FIELD SHEETS OF SECOND ORDER LEVELING

ROUTE ( ) FROM TO (II)

Date: 5. 15	Weather:	File page No.
Instrument:	Rods:	
Observer:	Checked:	

PT.	DIST. (m)	SCALE BACK-SIGHT (m)	SCALE FORE-SIGHT (m)	DIFFERENCE + (m)	DIFFERENCE − (m)	REMARKS
1	60	1.017	1.316		0.299	NO 104 13h 5p^m
2	60	1.251	1.406		0.155	
3	70	1.244	1.091	0.153		
4	65	1.371	1.514		0.143	
5	70	0.945	1.521		0.576	
6	70	1.195	0.796	0.399		−0.247
7	75	1.300	1.310	0.010		
8	60	1.326	0.961	0.365		
9	51	1.342	1.297		0.045	
10	50	1.300	1.146	0.154		(3)
11	67	1.159	1.240		0.081	
12	70	1.315	1.302	0.013		
13	70	1.297	1.377		0.080	
14	69	1.329	1.550		0.221	−0.714
15	70	1.450	1.046	0.404		
16	65	1.344	1.295		0.049	
17	70	1.190	1.315		0.125	
18	90	1.081	1.746		0.665	NO 105
19	90	1.677	1.015	0.662		
20	40	1.305	1.344		0.039	
21	65	1.343	1.156		0.187	+0.082
22	75	1.071	1.381		0.310	(2)
23	70	1.656	1.306	0.350		
24	75	1.307	1.440		0.133	
25	70	1.375	1.375	0.000		
26	64	1.415	1.190	0.225		
27	70	0.984	1.308		0.324	+0.708
28	66	1.367	1.305	0.062		
29	66	1.399	1.656		0.257	
30	60	1.308	0.701	0.607		(1)
31	65	0.761	1.387		0.626	
32	59	1.314	1.321		0.007	
TOTAL	2153	40.344	41.148	3.482	4.086	
CHECK			−0.804	−0.804		
RESULT	1/2 Δh					

T_1 = ,°C
T_2 = ,°C
T_1 = ,°C

FROM TO ( ) = − ( ) : S.P.

FIELD SHEETS OF SECOND ORDER LEVELING

ROUTE ( ) FROM TO (II)

Date: 5. 15	Weather:	File page No.
Instrument:	Rods:	
Observer:	Checked:	

PT.	DIST.	SCALE BACK-SIGHT	SCALE FORE-SIGHT	DIFFERENCE +	DIFFERENCE −	REMARKS
	350m	40.m 344	41.m 148	3.m 482	4.m 386	
33	60	1.307	1.106	.	0.199	
34	65	1.384	1.352	0.032	.	
35	60	1.417	1.380	0.037	.	
36	55	2.096	1.100	0.996	.	+1.332
37	55	1.082	1.050	0.032	.	
38	41	1.336	1.711	.	0.375	
39	50	1.561	0.825	0.736	.	
40	40	1.403	0.497	0.906	.	....No 106 16h 08m
TOTAL	3579	51.730	50.561	6.221	5.060	T_1 = , °C
CHECK			1.161	+1.161		T_2 = , °C
RESULT	1/2 Δh				+1.161	T_1 = , °C

FROM TO ( ) = − ( ) : S.P.

FIELD SHEETS OF SECOND ORDER LEVELING

ROUTE ( ) FROM TO (I)

Date: 1983 5. 16	Weather: Fine	File page No.
Instrument:	Rods:	
Observer:	Checked:	

PT.	DIST. (m)	SCALE BACK-SIGHT (m)	SCALE FORE-SIGHT (m)	DIFFERENCE + (m)	DIFFERENCE − (m)	REMARKS
1	94	1.412	1.442		0.030	NO 102 94.55m
2	68	1.111	1.033		0.022	
3	65	1.047	1.075	0.072		
4	72	1.482	1.219	0.263		+0.331
5	71	1.221	1.132	0.089		
6	69	1.206	1.034	0.172		(1)
7	72	1.086	1.301		0.217	
8	70	1.324	2.013		0.689	
9	71	1.614	1.560	0.054		+1.453
10	62	1.284	1.269	0.015		
11	61	1.706	0.772	0.934		
12	6	2.138	0.792	1.346		NO 103
13	18	0.678	2.844		2.166	
14	63	1.217	1.103	0.114		
15	71	1.445	1.143	0.302		
16	70	1.278	1.360		0.082	−1.716 ~~−1.926~~
17	69	1.403	1.461		0.058	
18	72	1.207	1.203	0.004		
19	73	1.210	1.251		0.041	
20	66	1.201	0.991	0.210		(2)
21	73	1.136	1.176		0.040	
22	73	1.228	1.294		0.066	
23	70	1.221	1.361		0.140	
24	68	1.221	1.167	0.054		
25	69	1.321	1.124	0.197		+0.333
26	78	1.336	1.090	0.246		
27	77	1.385	1.295	0.090		
28	74	1.167	1.185		0.018	(3)
29	68	1.154	1.324		0.170	
30	80	1.261	1.261	0.000		+0.269 ~~+0.254~~
31	68	1.635	1.540	0.095		
32	72	1.404	1.245	0.159		
TOTAL	2138	42.153	41.668	4.417	3.932	
CHECK			+0.485	+0.485		
RESULT	1/2 Δh					

T_1 = , °C
T_2 = , °C
T_1 = , °C

FROM TO ( ) = − ( ) : S.P.

FIELD SHEETS OF SECOND ORDER LEVELING

ROUTE ( ) FROM TO (I)

Date: 5. 16	Weather:	File page No.
Instrument:	Rods:	
Observer:	Checked:	

PT.	DIST.	SCALE BACK-SIGHT	SCALE FORE-SIGHT	DIFFERENCE +	DIFFERENCE −	REMARKS
	178m	42.153	41.168	4.417	3.932	
33	49	1.101	1.312		0.188	
34	74	0.980	1.124		0.144	
35	54	1.608	1.420	0.188		
36	38	1.380	0.942	0.439		No 104 10h27m
TOTAL	2365	47.144	46.485	4.034	4.364	T1 = °C
CHECK	2376		46.805			T2 = °C
	4741					T1 = °C
RESULT	1/2 Δh		+0.670	+0.670	+0.670	

FROM TO ( ) = − ( ) : S.P.

No 103 — No 104

+0.331 (1) +1.453 −1.716 (2) +0.333 (3) +0.368

−0.331 −1.451 +1.714 −0.346 −0.368

±0 +0.002 −0.002 −0.013 +0.001

FIELD SHEETS OF SECOND ORDER LEVELING

ROUTE ( ) FROM TO (II)

Date: 5. 16	Weather:	File page No.
Instrument:	Rods:	
Observer:	Checked:	

PT.	DIST. (m)	SCALE BACK-SIGHT (m)	SCALE FORE-SIGHT (m)	DIFFERENCE + (m)	DIFFERENCE − (m)	REMARKS
1	88	0.915	1.043		0.128	NO 102 13h28m
2	86	1.476	1.790		0.314	
3	75	1.380	1.292	0.088		
4	70	1.600	1.578	0.022		
5	70	1.379	1.111	0.268		−0.268
6	68	1.396	1.404		0.008	
7	80	1.304	1.330		0.026	
8	70	1.210	1.070	0.140		(3)
9	75	1.306	1.293	0.013		
10	76	1.240	1.345		0.105	
11	77	1.271	1.477		0.206	−0.346
12	70	1.179	1.627		0.448	
13	70	1.165	1.182		0.017	
14	70	1.297	1.222	0.075		
15	75	1.245	1.300	0.055		~~(2)~~
16	72	1.161	1.063	0.098		(2)
17	73	1.090	1.334		0.244	
18	73	1.153	1.218	0.065		
19	72	1.298	1.241	0.057		
20	70	1.298	1.281		0.013	+1.714
21	70	1.395	1.308	0.087		
22	70	1.221	1.435		0.214	
23	65	1.074	1.218		0.143	
24	78	2.915	0.746	2.169		NO 103
25	6	0.722	2.432		1.710	
26	30	0.924	1.523		0.599	
27	60	1.011	1.270	0.041		−1.451
28	73	1.486	1.931		0.445	
29	73	2.482	1.066	1.066		
30	70	1.291	1.095	0.196		(1)
31	70	1.114	1.287		0.173	
32	72	1.181	1.066		0.185	
TOTAL	2077	42.303	42.942	4.579	4.288	
CHECK			−0.709	−0.709		
RESULT	1/2 Δh					

T_1 = ,°C
T_2 = ,°C
T_1 = ,°C

FROM TO ( ) = −

( ) : S.P.

FIELD SHEETS OF SECOND ORDER LEVELING

ROUTE ( ) FROM TO (II)

Date: 5. 16	Weather:	File page No.
Instrument:	Rods:	
Observer:	Checked:	

PT.	DIST.	SCALE BACK-SIGHT	SCALE FORE-SIGHT	DIFFERENCE +	DIFFERENCE −	REMARKS
	277m	42.m 933	43.m 962	4.m 579	5.m 388	
33	70	1.033	1.562		0.533	
34	64	1.067	1.401		0.038	−0.33
35	70	1.431	1.502	0.071		
36	96	1.033	1.036	0.066		....NO 102 15h 36m
TOTAL	376	47.738	48.420	4.864	5.546	
CHECK			−0.682	−0.682		
RESULT	1/2 Δh				−0.682	

T_1 = ,°C
T_2 = ,°C
T_1 = ,°C

FROM TO ( ) = − ( ) : S.P.

FIELD SHEETS OF SECOND ORDER LEVELING

ROUTE ( ) FROM TO (2)

Date: 1983. 5. 16	Weather: fine	File page No.
Instrument:	Rods:	
Observer:	Checked:	

PT.	DIST.	SCALE BACK-SIGHT	SCALE FORE-SIGHT	DIFFERENCE +	DIFFERENCE −	REMARKS
	m	m	m	m	m	
						10h 15m
1	15	1.412	1.487	0	0.075	NO 102
2	20	0.400	0.850	0	0.450	
3	25	1.351	1.396	0.055	0	
4	24	1.215	1.265	0.050	0	+0.045
5	25	1.419	0.969	0.450	0	
6	25	1.250	1.399	0	0.149	
7	25	1.419	1.444	0	0.025	
8	25	1.490	1.398	0.092	0	(1)
9	25	1.015	1.260	0	0.245	
10	20	1.433	1.288	0.145	0	
11	20	1.356	1.429	0	0.073	
12	25	1.311	1.460	0	0.149	
13	20	1.469	1.404	0.065	0	−0.463
14	24	1.214	1.324	0.109	0	
15	28	1.358	1.403	0	0.044	
16	25	1.414	1.504	0	0.090	(2)
17	20	1.419	1.350	0.069	0	
18	28	1.316	1.462	0	0.146	
19	25	1.435	1.557	0.122	0	
20	20	1.359	1.422	0	0.113	+0.059
21	20	1.421	1.429	0	0.008	
22	20	1.441	1.443	0	0.002	
23	24	1.441	1.555	0.114	0	
24	23	1.524	1.400	0	0.104	NO 101
25	28	1.557	1.457	0	0.100	
26	25	1.404	1.604	0	0.200	
27	20	1.449	1.404	0.045	0	
28	21	1.449	1.465	0	0.016	−0.302
29	28	1.429	1.480	0.079	0	
30	24	1.428	1.645	0.217	0	
31	25	1.371	1.613	0	0.242	
32	27	1.432	1.431	0.001	0	(3) 12h 10m
TOTAL	2038	43.949	44.610	2.167	2.506	T_1 = °C
CHECK	2042					T_2 = °C
RESULT	1/2 Δh		−0.661	−0.661	−0.661	T_1 = °C

FROM TO ( ) = − ( ) : S.P.

No.102 +0.045(1) −0.463(2) +0.059 No.101 −0.302

−0.0489 +0.6610 −0.0654 +0.3010(3)

−0.003 −0.002 −0.006 −0.001

FIELD SHEETS OF SECOND ORDER LEVELING

ROUTE ( ) FROM TO (Ⅱ)

Date: 1983. 5. 16	Weather:	File page No.
Instrument:	Rods:	
Observer:	Checked:	

PT.	DIST. (m)	SCALE BACK-SIGHT (m)	SCALE FORE-SIGHT (m)	DIFFERENCE + (m)	DIFFERENCE − (m)	REMARKS
						13h20m
1	42	1.610	1.368	0.242	.	(3)
2	60	1.217	1.181	.	0.034	
3	66	1.474	1.601	.	0.027	
4	58	1.462	1.381	0.081	.	
5	62	1.360	1.398	.	0.038	+0.201
6	68	1.400	1.284	0.116	.	
7	38	1.471	1.586	.	0.065	
8	37	1.641	1.325	0.316	.	NO 101
9	60	1.387	1.471	.	0.084	
10	60	1.195	1.225	.	0.030	
11	64	1.411	1.435	.	0.024	
12	72	1.496	1.480	0.016	.	−0.066
13	62	1.430	1.342	0.087	.	
14	68	1.375	1.451	.	0.076	
15	64	1.439	1.452	.	0.013	
16	66	1.504	1.445	0.059	.	(2)
17	64	1.397	1.463	.	0.066	
18	62	1.339	1.483	0.156	.	
19	67	1.432	1.520	.	0.088	
20	62	1.349	1.403	.	0.054	+0.461
21	64	1.388	1.295	0.093	.	
22	64	1.466	1.204	0.262	.	
23	72	1.450	1.528	.	0.078	
24	82	1.482	1.256	0.226	.	(1)
25	70	1.341	1.418	.	0.077	
26	68	1.439	1.390	0.049	.	
27	62	1.432	1.425	0.007	.	
28	60	1.120	1.381	.	0.261	−0.048
29	64	0.986	1.270	.	0.284	
30	68	1.366	1.469	.	0.103	
31	70	1.276	1.872	.	0.596	
32	98	2.580	1.372	1.208	.	NO 102 13h40m
TOTAL	2044	46.414	45.765	2.938	2.279	
CHECK	✓		+0.649	+0.649		
RESULT	1/2 Δh				+0.649	

T_1 = , °C
T_2 = , °C
T_1 = , °C

FROM TO ( ) = − ( ) : S.P.

FIELD SHEETS OF SECOND ORDER LEVELING

ROUTE ( ) FROM TO (I)

Date: 1983. 5. 17	Weather: fine	File page No.
Instrument:	Rods:	
Observer:	Checked:	

PT.	DIST. (m)	SCALE BACK-SIGHT (m)	SCALE FORE-SIGHT (m)	DIFFERENCE + (m)	DIFFERENCE − (m)	REMARKS
						9h20m
1	78	1.587	1.229	0.358	.	--- (3)
2	60	1.449	1.070	0.379	.	
3	64	1.316	1.620	.	0.304	
4	60	1.112	1.186	.	0.074	+ 1.194
5	76	1.607	1.055	0.552	.	
6	77	1.180	1.224	.	0.044	
7A	72	1.370	1.356	0.014	.	
8	72	1.442	0.967	0.485	.	NO --- 120
9	68	0.674	1.428	.	0.754	
10	72	1.140	1.592	0.548	.	
11	74	1.429	1.476	.	0.047	
12	60	1.460	1.081	0.379	.	− 0.948
13	78	1.102	1.542	.	0.440	
14	60	0.632	1.042	.	0.410	
15	66	0.784	1.895	.	1.111	
16	68	1.467	0.880	0.587	.	--- (1)
17	72	1.280	1.206	0.074	.	
18	60	1.309	1.476	.	0.167	
19	68	1.670	1.480	0.190	.	+ 0.199
20	69	1.561	1.530	.	0.029	+ 0.288
21	72	1.429	1.398	0.031	.	
22	64	1.475	1.400	0.075	.	
23	72	1.399	1.421	.	0.022	
24	72	1.545	1.463	0.082	.	--- (2)
25	72	1.211	1.294	.	0.173	
26	74	1.380	1.432	.	0.052	
27	60	1.445	1.411	0.034	.	
28	62	1.421	1.479	.	0.058	+ 0.019
29	66	1.545	1.624	0.130	.	
30	70	1.585	1.447	0.138	.	
31	64	1.426	1.328	0.098	.	
32	64	1.312	1.480	.	0.168	--- (3)
TOTAL	2108	43.645	43.181	4.353	3.919	
CHECK			+ 0.464	+ 0.464		
RESULT	1/2 Δh				.	

T_1 = , °C
T_2 = , °C
T_1 = , °C

FROM TO ( ) = − ( ) : S.P.

FIELD SHEETS OF SECOND ORDER LEVELING

ROUTE ( ) FROM TO (x)

Date: 1983. 5. 17	Weather:	File page No.
Instrument:	Rods:	
Observer:	Checked:	

PT.	DIST.	SCALE BACK-SIGHT	SCALE FORE-SIGHT	DIFFERENCE +	DIFFERENCE −	REMARKS
	2108 m	43 m 645	43 m 181	4 m 383	3 m 919	
33	70	1.267	1.388		0.121	
34	46	1.060	1.303		0.243	
35	60	1.409	1.409	0.000		−0.347
36	52	1.353	1.342	0.011		
37	60	1.266	1.975		0.709	
38	40	1.942	1.227	0.715		--- (4) 12h10m
TOTAL	2466	51.942	51.825	5.109	4.992	
CHECK	2337		+0.117	+0.117		
	4833					
RESULT	1/2 Δh				+0.117	

T_1 = , °C
T_2 = , °C
T_1 = , °C

FROM TO ( ) = − ( ) : S.P.

3 +1.194 −1.185 +0.009 — NO. 120 −0.948 +0.944 −0.004 — 1 +0.199 −0.196 +0.003 — 2 +0.019 −0.031 −0.012 — 3 −0.347 +0.346 −0.001 — 4

FIELD SHEETS OF SECOND ORDER LEVELING

ROUTE ( ) FROM TO (II)

Date: 1983. 5. 17	Weather:	File page No.
Instrument:	Rods:	
Observer:	Checked:	

PT.	DIST.	SCALE BACK-SIGHT	SCALE FORE-SIGHT	DIFFERENCE +	DIFFERENCE −	REMARKS
	m	m	m	m	m	
						13h00m
1	40	1.257	1.942	0	0.715	---(4)
2	44	1.900	1.280	0.620	0	
3	60	1.402	1.347	0.055	0	+ 0.846
4	46	1.414	1.442	0	0.028	
5	40	1.350	1.067	0.283	0	
6	44	1.319	1.183	0.136	0	---(3)
7	42	1.503	1.440	0.063	0	
8	42	1.484	1.404	0	0.120	
9	40	1.319	1.319	0.000	0	
10	42	1.043	1.106	0	0.063	
11	40	1.240	1.352	0	0.112	- 0.031
12	48	1.314	1.353	0.039	0	
13	40	1.356	1.392	0	0.036	
14	42	1.312	1.137	0.175	0	---(2)
15	40	1.384	1.482	0	0.097	
16	40	1.439	1.392	0.047	0	
17	48	1.312	1.379	0	0.067	
18	42	1.310	1.311	0	0.001	- 0.196
19	48	1.415	1.446	0	0.031	
20	40	1.363	1.512	0	0.149	
21	46	1.439	1.506	0	0.067	
22	40	1.420	1.589	0.169	0	---(1)
23	42	0.962	1.562	0	0.760	
24	40	1.910	0.913	0.997	0	
25	42	1.390	0.932	0.458	0	
26	40	1.266	1.248	0.018	0	+ 0.944
27	40	1.495	1.341	0.154	0	
28	40	1.312	1.330	0	0.018	
29	46	1.180	1.391	0	0.211	
30	42	1.326	0.530	0.796	0	NO ---120
31	42	0.762	1.433	0	0.671	
32	48	1.318	1.463	0.145	0	
TOTAL	2007	42.989	42.444	4.191	3.646	T_1 = °C
CHECK						T_2 = °C
RESULT	1/2 Σh		+0.545	+0.545		T_1 = °C

FROM TO ( ) = − ( ) : S.P.

FIELD SHEETS OF SECOND ORDER LEVELING

ROUTE ( ) FROM TO (n)

Date: 1983. 5. 17	Weather:	File page No.
Instrument:	Rods:	
Observer:	Checked:	

PT.	DIST.	SCALE BACK-SIGHT	SCALE FORE-SIGHT	DIFFERENCE +	DIFFERENCE −	REMARKS
	2007 m	42 m 989	42 m 454	4 m 191	3 m 656	
		1.144	.	.	.	
33	64	1.122	1.225	.	0.063	
34	60	1.260	1.805	.	0.545	−1.185
35	68	1.486	1.049	0.437	.	
36	44	1.279	1.269	0.010	.	
37	64	1.189	1.260	.	0.091	
38	70	1.075	1.480	.	0.405	--- (3) 1450m
TOTAL	2387	40.420	40.342	4.638	4.760	
CHECK			+0.122	+0.122		
RESULT	1/2 Δh				−0.122	

T_1 = , °C
T_2 = , °C
T_1 = , °C

FROM TO ( ) = − ( ) : S.P.

FIELD SHEETS OF SECOND ORDER LEVELING

ROUTE ( ) FROM TO (I)

Date: 5. 17	Weather: Fine	File page No.
Instrument:	Rods:	
Observer:	Checked:	

PT.	DIST. (m)	SCALE BACK-SIGHT (m)	SCALE FORE-SIGHT (m)	DIFFERENCE + (m)	DIFFERENCE − (m)	REMARKS
						~~0.081~~ ~~0.085~~ BM4 BM6 9h 50m
1	53	1.512	1.619	.	0.107	
2	56	0.987	1.034	.	0.047	
3	70	1.042	1.027	0.015	.	
4	65	1.041	0.941	0.100	.	
5	71	1.035	0.706	0.329	.	
6	77	1.035	1.195	.	0.160	+0.024
7	76	0.978	1.264	.	0.286	
8	68	1.287	1.246	0.041	.	
9	74	1.451	1.412	.	0.039	
10	68	1.610	1.566	0.044	.	·····(1)
11	74	1.693	1.252	0.441	.	
12	65	1.244	1.124	0.120	.	
13	65	1.250	0.830	0.420	.	
14	68	1.256	1.456	.	0.200	−0.080
15	62	0.995	1.568	.	0.573	
16	71	1.000	1.167	0.167	.	
17	72	1.515	1.406	0.109	.	
18	68	1.210	1.884	.	0.674	·····(2)
19	71	1.741	1.360	0.381	.	
20	67	1.030	1.121	.	0.091	
21	68	1.022	1.122	.	0.100	
22	75	1.409	1.362	0.047	.	−0.011
23	67	1.047	1.121	0.076	.	
24	70	1.513	1.554	.	0.041	
25	74	0.968	1.050	.	0.082	
26	69	1.261	1.669	.	0.408	·····(3)
27	72	1.725	1.389	0.336	.	
28	72	1.367	1.211	0.156	.	
29	66	1.056	1.093	.	0.037	
30	62	1.447	1.637	.	0.190	−0.018
31	69	1.039	1.461	.	0.422	
32	65	1.401	1.111	0.290	.	
TOTAL	2162	42.996	42.574	4.003	3.583	
CHECK			+0.422	+0.422		
RESULT	1/2 Δh				.	

T_1 = , °C
T_2 = , °C
T_1 = , °C

FROM TO ( ) = −− ( ) : S.P.

FIELD SHEETS OF SECOND ORDER LEVELING

ROUTE ( ) FROM TO (I)

Date: 5. 17	Weather:	File page No.
Instrument:	Rods:	
Observer:	Checked:	

PT.	DIST.	SCALE BACK-SIGHT	SCALE FORE-SIGHT	DIFFERENCE +	DIFFERENCE −	REMARKS
	2162 m	42.995 m	42.534 m	4.003 m	3.582 m	
33	65	1.415	1.386	0.029	.	
34	64	1.342	1.700	.	0.478	....(4)
35	69	1.716	1.370	0.346	.	
36	68	1.011	1.053	.	0.042	
37	65	1.407	1.268	0.141	.	+0.306
38	68	1.426	1.303	0.123	.	
39	70	1.328	1.450	.	0.122	
40	70	1.350	1.480	.	0.130	....(5) 12h31m
TOTAL	2695	54.100	53.832	4.642	4.364	
CHECK	2681 / 5376		+0.278	+0.278		
RESULT	1/2 Δh				+0.278	

T_1 = , °C
T_2 = , °C
T_1 = , °C

FROM TO ( ) = − ( ) : S.P.

BM16 ⊡ +0.081 (1) −0.080 (2) −0.011 (3) −0.018 (4) +0.306 (5)

−0.075 +0.068 +0.017 +0.020 −0.013

+0.006 −0.012 +0.006 +0.002 −0.007

FIELD SHEETS OF SECOND ORDER LEVELING

ROUTE ( ) FROM TO (II)

Date: 5. 17	Weather:	File page No.
Instrument:	Rods:	
Observer:	Checked:	

PT.	DIST. (m)	SCALE BACK-SIGHT (m)	SCALE FORE-SIGHT (m)	DIFFERENCE + (m)	DIFFERENCE − (m)	REMARKS
1	70	1.476	1.345	0.131		..... (5) 134.40m
2	70	1.321	1.232	0.089		
3	70	1.314	1.434		0.120	
4	65	1.276	1.397		0.121	−0.310
5	65	1.310	1.240	0.070		
6	64	1.301	1.661		0.360	..... (4)
7	65	1.646	1.219	0.427		
8	64	1.376	1.438		0.062	
9	66	1.158	1.360		0.202	
10	65	1.420	1.352	0.068		
11	63	1.696	1.486	0.210		+0.020
12	64	1.321	1.215	0.106		
13	70	1.067	1.315		0.248	
14	72	1.444	1.723		0.279	..... (3)
15	70	1.665	1.367	0.298		
16	73	1.101	1.067	0.034		
17	73	1.668	1.549	0.129		
18	70	1.256	1.375		0.119	
19	65	1.313	1.480		0.167	+0.017
20	65	1.509	1.331	0.178		
21	70	1.378	1.269	0.129		
22	71	1.321	1.726		0.405	..... (2)
23	69	1.882	1.265	0.617		
24	70	1.285	1.460		0.175	
25	72	1.261	1.262		0.001	
		1.[illegible]	1.[illegible]	1.[illegible]	1.[illegible]	
26	70	1.568	1.119	0.449		
27	62	1.504	1.506		0.002	+0.068
28	62	0.976	1.504		0.528	
29	64	1.314	1.296	0.018		
30	73	1.240	1.560		0.310	..... (1)
31	68	1.550	1.604		0.054	
TOTAL	2102	43.945	43.205	2.983	3.243	T_1 = ,°C
CHECK			−0.262	−0.262		T_2 = ,°C
RESULT	1/2 Σh					T_1 = ,°C

FROM TO ( ) = — ( ) : S.P.

FIELD SHEETS OF SECOND ORDER LEVELING

ROUTE ( ) FROM TO (II)

Date: 5.17	Weather:	File page No.
Instrument:	Rods:	
Observer:	Checked:	

PT.	DIST.	SCALE BACK-SIGHT	SCALE FORE-SIGHT	DIFFERENCE +	DIFFERENCE −	REMARKS
	2102 m	43.945 m	43.207 m	2.938 m	3.245 m	
33	74	1.361	1.100	0.261		
34	69	1.331	1.361		0.030	
35	75	1.257	1.086	0.171		
36	75	1.520	1.586		0.066	−0.075
37	70	1.061	1.156		0.095	
38	69	0.900	1.268		0.368	
39	65	1.353	1.573		0.214	
40	70	1.406	1.006	0.400		~~EBM1~~ ~~B186~~
41	53	1.464	1.354	0.110		..... ~~BM4~~ 15h 59m BM6
TOTAL	2681	54.424	54.777	3.925	4.208	
CHECK			−0.283		−0.283	
RESULT	1/2 Σh				−0.283	

T_1 = , °C
T_2 = , °C
T_1 = , °C

FROM TO ( ) = − ( ) : S.P.

FIELD SHEETS OF SECOND ORDER LEVELING

ROUTE ( ) FROM TO ( )

Date: 5. 17	Weather:	File page No.
Instrument:	Rods:	
Observer:	Checked:	

PT.	DIST. (m)	SCALE BACK-SIGHT (m)	SCALE FORE-SIGHT (m)	DIFFERENCE + (m)	DIFFERENCE − (m)	REMARKS
KBM	53	1.650				
~~BS 504~~ BM6			1.544	0.106		
~~BS 504~~						
~~BS 504~~						
~~BS 505~~ BM6		1.512				
KBM	53		1.619		0.107	
TOTAL						T_1 = , °C
CHECK						T_2 = , °C
RESULT	1/2 Σh					T_1 = , °C

FROM TO ( ) = − ( ) : S.P.

FIELD SHEETS OF SECOND ORDER LEVELING

ROUTE ( ) FROM TO (±)

Date: 1983. 5. 18	Weather: fine	File page No.
Instrument:	Rods:	
Observer:	Checked:	

Bahr EL-Bagdr Drain

PT.	DIST. (m)	SCALE BACK-SIGHT (m)	SCALE FORE-SIGHT (m)	DIFFERENCE + (m)	DIFFERENCE − (m)	REMARKS
						No 107-1
1	48	0.811	1.002	.	0.191	
2	70	1.080	1.094	.	0.014	
3	64	1.489	1.514	.	0.025	
4	66	1.481	1.152	0.329	.	−0.195
5	64	1.320	1.464	.	0.144	−0.166
6	60	1.464	1.685	0.201	.	
7	58	1.121	1.332	.	0.211	
8	54	1.401	1.430	.	0.029	---(1)
9	64	1.460	1.543	.	0.083	
10	70	1.452	1.303	0.189	.	
11	66	1.312	1.316	.	0.004	
12	62	1.731	1.540	0.181	.	+0.339
13	70	1.092	1.334	.	0.242	
14	60	1.692	1.346	0.346	.	
15	58	1.352	1.335	0.017	.	
16	70	1.106	1.271	.	0.165	---(2)
17	62	1.284	1.326	.	0.042	
18	70	1.440	1.437	0.003	.	
19	72	1.096	0.915	0.181	.	
20	66	1.371	1.452	.	0.081	±0.000
21	62	1.080	1.183	.	0.103	
22	62	1.334	1.541	.	0.207	
23	60	1.442	1.658	.	0.216	
24	64	1.400	1.225	0.175	.	---(3)
25	60	1.409	1.385	0.024	.	
26	60	1.425	1.453	.	0.028	
27	68	1.295	1.360	0.065	.	
28	62	1.105	1.046	0.059	.	−0.138
29	60	1.495	1.394	0.101	.	
		1.488	.	.	.	
30	62	1.371	1.474	.	0.103	
31	68	1.222	1.200	0.022	.	
TOTAL	1972	42.253	41.969	2.213	1.929	
CHECK				+0.284	−0.284	
RESULT	1/2 Δh				.	

T_1 = , °C
T_2 = , °C
T_1 = , °C

FROM TO ( ) = − ( ) : S.P.

FIELD SHEETS OF SECOND ORDER LEVELING

ROUTE ( ) FROM TO (I)

Date: 1983. 5. 18	Weather:	File page No.
Instrument:	Rods:	
Observer:	Checked:	

PT.	DIST.	SCALE BACK-SIGHT	SCALE FORE-SIGHT	DIFFERENCE +	DIFFERENCE −	REMARKS
	m 1972	m 42.243	m 41.969	m 2.213	m 1.939	
22	60	1.247	1.445		0.278	---(4)
23	74	1.312	1.287	0.025		
24	68	1.886	1.766	0.120		
25	60	1.285	1.266	0.119		$\bar{x}$ 0.224
26	60	1.746	2.027		0.281	
27	60	1.720	1.479	0.241		
28	60	1.214	1.662		0.448	---(5)
TOTAL	2394 / 2424	52.783	53.001	2.718	2.936	
CHECK	4818		−0.218	−0.218		
RESULT	1/2 Δh				−0.218	

T_1 = , °C
T_2 = , °C
T_1 = , °C

FROM TO ( ) = − ( ) : S.P.

No. 107-1 −0.195 / +0.207 / +0.012 — 6 — +0.339 / −0.335 / +0.014 — 2 — +0.000 / +0.006 / +0.006 — 3 — −0.188 / +0.133 / −0.005 — 4 — −0.224 / +0.218 / −0.006 — 5

FIELD SHEETS OF SECOND ORDER LEVELING

ROUTE ( ) FROM TO (II)

Date: 1983. 5. 18	Weather:	File page No.
Instrument:	Rods:	
Observer:	Checked:	

PT.	DIST. (m)	SCALE BACK-SIGHT (m)	SCALE FORE-SIGHT (m)	DIFFERENCE + (m)	DIFFERENCE − (m)	REMARKS
1	50	1.665	1.200	0.465		(5)
2	44	1.636	1.792		0.156	
3	42	1.927	1.580	0.347		+0.218
4	46	1.644	1.406		0.142	
5	42	1.561	1.380		0.181	
6	70	1.535	1.510		0.025	(4)
7	60	1.399	1.241	0.158		
8	60	1.350	1.379		0.029	
9	62	1.622	1.441	0.181		
10	44	1.302	1.361		0.059	
11	60	1.409	1.365		0.044	+0.133
12	62	1.380	1.283		0.097	
13	60	1.356	1.267	0.089		
14	72	1.000	0.940		0.060	(3)
15	44	1.142	1.486		0.344	
16	62	1.469	1.292	0.177		
17	68	1.409	1.446	0.063		
18	68	1.469	1.122	0.347		+0.006
19	42	1.281	1.307		0.026	
20	60	1.220	1.532		0.312	
21	60	1.256	1.496	0.240		
22	82	1.179	1.178	0.001		(2)
23	60	1.362	1.432		0.070	
24	62	1.356	1.367		0.011	
25	60	1.432	1.361	0.071		
26	64	1.220	1.450		0.230	−0.325
27	70	1.818	1.333	0.485		
28	66	0.765	1.307		0.542	
29	72	1.432	1.443		0.011	
30	70	1.465	1.490		0.025	(1)
31	60	1.432	1.410	0.022		
32	70	1.402	1.160	0.242		
TOTAL	2025	44.542	44.395	2.285	2.138	
CHECK			44.542	+0.147	+0.147	
RESULT	1/2 Δh					

T_1 = °C
T_2 = °C
T_1 = °C

FROM TO ( ) = − ( ) : S.P.

FIELD SHEETS OF SECOND ORDER LEVELING

ROUTE ( ) FROM TO (Z)

Date: 1983. 5. 18	Weather:	File page No.
Instrument:	Rods:	
Observer:	Checked:	

PT.	DIST.	SCALE BACK-SIGHT	SCALE FORE-SIGHT	DIFFERENCE +	DIFFERENCE −	REMARKS
	1083 m	44.542 m	44.276 m	2.726 m	2.450 m	
33	58	1.412	1.213		0.201	
34	52	1.329	1.130	0.199		+0.207
35	70	1.217	1.587		0.370	
36	60	1.780	1.555		0.225	
37	64	1.482	1.322	0.160		
38	58	1.020	0.820	0.200		--- NO 107-1
TOTAL	2424	42.790	42.751	3.285	3.046	
CHECK			+0.239	+0.239		
RESULT	1/2 Δh				+0.239	

T_1 = °C
T_2 = °C
T_1 = °C

FROM TO ( ) = − ( ) : S.P.

FIELD SHEETS OF SECOND ORDER LEVELING

ROUTE ( ) FROM TO (I)

Date: 5. 18	Weather: Fine	File page No.
Instrument:	Rods:	
Observer:	Checked:	

PT.	DIST. (m)	SCALE BACK-SIGHT (m)	SCALE FORE-SIGHT (m)	DIFFERENCE + (m)	DIFFERENCE − (m)	REMARKS
						10h 21m
1	60	1.441	1.182	0.259	.	(5)
2	65	1.169	1.257	.	0.088	
3	71	1.237	1.417	.	0.180	
4	72	1.310	1.282	0.028	.	
5	68	1.170	1.175	.	0.005	−0.340
6	64	1.333	1.383	.	0.050	
7	68	1.342	1.357	.	0.015	
8	67	1.356	1.656	.	0.300	(6)
9	70	1.633	1.140	0.493	.	
10	65	1.280	1.245	0.035	.	
11	65	1.290	1.330	.	0.040	
12	68	1.344	1.334	.	0.010	−0.333
13	68	1.301	1.174	0.127	.	
14	70	1.383	1.506	.	0.123	
15	77	1.365	1.285	0.080	.	
16	65	1.269	1.033	.	0.236	(7)
17	70	1.314	1.302	0.012	.	
18	75	1.356	1.250	0.106	.	
19	69	1.464	1.316	0.148	.	
20	70	1.388	1.317	0.071	.	
21	70	1.340	1.363	.	0.023	+0.462
22	65	1.318	1.318	0.000	.	
23	62	1.306	1.446	.	0.140	
24	68	1.396	1.620	.	0.224	(8)
25	74	1.301	1.356	.	0.055	
26	70	1.475	1.485	.	0.010	
27	70	1.396	1.415	.	0.019	
28	70	1.405	1.319	0.086	.	
29	72	1.577	1.334	0.243	.	−0.278
30	70	1.393	1.352	0.041	.	
31	73	1.309	1.220	0.089	.	
32	64	1.333	1.085	.	0.162	
TOTAL	2010	43.362	43.150	2.568	2.356	T_1 = , °C
CHECK			+0.142	+0.142		T_2 = , °C
RESULT	1/2 Δh				.	T_1 = , °C

FROM TO ( ) = — ( ) : S.P.

FIELD SHEETS OF SECOND ORDER LEVELING

ROUTE ( ) FROM TO (I)

Date: 5. 18	Weather:	File page No.
Instrument:	Rods:	
Observer:	Checked:	

PT.	DIST.	SCALE BACK-SIGHT	SCALE FORE-SIGHT	DIFFERENCE +	DIFFERENCE −	REMARKS
	320 m	43.m 092	43.m 150	0.m 568	0.m 426	
33	63	1.336	1.486		0.151	
34	54	1.335	1.716		0.380	....(9) 12h 34m
TOTAL	317	44.962	46.351	0.568	0.957	
CHECK	322					
	642		−0.389	−0.389		
RESULT	1/2 Δh				−0.389	

T_1 = , °C
T_2 = , °C
T_1 = , °C

FROM TO ( ) = − ( ) : S.P.

(5) −0.340 (6) −0.333 (7) +0.462 (8) −0.378 (9)
+0.341 +0.340 −0.458 +0.383
+0.001 +0.007 +0.004 +0.005

FIELD SHEETS OF SECOND ORDER LEVELING

ROUTE ( ) FROM TO (II)

Date: 5. 18	Weather:	File page No.
Instrument:	Rods:	
Observer:	Checked:	

PT.	DIST. (m)	SCALE BACK-SIGHT (m)	SCALE FORE-SIGHT (m)	DIFFERENCE + (m)	DIFFERENCE − (m)	REMARKS
						13h 28m
1	65	1.734	1.378	0.356		....(9)
2	64	1.400	1.244	0.156		
3	64	1.360	1.146	0.214		
4	70	1.142	1.251		0.109	
5	70	1.236	1.285		0.049	
6	73	1.318	1.447		0.129	+0.283
7	71	1.171	1.380		0.209	
8	70	1.428	1.358	0.070		
9	73	1.420	1.340	0.079		
10	73	1.365	1.322	0.043		....(8)
11	68	1.484	1.270	0.214		
12	65	1.491	1.243	0.248		
13	60	1.309	1.291	0.018		
14	70	1.280	1.363		0.083	
15	70	1.306	1.301	0.005		-0.458
16	70	1.286	1.450		0.164	
17	73	1.321	1.341		0.020	
18	74	1.329	1.865		0.536	....(7)
19	66	1.996	1.212	0.784		
20	73	1.142	1.199		0.057	
21	73	1.130	1.040	0.090		
22	70	1.135	1.221		0.086	
23	65	1.176	1.078	0.097		+0.240
24	72	1.185	1.131	0.054		
25	65	1.140	1.268		0.128	
26	70	1.163	1.657		0.494	....(6)
27	67	1.646	1.131	0.515		
28	68	1.372	1.245		0.073	
29	66	1.302	1.194	0.108		
30	70	1.125	1.125	0.000		+0.341
31	70	1.161	1.605		0.444	
32	70	1.445	1.258	0.187		
TOTAL	2197	42.636	43.058	3.059	2.451	T_1 = , °C
CHECK			+0.578	+0.578		T_2 = , °C
RESULT	1/2 Δh					T_1 = , °C

FROM TO ( ) = − ( ) : S.P.

FIELD SHEETS OF SECOND ORDER LEVELING

ROUTE ( ) FROM TO (II)

Date: 5. 18	Weather:	File page No.
Instrument:	Rods:	
Observer:	Checked:	

PT.	DIST.	SCALE BACK-SIGHT	SCALE FORE-SIGHT	DIFFERENCE +	DIFFERENCE −	REMARKS
	197 m	42.636 m	42.068 m	3.029 m	2.461 m	
33	66	1.220	1.162	0.058		
34	60	0.842	1.074		0.232	....(5) 15h35m
TOTAL	323	44.700	44.294	3.087	2.681	
CHECK			+0.406	+0.406		
RESULT	1/2 Δh				+0.406	

T_1 = , °C
T_2 = , °C
T_1 = , °C

FROM TO ( ) = − ( ) : S.P.

FIELD SHEETS OF SECOND ORDER LEVELING

ROUTE ( ) FROM TO ( )

Date: 5. 21	Weather: Fine	File page No.
Instrument:	Rods:	
Observer:	Checked:	

PT.	DIST.	SCALE BACK-SIGHT	SCALE FORE-SIGHT	DIFFERENCE +	DIFFERENCE −	REMARKS
	m	m	m	m	m	
No. 117-2 (KBM)4		1.478				
仮杭			1.324	0.154		
仮杭		1.293				
No. 117-2 (KBM4)			1.447		0.154	
仮杭 BM4		1.299	1.460		0.161	
BM4 仮杭		1.408	1.248	0.160		
TOTAL						T_1 = , °C
CHECK						T_2 = , °C
RESULT	1/2 Δh					T_1 = , °C

FROM TO ( ) = — ( ) : S.P.

FIELD SHEETS OF SECOND ORDER LEVELING

ROUTE ( ) FROM TO (I)

Date: 5. 21	Weather: Fine	File page No.
Instrument:	Rods:	
Observer:	Checked:	

PT.	DIST. (m)	SCALE BACK-SIGHT (m)	SCALE FORE-SIGHT (m)	DIFFERENCE + (m)	DIFFERENCE − (m)	REMARKS
1	36	1.470	0.586		1.884	(4) 10h26m
2	70	1.924	1.040	0.874		
3	64	2.347	1.131	1.216		
4	66	1.110	1.300		0.190	
5	74	1.244	1.344		0.090	−0.016
6	67	1.400	1.436		0.036	
7	67	1.276	1.264	0.012		
8	70	1.344	1.292	0.052		
9	64	1.411	1.609		0.198	(5)
10	72	1.426	1.416	0.010		
11	68	1.348	1.328		0.020	
12	74	1.348	1.508		0.160	−0.288
13	66	1.337	1.159	0.178		
14	66	1.103	1.164		0.062	
15	60	1.235	1.353		0.118	(6)
16	68	1.216	1.301		0.085	−0.376
17	61	1.360	1.468		0.108	
18	63	1.361	1.427		0.066	(8) (7) 11h31m
TOTAL	1160	25.190	25.864	2.360	3.034	
CHECK	1173		−0.674	−0.674		
RESULT	233 1/2 Δh				−0.674	

T_1 = , °C
T_2 = , °C
T_1 = , °C

FROM TO ( ) = − ( ) : S.P.

(4) −0.016 (5) −0.282 (6) −0.376 (7)
+0.012 +0.279 +0.377
−0.004 −0.003 +0.001

FIELD SHEETS OF SECOND ORDER LEVELING

ROUTE ( ) FROM TO (II)

Date: 5. 21	Weather: Fine	File page No.
Instrument:	Rods:	
Observer:	Checked:	

PT.	DIST. (m)	SCALE BACK-SIGHT (m)	SCALE FORE-SIGHT (m)	DIFFERENCE + (m)	DIFFERENCE − (m)	REMARKS
						117.03 m
1	63	1.414	1.364	0.050	.	....(7)
2	60	1.476	1.356	0.120	.	
3	68	1.328	1.210	0.118	.	+0.377
4	61	1.286	1.196	0.089	.	....(6)
5	65	1.266	1.174	0.092	.	
6	65	1.121	1.201	.	0.069	
7	75	1.262	1.238	0.024	.	+0.379
8	70	1.264	1.180	0.084	.	
9	72	1.303	1.338	.	0.035	
10	66	1.463	1.280	0.183	.	....(5)
11	70	1.314	1.288	0.026	.	
12	70	1.215	1.312	.	0.097	
13	71	1.405	1.365	0.040	.	
14	72	1.412	1.342	0.070	.	+0.012
15	70	1.322	1.197	0.125	.	
16	62	1.195	2.091	.	1.196	
17	68	0.744	1.727	.	0.983	
18	25	0.121	1.038	1.917	.	....(4) 12.01 m
TOTAL	117.03	25.141	24.473	2.848	2.180	
CHECK			+0.668	+0.668		
RESULT	1/2 Δh				+0.668	

T_1 = , °C
T_2 = , °C
T_1 = , °C

FROM TO ( ) = −

( ) : S.P.

FIELD SHEETS OF SECOND ORDER LEVELING

ROUTE ( ) FROM TO (I)

Date: 1983. 6. 29	Weather: Fine	File page No.
Instrument:	Rods:	
Observer:	Checked:	

PT.	DIST. (m)	SCALE BACK-SIGHT (m)	SCALE FORE-SIGHT (m)	DIFFERENCE + (m)	DIFFERENCE − (m)	REMARKS
						10h00m
1	50	1.524	1.092	0.433		BM
2	70	1.188	1.376		0.188	
3	64	1.701	1.429	0.072		
4	66	1.563	1.460		0.103	+0.443
5	58	1.397	1.360		0.063	
6	74	1.481	1.373	0.108		
7	82	1.459	1.426	0.033		
8	72	1.382	1.221	0.161		(1)
9	76	1.270	1.476		0.206	
10	68	1.409	1.271	0.138		
11	68	1.456	1.481		0.025	
12	74	1.416	1.392	0.024		+0.283
13	70	1.520	1.492		0.072	
14	60	1.467	1.332	0.135		
15	54	1.479	1.319	0.160		
16	56	1.463	1.315	0.148		(2)
17	70	1.120	1.305		0.185	
18	68	1.490	1.372	0.121		
19	60	1.481	1.316	0.165		
20	62	1.176	1.383		0.207	+0.422
21	58	1.423	1.363	0.060		
22	60	1.411	1.364	0.047		
23	52	1.446	1.420	0.026		
24	52	1.409	1.284	0.125		(3)
25	54	1.204	1.290		0.086	
26	56	1.446	1.512		0.066	
27	60	1.432	1.417	0.015		
28	60	1.324	1.344		0.020	
29	54	1.426	1.478	0.048		−0.104
30	58	1.362	1.567		0.205	
31	64	1.486	1.509	0.023		
32	62	1.426	1.390	0.136		(4) 12h00m
TOTAL	2007	45.855	44.811	3.419	1.375	
CHECK	2008					
	4015		+1.044	+1.044		
RESULT	1/2 Δh				+1.044	

T_1 = °C
T_2 = °C
T_1 = °C

FROM TO ( ) = − ( ) : S.P.

BM ○ +0.443 −0.437 +0.006 — ① +0.283 −0.267 +0.016 — ② +0.422 −0.422 ±0.000 — ③ −0.104 +0.090 −0.014 — ④

FIELD SHEETS OF SECOND ORDER LEVELING

ROUTE ( ) FROM TO (Z)

Date: 1983. 4. 29	Weather:	File page No.
Instrument:	Rods:	
Observer:	Checked:	

PT.	DIST.	SCALE BACK-SIGHT	SCALE FORE-SIGHT	DIFFERENCE +	DIFFERENCE −	REMARKS
	m	m	m	m	m	
						(4) 12h30m
1	48	1.429	1.542	.	0.123	
2	48	1.423	1.424	.	0.001	
3	60	1.442	1.319	0.123	.	
4	44	1.374	1.552	.	0.178	+0.090
5	44	1.429	1.400	0.129	.	
6	70	1.364	1.490	0.126		
7	60	1.440	1.412	0.028	.	
8	30	1.424	1.318	0.108	.	(3)
9	40	1.382	1.442	.	0.060	
10	50	1.374	1.560	.	0.185	
11	46	1.450	1.412	0.038	.	
12	60	1.343	1.406	0.067	.	−0.422
13	44	1.423	1.372	.	0.059	
14	62	1.382	1.503	.	0.121	
15	48	1.362	1.522	.	0.160	
16	40	1.448	1.400	0.048	.	(2)
17	38	1.346	1.581	0.235	0.235	
18	48	1.340	1.494	.	0.144	
19	52	1.352	1.346	0.069	.	
20	48	1.341	1.474	.	0.133	−0.267
21	44	1.445	1.394	0.051	.	
22	48	1.312	1.374	.	0.062	
23	52	1.442	1.409	0.033	.	
24	48	1.400	1.352	0.048	.	(1)
25	60	1.194	1.334	.	0.141	
26	52	1.389	1.470	.	0.081	
27	60	1.433	1.356	0.077	.	
28	44	1.439	1.601	.	0.162	
29	60	1.340	1.400	0.060	.	−0.437
30	60	1.394	1.480	0.086	.	
31	60	1.344	1.371	.	0.027	
32	80	1.372	1.342	0.030	.	
TOTAL	1882	45.125	45.770	3.888	3.233	
CHECK			−0.645	−0.655		
RESULT	1/2 Δh				.	

T_1 = °C
T_2 = °C
T_1 = °C

FROM TO ( ) = − ( ) : S.P.

FIELD SHEETS OF SECOND ORDER LEVELING

ROUTE ( ) FROM TO (II)

Date: 1983. 6. 29	Weather:	File page No.
Instrument:	Rods:	
Observer:	Checked:	

PT.	DIST.	SCALE BACK-SIGHT	SCALE FORE-SIGHT	DIFFERENCE +	DIFFERENCE −	REMARKS
	1884m	45m 1335	45m 7704	1m 3369	1m 9699	
33	60	1.392	1.798		0.405	
34	64	1.467	1.467	0.000		--- BM 14.30m
TOTAL	2008	48.096	49.132	1.338	2.374	T_1 = ,°C
CHECK			−1.036	−1.036		T_2 = ,°C
RESULT	1/2 Δh				−1.036	T_1 = ,°C

FROM TO ( ) = — ( ) : S.P.

FIELD SHEETS OF SECOND ORDER LEVELING

ROUTE ( ) FROM TO (I)

Date: 5. 29	Weather: Fine	File page No.
Instrument:	Rods:	
Observer:	Checked:	

PT.	DIST. (m)	SCALE BACK-SIGHT (m)	SCALE FORE-SIGHT (m)	DIFFERENCE + (m)	DIFFERENCE − (m)	REMARKS
1	14	1.549	1.594		0.045	(10) BM 9.436 m
2	71	1.541	1.513	0.049		
3	70	1.556	1.555	0.007		
4	72	1.515	1.519	0.043		−0.142
5	72	1.535	1.396		0.166	
6	72	1.538	1.511		0.027	
7	71	1.513	1.510		0.003	
8	70	1.545	1.535	0.010		(1)
9	76	1.581	1.579	0.102		
10	70	1.535	1.529	0.006		
11	72	1.513	1.505	0.008		
12	72	1.535	1.535		0.045	
13	71	1.545	1.412		0.133	+0.183
14	68	1.421	1.587	0.134		
15	71	1.525	1.404		0.121	
16	72	1.506	1.366	0.140		(2)
17	70	1.572	1.465		0.107	
18	71	1.513	1.346	0.117		
19	70	1.556	1.501		0.055	
20	75	1.513	1.513	0.014		
21	67	1.555	1.551		0.037	+0.001
22	68	1.469	1.589	0.120		
23	70	1.555	1.551		0.004	
24	70	1.525	1.503		0.078	(3)
25	70	1.535	1.550	0.015		
26	69	1.555	1.559		0.001	
27	70	1.545	1.565		0.017	
28	71	1.556	1.575		0.019	−0.190
29	70	1.555	1.535		0.170	
30	68	1.494	1.302	0.187		
31	66	1.545	1.505	0.040		
32	67	1.100	1.285		0.185	(4) 11.535 m
TOTAL	2196	41.847	41.995	1.182	1.330	T_1 = ,°C
CHECK	2196					T_2 = ,°C
	4392		−0.148	−0.148		T_1 = ,°C
RESULT	1/2 Δh				−0.148	

FROM TO ( ) = − ( ) : S.P.

(10) −0.142 (1) +0.183 (2) +0.001 (3) −0.190 (4)

+0.142 −0.183 +0.003 +0.195

+0.000 −0.002 +0.004 +0.005

FIELD SHEETS OF SECOND ORDER LEVELING

ROUTE ( ) FROM TO (II)

Date: 5. 29	Weather:	File page No.
Instrument:	Rods:	
Observer:	Checked:	

PT.	DIST.	SCALE BACK-SIGHT	SCALE FORE-SIGHT	DIFFERENCE +	DIFFERENCE −	REMARKS
	m	m	m	m	m	
XX	70	X.XXX	X.XXX	.	.	
		.	.	.	.	
1	68	1.222	1.047	0.175	.	....(4) 15h40m
2	70	1.336	1.350	.	0.014	
3	67	1.300	1.308	.	0.008	
4	68	1.340	1.356	.	0.016	
5	72	1.318	1.305	0.013	.	+0.195
6	70	1.386	1.310	0.076	.	
7	68	1.381	1.342	0.039	.	
8	69	1.327	1.397	.	0.070	....(3)
9	70	1.379	1.310	0.069	.	
10	68	1.394	1.347	0.037	.	
11	72	1.332	1.300	.	0.068	
12	69	1.049	1.081	.	0.032	
13	70	1.389	1.304	.	0.015	+0.003
14	70	1.314	1.307	0.007	.	
15	71	1.317	1.319	.	0.002	
16	70	1.306	1.309	.	0.003	
17	70	1.370	1.336	.	0.066	....(2)
18	69	1.356	1.346	0.009	.	
19	70	1.169	1.360	.	0.191	
20	70	1.342	1.322	0.020	.	
21	72	1.389	1.310	.	0.021	−0.185
22	72	1.326	1.346	.	0.020	
23	73	1.396	1.388	0.007	.	
24	73	1.370	1.392	.	0.022	....(1)
25	60	1.390	1.356	.	0.034	
26	70	1.350	1.350	0.000	.	
27	72	1.384	1.384	0.041	.	
28	72	1.362	1.365	0.157	.	+0.142
29	73	1.350	1.384	.	0.034	
30	73	1.080	1.107	.	0.027	
TOTAL	2101	38.490	38.342	0.892	0.764	
CHECK			+0.128	+0.128		
RESULT	1/2 Δh				.	

T_1 = , °C
T_2 = , °C
T_1 = , °C

FROM TO ( ) = − ( ) : S.P.

FIELD SHEETS OF SECOND ORDER LEVELING

ROUTE ( ) FROM TO ( )

Date: 5. 29	Weather:	File page No.
Instrument:	Rods:	
Observer:	Checked:	

PT.	DIST.	SCALE BACK-SIGHT	SCALE FORE-SIGHT	DIFFERENCE +	DIFFERENCE −	REMARKS
	210 m	38.m490	38.m352	0.m392	0.m762	
21	70	1.308	1.241		0.033	
22	15	1.354	1.294	0.060		..... BM 14h 29m (10)
TOTAL	2186	41.152	40.997	0.452	0.797	
CHECK			+0.155	+0.155		
RESULT	1/2 Δh				+0.155	

T_1 = ,°C
T_2 = ,°C
T_1 = ,°C

FROM TO ( ) = − ( ) : S.P.

FIELD SHEETS OF SECOND ORDER LEVELING

ROUTE ( ) FROM TO ( )

Date: 5. 29	Weather: Fine	File page No.
Instrument:	Rods:	
Observer:	Checked:	

PT.	DIST.	SCALE BACK-SIGHT	SCALE FORE-SIGHT	DIFFERENCE +	DIFFERENCE −	REMARKS
	m	m	m	m	m	
(9)		1.181				9h 10m
~~BM~~(10)			0.577	0.604		
~~BM~~(10)		0.574				
(9)			1.128		0.554	9h 02m

TOTAL					
CHECK					
RESULT	1/2 Δh				

T_1 = ,°C
T_2 = ,°C
T_1 = ,°C

FROM TO ( ) = − ( ) : S.P.

FIELD SHEETS OF SECOND ORDER LEVELING

ROUTE ( ) FROM TO (I)

Date: 1983. 5. 30	Weather: Fine	File page No.
Instrument:	Rods:	
Observer:	Checked:	

PT.	DIST. (m)	SCALE BACK-SIGHT (m)	SCALE FORE-SIGHT (m)	DIFFERENCE + (m)	DIFFERENCE − (m)	REMARKS
						--- BM 8311
1	70	2.220	1.520	0.700		
2	66	1.325	1.405		0.080	
3	60	1.342	1.404		0.062	
4	58	1.312	1.376		0.064	+0.445
5	60	1.276	1.446		0.170	
6	61	1.472	1.361	0.111		
7	60	1.512	1.343	0.169		
8	55	1.446	1.515		0.069	--- (1)
9	60	1.271	1.253	0.018		
10	62	1.340	1.518		0.178	
11	70	1.455	1.467		0.012	
12	70	1.440	1.276	0.164		−0.411
13	70	1.371	1.311	0.060		
14	70	1.395	1.409		0.014	
15	50	1.441	1.288	0.153		
16	58	1.408	2.010		0.602	--- BM 8312
TOTAL	978	23.036	23.002	1.375	2.341	T_1 = , °C
CHECK	1932		+0.034	+0.034		T_2 = , °C
RESULT	1/2 Δh				+0.034	T_1 = , °C

FROM TO ( ) = − ( ) : S.P.

BM8311 +0.445 (1) −0.411 BM8312
−0.463 +0.419
−0.018 +0.008

FIELD SHEETS OF SECOND ORDER LEVELING

ROUTE ( ) FROM TO (Ⅱ)

Date: 1983. 6. 30	Weather:	File page No.
Instrument:	Rods:	
Observer:	Checked:	

PT.	DIST. (m)	SCALE BACK-SIGHT (m)	SCALE FORE-SIGHT (m)	DIFFERENCE + (m)	DIFFERENCE − (m)	REMARKS
						--- BM 8312
1	40	1.942	1.322	0.180	.	
2	42	1.301	1.375	.	0.074	
3	40	1.395	1.440	.	0.045	
4	42	1.421	1.461	.	0.040	+0.419
5	42	1.306	1.497	.	0.191	
6	42	1.422	1.391	0.031	.	
7	40	1.421	1.401	0.020	.	
8	38	1.408	1.270	0.138	.	--- (1)
9	40	1.400	1.358	0.042	.	
10	40	1.361	1.501	.	0.140	
11	42	1.306	1.440	.	0.134	
12	38	1.401	1.301	0.170	.	−0.463
13	44	1.411	1.291	0.120	.	
14	38	1.420	1.400	0.020	.	
15	40	1.436	1.310	0.126	.	
16	44	1.411	1.198	.	0.187	--- BM 8311
TOTAL	944	23.042	23.086	1.247	1.291	T_1 = ,°C
CHECK			−0.044	−0.044		T_2 = ,°C
RESULT	1/2 Δh				−0.044	T_1 = ,°C

FROM TO ( ) = − ( ) : S.P.

FIELD SHEETS OF SECOND ORDER LEVELING

ROUTE (—) FROM TO (x)

Date: 1983. 4. 30	Weather: Fine	File page No.
Instrument:	Rods:	
Observer:	Checked:	

PT.	DIST. (m)	SCALE BACK-SIGHT (m)	SCALE FORE-SIGHT (m)	DIFFERENCE + (m)	DIFFERENCE − (m)	REMARKS
						--- BM
1	62	1.240	1.194	0.046		
2	60	1.246	1.282		0.036	
3	60	1.246	1.342	0.096		
4	62	1.342	1.307	0.045		
		1.288			0.288	
5	60	1.305	1.362		0.057	
6	60	1.419	1.426	0.011		
7	60	1.326	1.427		0.101	
8	62	1.490	1.370	0.120		
9	70	1.392	1.493		0.101	
10	60	1.426	1.311	0.115		
11	60	1.368	1.300		0.132	--- BM 8311
TOTAL	647	16.227	16.044	1.342	1.149	
CHECK	648					
	1.303		+0.183	+0.183		
RESULT	1/2 Δh				+0.183	

T_1 = , °C
T_2 = , °C
T_1 = , °C

FROM TO ( ) = — ( ) : S.P.

BM +0.183 BM8311
— 0.183
± 0.000

FIELD SHEETS OF SECOND ORDER LEVELING

ROUTE ( ) FROM TO (I)

Date: 5. 30	Weather: Fine	File page No.
Instrument:	Rods:	
Observer:	Checked:	

PT.	DIST. (m)	SCALE BACK-SIGHT (m)	SCALE FORE-SIGHT (m)	DIFFERENCE + (m)	DIFFERENCE − (m)	REMARKS
1	65	1.192	1.665	0	0.473	....(4) 9h 29m
2	68	1.485	1.057	0.428	0	
3	72	1.247	1.244	0	0.003	
4	68	1.011	1.165	0	0.154	
5	68	1.158	1.125	0.033	0	±0.000
6	69	1.358	1.358	0	0	
		0	1.001	0.357	0	
7	75	0.815	0.981	0	0.166	
8	68	1.253	1.105	0.148	0	....(5)
9	73	1.054	1.250	0	0.196	
10	70	1.375	1.091	0.284	0	
11	70	1.042	1.253	0	0.211	−0.071
12	71	1.133	1.034	0.099	0	+0.028
13	70	0.884	0.962	0	0.078	
14	67	1.165	1.243	0	0.078	
15	73	1.080	1.089	0	0.009	
16	68	1.317	1.119	0.198	0	....(6)
17	73	1.080	0.930	0.150	0	
18	68	0.945	0.911	0.034	0	
19	73	0.938	1.000	0	0.062	
20	70	1.236	1.083	0.153	0	+0.053
21	71	1.182	1.090	0.092	0	
22	70	1.201	1.211	0	0.010	
23	73	0.980	0.970	0.034	0	
24	70	1.265	1.051	0	0.214	....(7)
25	71	1.061	0.974	0.087	0	
26	70	1.276	1.248	0.028	0	−0.004
27	74	0.930	1.185	0	0.255	
28	62	1.264	1.120	0.144	0	....(4) 11h 25m
TOTAL	1958	42.445	42.467	2.299	2.277	
CHECK	1951					
	3909		−0.022	−0.022		
RESULT	1/2 Δh				−0.022	

T_1 = °C
T_2 = °C
T_1 = °C

FROM TO ( ) = − ( ) : S.P.

(4) 0 ±0.000 (5) −0.071 (6) +0.053 (7) −0.004 (4)
~~+0.031~~ +0.081 −0.053 +0.004
+0.011
+0.011 +0.010 +0.001 ±0.000

FIELD SHEETS OF SECOND ORDER LEVELING

ROUTE ( ) FROM TO (II)

Date: 5. 30	Weather:	File page No.
Instrument:	Rods:	
Observer:	Checked:	

PT.	DIST. (m)	SCALE BACK-SIGHT (m)	SCALE FORE-SIGHT (m)	DIFFERENCE + (m)	DIFFERENCE − (m)	REMARKS
1	68	1.094	1.236	.	0.142	..... (a) 11h 25m
2	70	1.189	0.907	0.282	.	
3	71	1.244	1.286	.	0.042	+0.004
4	69	0.905	0.999	.	0.094	....(7)
5	70	1.426	1.451	.	0.025	
6	70	1.195	1.046	0.149	.	
7	70	1.231	1.317	.	0.086	
8	71	0.874	0.875	.	0.001	−0.052
9	72	0.904	0.882	0.022	.	
10	68	0.687	0.606	0.081	.	
11	68	0.880	0.906	.	0.026	
12	71	0.917	1.083	.	0.166	.....(6)
13	71	0.930	0.942	0.012	.	
14	72	0.888	1.081	.	0.193	
15	68	1.078	0.972	0.106	.	
16	68	0.824	0.707	0.117	.	+0.081
17	71	0.906	0.872	0.034	.	
18	70	0.980	0.971	0.009	.	
19	70	1.078	1.184	.	0.106	
20	70	0.938	0.858	0.080	.	.....(5)
21	72	0.882	0.916	.	0.034	
22	70	0.804	0.753	0.051	.	
23	68	1.018	1.392	.	0.374	
24	68	1.389	1.099	0.290	.	+0.031
25	69	1.095	1.209	.	0.114	
26	68	1.179	1.048	0.131	.	
27	65	0.867	0.950	.	0.083	
28	70	1.121	0.959	0.162	.	..... (4) 14h 32m
TOTAL	.951	28.479	28.515	1.540	1.486	
CHECK			+0.064	+0.064		
RESULT	1/2 Δh				+0.044	

T_1 = , °C
T_2 = , °C
T_1 = , °C

FROM TO ( ) = − ( ) : S.P.

FIELD SHEETS OF SECOND ORDER LEVELING

ROUTE ( ) FROM TO (Z)

Date: 1983. 6. 31	Weather:	File page No.
Instrument:	Rods:	
Observer:	Checked:	

PT.	DIST. (m)	SCALE BACK-SIGHT (m)	SCALE FORE-SIGHT (m)	DIFFERENCE + (m)	DIFFERENCE − (m)	REMARKS
1	70	1.244	1.602	0.662		BM8311 11h00
2	70	1.433	1.496		0.063	
3	68	1.419	1.236	0.183		
4	60	1.052	1.453		0.401	
5	68	1.451	1.472	0.079		
6	70	1.396	1.316	0.080		
7	68	1.382	1.406		0.024	
8	60	1.275	1.386		0.111	
9	64	1.280	1.429		0.149	
10	68	1.263	1.790		0.527	BM 11h30m
TOTAL	646	14.385	14.680	1.004	1.099	
CHECK			−0.295	−0.095		
RESULT	1/2 Δh				−0.095	

T_1 = ,°C
T_2 = ,°C
T_1 = ,°C

FROM TO ( ) = − ( ) : S.P.

FIELD SHEETS OF SECOND ORDER LEVELING

ROUTE ( ) FROM TO ( )

Date: 1983. 5. 31	Weather:	File page No.
Instrument:	Rods:	
Observer:	Checked:	

PT.	DIST.	SCALE BACK-SIGHT	SCALE FORE-SIGHT	DIFFERENCE +	DIFFERENCE −	REMARKS
	m	m	m	m	m	
1		1.334	1.440		0.208	--- (4) 10h00
2		1.346	1.100	0.165		
3		1.346	1.332	0.014		
4		0.809	1.186		0.377	
5		1.341	1.339	0.102		− 0.011
6		1.312	1.260	0.052		
7		1.108	1.175		0.067	
8		1.178	0.870	0.308		--- (5) 10h20m
TOTAL	111	9.494	9.405	0.641	0.652	T_1 = °C
CHECK			− 0.011	0.011		T_2 = °C
RESULT	1/2 Δh				− 0.011	T_1 = °C

FROM TO ( ) = − ( ) : S.P.

FIELD SHEETS OF SECOND ORDER LEVELING

ROUTE ( ) FROM TO ( )

Date: 1983. 6. 31	Weather:	File page No.
Instrument:	Rods:	
Observer:	Checked:	

PT.	DIST. (m)	SCALE BACK-SIGHT (m)	SCALE FORE-SIGHT (m)	DIFFERENCE + (m)	DIFFERENCE − (m)	REMARKS
						--- BM8312
1	72	1.831	1.392	0.443	.	
2	70	1.452	1.292	0.160	.	
3	68	1.495	1.320	0.175	.	
4	70	1.398	1.421	.	0.023	
5	72	1.512	1.345	0.167	.	
6	68	1.313	1.394	.	0.021	
7	60	1.334	1.375	.	0.041	
8	60	1.391	1.324	0.067	.	
9	70	1.380	1.385	.	0.005	
10	68	1.478	1.446	0.032	.	
11	72	1.435	1.460	.	0.025	
12	68	1.589	1.427	0.162	.	
13	70	1.444	1.467	.	0.022	
14	70	1.542	1.442	0.100	.	
15	68	1.222	2.227	.	0.894	--- BM8313
16		~~2.026~~	~~1.262~~	.	.	
TOTAL	1026	21.982	21.717	1.326	1.041	T_1 = , °C
CHECK			+0.265	+0.265		T_2 = , °C
RESULT	1/2 Δh				+0.265	T_1 = , °C

FROM TO ( ) = − ( ) : S.P.

FIELD SHEETS OF SECOND ORDER LEVELING

ROUTE ( ) FROM TO ( )

Date: 1983. 7. 3.	Weather: fine	File page No.
Instrument:	Rods:	
Observer:	Checked:	

PT.	DIST.	SCALE BACK-SIGHT	SCALE FORE-SIGHT	DIFFERENCE +	DIFFERENCE −	REMARKS
	m	m	m	m	m	
1-1		1.215				
No.115			1.212	0.0001		
No.115		1.210				
1-1			1.212		0.002	
TOTAL						T_1 = ,°C
CHECK						T_2 = ,°C
RESULT	1/2 Δh					T_1 = ,°C

FROM TO ( ) = − ( ) : S.P.