

PROGETTO DI IMPIANTO IDROELETTRICO DI REGOLAZIONE SUL BACINO DI CAMPOLATTARO (BN)

MARZO 2011



COMMITTENTE



R.E.C. S.r.l.
Via Uberti 37-20129 Milano

RAGGRUPPAMENTO TEMPORANEO DI IMPRESE

Mandataria :

ETATEC S.R.L.
SOCIETA' DI INGEGNERIA
20133 MILANO - via Bassini, 23 - tel.(02) 26681264
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AZIENDA CON SISTEMA DI QUALITA' CERTIFICATO UNI EN ISO 9001:2008
 SICV - SC 06-647/EA 34

PROGETTISTA: Prof. Ing. Alessandro Paoletti

Mandante :

CeAS
CENTRO DI ANALISI STRUTTURALE S.R.L.
AZIENDA CON SISTEMA QUALITA'
SERVIZI DI INGEGNERIA CIVILE
CIVIL ENGINEERING SERVICES

SISTEMA QUALITA'
UNI EN ISO 9001 : 2008
CERTIFICATO K031 RILASCIATO
DA

PROGETTISTA: Dott. Ing. Giovanni Canetta

TITOLO ELABORATO

SEZIONI RIO SECCO CON INDICAZIONE DEI LIVELLI IDRICI DI PIENA
T=100 ANNI - CONFIGURAZIONE STATO DI FATTO

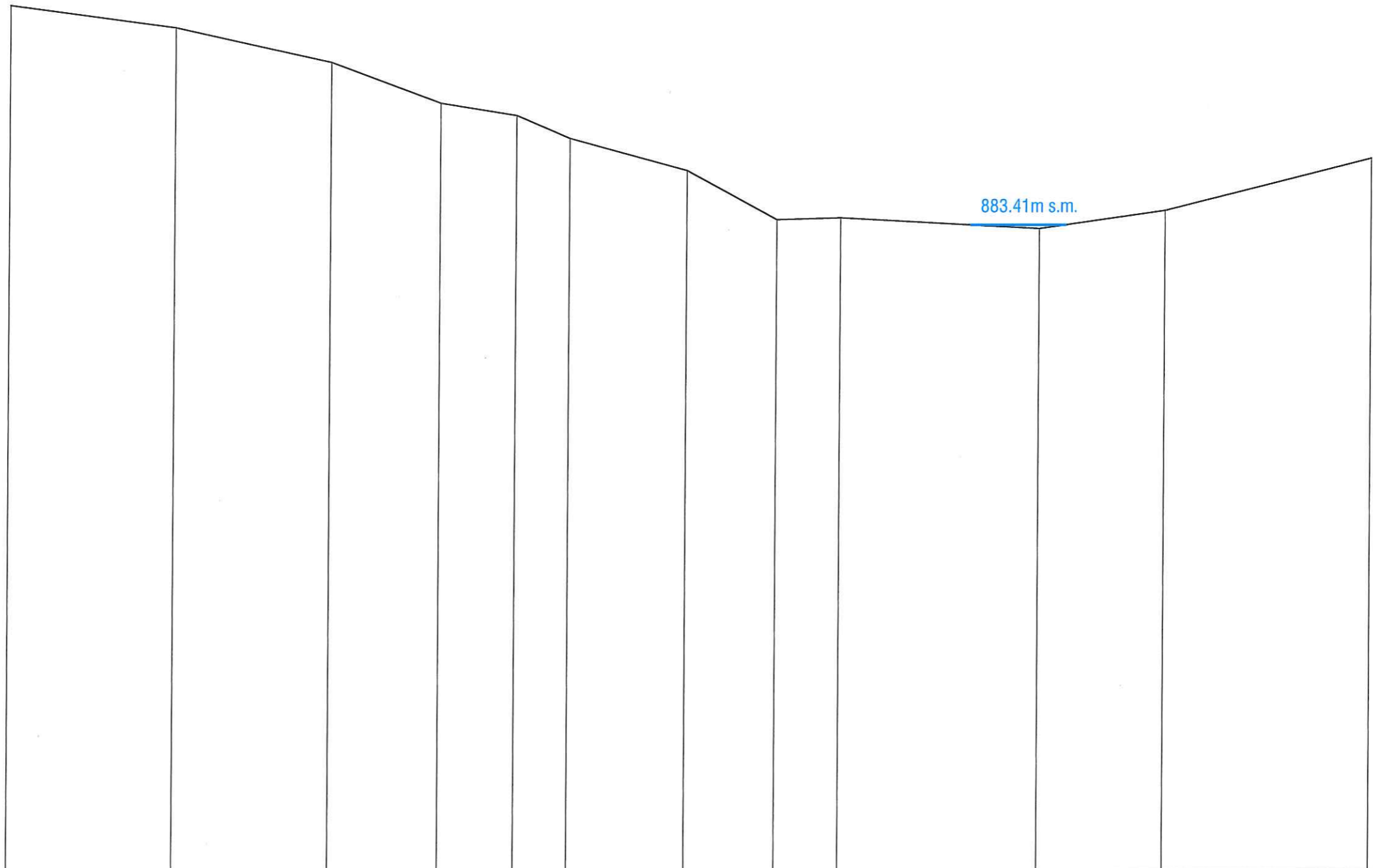
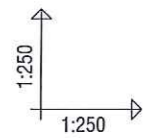
Revisione	Data	Descrizione	Redazione	Verifica	Approvazione			
A	30/07/2012	EMISSIONE PER RECEPIMENTO INTEGRAZIONI VIA	F. Salmistraro	F. Malingegno	A. Paoletti			
B								
C								
		<small>CODICE COMMESSA</small>	<small>TIPOLOGIA COMMESSA</small>	<small>TIPOLOGIA ELABORATO</small>	<small>FASE PROGETTAZIONE</small>	<small>PARTE DI IMPIANTO</small>	<small>PROGRESSIVO ELABORATO</small>	<small>SCALA:</small>
		483-01E	ET	D	D	A	030	—

SEZIONI RIO SECCO CON INDICAZIONE DEI LIVELLI IDRICI DI PIENA**T=100 ANNI NELLA CONFIGURAZIONE DI STATO DI FATTO****1. PREMESSA**

Vengono di seguito riportati, in forma grafica, i livelli idrici di piena del Rio Secco, così come calcolati nella Relazione di Compatibilità Idraulica (elab. cod. 483-01E ET RDA 045), considerando le condizioni idrologiche di stato di fatto associate ad un evento di piena di T=100 anni.

In particolare, per la definizione delle caratteristiche geometriche dei manufatti (ponti) e delle sezioni trasversali dell'alveo del Rio Secco e del T. Lente interessati dalla modellazione idraulica, la cui localizzazione è riportata nell'elaborato grafico 483-01E ET DDA 020÷025, ci si è riferiti alla specifica campagna di indagine topografica del Giugno 2012.

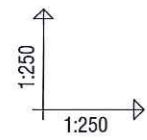
Sez. M1



Quota di riferimento 850.00

Numero punto	1	2	3	4	5	6	7	8	9	10	11	12
Quota attuale	894.78	893.62	891.82	889.71	889.07	887.88	886.22	883.69	883.78	883.22	884.15	886.84
Distanza parziale quota attuale		8.58	8.07	5.65	3.93	2.77	6.05	4.63	3.30	10.25	6.46	10.61
Distanza progressiva quota attuale	0.00	8.58	16.65	22.29	26.23	28.99	35.05	39.68	42.98	53.22	59.68	70.30
Pendenza grafica quota attuale		-0.13	-0.22	-0.38	-0.16	-0.43	-0.28	-0.55	0.03	-0.05	0.14	0.25

Sez. M2

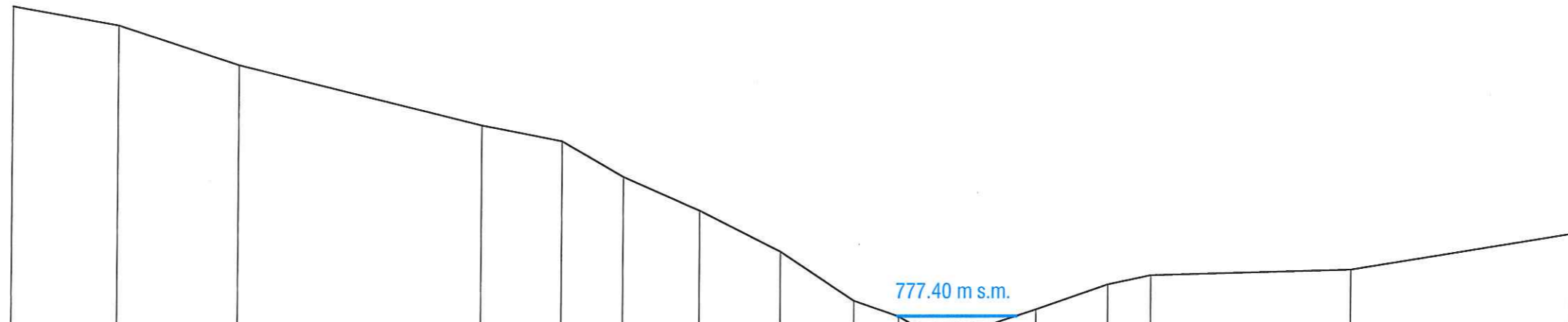


Quota di riferimento 780.00

Numero punto	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Quota attuale	823.24	817.02	815.59	813.42	810.87	809.67	808.61	807.63	806.78	806.33	806.33	807.36	806.55	806.66	806.88
Distanza parziale quota attuale		10.79	6.00	4.98	7.06	6.61	9.74	5.48	2.03	2.20	1.14	4.45	5.86	9.41	9.01
Distanza progressiva quota attuale	0.00	10.79	16.78	21.76	28.82	35.42	45.16	50.64	52.68	54.87	56.01	60.47	66.33	75.74	84.74
Pendenza grafica quota attuale		-0.58	-0.24	-0.44	-0.36	-0.18	-0.11	-0.18	-0.42	-0.20	0.57	0.08	-0.14	0.01	0.02

806.68 m s.m.

Sez.M3

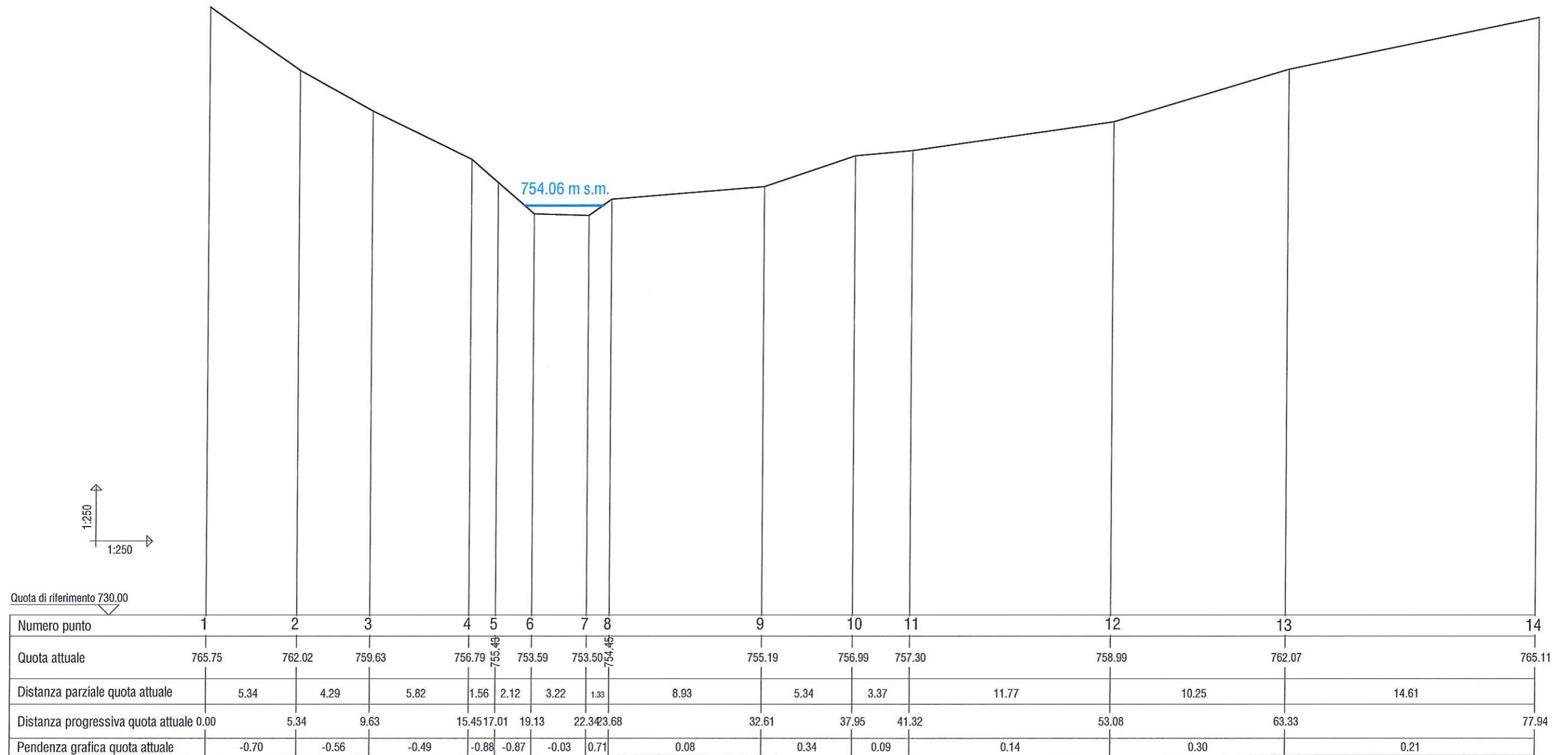


1:250
1:250

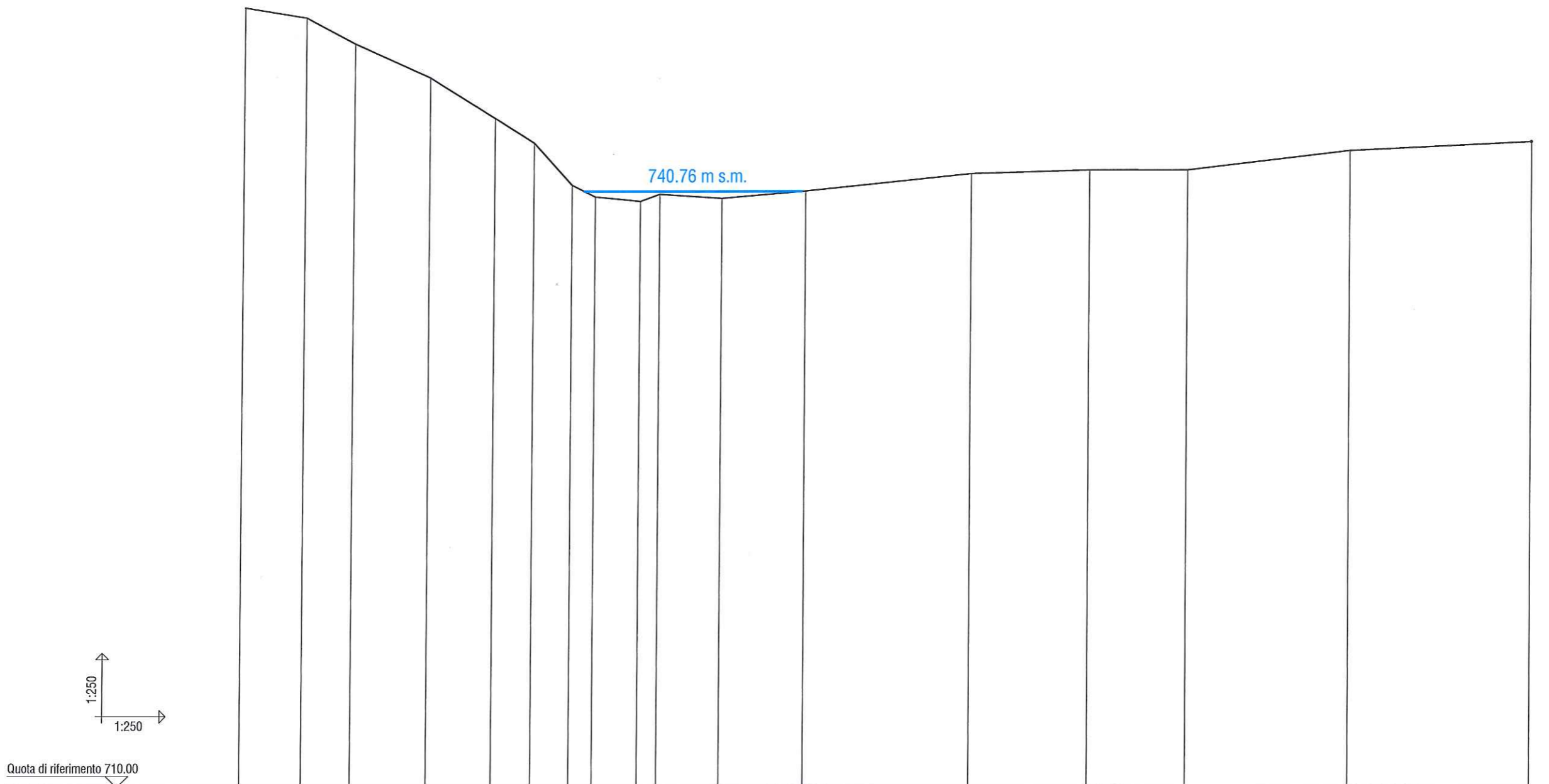
Quota di riferimento 750.00

Numero punto	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Quota attuale	791.50	790.64	788.83	786.07	785.35	783.73	782.20	780.34	778.11	777.39	777.40	777.04	777.70	778.84	779.25	779.49	781.08	
Distanza parziale quota attuale		4.83	5.51	11.02	3.65	2.80	3.47	3.67	3.35	2.04	0.77	2.22	1.35	1.89	3.25	1.95	9.05	9.98
Distanza progressiva quota attuale	0.00	4.83	10.33	21.35	25.01	27.81	31.28	34.95	38.29	40.33	41.10	43.32	44.67	46.55	49.80	51.75	60.80	70.78
Pendenza grafica quota attuale		-0.18	-0.33	-0.25	-0.20	-0.58	-0.44	-0.51	-0.67	-0.35	-0.08	0.04	0.04	0.33	0.35	0.21	0.03	0.16

Sez. M4

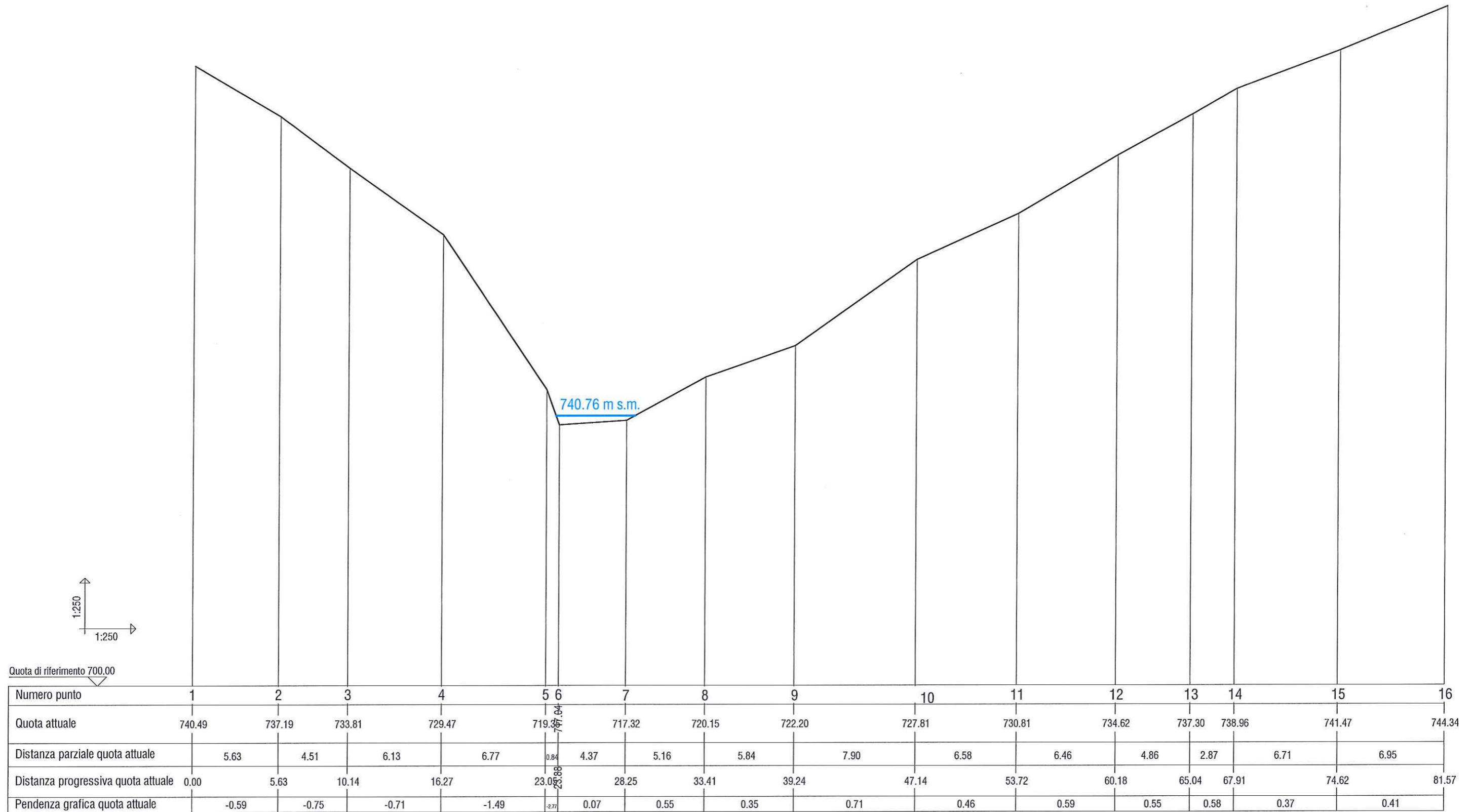


Sez. M5

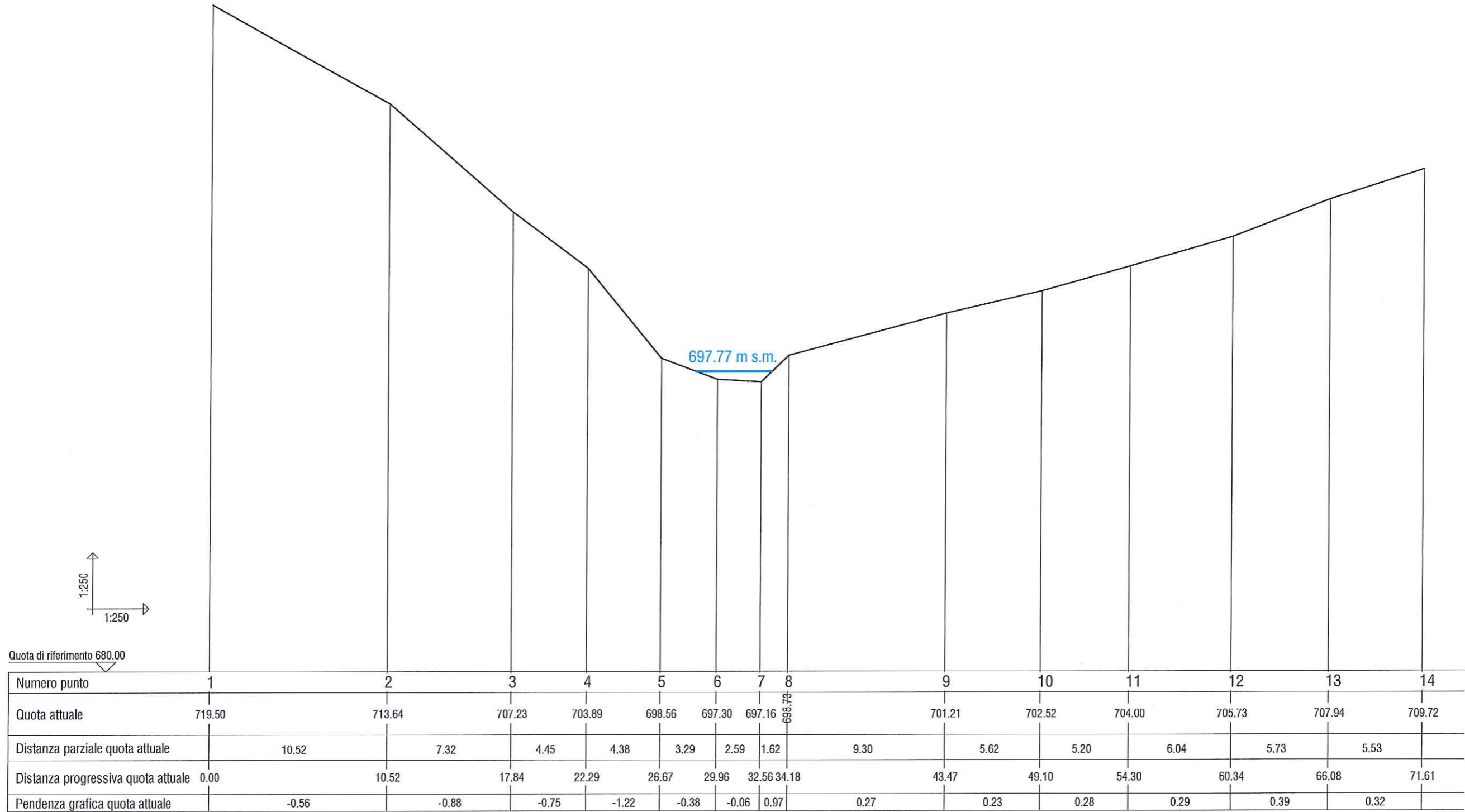


Numero punto	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Quota attuale	750.45	749.92	748.56	746.77	744.63	743.33	741.11	740.76	740.26	740.41	740.80	741.70	741.88	741.86	742.87	743.31	
Distanza parziale quota attuale		3.25	2.59	3.99	3.41	2.05	2.01	1.23	2.36	1.02	3.28	4.40	8.68	6.22	5.12	8.53	9.52
Distanza progressiva quota attuale	0.00	3.25	5.83	9.82	13.22	15.27	17.28	18.51	20.87	21.89	25.17	29.57	38.25	44.47	49.58	58.11	67.63
Pendenza grafica quota attuale		-0.16	-0.53	-0.45	-0.63	-0.64	-1.10	-0.50	-0.10	0.33	-0.07	0.09	0.10	0.03	0.00	0.12	0.05

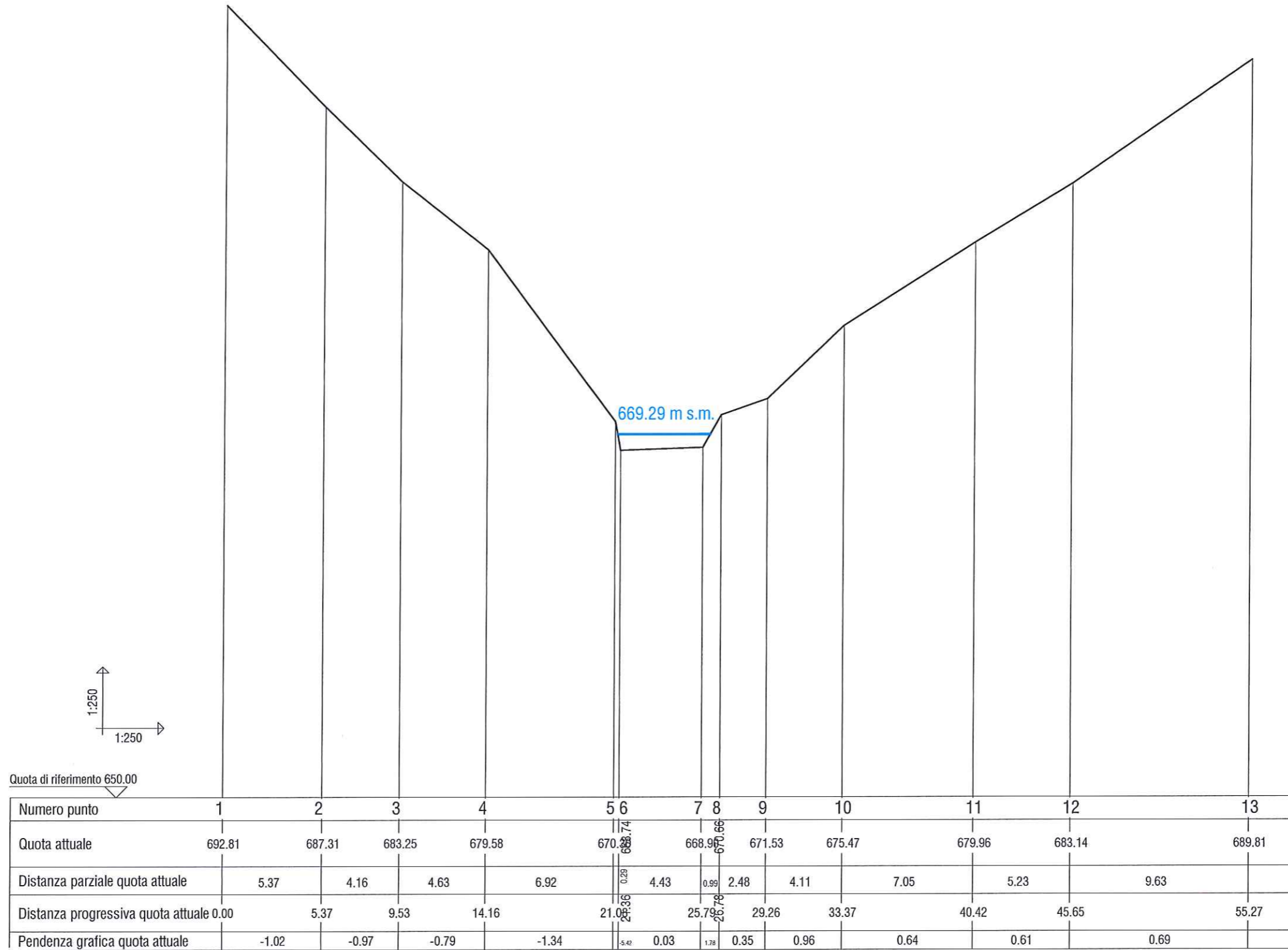
Sez. M6



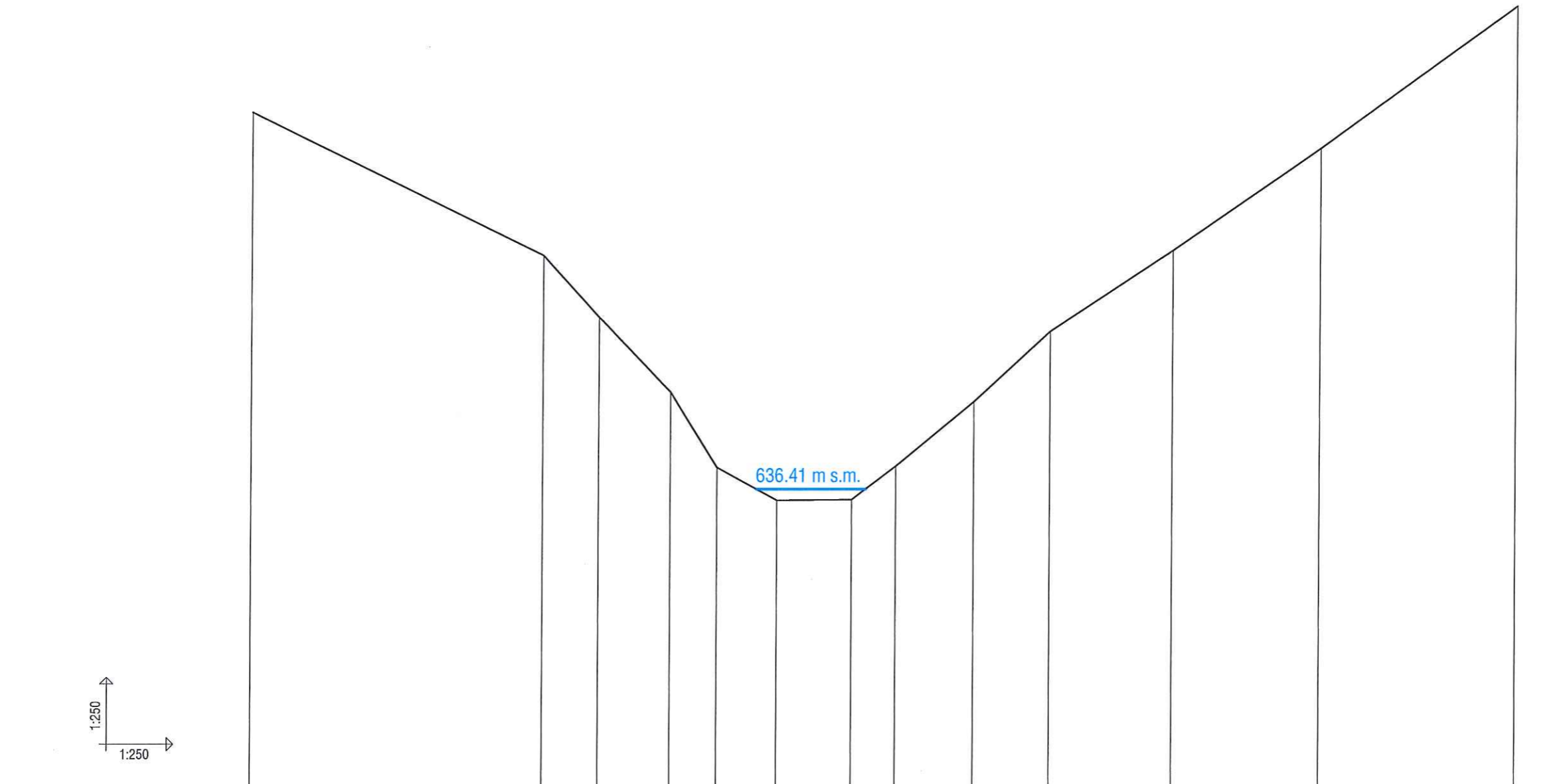
Sez. M7



Sez. M8



Sez. M9

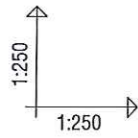


Quota di riferimento 620.00

Numero punto	1	2	3	4	5	6	7	8	9	10	11	12	13
Quota attuale	655.22	648.06	644.98	641.26	637.51	635.86	635.89	637.55	640.77	644.25	648.28	653.36	660.43
Distanza parziale quota attuale		14.50	2.80	3.56	2.32	2.98	3.72	2.19	3.87	3.78	6.06	7.32	9.72
Distanza progressiva quota attuale	0.00	14.50	17.30	20.86	23.18	26.16	29.88	32.08	35.95	39.73	45.79	53.12	62.83
Pendenza grafica quota attuale		-0.49	-1.10	-1.04	-1.62	-0.55	0.01	0.76	0.83	0.92	0.66	0.69	0.73

Sez. M10

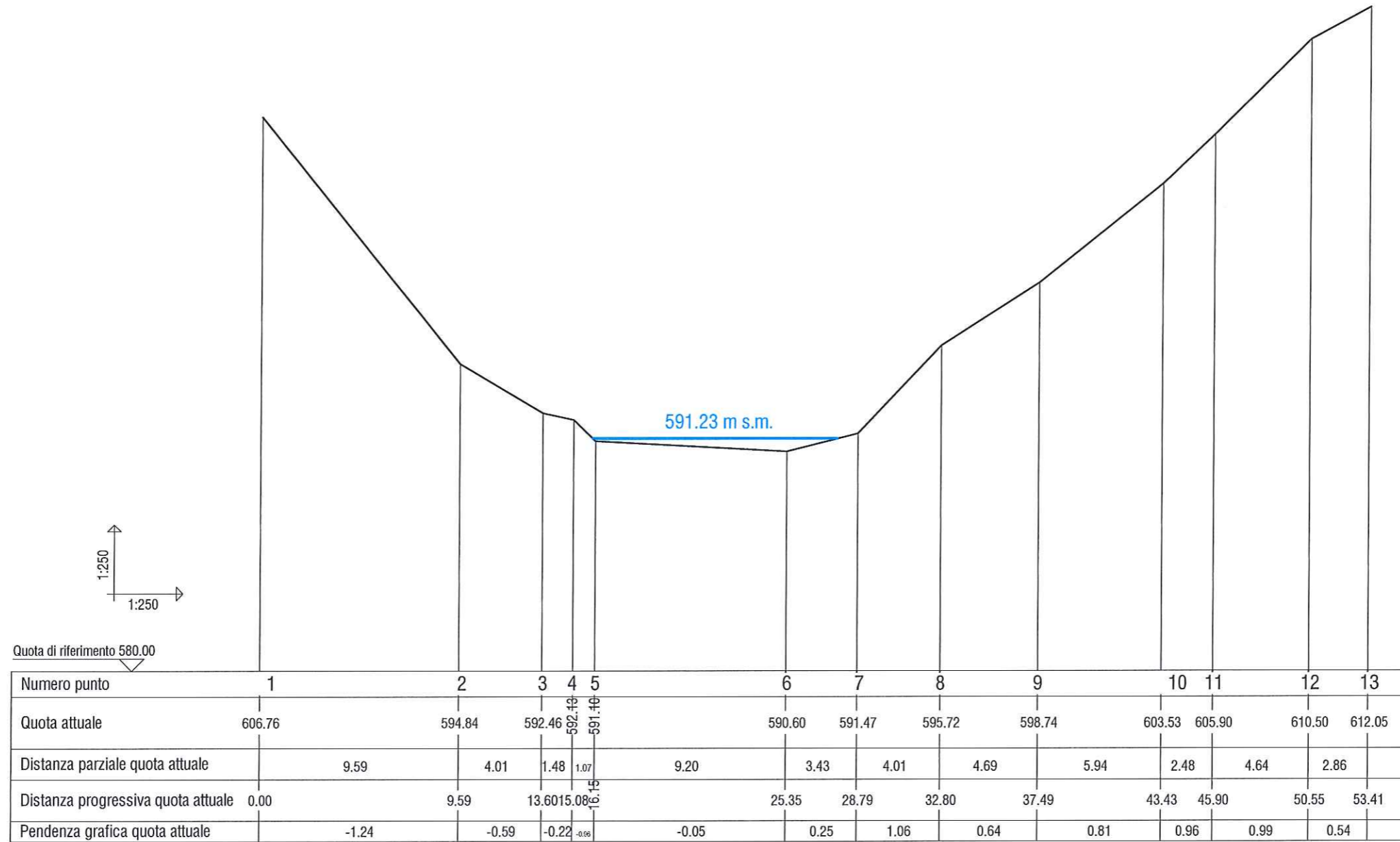
615.89 m s.m.



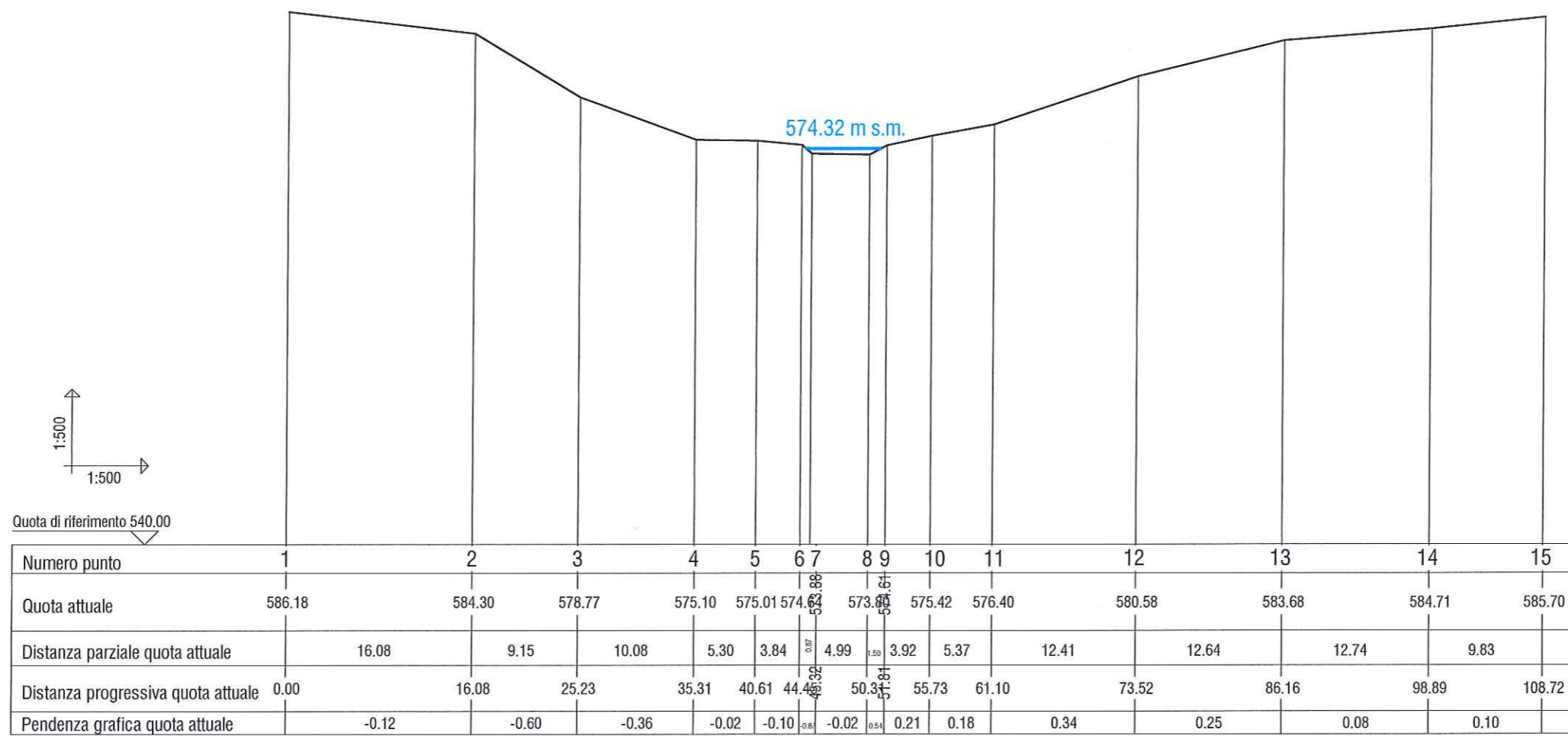
Quota di riferimento 600.00

Numero punto	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Quota attuale	625.02	619.89	618.17	616.20	615.43	615.71	615.68	617.69	619.31	622.47	625.18	628.34	633.57	640.11	643.03
Distanza parziale quota attuale		13.62	3.11	3.10	12.33	4.28	3.63	6.15	3.06	4.55	3.09	4.63	7.49	13.30	5.72
Distanza progressiva quota attuale	0.00	13.62	16.73	19.83	32.16	36.44	40.07	46.22	49.27	53.82	56.91	61.54	69.04	82.33	88.05
Pendenza grafica quota attuale		-0.38	-0.55	-0.64	-0.06	0.06	-0.01	0.33	0.53	0.69	0.88	0.68	0.70	0.49	0.51

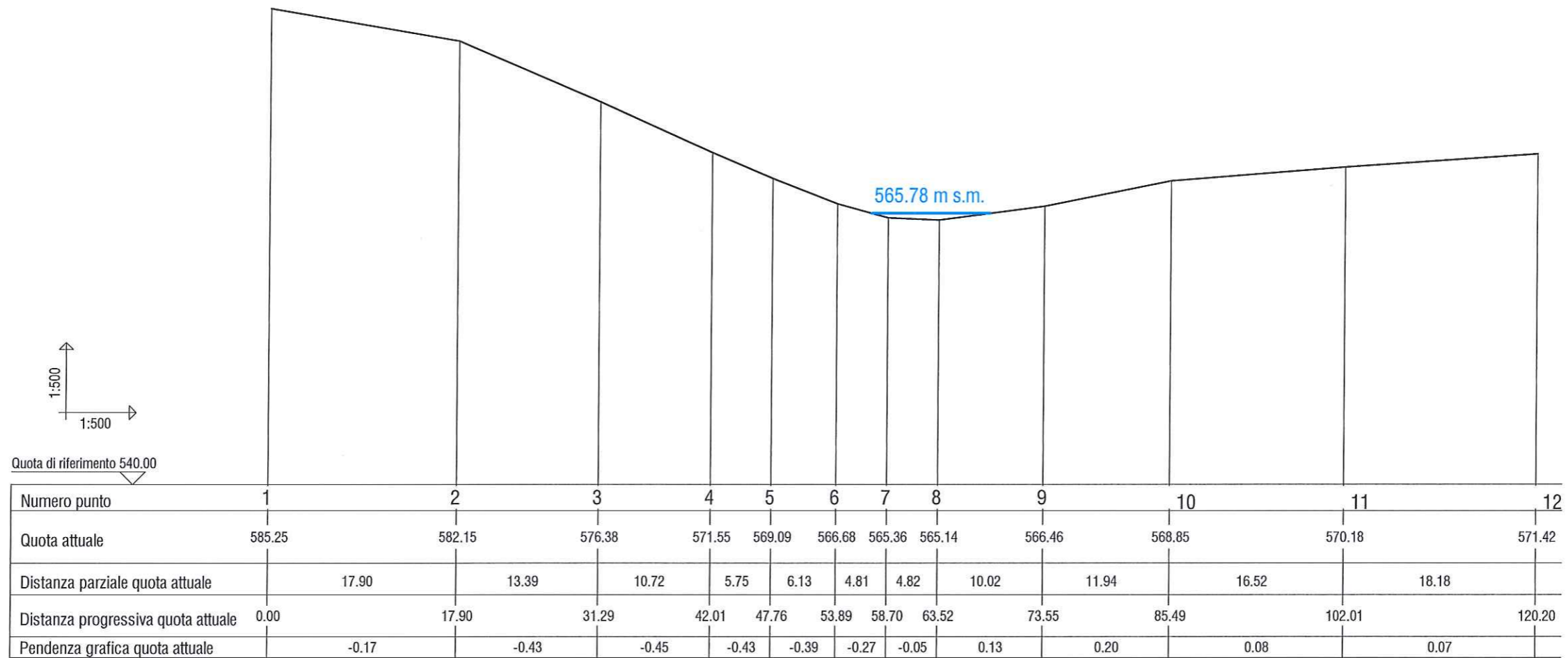
Sez. M11



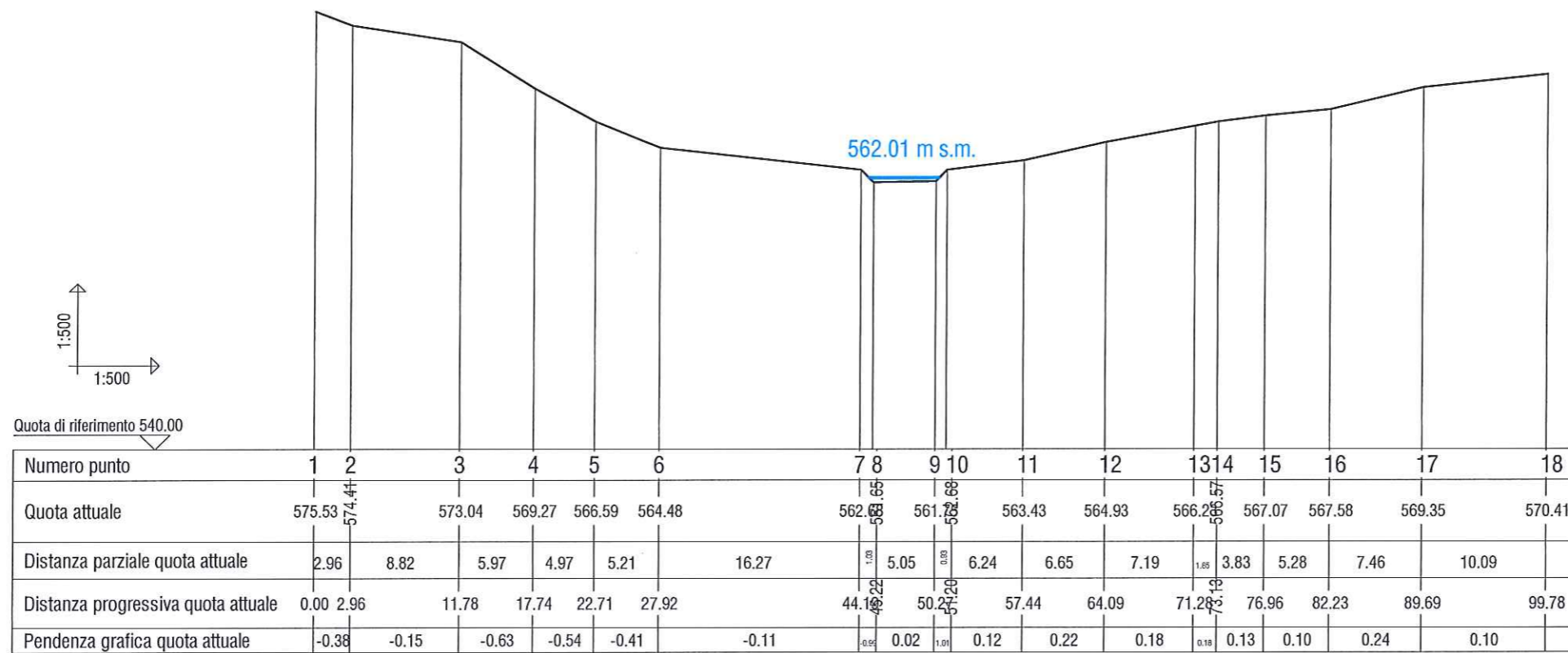
Sez. V1



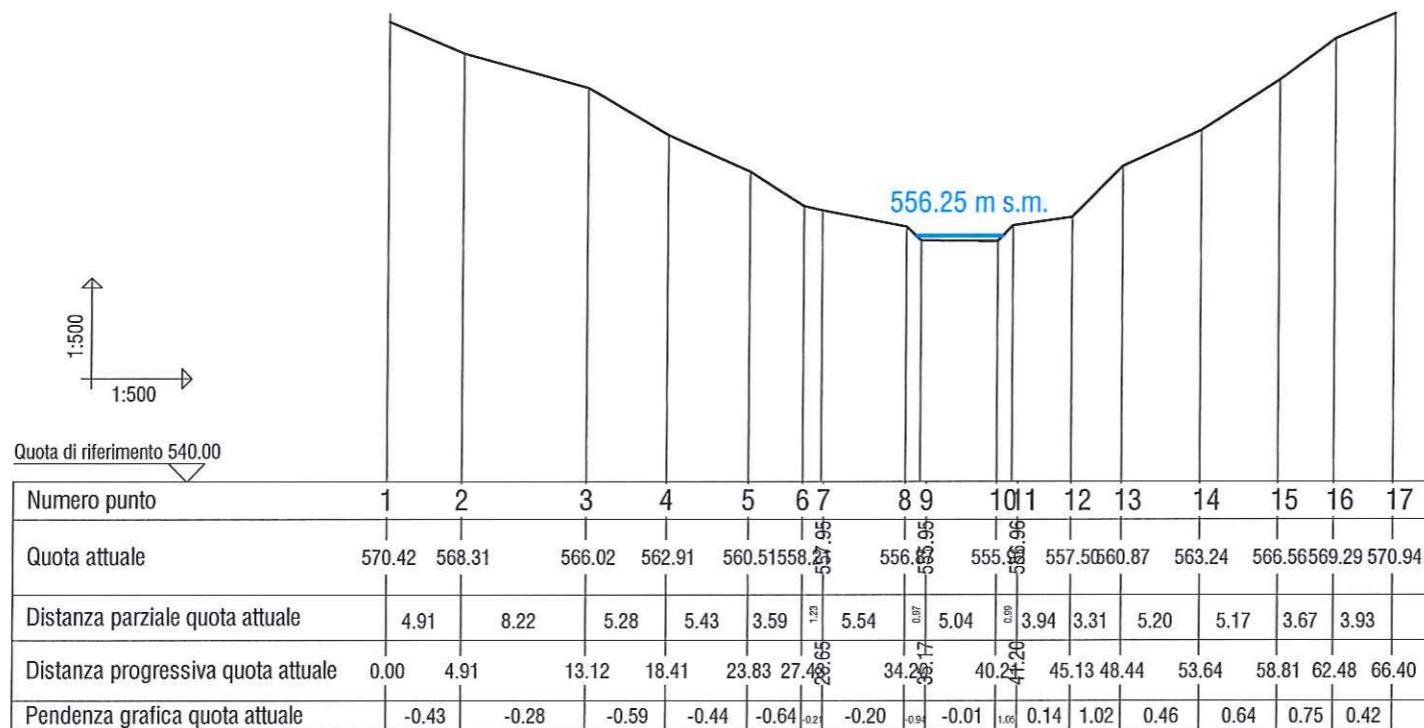
Sez. V2



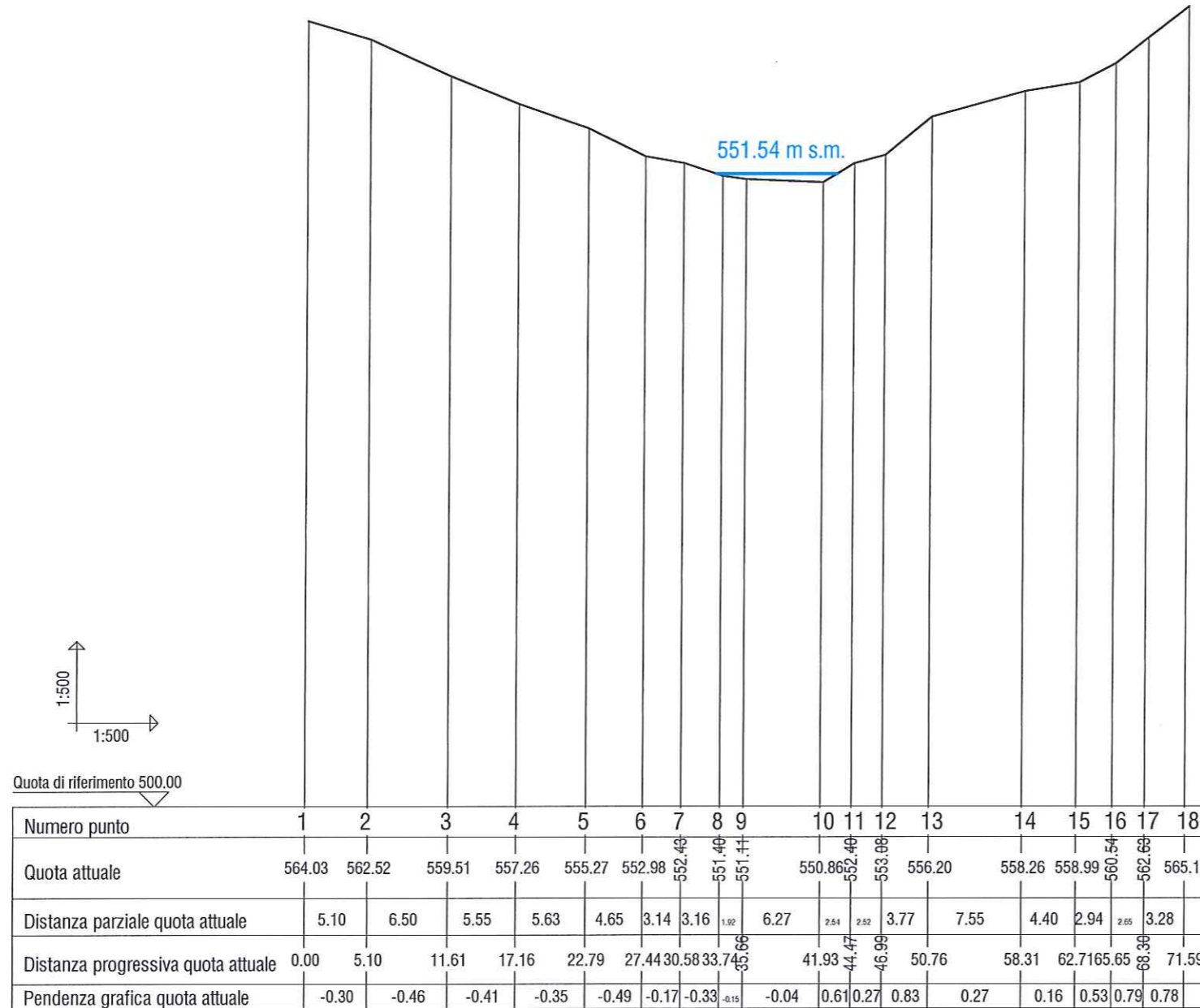
Sez. V3



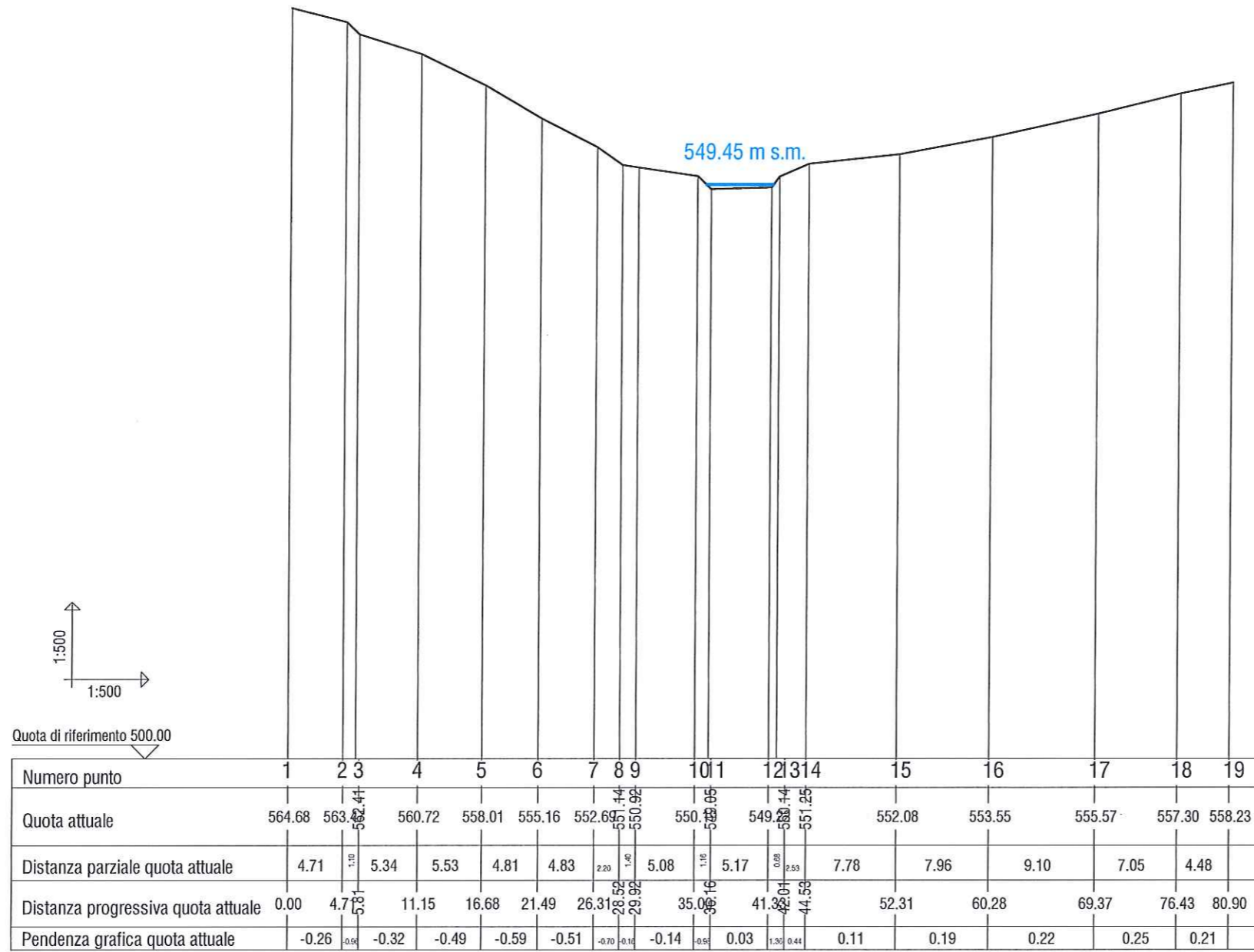
Sez. V4



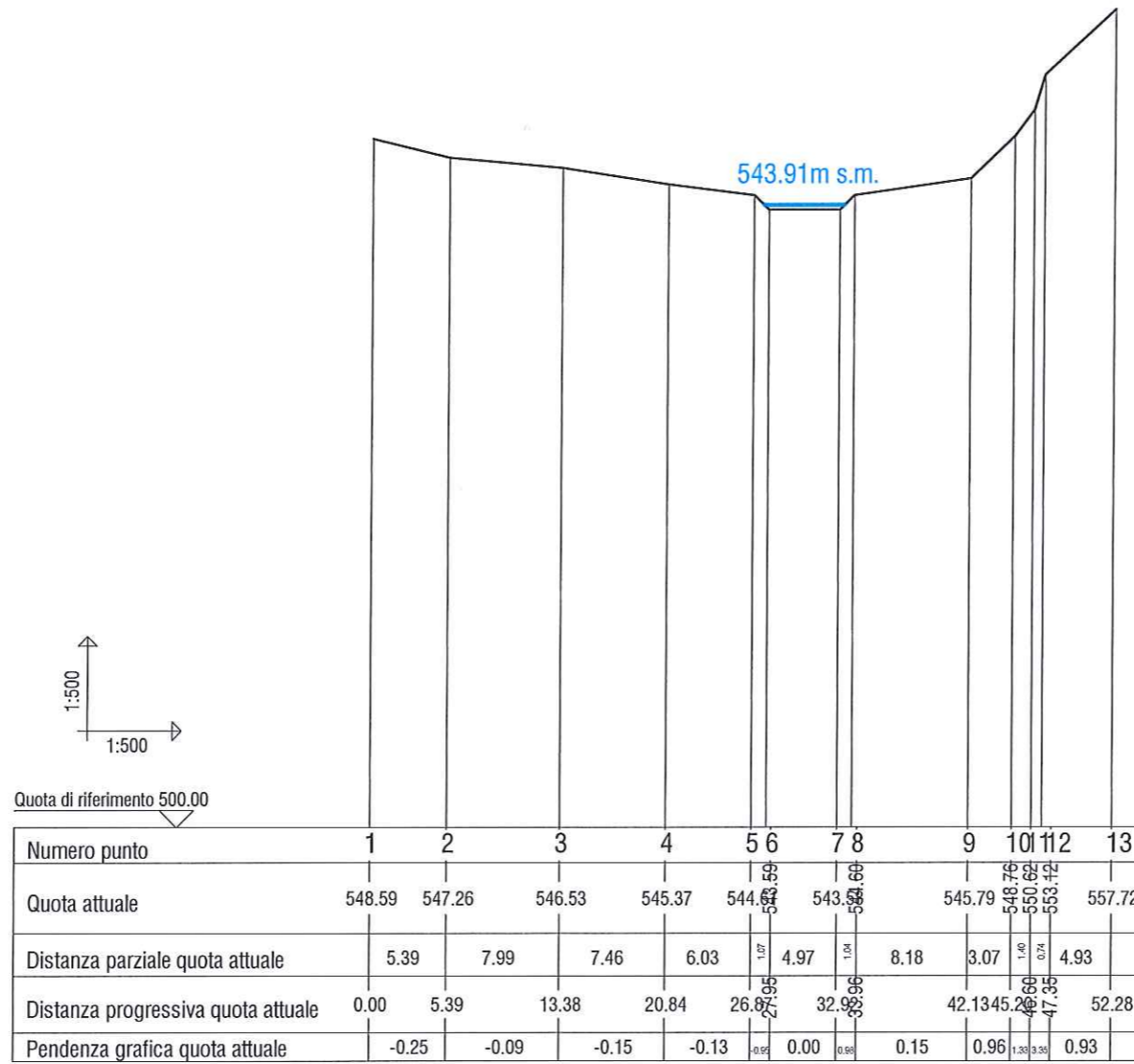
Sez. V5



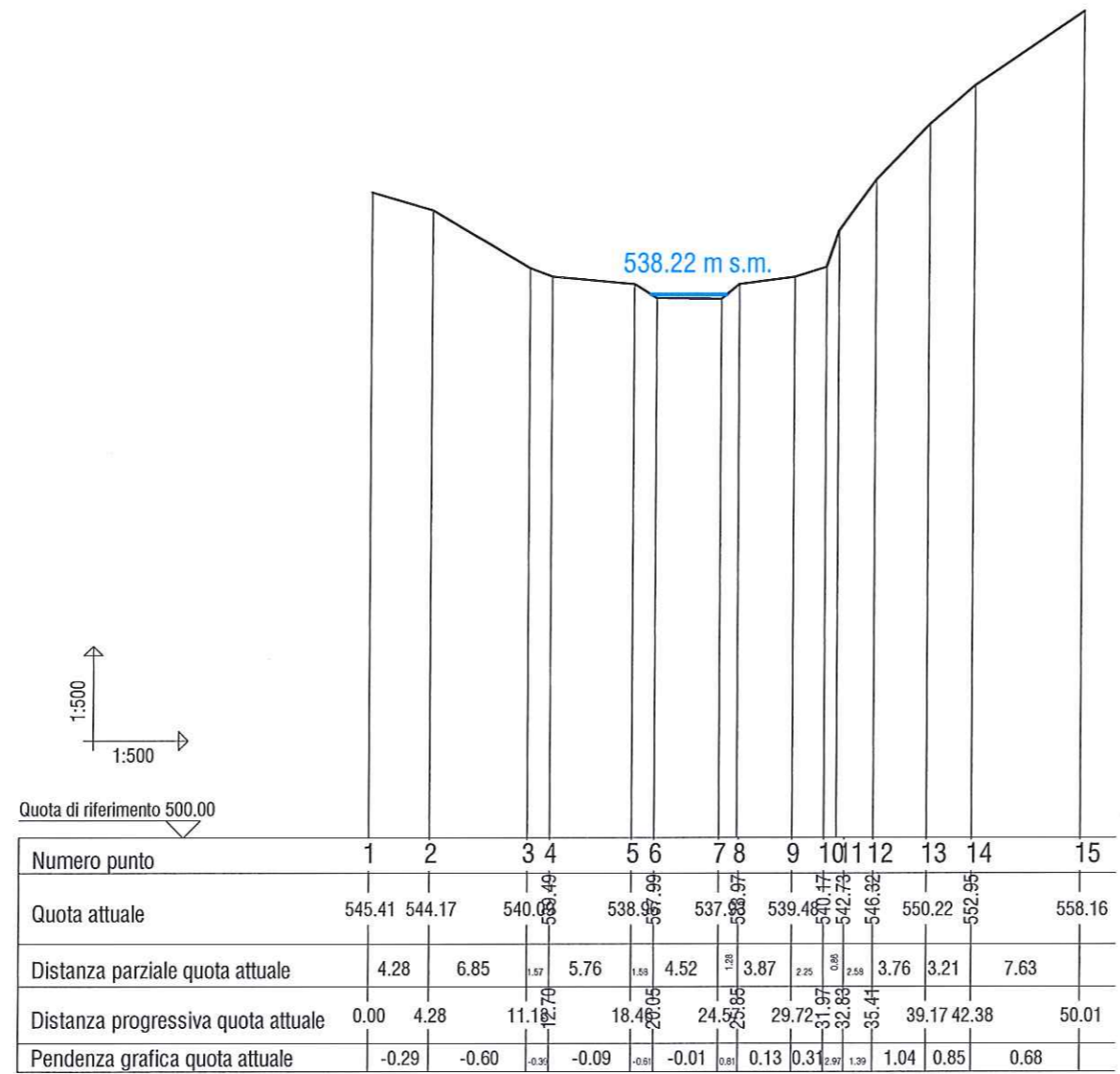
Sez. V6



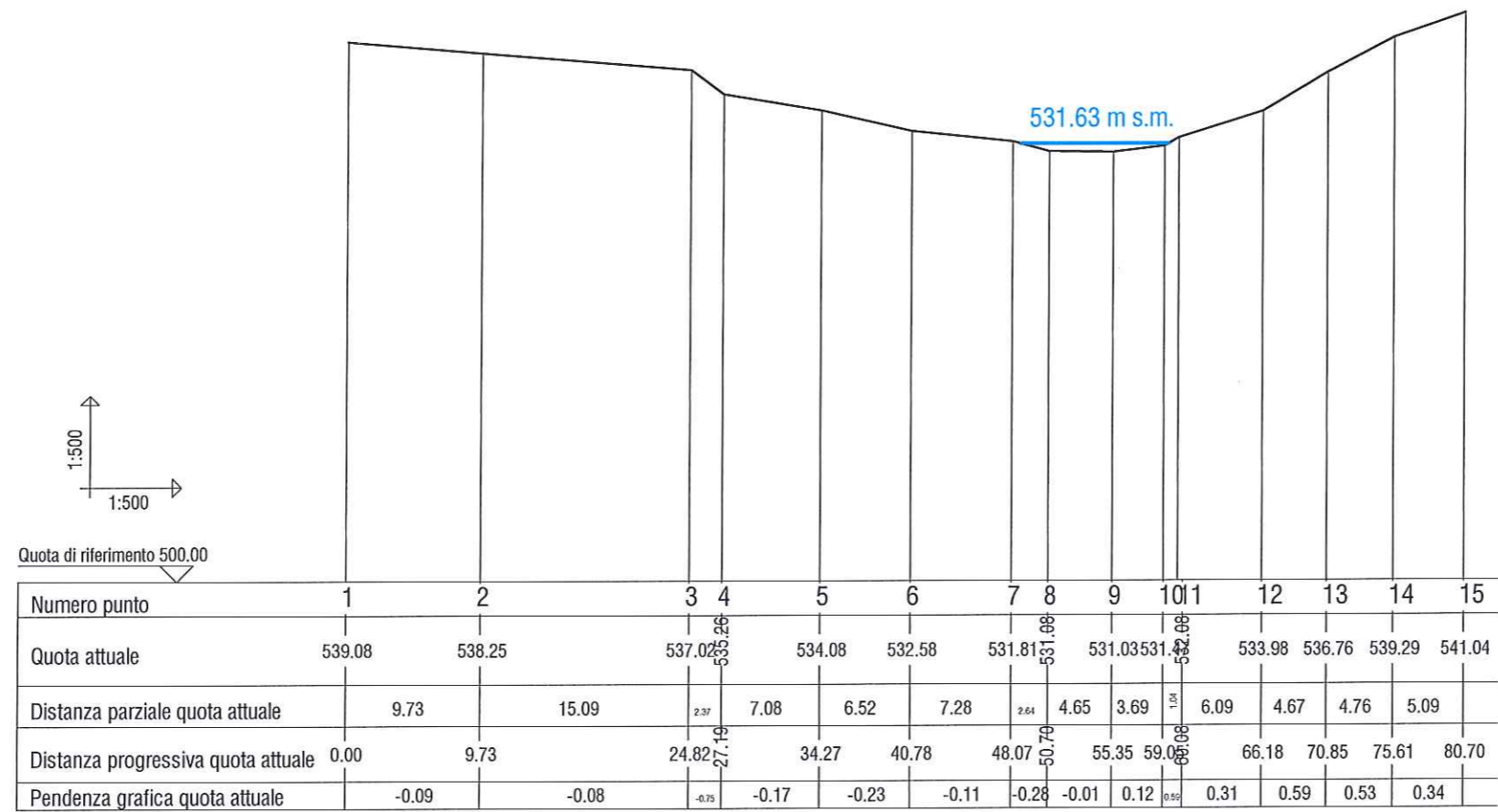
Sez. V7



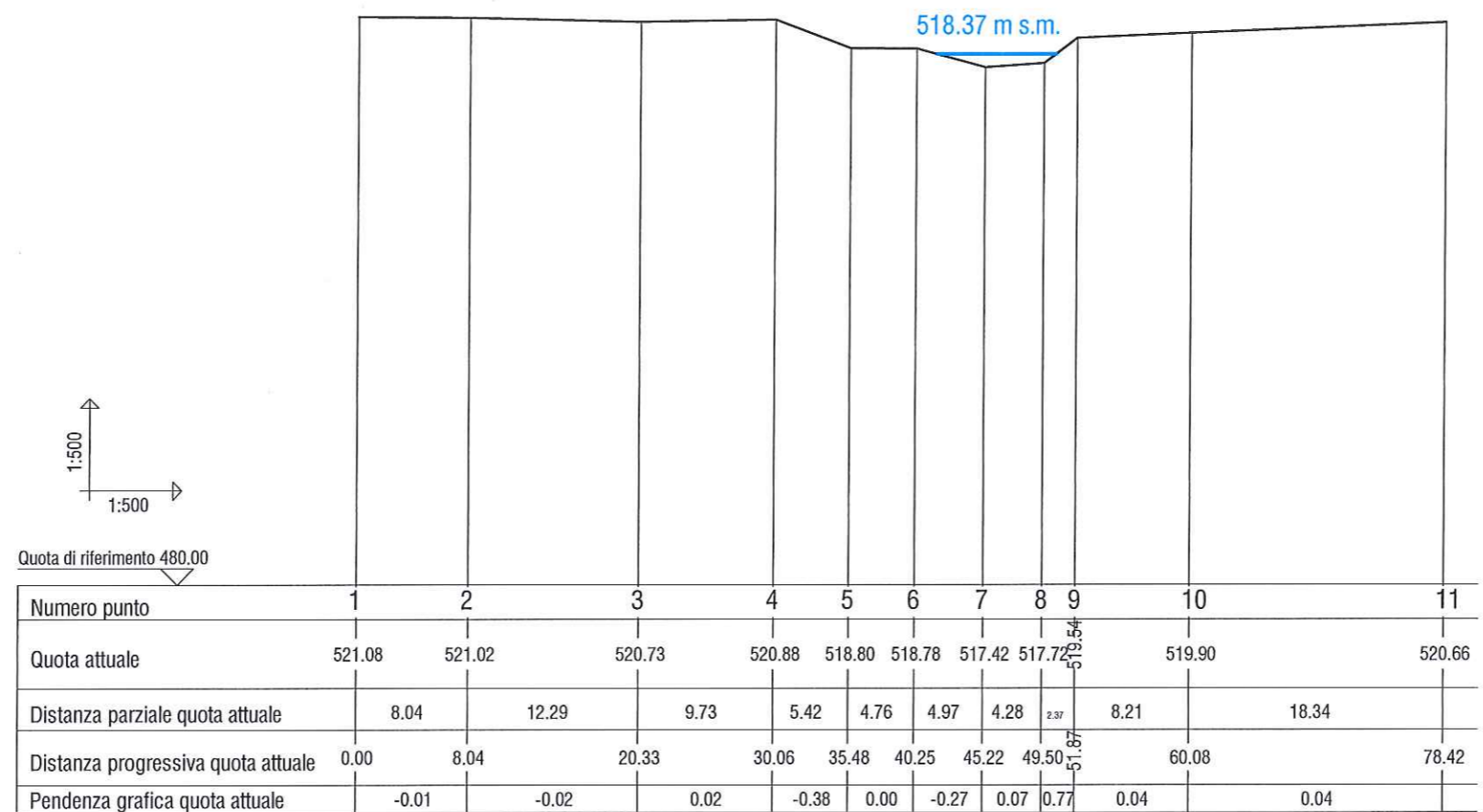
Sez. V8



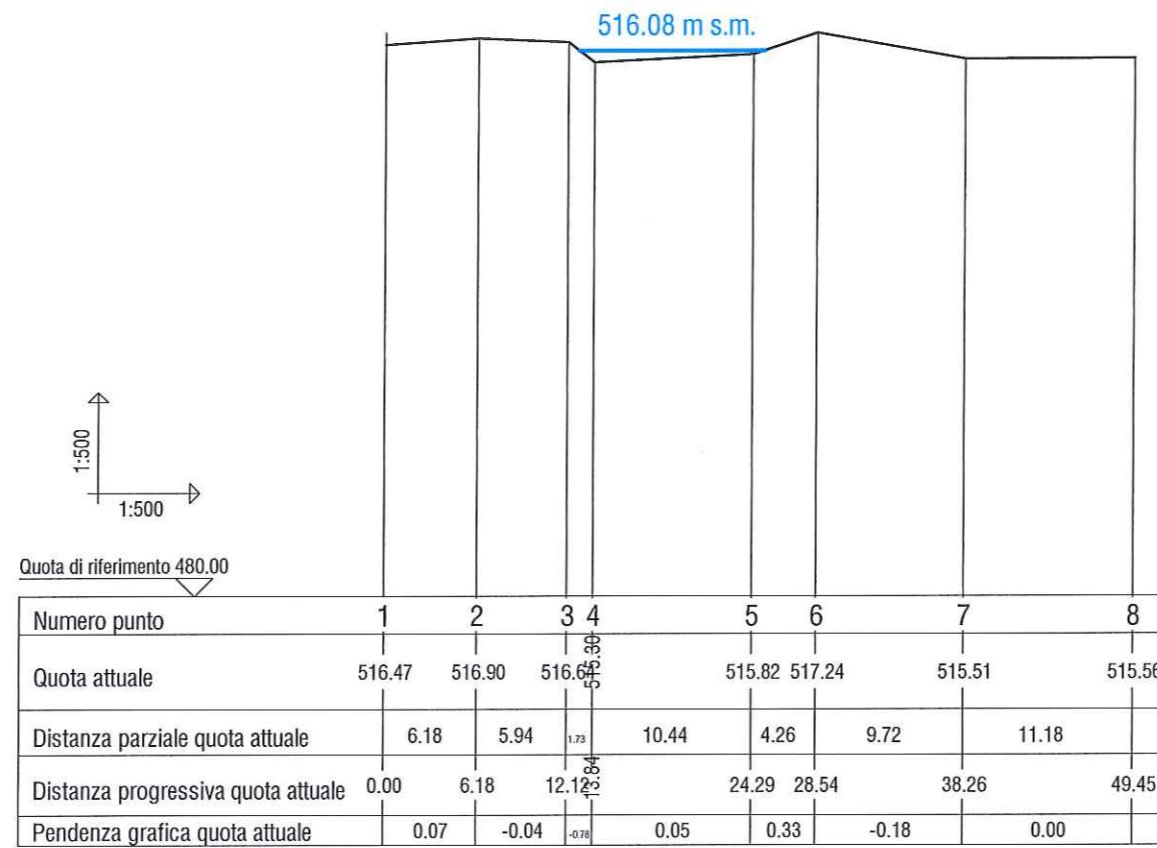
Sez. V9



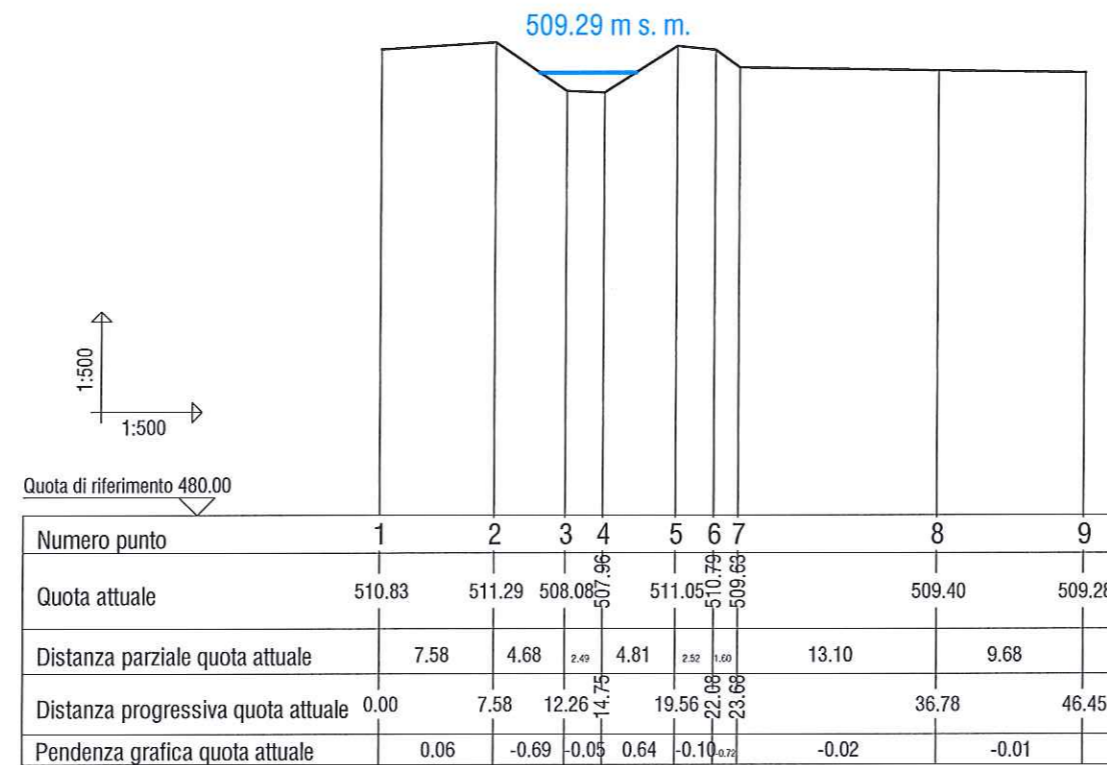
Sez. V10



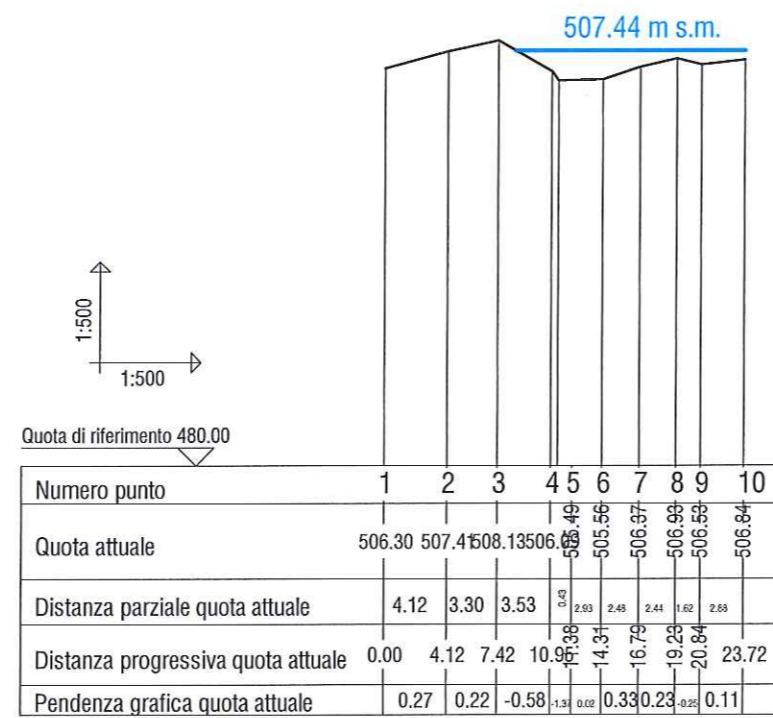
Sez. V11



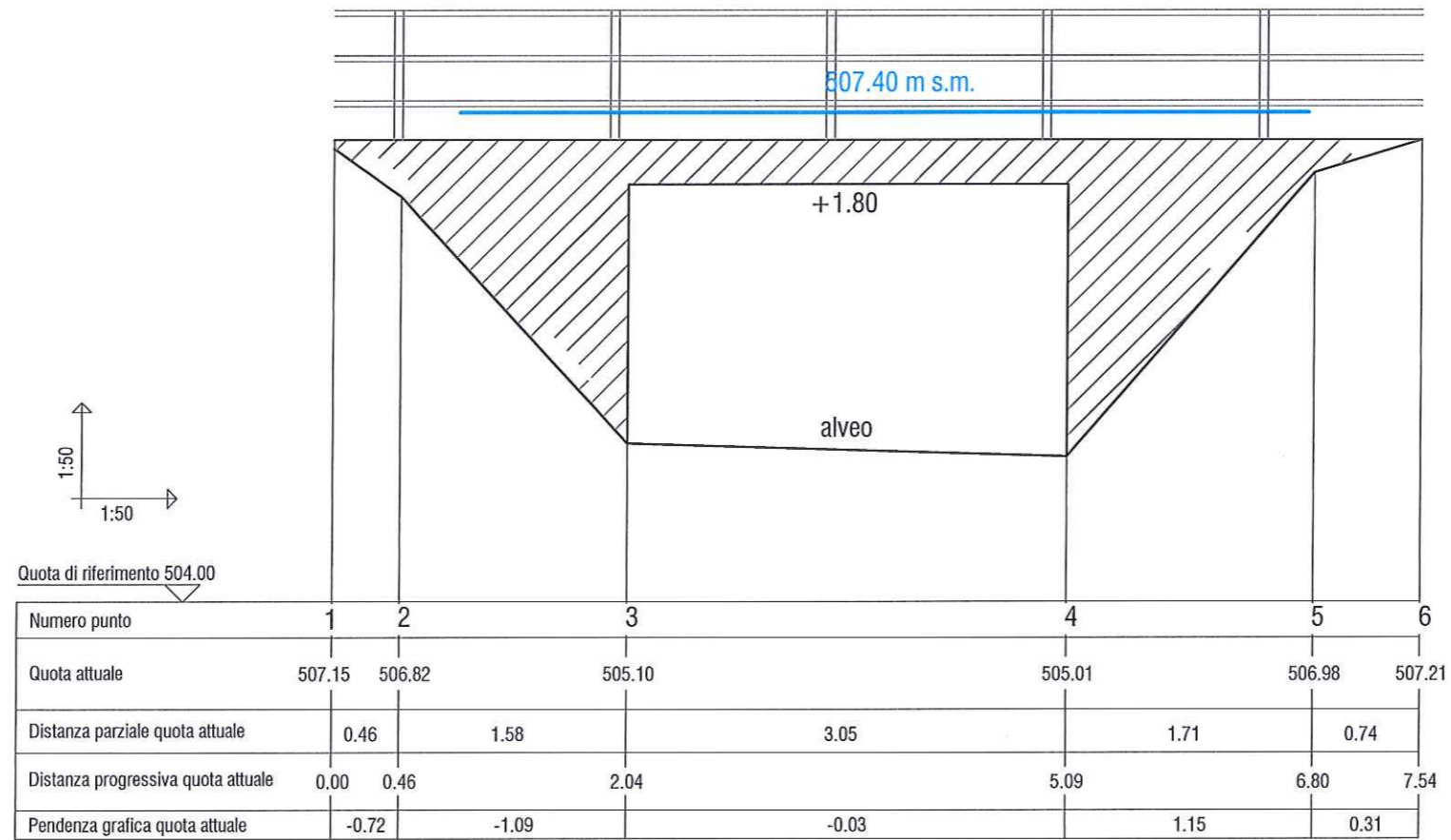
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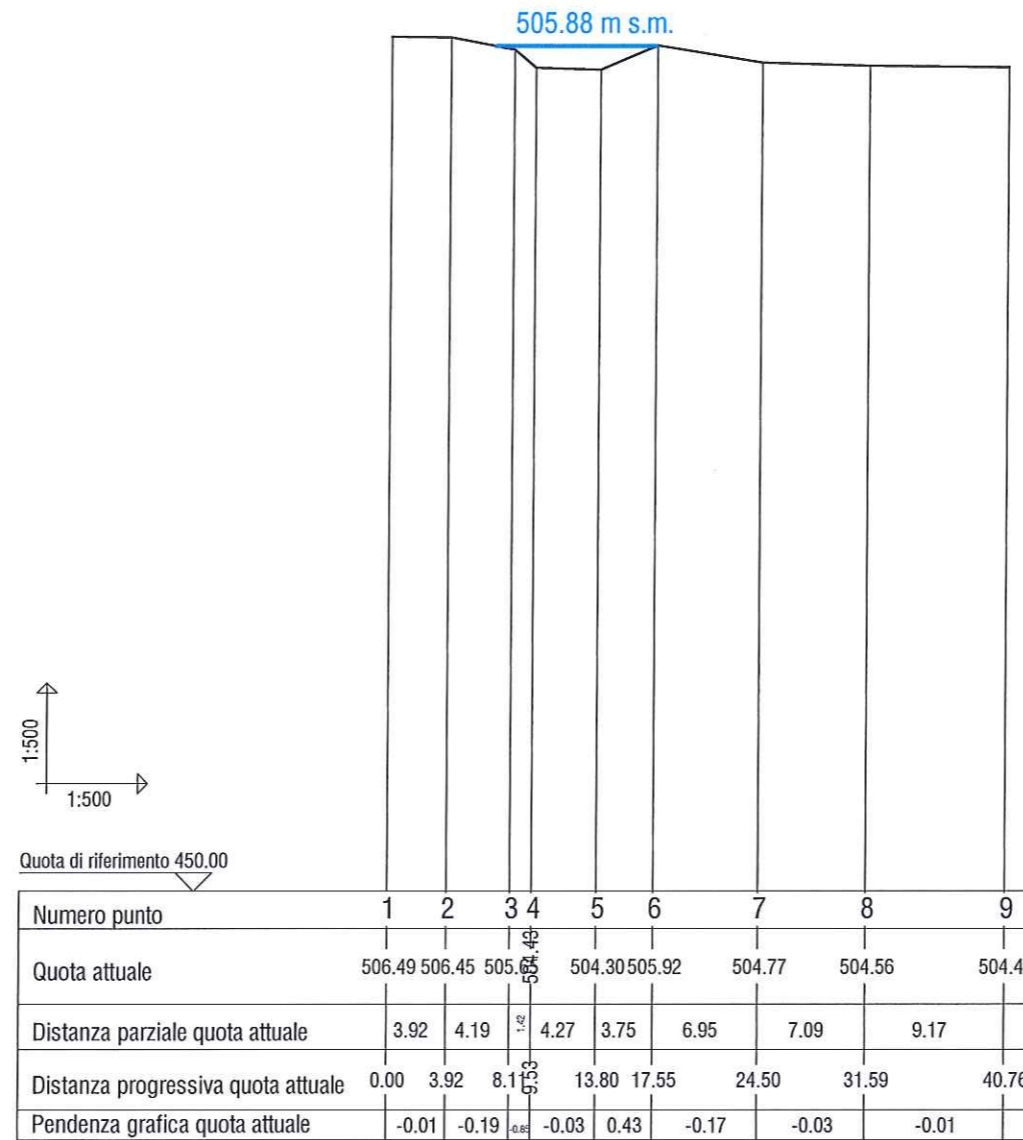
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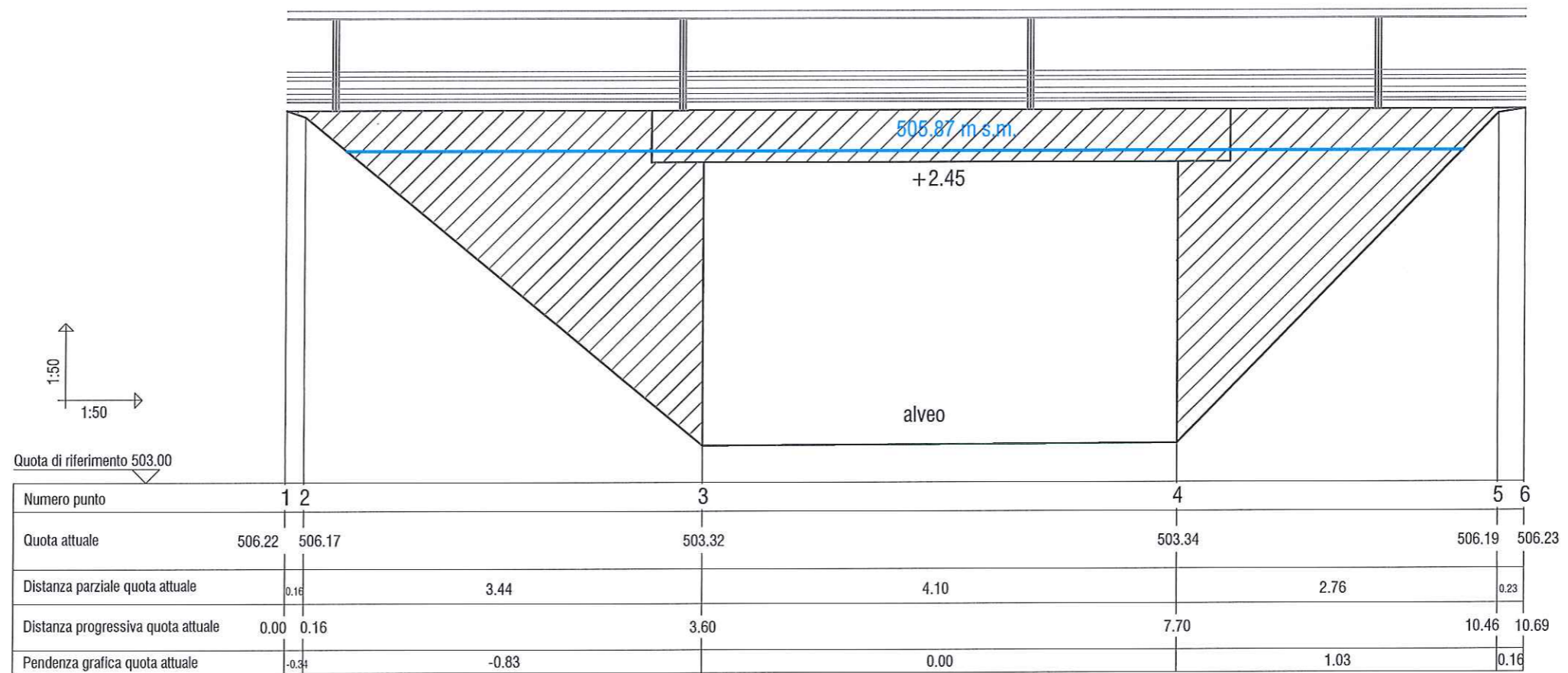
Sez. P1A



Sez. V14

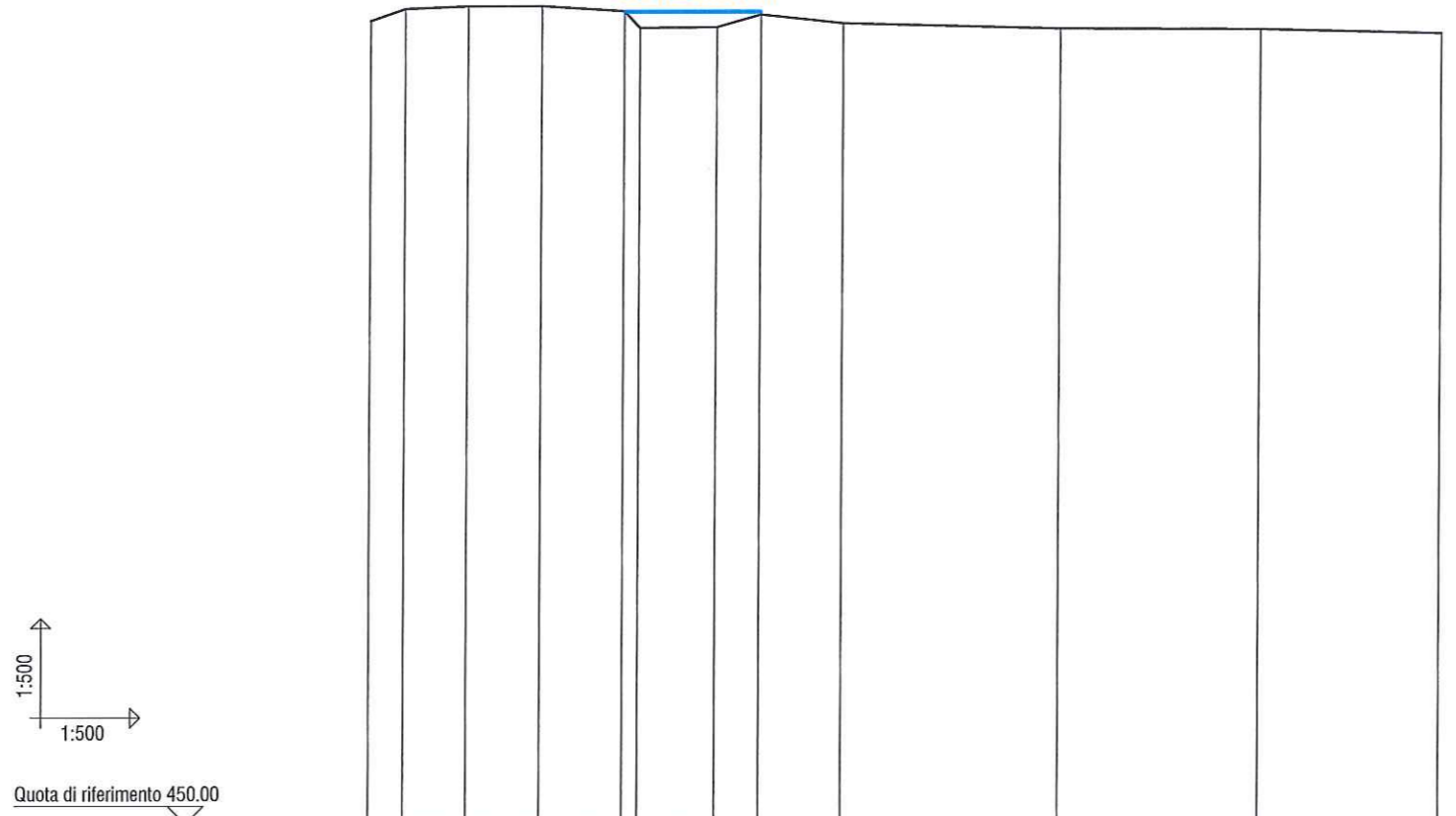


Sez. P2A



Sez. V15

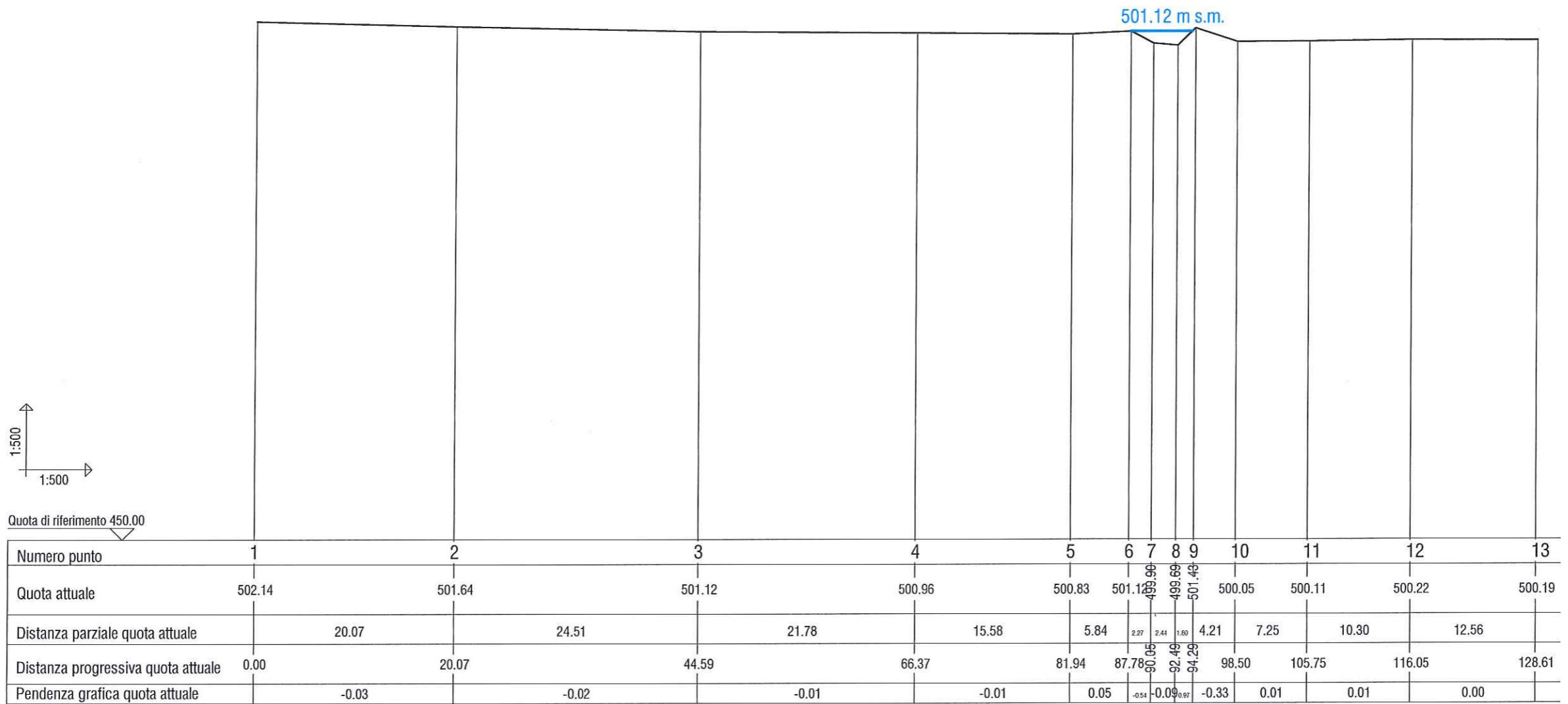
504.20 m s.m.



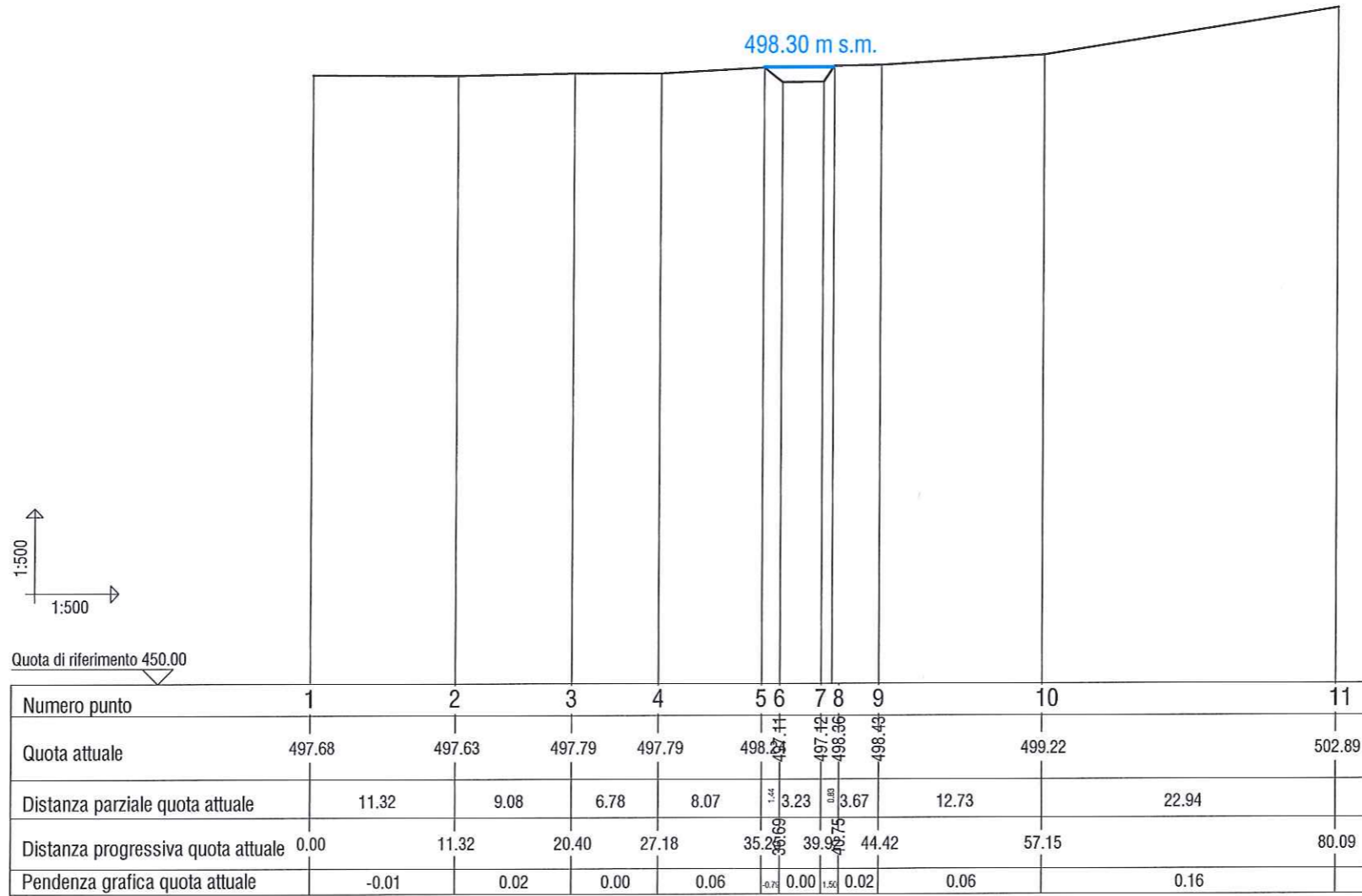
Quota di riferimento 450.00

Numero punto	1	2	3	4	5	6	7	8	9	10	11	12
Quota attuale	503.75	503.55	504.73	504.74	504.45	504.20	503.32	504.15	503.56	503.19	503.12	502.82
Distanza parziale quota attuale	2.32	4.20	4.91	5.51	11.08	5.12	2.97	5.50	14.52	13.37	12.04	
Distanza progressiva quota attuale	0.00	2.32	6.52	11.43	16.94	22.06	25.03	30.53	31.56	46.08	59.45	71.49
Pendenza grafica quota attuale	0.34	0.04	0.00	-0.06	-0.04	0.01	0.28	-0.11	-0.03	0.00	-0.03	

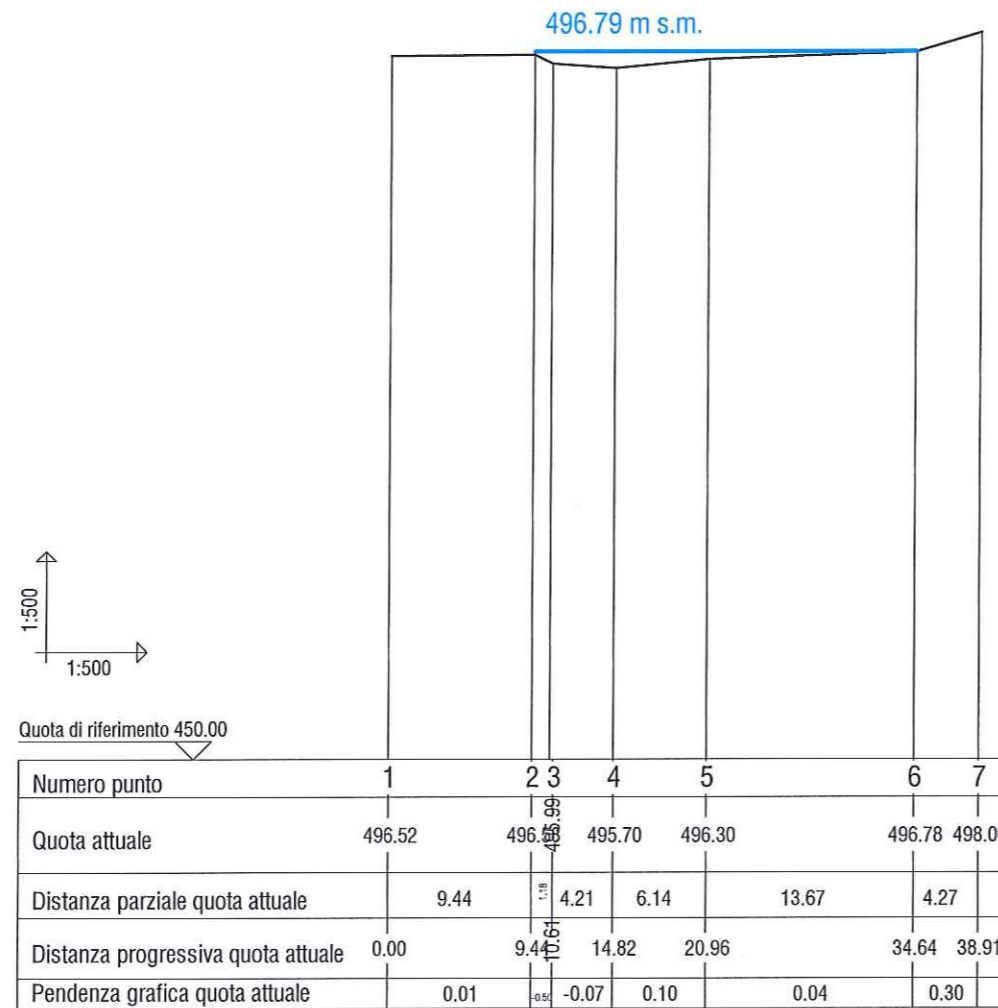
Sez. V16



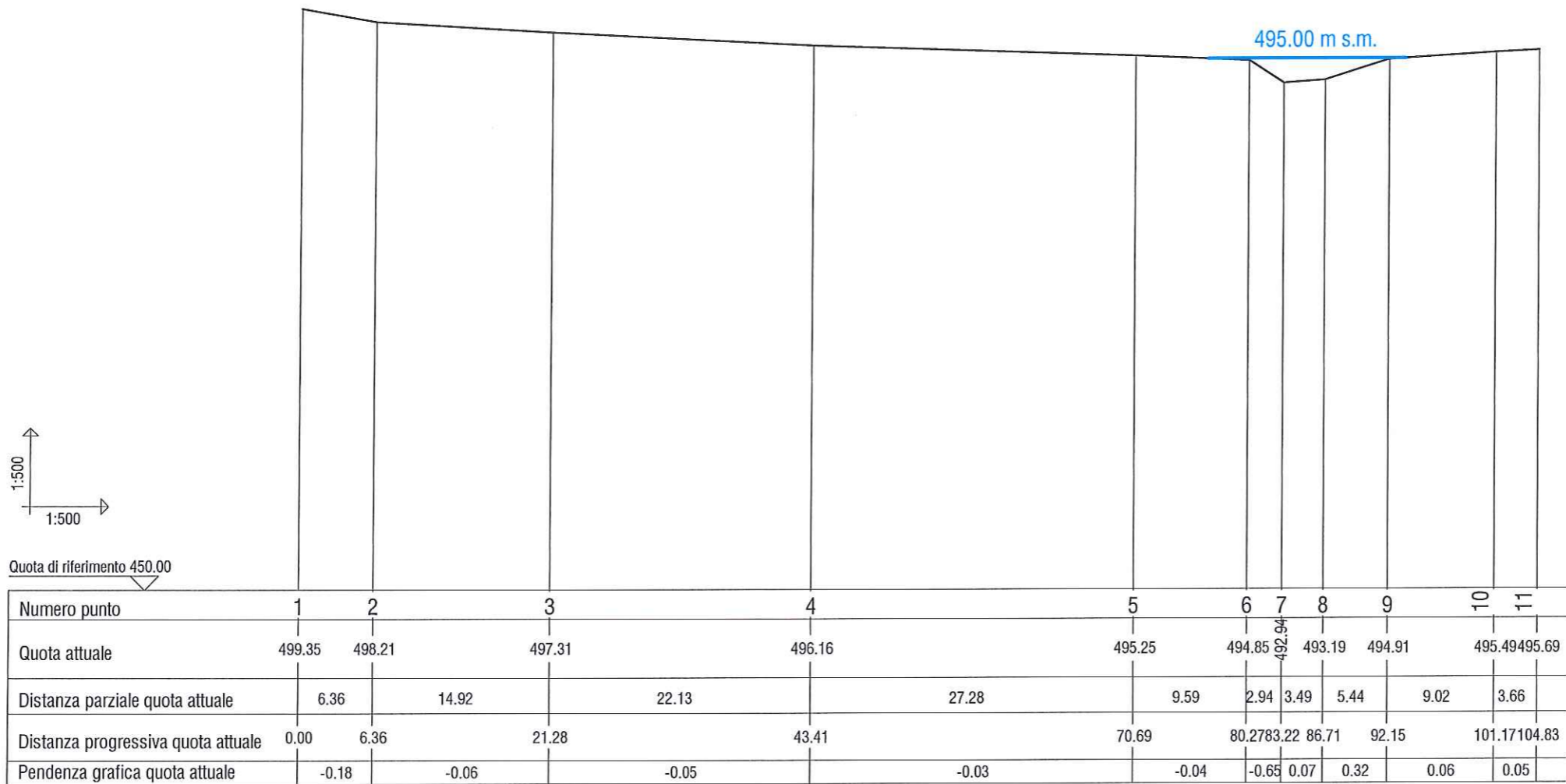
Sez. V17



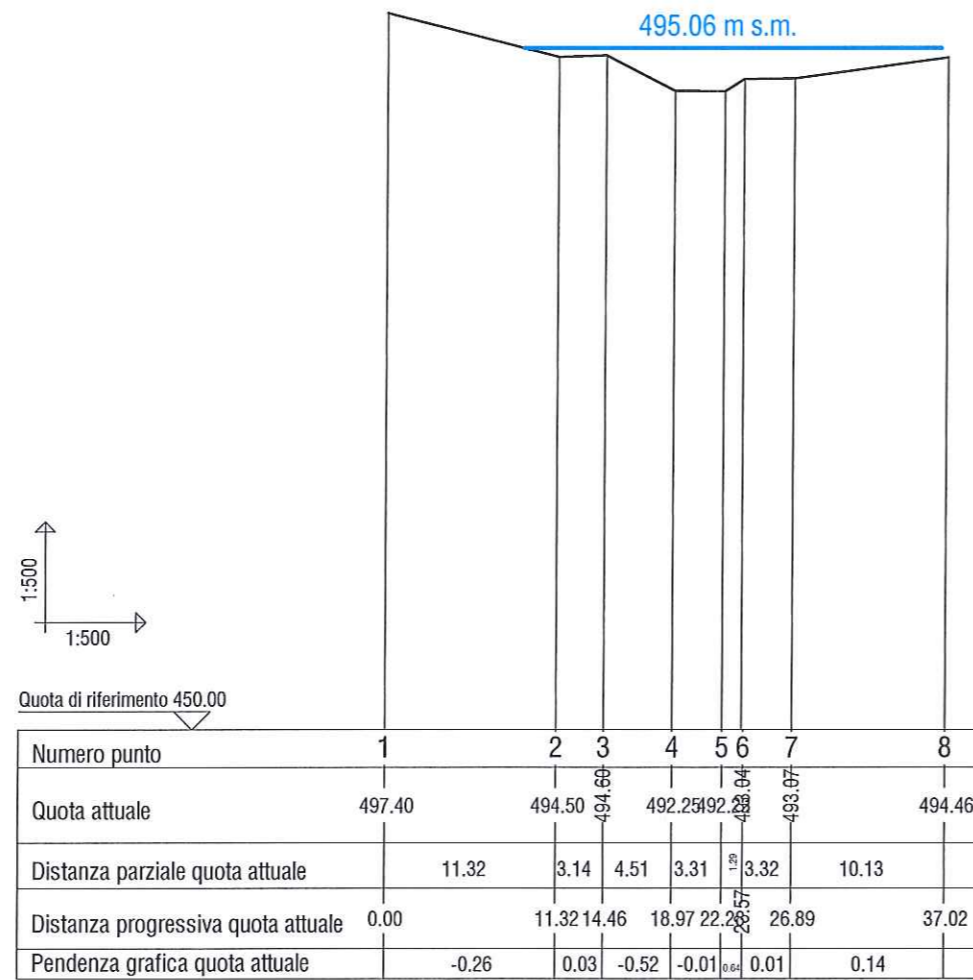
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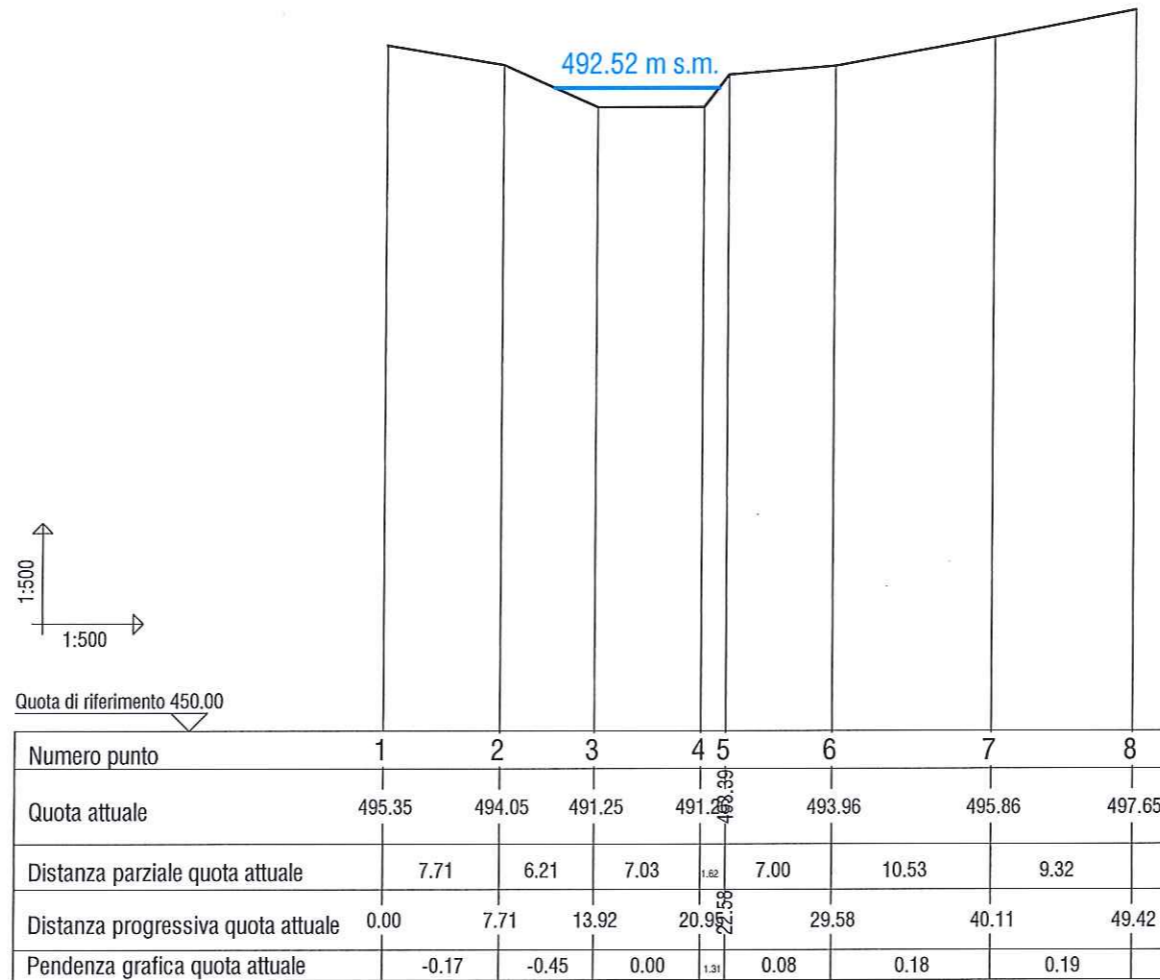
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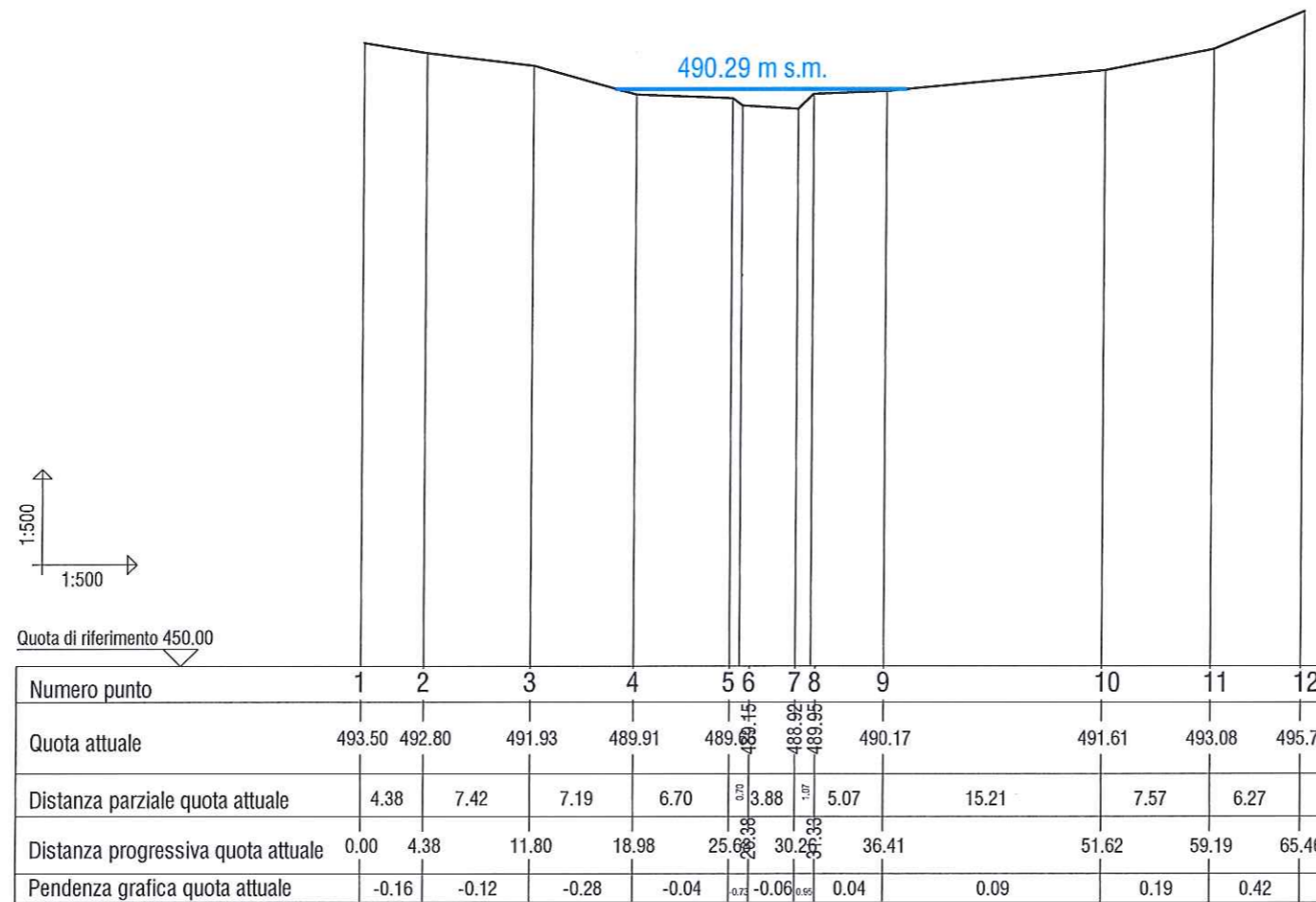
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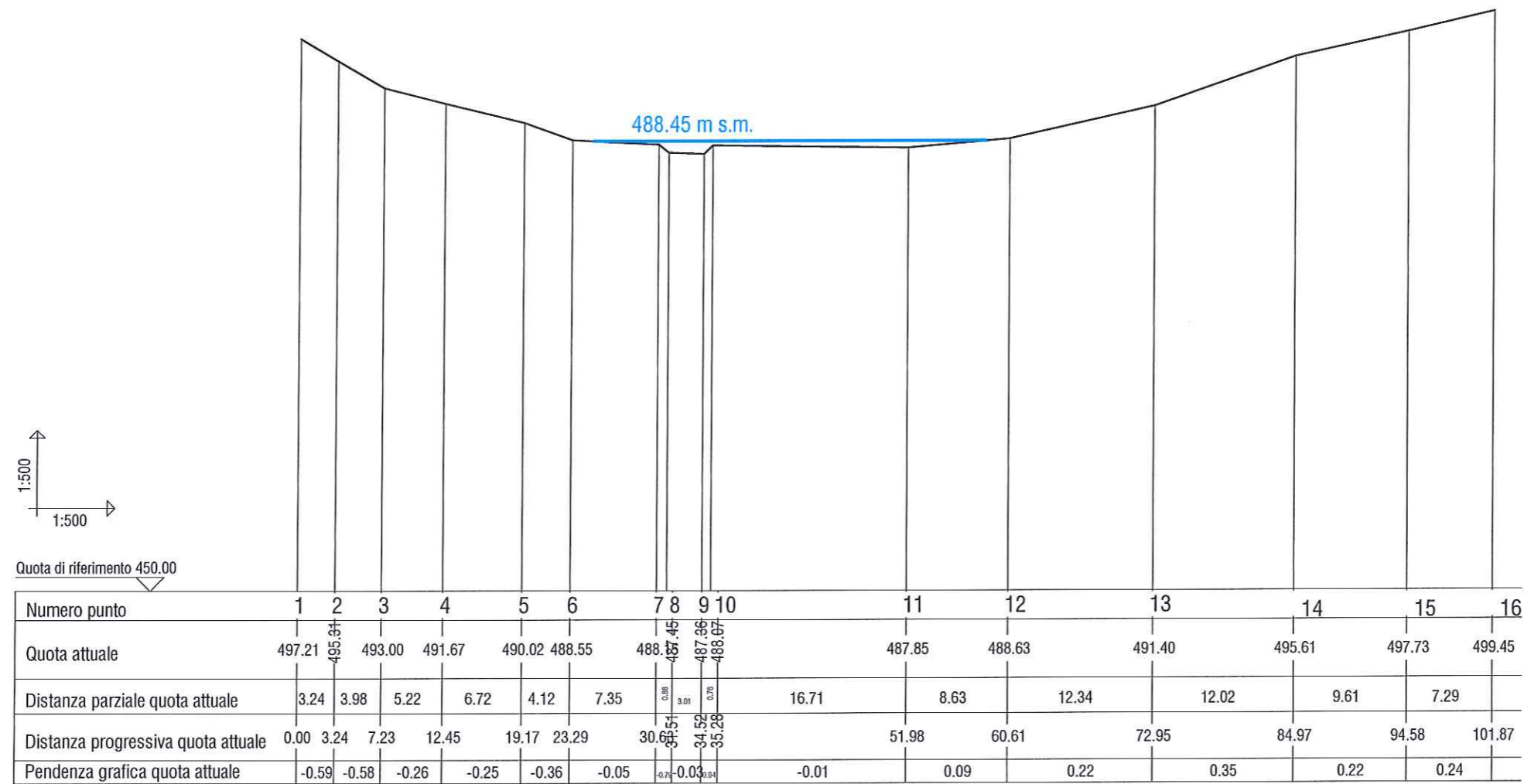
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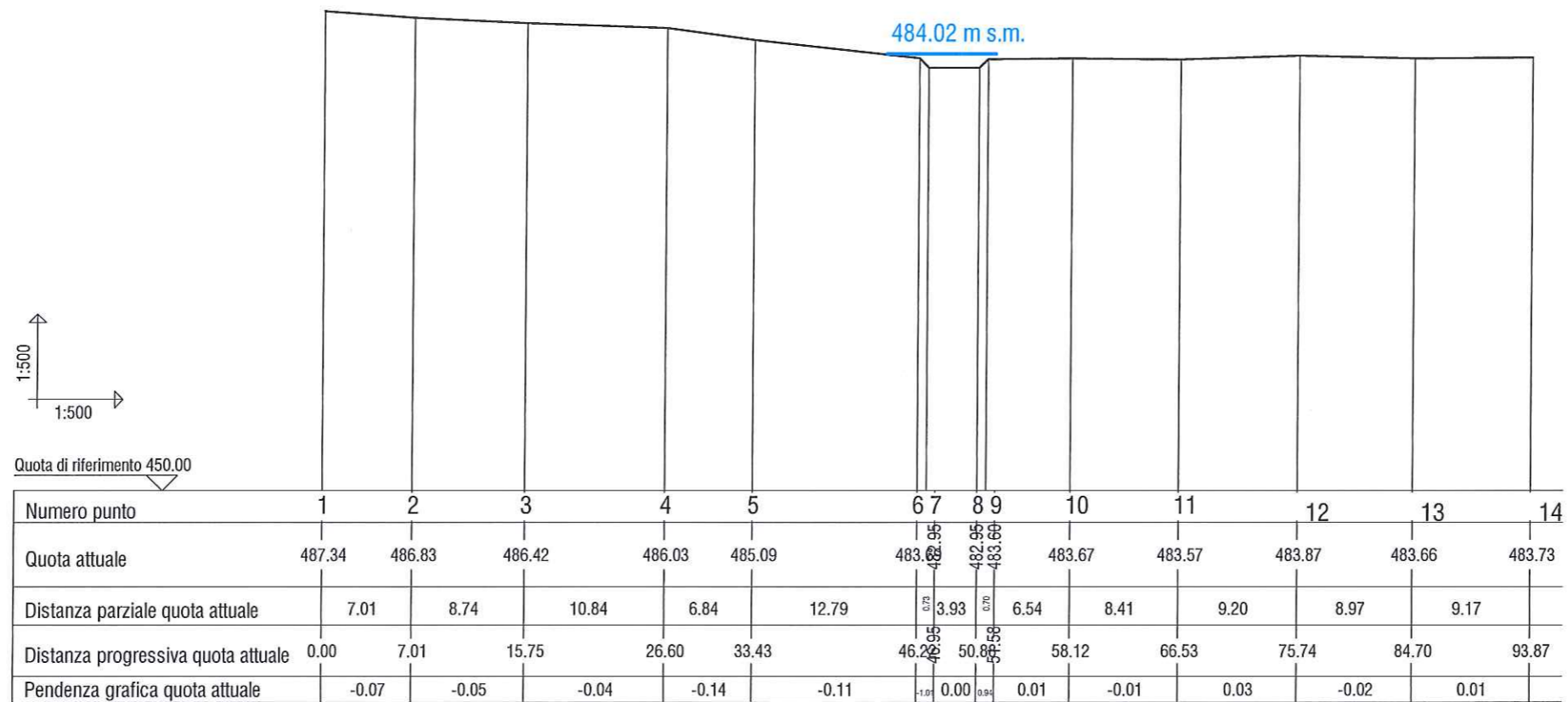
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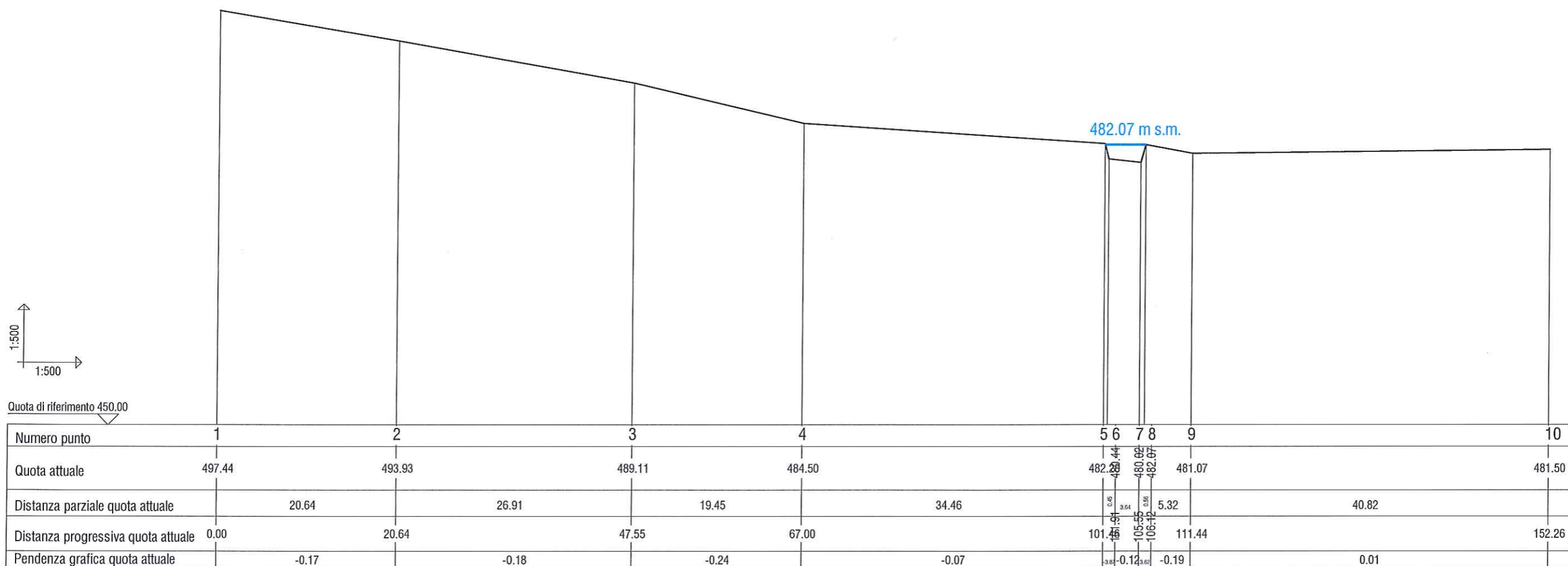
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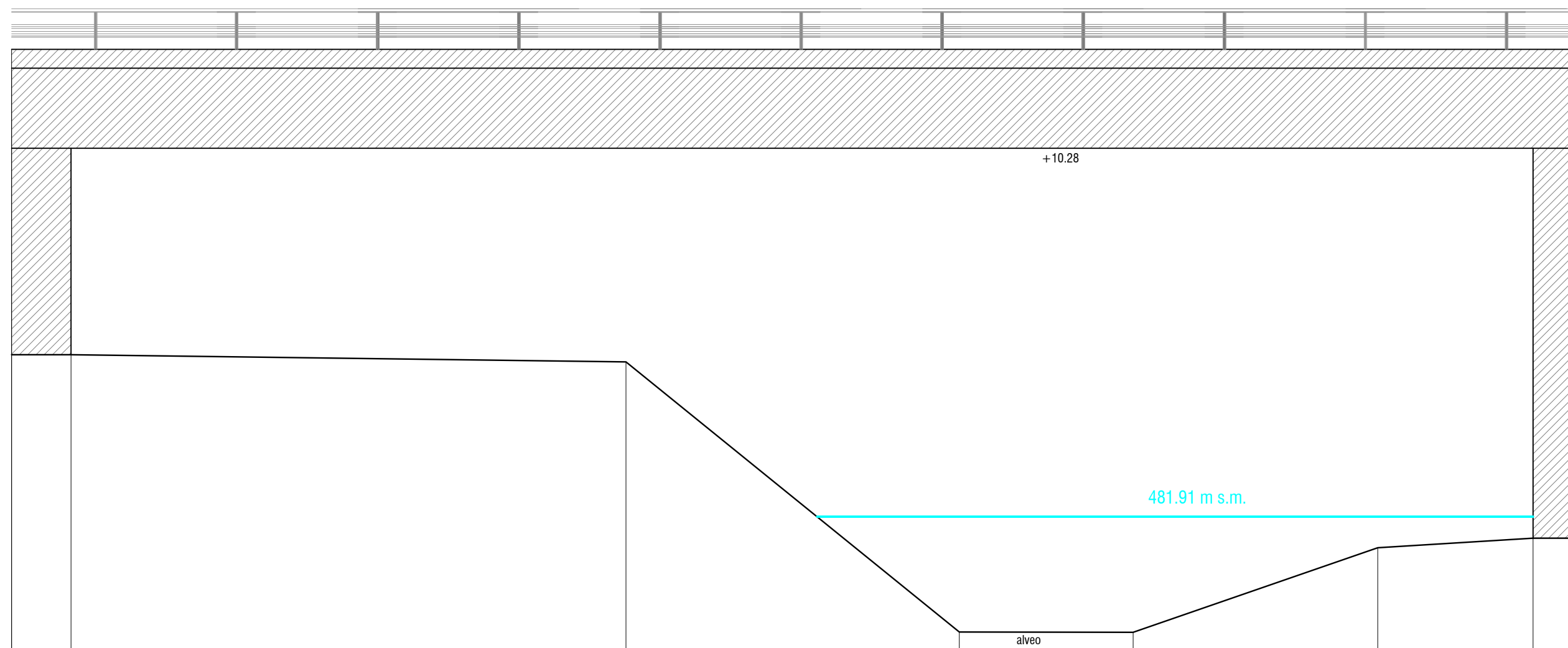
Sez. V24



Sez. V25



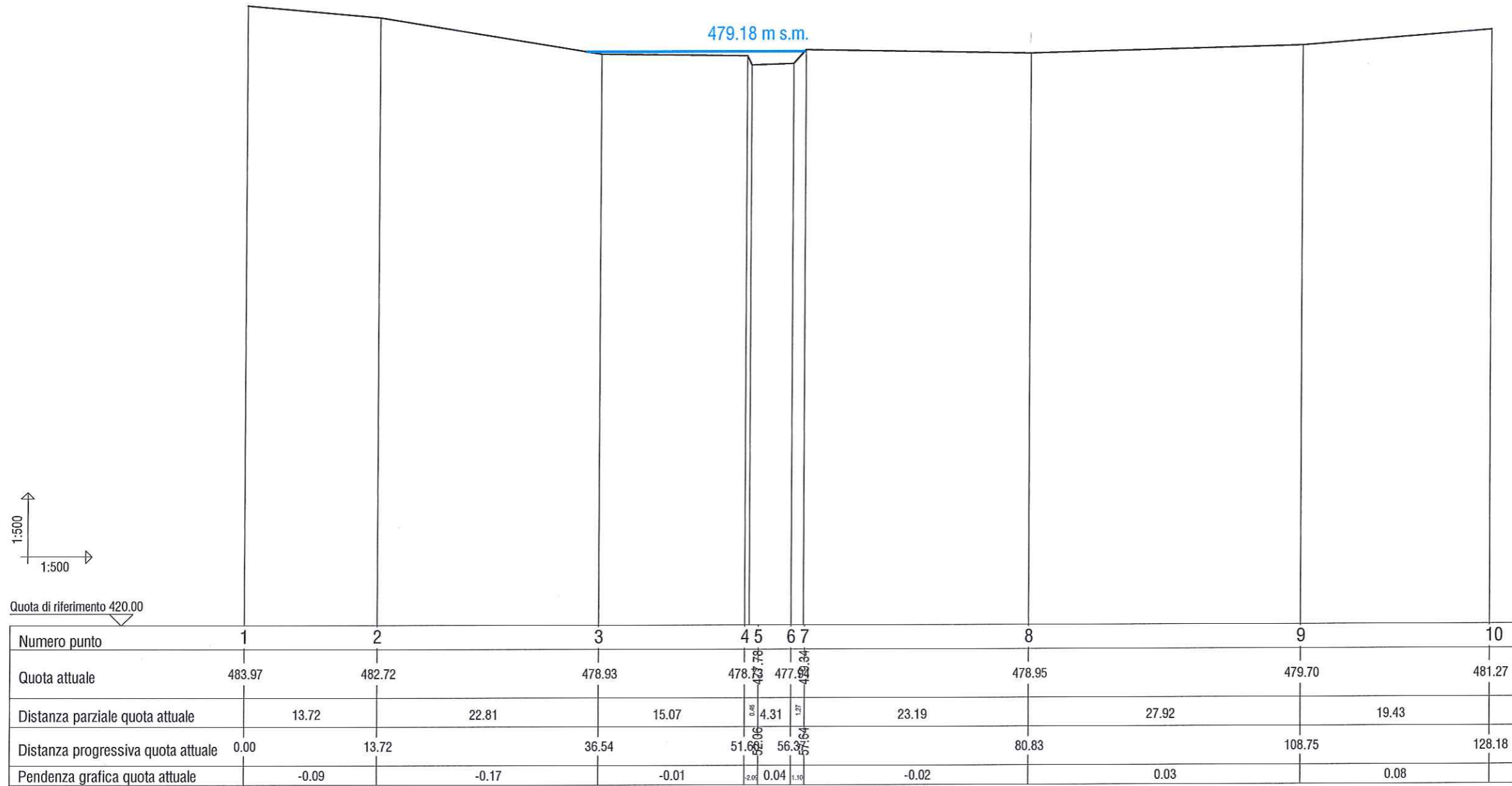
Sez. P4A



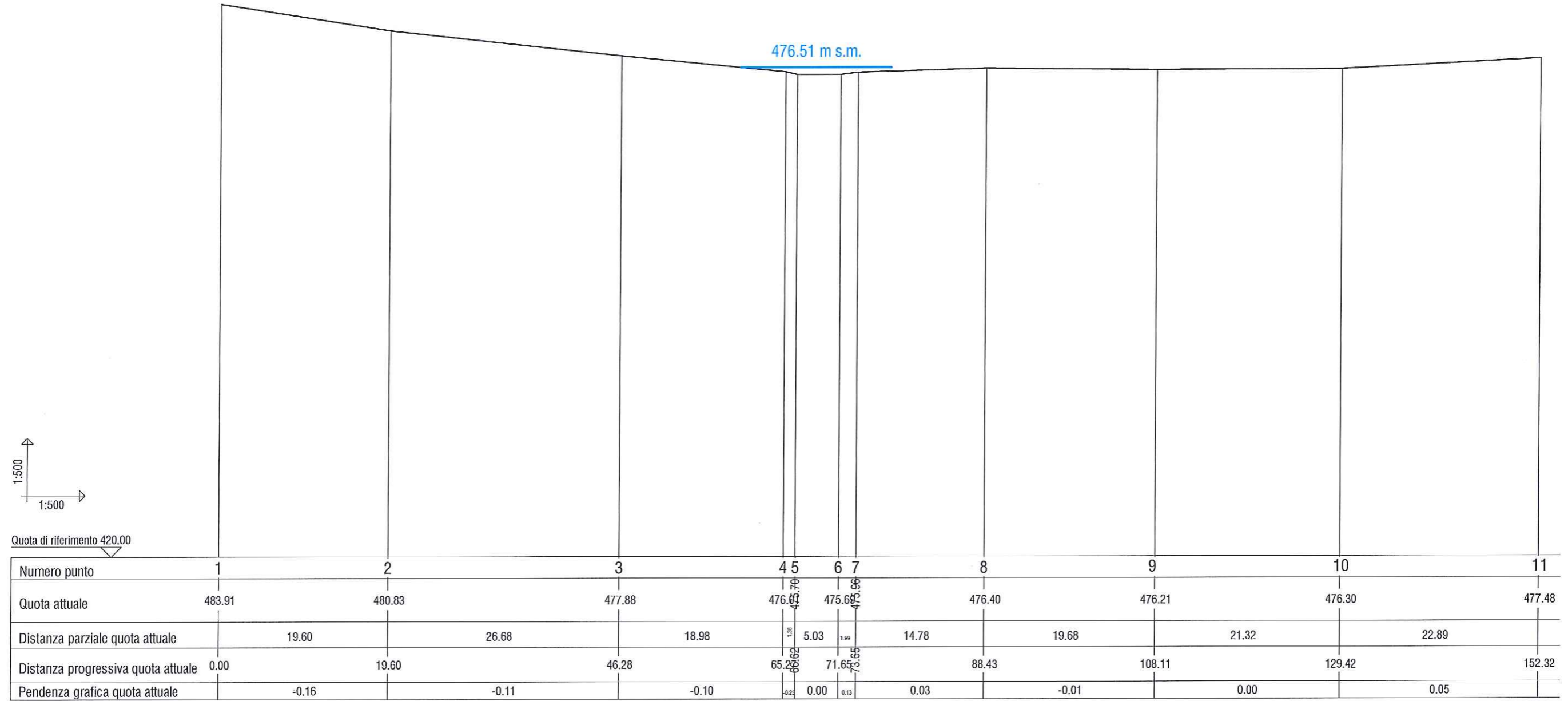
Quota di riferimento 490.00

Numero punto	1	2	3	4	5	6	7	8
Quota attuale	491.38	485.35	485.20	479.46	479.45	481.25	481.45	491.84
Distanza parziale quota attuale	1.26	11.80	7.08	3.70	5.20	3.30	1.00	
Distanza progressiva quota attuale	0.00	1.26	13.07	20.15	23.85	29.05	32.35	33.35
Pendenza grafica quota attuale	-4.77	-0.01	-0.81	0.00	0.35	0.06	10.35	

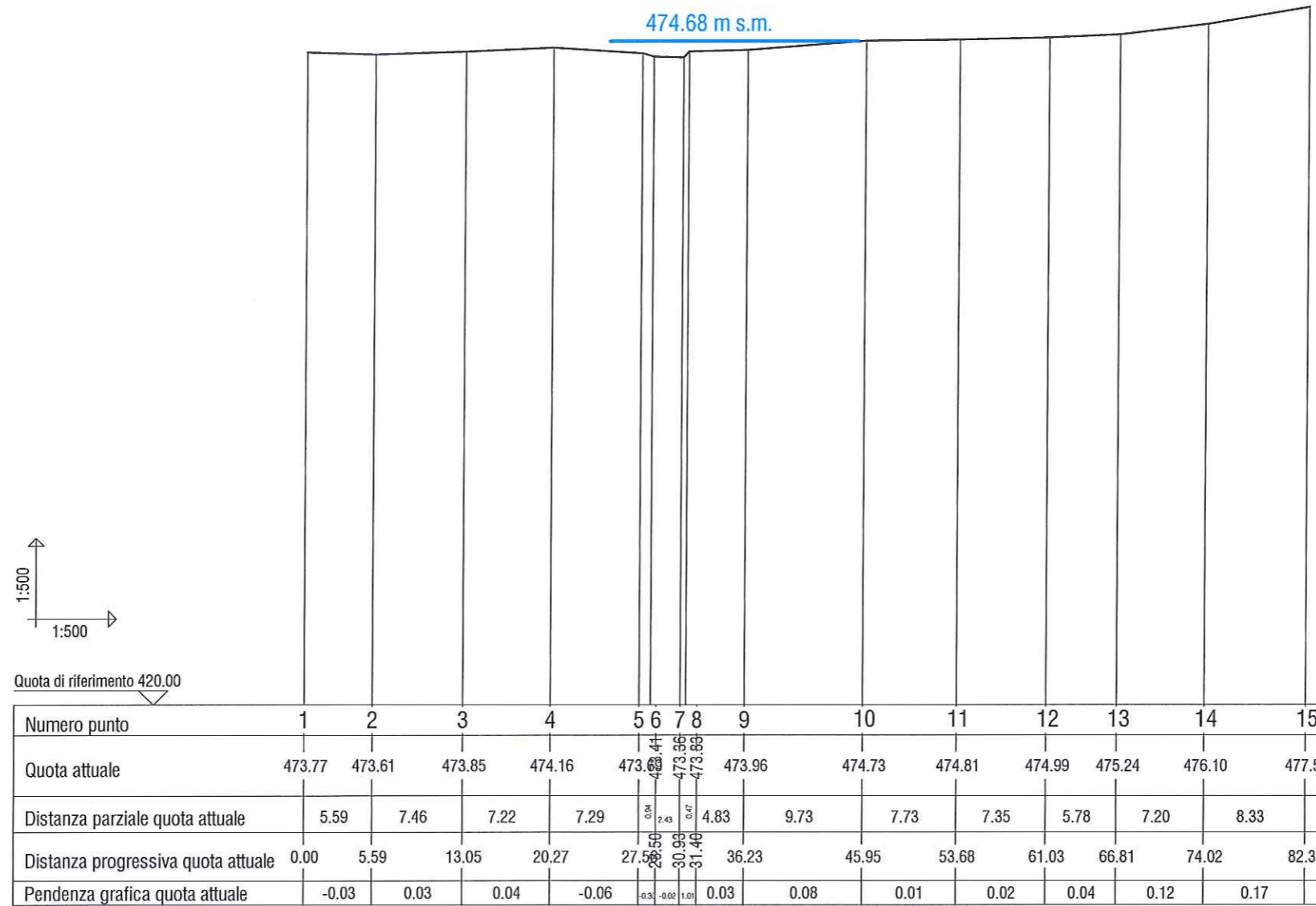
Sez. V26



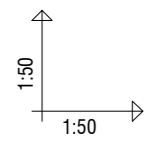
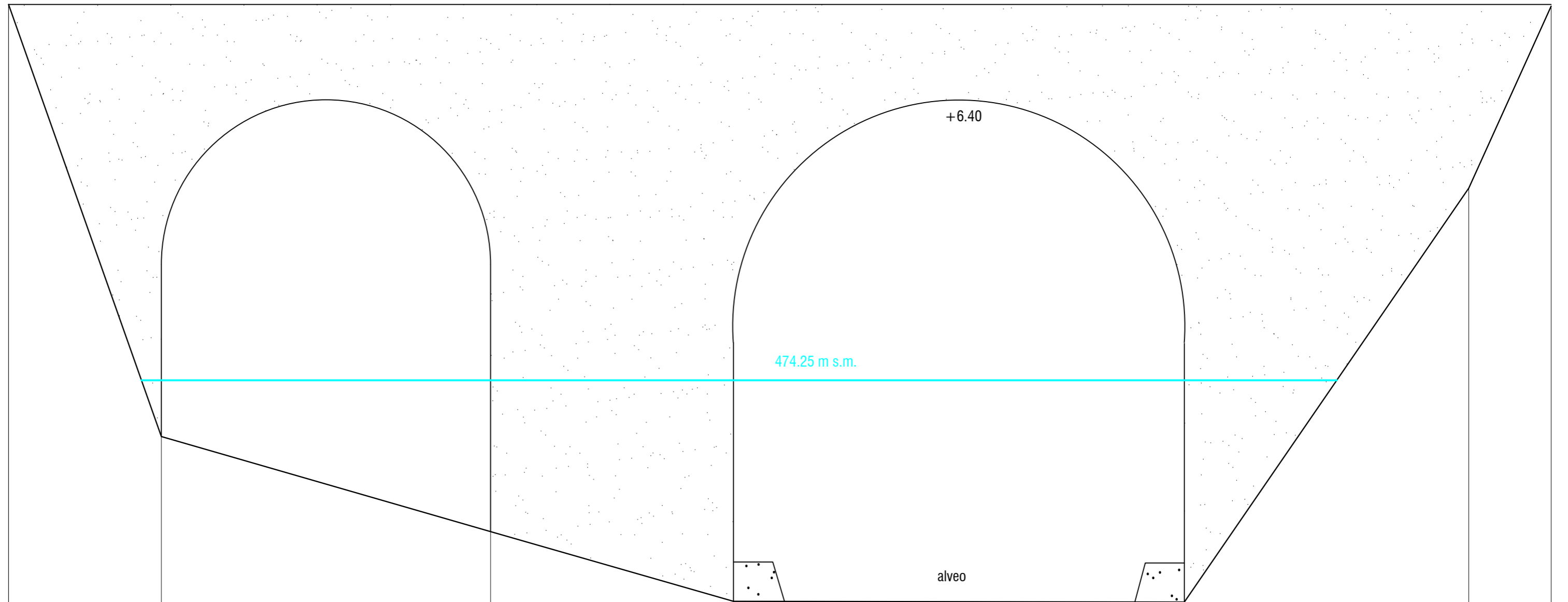
Sez. V27



Sez. V28



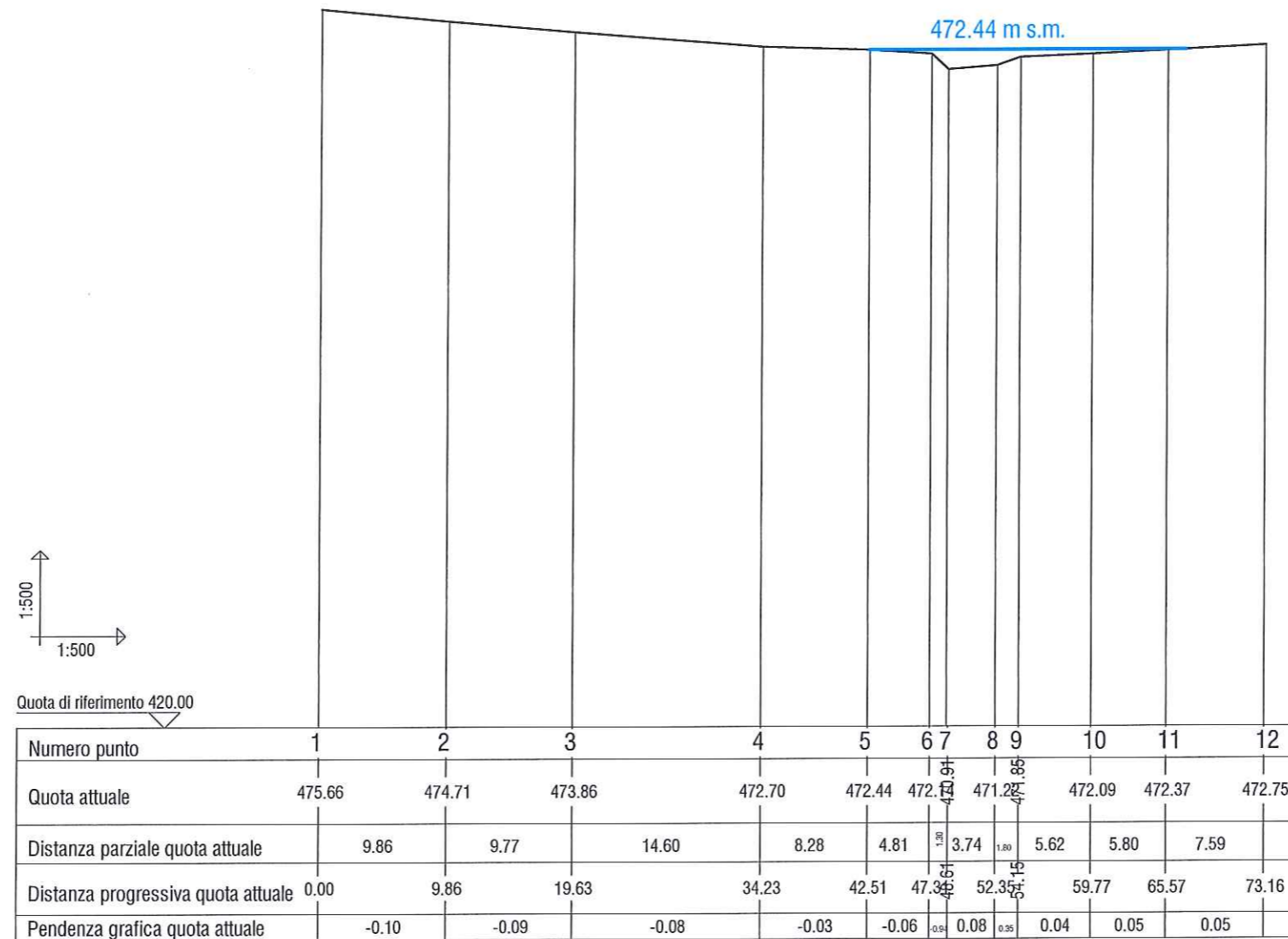
Sez. P4C



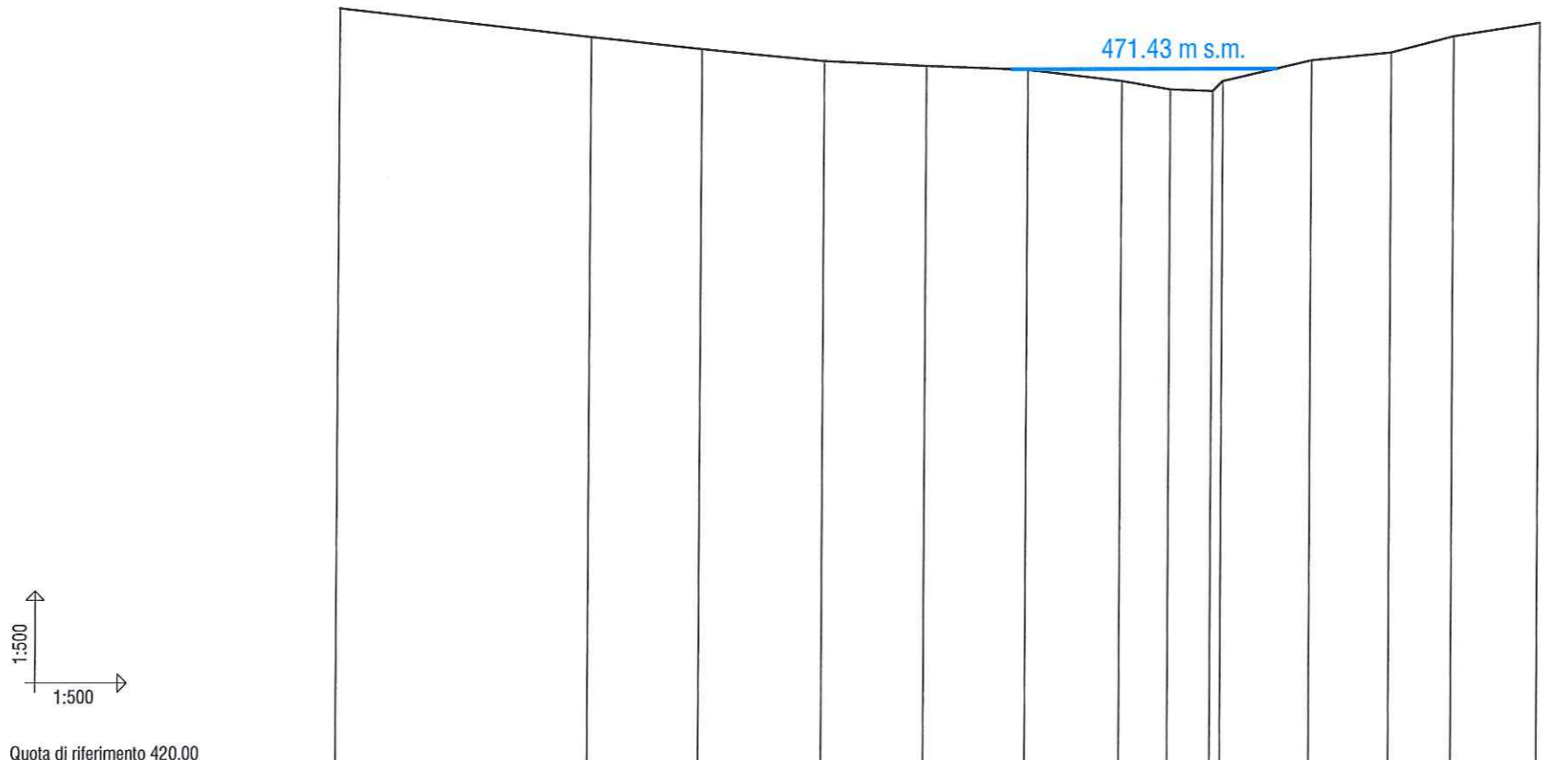
Quota di riferimento 470.00

Numero punto	1	2	3	4	5	6	7
Quota attuale	479.04	473.53	472.32	471.43	471.42	476.70	479.02
Distanza parziale quota attuale		1.95	4.20	3.10	5.75	3.63	1.05
Distanza progressiva quota attuale	0.00	1.95	6.15	9.25	15.00	18.63	19.68
Pendenza grafica quota attuale		-2.83	-0.29	-0.29	0.00	1.46	2.21

Sez. V29



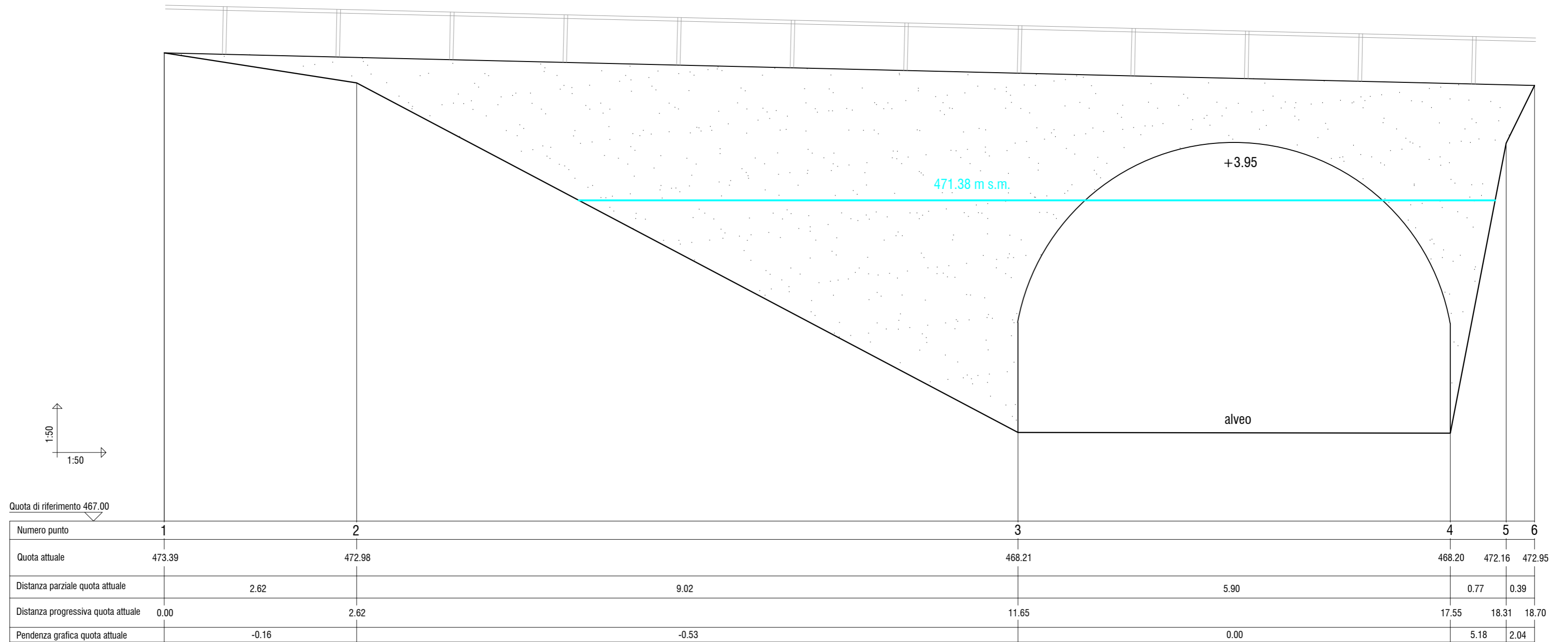
Sez. V30



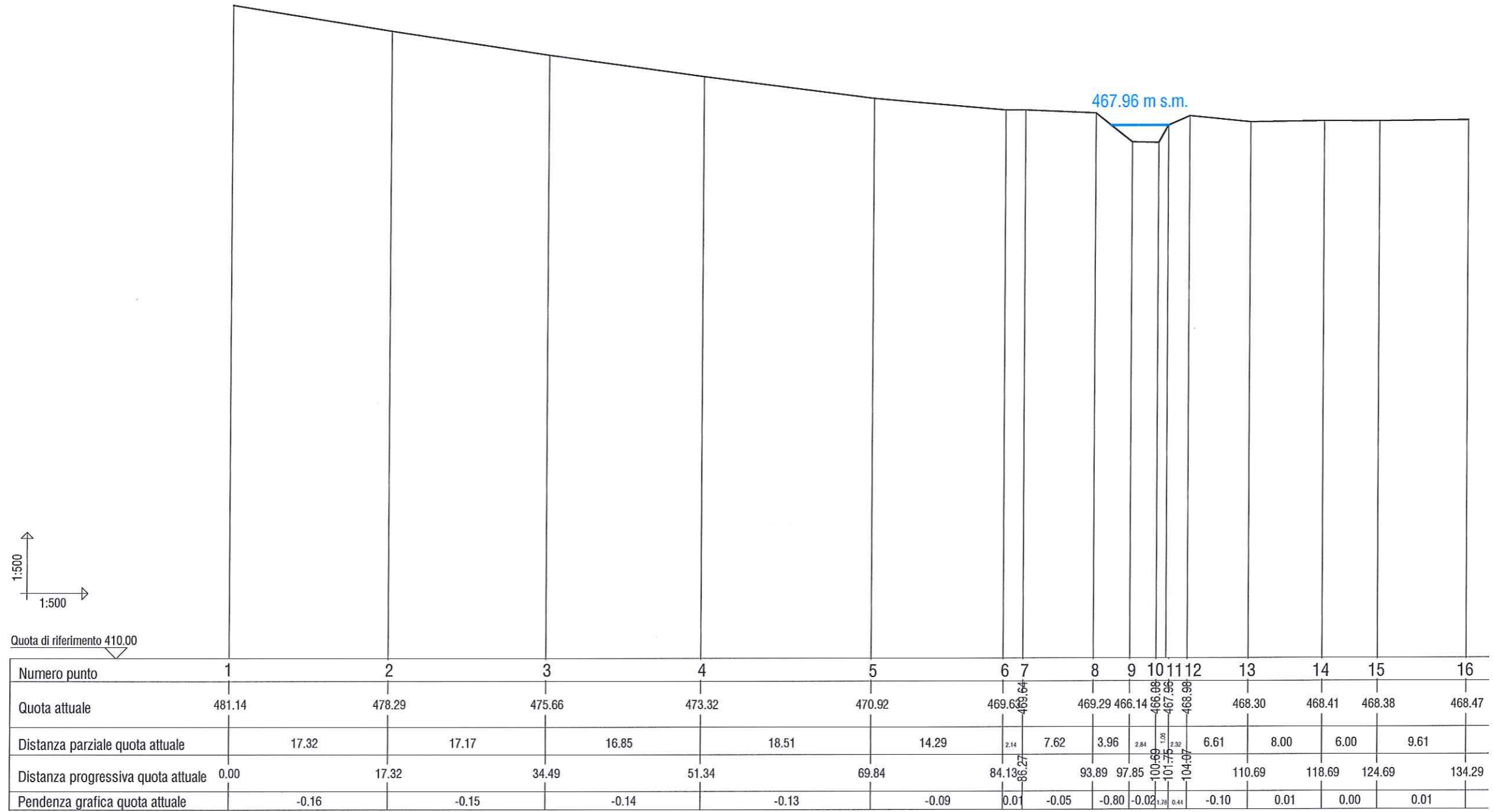
Quota di riferimento 420.00

Numero punto	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Quota attuale	475.92	473.81	472.92	472.03	471.68	471.38	470.55	469.94	470.82	470.53	472.02	472.56	473.73	474.68
Distanza parziale quota attuale		18.13	8.04	8.86	7.38	7.32	6.80	3.50	3.05	0.74	6.43	5.74	4.47	6.20
Distanza progressiva quota attuale	0.00	18.13	26.18	35.04	42.42	49.74	56.54	60.04	63.09	63.83	70.26	75.99	80.47	86.67
Pendenza grafica quota attuale		-0.12	-0.11	-0.10	-0.05	-0.04	-0.12	-0.18	-0.04	0.06	0.23	0.09	0.26	0.15

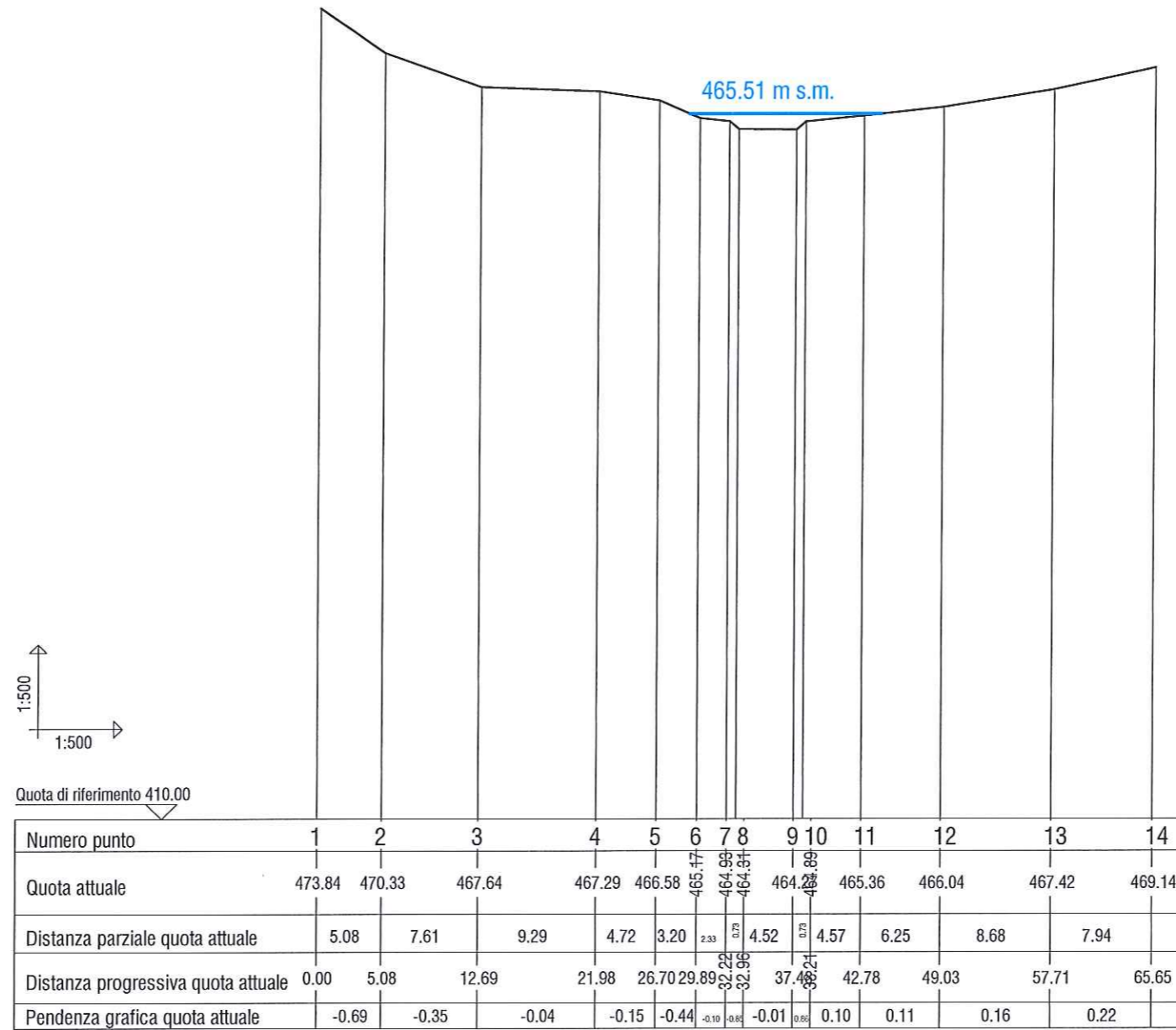
Sez. P5A



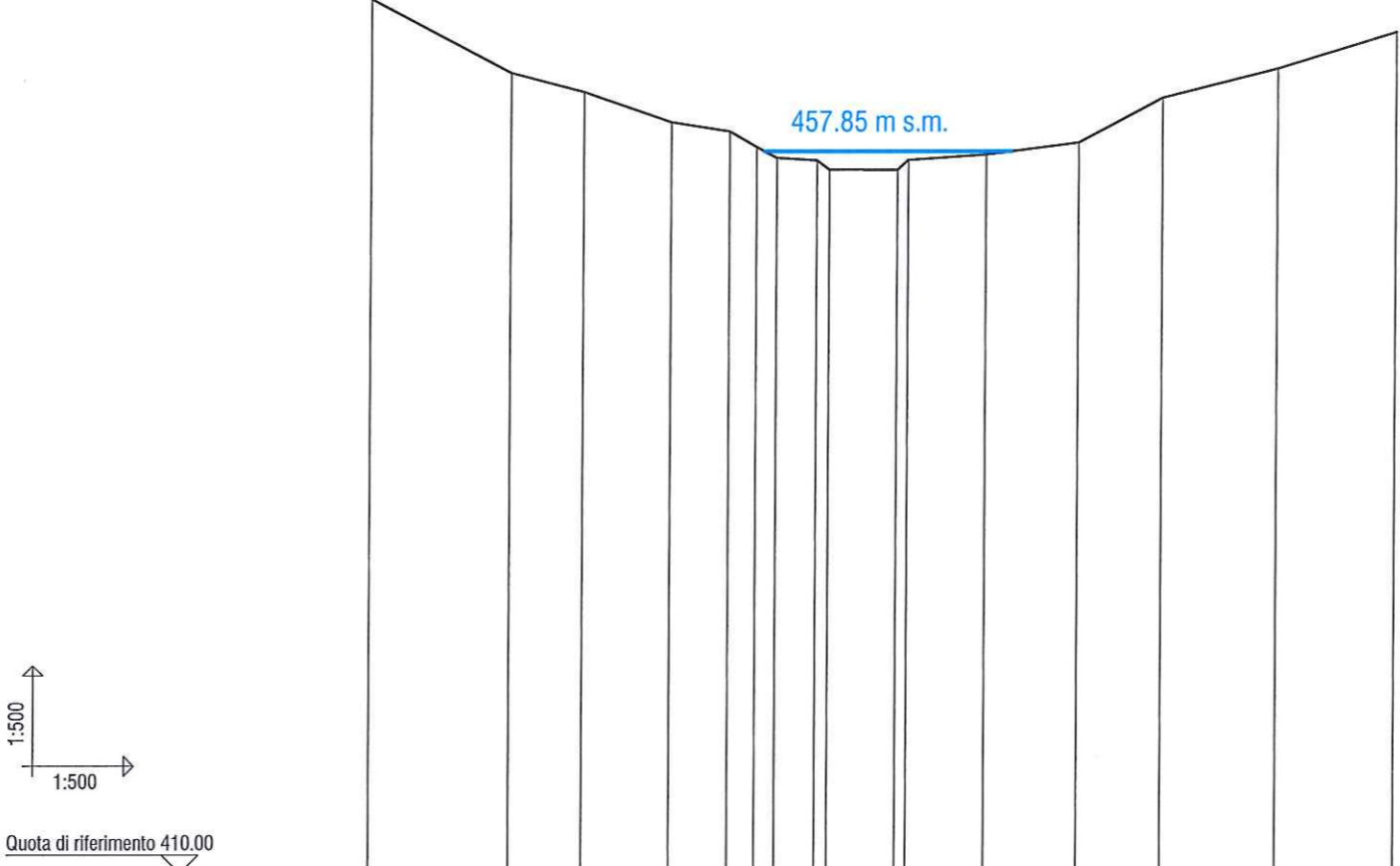
Sez. V31



Sez. V32

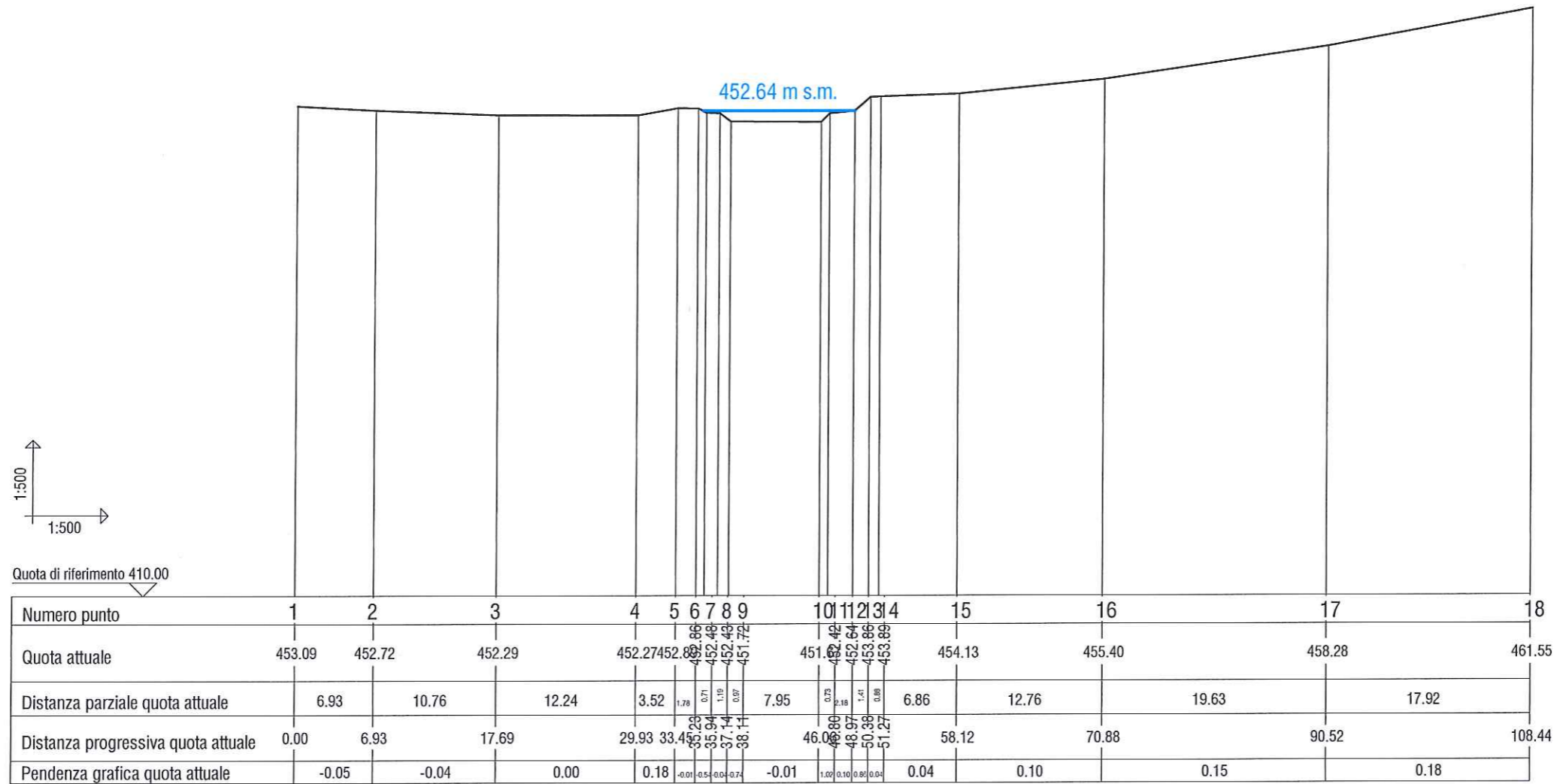


Sez. V33

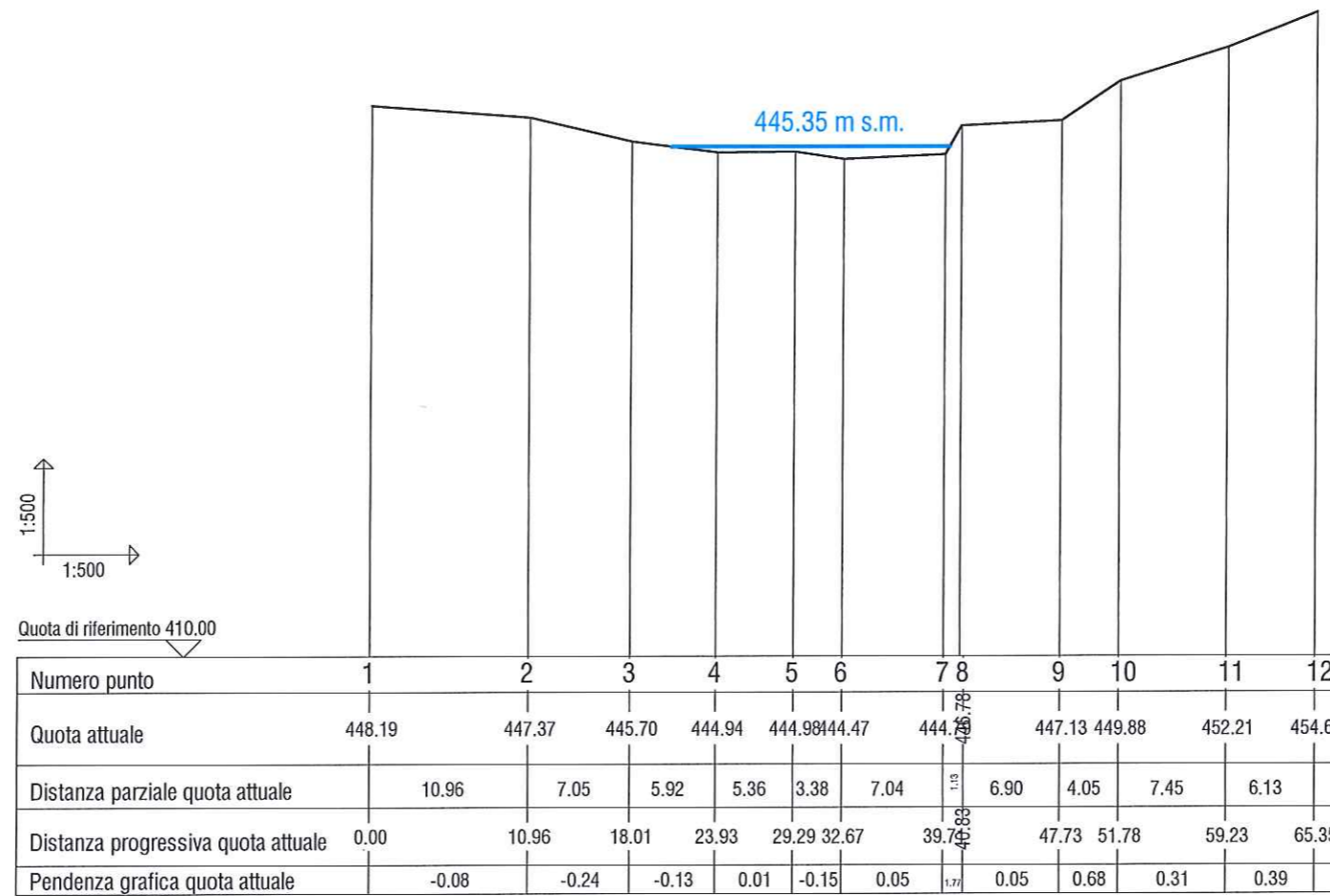


Numero punto	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Quota attuale	468.00	463.09	461.81	459.80	459.15	458.15	457.44	457.25	456.64	456.63	457.25	457.64	458.44	461.39	463.31	465.72
Distanza parziale quota attuale		9.31	4.81	5.77	3.90	1.79	1.98	2.66	0.83	4.51	0.72	5.17	6.12	5.49	7.62	7.82
Distanza progressiva quota attuale	0.00	9.31	14.12	19.88	23.78	25.57	26.92	29.58	30.41	34.92	35.64	40.81	46.93	52.42	60.04	67.87
Pendenza grafica quota attuale		-0.53	-0.27	-0.35	-0.16	-0.58	-0.53	-0.07	0.72	0.00	0.99	0.07	0.13	0.54	0.25	0.31

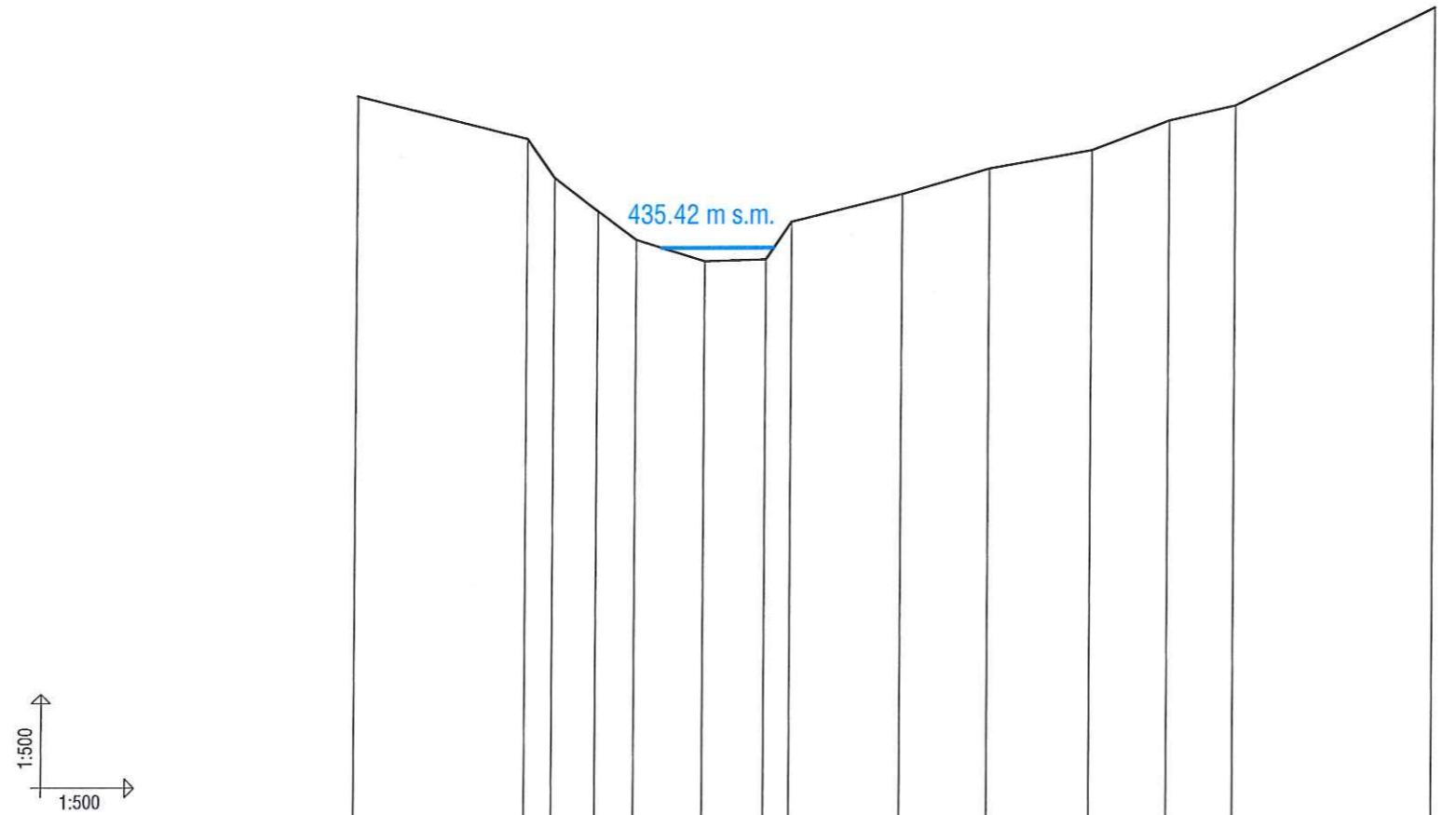
Sez. V34



Sez. V35



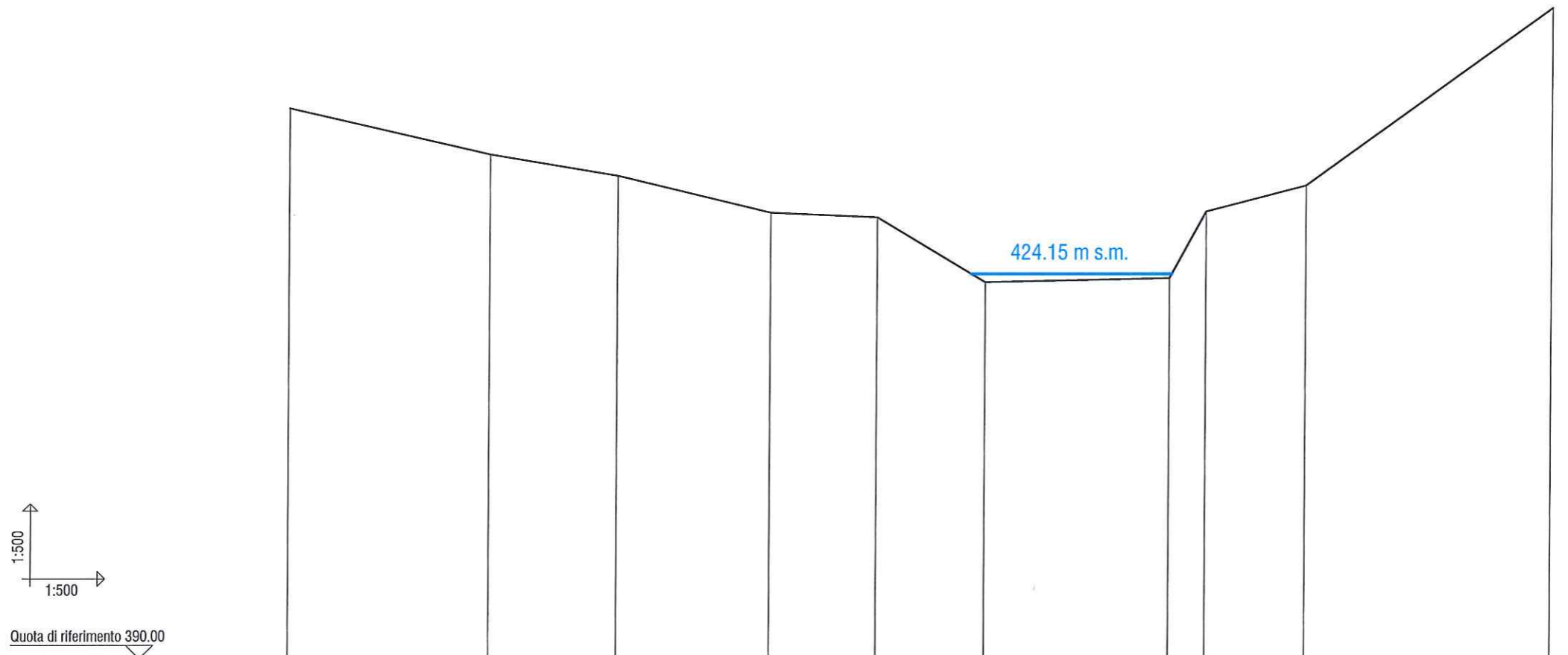
Sez. V36



Quota di riferimento 390.00

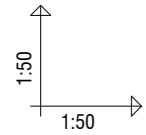
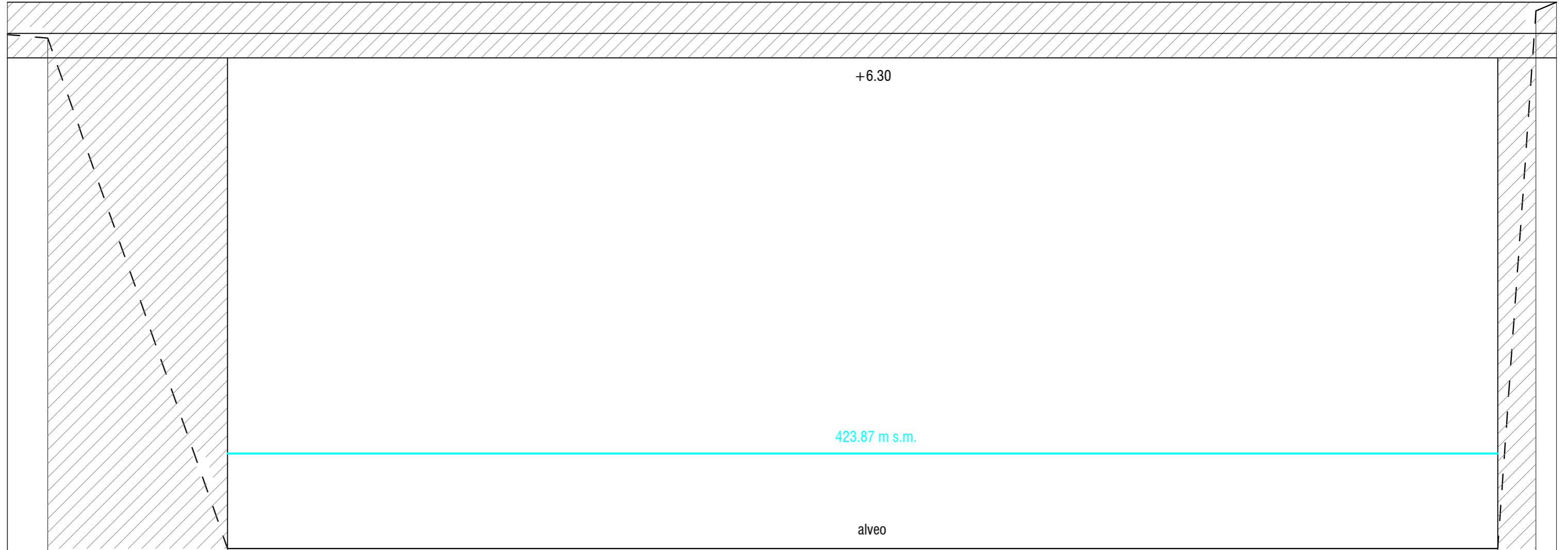
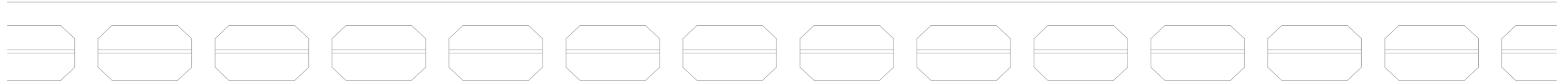
Numero punto	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Quota attuale	446.19	443.19	440.58	438.02	435.99	434.46	434.55	434.27	439.22	440.99	442.29	444.40	445.45	452.37
Distanza parziale quota attuale		12.06	1.53	3.11	2.78	4.84	4.32	1.81	7.81	6.18	7.25	5.48	4.68	14.03
Distanza progressiva quota attuale	0.00	12.06	13.59	17.11	19.87	24.71	29.02	30.86	38.67	44.84	52.09	57.57	62.25	76.28
Pendenza grafica quota attuale		-0.25	-1.44	-0.76	-0.73	-0.32	0.03	1.40	0.25	0.29	0.18	0.38	0.22	0.49

Sez. V37



Numero punto	1	2	3	4	5	6	7	8	9	10
Quota attuale	438.85	434.75	432.82	429.58	429.18	423.41	423.77	429.68	432.00	447.71
Distanza parziale quota attuale		17.80	11.31	13.53	9.45	9.62	16.28	3.24	8.80	21.76
Distanza progressiva quota attuale	0.00	17.80	29.11	42.64	52.10	61.71	78.00	81.23	90.03	111.79
Pendenza grafica quota attuale		-0.23	-0.17	-0.24	-0.04	-0.60	0.02	1.83	0.26	0.72

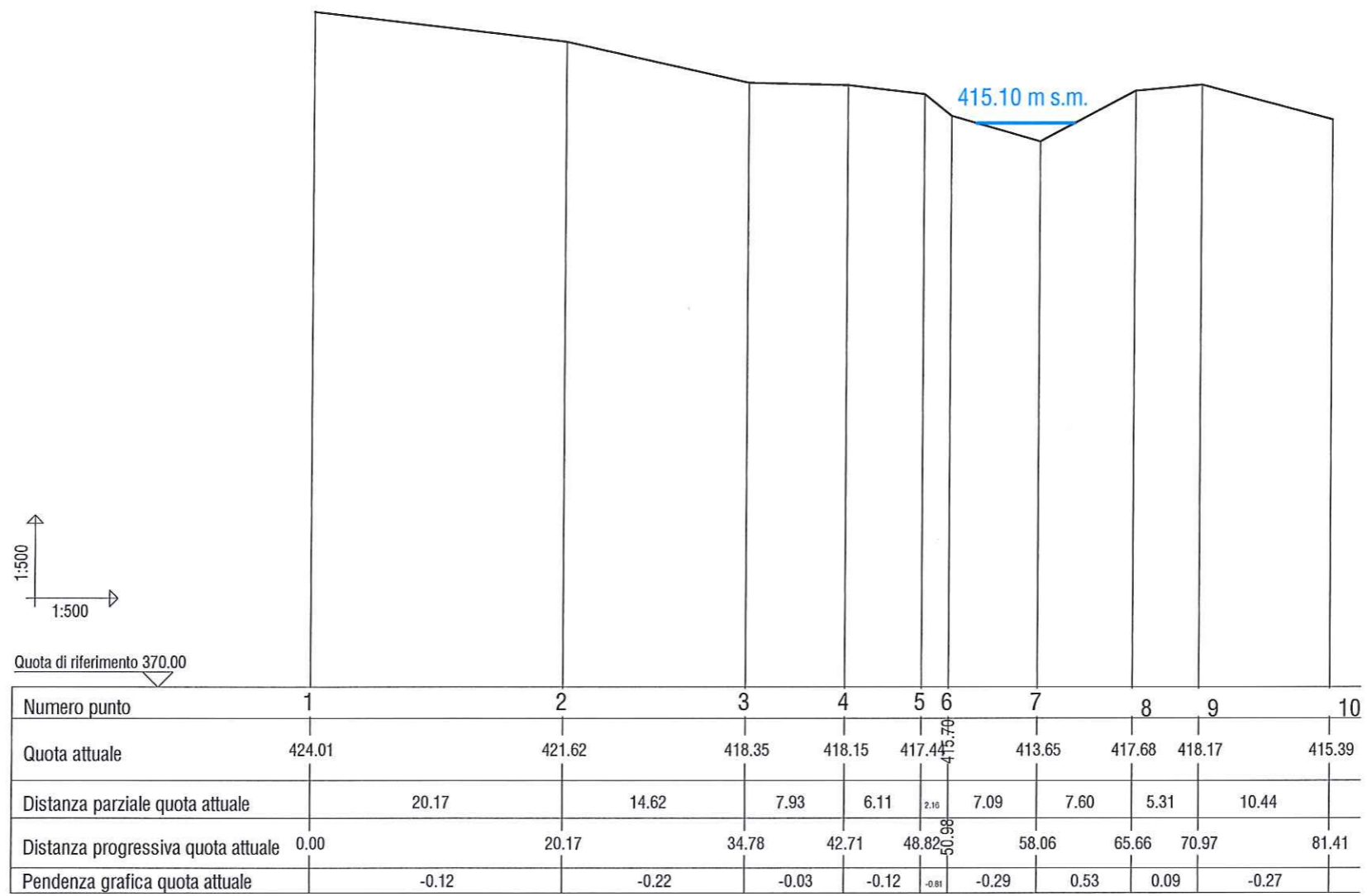
Sez. P6A



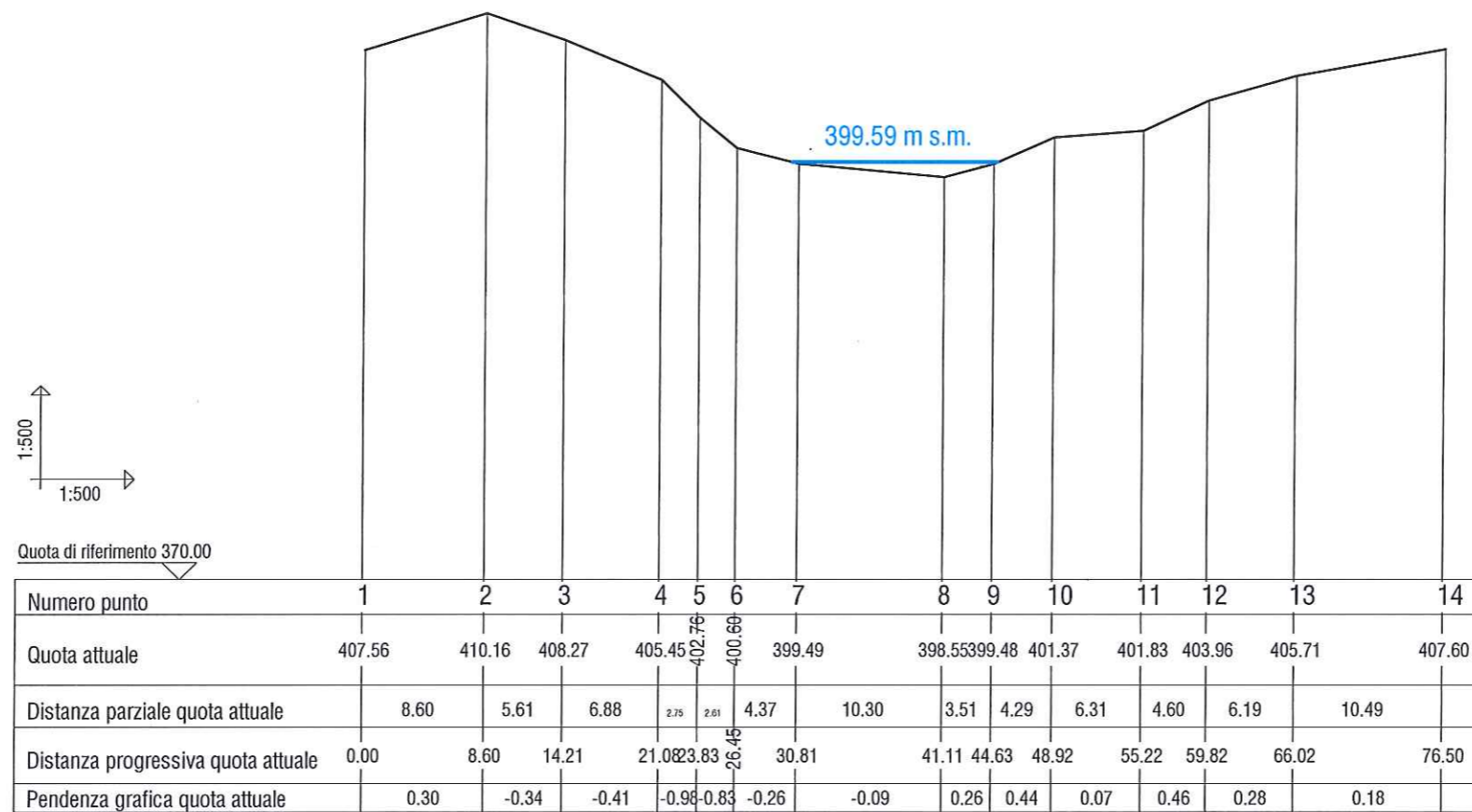
Quota di riferimento 421.00

Numero punto	1	2	3	4	5	6
Quota attuale	429.25	429.20	422.65	422.65	429.55	429.66
Distanza parziale quota attuale		0.52	2.31	16.29	0.49	0.26
Distanza progressiva quota attuale	0.00	0.52	2.82	19.11	19.60	19.86
Pendenza grafica quota attuale		-0.09	-2.84	0.00	14.05	0.42

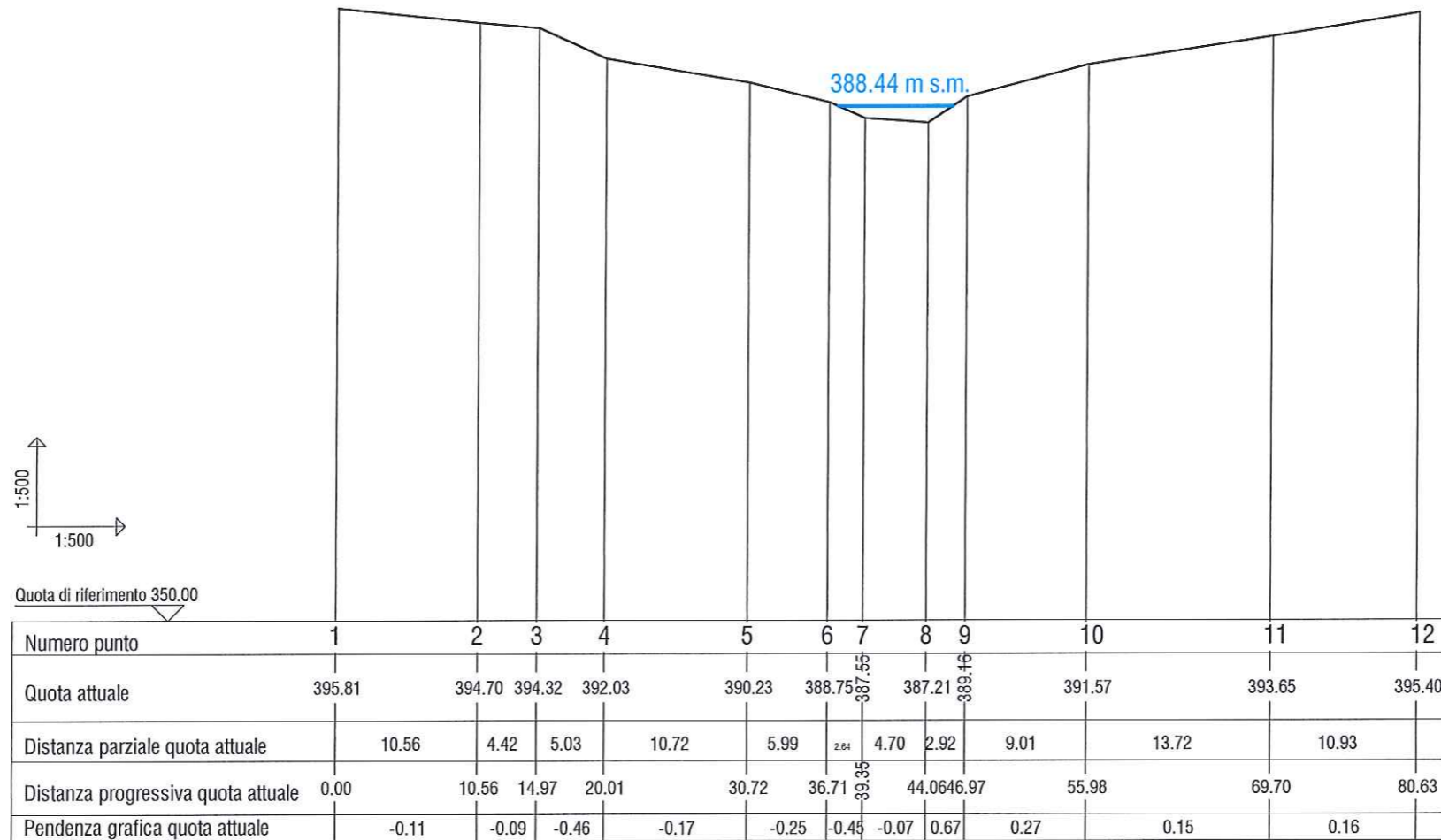
Sez. V38



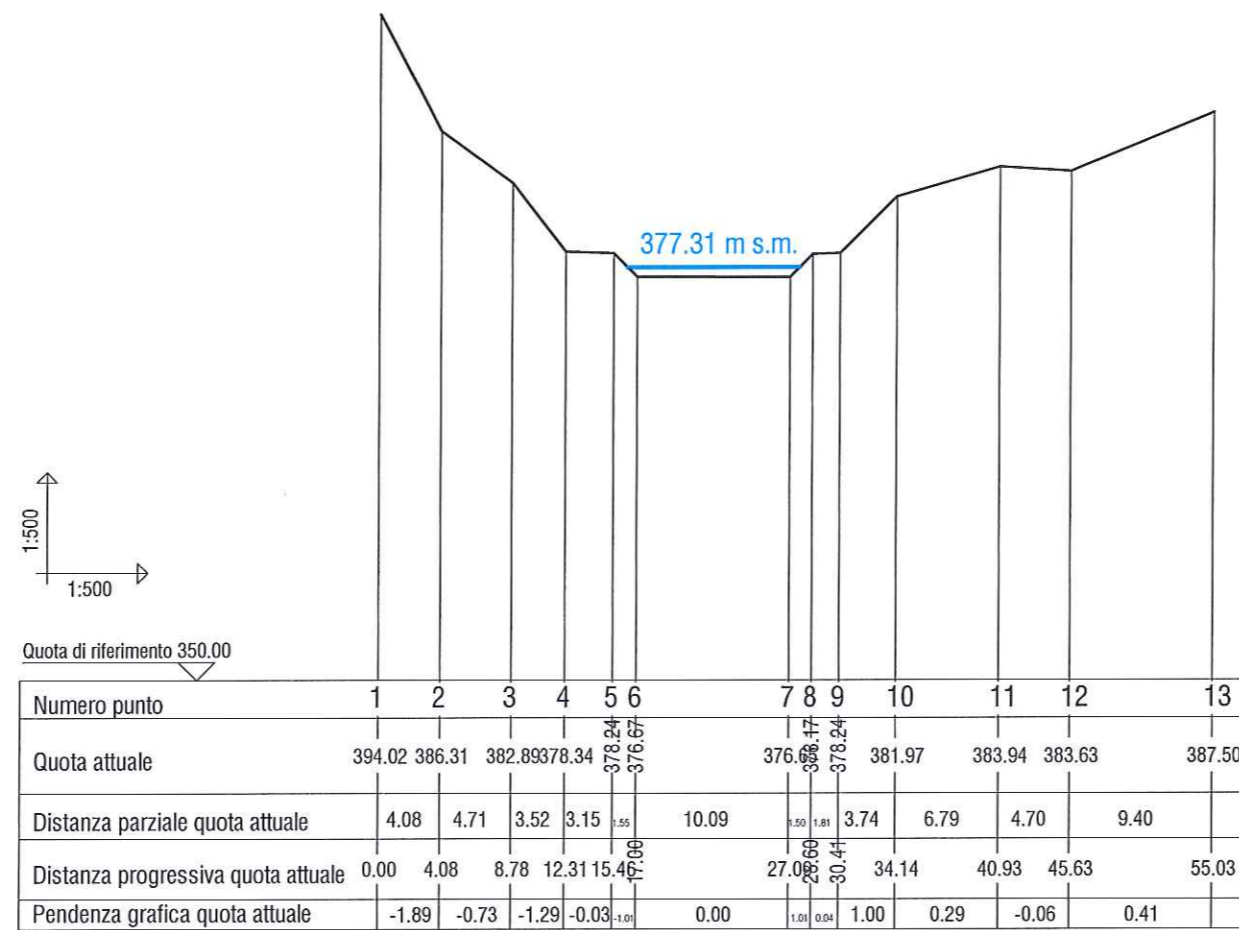
Sez. V39



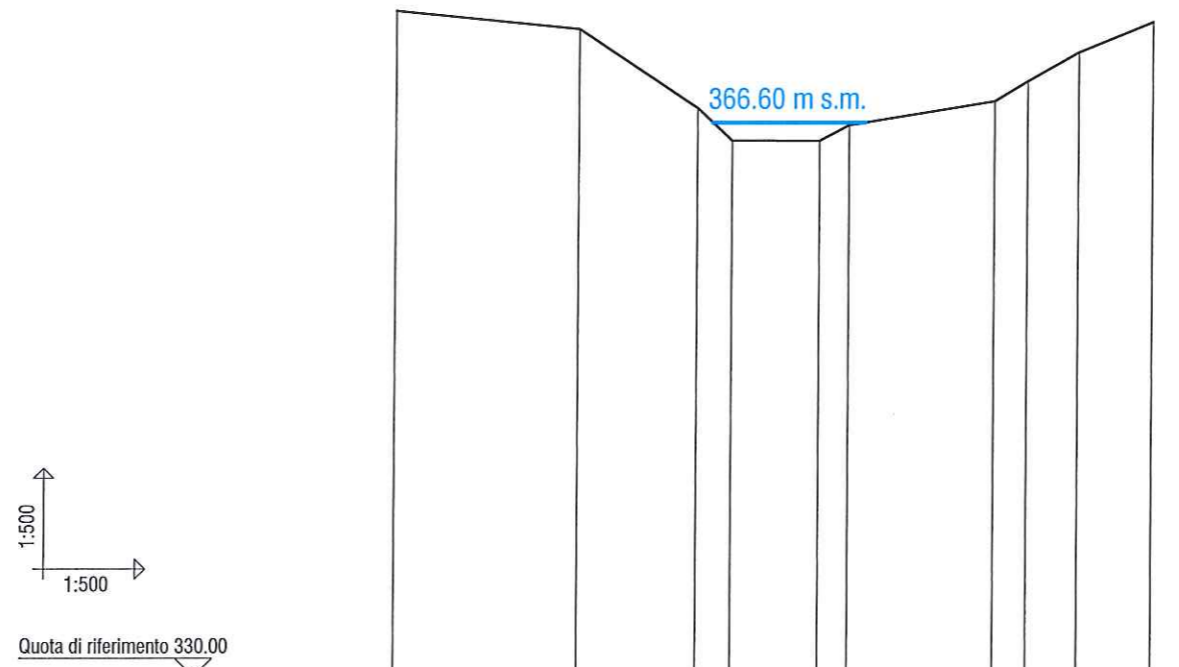
Sez. V40



Sez. V41

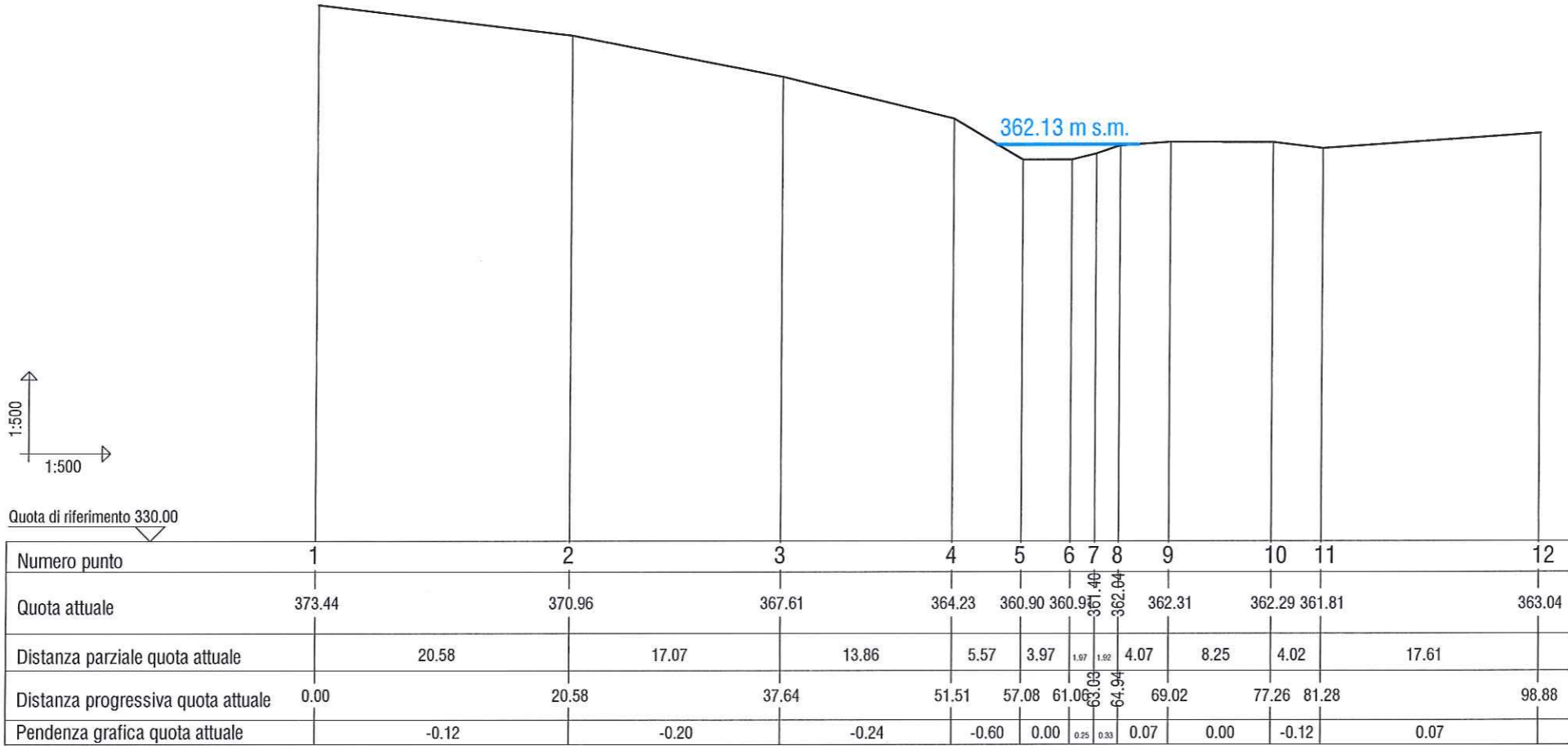


Sez. V42

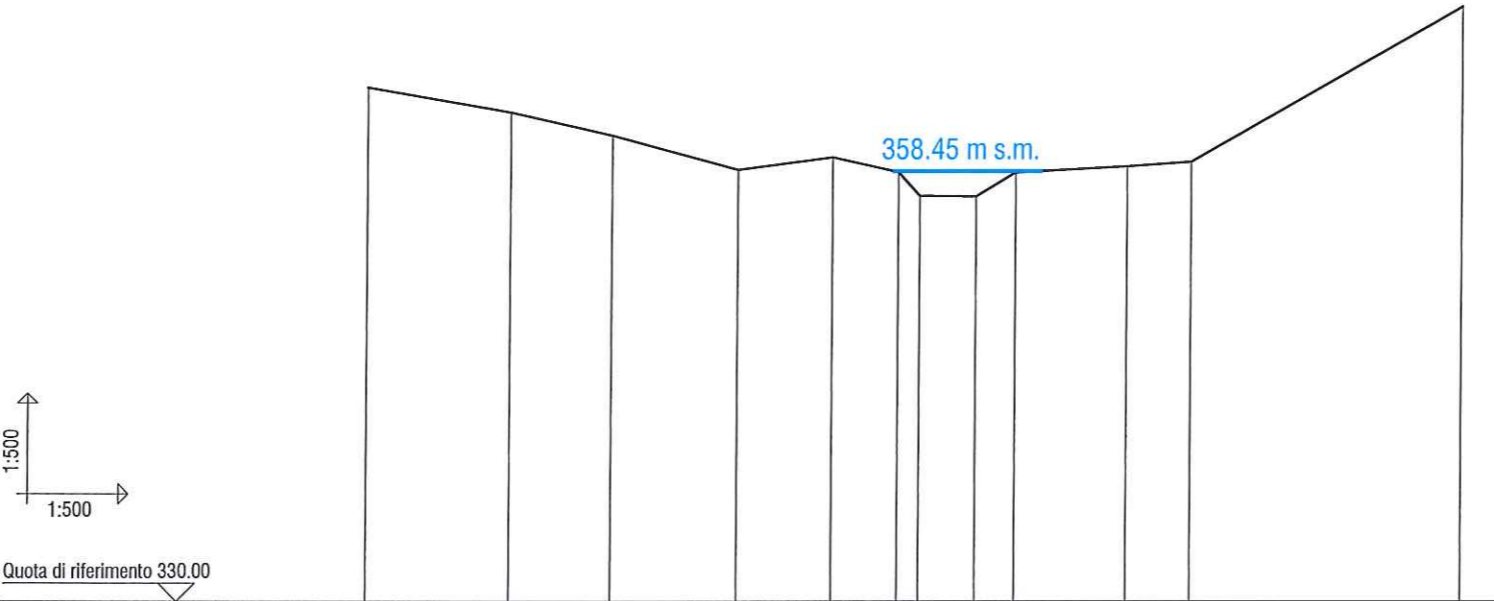


Numero punto	1	2	3	4	5	6	7	8	9	10
Quota attuale	374.01	372.79	367.57	366.60	365.36	367.98	371.21	373.20		
Distanza parziale quota attuale		12.16	7.81	2.29	5.76	1.94	9.62	2.17	3.36	4.88
Distanza progressiva quota attuale	0.00	12.16	19.97	22.26	28.02	29.96	39.57	41.74	45.11	49.99
Pendenza grafica quota attuale		-0.10	-0.67	-0.05	0.00	0.54	0.16	0.60	0.57	0.41

Sez. V43

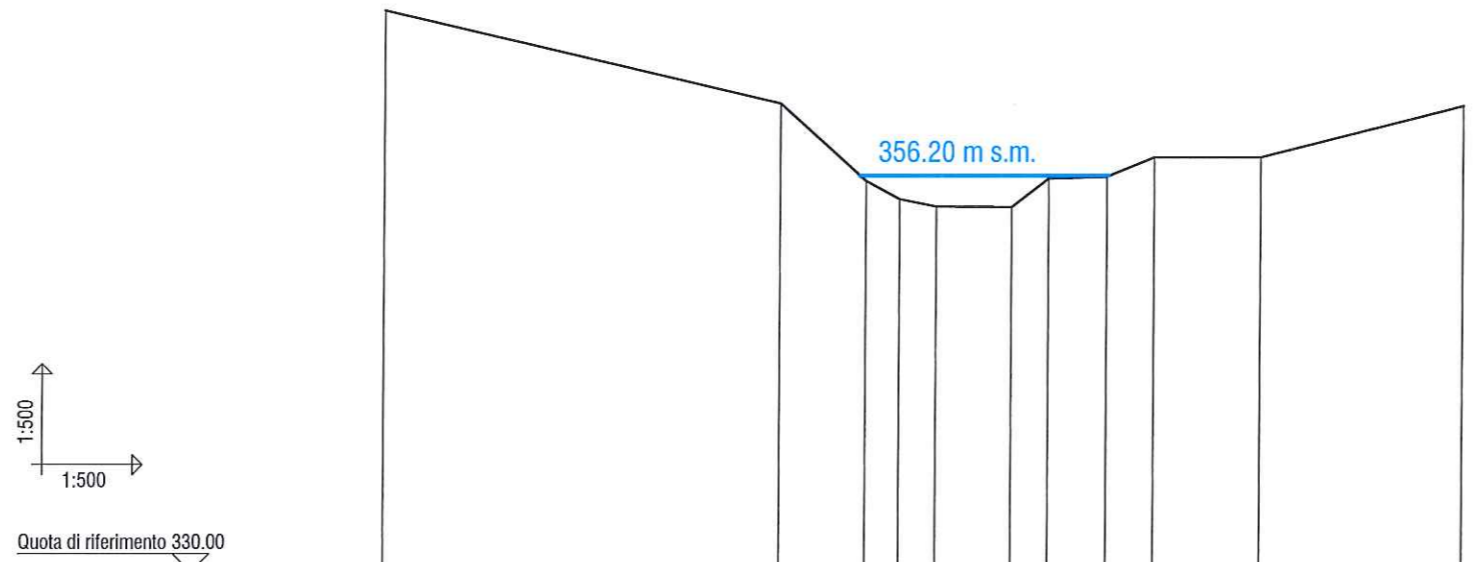


Sez. V44



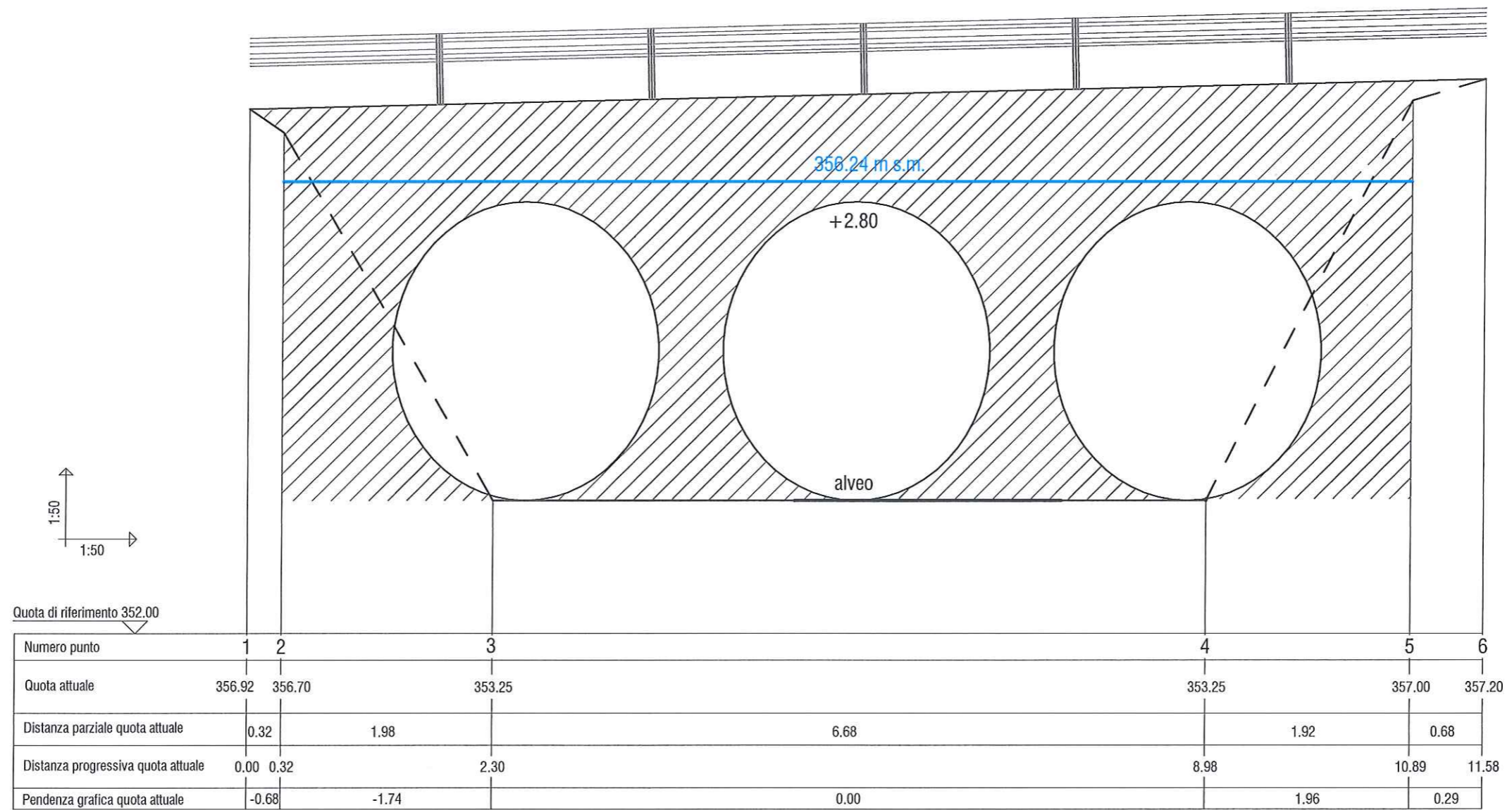
Numero punto	1	2	3	4	5	6	7	8	9	10	11	12
Quota attuale	363.97	362.32	360.80	358.52	359.36	358.98	358.45	356.78	358.96	358.75	359.05	369.28
Distanza parziale quota attuale		9.47	6.72	8.32	6.24	4.32	3.72	2.64	7.35	4.24	17.80	
Distanza progressiva quota attuale	0.00	9.47	16.19	24.51	30.75	35.07	40.17	42.82	50.17	54.41		72.21
Pendenza grafica quota attuale		-0.17	-0.23	-0.27	0.13	-0.23	-0.01	0.60	0.05	0.07	0.57	

Sez. V45

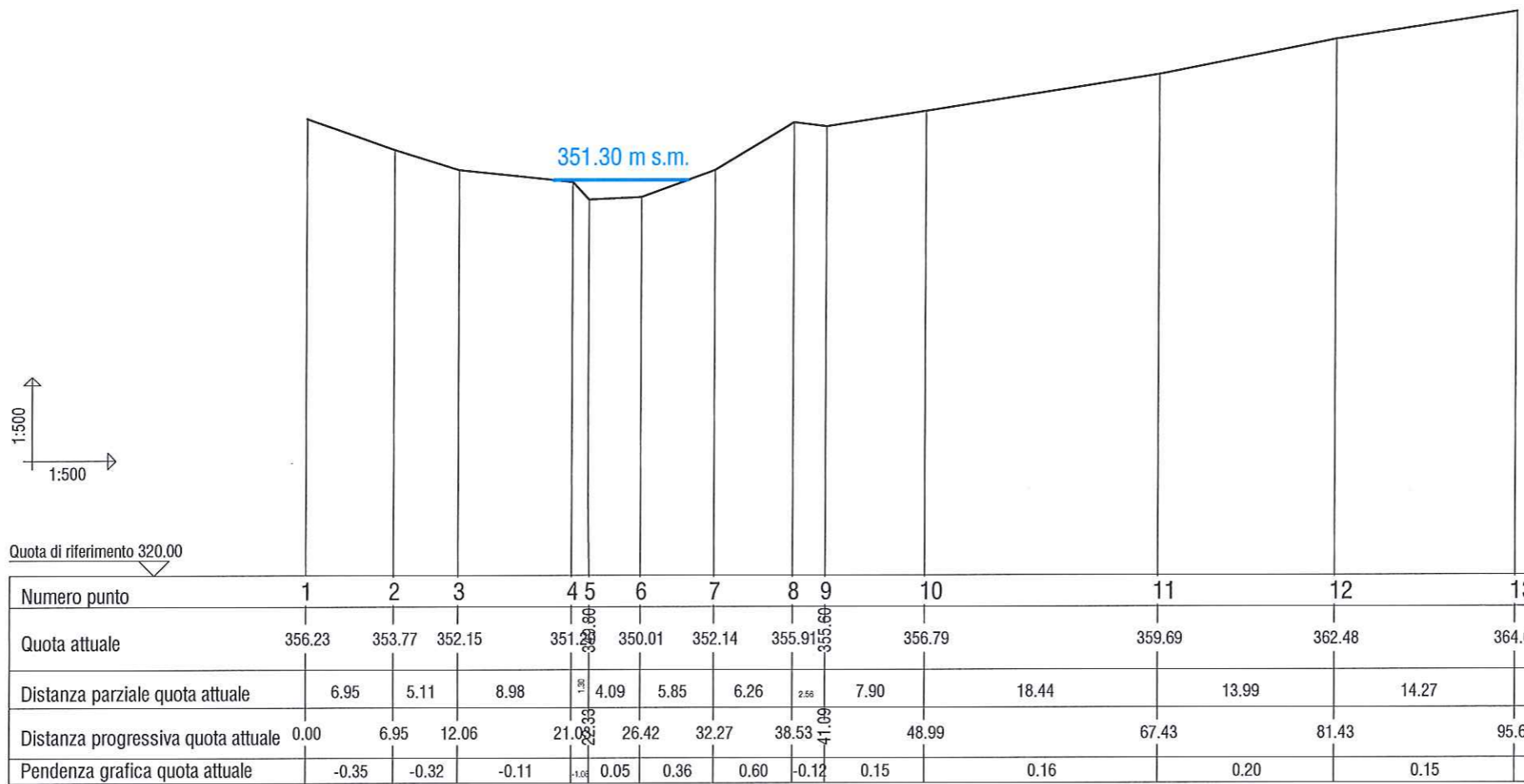


Numero punto	1	2	3	4	5	6	7	8	9	10	11
Quota attuale	367.14	361.00	355.86	354.65	354.47	354.14	356.02	356.16	357.43	357.43	360.80
Distanza parziale quota attuale		26.15	5.64	2.22	2.45	4.98	2.44	3.83	3.11	6.99	13.37
Distanza progressiva quota attuale	0.00	26.15	31.79	34.01	36.46	41.44	43.88	47.71	50.82	57.81	71.18
Pendenza grafica quota attuale		-0.23	-0.91	-0.51	-0.20	-0.01	0.77	0.03	0.41	0.00	0.25

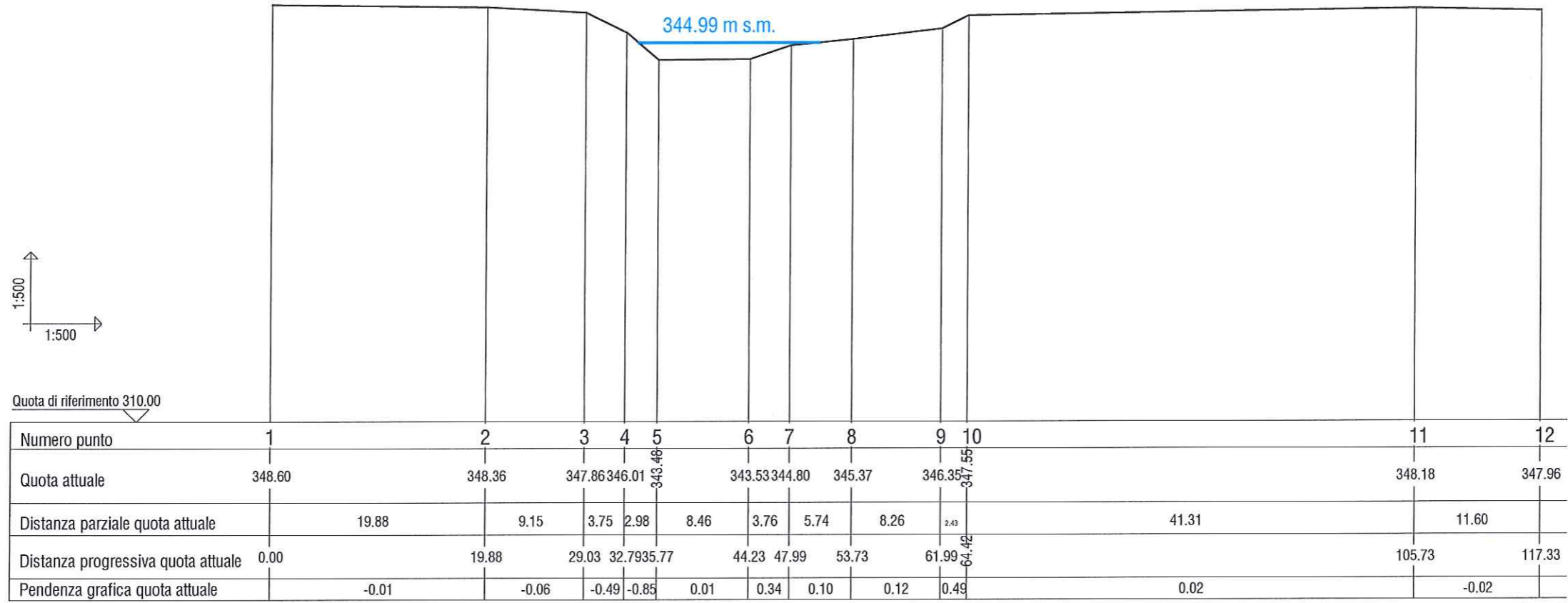
Sez. P7A



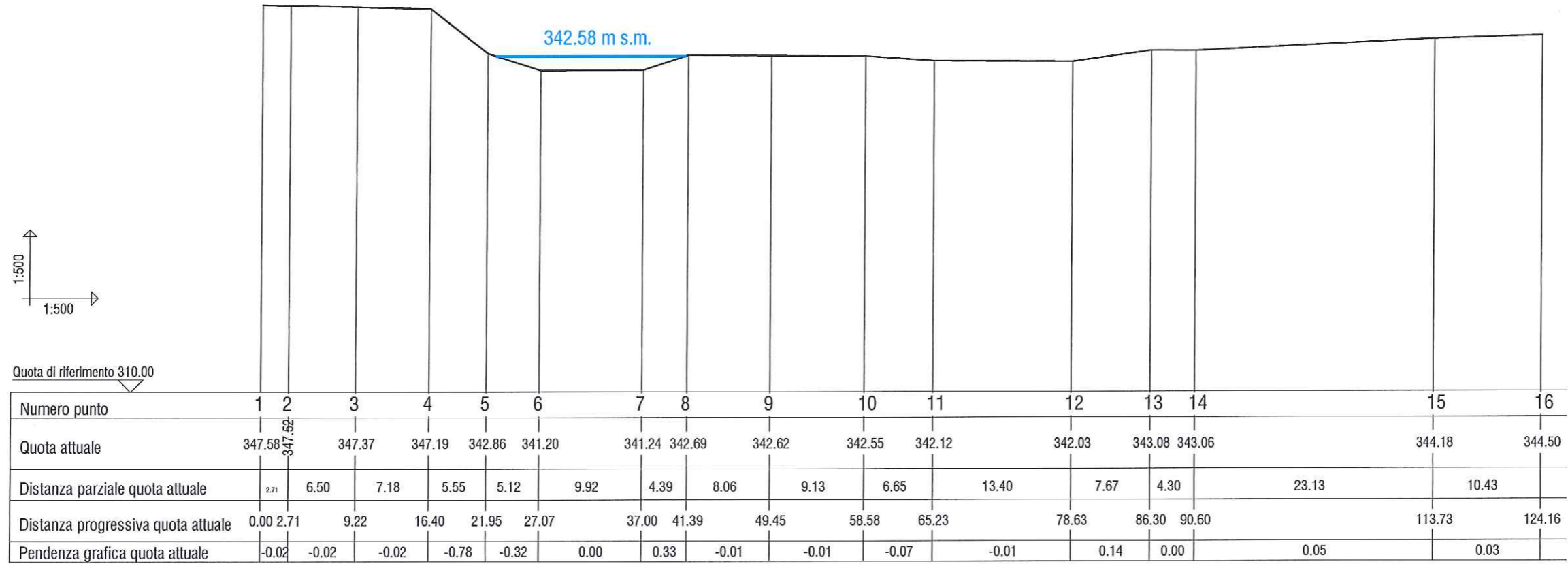
Sez. V46



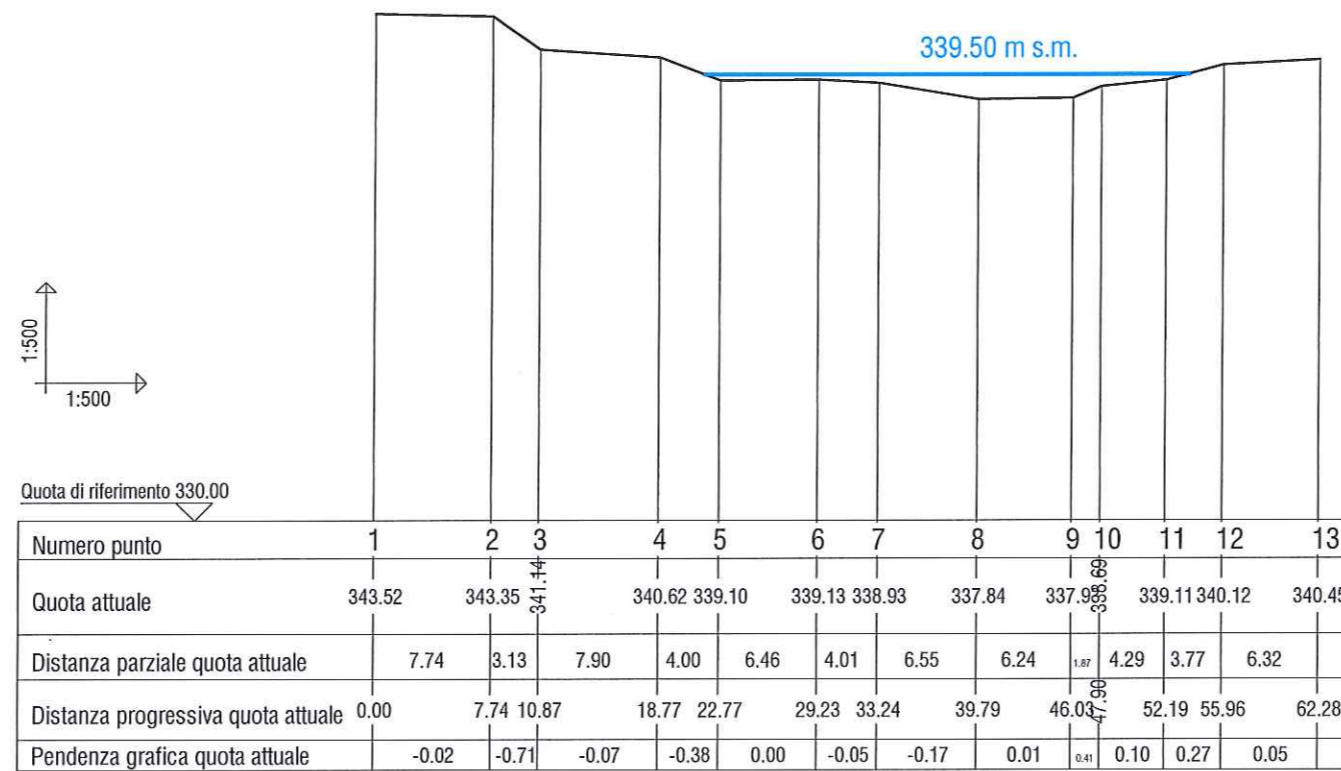
Sez. V47



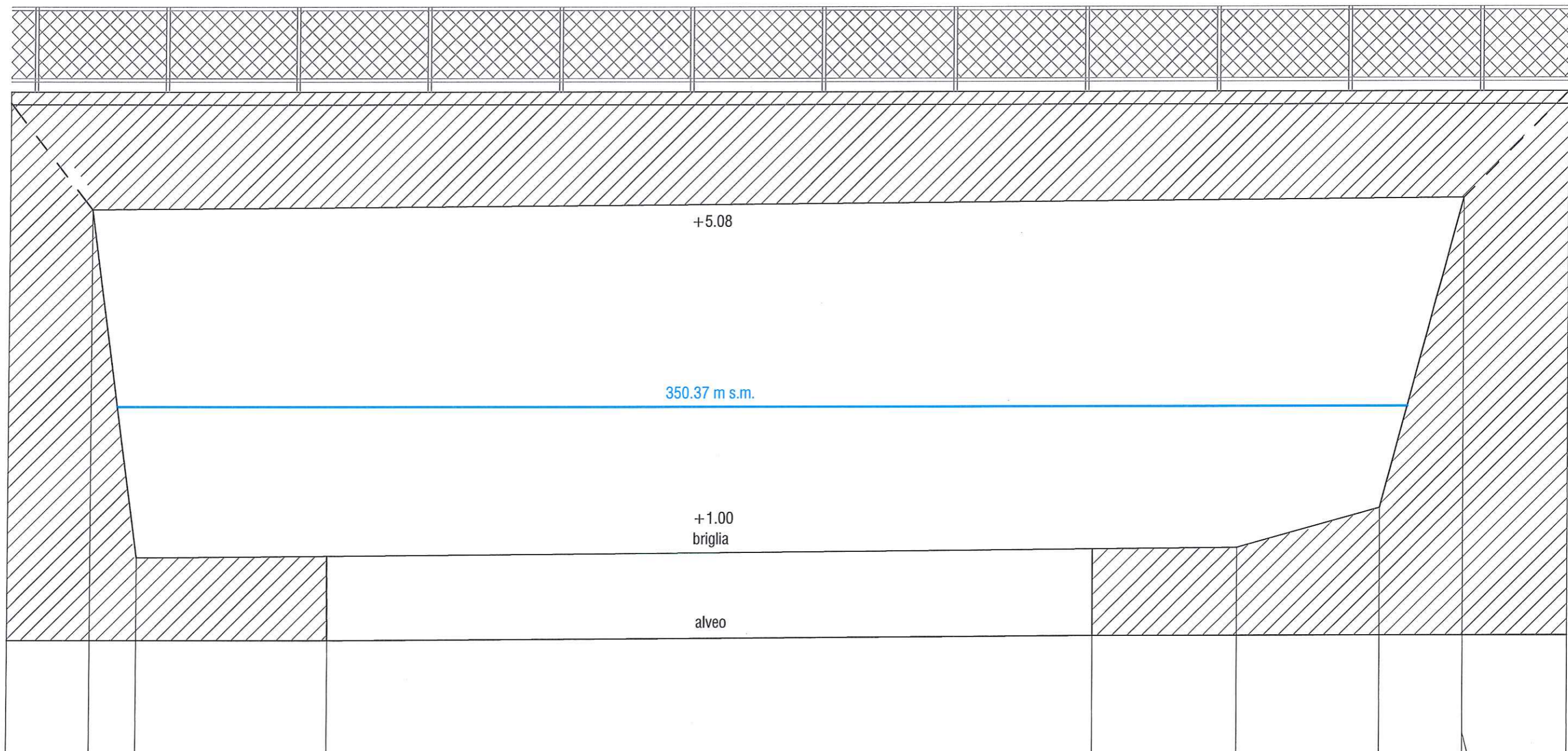
Sez. V48



Sez. V49



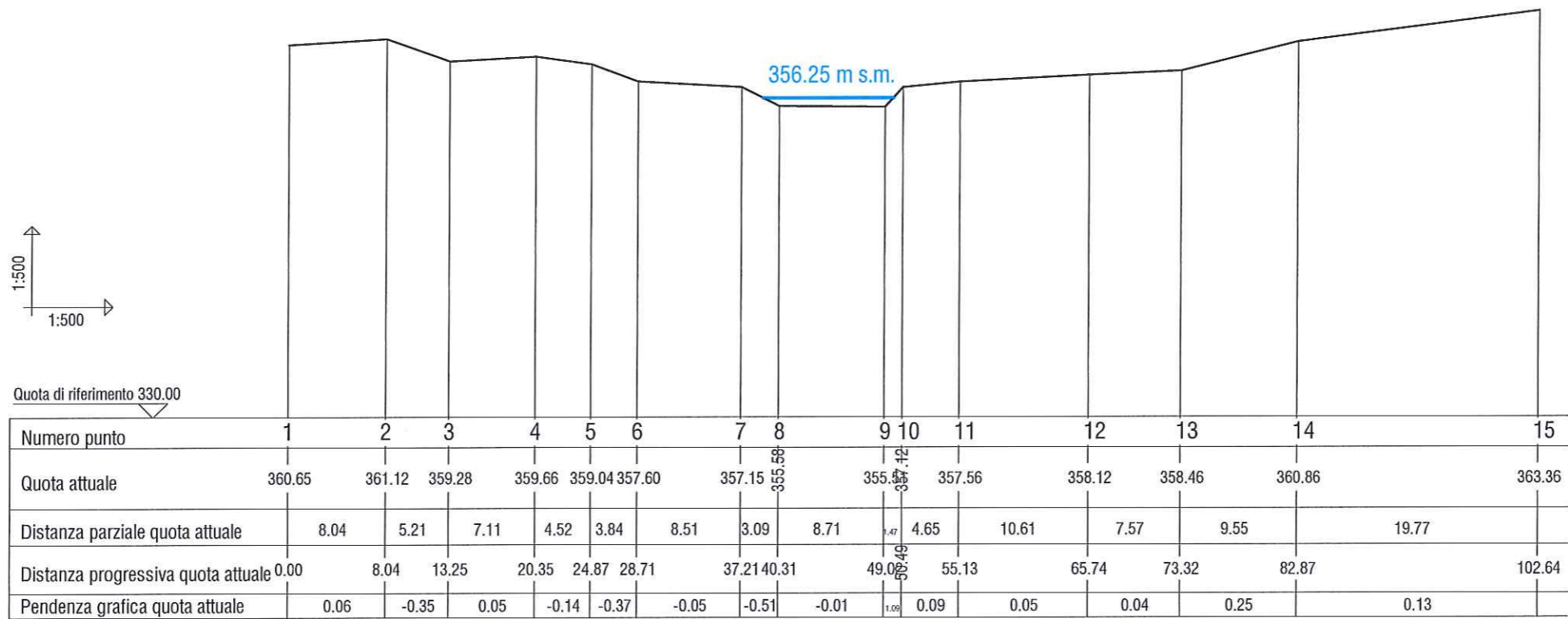
Sez. P8B



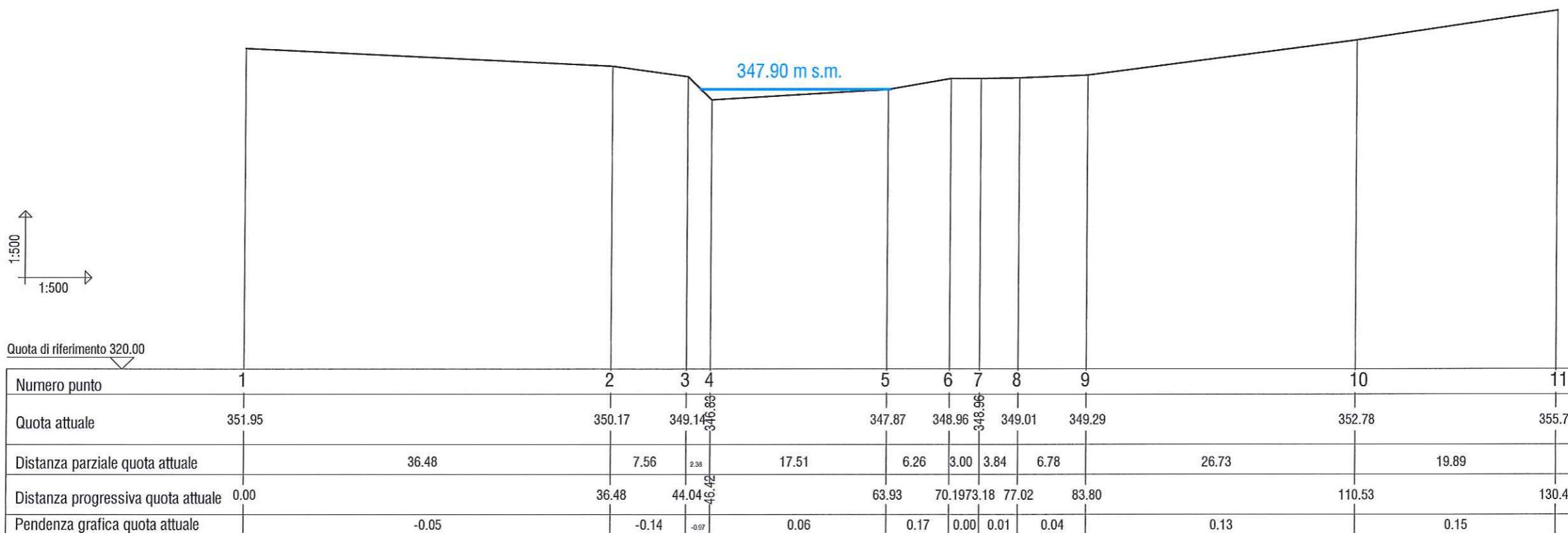
Quota di riferimento 346.00

Numero punto	1	2	3	4	5	6	7	8	9	10
Quota attuale	353.93	352.68	348.60	347.63	347.68	348.72	349.18	352.81	352.81	354.1
Distanza parziale quota attuale		0.97	0.55	2.25	8.94	1.69	1.67	0.97	0.00	1.22
Distanza progressiva quota attuale	0.00	0.97	1.51	3.76	12.71	14.39	16.06	17.03	17.03	18.2
Pendenza grafica quota attuale		-1.29	-7.49	-0.43	0.01	0.61	0.28	3.73	-	1.02

Sez. V50



Sez. V51



Sez. V52

