



CORRIDOIO PLURIMODALE TIRRENICO-NORD EUROPA ITINERARIO AGRIGENTO -CALTANISSETTA-A19

S.S. N° 640 "DI PORTO EMPEDOCLE"

AMMODERNAMENTO E ADEGUAMENTO ALLA CAT. B DEL D.M. 5.11.2001
Dal km 44+000 allo svincolo con l'A19

PROGETTO DEFINITIVO

GRUPPO DI PROGETTAZIONE

ATI:

TECHNITAL s.p.a. (mandataria)

S.I.S. Studio di Ingegneria Stradale s.r.l.

DELTA Ingegneria s.r.l.

INFRATEC s.r.l Consulting Engineering

PROGIN s.p.a.

I RESPONSABILI DI PROGETTO

Dott. Ing. M. Raccosta

Ordine Ing. Verona n° A1885

Prof. Ing. A. Bevilacqua

Ordine Ing. Palermo n° 4058

Dott. Ing. M. Carlino

Ordine Ing. Agrigento n° A828

Dott. Ing. N. Troccoli

Ordine Ing. Potenza n° 836

Dott. Ing. S. Esposito

Ordine Ing. Roma n° 20837

IL GEOLOGO

INTEGRAZIONI PRESTAZIONI SPECIALISTICHE

Dott. Ing. M. Raccosta

VISTO:IL RESPONSABILE
DEL PROCEDIMENTO

Dott. Ing. Massimiliano Fidenzi

VISTO:IL RESPONSABILE DEL
SERVIZIO PROGETTAZIONE

Dott. Ing. Antonio Valente

DATA

PROTOCOLLO

IDROLOGIA ED IDRAULICA - Parte generale

Vallone Arenella III - Viadotto Arenella III

Tabulato risultati Ante e Post Operam

CODICE PROGETTO

LO407B D 0501

NOME FILE

ID01-IDR-TR08.pdf

REVISIONE

B

FOGLIO

DI

SCALA:

D

C

B

REVISIONE a seguito istruttoria ANAS 19/03/07

Aprile 2007

A. Mita

F. Arciuli

C. Marro

A

EMISSIONE

Ottobre 2006

A. Mita

F. Arciuli

C. Marro

REV.

DESCRIZIONE

DATA

VERIFICATO
RESP. TECNICO

CONTROLLATO
RESP. D'ITINERARIO

APPROVATO
RESP. DI SETTORE

TABELLA DEI RISULTATI - ANTE OPERAM

Tempo di ritorno $T_r = 50$ anni

HEC-RAS

River: Vallone Arenella III

River (Fiume)	River Station (Sezione)	Q Total (Portata) [m ³ /s]	Min Ch El (Q.ta fondo) [m.s.m.]	W.S. Elev. (Pelo libero) [m.s.m.]	Crit. W.S. (Alt.critica) [m.s.m.]	Mann Wtd (Scabrezza) [m ^{1/3} s ⁻¹]	W.S. (Tirante) [m]	Vel Chnl (Velocità) [m/s]	Flow Area (Area sez. liquida) [m ²]	Top Width (Largh. Superf.) [m]	Froude # Chl (n° Froude)	Shear Total (Tens. Trascinam.) [N/m ²]	W.P. Total (Cont. Bagn.) [m]	E.G. Slope (Pend. Energia) [m/m]	R Idr. (R Idraulico) [m]
Vallone Arenella III	64	174.13	302.00	304.60	304.15	0.035	2.60	2.66	81.49	55.82	0.59	47.45	56.55	0.003358	1.441
Vallone Arenella III	65	174.13	302.73	304.69	304.69	0.035	1.96	3.64	55.60	48.62	0.97	111.20	48.82	0.009956	1.139
Vallone Arenella III	66	174.13	302.79	305.28		0.035	2.49	1.91	117.90	72.19	0.42	26.01	72.55	0.001632	1.625
Vallone Arenella III	67	174.13	302.81	305.27		0.035	2.46	2.31	96.27	66.62	0.52	36.21	66.83	0.002564	1.441
Vallone Arenella III	68	174.13	302.73	305.19	305.03	0.035	2.46	3.37	61.13	48.12	0.88	101.74	48.50	0.008231	1.260
Vallone Arenella III	69	174.13	302.88	304.68	305.15	0.035	1.80	5.77	35.45	35.80	1.73	338.07	36.11	0.035117	0.982
Vallone Arenella III	70	174.13	302.83	305.90	305.90	0.035	3.07	3.96	44.08	28.33	1.00	158.03	29.11	0.010643	1.514
Vallone Arenella III	71	174.13	304.06	305.51	306.27	0.035	1.45	7.75	24.05	32.68	2.67	648.88	32.81	0.090281	0.733
Vallone Arenella III	72	174.13	304.31	307.83	308.53	0.035	3.52	6.91	25.21	9.32	1.34	463.63	13.33	0.025005	1.891
Vallone Arenella III	72.5 Valle	174.13	304.31	310.16	310.16	0.035	5.85	2.47	70.58	260.56	0.33	131.39	128.62		0.549
Vallone Arenella III	72.5 Monte	174.13	304.36	310.33	310.24	0.035	5.97	2.03	85.98	280.80	0.26	86.95	144.79		0.594
Vallone Arenella III	73	174.13	304.36	310.40	308.64	0.035	6.04	2.10	124.85	283.72	0.46	22.99	136.18	0.002558	0.917
Vallone Arenella III	74	174.13	304.46	310.57	308.13	0.035	6.11	0.81	367.16	336.95	0.13	2.64	176.74	0.000130	2.077
Vallone Arenella III	75	174.13	303.58	310.57	307.48	0.035	6.99	0.91	308.83	282.71	0.14	3.52	142.32	0.000166	2.170
Vallone Arenella III	76	174.13	304.15	310.57	307.60	0.035	6.42	0.92	291.44	244.68	0.15	4.06	126.61	0.000180	2.302
Vallone Arenella III	77	174.13	304.49	310.57	307.55	0.035	6.08	0.84	317.17	198.79	0.13	3.06	131.53	0.000129	2.411
Vallone Arenella III	78	174.13	304.72	310.58	307.59	0.035	5.86	0.75	379.35	205.08	0.11	2.20	167.80	0.000099	2.261
Vallone Arenella III	79	174.13	304.74	310.57	307.88	0.035	5.83	0.95	260.99	152.07	0.15	3.63	124.71	0.000177	2.093
Vallone Arenella III	80	174.13	305.09	310.58		0.035	5.49	0.95	246.84	88.94	0.15	4.16	97.53	0.000168	2.531
Vallone Arenella III	81	174.13	306.00	310.58		0.035	4.58	0.96	253.20	104.05	0.15	4.36	106.09	0.000186	2.387
Vallone Arenella III	82	174.13	306.00	310.59		0.035	4.59	0.92	262.72	117.06	0.15	4.77	126.84	0.000235	2.071
Vallone Arenella III	83	174.13	306.00	310.59		0.035	4.59	0.95	277.82	121.47	0.15	4.08	127.45	0.000191	2.180
Vallone Arenella III	84	174.13	305.69	310.59		0.035	4.90	1.02	254.50	117.38	0.17	4.80	118.31	0.000227	2.151
Vallone Arenella III	85	174.13	305.83	310.60		0.035	4.77	1.12	211.28	101.23	0.21	7.51	102.52	0.000372	2.061

TABELLA DEI RISULTATI - ANTE OPERAM

Tempo di ritorno $T_r = 100$ anni

HEC-RAS

River: Vallone Arenella III

River (Fiume)	River Station (Sezione)	Q Total (Portata) [m ³ /s]	Min Ch El (Q.ta fondo) [m.s.m.]	W.S. Elev. (Pelo libero) [m.s.m.]	Crit. W.S. (Alt.critica) [m.s.m.]	Mann Wtd (Scabrezza) [m ^{1/3} s ⁻¹]	W.S. (Tirante) [m]	Vel Chnl (Velocità) [m/s]	Flow Area (Area sez. liquida) [m ²]	Top Width (Largh. Superf.) [m]	Froude # Chl (n° Froude)	Shear Total (Tens. Trascinam.) [N/m ²]	W.P. Total (Cont. Bagn.) [m]	E.G. Slope (Pend. Energia) [m/m]	R Idr. (R Idraulico) [m]
Vallone Arenella III	64	202.97	302.00	304.72	304.28	0.035	2.72	2.90	87.83	56.97	0.63	55.44	57.73	0.003716	1.521
Vallone Arenella III	65	202.97	302.73	304.83	304.83	0.035	2.10	3.82	62.58	50.44	0.97	116.98	50.65	0.009655	1.236
Vallone Arenella III	66	202.97	302.79	305.46		0.035	2.67	2.02	131.17	73.84	0.42	28.17	74.25	0.001626	1.767
Vallone Arenella III	67	202.97	302.81	305.45		0.035	2.64	2.43	108.39	69.89	0.52	38.34	70.12	0.002529	1.546
Vallone Arenella III	68	202.97	302.73	305.35	305.17	0.035	2.62	3.52	69.08	51.09	0.87	103.33	51.48	0.007852	1.342
Vallone Arenella III	69	202.97	302.88	304.79	305.26	0.035	1.91	6.06	39.30	37.31	1.77	371.42	37.64	0.036271	1.044
Vallone Arenella III	70	202.97	302.83	306.11	306.11	0.035	3.28	4.07	50.12	30.76	1.00	160.30	31.59	0.010301	1.587
Vallone Arenella III	71	202.97	304.06	305.56	306.41	0.035	1.50	8.51	25.65	33.71	2.87	770.67	33.85	0.103727	0.758
Vallone Arenella III	72	202.97	304.31	308.89	309.46	0.035	4.58	5.59	39.45	51.57	0.97	158.91	31.42	0.012906	1.256
Vallone Arenella III	72.5 Valle	202.97	304.31	310.23	310.23	0.035	5.92	2.56	79.23	272.05	0.34	135.67	133.85		0.592
Vallone Arenella III	72.5 Monte	202.97	304.36	310.42	310.32	0.035	6.06	2.08	97.48	284.43	0.27	91.19	145.93		0.668
Vallone Arenella III	73	202.97	304.36	310.48	309.67	0.035	6.12	2.30	134.09	286.66	0.49	28.01	137.09	0.002921	0.978
Vallone Arenella III	74	202.97	304.46	310.66	308.20	0.035	6.20	0.90	384.20	340.14	0.14	3.29	178.74	0.000156	2.149
Vallone Arenella III	75	202.97	303.58	310.66	307.72	0.035	7.08	1.02	322.25	299.24	0.15	4.43	142.99	0.000201	2.254
Vallone Arenella III	76	202.97	304.15	310.66	307.78	0.035	6.51	1.03	303.41	256.38	0.16	5.10	127.21	0.000218	2.385
Vallone Arenella III	77	202.97	304.49	310.67	307.70	0.035	6.18	0.94	329.86	220.39	0.14	3.85	133.27	0.000159	2.475
Vallone Arenella III	78	202.97	304.72	310.68	307.72	0.035	5.96	0.84	395.48	221.10	0.13	2.76	170.60	0.000121	2.318
Vallone Arenella III	79	202.97	304.74	310.67	308.07	0.035	5.93	1.07	272.91	165.58	0.16	4.59	126.91	0.000218	2.150
Vallone Arenella III	80	202.97	305.09	310.67		0.035	5.58	1.07	255.63	91.22	0.16	5.24	100.04	0.000209	2.555
Vallone Arenella III	81	202.97	306.00	310.68		0.035	4.68	1.09	263.71	108.11	0.17	5.41	110.26	0.000231	2.392
Vallone Arenella III	82	202.97	306.00	310.69		0.035	4.69	1.03	274.77	120.42	0.16	5.97	130.42	0.000289	2.107
Vallone Arenella III	83	202.97	306.00	310.69		0.035	4.69	1.07	290.38	125.69	0.17	5.05	131.88	0.000234	2.202
Vallone Arenella III	84	202.97	305.69	310.69		0.035	5.00	1.15	266.60	121.49	0.19	5.92	122.42	0.000277	2.178
Vallone Arenella III	85	202.97	305.83	310.70		0.035	4.87	1.25	221.86	102.95	0.23	9.22	104.26	0.000442	2.128

TABELLA DEI RISULTATI - ANTE OPERAM

Tempo di ritorno $T_r = 300$ anni

HEC-RAS

River: Vallone Arenella III

River (Fiume)	River Station (Sezione)	Q Total (Portata) [m ³ /s]	Min Ch El (Q.ta fondo) [m.s.m.]	W.S. Elev. (Pelo libero) [m.s.m.]	Crit. W.S. (Alt.critica) [m.s.m.]	Mann Wtd (Scabrezza) [m ^{1/3} s ⁻¹]	W.S. (Tirante) [m]	Vel Chnl (Velocità) [m/s]	Flow Area (Area sez. liquida) [m ²]	Top Width (Largh. Superf.) [m]	Froude # Chl (n° Froude)	Shear Total (Tens. Trascinam.) [N/m ²]	W.P. Total (Cont. Bagn.) [m]	E.G. Slope (Pend. Energia) [m/m]	R Idr. (R Idraulico) [m]
Vallone Arenella III	64	365.33	302.00	305.44	304.95	0.035	3.44	3.62	132.51	70.34	0.68	71.95	71.33	0.003949	1.858
Vallone Arenella III	65	365.33	302.73	305.47	305.47	0.035	2.74	4.63	98.13	62.42	0.99	138.32	62.72	0.009016	1.565
Vallone Arenella III	66	365.33	302.79	306.31		0.035	3.52	2.57	198.95	93.82	0.46	36.05	94.41	0.001745	2.107
Vallone Arenella III	67	365.33	302.81	306.30		0.035	3.49	2.91	173.75	87.84	0.53	45.04	88.42	0.002337	1.965
Vallone Arenella III	68	365.33	302.73	306.15	305.88	0.035	3.42	4.07	116.04	66.11	0.83	106.26	66.60	0.006219	1.742
Vallone Arenella III	69	365.33	302.88	305.27	305.97	0.035	2.39	7.20	59.09	44.22	1.91	511.61	44.62	0.039394	1.324
Vallone Arenella III	70	365.33	302.83	307.05	307.05	0.035	4.22	4.45	93.88	62.54	0.89	103.49	63.47	0.007135	1.479
Vallone Arenella III	71	365.33	304.06	306.09	307.09	0.035	2.03	8.95	46.54	44.74	2.45	662.97	44.96	0.065307	1.035
Vallone Arenella III	72	365.33	304.31	310.33	310.48	0.035	6.02	4.35	121.99	283.71	0.95	106.35	127.15	0.011303	0.959
Vallone Arenella III	72.5 Valle	365.33	304.31	310.57	310.57	0.035	6.26	3.02	120.90	293.00	0.39	174.64	143.85		0.840
Vallone Arenella III	72.5 Monte	365.33	304.36	310.82	310.62	0.035	6.46	2.41	151.57	159.33	0.30	112.01	159.33		0.951
Vallone Arenella III	73	365.33	304.36	310.82	310.57	0.035	6.46	3.13	180.29	307.08	0.62	53.19	149.54	0.004499	1.206
Vallone Arenella III	74	365.33	304.46	311.13	308.75	0.035	6.67	1.33	468.43	349.80	0.20	7.26	185.63	0.000294	2.523
Vallone Arenella III	75	365.33	303.58	311.12	308.51	0.035	7.54	1.51	387.39	309.12	0.22	10.19	145.48	0.000390	2.663
Vallone Arenella III	76	365.33	304.15	311.12	308.51	0.035	6.97	1.55	361.49	294.27	0.23	11.68	130.12	0.000429	2.778
Vallone Arenella III	77	365.33	304.49	311.14	308.34	0.035	6.65	1.44	393.15	306.09	0.21	8.77	141.90	0.000323	2.771
Vallone Arenella III	78	365.33	304.72	311.16	308.33	0.035	6.44	1.27	476.76	311.65	0.18	6.19	183.10	0.000242	2.604
Vallone Arenella III	79	365.33	304.74	311.13	308.68	0.035	6.39	1.65	333.16	237.75	0.24	10.60	139.43	0.000452	2.389
Vallone Arenella III	80	365.33	305.09	311.14		0.035	6.05	1.71	300.97	104.66	0.25	11.90	114.53	0.000462	2.628
Vallone Arenella III	81	365.33	306.00	311.16		0.035	5.16	1.70	320.01	128.15	0.25	11.60	130.86	0.000484	2.445
Vallone Arenella III	82	365.33	306.00	311.19		0.035	5.19	1.56	338.45	136.04	0.23	13.12	147.09	0.000581	2.301
Vallone Arenella III	83	365.33	306.00	311.19		0.035	5.19	1.63	358.71	149.22	0.25	10.52	156.42	0.000468	2.293
Vallone Arenella III	84	365.33	305.69	311.18		0.035	5.49	1.74	331.67	141.99	0.27	12.29	142.95	0.000540	2.320
Vallone Arenella III	85	365.33	305.83	311.21		0.035	5.38	1.85	275.82	110.50	0.31	19.09	111.88	0.000789	2.465

TABELLA DEI RISULTATI - POST OPERAM

Tempo di ritorno $T_r = 50$ anni

HEC-RAS															
River: Vallone Arenella III															
River (Fiume)	River Station (Sezione)	Q Total (Portata) [m ³ /s]	Min Ch El (Q.ta fondo) [m.s.m.]	W.S. Elev. (Pelo libero) [m.s.m.]	Crit. W.S. (Alt.critica) [m.s.m.]	Mann Wtd (Scabrezza) [m ^{1/3} s ⁻¹]	W.S. (Tirante) [m]	Vel Chnl (Velocità) [m/s]	Flow Area (Area sez. liquida) [m ²]	Top Width (Largh. Superf.) [m]	Froude # Chl (n° Froude)	Shear Total (Tens. Trascinam.) [N/m ²]	W.P. Total (Cont. Bagn.) [m]	E.G. Slope (Pend. Energia) [m/m]	R Idr. (R Idrraulico) [m]
Vallone Arenella III	64	174.13	302.00	304.56	304.25	0.035	2.56	2.96	73.07	52.42	0.66	66.47	57.26	0.005312	1.276
Vallone Arenella III	65	174.13	302.73	304.76	304.76	0.035	2.03	3.71	55.12	46.56	0.95	118.69	49.45	0.010857	1.115
Vallone Arenella III	66	174.13	302.79	305.35		0.035	2.56	1.96	114.03	66.85	0.42	25.01	73.35	0.001640	1.555
Vallone Arenella III	67	174.13	302.81	305.36		0.035	2.55	2.32	95.98	65.22	0.51	40.25	69.67	0.002979	1.378
Vallone Arenella III	68	174.13	302.73	305.31	305.06	0.035	2.58	3.28	63.60	47.27	0.81	93.89	49.82	0.007500	1.277
Vallone Arenella III	69	174.13	302.88	304.68	305.15	0.035	1.80	5.77	35.46	35.80	1.73	337.90	36.11	0.035094	0.982
Vallone Arenella III	70	174.13	302.83	305.90	305.90	0.035	3.07	3.96	44.04	28.31	1.00	158.35	29.10	0.010669	1.513
Vallone Arenella III	71	174.13	304.06	305.51	306.27	0.035	1.45	7.76	24.04	32.67	2.67	649.19	32.81	0.090334	0.733
Vallone Arenella III	72	174.13	304.31	307.84	308.53	0.035	3.53	6.88	25.30	9.33	1.33	460.05	13.35	0.024766	1.895
Vallone Arenella III	72.5 Valle	174.13	304.31	310.15	310.15	0.035	5.84	2.43	71.58	263.15	0.32	136.46	130.56		0.548
Vallone Arenella III	72.5 Monte	174.13	304.36	310.32	310.24	0.035	5.96	2.08	83.74	280.09	0.27	91.72	144.56		0.579
Vallone Arenella III	73	174.13	304.36	310.40	308.64	0.035	57.26	2.12	123.91	283.42	0.46	23.25	136.09	0.002604	0.911
Vallone Arenella III	74	174.13	304.46	310.56	308.13	0.035	49.45	0.82	355.94	330.75	0.13	2.60	177.59	0.000132	2.004
Vallone Arenella III	75	174.13	303.58	310.56	307.48	0.035	73.35	0.92	300.93	276.44	0.13	3.86	141.26	0.000185	2.130
Vallone Arenella III	76	174.13	304.15	310.56	307.74	0.035	69.67	0.89	271.90	238.40	0.14	5.52	133.04	0.000275	2.044
Vallone Arenella III	77	174.13	304.49	310.57	307.55	0.035	49.82	0.86	307.61	194.85	0.13	3.08	134.25	0.000137	2.291
Vallone Arenella III	78	174.13	304.72	310.58	307.70	0.035	36.11	0.72	364.00	201.66	0.11	2.88	174.59	0.000141	2.085
Vallone Arenella III	79	174.13	304.74	310.57	307.93	0.035	29.10	0.97	250.21	148.81	0.15	4.55	128.66	0.000239	1.945
Vallone Arenella III	80	174.13	305.09	310.58		0.035	32.81	0.96	234.17	85.93	0.15	5.43	102.94	0.000243	2.275
Vallone Arenella III	81	174.13	306.00	310.58		0.035	13.35	0.97	239.77	101.12	0.16	5.83	112.25	0.000278	2.136
Vallone Arenella III	82	174.13	306.00	310.59		0.035	4.59	0.93	260.24	114.08	0.15	4.69	125.55	0.000231	2.073
Vallone Arenella III	83	174.13	306.00	310.59		0.035	4.59	0.93	279.11	121.64	0.15	4.45	127.09	0.000207	2.196
Vallone Arenella III	84	174.13	305.69	310.59		0.035	4.90	1.02	250.43	114.48	0.17	4.68	118.29	0.000225	2.117
Vallone Arenella III	85	174.13	305.83	310.60		0.035	4.77	1.12	211.52	101.27	0.21	7.49	102.57	0.000370	2.062

TABELLA DEI RISULTATI - POST OPERAM

Tempo di ritorno $T_r = 100$ anni

HEC-RAS		River: Vallone Arenella III													
River (Fiume)	River Station (Sezione)	Q Total (Portata) [m ³ /s]	Min Ch El (Q.ta fondo) [m.s.m.]	W.S. Elev. (Pelo libero) [m.s.m.]	Crit. W.S. (Alt.critica) [m.s.m.]	Mann Wtd (Scabrezza) [m ^{1/3} s ⁻¹]	W.S. (Tirante) [m]	Vel Chnl (Velocità) [m/s]	Flow Area (Area sez. liquida) [m ²]	Top Width (Largh. Superf.) [m]	Froude # Chl (n° Froude)	Shear Total (Tens. Trascinam.) [N/m ²]	W.P. Total (Cont. Bagn.) [m]	E.G. Slope (Pend. Energia) [m/m]	R Idr. (R Idrraulico) [m]
Vallone Arenella III	64	202.97	302.00	304.65	304.39	0.035	2.65	3.25	77.82	53.34	0.71	79.87	58.39	0.006111	1.333
Vallone Arenella III	65	202.97	302.73	304.90	304.90	0.035	2.17	3.88	62.01	48.42	0.96	126.01	51.63	0.010698	1.201
Vallone Arenella III	66	202.97	302.79	305.53		0.035	2.74	2.08	126.34	68.51	0.43	27.24	75.78	0.001666	1.667
Vallone Arenella III	67	202.97	302.81	305.55		0.035	2.74	2.41	108.21	66.66	0.51	43.34	71.67	0.002927	1.510
Vallone Arenella III	68	202.97	302.73	305.48	305.22	0.035	2.75	3.43	71.72	50.39	0.80	97.23	53.29	0.007367	1.346
Vallone Arenella III	69	202.97	302.88	304.79	305.26	0.035	1.91	6.06	39.31	37.31	1.77	371.31	37.64	0.036257	1.044
Vallone Arenella III	70	202.97	302.83	306.10	306.10	0.035	3.27	4.08	50.09	30.75	1.00	160.54	31.57	0.010318	1.587
Vallone Arenella III	71	202.97	304.06	305.56	306.41	0.035	1.50	8.53	25.61	33.69	2.88	772.80	33.83	0.104084	0.757
Vallone Arenella III	72	202.97	304.31	308.91	309.46	0.035	4.60	5.53	40.12	53.01	0.96	153.81	32.22	0.012593	1.245
Vallone Arenella III	72.5 Valle	202.97	304.31	310.23	310.23	0.035	5.92	2.53	80.38	274.15	0.33	140.04	135.67		0.592
Vallone Arenella III	72.5 Monte	202.97	304.36	310.39	310.32	0.035	6.03	2.16	93.98	283.32	0.28	98.40	145.59		0.646
Vallone Arenella III	73	202.97	304.36	310.47	309.67	0.035	6.11	2.32	132.74	286.21	0.50	28.46	136.96	0.002994	0.969
Vallone Arenella III	74	202.97	304.46	310.66	308.20	0.035	6.20	0.91	372.11	333.94	0.14	3.24	179.99	0.000160	2.067
Vallone Arenella III	75	202.97	303.58	310.66	307.72	0.035	7.08	1.02	313.59	290.22	0.15	4.88	142.31	0.000226	2.204
Vallone Arenella III	76	202.97	304.15	310.66	307.91	0.035	6.51	0.99	283.16	249.90	0.16	6.90	134.02	0.000333	2.113
Vallone Arenella III	77	202.97	304.49	310.66	307.69	0.035	6.17	0.97	319.76	215.77	0.15	3.88	136.15	0.000168	2.349
Vallone Arenella III	78	202.97	304.72	310.68	307.85	0.035	5.96	0.80	379.75	217.90	0.12	3.60	177.58	0.000172	2.138
Vallone Arenella III	79	202.97	304.74	310.67	308.11	0.035	5.93	1.09	261.75	162.30	0.17	5.78	131.04	0.000295	1.997
Vallone Arenella III	80	202.97	305.09	310.67		0.035	5.58	1.09	242.63	88.20	0.17	6.85	105.63	0.000304	2.297
Vallone Arenella III	81	202.97	306.00	310.68		0.035	4.68	1.10	250.02	105.19	0.17	7.26	116.63	0.000345	2.144
Vallone Arenella III	82	202.97	306.00	310.69		0.035	4.69	1.04	271.95	117.44	0.17	5.87	129.33	0.000284	2.103
Vallone Arenella III	83	202.97	306.00	310.70		0.035	4.70	1.04	291.79	125.89	0.16	5.54	131.54	0.000255	2.218
Vallone Arenella III	84	202.97	305.69	310.69		0.035	5.00	1.14	262.27	118.61	0.19	5.76	122.63	0.000275	2.139
Vallone Arenella III	85	202.97	305.83	310.70		0.035	4.87	1.25	222.13	102.99	0.23	9.20	104.30	0.000440	2.130

TABELLA DEI RISULTATI - POST OPERAM

Tempo di ritorno $T_r = 300$ anni

HEC-RAS															
River: Vallone Arenella III															
River (Fiume)	River Station (Sezione)	Q Total (Portata) [m ³ /s]	Min Ch El (Q.ta fondo) [m.s.m.]	W.S. Elev. (Pelo libero) [m.s.m.]	Crit. W.S. (Alt.critica) [m.s.m.]	Mann Wtd (Scabrezza) [m ^{1/3} s ⁻¹]	W.S. (Tirante) [m]	Vel Chnl (Velocità) [m/s]	Flow Area (Area sez. liquida) [m ²]	Top Width (Largh. Superf.) [m]	Froude # Chl (n° Froude)	Shear Total (Tens. Trascinam.) [N/m ²]	W.P. Total (Cont. Bagn.) [m]	E.G. Slope (Pend. Energia) [m/m]	R Idr. (R Idrraulico) [m]
Vallone Arenella III	64	365.33	302.00	305.47	305.06	0.035	3.47	3.77	125.15	70.84	0.70	90.45	77.77	0.005732	1.609
Vallone Arenella III	65	365.33	302.73	305.61	305.61	0.035	2.88	4.59	100.28	64.82	0.95	141.37	69.52	0.009994	1.442
Vallone Arenella III	66	365.33	302.79	306.36		0.035	3.57	2.71	188.73	90.29	0.48	34.66	101.04	0.001892	1.868
Vallone Arenella III	67	365.33	302.81	306.41		0.035	3.60	2.84	171.30	87.32	0.51	50.25	95.76	0.002865	1.789
Vallone Arenella III	68	365.33	302.73	306.29	305.95	0.035	3.56	3.98	118.94	65.33	0.78	110.38	69.97	0.006621	1.700
Vallone Arenella III	69	365.33	302.88	305.27	305.98	0.035	2.39	7.20	59.05	44.21	1.91	512.68	44.61	0.039495	1.324
Vallone Arenella III	70	365.33	302.83	307.07	307.07	0.035	4.24	4.40	94.77	60.15	0.87	104.89	61.26	0.006915	1.547
Vallone Arenella III	71	365.33	304.06	306.08	307.09	0.035	2.02	8.99	46.36	44.71	2.46	668.48	44.92	0.066061	1.032
Vallone Arenella III	72	365.33	304.31	310.36	310.48	0.035	6.05	4.23	127.87	287.85	0.92	101.29	129.69	0.010475	0.986
Vallone Arenella III	72.5 Valle	365.33	304.31	310.57	310.57	0.035	6.26	2.98	122.41	295.71	0.38	179.38	144.88		0.845
Vallone Arenella III	72.5 Monte	365.33	304.36	310.78	310.62	0.035	6.42	2.51	145.27	305.15	0.32	123.12	157.44		0.923
Vallone Arenella III	73	365.33	304.36	310.78	310.57	0.035	6.42	3.23	174.44	304.99	0.65	56.63	147.78	0.004892	1.180
Vallone Arenella III	74	365.33	304.46	311.11	308.75	0.035	6.65	1.36	451.47	343.48	0.20	7.28	188.57	0.000310	2.394
Vallone Arenella III	75	365.33	303.58	311.11	308.51	0.035	7.53	1.51	374.74	302.99	0.21	11.42	146.57	0.000456	2.557
Vallone Arenella III	76	365.33	304.15	311.11	308.56	0.035	6.96	1.46	337.66	288.16	0.22	15.55	138.71	0.000652	2.434
Vallone Arenella III	77	365.33	304.49	311.12	308.34	0.035	6.63	1.49	379.94	302.58	0.21	8.87	145.46	0.000346	2.612
Vallone Arenella III	78	365.33	304.72	311.16	308.42	0.035	6.44	1.18	459.10	307.85	0.17	7.97	190.95	0.000338	2.404
Vallone Arenella III	79	365.33	304.74	311.13	308.76	0.035	6.39	1.66	320.12	233.21	0.24	13.47	144.36	0.000619	2.218
Vallone Arenella III	80	365.33	305.09	311.14		0.035	6.05	1.72	286.53	101.62	0.25	15.74	121.02	0.000678	2.368
Vallone Arenella III	81	365.33	306.00	311.16		0.035	5.16	1.68	305.36	125.38	0.25	15.64	138.35	0.000723	2.207
Vallone Arenella III	82	365.33	306.00	311.18		0.035	5.18	1.58	333.56	132.91	0.24	12.96	146.82	0.000582	2.272
Vallone Arenella III	83	365.33	306.00	311.20		0.035	5.20	1.57	360.67	146.63	0.23	11.85	153.50	0.000514	2.350
Vallone Arenella III	84	365.33	305.69	311.19		0.035	5.50	1.74	325.84	139.09	0.27	11.92	144.13	0.000538	2.261
Vallone Arenella III	85	365.33	305.83	311.21		0.035	5.38	1.85	276.10	110.54	0.31	19.05	111.92	0.000787	2.467