PLANILLA DE CALCULO
POLIGONAL CERRADA

LUGAR: PAUNA - BOYACÁ

LEVANTO: Top.FABIAN ESPINEL

FECHA:OCTUBRE DE 2024

CALCULO: FABIAN ESPINEL

LADO		DISTANCIA	AZIMUT			AZIMUT	PROYECCIONES SIN CORREGIR		CORRECCIONES		PROYECCIONES CORREGIDAS		VERTICE	COORDENADAS	
EST	**PV**		G	M	S	RADIANES	NORTE(+), SUR(-)	ESTE(+), OESTE(-)	NORTE-SUR	ESTE-OESTE	NORTE(+), SUR(-)	ESTE(12), OESTE(-)		Y	X
GPS02	BM01	158.182	188	58	59.0794	3.2983769353	-156.242	-24.699	0.001	0.000	-156.241	-24.699	GPS02	2183095.692	4891970.278
BM01	BM02	31.326	282	33	47.9757	4.9316603949	6.814	-30.576	0.000	0.000	6.814	-30.576	BM01	2182939.451	4891945.579
BM02	BM03	50.93	222	20	57.4377	3.8807271699	-37.640	-34.309	0.000	0.000	-37.640	-34.309	BM02	2182946.265	4891915.003
BM03	BM04	46.933	211	17	1.2141	3.6875957079	-40.109	-24.371	0.000	0.000	-40.109	-24.371	BM03	2182908.625	4891880.695
BM04	BM05	48.119	69	41	42.8092	1.2164111454	16.698	45.129	0.000	0.000	16.698	45.129	BM04	2182868.516	4891856.324
BM05	BM06	131.061	139	12	1.6254	2.4295061993	-99.213	85.637	0.000	0.001	-99.213	85.638	BM05	2182885.214	4891901.453
BM06	BM07	122.178	228	38	10.0068	3.9904529613	-80.740	-91.698	0.000	0.001	-80.740	-91.697	BM06	2182786.001	4891987.091
BM07	BM08	13.861	296	33	7.5993	5.1758107399	6.196	-12.399	0.000	0.000	6.196	-12.399	BM07	2182705.262	4891895.394
BM08	BM09	124.903	308	16	1.9745	5.3802778808	77.356	-98.065	0.000	0.001	77.357	-98.064	BM08	2182711.458	4891882.995
BM09	BM10	73.713	257	32	55.8252	4.4950752491	-15.893	-71.979	0.000	0.001	-15.893	-71.979	BM09	2182788.814	4891784.930
BM10	BM11	54.166	225	16	30.8993	3.9317948329	-38.117	-38.485	0.000	0.000	-38.117	-38.484	BM10	2182772.921	4891712.951
BM11	BM12	35.693	235	52	57.0939	4.1169267286	-20.020	-29.550	0.000	0.000	-20.020	-29.550	BM11	2182734.805	4891674.467
BM12	BM13	87.061	214	17	34.0227	3.7401146460	-71.927	-49.052	0.000	0.000	-71.927	-49.052	BM12	2182714.785	4891644.917
BM13	BM14	69.827	299	36	49.2941	5.2292454242	34.505	-60.706	0.000	0.000	34.505	-60.706	BM13	2182642.858	4891595.865
BM14	BM15	63.628	322	57	51.8918	5.6367923986	50.792	-38.324	0.000	0.000	50.792	-38.324	BM14	2182677.363	4891535.160
BM15	BM16	141.32	344	4	18.124	6.0051840481	135.894	-38.783	0.001	0.000	135.895	-38.783	BM15	2182728.156	4891496.836
BM16	BM17	85.168	44	15	14.7153	0.7723795359	61.002	59.434	0.000	0.000	61.002	59.434	BM16	2182864.050	4891458.054
BM17	BM18	82.407	316	14	2.7674	5.5193262887	59.512	-57.002	0.000	0.000	59.512	-57.002	BM17	2182925.052	4891517.488
BM18	BM19	31.005	53	32	22.6233	0.9344426072	18.425	24.936	0.000	0.000	18.425	24.937	BM18	2182984.565	4891460.486
BM19	BM20	37.896	153	25	46.3428	2.6778506374	-33.894	16.951	0.000	0.000	-33.893	16.951	BM19	2183002.990	4891485.423
BM20	BM21	34.909	113	12	18.201	1.9758009545	-13.755	32.085	0.000	0.000	-13.755	32.085	BM20	2182969.097	4891502.374
BM21	BM22	54.402	129	34	34.7914	2.2615336079	-34.660	41.932	0.000	0.000	-34.660	41.932	BM21	2182955.342	4891534.459
BM22	BM23	43.64	139	49	32.8137	2.4404202681	-33.345	28.153	0.000	0.000	-33.345	28.153	BM22	2182920.682	4891576.391
BM23	BM24	35.726	117	27	54.7606	2.0501546936	-16.477	31.699	0.000	0.000	-16.477	31.700	BM23	2182887.337	4891604.544
BM24	BM25	36.361	112	34	13.4782	1.9647243057	-13.956	33.576	0.000	0.000	-13.956	33.576	BM24	2182870.860	4891636.243
BM25	BM26	26.34	38	15	51.7452	0.6678393068	20.681	16.312	0.000	0.000	20.681	16.312	BM25	2182856.904	4891669.820
BM26	BM27	164.96	312	52	1.0533	5.4605585603	112.222	-120.905	0.001	0.001	112.223	-120.904	BM26	2182877.586	4891686.132
BM27	BM28	153.117	311	46	18.4576	5.4414443170	102.001	-114.195	0.000	0.001	102.002	-114.194	BM27	2182989.808	4891565.228
BM28	BM29	67.978	321	15	51.7393	5.6071210620	53.026	-42.536	0.000	0.000	53.026	-42.535	BM28	2183091.810	4891451.033
BM29	BM30	58.323	348	48	19.0083	6.0878005866	57.213	-11.323	0.000	0.000	57.214	-11.323	BM29	2183144.836	4891408.498
BM30	BM31	99.225	308	28	58.3523	5.3840418666	61.746	-77.673	0.000	0.001	61.746	-77.672	BM30	2183202.049	4891397.175
BM31	BM32	164.582	114	47	4.6435	2.0033696057	-68.994	149.422	0.000	0.001	-68.994	149.423	BM31	2183263.795	4891319.503
BM32	BM33	54.53	135	5	45.0356	2.3578672703	-38.623	38.494	0.000	0.000	-38.623	38.494	BM32	2183194.802	4891468.926
BM33	BM34	82.799	132	36	36.0082	2.3144811611	-56.055	60.938	0.000	0.000	-56.055	60.939	BM33	2183156.179	4891507.420
BM34	BM35	89.615	131	50	24.2933	2.3010435081	-59.778	66.764	0.000	0.000	-59.778	66.765	BM34	2183100.124	4891568.359
BM35	BM36	83.099	140	52	12.1933	2.4586462548	-64.461	52.442	0.000	0.000	-64.461	52.443	BM35	2183040.346	4891635.124
BM36	BM37	72.858	138	22	46.2794	2.4151782775	-54.466	48.392	0.000	0.000	-54.466	48.392	BM36	2182975.885	4891687.566
BM37	BM38	57.562	58	50	45.2588	1.0270547976	29.779	49.260	0.000	0.000	29.779	49.261	BM37	2182921.420	4891735.958
BM38	BM39	86.018	53	12	5.905	0.9285437904	51.525	68.879	0.000	0.000	51.525	68.879	BM38	2182951.199	4891785.219
BM39	BM40	105.48	293	3	29.6062	5.1148309085	41.313	-97.053	0.000	0.001	41.313	-97.052	BM39	2183002.724	4891854.098
BM40	BM41	87.651	306	20	36.2943	5.3467012357	51.944	-70.601	0.000	0.001	51.944	-70.601	BM40	2183044.037	4891757.046

P L A N I L L A D E C A L C U L O
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CALCULO: FABIAN ESPINEL

LADO		DISTANCIA	AZIMUT			AZIMUT	PROYECCIONES SIN CORREGIR		CORRECCIONES		PROYECCIONES CORREGIDAS		VERTICE	**COORDENADAS**	
EST	**PV**		G	M	S	RADIANES	NORTE(+), SUR(-)	ESTE(+), OESTE(-)	NORTE-SUR	ESTE-OESTE	NORTE(+), SUR(-)	ESTE(12), OESTE(-)		Y	X
BM41	BM42	80.986	321	22	24.4163	5.6090248138	63.269	-50.555	0.000	0.000	63.269	-50.554	BM41	2183095.981	4891686.446
BM42	BM43	79.9	327	4	8.0555	5.7084292618	67.062	-43.436	0.000	0.000	67.062	-43.436	BM42	2183159.251	4891635.891
BM43	BM44	24.944	249	43	11.218	4.3584324174	-8.646	-23.398	0.000	0.000	-8.646	-23.398	BM43	2183226.313	4891592.455
BM44	BM45	68.709	313	43	51.5229	5.4756385425	47.497	-49.649	0.000	0.000	47.497	-49.648	BM44	2183217.667	4891569.058
BM45	BM46	90.211	297	50	3.2574	5.1981880819	42.121	-79.774	0.000	0.001	42.121	-79.773	BM45	2183265.164	4891519.410
BM46	BM47	68.51	306	30	12.9325	5.3494968566	40.755	-55.070	0.000	0.000	40.755	-55.069	BM46	2183307.285	4891439.636
BM47	BM48	43.036	277	0	39.8661	4.8347553050	5.253	-42.714	0.000	0.000	5.253	-42.714	BM47	2183348.040	4891384.567
BM48	BM49	70.002	301	8	34.3295	5.2559345890	36.203	-59.913	0.000	0.000	36.203	-59.913	BM48	2183353.293	4891341.853
BM49	BM50	32.759	226	2	29.0467	3.9451667088	-22.739	-23.581	0.000	0.000	-22.739	-23.581	BM49	2183389.497	4891281.940
BM50	BM51	36.075	223	4	8.7956	3.8932904276	-26.354	-24.635	0.000	0.000	-26.354	-24.635	BM50	2183366.757	4891258.359
BM51	BM52	36.069	221	20	49.2505	3.8632341847	-27.078	-23.828	0.000	0.000	-27.078	-23.828	BM51	2183340.404	4891233.724
BM52	BM53	26.496	313	53	34.3836	5.4784643309	18.370	-19.094	0.000	0.000	18.370	-19.094	BM52	2183313.326	4891209.897
BM53	BM54	61.191	5	7	49.838	0.0895443015	60.946	5.472	0.000	0.000	60.946	5.472	BM53	2183331.696	4891190.803
BM54	BM55	49.197	35	36	7.1479	0.6213718678	40.001	28.640	0.000	0.000	40.001	28.640	BM54	2183392.642	4891196.275
BM55	BM56	27.904	344	46	44.1051	6.0175273128	26.925	-7.326	0.000	0.000	26.925	-7.326	BM55	2183432.643	4891224.915
BM56	BM57	46.44	298	39	55.8056	5.2126963649	22.277	-40.748	0.000	0.000	22.277	-40.748	BM56	2183459.569	4891217.589
BM57	BM58	117.312	339	49	27.5605	5.9310533043	110.114	-40.461	0.001	0.000	110.114	-40.461	BM57	2183481.846	4891176.841
BM58	BM58A	59.828	133	59	54.2625	2.3387133818	-41.559	43.038	0.000	0.000	-41.559	43.038	BM58	2183591.960	4891136.381
BM58A	BM61	68.384	144	54	40.8057	2.5291799181	-55.956	39.310	0.000	0.000	-55.956	39.310	BM58A	2183550.401	4891179.419
BM61	BM62	39.024	108	0	21.3909	1.8850592984	-12.063	37.113	0.000	0.000	-12.063	37.113	BM61	2183494.446	4891218.729
BM62	BM63	28.729	24	5	43.8991	0.4205462904	26.226	11.729	0.000	0.000	26.226	11.729	BM62	2183482.383	4891255.842
BM63	BM64	87.135	328	56	35.5529	5.7411420523	74.645	-44.952	0.000	0.000	74.645	-44.952	BM63	2183508.609	4891267.571
BM64	BM65	188.786	106	40	9.9074	1.8617325681	-54.153	180.852	0.000	0.001	-54.153	180.854	BM64	2183583.254	4891222.620
BM65	BM66	32.54	82	1	47.1427	1.4316894293	4.512	32.226	0.000	0.000	4.512	32.226	BM65	2183529.101	4891403.474
BM66	BM67	46.184	109	36	7.8012	1.9129186817	-15.494	43.507	0.000	0.000	-15.494	43.508	BM66	2183533.613	4891435.699
BM67	BM68	59.634	94	27	3.6895	1.6484813659	-4.628	59.454	0.000	0.000	-4.628	59.455	BM67	2183518.119	4891479.207
BM68	BM69	41.703	172	19	43.1025	3.0077021566	-41.330	5.567	0.000	0.000	-41.330	5.567	BM68	2183513.491	4891538.662
BM69	BM70	41.645	131	38	19.6625	2.2975303988	-27.670	31.123	0.000	0.000	-27.670	31.124	BM69	2183472.161	4891544.229
BM70	BM71	59.057	109	48	4.499	1.9163933307	-20.006	55.565	0.000	0.000	-20.006	55.566	BM70	2183444.491	4891575.352
BM71	BM72	70.727	85	10	9.6696	1.4864856260	5.956	70.476	0.000	0.001	5.956	70.476	BM71	2183424.485	4891630.918
BM72	BM73	15.172	194	12	17.1844	3.3895127201	-14.708	-3.723	0.000	0.000	-14.708	-3.723	BM72	2183430.441	4891701.394
BM73	BM74	107.748	138	11	0.3032	2.4117556083	-80.303	71.841	0.000	0.001	-80.302	71.841	BM73	2183415.733	4891697.671
BM74	BM75	30.391	174	37	1.681	3.0476439123	-30.257	2.851	0.000	0.000	-30.257	2.851	BM74	2183335.431	4891769.512
BM75	BM76	22.692	133	18	6.5733	2.3265557615	-15.563	16.514	0.000	0.000	-15.563	16.514	BM75	2183305.174	4891772.363
BM76	BM77	21.703	138	45	44.7019	2.4218610584	-16.320	14.306	0.000	0.000	-16.320	14.306	BM76	2183289.611	4891788.878
BM77	BM78	16.927	118	30	43.6593	2.0684268301	-8.080	14.874	0.000	0.000	-8.080	14.874	BM77	2183273.291	4891803.184
BM78	BM79	47.015	153	55	15.9755	2.6864300588	-42.228	20.668	0.000	0.000	-42.228	20.668	BM78	2183265.211	4891818.058
BM79	BM80	12.722	155	45	20.9762	2.7184520058	-11.600	5.224	0.000	0.000	-11.600	5.224	BM79	2183222.982	4891838.727
BM80	BM81	42.538	173	23	36.8122	3.0262885057	-42.256	4.894	0.000	0.000	-42.255	4.894	BM80	2183211.382	4891843.951
BM81	BM82	50.419	254	34	5.4056	4.4430527068	-13.416	-48.601	0.000	0.000	-13.416	-48.601	BM81	2183169.127	4891848.845
BM82	BM90	99.217	330	53	42.704	5.7752106422	86.689	-48.260	0.000	0.000	86.689	-48.260	BM82	2183155.711	4891800.244

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LADO		DISTANCIA	AZIMUT			AZIMUT	PROYECCIONES SIN CORREGIR		CORRECCIONES		PROYECCIONES CORREGIDAS		VERTICE	COORDENADAS	
EST	**PV**		G	M	S	RADIANES	NORTE(+), SUR(-)	ESTE(+), OESTE(-)	NORTE-SUR	ESTE-OESTE	NORTE(+), SUR(-)	ESTE(12), OESTE(-)		Y	X
BM90	BM91	38.765	359	41	38.5551	6.2778453524	38.764	-0.207	0.000	0.000	38.765	-0.207	BM90	2183242.401	4891751.984
BM91	BM92	88.823	312	2	1.9129	5.4460183174	59.473	-65.973	0.000	0.000	59.473	-65.973	BM91	2183281.165	4891751.777
BM92	BM93	75.46	304	28	13.1424	5.3140095128	42.709	-62.211	0.000	0.000	42.709	-62.210	BM92	2183340.639	4891685.804
BM93	BM94	72.486	292	5	56.6935	5.0980907154	27.270	-67.161	0.000	0.000	27.270	-67.160	BM93	2183383.348	4891623.594
BM94	BM95	100.018	272	29	50.2498	4.7559749420	4.358	-99.923	0.000	0.001	4.358	-99.922	BM94	2183410.618	4891556.434
BM95	BM96	39.771	250	15	56.3217	4.3679595090	-13.429	-37.435	0.000	0.000	-13.429	-37.435	BM95	2183414.976	4891456.511
BM96	BM97	89.276	125	1	3.0719	2.1819673465	-51.229	73.115	0.000	0.001	-51.229	73.115	BM96	2183401.547	4891419.076
BM97	BM98	81.469	102	21	0.2874	1.7863458830	-17.425	79.584	0.000	0.001	-17.425	79.584	BM97	2183350.318	4891492.192
BM98	BM99	85.736	133	36	26.1594	2.3318867053	-59.133	62.080	0.000	0.000	-59.133	62.081	BM98	2183332.893	4891571.776
BM99	BM100	78.246	132	3	50.2391	2.3049508436	-52.422	58.090	0.000	0.000	-52.421	58.090	BM99	2183273.760	4891633.857
BM100	BM101	87.913	134	22	17.0181	2.3452232446	-61.478	62.842	0.000	0.000	-61.478	62.843	BM100	2183221.339	4891691.947
BM101	BM102	73.459	144	23	49.3428	2.5202037726	-59.727	42.765	0.000	0.000	-59.727	42.766	BM101	2183159.861	4891754.789
BM102	BM103	4.556	204	51	18.2496	3.5753954497	-4.134	-1.915	0.000	0.000	-4.134	-1.915	BM102	2183100.134	4891797.555
BM103	GPS02	174.633	90	6	3.7886	1.5725600239	-0.308	174.633	0.000	0.001	-0.308	174.634	BM103	2183096.000	4891795.640
													GPS02	2183095.692	4891970.274
SUMAS		6488.824					-0.0190	-0.0371	0.0190	0.0331	0.0000	-0.0040			

Ey= -0.0190 Ky= 0.0000048 ∴ EL= 0.0417

Ex= -0.0371 Kx= 0.0000072 TL= ΣL /10000 = 0.6489

EL < TL EL LEVANTAMIENTO

PRECISIÓN = 1 / 155765.80 SE ACEPTA