



DOTT. NICOLA D'UBALDO
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REPORT LETTURE INCLINOMETRICHE

PROGETTO	STATO MOVIMENTO AREA IN FRANA G.4 STABILIMENTO TERMALE
COMMITTENTE	FLAVIO CATTANEO
COMUNE	SAN CASCIANO (SI)
UBICAZIONE	Loc. Terme di San Casciano dei Bagni N.C.T. Foglio n°57 - Part.la n°42
DATA	Marzo 2023



P.P.V.
IL PROGETTISTA

DOTT. NICOLA D'UBALDO
GEOLOGO

La seguente relazione è composta da:
Parole 261 - Pagine 16
Committente: FLAVIO CATTANEO

PREMESSA

Ad evasione dell'incarico ricevuto dal Sig. FLAVIO CATTANEO è stato eseguito il seguente report inclinometrico dei terreni situati in Loc. Terme di San Casciano dei Bagni nel comune di SAN CASCIANO (SI).

Lo studio è stato espletato al fine di ottimizzare le scelte progettuali per l'intervento di: STATO MOVIMENTO AREA IN FRANA G.4 STABILIMENTO TERMALÉ.

Il presente elaborato valuta gli spostamenti a partire dal 21/12/2021 preme precisare che la lettura in tale data denota errori di acquisizione probabilmente dovuti a successivi interventi nell'area prossima all'inclinometro, a scopo esaustivo viene riportata anche una elaborazione considerando come misura originaria quella del 12/05/2022 priva di errori di acquisizione.

Zona :					Tubo:					Misura del : 09/03/2023 N° : 3
Identificativo Tubo					Sonda Usata					
Quota Acqua					Corr. Sensibilità Sonda A : 25000 B : 25000					
Correzione Azimutale 247					Correzione Angolare 0					
N°	A1	A2	B3	B4	B1	B2	A3	A4	Spira.	
1	272	-286	-279	265	-201	181	-205	191	0	
2	257	-271	-267	255	-176	158	-181	168	0	
3	159	-176	-171	162	-191	171	-191	177	0	
4	9	-25	-20	6	-222	201	-216	204	0	
5	-73	63	64	-67	-201	179	-198	185	0	
6	5	-36	-33	9	-236	213	-223	206	0	
7	-2	-11	-14	-3	-202	186	-203	188	0	
8	-38	23	22	-37	-172	154	-171	158	0	
9	-46	31	26	-44	-193	176	-192	178	0	
10	-41	27	26	-41	-185	169	-184	171	0	
11	-40	26	23	-41	-177	161	-177	164	0	
12	-76	60	54	-69	-65	51	-69	55	0	
13	-62	48	44	-65	-100	85	-99	84	0	
14	-69	55	53	-73	-86	70	-83	69	0	
15	-71	56	51	-71	-84	63	-78	64	0	
16	-74	59	55	-73	-78	63	-76	61	0	
17	-72	59	58	-82	-88	71	-86	72	0	
18	-44	29	24	-42	-43	28	-40	27	0	
19	-32	18	14	-39	-36	18	-35	20	0	
20	-27	12	11	-31	-32	11	-30	16	0	
21	-24	10	5	-30	-48	30	-47	34	0	
22	-36	22	20	-38	-41	21	-37	22	0	
23	-39	26	23	-48	-31	10	-29	16	0	
24	-148	134	147	-162	-82	64	-74	62	0	
25	-128	114	115	-130	-101	83	-98	83	0	
26	-131	116	117	-132	-99	83	-96	82	0	
27	-127	113	115	-133	-67	51	-65	50	0	
28	-123	108	113	-123	-52	33	-50	36	0	
29	-99	84	86	-100	-70	56	-69	55	0	
30	-119	103	89	-105	-181	164	-181	166	0	
31	-122	107	102	-121	-200	183	-198	184	0	
32	-123	109	106	-121	-207	190	-204	190	0	
33	-131	118	118	-134	-209	188	-205	192	0	
34	-139	125	123	-140	-193	178	-192	177	0	
35	-159	145	142	-159	-206	187	-202	188	0	
36	-216	202	209	-232	-194	177	-189	175	0	
37	-197	183	176	-194	-166	146	-159	146	0	
38	-209	195	193	-207	-133	112	-126	113	0	
39	-213	198	194	-213	-135	114	-127	114	0	
40	-203	188	184	-202	-148	128	-142	127	0	
41	-197	182	176	-193	-143	122	-134	122	0	
42	-119	104	90	-106	-87	66	-78	63	0	
43	-127	110	107	-130	-102	81	-98	82	0	
44	-125	110	105	-126	-93	73	-87	73	0	
45	-115	100	96	-119	-62	42	-57	44	0	
46	-96	81	77	-100	-41	21	-37	23	0	
47	-103	88	84	-111	-15	-8	-8	-5	0	
48	-167	152	149	-170	58	-79	65	-83	0	
49	-125	110	118	-129	97	-115	99	-114	0	
50	-104	89	97	-107	146	-166	150	-164	0	
51	-102	88	94	-108	165	-187	170	-185	0	
52	-101	86	95	-109	213	-233	215	-228	0	
53	-104	90	99	-111	251	-270	253	-268	0	
54	-74	58	77	-88	333	-346	329	-346	0	
55	-70	55	66	-79	324	-337	325	-340	0	
56	-102	88	96	-107	270	-282	271	-286	0	
57	-154	139	146	-160	199	-214	204	-217	0	
58	-255	240	248	-259	120	-134	126	-143	0	

Zona :

Tubo:

Misura del : 09/03/2023

Movimento per Sommatoria Rispetto all'Origine Del : 21/12/2021

N°	Profondità m.	Differenza X mm.	Differenza Y mm.	Risultante mm.	Azimut (°)
1	0.50	-12.0	-11.2	16.4	222.82
2	1.00	-8.8	-8.4	12.1	223.80
3	1.50	-5.2	-6.1	8.0	229.80
4	2.00	-2.3	-4.0	4.6	240.64
5	2.50	-1.7	-2.6	3.1	236.92
6	3.00	-2.8	-2.9	4.1	225.42
7	3.50	-3.0	-2.4	3.8	218.56
8	4.00	-2.8	-2.1	3.5	216.24
9	4.50	-2.6	-2.0	3.3	218.11
10	5.00	-2.7	-1.9	3.3	214.31
11	5.50	-2.9	-1.7	3.4	210.07
12	6.00	-3.1	-0.4	3.1	186.95
13	6.50	-3.1	-1.0	3.3	197.67
14	7.00	-3.1	-0.8	3.2	195.35
15	7.50	-3.0	-0.8	3.1	194.84
16	8.00	-3.0	-0.8	3.1	194.36
17	8.50	-2.9	-0.8	3.1	195.98
18	9.00	-3.2	-0.7	3.3	192.36
19	9.50	-3.3	-0.6	3.4	189.78
20	10.00	-3.3	-0.5	3.4	188.74
21	10.50	-3.3	-0.6	3.4	189.44
22	11.00	-3.3	-0.3	3.3	185.74
23	11.50	-3.3	-0.2	3.3	184.29
24	12.00	-2.0	-0.3	2.1	188.16
25	12.50	-2.3	-0.8	2.4	198.31
26	13.00	-2.3	-0.8	2.4	198.63
27	13.50	-2.5	-0.6	2.5	194.74
28	14.00	-2.4	-0.8	2.6	198.20
29	14.50	-2.6	-1.2	2.9	204.60
30	15.00	-2.2	-1.8	2.9	218.96
31	15.50	-2.1	-1.9	2.9	222.54
32	16.00	-2.2	-2.0	3.0	223.30
33	16.50	-2.0	-2.2	3.0	226.90
34	17.00	-2.1	-2.1	3.0	226.07
35	17.50	-1.8	-2.3	2.9	231.36
36	18.00	-1.0	-2.3	2.5	247.03
37	18.50	-1.6	-2.1	2.6	232.84
38	19.00	-1.6	-1.9	2.5	229.06
39	19.50	-1.6	-1.8	2.4	229.19
40	20.00	-1.5	-2.1	2.6	234.23
41	20.50	-1.6	-2.2	2.7	234.41
42	21.00	-2.4	-1.8	3.0	217.33
43	21.50	-2.1	-2.1	3.0	225.03
44	22.00	-2.0	-2.1	2.9	226.61
45	22.50	-2.1	-2.0	2.9	224.12
46	23.00	-2.1	-1.9	2.9	221.69
47	23.50	-2.0	-1.7	2.7	221.13
48	24.00	-1.3	-0.8	1.5	210.10
49	24.50	-1.8	-0.8	2.0	203.58
50	25.00	-2.1	-0.4	2.2	192.03
51	25.50	-2.2	-0.3	2.2	186.65
52	26.00	-2.4	0.1	2.4	176.86
53	26.50	-2.5	0.6	2.6	167.64
54	27.00	-2.6	1.0	2.8	159.44
55	27.50	-2.8	1.0	3.0	160.68
56	28.00	-2.3	0.7	2.4	164.41
57	28.50	-1.8	0.3	1.8	168.91
58	29.00	-0.9	0.1	1.0	172.39
59	29.50	0.0	-0.1	0.1	289.82
60	30.00	0.0	0.0	0.0	0.00

Zona :

Tubo:

Misura del : 09/03/2023

Movimento Per Punti rispetto all' Origine Del : 21/12/2021

N°	Profondità m.	Differenza X mm.	Differenza Y mm.	Risultante mm.	Azimut (°)
1	0.50	-3.3	-2.8	4.3	220.06
2	1.00	-3.6	-2.3	4.3	212.51
3	1.50	-2.9	-2.1	3.5	215.56
4	2.00	-0.6	-1.5	1.6	247.87
5	2.50	1.2	0.3	1.2	14.90
6	3.00	0.1	-0.5	0.5	282.31
7	3.50	-0.2	-0.3	0.3	242.70
8	4.00	-0.2	0.0	0.2	184.57
9	4.50	0.1	-0.2	0.2	303.54
10	5.00	0.2	-0.2	0.3	320.55
11	5.50	0.2	-1.3	1.3	277.44
12	6.00	0.0	0.6	0.6	86.23
13	6.50	0.0	-0.2	0.2	251.81
14	7.00	0.0	0.0	0.1	221.43
15	7.50	0.0	0.0	0.0	226.96
16	8.00	0.0	0.1	0.1	122.46
17	8.50	0.3	-0.1	0.3	330.27
18	9.00	0.1	-0.1	0.2	318.20
19	9.50	0.0	-0.1	0.1	278.96
20	10.00	0.0	0.0	0.0	125.53
21	10.50	0.0	-0.2	0.2	264.70
22	11.00	0.0	-0.1	0.1	245.88
23	11.50	-1.2	0.0	1.2	177.70
24	12.00	0.3	0.5	0.5	59.87
25	12.50	0.0	0.0	0.0	166.13
26	13.00	0.2	-0.1	0.2	320.82
27	13.50	0.0	0.2	0.2	96.30
28	14.00	0.2	0.4	0.4	67.05
29	14.50	-0.4	0.6	0.7	119.78
30	15.00	-0.1	0.1	0.2	137.44
31	15.50	0.0	0.1	0.1	64.18
32	16.00	-0.1	0.1	0.2	133.38
33	16.50	0.0	0.0	0.0	313.56
34	17.00	-0.2	0.1	0.3	148.42
35	17.50	-0.9	0.0	0.9	179.14
36	18.00	0.6	-0.2	0.6	341.14
37	18.50	0.1	-0.2	0.2	288.71
38	19.00	-0.1	-0.1	0.1	226.75
39	19.50	0.0	0.3	0.3	94.85
40	20.00	0.0	0.1	0.1	61.66
41	20.50	0.9	-0.3	0.9	339.31
42	21.00	-0.3	0.3	0.4	138.31
43	21.50	-0.1	0.0	0.1	168.49
44	22.00	0.1	-0.1	0.1	295.12
45	22.50	0.1	-0.1	0.1	299.84
46	23.00	-0.1	-0.2	0.2	228.41
47	23.50	-0.7	-1.0	1.2	235.55
48	24.00	0.5	0.0	0.5	2.09
49	24.50	0.3	-0.3	0.5	311.64
50	25.00	0.1	-0.2	0.2	296.99
51	25.50	0.2	-0.4	0.4	296.95
52	26.00	0.1	-0.4	0.4	285.06
53	26.50	0.1	-0.4	0.5	286.11
54	27.00	0.1	0.0	0.1	5.18
55	27.50	-0.4	0.3	0.5	143.79
56	28.00	-0.6	0.3	0.7	152.20
57	28.50	-0.8	0.2	0.8	164.98
58	29.00	-1.0	0.2	1.0	167.79
59	29.50	0.0	-0.1	0.1	289.82
60	30.00	0.0	0.0	0.0	0.00

Zona :

Tubo:

Misura del : 09/03/2023

Movimento per Sommatoria Rispetto all'Origine Del : 12/05/2022

N°	Profondità m.	Differenza X mm.	Differenza Y mm.	Risultante mm.	Azimut (°)
1	0.50	-5.2	-8.3	9.8	238.17
2	1.00	-3.0	-7.0	7.6	246.61
3	1.50	-0.9	-5.4	5.5	260.11
4	2.00	0.9	-3.9	4.0	282.41
5	2.50	1.2	-2.8	3.0	293.66
6	3.00	0.7	-2.5	2.6	285.92
7	3.50	0.5	-2.4	2.4	282.34
8	4.00	0.4	-2.3	2.3	280.50
9	4.50	0.4	-2.2	2.2	279.12
10	5.00	0.3	-2.0	2.1	278.62
11	5.50	0.2	-1.9	1.9	276.42
12	6.00	0.2	-1.6	1.6	275.34
13	6.50	0.1	-1.6	1.6	274.90
14	7.00	0.1	-1.5	1.5	273.96
15	7.50	0.1	-1.4	1.4	273.22
16	8.00	0.0	-1.3	1.3	272.16
17	8.50	0.0	-1.2	1.2	271.89
18	9.00	0.0	-1.2	1.2	270.21
19	9.50	0.0	-1.1	1.1	270.19
20	10.00	0.0	-1.0	1.0	269.61
21	10.50	0.0	-0.9	0.9	267.85
22	11.00	-0.1	-0.8	0.8	264.48
23	11.50	-0.1	-0.7	0.7	261.81
24	12.00	-0.1	-0.7	0.7	259.08
25	12.50	-0.2	-0.7	0.8	257.03
26	13.00	-0.2	-0.7	0.7	253.51
27	13.50	-0.3	-0.6	0.7	245.56
28	14.00	-0.3	-0.6	0.7	244.26
29	14.50	-0.3	-0.7	0.8	247.73
30	15.00	-0.3	-0.6	0.7	241.60
31	15.50	-0.4	-0.6	0.7	233.89
32	16.00	-0.4	-0.5	0.7	230.50
33	16.50	-0.5	-0.5	0.7	227.58
34	17.00	-0.5	-0.5	0.7	224.87
35	17.50	-0.5	-0.5	0.7	223.15
36	18.00	-0.6	-0.5	0.8	222.75
37	18.50	-0.6	-0.5	0.8	223.69
38	19.00	-0.6	-0.5	0.8	221.55
39	19.50	-0.6	-0.5	0.7	220.58
40	20.00	-0.5	-0.5	0.7	222.88
41	20.50	-0.6	-0.5	0.8	223.69
42	21.00	-0.6	-0.4	0.7	217.72
43	21.50	-0.6	-0.5	0.7	221.19
44	22.00	-0.5	-0.5	0.7	223.60
45	22.50	-0.5	-0.5	0.7	225.12
46	23.00	-0.4	-0.5	0.6	233.88
47	23.50	-0.2	-0.5	0.5	248.00
48	24.00	-0.1	-0.5	0.5	257.92
49	24.50	0.0	-0.4	0.4	267.90
50	25.00	0.0	-0.4	0.4	274.79
51	25.50	0.1	-0.4	0.4	281.39
52	26.00	0.0	-0.3	0.3	269.43
53	26.50	0.0	-0.2	0.2	265.85
54	27.00	0.0	-0.2	0.2	270.48
55	27.50	0.1	-0.3	0.3	284.09
56	28.00	0.1	-0.2	0.3	294.06
57	28.50	0.1	-0.2	0.2	301.47
58	29.00	0.1	-0.1	0.2	307.03
59	29.50	0.1	-0.1	0.1	309.70
60	30.00	0.0	0.0	0.0	0.00

Zona :

Tubo:

Misura del : 09/03/2023

Movimento Per Punti rispetto all' Origine Del 12/05/2022

N°	Profondità m.	Differenza X mm.	Differenza Y mm.	Risultante mm.	Azimut (°)
1	0.50	-2.1	-1.3	2.5	212.09
2	1.00	-2.1	-1.5	2.6	216.33
3	1.50	-1.8	-1.5	2.4	219.75
4	2.00	-0.3	-1.2	1.2	253.64
5	2.50	0.5	-0.3	0.6	329.10
6	3.00	0.2	-0.1	0.2	330.41
7	3.50	0.1	-0.1	0.1	319.57
8	4.00	0.1	-0.1	0.1	314.25
9	4.50	0.0	-0.2	0.2	284.87
10	5.00	0.1	-0.1	0.2	305.34
11	5.50	0.1	-0.3	0.3	282.69
12	6.00	0.0	0.0	0.0	338.00
13	6.50	0.0	-0.1	0.1	286.16
14	7.00	0.0	-0.1	0.1	286.29
15	7.50	0.0	-0.1	0.1	287.29
16	8.00	0.0	-0.1	0.1	275.47
17	8.50	0.0	0.0	0.0	316.96
18	9.00	0.0	-0.1	0.1	270.38
19	9.50	0.0	-0.1	0.1	276.61
20	10.00	0.0	-0.1	0.1	293.00
21	10.50	0.0	-0.1	0.1	288.60
22	11.00	0.0	-0.1	0.1	278.96
23	11.50	0.0	0.0	0.0	14.87
24	12.00	0.0	0.1	0.1	61.16
25	12.50	0.0	-0.1	0.1	289.42
26	13.00	0.1	-0.1	0.1	319.56
27	13.50	0.0	0.0	0.0	43.56
28	14.00	0.0	0.1	0.1	108.60
29	14.50	0.1	-0.1	0.1	318.02
30	15.00	0.1	-0.1	0.1	316.96
31	15.50	0.0	0.0	0.1	287.29
32	16.00	0.0	0.0	0.0	356.44
33	16.50	0.0	0.0	0.0	356.44
34	17.00	0.0	0.0	0.0	319.57
35	17.50	0.0	0.0	0.0	23.00
36	18.00	0.0	0.0	0.0	94.57
37	18.50	0.0	0.0	0.0	293.00
38	19.00	0.0	0.0	0.0	274.57
39	19.50	0.0	0.0	0.0	122.46
40	20.00	0.0	0.0	0.0	79.31
41	20.50	0.0	-0.1	0.1	274.57
42	21.00	0.0	0.1	0.1	96.30
43	21.50	0.0	0.0	0.0	173.26
44	22.00	0.0	0.0	0.0	203.00
45	22.50	-0.1	0.0	0.1	161.81
46	23.00	-0.2	0.0	0.2	198.17
47	23.50	-0.1	0.0	0.1	164.84
48	24.00	-0.1	-0.1	0.1	215.80
49	24.50	0.0	0.0	0.1	217.04
50	25.00	0.0	0.0	0.1	219.70
51	25.50	0.1	-0.1	0.1	319.57
52	26.00	0.0	-0.1	0.1	278.96
53	26.50	0.0	0.0	0.0	169.31
54	27.00	-0.1	0.0	0.1	154.99
55	27.50	0.0	0.0	0.0	184.57
56	28.00	0.0	0.0	0.0	252.40
57	28.50	0.0	-0.1	0.1	289.19
58	29.00	0.0	-0.1	0.1	302.46
59	29.50	0.1	-0.1	0.1	309.70
60	30.00	0.0	0.0	0.0	0.00

	TAVOLA: Ubicazione indagini geognostiche		Scala ---
	TAV. IV	Committente: FLAVIO CATTANEO	
	Base Cartografica: NCT SAN CASCIANO (SI) - Foglio 57		Scala originale ---



Legenda:

 Area di studio

 INCLINOMETRO