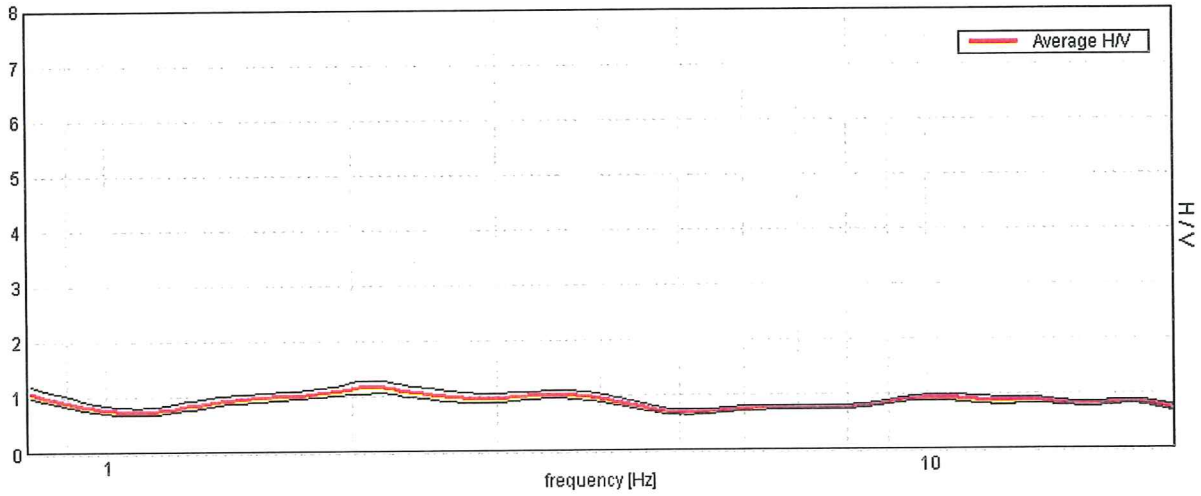
CESENATICO (FC) – SALA, VIA PADRE ARMANDO VINCENZI

Start recording: 09/06/10 13:32:46 End recording: 09/06/10 13:52:47
Channel labels: NORTH SOUTH; EAST WEST ; UP DOWN
GPS: 44.150158 – 12.383188

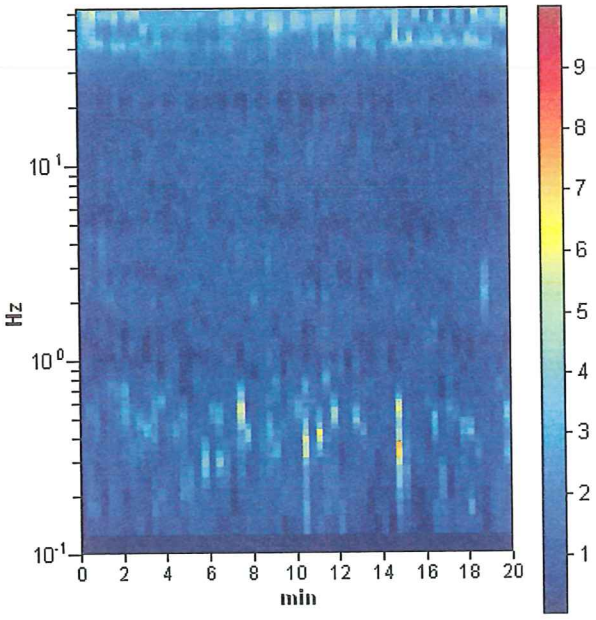
Trace length: 0h20'00". Analysis performed on the entire trace.
Sampling frequency: 128 Hz
Window size: 20 s
Smoothing window: Triangular window
Smoothing: 15%

HORIZONTAL TO VERTICAL SPECTRAL RATIO

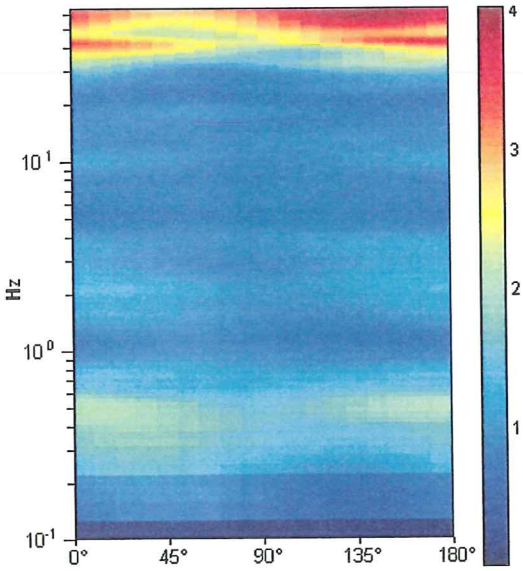
Max. H/V at 2.06 ± 0.22 Hz. (In the range 1.0 - 20.0 Hz).



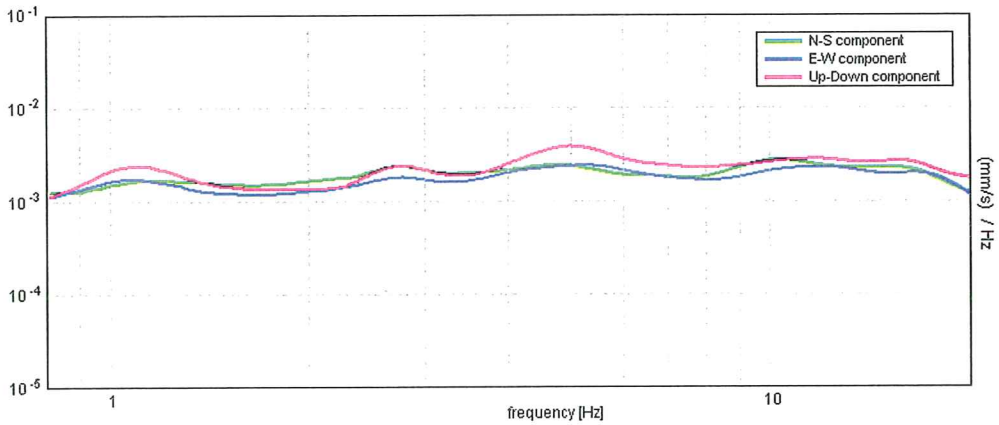
H/V TIME HISTORY



DIRECTIONAL H/V

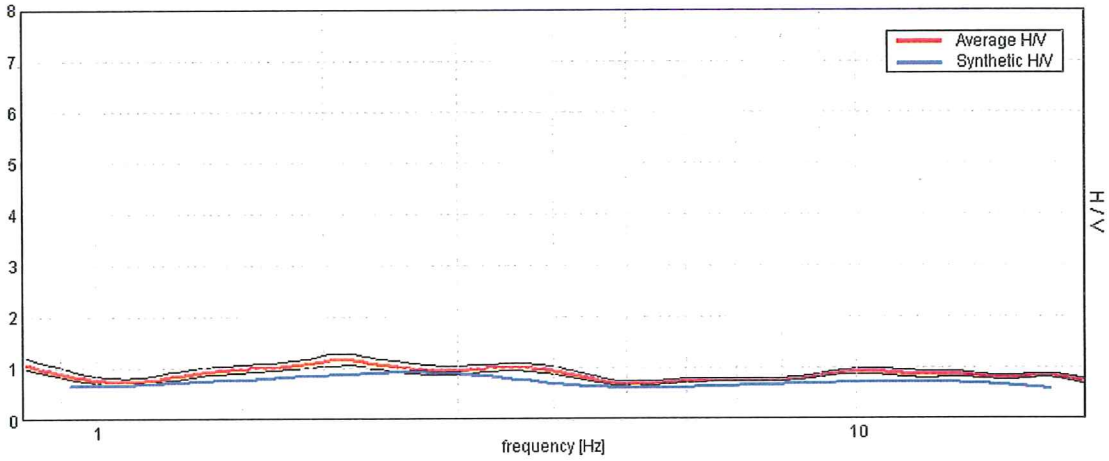


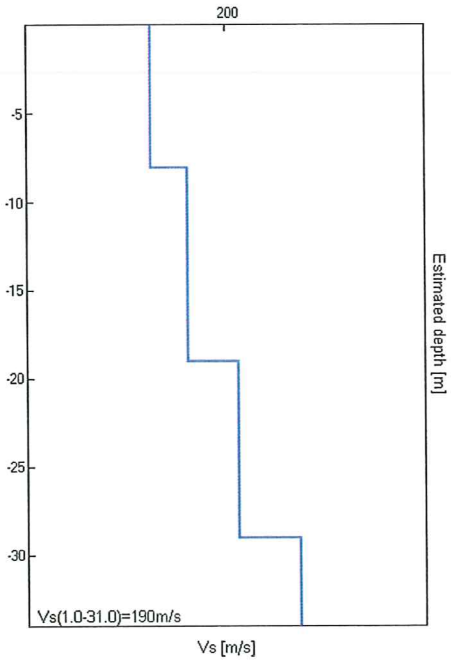
SINGLE COMPONENT SPECTRA



EXPERIMENTAL VS. SYNTHETIC H/V

Max. H/V at 2.06 ± 0.22 Hz. (In the range 1.0 - 20.0 Hz).





Depth at the bottom of the layer [m]	Thickness [m]	Vs [m/s]
8.00	8.00	170
19.00	11.00	185
29.00	10.00	205
inf.	inf.	230

Vs(1.0-31.0)=190m/s

Max. H/V at 2.06 ± 0.22 Hz (in the range 1.0 - 20.0 Hz).

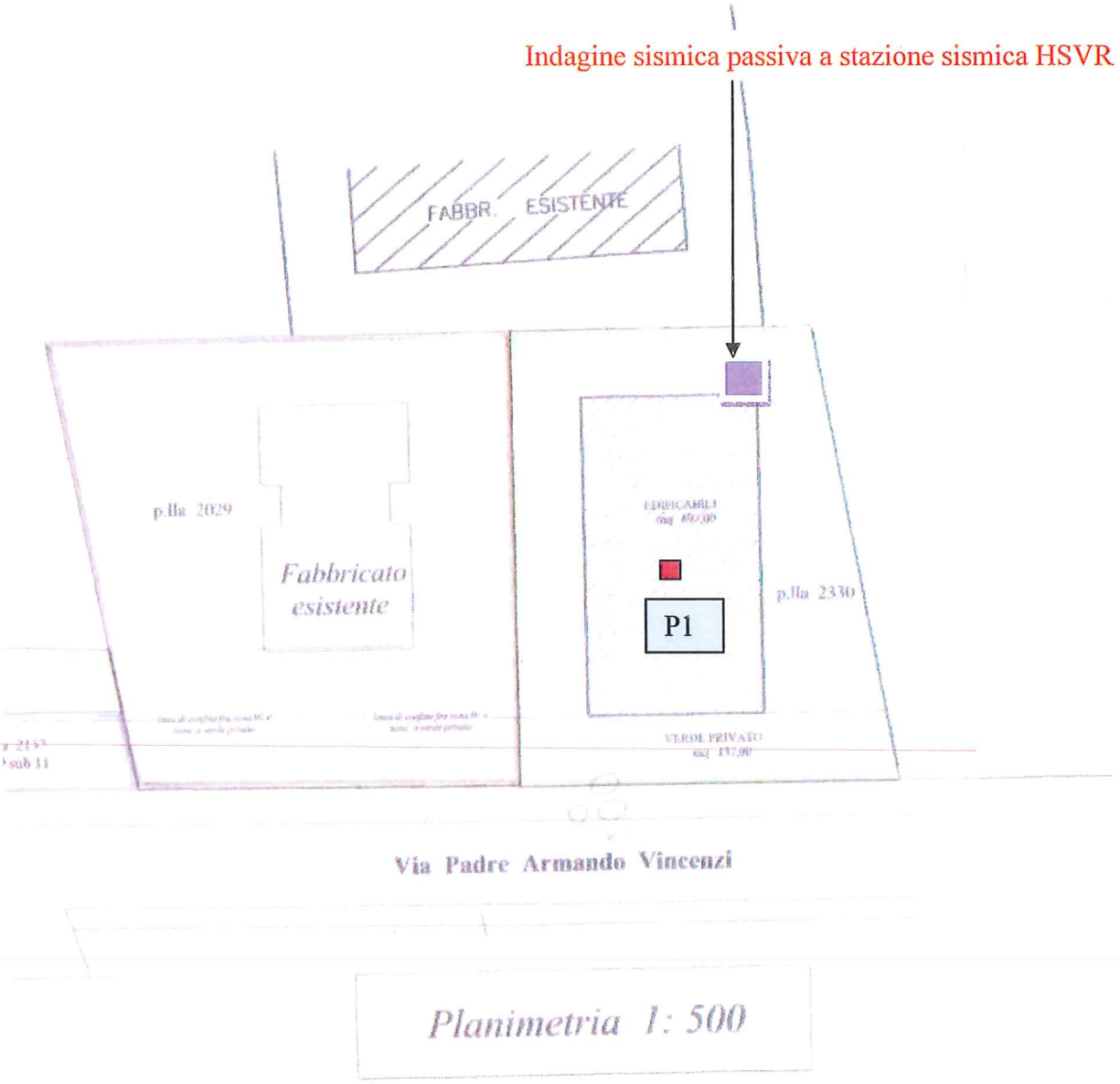
Criteria for a reliable HVSR curve [All 3 should be fulfilled]			
$f_0 > 10 / L_w$	2.06 > 0.50	OK	
$n_c(f_0) > 200$	2475.0 > 200	OK	
$\sigma_A(f) < 2$ for $0.5f_0 < f < 2f_0$ if $f_0 > 0.5$Hz $\sigma_A(f) < 3$ for $0.5f_0 < f < 2f_0$ if $f_0 < 0.5$Hz	Exceeded 0 out of 100 times	OK	
Criteria for a clear HVSR peak [At least 5 out of 6 should be fulfilled]			
Exists f^- in $[f_0/4, f_0]$ | $A_{H/V}(f^-) < A_0 / 2$	1.19	OK	
Exists f^+ in $[f_0, 4f_0]$ | $A_{H/V}(f^+) < A_0 / 2$	2.84	OK	
$A_0 > 2$	1.17 > 2		NO
$f_{peak}[A_{H/V}(f) \pm \sigma_A(f)] = f_0 \pm 5\%$	|0.04308| < 0.05	OK	
$\sigma_f < \varepsilon(f_0)$	0.09949 < 0.10313	OK	
$\sigma_A(f_0) < \theta(f_0)$	0.0582 < 1.58	OK	

L_w	window length
n_w	number of windows used in the analysis
$n_c = L_w n_w f_0$	number of significant cycles
f	current frequency
f_0	H/V peak frequency
σ_f	standard deviation of H/V peak frequency
$\varepsilon(f_0)$	threshold value for the stability condition $\sigma_f < \varepsilon(f_0)$
A_0	H/V peak amplitude at frequency f_0
$A_{H/V}(f)$	H/V curve amplitude at frequency f
f^-	frequency between $f_0/4$ and f_0 for which $A_{H/V}(f^-) < A_0/2$
f^+	frequency between f_0 and $4f_0$ for which $A_{H/V}(f^+) < A_0/2$
$\sigma_A(f)$	standard deviation of $A_{H/V}(f)$, $\sigma_A(f)$ is the factor by which the mean $A_{H/V}(f)$ curve should be multiplied or divided
$\sigma_{logH/V}(f)$	standard deviation of log $A_{H/V}(f)$ curve
$\theta(f_0)$	threshold value for the stability condition $\sigma_A(f) < \theta(f_0)$

Threshold values for σ_f and $\sigma_A(f_0)$					
Freq.range [Hz]	< 0.2	0.2 – 0.5	0.5 – 1.0	1.0 – 2.0	> 2.0
$\varepsilon(f_0)$ [Hz]	0.25 f_0	0.2 f_0	0.15 f_0	0.10 f_0	0.05 f_0
$\theta(f_0)$ for $\sigma_A(f_0)$	3.0	2.5	2.0	1.78	1.58
Log $\theta(f_0)$ for $\sigma_{logH/V}(f_0)$	0.48	0.40	0.30	0.25	0.20

According to the Sesame, 2005 guidelines.

UBICAZIONE SONDAGGIO PENETROMETRICO



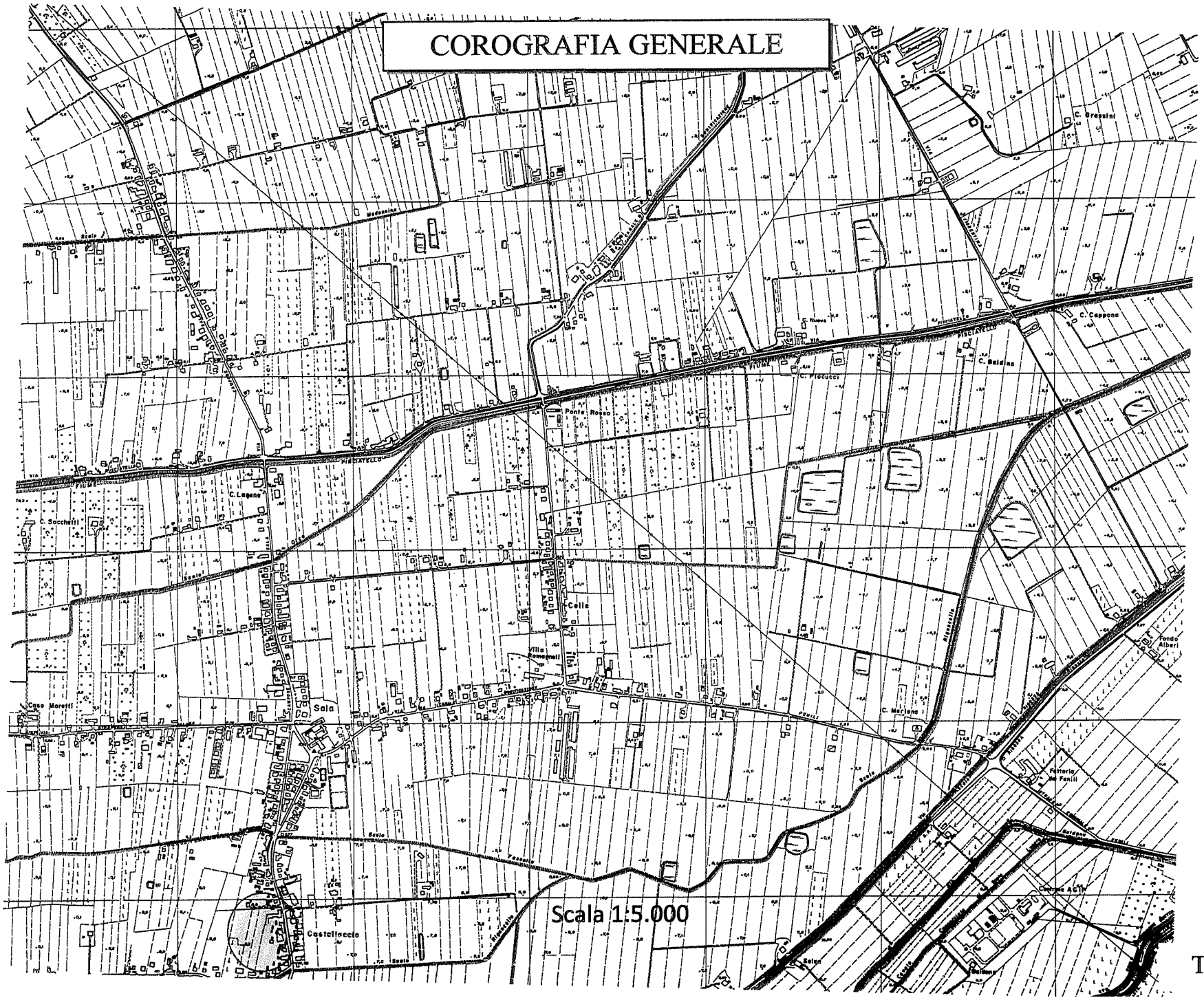
■ **P1** Sondaggio penetrometrico statico **Tav. 3**

PLANIMETRIA CATASTALE

Scala 1:2.000

Tav. 2

COROGRAFIA GENERALE



Tav. 1