253	579972,516	4784502,760	48,140
5254	579972,327	4784503,323	48,420
5255	579972,251	4784503,452	48,550
5256	579969,175	4784503,542	48,570
5257	579969,144	4784503,411	48,410
5258	579968,844	4784502,887	48,140
5259	579966,937	4784503,018	48,140
5260	579967,111	4784503,595	48,560

Nombre	Coord. X	Coord. Y	Coord. Z
5261	579967,054	4784503,632	48,550
5262	579966,942	4784503,927	48,560
5263	579967,314	4784503,448	48,420
5264	579966,891	4784503,504	48,370
5265	579966,890	4784503,935	48,360
5266	579969,221	4784503,881	48,560
5267	579973,249	4784503,798	48,560
5268	579975,377	4784503,718	48,560
5269	579975,405	4784503,783	48,220
5270	579973,607	4784503,856	48,090
5271	579971,030	4784503,894	48,110
5272	579967,813	4784503,964	48,120
5273	579966,239	4784504,011	48,110
5274	579966,228	4784504,008	48,110
5275	579966,268	4784502,999	48,130
5276	579964,925	4784502,908	48,110
5277	579962,845	4784503,027	48,140
5278	579960,524	4784503,092	48,130
5279	579957,549	4784503,050	48,120
5280	579956,692	4784503,105	48,140
5281	579965,048	4784504,036	48,120
5282	579963,542	4784504,082	48,270
5283	579960,221	4784504,146	48,160
5284	579957,726	4784504,218	48,140
5285	579956,784	4784504,294	48,240
5286	579956,714	4784503,782	48,590
5287	579959,017	4784503,710	48,580
5288	579962,646	4784503,627	48,590
5289	579964,248	4784503,566	48,560
5290	579965,337	4784503,545	48,550
5291	579965,417	4784503,950	48,370
5292	579965,413	4784503,497	48,360
5293	579964,228	4784503,531	48,440
5294	579963,707	4784504,004	48,550
5295	579960,405	4784504,119	48,570
5296	579960,336	4784503,635	48,450
5297	579956,715	4784503,742	48,430
5298	579956,821	4784504,226	48,600
5299	579956,976	4784504,809	48,090

PROYECTO DE RENOVACIÓN DE LA ESTACIÓN DE AFORO DEL LEITZARAN (ANDOAIN)
LEITZARANGO AFORALEKUA (ANDOAIN) BERRITZEKO PROIEKTUA

ANEJO N.º 2: CARTOGRAFIA Y TOPOGRAFIA
2.ERANSKINA: KARTOGRAFIA ETA TOPOGRAFIA

Nombre	Coord. X	Coord. Y	Coord. Z
5300	579956,988	4784506,075	48,170
5301	579958,012	4784506,044	48,110
5302	579958,125	4784504,863	48,140
5303	579959,279	4784504,739	48,090
5304	579959,281	4784506,206	48,150
5305	579960,324	4784506,173	48,230
5306	579960,463	4784506,569	48,190
5307	579960,600	4784506,761	47,650
5308	579961,095	4784506,430	48,290
5309	579959,186	4784506,535	48,160
5310	579959,372	4784506,919	47,810
5311	579958,430	4784506,937	47,800
5312	579957,699	4784506,764	48,120
5313	579957,125	4784506,795	48,150
5314	579957,618	4784506,376	48,060
5315	579958,030	4784506,603	47,870
5316	579958,128	4784506,379	48,140
5317	579957,705	4784506,010	48,110
5318	579958,740	4784506,555	48,150
5319	579959,446	4784505,950	48,160
5320	579960,480	4784506,077	48,310
5321	579961,169	4784506,092	48,360
5322	579961,151	4784506,382	48,310
5323	579960,721	4784506,543	48,250
5324	579960,666	4784506,779	47,650
5325	579961,302	4784506,551	47,700
5326	579961,086	4784505,733	48,180
5327	579961,192	4784505,439	48,020
5328	579961,177	4784505,423	48,180
5329	579961,929	4784504,706	48,080
5330	579962,113	4784505,104	48,130
5331	579962,191	4784505,374	48,060
5332	579962,040	4784505,955	48,170
5333	579961,961	4784505,934	48,150
5334	579962,349	4784505,958	48,230
5335	579962,613	4784506,014	48,220
5336	579962,733	4784505,931	48,150
5337	579962,621	4784505,742	48,200
5338	579962,526	4784505,736	48,290

Nombre	Coord. X	Coord. Y	Coord. Z
5339	579962,298	4784505,633	48,030
5340	579961,893	4784505,486	48,080
5341	579961,725	4784505,431	48,320
5342	579961,976	4784505,411	48,280
5343	579962,199	4784504,658	48,040
5344	579962,527	4784505,063	48,220
5345	579962,861	4784505,594	47,840
5346	579962,822	4784505,940	47,910
5347	579962,824	4784506,041	47,740
5348	579962,580	4784506,190	47,890
5349	579962,210	4784506,082	47,780
5350	579961,380	4784506,392	47,790
5351	579963,266	4784504,600	48,010
5352	579963,442	4784505,282	47,830
5353	579963,409	4784506,050	47,700
5354	579964,071	4784504,518	48,010
5355	579964,732	4784504,387	48,030
5356	579964,636	4784504,928	48,050
5357	579964,471	4784505,151	48,000
5358	579964,715	4784506,190	47,670
5359	579965,242	4784505,899	47,570
5360	579965,344	4784505,620	48,010
5361	579965,403	4784505,399	48,060
5362	579965,373	4784505,103	47,880
5363	579965,618	4784504,958	48,030
5364	579965,678	4784505,480	48,070
5365	579965,708	4784506,089	47,550
5366	579965,802	4784506,707	47,520
5367	579966,147	4784505,668	47,510
5368	579966,011	4784504,898	47,950
5369	579965,905	4784504,502	47,950
5370	579966,255	4784504,813	47,990
5371	579975,102	4784504,453	48,040
5372	579974,101	4784504,342	47,920
5373	579974,186	4784505,471	47,830
5374	579975,176	4784505,459	47,900
5375	579973,649	4784505,736	47,850
5376	579973,856	4784505,311	47,850
5377	579973,352	4784504,226	47,990

PROYECTO DE RENOVACIÓN DE LA ESTACIÓN DE AFORO DEL LEITZARAN (ANDOAIN)
LEITZARANGO AFORALEKUA (ANDOAIN) BERRITZEKO PROIEKTUA

ANEJO N.º 2: CARTOGRAFIA Y TOPOGRAFIA
2.ERANSKINA: KARTOGRAFIA ETA TOPOGRAFIA

Nombre	Coord. X	Coord. Y	Coord. Z
5378	579973,051	4784504,670	47,910
5379	579972,684	4784505,325	47,830
5380	579972,522	4784505,845	47,800
5381	579971,714	4784506,259	47,910
5382	579971,552	4784505,285	48,020
5383	579971,320	4784504,443	47,980
5384	579970,450	4784506,549	47,780
5385	579970,408	4784505,694	48,050
5386	579970,213	4784504,779	48,000
5387	579969,449	4784506,553	47,610
5388	579968,828	4784506,803	47,700
5389	579968,699	4784506,019	47,760
5390	579969,325	4784504,623	48,060
5391	579968,483	4784504,512	47,990
5392	579967,749	4784504,389	48,040
5393	579967,402	4784504,734	48,010
5394	579967,498	4784504,952	48,190
5395	579967,801	4784505,117	48,120
5396	579968,171	4784505,088	48,000
5397	579968,535	4784505,157	47,960
5398	579967,893	4784504,622	48,050
5399	579967,653	4784505,346	48,010
5400	579968,043	4784505,559	47,740
5401	579967,275	4784505,689	47,800
5402	579967,301	4784506,319	47,720
5403	579967,869	4784506,456	47,730
5404	579966,921	4784506,410	47,540
5405	579966,725	4784505,914	47,710
5406	579966,892	4784505,486	48,090
5407	579966,905	4784504,991	47,990
5408	579966,877	4784504,627	47,970
5409	579966,534	4784504,534	47,930
5410	579966,318	4784504,985	48,000
5411	579966,561	4784505,701	47,630
5412	579966,980	4784506,533	47,520
5413	579967,308	4784506,504	47,900
5414	579967,413	4784506,074	48,100
5415	579967,528	4784505,924	48,160
5416	579967,537	4784506,035	48,170

Nombre	Coord. X	Coord. Y	Coord. Z
5417	579967,645	4784506,300	47,760
5418	579967,801	4784505,939	47,810
5419	579967,755	4784505,932	47,760
5420	579967,609	4784506,019	47,760
5421	579967,266	4784505,711	47,690
5422	579967,074	4784505,840	47,670
5423	579967,162	4784506,360	47,680
5424	579967,392	4784506,233	47,680
5425	579967,771	4784506,708	47,750
5426	579967,727	4784507,146	47,680
5427	579974,891	4784490,038	49,050
5428	579973,618	4784490,215	49,000
5429	579972,265	4784490,234	48,880
5430	579970,448	4784490,327	48,790
5431	579969,080	4784490,227	48,740
5432	579967,331	4784490,329	48,610
5433	579965,837	4784490,315	48,600
5434	579964,638	4784490,155	48,600
5435	579962,801	4784490,155	48,590
5436	579961,355	4784490,061	48,590
5437	579960,130	4784489,968	48,600
5438	579958,805	4784489,791	48,590
5439	579957,544	4784489,771	48,600
5440	579956,391	4784489,779	48,680
5441	579956,331	4784488,843	48,620
5442	579957,771	4784488,760	48,590
5443	579956,346	4784487,488	48,630
5444	579956,363	4784486,476	48,630
5445	579957,629	4784486,474	48,620
5446	579957,902	4784488,016	48,610
5447	579958,189	4784489,397	48,600
5448	579959,149	4784489,656	48,590
5449	579959,268	4784488,554	48,580
5450	579959,397	4784487,486	48,580
5451	579959,672	4784486,440	48,590
5452	579960,693	4784486,363	48,590
5453	579960,989	4784487,662	48,580
5454	579961,162	4784489,028	48,580
5455	579962,105	4784489,130	48,570

PROYECTO DE RENOVACIÓN DE LA ESTACIÓN DE AFORO DEL LEITZARAN (ANDOAIN)
LEITZARANGO AFORALEKUA (ANDOAIN) BERRITZEKO PROIEKTUA

ANEJO N.º 2: CARTOGRAFIA Y TOPOGRAFIA
2.ERANSKINA: KARTOGRAFIA ETA TOPOGRAFIA

Nombre	Coord. X	Coord. Y	Coord. Z
5456	579962,397	4784488,127	48,590
5457	579962,709	4784486,785	48,600
5458	579963,975	4784486,675	48,580
5459	579964,145	4784488,038	48,610
5460	579964,096	4784489,401	48,590
5461	579965,239	4784489,637	48,590
5462	579965,289	4784488,210	48,580
5463	579965,345	4784486,935	48,580
5464	579967,107	4784486,788	48,570
5465	579967,157	4784488,100	48,570
5466	579967,324	4784489,291	48,580
5467	579967,289	4784490,065	48,620
5468	579969,073	4784489,969	48,750
5469	579968,989	4784488,589	48,680
5470	579969,054	4784487,088	48,670
5471	579969,222	4784485,577	48,720
5472	579970,904	4784485,297	48,860
5473	579971,014	4784486,981	48,860
5474	579971,172	4784488,629	48,850
5475	579971,056	4784489,880	48,830
5476	579972,544	4784490,211	48,940
5477	579972,511	4784488,968	48,920
5478	579972,430	4784487,562	48,920
5479	579972,559	4784486,356	48,950
5480	579973,594	4784486,254	49,010
5481	579973,698	4784487,549	48,940
5482	579973,415	4784488,929	48,940
5483	579973,395	4784490,178	48,980
5484	579974,202	4784489,902	49,010
5485	579974,848	4784489,748	49,040
5486	579973,893	4784488,961	48,960
5487	579974,829	4784488,527	49,110
5488	579974,690	4784488,065	48,980
5489	579974,697	4784487,642	48,970
5490	579974,187	4784487,822	48,940
5491	579973,760	4784487,340	49,080
5492	579973,850	4784486,207	48,970
5493	579974,130	4784486,070	48,980
5494	579974,695	4784486,032	48,820

Nombre	Coord. X	Coord. Y	Coord. Z
5495	579974,664	4784486,674	48,990
5496	579953,811	4784511,013	51,160
5497	579953,276	4784508,843	51,540
5498	579953,467	4784506,026	51,640
5499	579953,575	4784500,627	51,790
5500	579953,665	4784497,448	51,780
5501	579954,263	4784495,101	51,820
5502	579954,442	4784492,160	51,940
5503	579954,403	4784489,651	51,870
5504	579954,552	4784487,546	51,860
5505	579954,358	4784483,995	51,820
5506	579954,166	4784482,785	51,870
5507	579953,830	4784481,879	51,910
5508	579953,870	4784481,645	51,910
5509	579954,117	4784481,325	51,940
5510	579954,357	4784481,382	51,830
5511	579956,018	4784484,617	51,810
5512	579956,145	4784486,381	51,790
5513	579957,355	4784508,156	47,840
5514	579958,586	4784508,206	47,840
5515	579960,086	4784507,848	47,670
5516	579961,380	4784508,073	47,700
5517	579962,294	4784508,077	47,460
5518	579962,949	4784507,981	47,460
5519	579964,413	4784507,764	47,440
5520	579965,598	4784507,579	47,580
5521	579966,414	4784507,600	47,460
5522	579966,651	4784506,623	47,590
5523	579967,544	4784506,467	47,910
5524	579968,610	4784506,683	47,710
5525	579970,293	4784506,362	47,960
5526	579971,729	4784506,091	47,910
5527	579973,002	4784505,844	48,090
5528	579975,275	4784505,042	47,990
5529	579975,076	4784506,166	48,120
5530	579975,149	4784508,478	47,990
5531	579975,052	4784508,951	48,140
5532	579973,587	4784509,385	47,850
5533	579971,091	4784509,355	47,760

PROYECTO DE RENOVACIÓN DE LA ESTACIÓN DE AFORO DEL LEITZARAN (ANDOAIN)
LEITZARANGO AFORALEKUA (ANDOAIN) BERRITZEKO PROIEKTUA

ANEJO N.º 2: CARTOGRAFIA Y TOPOGRAFIA
2.ERANSKINA: KARTOGRAFIA ETA TOPOGRAFIA

Nombre	Coord. X	Coord. Y	Coord. Z
5534	579969,620	4784509,489	47,540
5535	579967,919	4784509,416	47,630
5536	579966,828	4784509,616	47,450
5537	579965,640	4784509,470	47,180
5538	579964,130	4784509,074	47,470
5539	579962,870	4784509,152	47,470
5540	579961,465	4784509,147	47,410
5541	579959,518	4784508,667	48,040
5542	579958,429	4784508,598	48,240
5543	579957,301	4784509,395	48,080
5544	579957,672	4784511,506	48,000
5545	579957,692	4784512,641	48,110
5546	579958,327	4784512,977	48,030
5547	579958,937	4784512,805	47,990
5548	579960,844	4784512,758	47,740
5549	579962,517	4784512,689	47,600
5550	579963,659	4784512,982	47,540
5551	579965,198	4784513,120	47,520
5552	579966,510	4784513,486	47,540
5553	579968,179	4784513,507	47,720
5554	579969,191	4784513,387	47,660
5555	579970,509	4784513,094	47,910
5556	579972,269	4784513,261	48,140
5557	579973,667	4784513,135	48,220
5558	579971,930	4784516,167	48,160
5559	579970,330	4784516,207	47,950
5560	579968,624	4784516,225	47,800
5561	579966,993	4784516,254	47,640
5562	579965,802	4784516,144	47,650
5563	579964,602	4784516,052	47,720
5564	579963,181	4784516,136	47,980
5565	579961,367	4784515,885	48,090
5566	579959,858	4784515,706	47,970
5567	579958,857	4784515,633	48,020
5568	579957,683	4784515,426	48,120
5569	579957,554	4784517,561	48,250
5570	579959,096	4784519,001	48,170
5571	579960,525	4784519,163	48,160
5572	579961,556	4784519,075	48,200

Nombre	Coord. X	Coord. Y	Coord. Z
5573	579962,510	4784519,087	48,130
5574	579964,161	4784519,013	47,770
5575	579965,578	4784519,173	47,780
5576	579966,985	4784519,176	48,000
5577	579968,597	4784518,934	47,930
5578	579970,263	4784519,417	48,120
5579	579969,989	4784522,322	48,070
5580	579968,365	4784522,456	47,920
5581	579966,583	4784522,044	47,940
5582	579965,446	4784522,024	47,930
5583	579964,149	4784522,306	48,030
5584	579962,420	4784522,055	48,230
5585	579960,798	4784521,702	48,280
5586	579959,204	4784521,588	48,270
5587	579957,508	4784521,638	48,130
5588	579958,621	4784522,641	48,330
5589	579958,959	4784523,731	48,390
5590	579959,062	4784524,896	48,350
5591	579959,390	4784526,300	48,300
5592	579960,066	4784527,426	48,190
5593	579960,731	4784529,005	48,210
5594	579961,244	4784529,979	48,460
5595	579961,633	4784531,887	48,230
5596	579962,349	4784532,428	48,130
5597	579962,260	4784532,450	48,120
5598	579961,485	4784529,346	48,240
5599	579961,091	4784528,061	48,250
5600	579960,599	4784526,705	48,230
5601	579960,233	4784525,286	48,270
5602	579959,945	4784524,619	48,370
5603	579959,967	4784522,611	48,260
5604	579958,157	4784522,390	48,230
5605	579957,211	4784522,770	48,180
5606	579957,980	4784523,734	48,250
5607	579957,482	4784523,824	48,240
5608	579957,671	4784525,275	48,120
5609	579958,235	4784525,529	48,310
5610	579958,502	4784526,411	48,190
5611	579957,963	4784527,209	48,120

PROYECTO DE RENOVACIÓN DE LA ESTACIÓN DE AFORO DEL LEITZARAN (ANDOAIN)
LEITZARANGO AFORALEKUA (ANDOAIN) BERRITZEKO PROIEKTUA

ANEJO N.º 2: CARTOGRAFIA Y TOPOGRAFIA
2.ERANSKINA: KARTOGRAFIA ETA TOPOGRAFIA

Nombre	Coord. X	Coord. Y	Coord. Z
5612	579958,234	4784527,232	48,180
5613	579958,855	4784527,110	48,290
5614	579959,399	4784527,985	48,220
5615	579958,539	4784528,311	48,140
5616	579958,672	4784529,580	48,140
5617	579958,191	4784529,691	48,040
5618	579958,707	4784531,174	47,990
5619	579957,983	4784531,150	48,030
5620	579960,012	4784531,190	48,040
5621	579961,298	4784530,819	48,230
5622	579963,416	4784530,616	48,140
5623	579962,870	4784528,952	48,140
5624	579962,691	4784526,678	48,160
5625	579962,621	4784525,039	48,170
5626	579962,481	4784523,050	48,260
5627	579963,310	4784521,496	48,130
5628	579964,199	4784522,136	48,060
5629	579964,205	4784524,324	48,090
5630	579965,474	4784524,928	48,000
5631	579965,731	4784523,830	48,050
5632	579967,133	4784523,946	48,060
5633	579967,055	4784525,570	48,120
5634	579968,382	4784525,894	48,010
5635	579969,098	4784524,569	48,270
5636	579970,136	4784525,033	48,180
5637	579969,324	4784525,741	48,500
5638	579969,025	4784527,473	48,360
5639	579969,270	4784528,400	48,200
5640	579968,009	4784528,525	47,990
5641	579966,605	4784528,549	47,980
5642	579966,447	4784527,377	48,080
5643	579964,742	4784527,579	48,060
5644	579964,145	4784528,240	48,090
5645	579964,373	4784529,957	48,110
5646	579965,955	4784530,637	48,000
5647	579966,914	4784530,549	48,090
5648	579967,961	4784530,799	48,000
5649	579969,301	4784531,172	48,100
5650	579969,073	4784532,804	48,150

Nombre	Coord. X	Coord. Y	Coord. Z
5651	579967,653	4784533,259	48,000
5652	579966,232	4784533,154	48,060
5653	579964,599	4784533,074	48,020
5654	579963,129	4784533,341	48,110
5655	579962,220	4784535,863	48,040
5656	579961,212	4784535,842	48,010
5657	579960,300	4784536,118	47,950
5658	579959,961	4784536,172	47,890
5659	579960,265	4784538,606	47,730
5660	579961,762	4784538,632	47,850
5661	579963,737	4784538,681	48,050
5662	579964,985	4784538,144	48,110
5663	579965,586	4784538,964	48,080
5664	579966,990	4784538,733	48,050
5665	579967,361	4784536,889	48,120
5666	579969,281	4784535,792	48,150
5667	579968,893	4784536,991	48,050
5668	579969,043	4784538,728	48,190
5669	579967,358	4784539,789	48,020
5670	579966,018	4784539,861	48,130
5671	579964,577	4784539,998	48,030
5672	579963,145	4784540,152	47,980
5673	579961,858	4784540,190	47,800
5674	579960,842	4784540,339	47,670
5675	579959,983	4784540,407	47,750
5676	579960,037	4784541,951	47,660
5677	579959,771	4784543,337	47,560
5678	579960,796	4784542,855	47,680
5679	579962,028	4784542,481	47,820
5680	579963,463	4784542,648	47,980
5681	579965,075	4784542,664	48,080
5682	579966,678	4784542,603	47,980
5683	579968,024	4784542,694	47,880
5684	579969,261	4784542,862	48,060
5685	579968,884	4784545,279	48,040
5686	579967,361	4784545,313	47,900
5687	579959,793	4784546,565	47,400
5688	579960,630	4784547,054	47,400
5689	579961,568	4784546,962	47,690

PROYECTO DE RENOVACIÓN DE LA ESTACIÓN DE AFORO DEL LEITZARAN (ANDOAIN)
LEITZARANGO AFORALEKUA (ANDOAIN) BERRITZEKO PROIEKTUA

ANEJO N.º 2: CARTOGRAFIA Y TOPOGRAFIA
2.ERANSKINA: KARTOGRAFIA ETA TOPOGRAFIA

Nombre	Coord. X	Coord. Y	Coord. Z
5690	579963,157	4784547,102	47,830
5691	579965,295	4784547,805	47,950
5692	579967,698	4784548,205	48,010
5693	579968,804	4784552,098	48,130
5694	579967,211	4784552,079	47,950
5695	579965,600	4784551,967	47,880
5696	579963,602	4784551,833	47,610
5697	579961,055	4784551,865	47,630
5698	579960,248	4784552,002	47,600
5699	579959,454	4784552,213	47,410
5700	579968,843	4784555,404	48,120
5701	579967,168	4784555,596	47,940
5702	579965,298	4784555,804	47,870
5703	579963,614	4784555,937	47,650
5704	579961,536	4784555,948	47,660
5705	579959,861	4784555,825	47,480
5706	579958,896	4784555,405	47,490
5707	579958,655	4784560,245	47,580
5708	579960,356	4784560,025	47,550
5709	579961,950	4784560,091	47,700
5710	579963,635	4784559,819	47,680
5711	579964,766	4784560,001	47,860
5712	579966,018	4784560,293	47,910
5713	579967,121	4784560,327	47,930
5714	579968,365	4784559,968	48,110
5715	579968,970	4784563,858	48,110
5716	579967,088	4784563,751	47,930
5717	579965,489	4784563,933	47,890
5718	579964,471	4784564,450	47,850
5719	579963,588	4784564,789	47,740
5720	579962,007	4784564,786	47,740
5721	579960,450	4784564,707	47,650
5722	579958,634	4784564,755	47,700
5723	579959,244	4784570,803	47,830
5724	579960,767	4784570,423	47,730
5725	579962,176	4784570,314	47,790
5726	579963,330	4784570,312	47,790
5727	579964,572	4784570,109	47,840
5728	579967,289	4784569,966	47,910

Nombre	Coord. X	Coord. Y	Coord. Z
5729	579969,056	4784569,558	48,090
5730	579967,631	4784572,547	48,080
5731	579965,461	4784572,875	47,900
5732	579964,304	4784572,083	47,850
5733	579962,213	4784573,305	47,830
5734	579960,758	4784573,484	47,840
5735	579975,281	4784509,167	48,370
5736	579975,303	4784509,191	48,720
5737	579975,098	4784508,677	48,690
5738	579975,007	4784508,582	48,420
5739	579956,914	4784506,593	48,420
5740	579956,904	4784506,330	48,630
5741	579956,872	4784506,118	48,780
5742	579956,837	4784506,072	48,860
5743	579956,755	4784505,891	48,860
5744	579956,706	4784505,849	48,840
5745	579956,612	4784506,466	48,530
5746	579975,215	4784486,384	51,560
5747	579975,148	4784484,396	51,570
5748	579975,413	4784504,557	51,050
5749	579975,348	4784504,507	48,630
5750	579956,083	4784484,524	48,580
5751	579957,309	4784484,439	48,540
5752	579958,487	4784484,373	48,550
5753	579956,036	4784483,396	48,480
5754	579957,816	4784483,269	48,350
5755	579959,563	4784482,958	48,030
5756	579960,491	4784483,121	48,150
5757	579961,764	4784482,985	48,290
5758	579962,939	4784482,969	48,390
5759	579967,726	4784482,613	48,670
5760	579969,323	4784482,688	48,850
5761	579970,978	4784482,666	48,900
5762	579972,848	4784482,570	49,000
5763	579974,503	4784482,615	49,210
5764	579974,776	4784484,359	49,170
5765	579973,449	4784484,574	49,000
5766	579971,718	4784484,421	48,950
5767	579969,331	4784484,082	48,770

PROYECTO DE RENOVACIÓN DE LA ESTACIÓN DE AFORO DEL LEITZARAN (ANDOAIN)
LEITZARANGO AFORALEKUA (ANDOAIN) BERRITZEKO PROIEKTUA

ANEJO N.º 2: CARTOGRAFIA Y TOPOGRAFIA
2.ERANSKINA: KARTOGRAFIA ETA TOPOGRAFIA

Nombre	Coord. X	Coord. Y	Coord. Z
5768	579967,777	4784484,305	48,630
5769	579966,448	4784484,344	48,560
5770	579964,725	4784484,053	48,530
5771	579963,325	4784484,023	48,550
5772	579961,827	4784483,657	48,430
5773	579960,367	4784483,338	48,370
5774	579958,954	4784483,615	48,440
5775	579955,736	4784480,811	48,760
5776	579956,917	4784480,616	48,520
5777	579958,625	4784480,936	48,180
5778	579959,901	4784480,403	47,970
5779	579959,088	4784480,485	48,310
5780	579959,681	4784480,410	48,020
5781	579960,021	4784480,377	48,020
5782	579959,264	4784480,124	48,200
5783	579960,093	4784478,967	47,870
5784	579957,974	4784478,751	48,190
5785	579957,512	4784479,059	48,340
5786	579957,222	4784478,871	48,300
5787	579956,573	4784479,017	48,280
5788	579955,535	4784479,076	48,860
5789	579955,087	4784477,247	48,840
5790	579956,228	4784477,027	48,470
5791	579957,271	4784476,655	48,520
5792	579958,196	4784476,565	48,120
5793	579959,691	4784476,420	47,960
5794	579960,323	4784475,308	47,840
5795	579958,449	4784475,548	48,070
5796	579957,003	4784475,402	48,280
5797	579957,158	4784474,355	48,260
5798	579956,969	4784473,528	48,230
5799	579958,369	4784473,127	47,980
5800	579956,943	4784470,447	48,250
5801	579959,628	4784470,473	47,990
5802	579959,952	4784468,291	47,940
5803	579957,290	4784467,595	48,310
5804	579958,240	4784465,093	48,500
5805	579960,779	4784465,386	47,890
5806	579961,418	4784464,002	47,940

Nombre	Coord. X	Coord. Y	Coord. Z
5807	579962,157	4784463,711	47,640
5808	579962,138	4784463,405	48,030
5809	579962,164	4784463,271	48,040
5810	579962,995	4784462,637	47,890
5811	579961,457	4784462,469	48,770
5812	579962,278	4784461,850	48,110
5813	579963,536	4784461,133	48,020
5814	579962,779	4784460,545	48,390
5815	579961,929	4784460,794	48,570
5816	579963,643	4784459,456	48,200
5817	579962,555	4784459,323	48,480
5818	579962,135	4784458,050	48,650
5819	579962,409	4784457,098	48,270
5820	579963,806	4784456,991	48,440
5821	579964,098	4784458,565	48,220
5822	579964,350	4784460,484	48,150
5823	579964,204	4784462,017	48,170
5824	579963,945	4784463,354	48,030
5825	579963,885	4784463,589	47,880
5826	579963,819	4784464,851	47,850
5827	579963,898	4784466,221	47,890
5828	579963,742	4784466,482	47,740
5829	579963,742	4784466,482	47,740
5830	579963,493	4784468,323	47,710
5831	579963,320	4784469,919	47,760
5832	579963,099	4784471,518	47,800
5833	579962,814	4784472,912	47,860
5834	579962,434	4784475,184	47,900
5835	579962,288	4784476,757	47,960
5836	579962,290	4784478,694	48,060
5837	579962,530	4784480,552	48,180
5838	579963,883	4784480,997	48,470
5839	579964,627	4784481,275	48,470
5840	579967,723	4784480,412	48,690
5841	579969,739	4784480,362	48,860
5842	579971,737	4784480,546	48,990
5843	579973,283	4784480,322	49,060
5844	579974,654	4784480,307	49,170
5845	579974,164	4784477,169	49,210

PROYECTO DE RENOVACIÓN DE LA ESTACIÓN DE AFORO DEL LEITZARAN (ANDOAIN)
LEITZARANGO AFORALEKUA (ANDOAIN) BERRITZEKO PROIEKTUA

ANEJO N.º 2: CARTOGRAFIA Y TOPOGRAFIA
2.ERANSKINA: KARTOGRAFIA ETA TOPOGRAFIA

Nombre	Coord. X	Coord. Y	Coord. Z
5846	579972,371	4784476,837	49,040
5847	579970,607	4784476,911	48,920
5848	579968,701	4784476,598	48,740
5849	579966,746	4784476,664	48,670
5850	579964,889	4784476,504	48,380
5851	579964,290	4784473,526	48,180
5852	579966,554	4784473,714	48,620
5853	579968,678	4784474,124	48,780
5854	579970,543	4784474,246	48,900
5855	579973,068	4784474,142	49,120
5856	579972,787	4784470,588	49,060
5857	579970,381	4784470,029	48,940
5858	579967,881	4784469,675	48,590
5859	579966,261	4784469,581	48,320
5860	579964,747	4784469,366	48,120
5861	579964,705	4784466,489	48,090
5862	579966,135	4784466,446	48,310
5863	579967,782	4784466,906	48,530
5864	579969,615	4784467,116	48,830
5865	579971,228	4784467,211	48,920
5866	579973,213	4784467,311	49,030
5867	579973,558	4784463,910	49,090
5868	579971,552	4784463,278	48,910
5869	579969,110	4784463,180	48,630
5870	579967,315	4784462,952	48,380
5871	579965,062	4784462,561	48,170
5872	579965,353	4784459,845	48,310
5873	579967,055	4784459,866	48,450
5874	579968,868	4784460,314	48,510
5875	579971,288	4784461,033	48,810
5876	579972,956	4784461,280	48,900
5877	579974,367	4784461,255	49,080
5878	579974,774	4784457,407	49,040
5879	579972,816	4784456,549	48,930
5880	579971,563	4784456,354	49,000
5881	579970,480	4784456,122	48,800
5882	579968,051	4784455,990	48,630
5883	579965,964	4784455,673	48,600
5884	579964,294	4784455,563	48,500

Nombre	Coord. X	Coord. Y	Coord. Z
5885	579962,818	4784455,228	48,590
5886	579962,557	4784452,487	48,720
5887	579964,038	4784452,831	48,660
5888	579965,932	4784453,215	48,780
5889	579967,759	4784453,628	48,720
5890	579969,647	4784453,995	48,770
5891	579971,370	4784454,637	48,850
5892	579973,026	4784455,044	48,840
5893	579974,505	4784455,220	48,950
5894	579975,949	4784455,312	49,080
5895	579976,876	4784451,704	49,110
5896	579975,732	4784451,185	48,950
5897	579973,817	4784450,544	48,850
5898	579971,885	4784450,101	48,890
5899	579967,267	4784449,181	48,860
5900	579964,824	4784448,545	48,880
5901	579962,902	4784447,760	48,900
5902	579963,147	4784445,066	49,030
5903	579964,631	4784445,680	48,940
5904	579966,944	4784445,938	49,000
5905	579969,515	4784446,734	49,060
5906	579971,326	4784447,419	48,920
5907	579973,512	4784448,045	48,890
5908	579975,985	4784448,962	49,050
5909	579977,489	4784449,481	49,130
5910	579979,273	4784446,281	49,150
5911	579977,643	4784445,541	49,040
5912	579975,817	4784444,842	49,100
5913	579972,973	4784444,219	49,000
5914	579971,178	4784443,606	48,990
5915	579969,224	4784443,107	49,040
5916	579967,572	4784442,386	49,120
5917	579966,397	4784441,909	48,970
5918	579965,142	4784441,458	48,870
5919	579963,909	4784441,062	48,880
5920	579963,496	4784440,916	48,840
5921	579965,242	4784437,113	49,050
5922	579966,728	4784437,693	49,030
5923	579968,444	4784438,393	49,030

PROYECTO DE RENOVACIÓN DE LA ESTACIÓN DE AFORO DEL LEITZARAN (ANDOAIN)
LEITZARANGO AFORALEKUA (ANDOAIN) BERRITZEKO PROIEKTUA

ANEJO N.º 2: CARTOGRAFIA Y TOPOGRAFIA
2.ERANSKINA: KARTOGRAFIA ETA TOPOGRAFIA

Nombre	Coord. X	Coord. Y	Coord. Z
5924	579970,016	4784439,077	49,120
5925	579971,704	4784439,920	49,020
5926	579973,246	4784440,477	49,100
5927	579974,928	4784441,332	49,090
5928	579976,605	4784441,913	49,270
5929	579978,484	4784442,281	49,100
5930	579979,641	4784442,815	49,100
5931	579981,123	4784443,336	49,210
5932	579981,956	4784441,145	49,220
5933	579980,692	4784440,581	49,170
5934	579978,850	4784439,636	49,100
5935	579977,056	4784438,668	49,100
5936	579974,776	4784437,594	49,120
5937	579973,017	4784436,750	49,110
5938	579970,915	4784435,647	49,150
5939	579969,160	4784434,622	49,080
5940	579968,110	4784434,073	49,110
5941	579967,135	4784433,604	49,070
5942	579966,715	4784433,139	49,100
5943	579967,495	4784431,765	49,180
5944	579969,168	4784432,342	49,120
5945	579970,985	4784432,708	49,130
5946	579972,834	4784433,229	49,130
5947	579975,946	4784434,465	49,180
5948	579978,021	4784435,140	49,200
5949	579979,847	4784435,839	49,210
5950	579981,382	4784436,816	49,090
5951	579982,387	4784437,302	49,330
5952	579983,137	4784437,601	49,130
5953	579984,706	4784434,791	49,110
5954	579983,172	4784433,876	49,140
5955	579981,524	4784432,923	49,220
5956	579979,742	4784431,932	49,240
5957	579978,326	4784431,078	49,160
5958	579976,655	4784430,159	49,160
5959	579975,528	4784429,357	49,100
5960	579974,534	4784429,108	49,200
5961	579971,775	4784426,882	49,200
5962	579973,703	4784423,745	49,180

Nombre	Coord. X	Coord. Y	Coord. Z
5963	579975,547	4784424,840	49,250
5964	579977,350	4784425,914	49,210
5965	579979,663	4784427,216	49,200
5966	579981,117	4784428,212	49,130
5967	579983,228	4784429,327	49,150
5968	579984,726	4784430,132	49,290
5969	579985,995	4784431,168	49,200
5970	579986,734	4784431,651	49,220
5971	579987,482	4784432,064	49,090
5972	579989,430	4784428,996	49,240
5973	579988,649	4784428,655	49,140
5974	579987,562	4784427,825	49,170
5975	579986,181	4784426,857	49,260
5976	579984,788	4784425,953	49,230
5977	579983,714	4784425,234	49,240
5978	579982,292	4784424,369	49,240
5979	579981,139	4784423,700	49,270
5980	579979,840	4784422,920	49,220
5981	579978,638	4784422,222	49,250
5982	579977,356	4784421,397	49,330
5983	579976,163	4784420,603	49,260
5984	579978,759	4784418,825	49,360
5985	579980,443	4784419,901	49,230
5986	579982,002	4784420,536	49,290
5987	579983,500	4784421,105	49,270
5988	579984,948	4784421,945	49,350
5989	579986,524	4784422,625	49,320
5990	579988,126	4784423,498	49,240
5991	579989,618	4784424,341	49,250
5992	579991,051	4784425,152	49,240
5993	579993,029	4784421,921	49,250
5994	579991,344	4784421,314	49,290
5995	579989,655	4784420,361	49,330
5996	579987,996	4784419,451	49,350
5997	579986,323	4784418,687	49,420
5998	579985,089	4784417,857	49,240
5999	579983,762	4784417,131	49,300
6000	579982,536	4784416,416	49,280
6001	579981,717	4784415,569	49,400

PROYECTO DE RENOVACIÓN DE LA ESTACIÓN DE AFORO DEL LEITZARAN (ANDOAIN)
LEITZARANGO AFORALEKUA (ANDOAIN) BERRITZEKO PROIEKTUA

ANEJO N.º 2: CARTOGRAFIA Y TOPOGRAFIA
2.ERANSKINA: KARTOGRAFIA ETA TOPOGRAFIA

Nombre	Coord. X	Coord. Y	Coord. Z
6002	579981,084	4784414,596	49,260
6003	579979,965	4784413,700	49,360
6004	579982,492	4784411,389	49,170
6005	579983,728	4784411,899	49,240
6006	579985,226	4784412,816	49,300
6007	579986,386	4784413,625	49,340
6008	579987,843	4784414,522	49,430
6009	579989,255	4784415,504	49,480
6010	579990,850	4784416,319	49,400
6011	579992,289	4784417,447	49,270
6012	579993,774	4784417,976	49,390
6013	579995,273	4784418,736	49,400
6014	579996,763	4784416,463	49,350
6015	579995,121	4784415,589	49,330
6016	579994,138	4784414,929	49,380
6017	579992,861	4784414,128	49,380
6018	579991,982	4784413,321	49,430
6019	579990,712	4784412,534	49,490
6020	579989,418	4784411,397	49,440
6021	579988,231	4784410,604	49,390
6022	579987,076	4784409,724	49,350
6023	579985,847	4784408,678	49,480
6024	579987,369	4784405,460	49,530
6025	579988,933	4784406,490	49,440
6026	579990,657	4784407,555	49,290
6027	579991,916	4784408,037	49,460
6028	579993,388	4784408,501	49,430
6029	579994,994	4784409,170	49,450
6030	579996,428	4784410,042	49,430
6031	579997,437	4784411,251	49,370
6032	579998,590	4784412,362	49,450
6033	579999,893	4784413,220	49,600
6034	580002,463	4784410,646	49,570
6035	580001,240	4784410,005	49,530
6036	580000,022	4784409,191	49,400
6037	579998,857	4784408,578	49,200
6038	579997,593	4784407,612	49,100
6039	579996,184	4784406,646	49,150
6040	579994,771	4784406,066	49,120

Nombre	Coord. X	Coord. Y	Coord. Z
6041	579993,338	4784405,292	49,180
6042	579991,779	4784404,477	49,260
6043	579990,270	4784403,542	49,500
6044	579990,870	4784400,571	49,460
6045	579991,061	4784400,079	49,250
6046	579992,167	4784400,702	49,010
6047	579993,511	4784401,133	48,840
6048	579994,879	4784401,821	48,700
6049	579994,950	4784401,866	48,640
6050	579995,681	4784402,493	48,600
6051	579996,938	4784403,326	48,480
6052	579998,150	4784404,167	48,520
6053	579999,253	4784404,797	48,550
6054	580000,405	4784405,474	48,690
6055	580001,644	4784406,170	48,960
6056	580002,766	4784406,805	49,260
6057	579990,068	4784398,842	49,690
6058	579988,957	4784401,269	49,620
6059	579987,662	4784403,565	49,570
6060	579986,238	4784405,195	49,600
6061	579984,925	4784406,598	49,610
6062	579984,126	4784407,678	49,590
6063	579983,141	4784408,787	49,520
6064	579982,106	4784409,695	49,480
6065	579982,156	4784410,745	49,480
6066	579981,931	4784411,512	49,430
6067	579980,054	4784413,014	49,490
6068	579976,458	4784418,902	49,430
6069	579975,316	4784420,419	49,450
6070	579973,649	4784421,788	49,430
6071	579973,094	4784422,866	49,430
6072	579972,380	4784423,958	49,390
6073	579971,690	4784424,796	49,310
6074	579970,973	4784425,854	49,340
6075	579970,407	4784426,872	49,360
6076	579969,958	4784427,213	49,360
6077	579969,048	4784428,693	49,310
6078	579968,733	4784429,709	49,320
6079	579968,316	4784430,215	49,280

PROYECTO DE RENOVACIÓN DE LA ESTACIÓN DE AFORO DEL LEITZARAN (ANDOAIN)
LEITZARANGO AFORALEKUA (ANDOAIN) BERRITZEKO PROIEKTUA

ANEJO N.º 2: CARTOGRAFIA Y TOPOGRAFIA
2.ERANSKINA: KARTOGRAFIA ETA TOPOGRAFIA

Nombre	Coord. X	Coord. Y	Coord. Z
6080	579967,534	4784430,937	49,460
6081	579966,389	4784432,870	49,240
6082	579966,878	4784432,486	49,330
6083	579964,699	4784438,658	49,320
6084	579963,640	4784439,419	49,330
6085	579959,663	4784455,044	49,550
6086	579975,117	4784484,202	51,710
6087	579974,895	4784484,209	51,700
6088	579974,914	4784483,935	51,700
6089	579975,062	4784485,088	51,550
6090	579975,075	4784485,370	51,550
6091	579975,360	4784485,369	51,550
6092	579975,182	4784485,152	51,830
6093	579975,153	4784485,265	51,830
6094	579975,248	4784485,271	51,830
6095	579975,519	4784486,849	51,550
6096	579976,296	4784486,801	51,540
6097	579976,341	4784488,491	51,540
6098	579976,684	4784487,502	51,540
6099	579976,496	4784487,011	51,540
6100	579976,991	4784486,963	51,540
6101	579976,785	4784487,224	51,540
6102	579975,591	4784490,230	51,550
6103	579977,235	4784490,212	51,560
6104	579982,596	4784490,082	51,750
15000	579978,671	4784478,293	51,660
15001	579978,427	4784478,039	51,660
15002	579978,757	4784478,553	51,680
15003	579979,410	4784478,275	51,680
15004	579975,856	4784471,394	51,420
15005	579975,976	4784471,441	51,440
15006	579976,260	4784471,422	51,480
15007	579976,625	4784471,238	51,510
15008	579976,901	4784471,024	51,530
15009	579977,219	4784470,530	51,590
15010	579977,461	4784469,830	51,630
15011	579977,617	4784468,761	51,630
15012	579977,719	4784467,637	51,600
15013	579977,758	4784466,001	51,580

Nombre	Coord. X	Coord. Y	Coord. Z
15014	579978,006	4784464,480	51,580
15015	579978,447	4784462,822	51,560
15016	579978,562	4784461,567	51,390
15017	579978,761	4784460,494	51,300
15018	579979,198	4784459,273	51,280
15019	579979,695	4784457,853	51,230
15020	579980,975	4784455,879	51,190
15021	579981,699	4784454,848	51,050
15022	579982,381	4784453,745	51,160
15023	579983,007	4784452,605	50,960
15024	579983,401	4784451,446	50,900
15025	579984,275	4784449,985	50,860
15026	579985,330	4784449,046	50,920
15027	579986,263	4784448,138	50,990
15028	579987,238	4784446,652	51,100
15029	579988,410	4784445,158	51,000
15030	579989,444	4784444,040	51,090
15031	579990,405	4784442,624	51,040
15032	579991,123	4784441,048	51,020
15033	579992,041	4784439,270	50,910
15034	579992,885	4784437,267	50,790
15035	579993,614	4784435,623	50,730
15036	579994,845	4784433,862	50,680
15037	579996,196	4784432,029	50,720
15038	579997,787	4784429,618	50,730
15039	579998,775	4784427,692	50,800
15040	579999,278	4784426,433	50,750
15041	579999,923	4784424,757	50,730
15042	580000,565	4784423,700	50,780
15043	580001,397	4784422,501	50,590
15044	580001,412	4784423,067	50,740
15045	580001,160	4784423,729	50,760
15046	580000,638	4784425,360	50,690
15047	579999,991	4784427,005	50,740
15048	579999,373	4784428,703	50,780
15049	579998,800	4784430,371	50,900
15050	579998,375	4784431,544	50,880
15051	579998,319	4784431,982	50,890
15052	579998,601	4784432,324	51,180

PROYECTO DE RENOVACIÓN DE LA ESTACIÓN DE AFORO DEL LEITZARAN (ANDOAIN)
LEITZARANGO AFORALEKUA (ANDOAIN) BERRITZEKO PROIEKTUA

ANEJO N.º 2: CARTOGRAFIA Y TOPOGRAFIA
2.ERANSKINA: KARTOGRAFIA ETA TOPOGRAFIA

Nombre	Coord. X	Coord. Y	Coord. Z
15053	579998,296	4784432,264	51,200
15054	579998,300	4784432,224	50,830
15055	579998,079	4784432,701	50,910
15057	579997,658	4784433,783	50,900
15058	579997,439	4784434,511	51,160
15059	579999,153	4784433,304	51,390
15060	579997,159	4784434,156	51,030
15061	579996,896	4784434,507	51,070
15062	579996,438	4784435,138	51,110
15063	579996,069	4784435,997	51,130
15064	579996,191	4784436,987	51,190
15065	579996,281	4784438,204	51,190
15066	579995,840	4784439,635	51,170
15067	579995,853	4784441,140	51,260
15068	579995,657	4784442,991	51,300
15069	579995,005	4784445,164	51,250
15070	579994,170	4784447,052	51,240
15071	579993,419	4784449,256	51,200
15072	579992,867	4784451,271	51,230
15073	579992,402	4784453,593	51,310
15074	579991,807	4784455,607	51,310
15075	579991,205	4784457,758	51,370
15076	579991,008	4784459,473	51,400
15077	579990,754	4784461,502	51,480
15078	579990,411	4784463,044	51,670
15079	579983,360	4784458,264	51,250
15080	579984,034	4784458,941	51,270
15081	579984,514	4784459,677	51,320
15082	579985,412	4784460,694	51,390
15083	579986,194	4784461,980	51,510
15084	579986,615	4784463,449	51,550
15085	579986,821	4784466,758	51,600
15086	579987,214	4784472,633	51,590
15087	579987,491	4784477,823	51,570
15088	579987,730	4784482,545	51,580
15089	579987,740	4784487,411	51,600
15093	579988,056	4784489,893	51,650
15094	579988,069	4784490,257	51,780
15095	579988,344	4784491,341	51,870

Nombre	Coord. X	Coord. Y	Coord. Z
15096	579988,392	4784492,496	51,930
15097	579988,338	4784493,322	52,000
15098	579988,101	4784494,158	52,020
15099	579987,892	4784494,891	52,020
15100	579987,664	4784495,439	51,940
15101	579987,292	4784495,781	51,880
15102	579987,895	4784492,105	51,690
15103	579987,943	4784492,485	51,710
15104	579987,843	4784493,206	51,730
15105	579987,671	4784493,934	51,720
15106	579987,399	4784494,615	51,710
15107	579987,157	4784495,105	51,690
15108	579986,807	4784495,493	51,670
15109	579986,617	4784495,930	51,690
15110	579985,069	4784496,207	51,550
15111	579984,666	4784496,228	51,510
15112	579983,795	4784496,376	51,490
15113	579982,985	4784496,492	51,450
15114	579982,199	4784496,617	51,500
15115	579981,639	4784496,913	51,510
15116	579981,266	4784497,207	51,520
15117	579980,858	4784497,890	51,520
15118	579980,404	4784498,776	51,550
15119	579980,088	4784499,666	51,520
15120	579979,761	4784500,640	51,480
15121	579979,512	4784501,622	51,490
15122	579979,341	4784502,614	51,520
15123	579984,796	4784493,498	51,540
15124	579984,783	4784491,411	51,550
15125	579984,927	4784490,069	51,680
15126	579990,054	4784465,270	51,810
15127	579990,549	4784464,389	51,920
15128	579991,076	4784463,366	52,090
15129	579991,609	4784461,791	52,110
15130	579992,249	4784459,543	52,210
15131	579992,953	4784457,226	52,320
15132	579993,618	4784455,113	52,390
15133	579994,186	4784453,012	52,490
15134	579994,829	4784451,016	52,610

PROYECTO DE RENOVACIÓN DE LA ESTACIÓN DE AFORO DEL LEITZARAN (ANDOAIN)
LEITZARANGO AFORALEKUA (ANDOAIN) BERRITZEKO PROIEKTUA

ANEJO N.º 2: CARTOGRAFIA Y TOPOGRAFIA
2.ERANSKINA: KARTOGRAFIA ETA TOPOGRAFIA

Nombre	Coord. X	Coord. Y	Coord. Z
15135	579995,821	4784449,101	52,890
15136	579996,599	4784447,588	53,120
15137	579997,504	4784445,976	53,300
15138	579998,411	4784444,726	53,470
15139	579996,262	4784459,395	52,850
15140	579994,687	4784468,462	52,570
15141	579993,444	4784478,075	52,480
15142	579992,772	4784488,057	52,660
15143	579991,335	4784497,742	52,690
15144	579989,869	4784505,612	52,540
15145	579983,997	4784505,431	51,830
15146	579979,554	4784502,657	51,550
15147	579979,465	4784505,017	51,550
15148	579979,539	4784509,222	51,550
15149	579979,399	4784513,234	51,470
15150	579979,500	4784517,079	51,470
15151	579979,400	4784519,842	51,400
15152	579979,355	4784524,187	51,360
15153	579979,193	4784529,014	51,370
15154	579978,852	4784533,538	51,410
15155	579978,480	4784537,975	51,390
15156	579978,425	4784539,879	51,370
15157	579978,291	4784542,180	51,290
15158	579978,113	4784545,356	51,220
15159	579978,027	4784548,578	51,130
15160	579978,178	4784551,559	51,080
15161	579978,282	4784554,275	51,020
15162	579978,330	4784557,121	50,990
15163	579978,618	4784559,971	51,020
15164	579978,663	4784561,630	50,970
15165	579979,333	4784564,585	50,960
15166	579980,269	4784563,203	50,990
15167	579979,840	4784561,559	51,020
15168	579979,552	4784559,517	51,070
15169	579979,279	4784556,818	51,140
15170	579979,341	4784554,999	51,150
15171	579980,000	4784553,892	51,210
15172	579980,674	4784554,307	51,250
15173	579980,802	4784555,341	51,260

Nombre	Coord. X	Coord. Y	Coord. Z
15174	579981,081	4784556,632	51,240
15175	579981,525	4784558,441	51,220
15176	579981,932	4784560,419	51,200
15177	579982,274	4784562,137	51,170
15178	579982,647	4784564,017	51,080
15179	579981,412	4784565,228	50,830
15180	579980,939	4784564,277	50,860
15181	579980,542	4784562,404	50,870
15182	579980,252	4784560,758	50,890
15183	579980,057	4784559,556	50,940
15184	579980,099	4784559,262	50,950
15185	579980,289	4784559,241	50,920
15186	579980,399	4784559,371	50,920
15187	579980,601	4784559,831	50,970
15188	579980,933	4784560,936	50,930
15189	579981,398	4784562,581	50,900
15190	579981,822	4784564,503	50,890
15191	579984,519	4784558,719	51,630
15192	579990,483	4784556,863	52,180
15193	579997,067	4784555,992	53,070
15194	579995,051	4784548,859	53,000
15195	579993,005	4784541,602	52,930
15196	579992,006	4784537,971	52,890
15197	579991,559	4784535,924	52,840
15198	579991,392	4784533,958	52,870
15199	579991,385	4784532,077	52,920
15200	579991,667	4784530,203	52,970
15201	579991,949	4784524,582	53,050
15202	579992,636	4784517,221	53,130
15203	579993,535	4784511,792	53,260
15204	579994,281	4784504,384	53,410
15205	579989,527	4784514,083	52,600
15206	579984,442	4784514,722	51,970
15207	579983,659	4784522,664	52,050
15208	579988,681	4784523,647	52,640
15209	579988,815	4784532,047	52,570
15210	579982,498	4784532,970	51,930
15211	579982,403	4784542,742	51,780
15212	579988,638	4784543,591	52,370

PROYECTO DE RENOVACIÓN DE LA ESTACIÓN DE AFORO DEL LEITZARAN (ANDOAIN)
LEITZARANGO AFORALEKUA (ANDOAIN) BERRITZEKO PROIEKTUA

ANEJO N.º 2: CARTOGRAFIA Y TOPOGRAFIA
2.ERANSKINA: KARTOGRAFIA ETA TOPOGRAFIA

Nombre	Coord. X	Coord. Y	Coord. Z
15213	579990,870	4784553,153	52,370
15214	579985,281	4784553,444	51,840
15215	579978,687	4784555,299	51,080
15216	579978,679	4784554,075	51,150
15217	579978,706	4784552,135	51,260
15218	579978,574	4784548,999	51,250
15219	579978,574	4784546,517	51,310
15220	579978,504	4784544,021	51,390
15221	579978,488	4784542,225	51,410
15222	579978,581	4784540,797	51,460
15223	579978,748	4784539,152	51,490
15224	579978,907	4784536,676	51,480
15225	579979,237	4784533,872	51,520
15226	579979,519	4784531,585	51,490
15227	579979,749	4784529,872	51,530
15228	579979,894	4784526,849	51,500
15229	579979,972	4784524,639	51,510
15230	579980,025	4784522,223	51,570
15231	579980,116	4784520,052	51,540
15232	579980,176	4784517,871	51,620
15233	579980,020	4784515,802	51,620
15234	579979,904	4784514,115	51,610
15235	579979,752	4784512,217	51,620
15236	579979,633	4784510,680	51,580
15237	579979,785	4784509,063	51,570
15238	579976,033	4784517,609	51,430
15239	579976,062	4784517,641	51,470
15240	579976,428	4784517,734	51,460
15241	579976,725	4784518,028	51,480
15242	579976,774	4784518,614	51,440
15243	579976,826	4784519,987	51,460
15244	579976,697	4784521,197	51,410
15245	579976,638	4784522,842	51,450
15246	579976,634	4784525,064	51,460
15247	579976,500	4784529,600	51,410
15248	579976,272	4784533,697	51,420
15249	579975,850	4784538,689	51,350
15250	579975,612	4784542,569	51,270
15251	579975,325	4784546,362	51,160

Nombre	Coord. X	Coord. Y	Coord. Z
15252	579975,451	4784549,006	51,110
15253	579975,611	4784551,296	51,100
15254	579975,615	4784554,010	51,060
15255	579975,671	4784557,059	51,050
15256	579975,771	4784559,859	51,060
15257	579978,899	4784551,852	51,250
15258	579979,108	4784550,579	51,350
15259	579979,172	4784548,565	51,400
15260	579979,186	4784546,080	51,470
15261	579979,288	4784543,191	51,480
15262	579979,285	4784540,411	51,600
15263	579979,402	4784538,062	51,660
15264	579979,634	4784535,641	51,700
15265	579979,961	4784533,165	51,710
15266	579980,329	4784530,792	51,720
15267	579980,420	4784529,102	51,760
15268	579980,519	4784526,431	51,790
15269	579980,650	4784523,919	51,810
15270	579980,718	4784522,025	51,890
15271	579980,868	4784520,311	51,810
15272	579980,721	4784518,748	51,780
15273	579980,589	4784516,630	51,790
15274	579980,513	4784514,274	51,740
15275	579980,185	4784512,414	51,710
15276	579980,028	4784510,399	51,680
15277	579979,819	4784507,533	51,630
15278	579975,720	4784518,331	51,440
15279	579975,312	4784518,335	51,420
15280	579975,556	4784518,199	51,450
15281	579975,821	4784518,551	51,390
15282	579975,737	4784518,707	51,360
15283	579975,457	4784519,121	51,290
15284	579975,622	4784519,740	51,300
15285	579976,082	4784520,454	51,340
15286	579976,292	4784521,098	51,290
15287	579976,161	4784522,185	51,430
15288	579975,895	4784523,799	51,340
15289	579975,541	4784527,615	51,260
15290	579975,296	4784533,594	51,270

PROYECTO DE RENOVACIÓN DE LA ESTACIÓN DE AFORO DEL LEITZARAN (ANDOAIN)
LEITZARANGO AFORALEKUA (ANDOAIN) BERRITZEKO PROIEKTUA

ANEJO N.º 2: CARTOGRAFIA Y TOPOGRAFIA
2.ERANSKINA: KARTOGRAFIA ETA TOPOGRAFIA

Nombre	Coord. X	Coord. Y	Coord. Z
15291	579974,739	4784538,123	51,210
15292	579974,719	4784541,914	51,150
15293	579974,348	4784545,666	51,070
15294	579974,806	4784548,287	51,060
15295	579974,854	4784551,475	51,040
15296	579974,529	4784554,519	50,930
15297	579974,392	4784556,694	50,860
15298	579974,392	4784559,652	50,890
15299	579974,690	4784562,668	50,900
15300	579975,147	4784564,818	50,880
15301	579973,508	4784565,282	49,650
15302	579973,291	4784564,394	49,480
15303	579972,810	4784562,483	49,400
15304	579972,411	4784560,988	49,250
15305	579972,378	4784559,427	49,130
15306	579972,772	4784557,321	49,090
15307	579972,666	4784555,123	48,900
15308	579971,961	4784552,702	48,650
15309	579972,383	4784550,687	48,830
15310	579972,466	4784548,596	49,030
15311	579972,094	4784549,058	49,030
15312	579971,758	4784550,017	48,790
15313	579971,293	4784551,933	48,590
15314	579971,348	4784554,011	48,690
15315	579971,400	4784556,158	48,880
15316	579971,257	4784557,713	48,980
15317	579971,278	4784559,247	49,060
15318	579971,457	4784561,553	49,360
15319	579971,351	4784561,951	49,530
15320	579971,250	4784564,849	49,180
15321	579971,662	4784565,696	49,430
15322	579972,213	4784567,114	49,670
15323	579972,011	4784569,024	49,680
15324	579969,864	4784568,425	48,260
15325	579969,565	4784562,114	48,380
15326	579969,217	4784558,949	48,380
15327	579969,420	4784556,418	48,400
15328	579969,255	4784555,729	48,410
15329	579969,215	4784554,994	48,350

Nombre	Coord. X	Coord. Y	Coord. Z
15330	579969,649	4784554,000	48,360
15331	579970,146	4784552,436	48,350
15332	579970,175	4784551,173	48,330
15333	579970,225	4784550,091	48,390
15334	579970,106	4784546,170	48,350
15335	579969,903	4784544,267	48,350
15336	579969,969	4784543,933	48,400
15337	579969,885	4784543,548	48,370
15338	579970,008	4784542,949	48,360
15339	579970,203	4784541,719	48,380
15340	579970,209	4784540,881	48,330
15341	579970,139	4784539,840	48,370
15342	579970,161	4784538,639	48,330
15343	579970,084	4784537,738	48,330
15344	579969,894	4784537,160	48,380
15345	579969,775	4784536,720	48,350
15346	579970,151	4784536,437	48,390
15347	579970,912	4784535,559	48,450
15348	579971,281	4784534,117	48,490
15349	579971,327	4784532,772	48,550
15350	579971,757	4784530,131	48,400
15351	579972,044	4784527,275	48,540
15352	579972,005	4784525,439	48,500
15353	579970,682	4784533,152	48,350
15354	579970,562	4784532,280	48,380
15355	579970,733	4784531,276	48,380
15356	579970,914	4784529,716	48,380
15357	579970,944	4784528,852	48,410
15358	579970,771	4784528,253	48,400
15359	579970,941	4784527,429	48,410
15360	579971,370	4784526,646	48,420
15361	579971,527	4784526,286	48,400
15362	579971,590	4784526,106	48,410
15363	579971,539	4784525,995	48,400
15364	579970,903	4784525,202	48,420
15365	579970,470	4784523,859	48,310
15366	579970,493	4784523,655	48,350
15367	579970,588	4784523,507	48,340
15368	579971,193	4784523,109	48,390

PROYECTO DE RENOVACIÓN DE LA ESTACIÓN DE AFORO DEL LEITZARAN (ANDOAIN)
LEITZARANGO AFORALEKUA (ANDOAIN) BERRITZEKO PROIEKTUA

ANEJO N.º 2: CARTOGRAFIA Y TOPOGRAFIA
2.ERANSKINA: KARTOGRAFIA ETA TOPOGRAFIA

Nombre	Coord. X	Coord. Y	Coord. Z
15369	579971,820	4784522,571	48,390
15370	579971,978	4784522,548	48,390
15371	579972,061	4784522,393	48,400
15372	579972,181	4784521,950	48,400
15373	579972,303	4784521,186	48,360
15374	579972,684	4784520,552	48,370
15375	579972,920	4784520,422	48,350
15376	579973,168	4784520,209	48,360
15377	579973,296	4784520,015	48,380
15378	579972,717	4784522,367	48,590
15379	579973,174	4784521,680	48,550
15380	579973,408	4784521,017	48,510
15381	579973,793	4784519,892	48,480
15382	579973,725	4784519,300	48,430
15383	579973,558	4784517,790	48,420
15384	579973,901	4784516,367	48,400
15385	579974,120	4784514,473	48,380
15386	579974,382	4784512,811	48,410
15387	579974,807	4784509,551	48,390
15388	579975,017	4784509,147	48,420
15389	579972,590	4784526,189	48,870
15390	579972,616	4784525,119	49,350
15391	579972,913	4784524,150	49,380
15392	579973,527	4784523,169	49,420
15393	579974,284	4784521,464	50,240
15394	579974,475	4784520,859	50,540
15395	579974,733	4784520,138	50,940
15396	579974,958	4784519,907	51,050
15397	579975,119	4784519,207	51,170
15398	579975,310	4784518,423	51,250
15399	579975,696	4784518,409	51,420
15400	579975,405	4784515,730	51,480
15401	579975,532	4784513,099	51,490
15402	579975,603	4784510,910	51,520
15403	579975,661	4784508,987	51,530
15404	579975,612	4784507,291	51,530
15405	579975,524	4784504,737	51,570
15406	579975,510	4784503,760	51,580
15407	579975,314	4784503,997	51,230

Nombre	Coord. X	Coord. Y	Coord. Z
15408	579975,131	4784504,179	51,230
15409	579975,362	4784504,355	51,240
15410	579975,426	4784504,553	51,100
15411	579975,449	4784504,605	51,150
15412	579975,483	4784504,629	51,130
15413	579975,427	4784501,290	51,580
15414	579975,371	4784500,007	51,620
15415	579975,366	4784498,319	51,670
15416	579975,563	4784499,127	51,630
15417	579975,603	4784499,514	51,660
15418	579975,321	4784499,500	51,250
15419	579975,235	4784499,514	51,280
15420	579975,212	4784499,212	51,280
15421	579975,323	4784499,191	51,260
15422	579975,174	4784499,192	50,840
15423	579975,456	4784499,819	51,600
15424	579975,476	4784500,126	51,620
15425	579975,720	4784500,159	51,600
15426	579975,635	4784499,908	51,880
15427	579975,569	4784499,981	51,930
15428	579975,674	4784499,995	51,940
15429	579975,721	4784502,363	51,650
15430	579975,672	4784500,418	51,660
15431	579975,611	4784498,314	51,690
15432	579975,455	4784494,429	51,590
15433	579977,047	4784499,724	51,600
15434	579977,051	4784500,291	51,610
15435	579977,520	4784500,106	51,600
15436	579977,201	4784500,033	51,590
15437	579975,305	4784497,645	51,570
15438	579975,212	4784494,205	51,570
15439	579975,123	4784491,223	51,550
15440	579975,456	4784492,294	51,620
15441	579974,926	4784483,341	51,580
15442	579975,399	4784483,323	51,610
15443	579976,403	4784483,252	51,630
15444	579975,404	4784483,305	51,490
15445	579974,960	4784483,307	51,450
15446	579974,966	4784483,267	51,450

PROYECTO DE RENOVACIÓN DE LA ESTACIÓN DE AFORO DEL LEITZARAN (ANDOAIN)
LEITZARANGO AFORALEKUA (ANDOAIN) BERRITZEKO PROIEKTUA

ANEJO N.º 2: CARTOGRAFIA Y TOPOGRAFIA
2.ERANSKINA: KARTOGRAFIA ETA TOPOGRAFIA

Nombre	Coord. X	Coord. Y	Coord. Z
15447	579975,427	4784483,242	51,480
15448	579976,673	4784483,186	51,550
15449	579975,375	4784483,186	51,550
15450	579974,924	4784483,205	51,580
15451	579974,898	4784480,337	51,540
15452	579975,011	4784478,097	51,540
15453	579975,076	4784476,196	51,510
15454	579975,228	4784473,726	51,480
15455	579975,404	4784471,315	51,410
15456	579975,867	4784471,377	51,440
15457	579975,664	4784471,520	51,460
15458	579974,858	4784476,930	49,370
15459	579974,576	4784475,858	49,350
15460	579974,514	4784474,997	49,280
15461	579974,502	4784474,091	49,290
15462	579974,858	4784474,188	49,360
15463	579974,874	4784472,733	49,350
15464	579974,631	4784472,660	49,310
15465	579974,654	4784471,398	49,340
15466	579974,682	4784470,732	49,280
15467	579974,660	4784470,052	49,280
15468	579974,618	4784469,309	49,320
15469	579974,781	4784467,933	49,300
15470	579975,326	4784470,600	49,310
15471	579975,262	4784470,072	49,420
15472	579975,037	4784469,032	49,420
15473	579975,206	4784467,941	49,480
15474	579975,351	4784466,660	49,460
15475	579974,882	4784468,063	49,310
15476	579974,895	4784467,000	49,310
15477	579975,141	4784465,869	49,310
15478	579975,045	4784465,151	49,330
15479	579975,153	4784464,241	49,300
15480	579975,153	4784463,460	49,340
15481	579975,096	4784462,748	49,350
15482	579975,218	4784461,647	49,340
15483	579975,291	4784460,966	49,320
15484	579975,525	4784459,514	49,350
15485	579975,858	4784458,369	49,360

Nombre	Coord. X	Coord. Y	Coord. Z
15486	579976,244	4784457,538	49,350
15487	579976,640	4784456,802	49,300
15488	579976,989	4784455,867	49,340
15489	579977,271	4784454,929	49,380
15490	579977,437	4784454,081	49,330
15491	579977,956	4784453,374	49,310
15492	579978,257	4784452,366	49,320
15493	579978,677	4784451,366	49,360
15494	579979,106	4784450,126	49,330
15495	579975,623	4784463,313	49,340
15496	579975,755	4784462,826	49,490
15497	579975,900	4784461,993	49,520
15498	579976,389	4784460,743	49,560
15499	579976,964	4784459,187	49,630
15500	579977,593	4784457,511	49,550
15501	579978,451	4784455,669	49,600
15502	579979,267	4784453,810	49,620
15503	579979,980	4784452,513	49,740
15504	579981,001	4784451,733	49,970
15505	579980,610	4784447,402	49,330
15506	579981,143	4784446,230	49,330
15507	579981,644	4784444,934	49,300
15508	579981,962	4784443,721	49,310
15509	579982,592	4784442,629	49,320
15510	579983,189	4784440,997	49,310
15511	579984,296	4784439,364	49,380
15512	579984,751	4784437,407	49,390
15513	579985,965	4784435,972	49,410
15514	579986,790	4784435,071	49,390
15515	579987,836	4784434,383	49,350
15516	579988,500	4784433,269	49,420
15517	579989,319	4784432,109	49,420
15518	579989,906	4784430,711	49,400
15519	579990,854	4784429,588	49,420
15520	579991,290	4784428,153	49,420
15521	579991,676	4784427,091	49,440
15522	579992,456	4784425,945	49,460
15523	579993,131	4784424,924	49,490
15524	579994,041	4784423,537	49,530

PROYECTO DE RENOVACIÓN DE LA ESTACIÓN DE AFORO DEL LEITZARAN (ANDOAIN)
LEITZARANGO AFORALEKUA (ANDOAIN) BERRITZEKO PROIEKTUA

ANEJO N.º 2: CARTOGRAFIA Y TOPOGRAFIA
2.ERANSKINA: KARTOGRAFIA ETA TOPOGRAFIA

Nombre	Coord. X	Coord. Y	Coord. Z
15525	579994,694	4784422,535	49,450
15526	579995,583	4784420,825	49,540
15527	579996,446	4784419,988	49,580
15528	579996,462	4784419,790	49,590
15529	579996,627	4784418,718	49,560
15530	579997,011	4784417,917	49,670
15531	579998,090	4784416,929	49,650
15532	579999,230	4784416,441	49,660
15533	579999,870	4784415,898	49,700
15534	580000,483	4784415,295	49,710
15535	580001,187	4784414,413	49,640
15536	580004,578	4784416,037	50,020
15537	580002,953	4784418,035	49,920
15538	580002,098	4784419,051	49,830
15539	580001,297	4784420,059	49,820
15540	580000,050	4784421,407	49,880
15541	579999,246	4784422,218	49,830
15542	579998,473	4784423,235	49,920
15543	579997,019	4784424,703	49,860
15544	579995,059	4784426,391	49,810
15545	579993,621	4784428,228	49,870
15546	579991,809	4784429,985	49,880
15547	579992,488	4784427,884	49,850
15548	579993,710	4784426,153	49,810
15549	579994,855	4784424,303	49,840
15550	579996,023	4784422,718	49,900
15551	579996,525	4784421,233	49,950
15552	579997,167	4784420,186	50,010
15553	579998,227	4784419,061	49,930
15554	580001,241	4784415,976	49,980
15555	580003,728	4784413,320	50,070
15556	579999,488	4784428,042	50,800
15557	579999,748	4784427,572	50,920
15558	580000,377	4784426,513	51,000
15559	580001,106	4784425,316	51,140
15560	580002,189	4784423,928	51,390
15561	580002,673	4784423,220	51,400
15562	580002,603	4784424,011	51,530
15563	580002,585	4784424,657	51,490

Nombre	Coord. X	Coord. Y	Coord. Z
15564	580002,534	4784425,994	51,440
15565	580002,335	4784427,847	51,600
15566	580001,781	4784430,291	51,660
15567	580001,659	4784432,552	51,870
15568	580002,468	4784433,595	52,140
15569	580002,668	4784434,960	52,610
15570	580002,157	4784436,019	52,500
15571	580001,115	4784436,234	52,190
15572	579999,883	4784436,367	51,680
15573	579998,612	4784436,605	51,330
15574	579997,526	4784437,055	51,460
15575	579996,346	4784448,302	52,970
15576	579996,778	4784447,316	53,180
15577	579998,118	4784445,494	53,490
15578	579999,190	4784443,505	53,790
15579	579999,993	4784441,828	54,070
15580	580000,893	4784439,985	54,330
15581	580001,572	4784438,860	54,550
15582	580002,549	4784438,477	54,760
15583	580003,407	4784438,629	55,030
15584	580004,996	4784438,019	55,360
15585	580006,425	4784436,711	55,940
15586	580007,654	4784432,807	56,560
15587	580007,756	4784427,781	56,840
15588	580008,167	4784423,460	57,160
15589	580009,298	4784417,276	57,550
15590	580003,828	4784438,778	55,100
15591	580003,246	4784439,712	55,100
15592	580002,576	4784444,244	54,680
15593	580001,580	4784451,346	54,300
15594	580000,582	4784458,733	54,010
15595	579999,600	4784466,017	53,850
15596	579998,769	4784473,117	53,800
15597	579997,540	4784482,443	53,660
15598	579996,505	4784489,513	53,530
15599	579995,995	4784493,078	53,610
15600	579995,085	4784498,752	53,480
15601	579994,004	4784506,228	53,350
15602	579975,393	4784483,652	51,520

PROYECTO DE RENOVACIÓN DE LA ESTACIÓN DE AFORO DEL LEITZARAN (ANDOAIN)
LEITZARANGO AFORALEKUA (ANDOAIN) BERRITZEKO PROIEKTUA

ANEJO N.º 2: CARTOGRAFIA Y TOPOGRAFIA
2.ERANSKINA: KARTOGRAFIA ETA TOPOGRAFIA

Nombre	Coord. X	Coord. Y	Coord. Z
15603	579980,295	4784483,417	51,490
15604	579984,835	4784483,331	51,490
15605	579984,673	4784481,348	51,560
15606	579984,385	4784477,425	51,580
15607	579984,155	4784473,201	51,650
15608	579983,778	4784470,088	51,650
15609	579983,351	4784466,832	51,600
15610	579982,855	4784464,273	51,580
15611	579982,296	4784462,547	51,500
15612	579982,089	4784462,126	51,470
15613	579981,615	4784461,886	51,430
15614	579981,169	4784461,648	51,430
15615	579980,978	4784460,923	51,340
15616	579981,986	4784460,421	51,350
15617	579981,957	4784459,956	51,310
15618	579982,031	4784458,982	51,270
15619	579982,022	4784458,654	51,250
15620	579982,463	4784458,529	51,250
15621	579983,129	4784458,391	51,260
15622	579983,568	4784458,604	51,250
15623	579980,234	4784472,781	51,640
15624	579970,408	4784426,872	49,360
15625	579970,238	4784424,815	49,420
15626	579969,283	4784422,383	49,500
15627	579969,222	4784421,327	49,520
15628	579970,027	4784419,994	49,540
15629	579972,483	4784419,097	49,560
15630	579975,664	4784417,011	49,740
15631	579978,106	4784413,899	50,010
15632	579980,444	4784409,762	50,050
15633	579981,454	4784406,284	50,100
15634	579982,205	4784402,836	50,130
15635	579983,682	4784399,070	50,140
15636	579985,104	4784396,768	50,180
15638	579970,860	4784416,956	50,500
15639	579973,134	4784415,768	50,570
15640	579976,307	4784412,452	50,610
15641	579978,185	4784408,263	50,650
15642	579978,978	4784404,658	50,680

Nombre	Coord. X	Coord. Y	Coord. Z
15643	579979,735	4784400,369	50,750
15645	579980,528	4784395,242	50,800
15646	579977,876	4784396,770	50,830
15647	579975,524	4784398,827	50,880
15648	579973,528	4784403,040	50,950
15649	579971,633	4784407,153	50,910
15650	579969,483	4784411,886	50,770
15651	579967,606	4784417,063	50,690
15652	579967,306	4784419,562	50,430
15653	579972,912	4784411,990	50,740
15654	579977,267	4784401,522	50,830
15655	579973,761	4784395,338	52,460
15656	579968,505	4784392,811	54,980
15657	579963,930	4784403,526	54,450
15658	579969,506	4784403,403	52,470
15659	579965,495	4784415,517	52,200
15660	579961,258	4784413,255	54,930
15661	579960,253	4784421,947	53,440
15662	579964,671	4784423,516	51,950
15663	579967,304	4784426,854	51,270
15664	579964,257	4784431,512	52,700
15665	579959,454	4784431,019	56,520
15666	579961,499	4784439,314	50,380
15667	579955,868	4784440,638	54,110
15668	579958,994	4784449,777	49,820
15669	579953,666	4784450,432	53,020
15670	579955,878	4784459,335	52,470
15671	579949,360	4784461,101	56,270
15672	579953,635	4784468,315	52,410
15673	579949,006	4784469,153	54,940
15674	579953,050	4784476,764	50,640
15675	579947,572	4784476,363	55,870
15676	579952,294	4784481,417	52,510
15677	579948,761	4784483,934	54,960
15678	579950,048	4784490,352	54,630
15679	579950,301	4784497,932	55,200
15680	579950,503	4784504,967	54,130
15681	579950,743	4784511,364	52,880
15682	579950,950	4784517,605	52,510

PROYECTO DE RENOVACIÓN DE LA ESTACIÓN DE AFORO DEL LEITZARAN (ANDOAIN)
LEITZARANGO AFORALEKUA (ANDOAIN) BERRITZEKO PROIEKTUA

ANEJO N.º 2: CARTOGRAFIA Y TOPOGRAFIA
2.ERANSKINA: KARTOGRAFIA ETA TOPOGRAFIA

Nombre	Coord. X	Coord. Y	Coord. Z
15683	579954,966	4784523,258	49,440
15684	579950,559	4784524,797	51,310
15685	579950,265	4784530,490	52,350
15686	579954,974	4784530,986	50,530
15687	579954,907	4784537,021	51,010
15688	579951,103	4784538,592	52,410
15689	579955,304	4784544,337	49,830
15690	579951,063	4784546,206	51,240
15691	579955,534	4784551,357	49,550
15692	579951,606	4784553,506	50,840
15693	579954,874	4784560,752	49,580
15694	579950,589	4784561,297	51,470
15695	579949,770	4784568,079	51,920
15696	579955,260	4784568,919	49,510
15697	579951,878	4784575,600	51,890

Nombre	Coord. X	Coord. Y	Coord. Z
15698	579955,569	4784575,205	49,370
15699	579958,036	4784573,655	48,260
15700	579957,819	4784572,309	48,260
15701	579957,500	4784568,722	48,260
15702	579957,226	4784566,243	48,270
15703	579957,244	4784562,607	48,280
15704	579957,270	4784557,477	48,310
15705	579957,307	4784551,918	48,330
15706	579957,176	4784548,398	48,340
15707	579957,097	4784543,411	48,360
15708	579957,097	4784539,038	48,350
15709	579956,983	4784533,844	48,350
15710	579956,857	4784529,638	48,350
15711	579956,920	4784526,527	48,360

ANEXO I: MEMORIA DEL LEVANTAMIENTO TOPOGRÁFICO DE “GAROA, INGENIERÍA CARTOGRÁFICA”

PROYECTO DE RENOVACIÓN DE LA ESTACIÓN DE AFORO DEL LEITZARAN (ANDOAIN)
LEITZARANGO AFORALEKUA (ANDOAIN) BERRITZEKO PROIEKTUA

ANEJO N.º 2: CARTOGRAFIA Y TOPOGRAFIA
2.ERANSKINA: KARTOGRAFIA ETA TOPOGRAFIA



**LEVANTAMIENTO TOPOGRÁFICO DE LA ESTACIÓN DE AFOROS DE
LEITZARÁN EN GIPUZKOA**

PROMOTOR:	Obra Hidraulikoetako Zuzendaritza - Dirección de Obras Hidráulicas Ingurumena eta Obra Hidraulikoak - Medio Ambiente y Obras Hidráulicas Gipuzkoako Foru Aldundia - Diputación Foral de Gipuzkoa
FECHA:	Agosto - Diciembre 2020
DOCUMENTO:	Memoria

ÍNDICE

- 1.- *MEMORIA*
 - 1.1.- Objeto
 - 1.2.- Trabajos realizados

- 2.- *ANEXOS*
 - 2.1.- Equipos utilizados
 - 2.2.- Reseñas de vértices

1.- MEMORIA

1.-MEMORIA

1.1.- OBJETO

El objeto de la presente memoria es la descripción de los trabajos efectuados para la realización del plano topográfico de detalle a escala 1/500 de la estación de aforos de Leitzarán, en Gipuzkoa.

El trabajo se realiza por encargo de la Dirección de Obras Hidráulicas del Departamento de Medio Ambiente y Obras Hidráulicas de la DIPUTACIÓN FORAL DE GIPUZKOA.

En Vitoria-Gasteiz a 14 de diciembre de 2020

El Ingeniero en Geomática y Topografía



Juan Gallardo Sancha
Colegiado nº 2773

1.2. – TRABAJOS REALIZADOS

Antes de comenzar con la toma de datos en campo, se analizaron las características de la estación de aforos y de los tramos de ríos a cartografiar para elegir el método topográfico a utilizar, instrumentación y características de la embarcación a emplear si fuera necesario. En el trabajo que nos ocupa se han podido realizar las mediciones a pie utilizando vadeadores.

Para la obtención de coordenadas de partida, se decidió utilizar 2 receptores GNSS topográficos (sistema global de navegación por satélite), uno como receptor fijo para calcular las coordenadas absolutas del trabajo y otro móvil que se utilizó principalmente para dar coordenadas a los puntos de partida de las poligonales realizadas. El enlace entre los receptores móviles y el fijo se realizó mediante radio, posibilitando la obtención de coordenadas precisas en tiempo real (RTK: navegación cinemática en tiempo real).

El receptor fijo se estacionó en un punto arbitrario que no se materializó en el suelo. Para trabajos adicionales en el futuro se han dado coordenadas a 3 vértices o bases de replanteo materializados mediante clavos de acero. Algunos de estos puntos no permiten el estacionamiento y servirán como bases de orientación. Las coordenadas XY de estos puntos se han obtenido mediante GNSS, pero las cotas calculadas se han obtenido mediante observación con estación total (cota trigonométrica).

Para la toma de datos de puntos del levantamiento (incluido el lecho del río) se decidió utilizar estaciones totales robotizadas utilizando el método de radiación y receptores GNSS topográficos. Las estaciones totales también ofrecen la posibilidad de medición con distanciómetro láser, lo que permite la medición de puntos inaccesibles o donde no se puede situar un jalón topográfico (aleros, alzados de puentes, regletas, etc.). Cuando fue necesario realizar poligonales por el lecho del río se utilizó centrado forzoso por la imposibilidad de materializar los puntos de las estaciones de la poligonal.

El levantamiento se adecuó a los límites y extensión solicitada en las notas técnicas recibidas de la DFG y se representaron todos los elementos solicitados.

Una vez finalizados los trabajos de campo, se comenzó calculando las coordenadas del receptor fijo y de todos los puntos medidos. El cálculo de coordenadas se realizó en Sistema Absoluto, Proyección U.T.M.-ETRS89 H30 (cota ortométrica). Para obtener las coordenadas de la posición del receptor GNSS fijo utilizado en el levantamiento se procedió a calcular las observaciones en "estático", almacenadas en dicho receptor, de forma simultánea a las observadas por las estaciones GNSS de la Red GPS/GNSS de Euskadi.

La coordenada Z se obtuvo a partir de las cotas asignadas a las regletas en los trabajos realizados anteriormente para la Agencia Vasca del Agua – Uraren Euskal Agentzia (URA).

Una vez realizado el cálculo GNSS se obtuvieron las coordenadas X,Y,Z de todos los puntos medidos mediante RTK cercano y los puntos radiados por topografía clásica.

Todos estos puntos se dibujaron en un programa informático de CAD utilizando codificación automática de elementos. A partir de la minuta de campo se realizó la delineación definitiva en 3D. Finalmente se realizó el cálculo del MDT y curvado. El plano se codificó en base a las capas y símbolos existentes en el dibujo prototipo recibido.

Los trabajos de campo se realizaron entre la última semana de agosto y la primera de noviembre de 2020. El equipo de trabajo estuvo formado por 2 Ingenieros en Geomática y Topografía y 1 Ingeniero Técnico en Topografía.

2.- ANEXOS

2.1.- EQUIPOS UTILIZADOS

EQUIPOS UTILIZADOS

RECEPTORES GNSS TOPOGRÁFICOS

Equipo: 2 Receptores GS14 (receptor móvil) y 1 receptor GX 1230+ (equipo utilizado como base Fija)

Números de Serie: 481320 y 481587

Marca: LEICA

Características:

Receptores bifrecuencia con 120 canales que permiten el seguimiento de 60 satélites simultáneamente. Soportan las constelaciones GPS L2, GLONASS, Galileo y BeiDou. Capaces de recibir correcciones DGPS/RTCM y RTK.

Tasa de posicionamiento de 20 Hz y registro de datos brutos en todos los formatos soportados incluido RINEX. Salida NEA para aplicaciones especiales. Comunicaciones mediante radio UHF (recepción / transmisión) y módem 3,75 G.

Obtienen puntos en Tiempo Real con una Precisión de 0,020 m.

Disponen de múltiples aplicaciones encaminadas a la toma de datos. Más información en:

http://www.leica-geosystems.com/downloads123/zz/gpsgis/VivaGS14/brochures-datasheet/Leica_Viva_GS14_DS_es.pdf

Se asegura la adecuación y correcto estado de este equipo mediante verificaciones y calibraciones periódicas siguiendo el procedimiento PG17 "Control de dispositivos de seguimiento y medición" de Sistema de Gestión de la Calidad UNE-EN-ISO-9001:2000, implantado en I. C. Garoa S.L. desde el 3 de septiembre de 2.003.

2.2.- RESEÑAS DE VÉRTICES

1001

Estación aforo de Leitzaran

X= 579976.837

Fecha: Septiembre 2020

Y= 4784500.059

Z= 51.569

Sistema de Referencia:

Planimetría: ETRS89

Altimetría: RedNAP

Método de observación:

Planimetría: GNSS RTK referido a la red GNSS de Euskadi

Altimetría: Radiación. Cota trigonométrica desde uno de los vértices.

CROQUIS DE SITUACIÓN



FOTOGRAFÍA



RESEÑA:

Clavo de acero con arandela situado junto a una arqueta en el margen derecha del río. Estación de aforo de Leitzaran.

1002

Estación aforo de Leitzaran

X= 579975.711

Fecha: Septiembre 2020

Y= 4784484.197

Z= 51.527

Sistema de Referencia:

Planimetría: ETRS89

Altimetría: RedNAP

Método de observación:

Planimetría: GNSS RTK referido a la red GNSS de Euskadi

Altimetría: Radiación. Cota trigonométrica desde uno de los vértices.

CROQUIS DE SITUACIÓN



FOTOGRAFÍA



RESEÑA:

Clavo de acero con arandela situado en la plataforma de la caseta de la estación de aforo. Estación de aforo de Leitzaran.

1003

Estación aforo de Leitzaran

X= 579955.949

Fecha: Septiembre 2020

Y= 4784494.173

Z= 51.797

Sistema de Referencia:

Planimetría: *ETRS89*

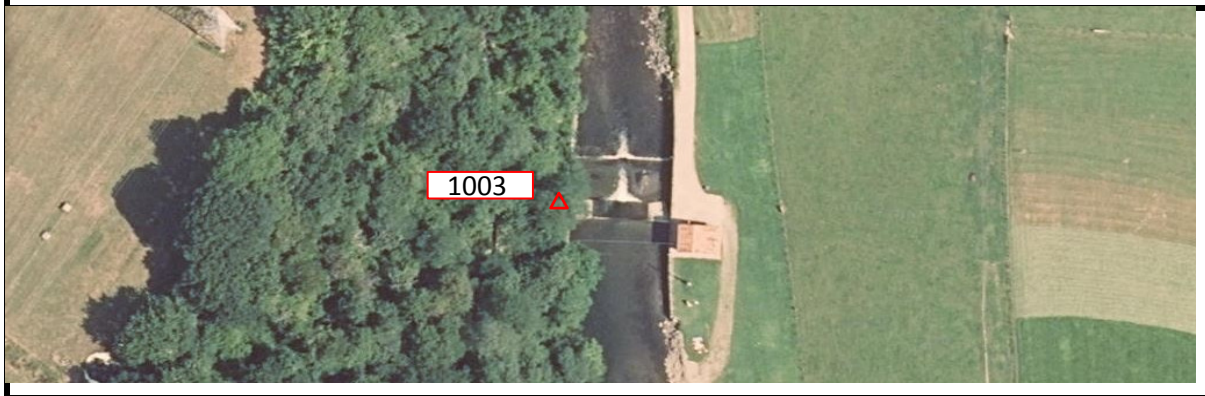
Altimetría: *RedNAP*

Método de observación:

Planimetría: GNSS RTK referido a la red GNSS de Euskadi

Altimetría: Radiación. Cota trigonométrica desde uno de los vértices.

CROQUIS DE SITUACIÓN



FOTOGRAFÍA



RESEÑA:

Clavo de acero con arandela situado en el muro de contención de margen izquierdo junto a la escalera de pates. Estación de aforo de Leitzaran.

ANEXO II: PLANO DEL LEVANTAMIENTO TOPOGRÁFICO

PROYECTO DE RENOVACIÓN DE LA ESTACIÓN DE AFORO DEL LEITZARAN (ANDOAIN)
LEITZARANGO AFORALEKUA (ANDOAIN) BERRITZEKO PROIEKTUA

ANEJO N.º 2: CARTOGRAFIA Y TOPOGRAFIA
2.ERANSKINA: KARTOGRAFIA ETA TOPOGRAFIA

