



CÂMARA MUNICIPAL DE CASCAIS

ATUALIZAÇÃO DA CARTA DE ÁREAS INUNDÁVEIS
DO CONCELHO DE CASCAIS PARA O PERÍODO DE RETORNO
DE 100 ANOS

RELATÓRIO



SETEMBRO 2012



ATUALIZAÇÃO DA CARTA DE ÁREAS INUNDÁVEIS
DO CONCELHO DE CASCAIS PARA O PERÍODO DE RETORNO
DE 100 ANOS



EQUIPA TÉCNICA

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ATUALIZAÇÃO DA CARTA DE ÁREAS INUNDÁVEIS DO CONCELHO DE CASCAIS PARA O PERÍODO DE RETORNO DE 100 ANOS



ÍNDICE DO DOCUMENTO

1	INTRODUÇÃO	1
2	METODOLOGIA.....	2
3	ELEMENTOS RECOLHIDOS NO CAMPO	3
4	RESULTADOS OBTIDOS.....	4

ANEXO I – PASSAGENS HIDRÁULICAS. ELEMENTOS RECOLHIDOS NO CAMPO

ANEXO II – RESULTADOS DA MODELAÇÃO HIDRÁULICA REALIZADA

ANEXO III – CARTA DE ÁREAS INUNDÁVEIS DO CONCELHO DE CASCAIS



1 Introdução

O presente relatório refere-se à "Atualização da Carta de Áreas Inundáveis do Concelho de Cascais para o Período de Retorno de 100 anos", elaborada em 2009 pela Hidroprojecto.

A necessidade de atualizar a carta anteriormente elaborada, decorreu da análise feita pela Comissão de Coordenação e Desenvolvimento de Lisboa e Vale do Tejo (CCDR-LVT) e pela Administração de Região Hidrográfica do Tejo (ARH do Tejo), e da constatação que haveria que ter em conta determinadas obras, entretanto realizadas e licenciadas por estas entidades, que têm consequências na delimitação das áreas inundadas apresentadas.

Adicionalmente, foi solicitada a incorporação no modelo das dimensões de algumas passagens hidráulicas mais significativas, e que fosse aumentado o número de secções estudadas em cada uma das ribeiras agora em estudo.

Constituindo-se este relatório como uma adenda ao relatório anterior, optou-se por não repetir nele informação já anteriormente exposta, apresentando-se tão-somente, os resultados obtidos para as ribeiras agora analisadas.



2 Metodologia



As ribeiras cujas áreas inundadas foram alvo de actualização listam-se de seguida:

- Ribeira da Foz do Guincho – apenas afluente da margem esquerda (Murches - Charneca, que passa em Aldeia do Juzo);
- Ribeira do Arneiro (afluente da ribeira da Laje);
- Ribeira de Bicesse;
- Ribeira de Caparide;
- Ribeira da Castelhana;
- Ribeira das Marianas;
- Ribeira dos Mochos e
- Ribeira de Sassoeiros.

De forma a atualizar a carta de áreas inundáveis no que respeita a estas ribeiras, recuperou-se o modelo hidráulico anteriormente utilizado, bem como os caudais estimados no estudo hidrológico realizado pela Hidroprojecto em 2009, os respectivos hidrogramas e o mesmo modelo digital do terreno.

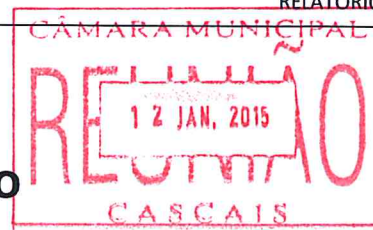
Correu-se então o modelo HEC-RAS para as ribeiras referidas, introduzindo as alterações necessárias de forma a incluir as passagens hidráulicas levantadas e respectivas dimensões, bem como um maior número de secções, e assim aferir as manchas de inundação anteriormente obtidas.

As intervenções entretanto realizadas em determinados troços das ribeiras não estão contempladas na cartografia de base, pelo que não se encontram traduzidas diretamente nos resultados da modelação apresentados. Assim sendo, e de forma a responder à solicitação da APA-ARH Tejo, houve necessidade de ajustar as manchas de inundação resultantes do modelo de acordo com a informação constante nos Planos de Pormenor respetivos.



3 Elementos recolhidos no campo

Os elementos relativos às passagens hidráulicas incluídas no modelo, fornecidos pela C.M. Cascais de acordo com o solicitado, apresentam-se no Anexo I.



4 Resultados obtidos

No Anexo II apresenta-se, para cada uma das ribeiras estudadas, o resultado da modelação da propagação dos caudais de ponta de cheia correspondentes ao período de retorno de 100 anos, realizada no âmbito da presente consulta. Nas figuras apresentadas é indicada a altura de água atingida em cada uma das PH analisadas.

No Anexo III apresenta-se a carta de áreas inundáveis do concelho de Cascais.



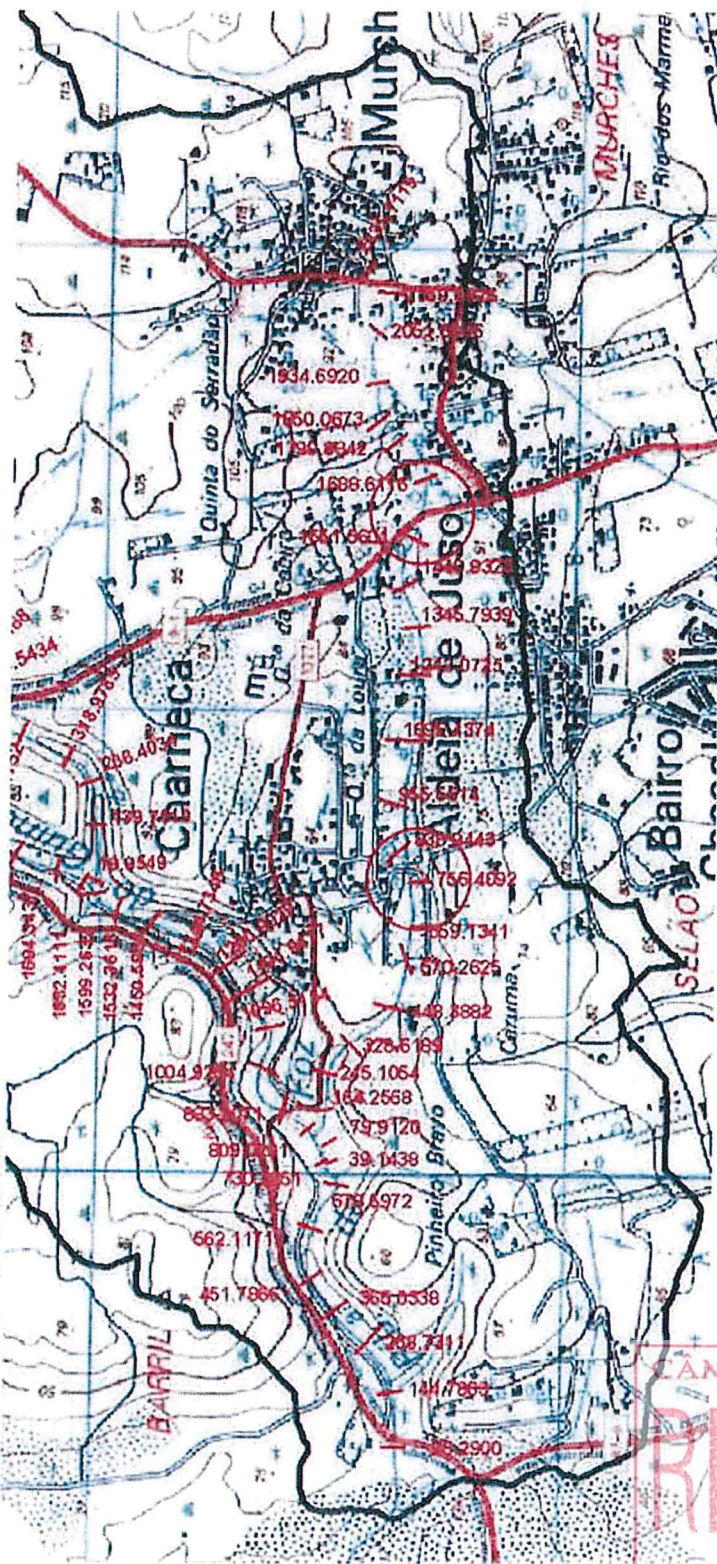


ANEXO I
PASSAGENS HIDRÁULICAS. ELEMENTOS RECOLHIDOS NO
CAMPO



A handwritten signature in blue ink, consisting of a stylized 'A' followed by a flourish.

Afluente da ribeira da Foz do Guincho



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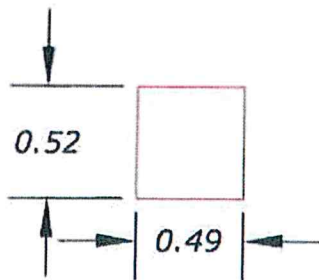
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Afluente da Ribeira da Foz do Guincho 1

Comprimento da Secção - 5.90m

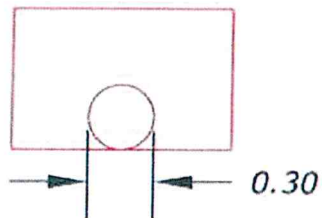
Perimetro - 2.02m



Afluente da Ribeira da Foz do Guincho 2

Terreno Particular Fechado

Comprimento da Secção - 38.90m



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Afluente da Ribeira da Foz do Guincho



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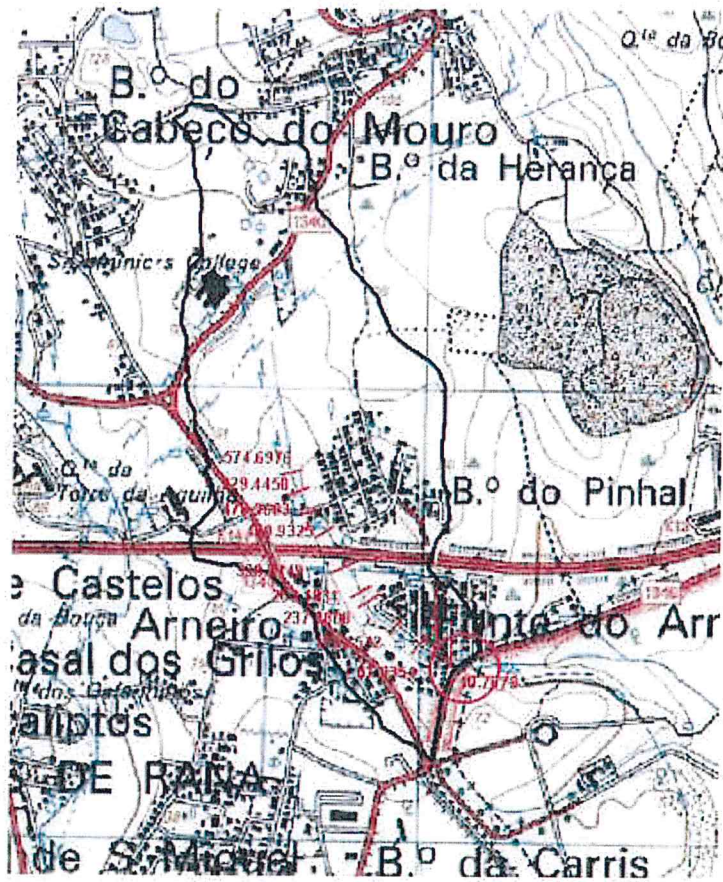
Afluente da Ribeira da Foz do Guincho



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12 JAN. 2015
CASCAIS



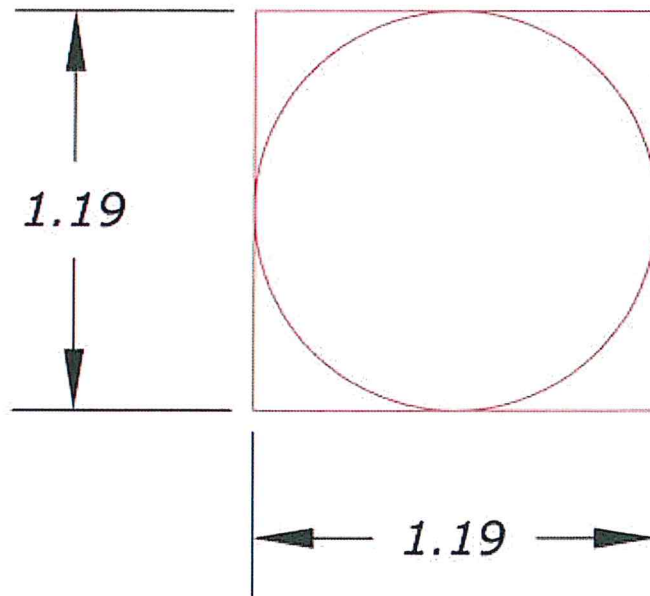
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Ribeira do Arneiro 1

Comprimento da Secção - 111.00m

Perimetro - 3.72m



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Ribeira do Arneiro

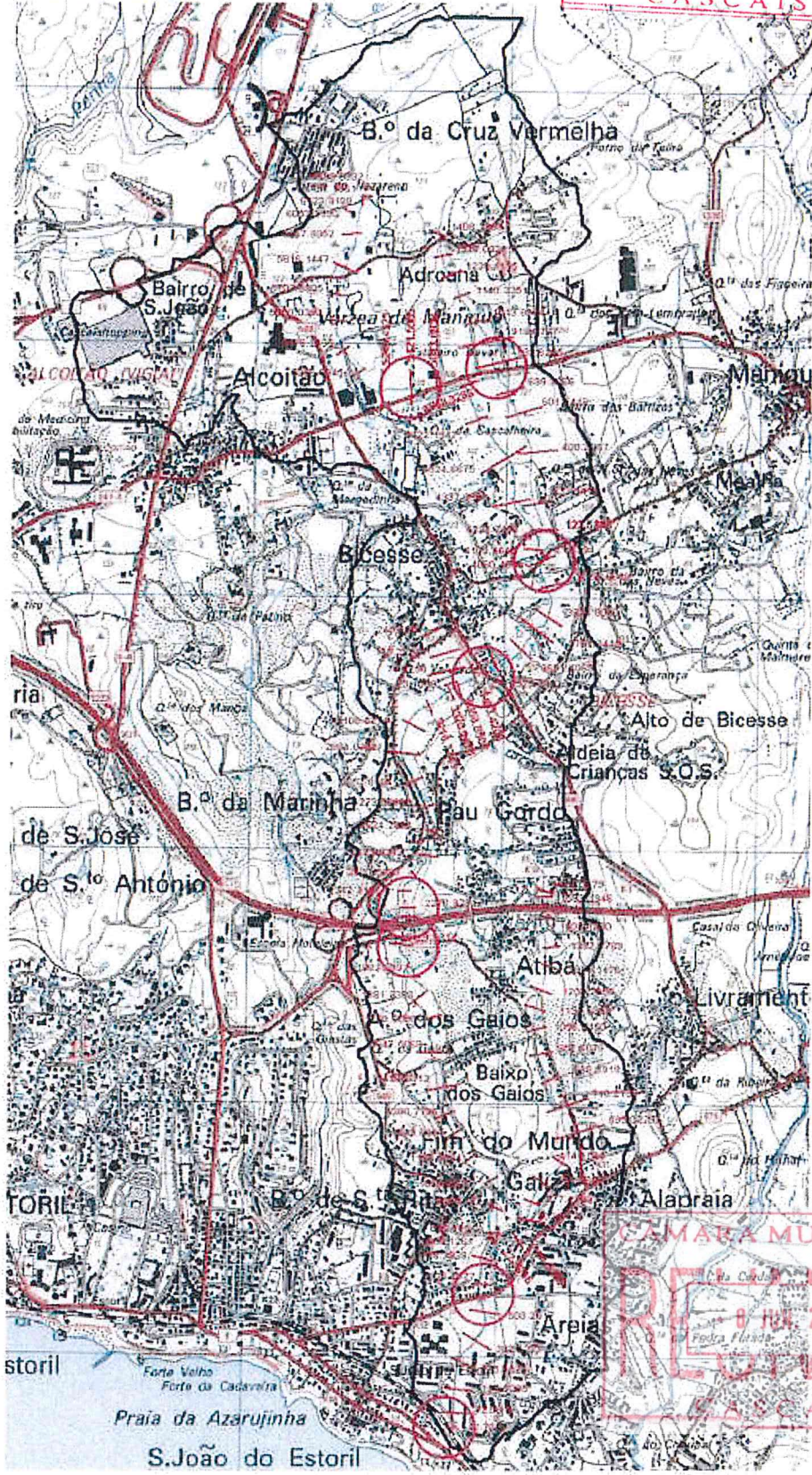


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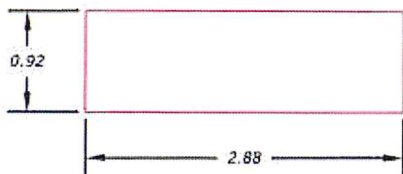
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Ribeira de Bicesse

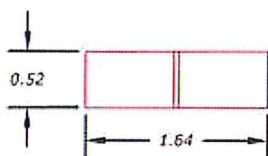


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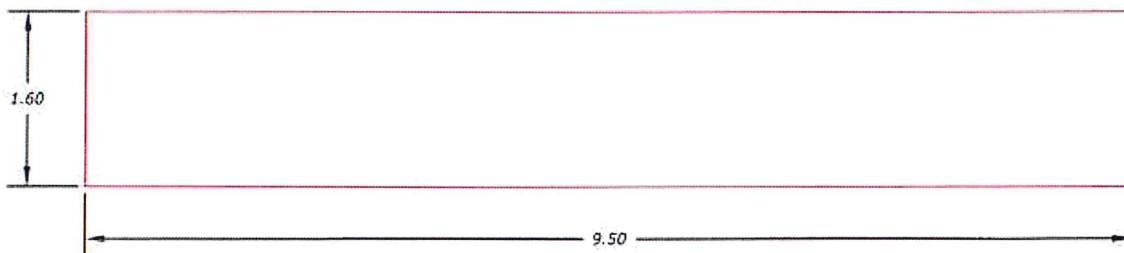
Ribeira de Bicesse 8
Comprimento da Secção - 23.70m
Perímetro - 7.60m



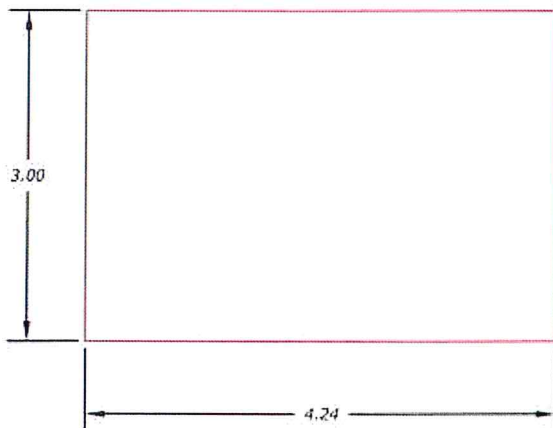
Ribeira de Bicesse 7
Comprimento da Secção - 8.15m
Perímetro - 4.32m



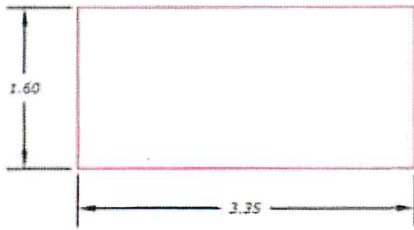
Ribeira de Bicesse 6
Comprimento da Secção - 11.15m
Perímetro - 22.20m



Ribeira de Bicesse 5
Comprimento da Secção - 11.30m
Perímetro - 14.48m

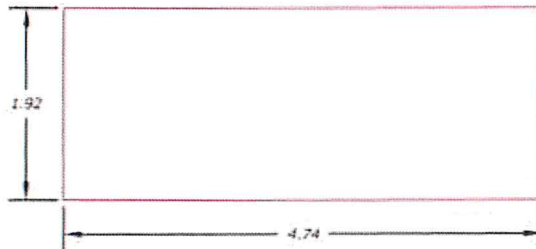


Ribeira de Bicesse 4
Comprimento da Secção - 114,00m
Perímetro - 9,90m

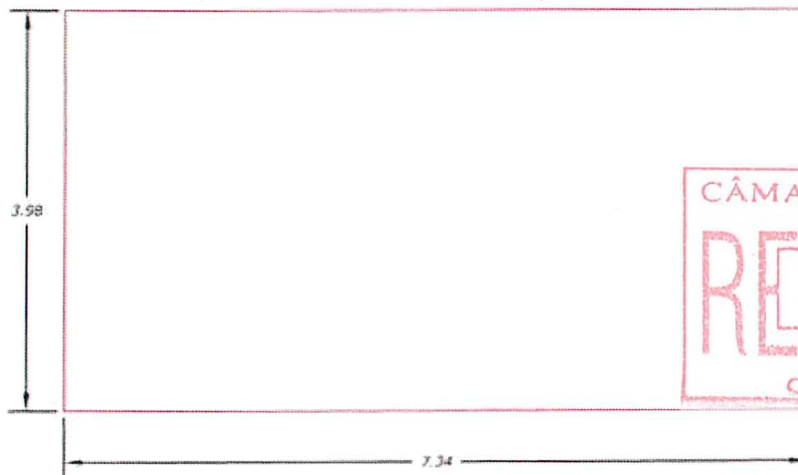


Ribeira de Bicesse 3
Tapada

Ribeira de Bicesse 2
Comprimento da Secção - 13,30m
Perímetro - 13,32m

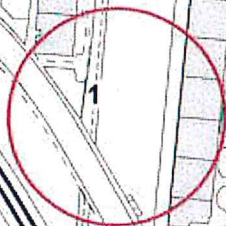


Ribeira de Bicesse 1
Comprimento da Secção - 23,70m
Perímetro - 22,54m



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Ribeira de Bicesse



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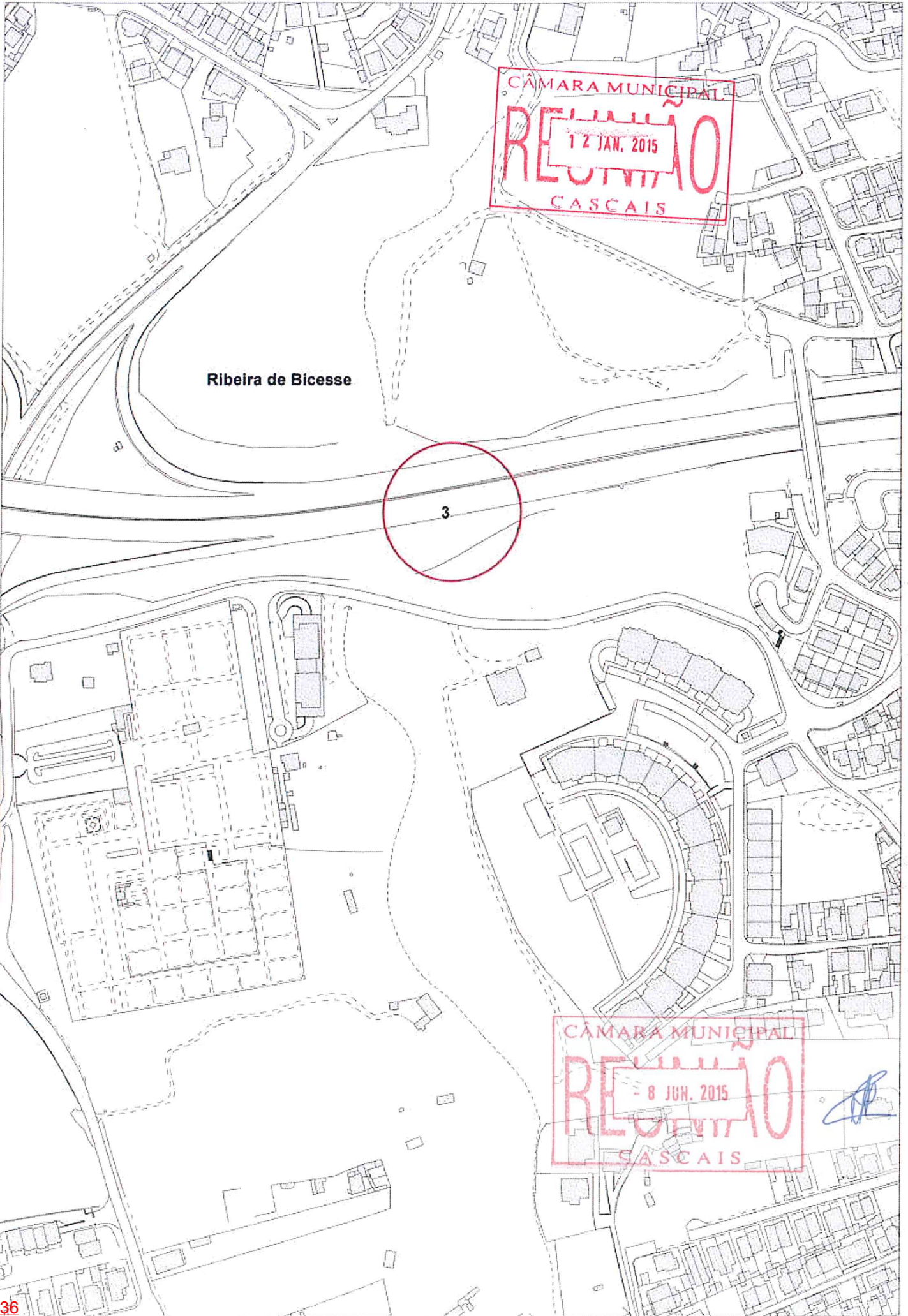
CÂMARA MUNICIPAL
REUNIAO
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CASCAIS

Ribeira de Bicesse



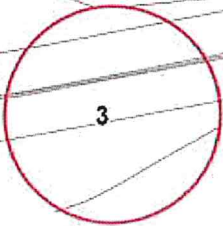
2

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Ribeira de Bicesse

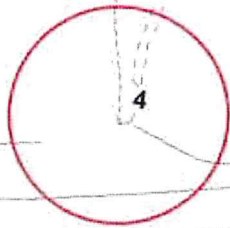


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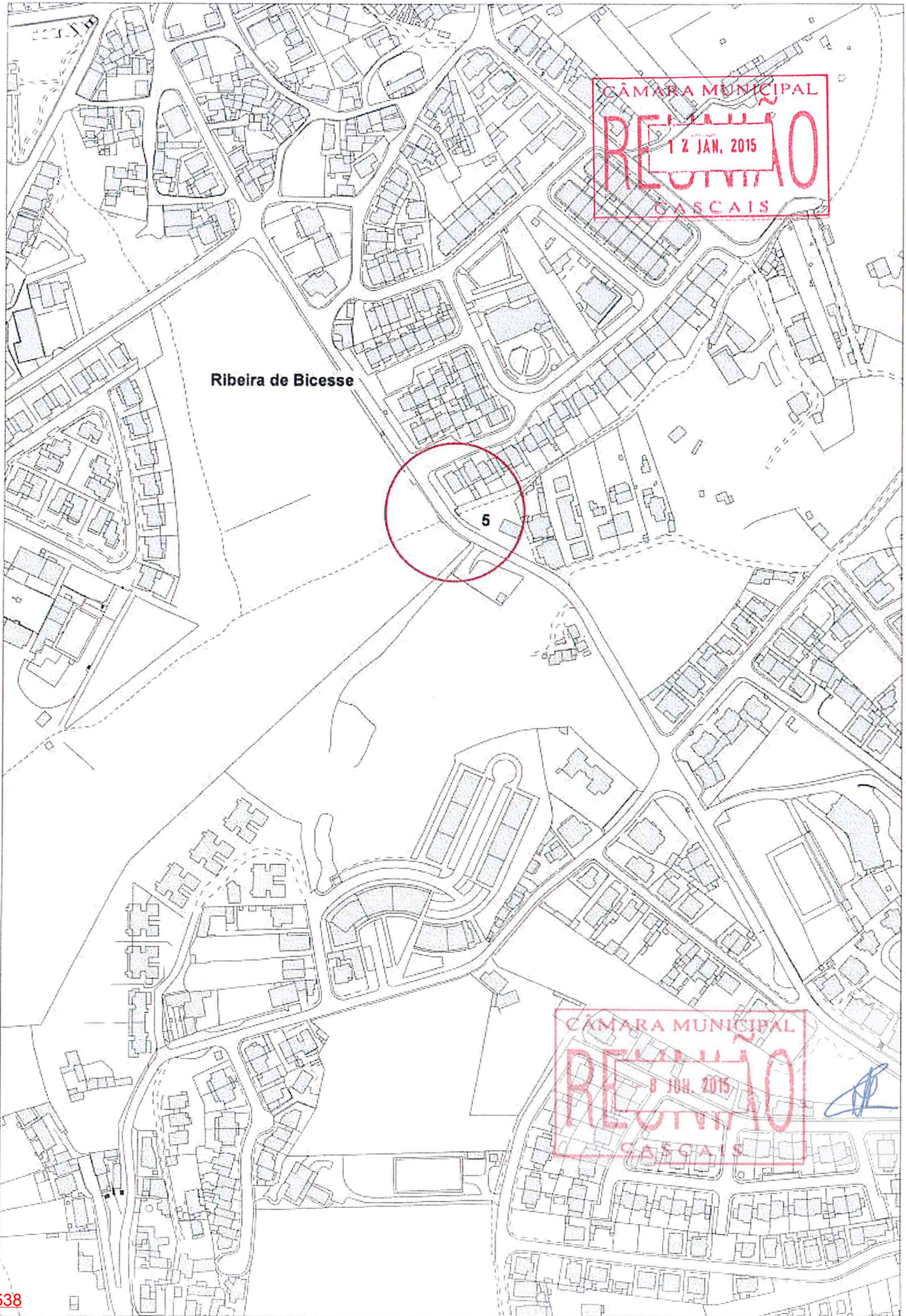
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Ribeira de Bicesse



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Ribeira de Bicesse

5

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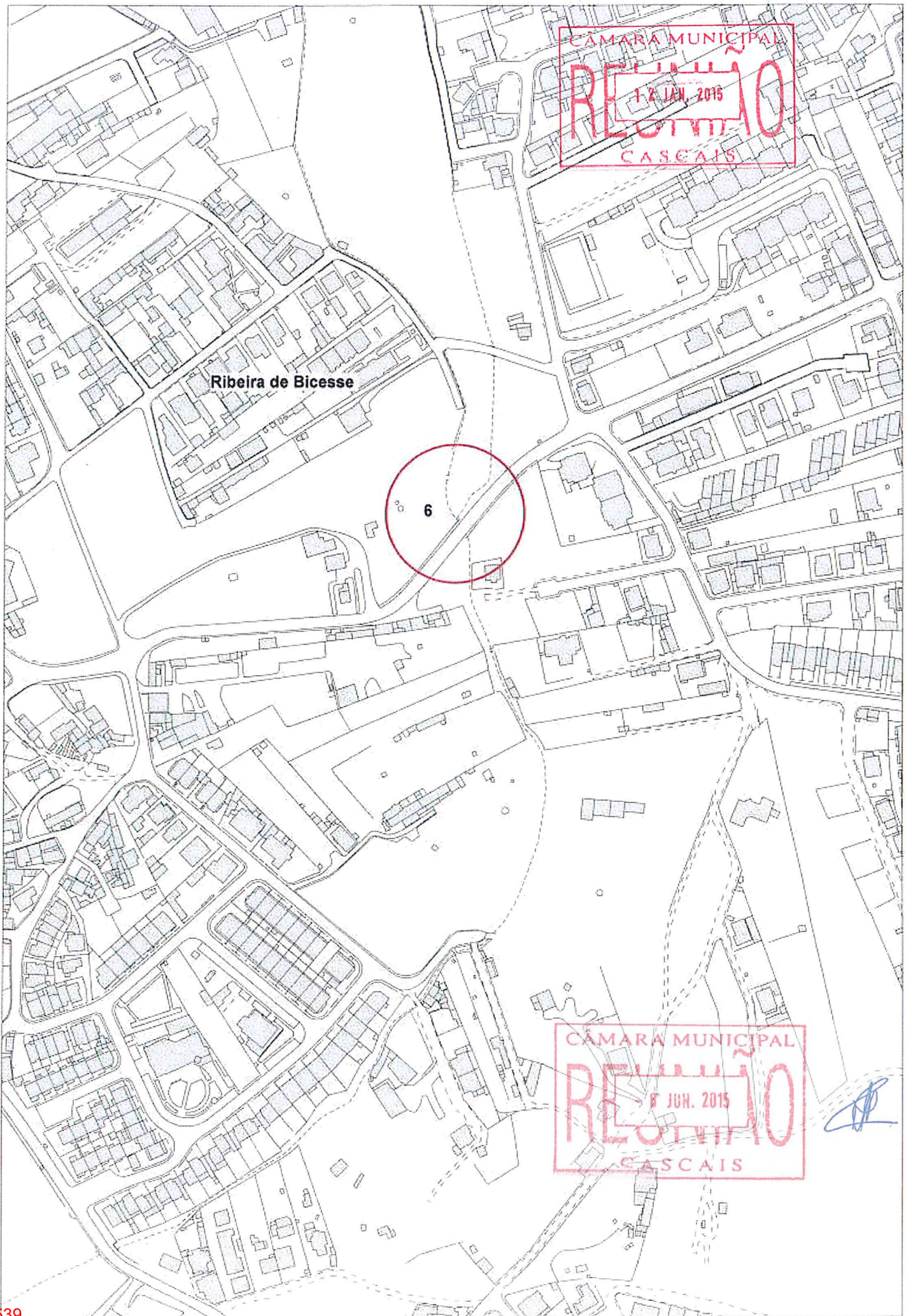
CASCAIS

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Ribeira de Bicesse

6

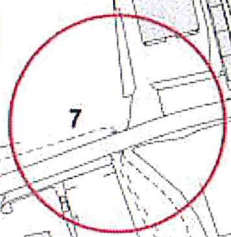
CÂMARA MUNICIPAL
REUNIÃO
12 JAN. 2015
CASCAIS

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CASCAIS

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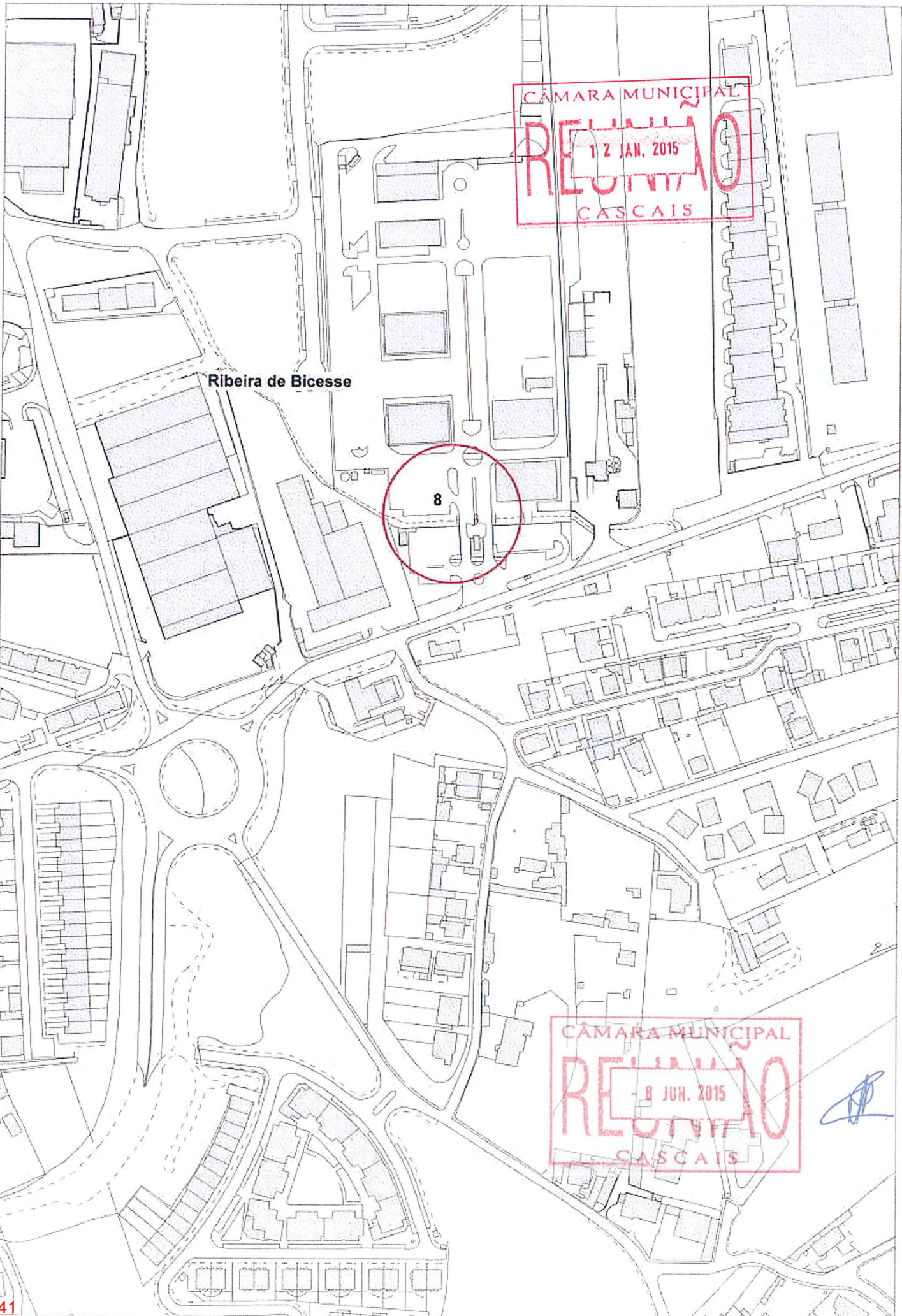
CÂMARA MUNICIPAL
RECEBIMOS
12 JAN. 2015
CASCAIS

Ribeira de Bicesse



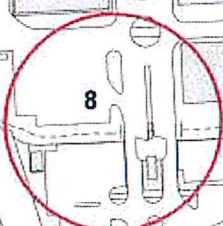
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REUNIAO
12 JAN. 2015
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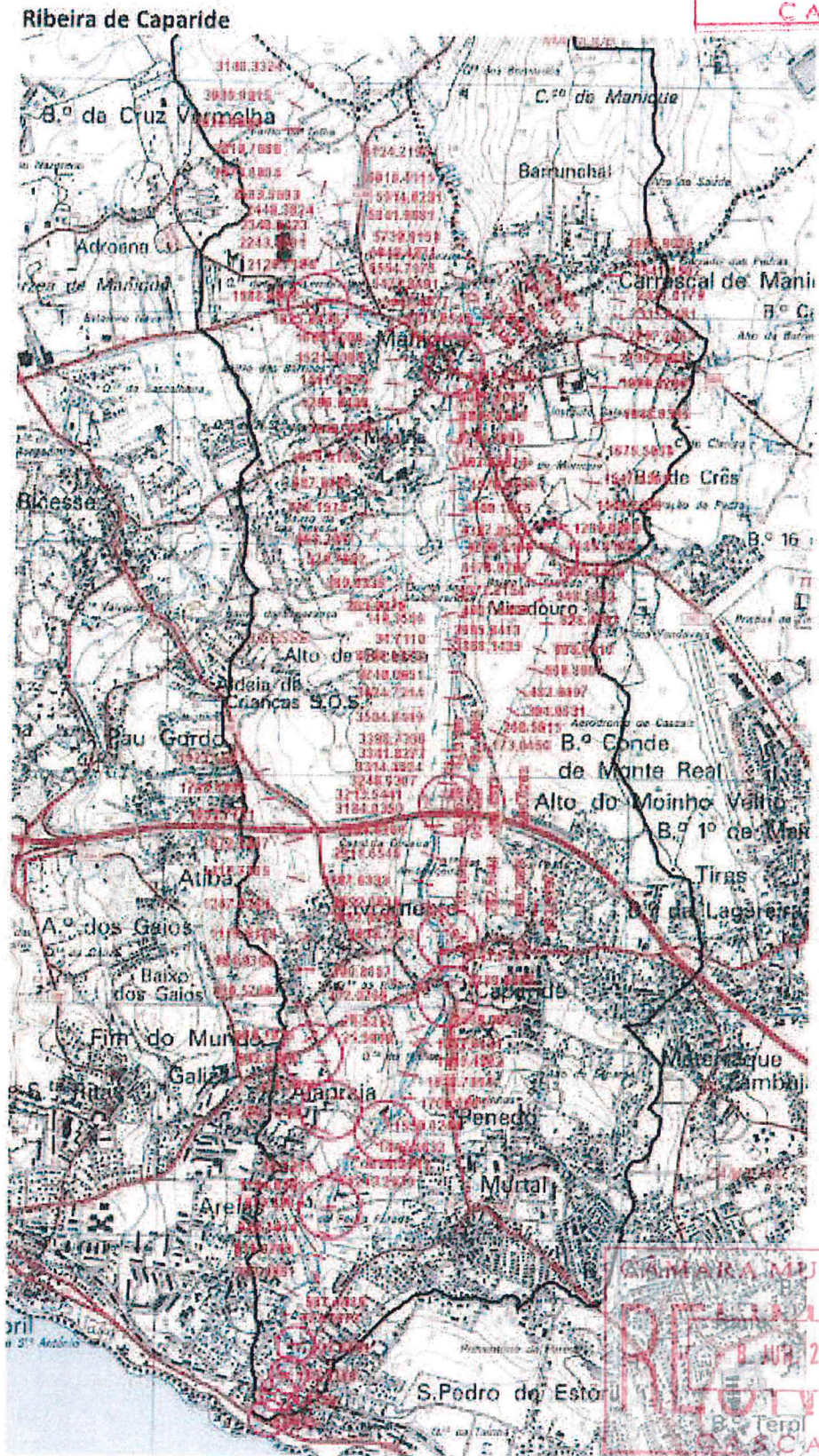
Ribeira de Bicesse



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CASCAIS

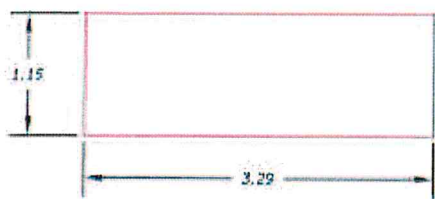
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CÂMARA MUNICIPAL
REQUISIÇÃO
12 JAN. 2015
CASCAIS

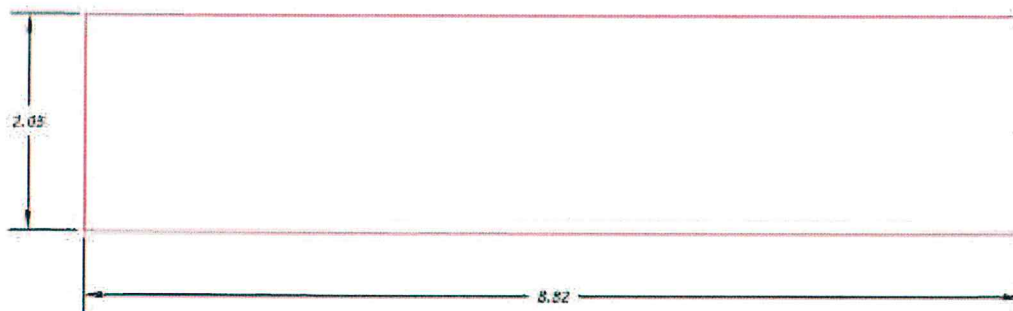


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12 JAN. 2015
CASCAIS

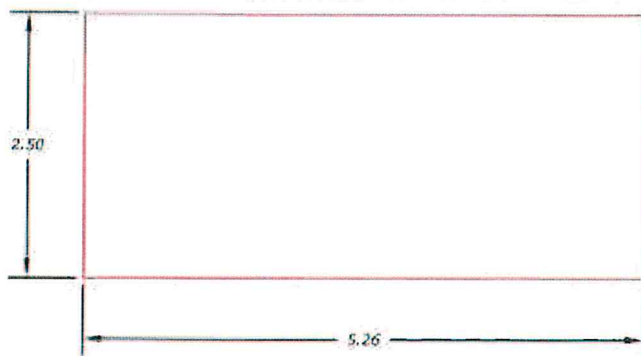
Ribeira de Caparide 1
Comprimento da Secção - 13.75m
Perímetro - 8.98m



Ribeira de Caparide Novo
Comprimento da Secção - 8.30m
Perímetro - 21.75m



Ribeira de Caparide 2
Comprimento da Secção - 8.00m
Perímetro - 15.52m



Ribeira de Caparide 3
Comprimento da Secção - 6.50m
Perímetro - 4.77m

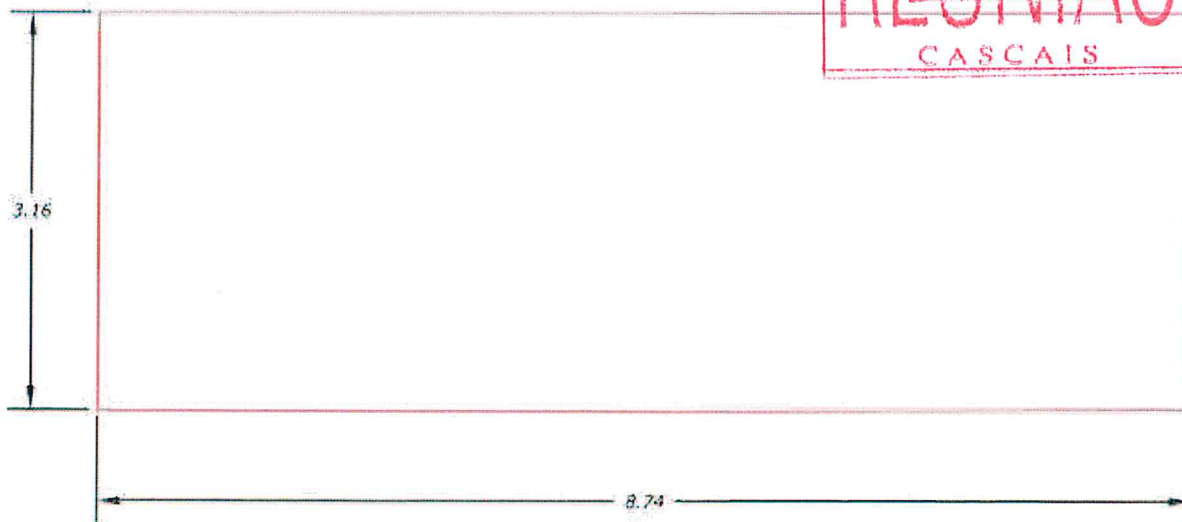


Ribeira de Caparide 4
Não têm passagem
Viaduto

Ribeira de Caparide 5

Comprimento da Secção - 8.60m

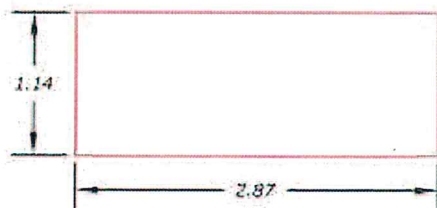
Perímetro - 23.80m



Ribeira de Caparide 6

Comprimento da Secção - 42.60m

Perímetro - 8.02m



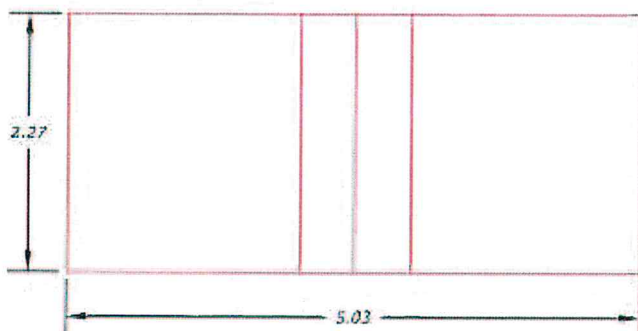
Ribeira de Caparide 7

Comprimento da Secção - 15.60m

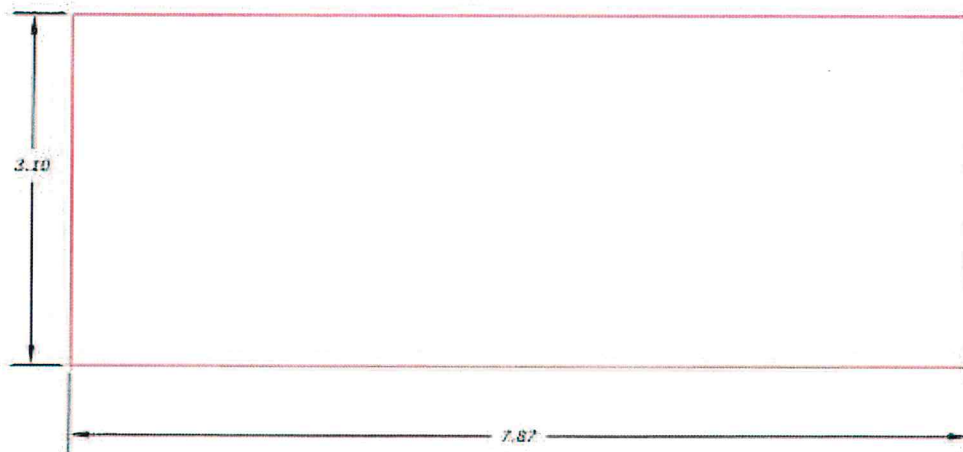
Perímetro - 7.40m



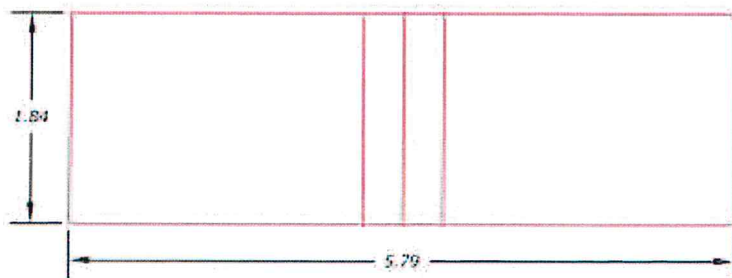
Ribeira de Caparide 8
Comprimento da Secção - 2.14m
Perímetro - 14.60m



Ribeira de Caparide 9
Comprimento da Secção - 8.00m
Perímetro - 21.94m

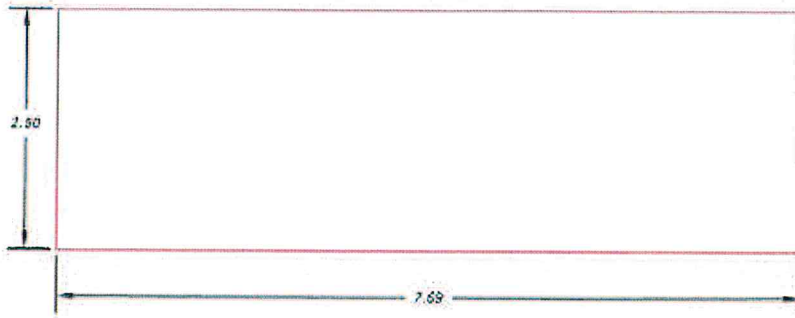


Ribeira de Caparide 10
Comprimento da Secção - 1.10m
Perímetro - 15.26m

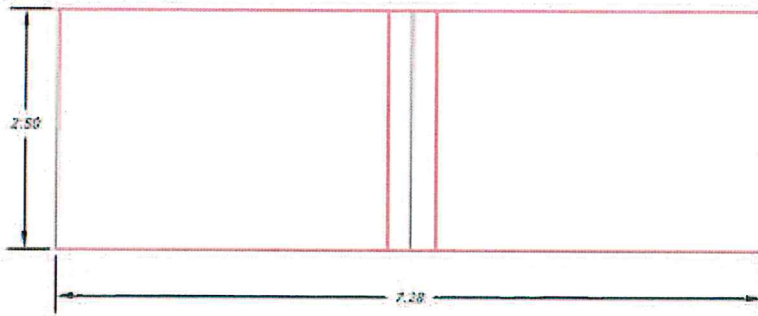


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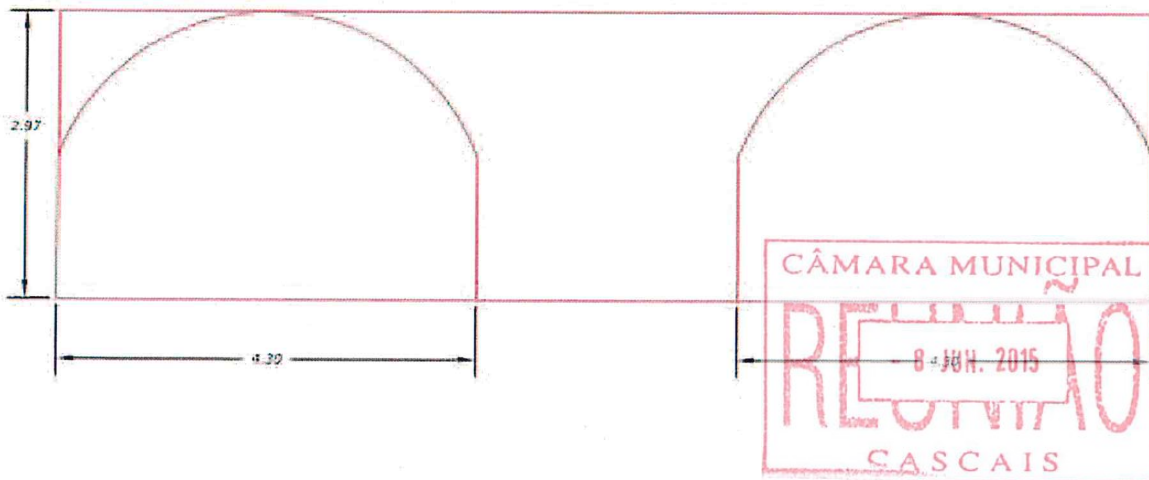
Ribeira de Caparide 11
Comprimento da Secção - 14,00m
Perímetro - 20,37m



Ribeira de Caparide 12
Comprimento da Secção - 11,30m
Perímetro - 19,57m



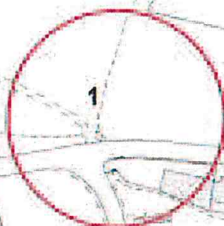
Ribeira de Caparide 13
Comprimento da Secção - 26,30m
Perímetro - 28,30m



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Ribeira de Caparide



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Ribeira de Caparide



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12 JAN. 2015
CASCAIS

Ribeira de Caparide



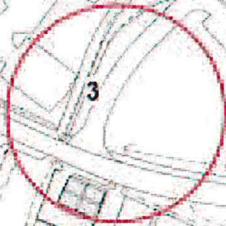
Novo

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RECEBIMOS
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CASCAIS

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CÂMARA MUNICIPAL
RELEVÂO
12 JAN. 2015
CASCAIS

Ribeira de Caparide



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CASCAIS

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REUNIAO
12 JAN. 2015
CASCAIS

Ribeira de Caparide

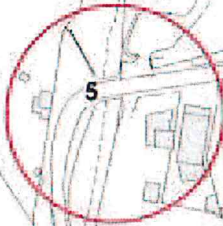
4

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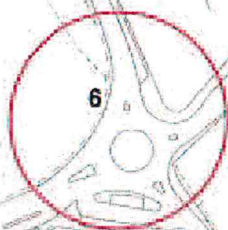
Ribeira de Caparide



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8 JUN. 2015
CASCAIS

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REUNIÃO
12 JAN. 2015
CASCAIS

Ribeira de Caparide

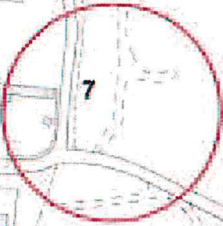


CÂMARA MUNICIPAL
REUNIÃO
- 8 JUN. 2015
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12 JAN. 2015
CASCAIS

Ribeira de Caparide



7

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REUNIAO
12 JAN. 2015
CASCAIS

Ribeira de Caparide

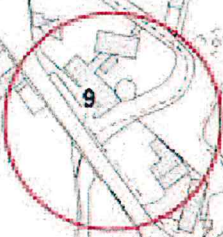


CÂMARA MUNICIPAL
REUNIAO
- 8 JUN. 2015
CASCAIS

A handwritten signature in blue ink, located in the bottom right corner of the map area.

CÂMARA MUNICIPAL
REQUISITO
12 JAN. 2015
CASCAIS

Ribeira de Caparide

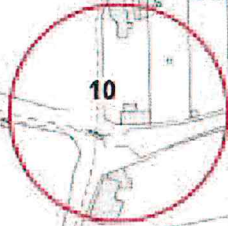


CÂMARA MUNICIPAL
REQUISITO
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CASCAIS

A handwritten signature in blue ink is located in the bottom right corner of the map, next to the second stamp.

CÂMARA MUNICIPAL
REUNIAO
12 JAN, 2015
CASCAIS

Ribeira de Caparide



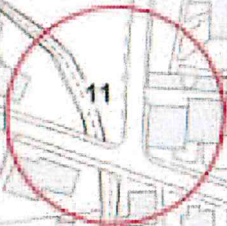
10

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- 8 JUN, 2015
CASCAIS

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CASCAIS

Ribeira de Caparide

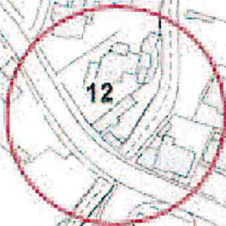


CÂMARA MUNICIPAL
REQUISITO
8 JUN. 2015
CASCAIS

A handwritten signature in blue ink is located in the bottom right corner of the map.

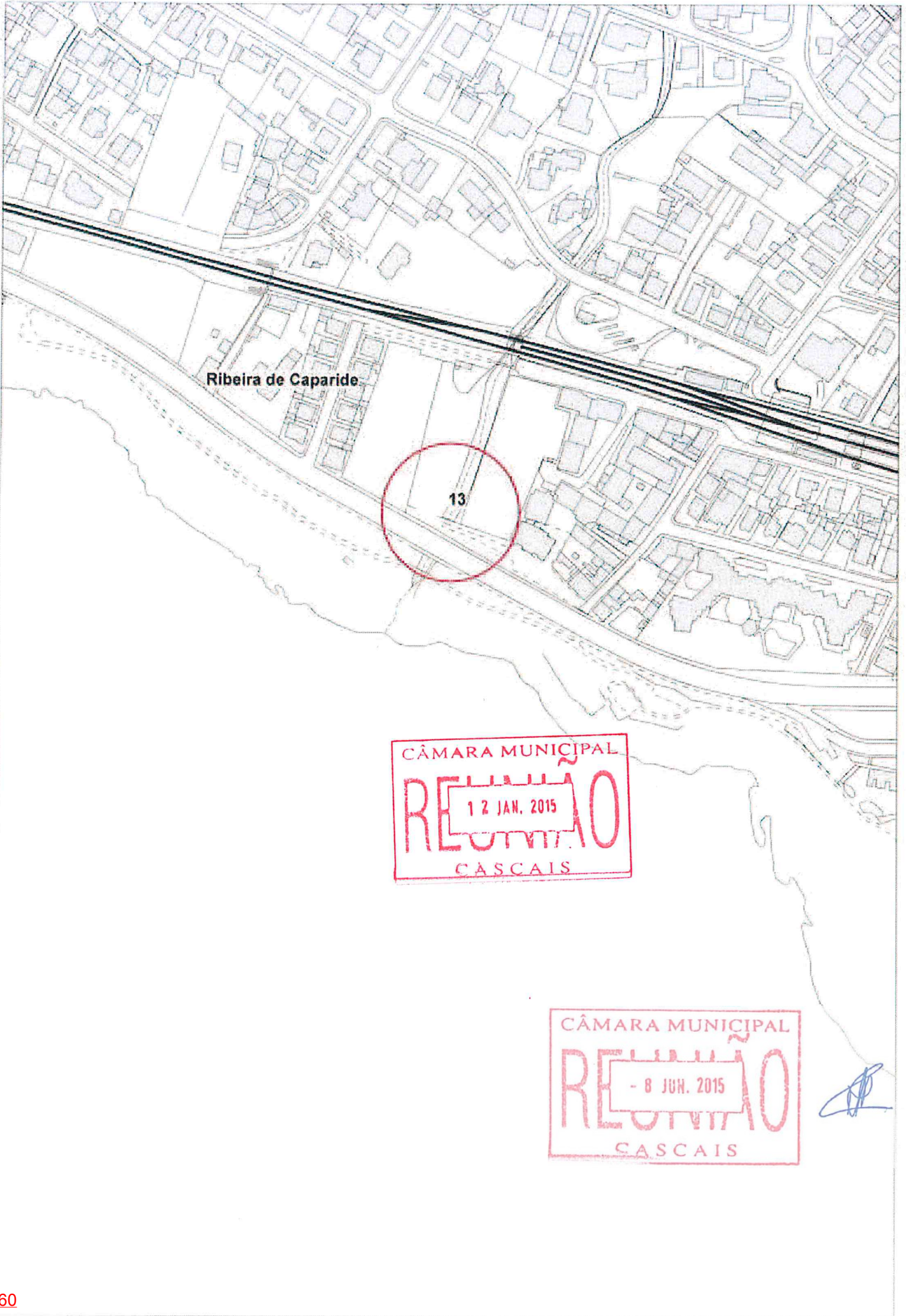
CÂMARA MUNICIPAL
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Ribeira de Caparide



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A handwritten signature in blue ink is located in the bottom right corner of the page.



Ribeira de Caparide

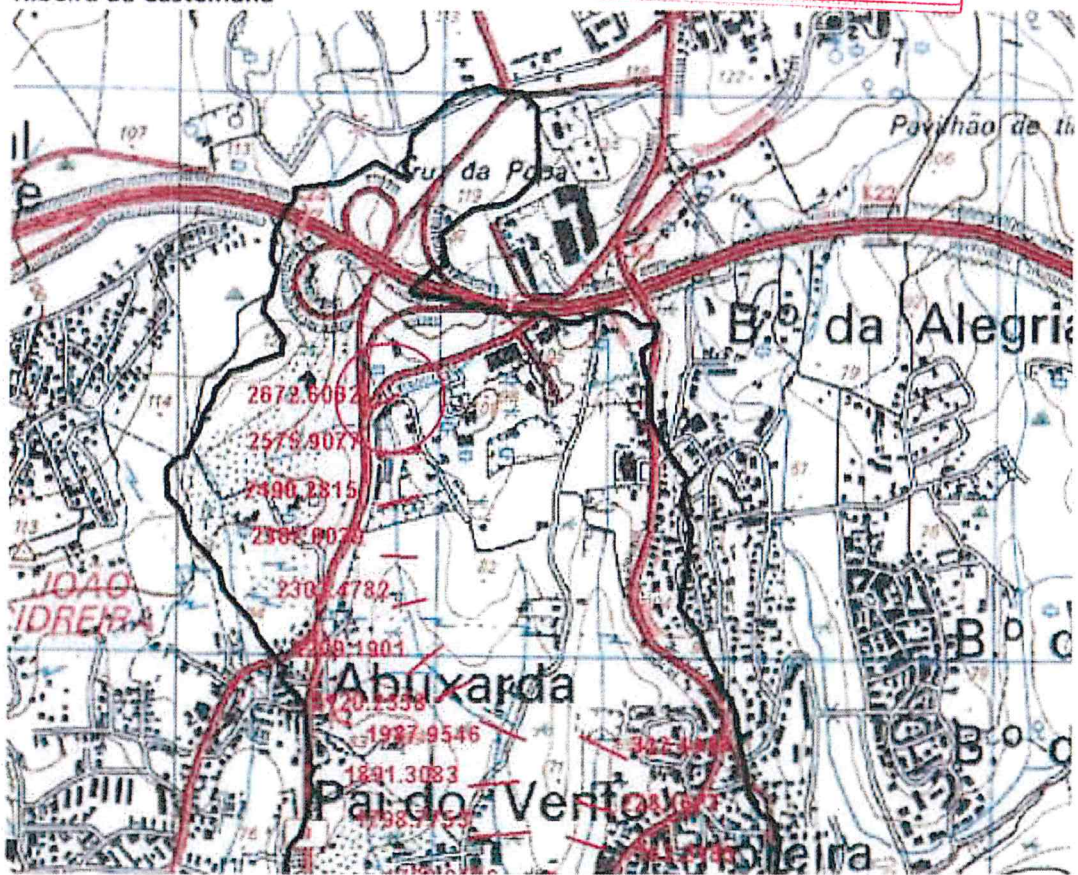
13

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REUNIAO
- 8 JUN. 2015
CASCAIS

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REUNIAO
12 JAN. 2015
CASCAIS

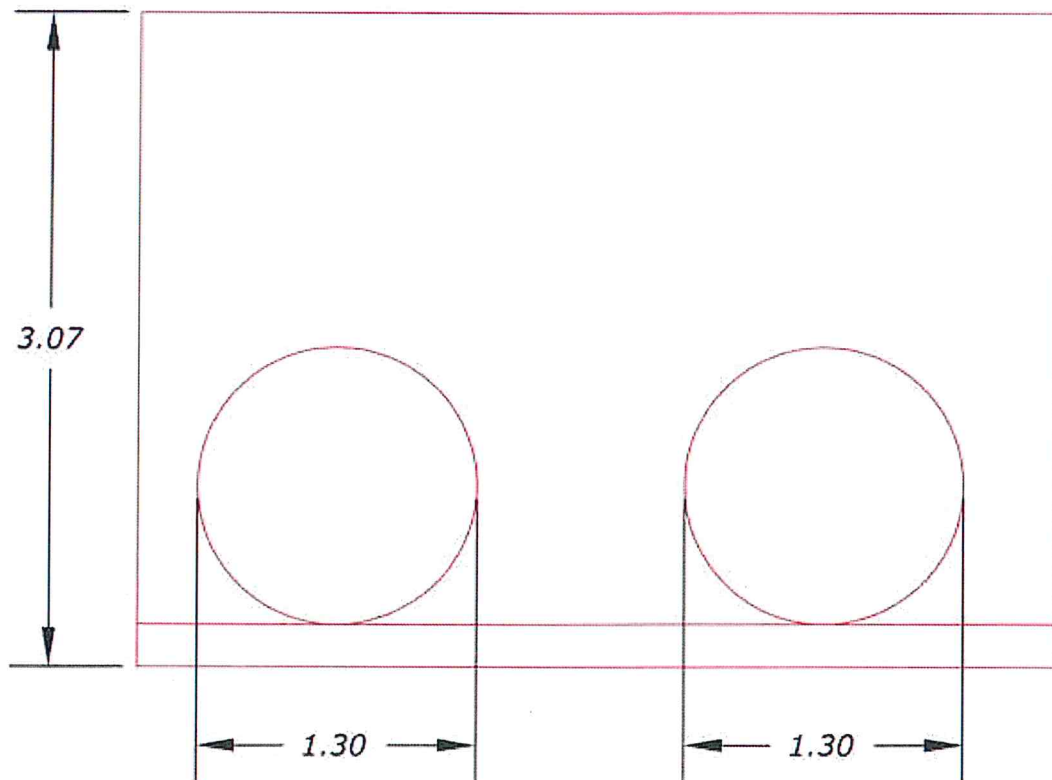
Ribeira da Castelhana



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- 8 JUN. 2015
CASCAIS



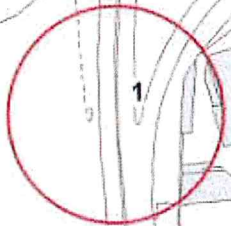
Ribeira da Castelhana
Comprimento da Secção - 116.00m



A handwritten signature in blue ink, consisting of a stylized set of initials.

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REQUISITO
1.2 JAN. 2015
CASCAIS

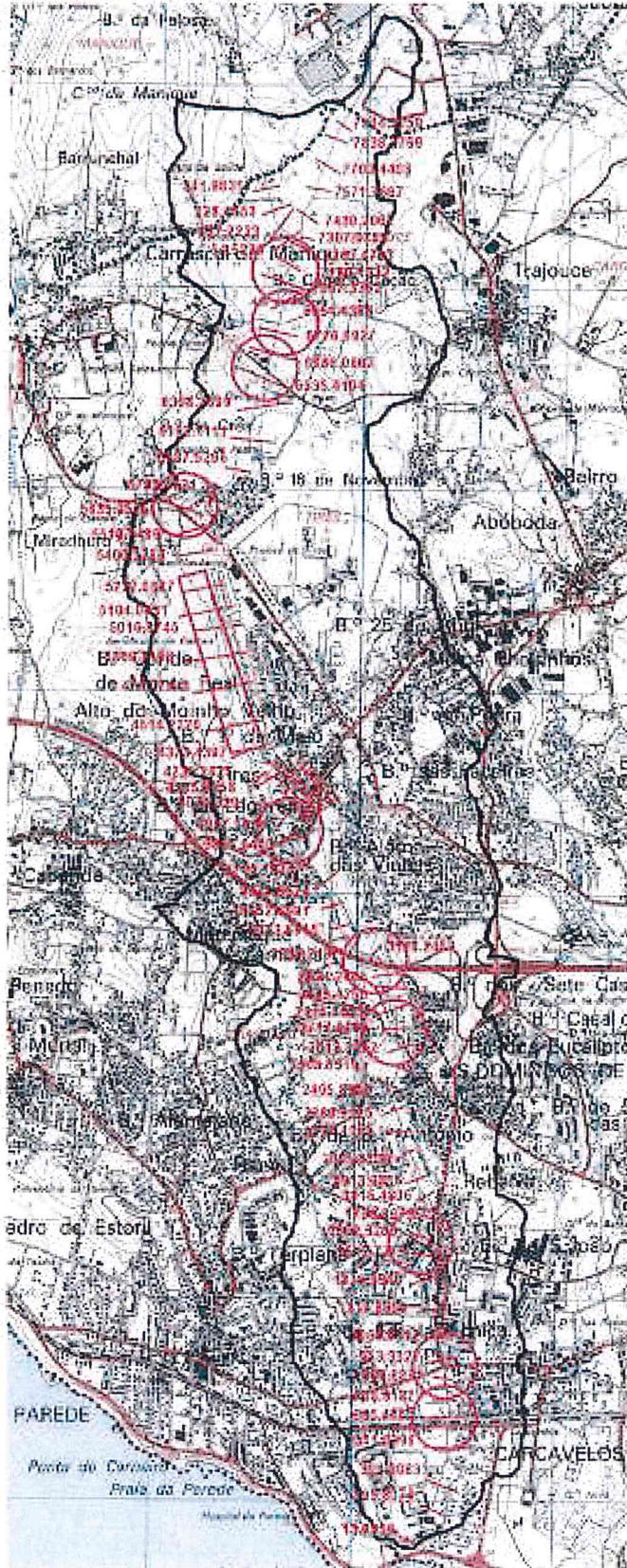
Ribeira da Castelhana



CÂMARA MUNICIPAL
REQUISITO
- 8 JUN. 2015
CASCAIS

A handwritten signature in blue ink is located in the bottom right corner of the map.

Ribeira das Marianas

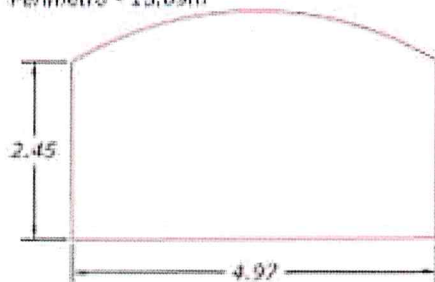


CÂMARA MUNICIPAL
REUNIAO
12 JAN, 2015
CASCAIS

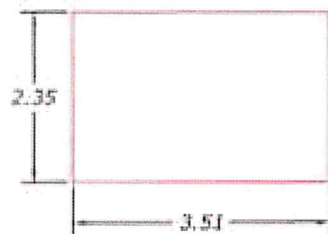
CÂMARA MUNICIPAL
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- 8 JUN, 2015
CASCAIS



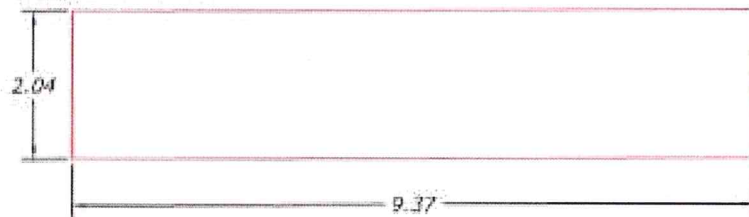
Ribeira das Marianas 1
Comprimento da Secção - 25,20m
Perímetro - 15,09m



Ribeira das Marianas 2
Comprimento da Secção - 20,60m
Perímetro - 11,72m



Ribeira das Marianas 3
Comprimento da Secção - 14,40m
Perímetro - 22,816m

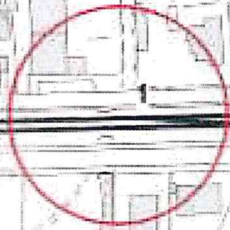


Ribeira das Marianas 4
Comprimento da Secção - 30,70m
Perímetro - 13,98m



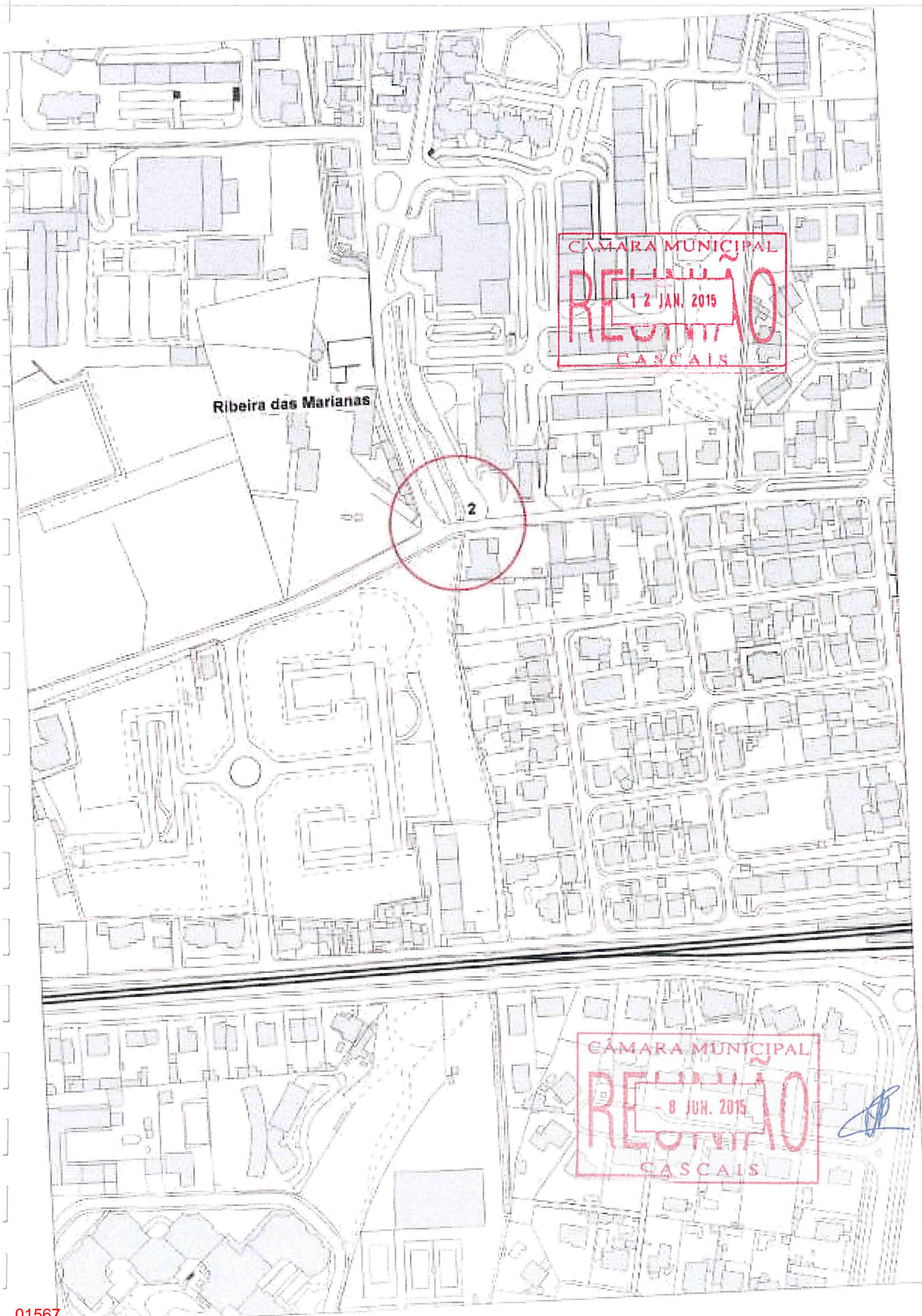
CÂMARA MUNICIPAL
RECEBIMOS
12 JAN. 2015
CASCAIS

Ribeira das Marianas



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RECEBIMOS
- 8 JUL. 2015
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A handwritten signature in blue ink is located to the right of the second stamp. The signature is stylized and appears to be a name, possibly 'J. P. Silva'.



Ribeira das Marianas

2

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CÂMARA MUNICIPAL
REGRATAÇÃO
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CASCAIS

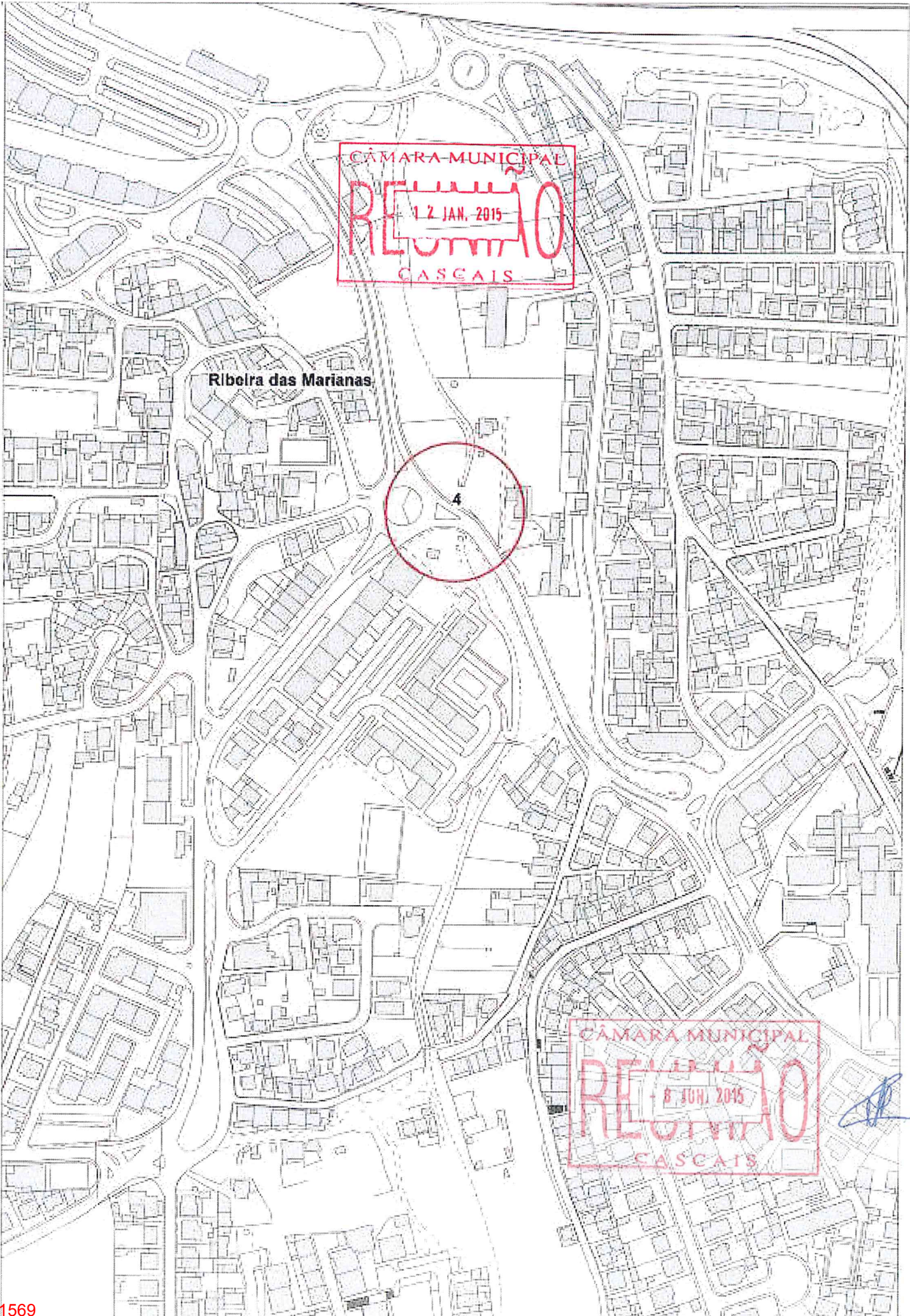
CÂMARA MUNICIPAL
RELEVÂO
12 JAN. 2015
CASCAIS

Ribeira das Marianas



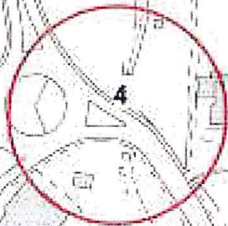
CÂMARA MUNICIPAL
RELEVÂO
8 JUN. 2015
CASCAIS

A handwritten signature in blue ink is located in the bottom right corner of the map, overlapping the second stamp.



CÂMARA MUNICIPAL
RECEBIMOS
12 JAN. 2015
CASCAIS

Ribeira das Marianas



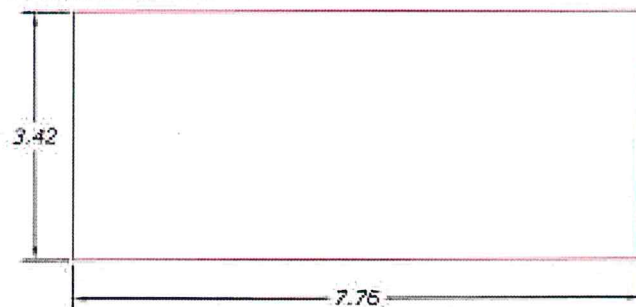
4

CÂMARA MUNICIPAL
RECEBIMOS
8 JUN. 2015
CASCAIS

[Handwritten signature]

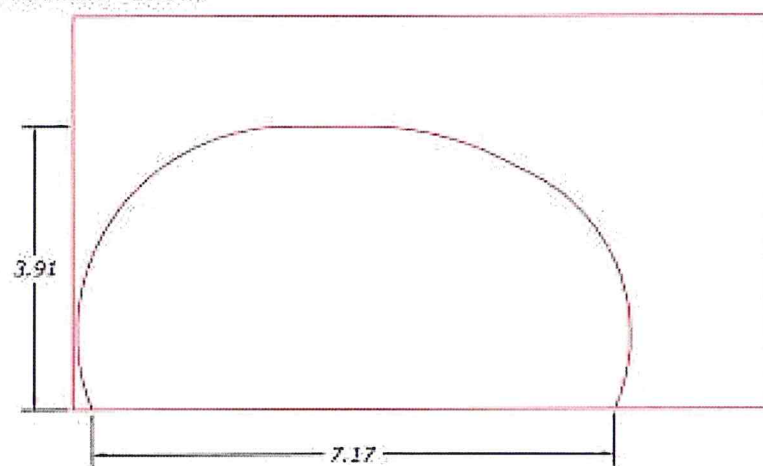
Ribeira das Marianas 5

Comprimento da Secção - 12.20m
Perímetro - 22.36m



Ribeira das Marianas 6

Comprimento da Secção - 83.90m
Perímetro - 20.04m



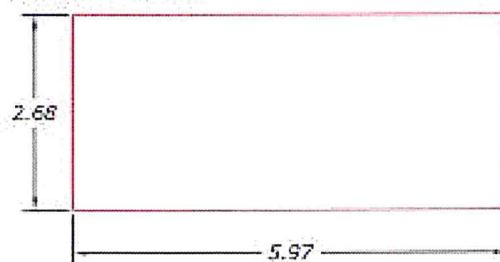
Ribeira das Marianas 7

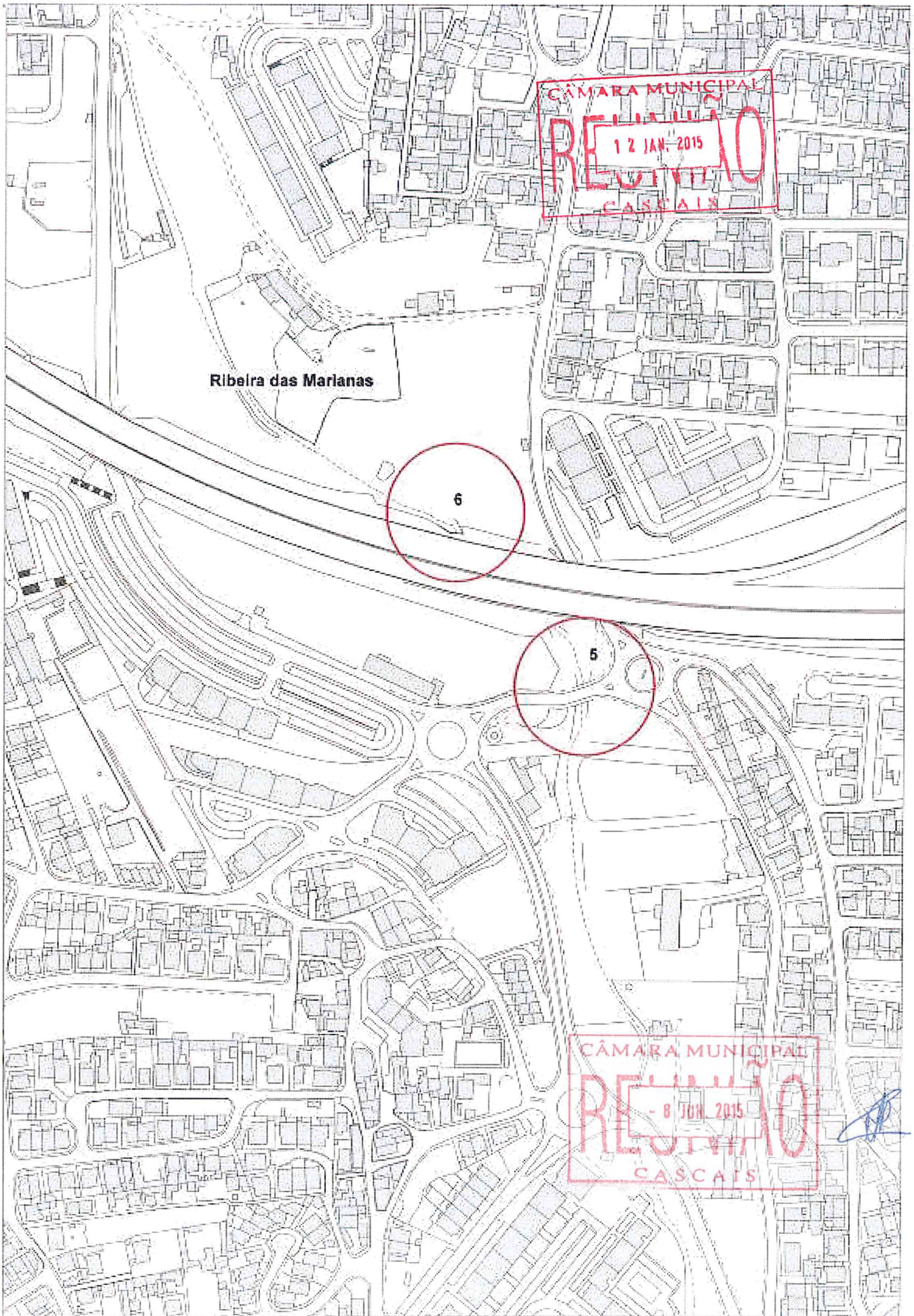
Comprimento da Secção - 10.50m
Perímetro - 8.40m



Ribeira das Marianas 7.1

Comprimento da Secção - 10.50m
Perímetro - 17.30m





Ribeira das Marianas

6

5

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RELEVÂNCIA
- 8 JUN. 2015
CASCAIS

CĂMARA MUNICIPAL
REOTIVĂ
12 JAN. 2019
CASCAIS

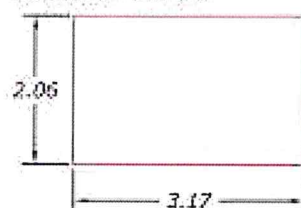


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Ribeira das Marianas 8

Comprimento da Secção - 11.65m
Perímetro - 10.45m



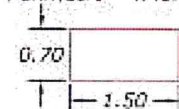
Ribeira das Marianas 9

Comprimento da Secção - 7.30m
Perímetro - 7.44m



Ribeira das Marianas 10

Comprimento da Secção - 8.15m
Perímetro - 4.40m

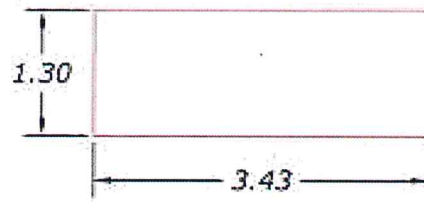


Ribeira das Marianas

Aeródromo Tires 8.1

Comprimento da Secção - 105.80m

Perímetro - 9.46m



Ribeira das Marianas

Aeródromo Tires 8.2

Comprimento da Secção - 15.08m

Perímetro - 9.00m

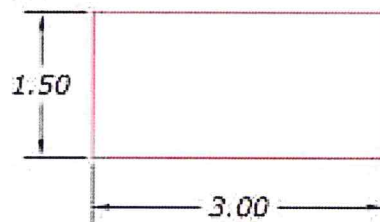


Ribeira das Marianas

Aeródromo Tires 8.3

Comprimento da Secção - 30.20m

Perímetro - 9.00m

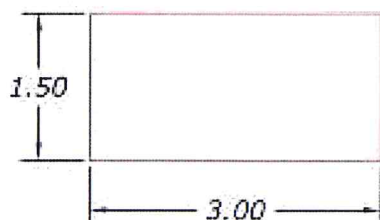


Ribeira das Marianas

Aeródromo Tires 8.4

Comprimento da Secção - 20.00m

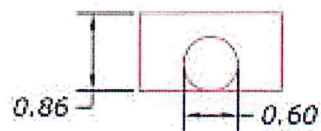
Perímetro - 9.00m



Afluente Ribeira das Marianas

Aeródromo Tires 8.5

Comprimento da Secção - 30.90m



Afluente Ribeira das Marianas

Aeródromo Tires 8.6

Comprimento da Secção - 17.00m



Afluente Ribeira das Marianas

Aeródromo Tires 8.7

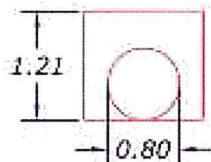
Comprimento da Secção - 26.00m



Afluente Ribeira das Marianas

Aeródromo Tires 8.8

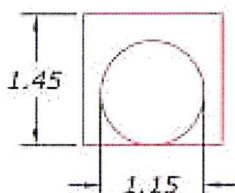
Comprimento da Secção - 10.00m



Afluente Ribeira das Marianas

Aeródromo Tires 8.9

Comprimento da Secção - 52.25m



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12 JAN, 2015
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Ribeira das Marianas



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A handwritten signature in blue ink, located in the bottom right corner of the map area.

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8.1

8.2

8.3

8.4

8.5

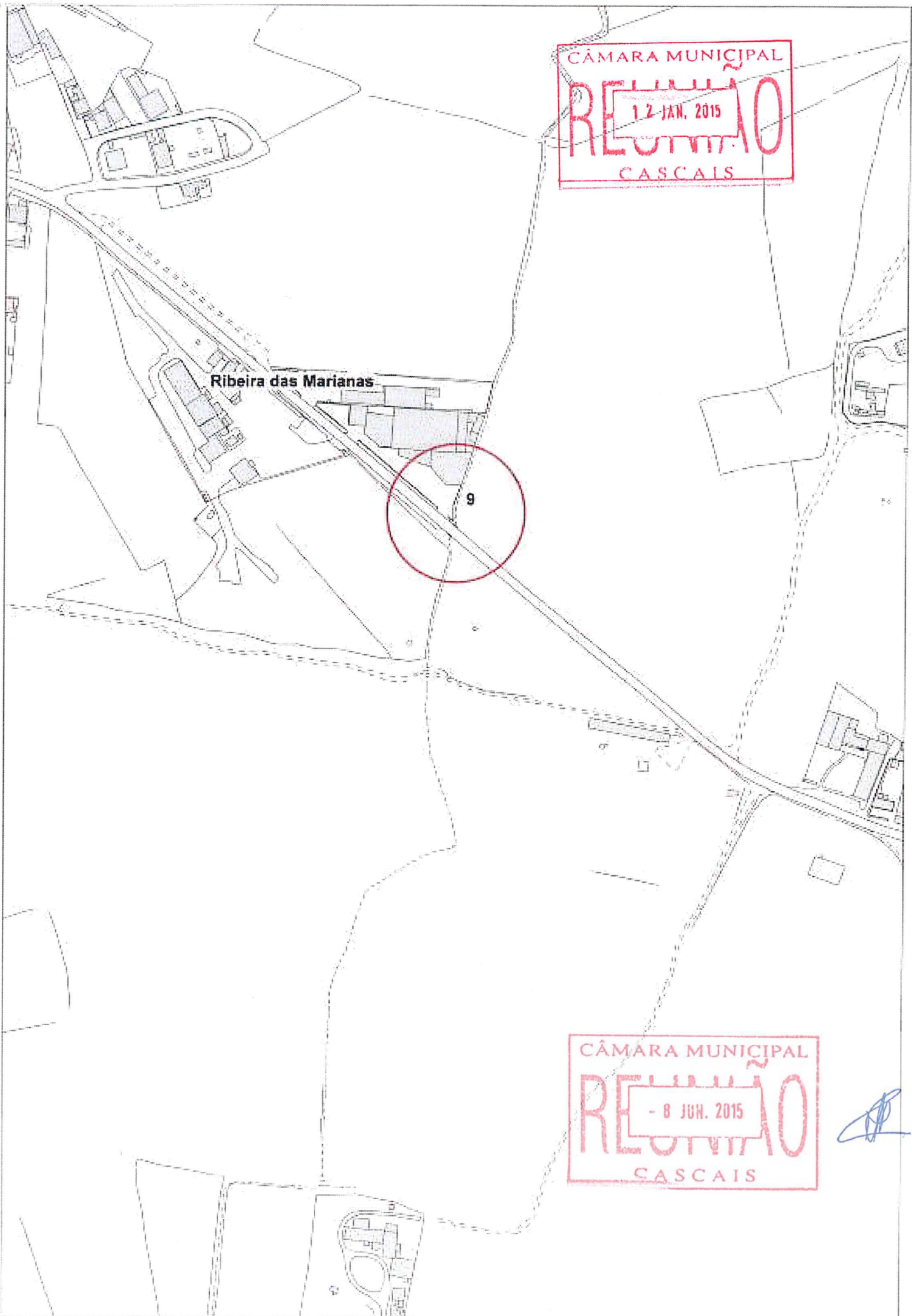
8.6

8.7

8.8

8.9

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REȘIȚA
12 JAN. 2015
CASCAIS

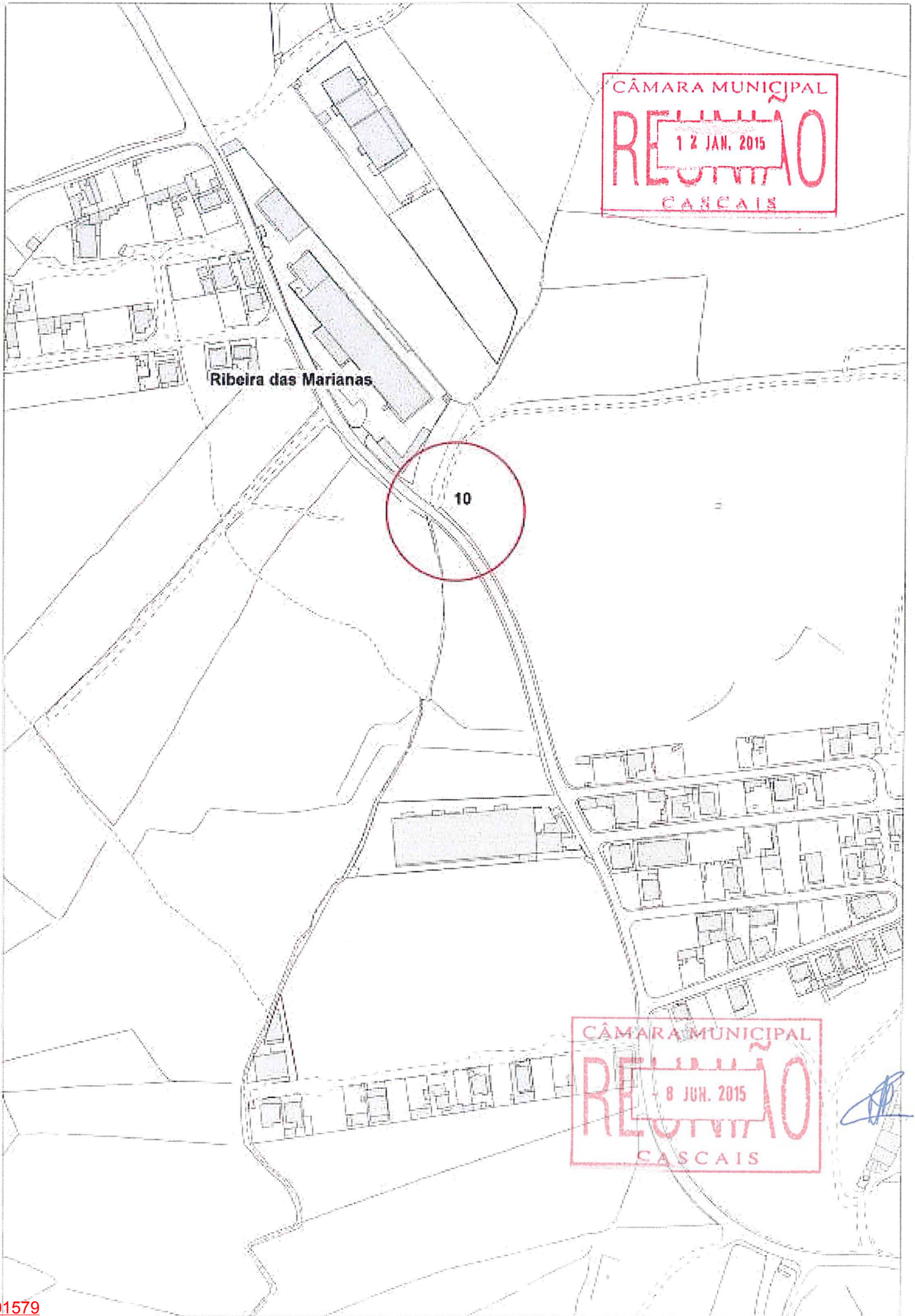


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Ribeira das Marianas

9

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REUNIAO
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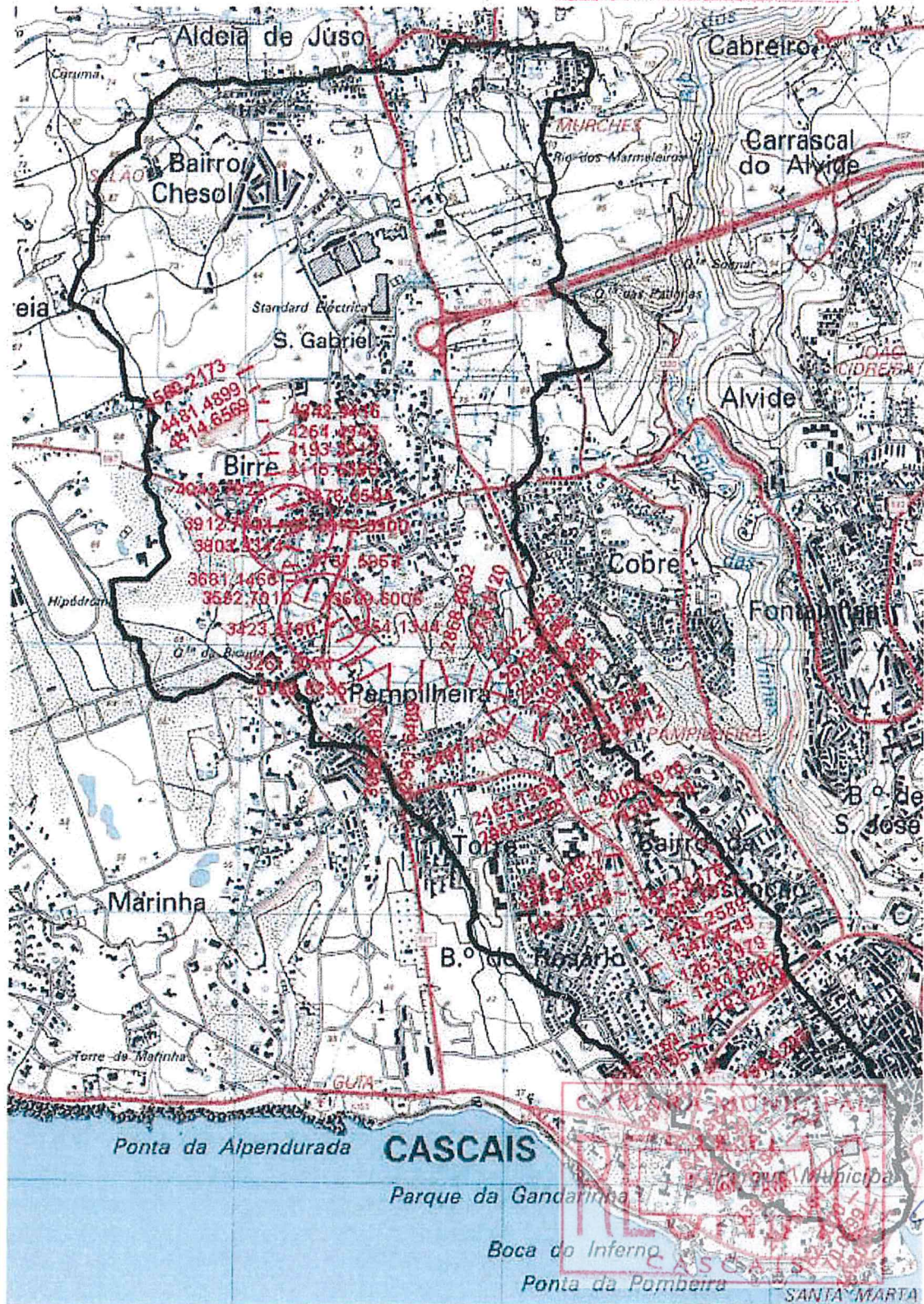
Ribeira das Marianas

10

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RECONTAO
12 JAN. 2015
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Ribeira dos Mochos



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RECEBIMOS
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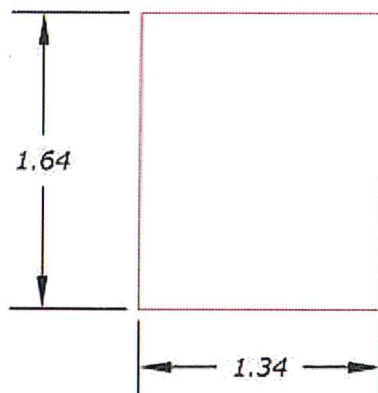
Ribeira dos Mochos 1, 2 e 3



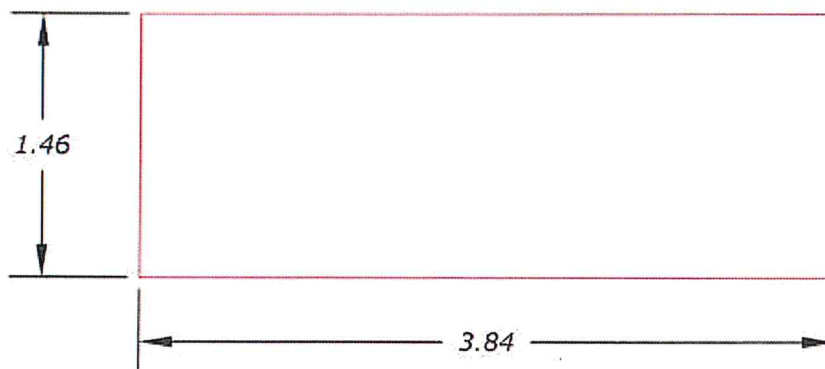
CÂMARA MUNICIPAL
RECEBIMOS
8 JUN. 2015
CASCAIS

A handwritten signature in blue ink is located to the right of the second red stamp.

Ribeira dos Mochos 1
Comprimento da Secção - 18.40m
Perimetro - 5.96m



Ribeira dos Mochos 2
Comprimento da Secção - 12.10m
Perimetro - 10.60m

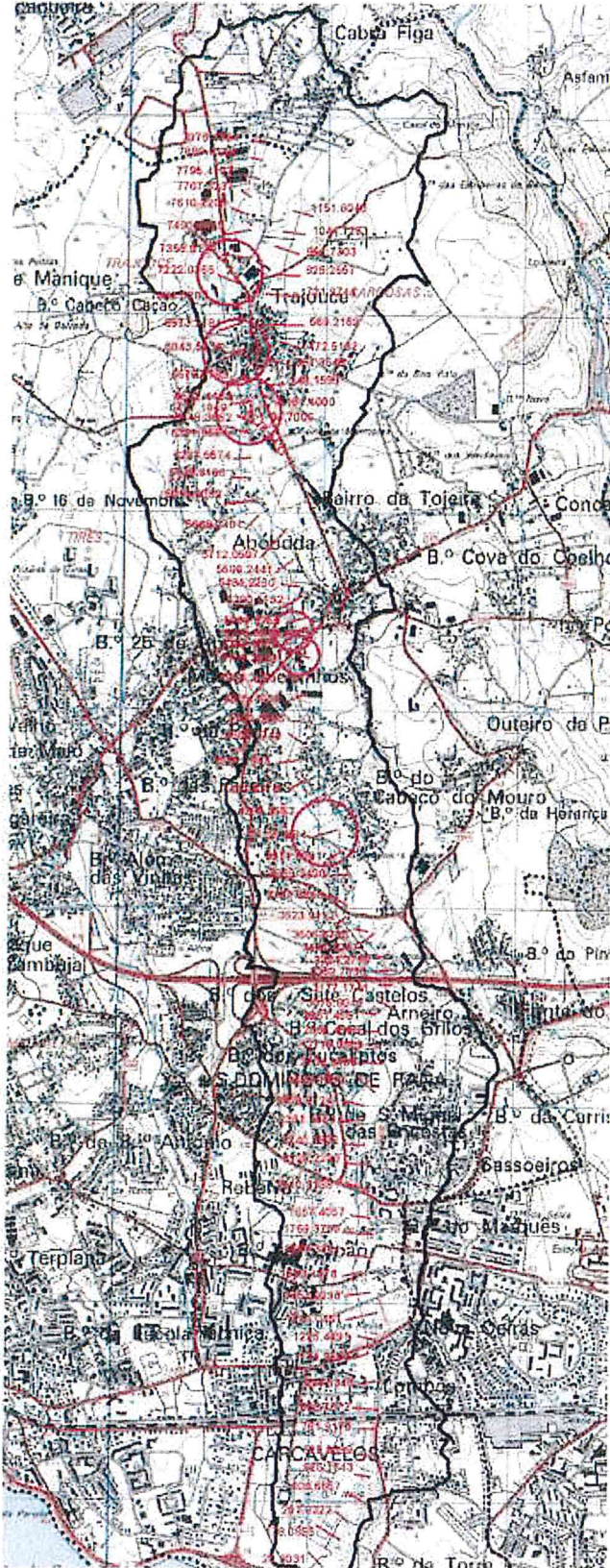


Ribeira dos Mochos 3
Tapada



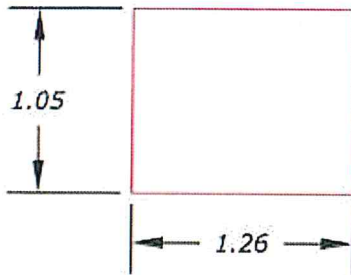
A handwritten signature in blue ink, consisting of a stylized set of initials.

Ribeira de Sasseiros



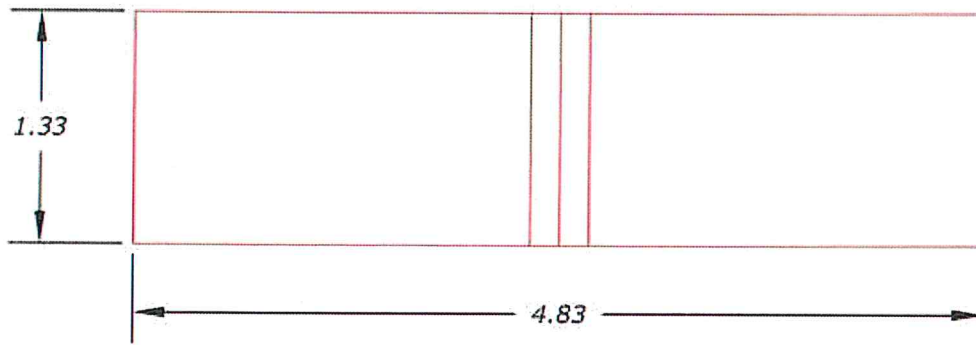
Ribeira de Sassoeiros 1

Comprimento da Secção - 5.20m
Perímetro - 4.62m



Ribeira de Sassoeiros 2

Comprimento da Secção - 10.70m
Perímetro - 12.32m

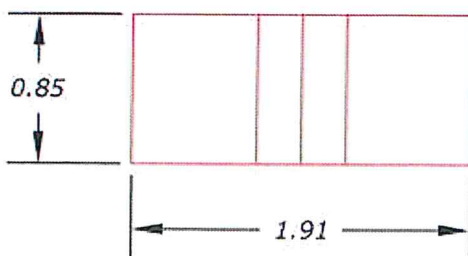


Ribeira de Sassoeiros 3

Comprimento da Secção - 60.50m
Perímetro - 5.52m

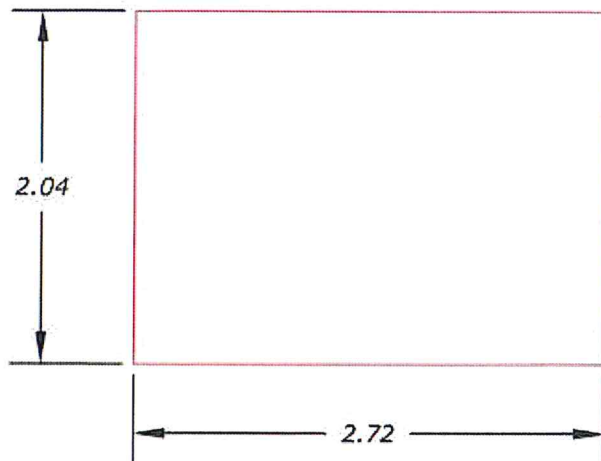


A handwritten signature in blue ink, consisting of a stylized set of initials.



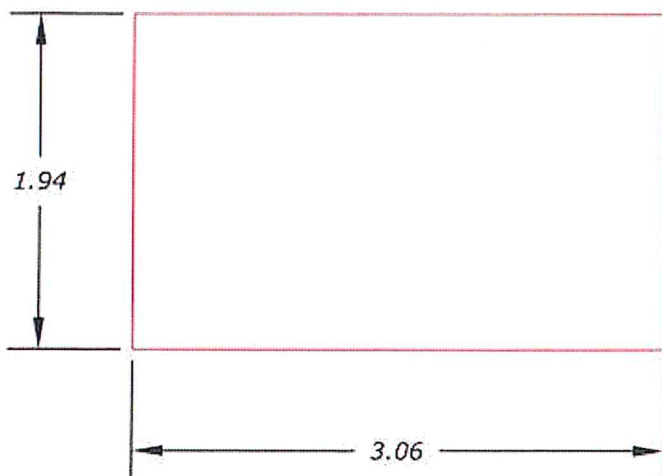
Ribeira de Sassoeiros 4

Comprimento da Secção - 4.20m
Perimetro - 9.52m



Ribeira de Sassoeiros 5

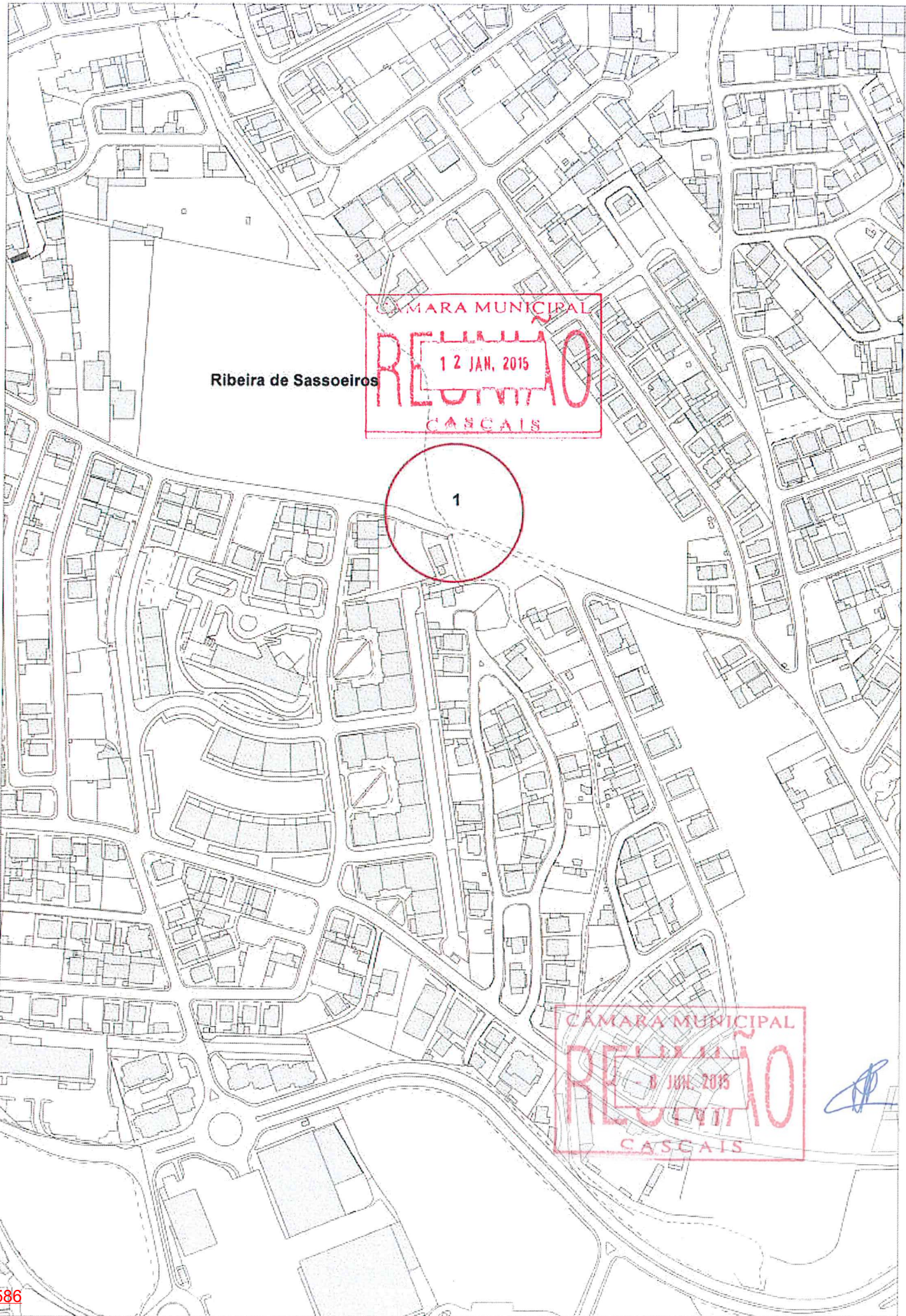
Comprimento da Secção - 6.60m
Perimetro - 10.00m



A handwritten signature in blue ink, consisting of a stylized set of initials.

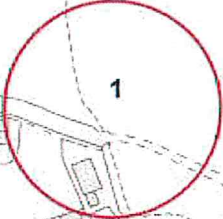
Ribeira de Sassoeiros 6

Tapado



Ribeira de Sasseiros

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1

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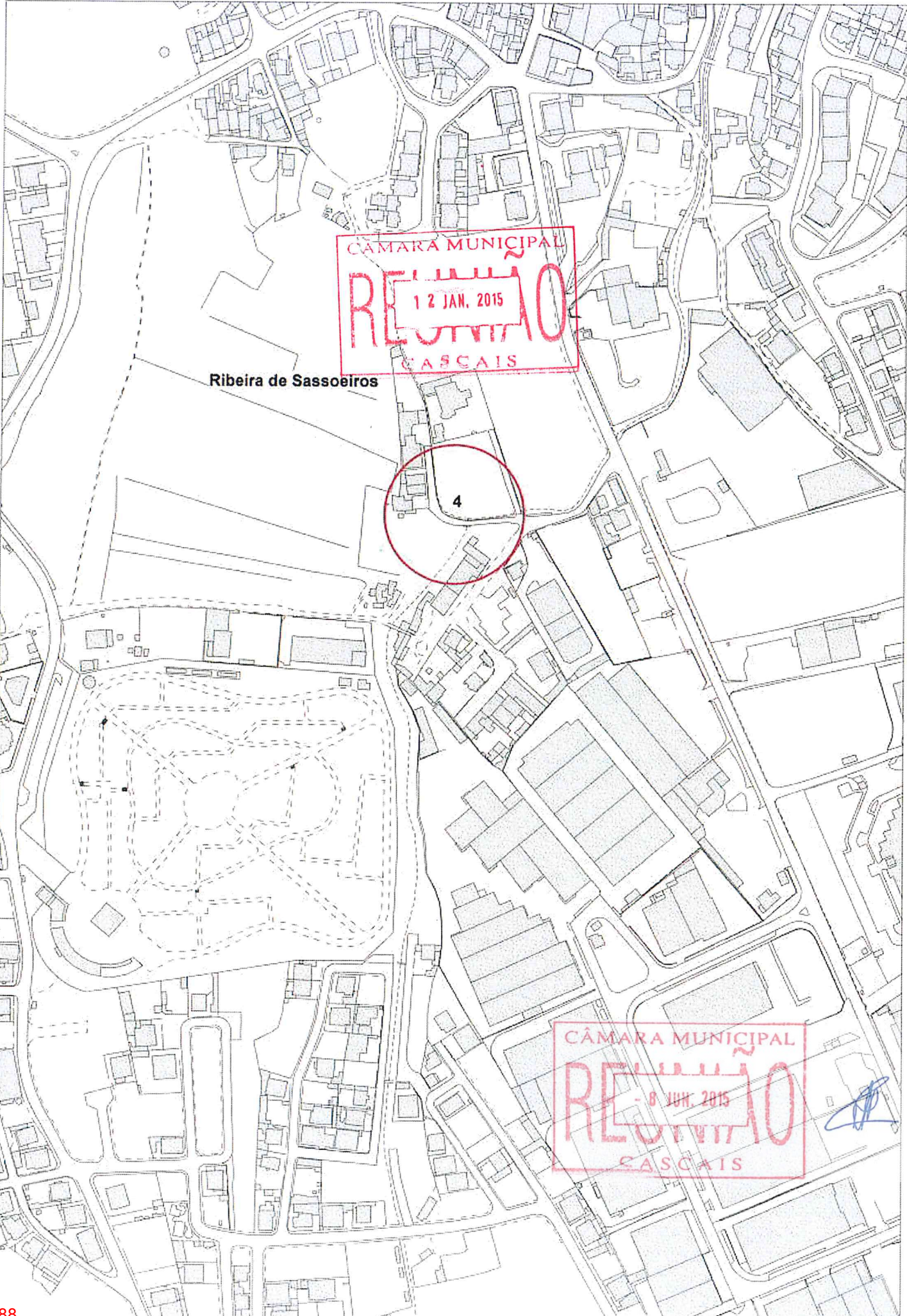
CÂMARA MUNICIPAL
REQUISIÇÃO
12 JAN, 2015
CASCAIS

Ribeira de Sasseiros

2

3

CÂMARA MUNICIPAL
REQUISIÇÃO
- 8 JUN. 2015
CASCAIS

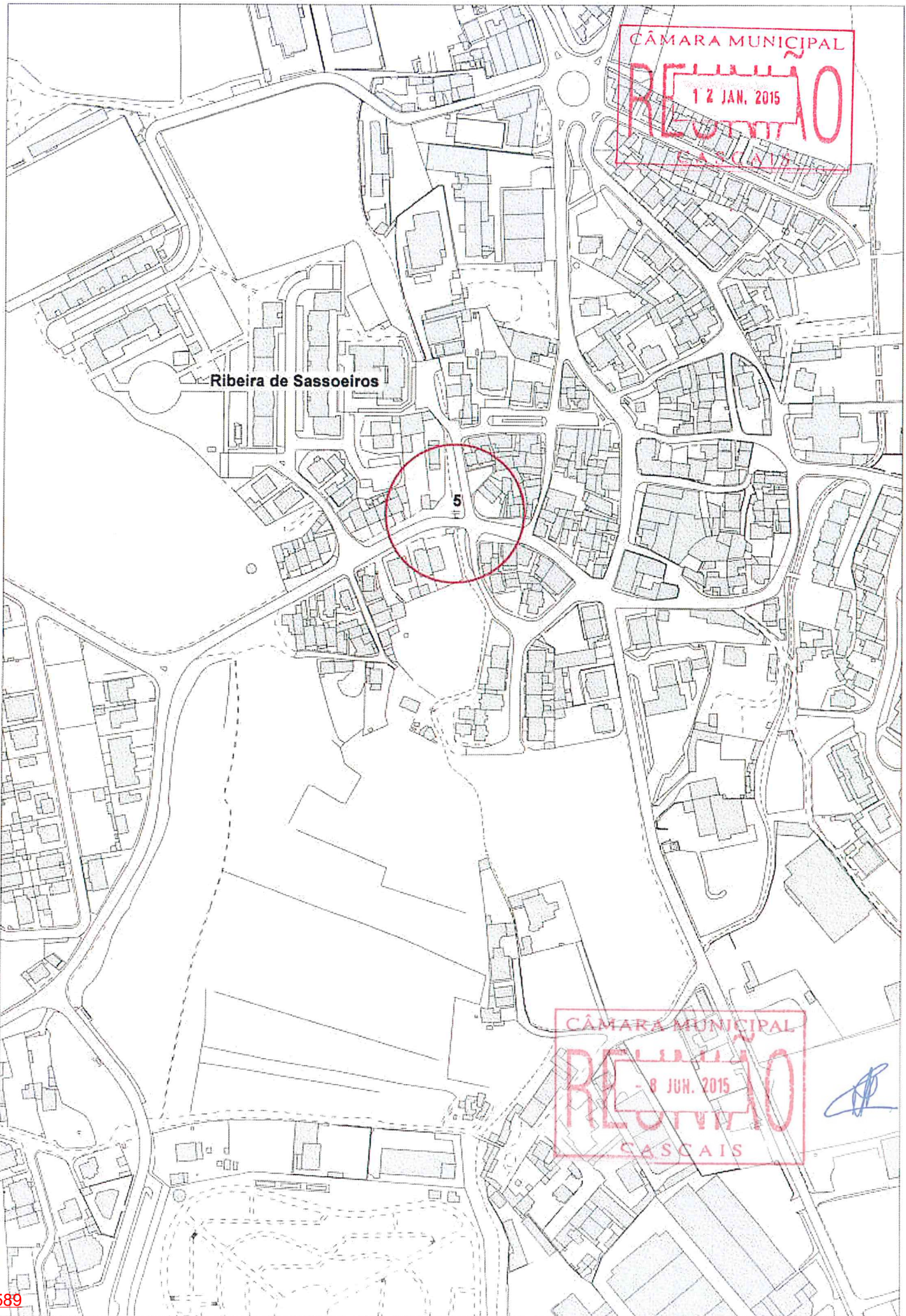


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REGRATAO
12 JAN. 2015
CASCAIS

Ribeira de Sasseiros

4

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REGRATAO
- 8 JUN. 2015
CASCAIS

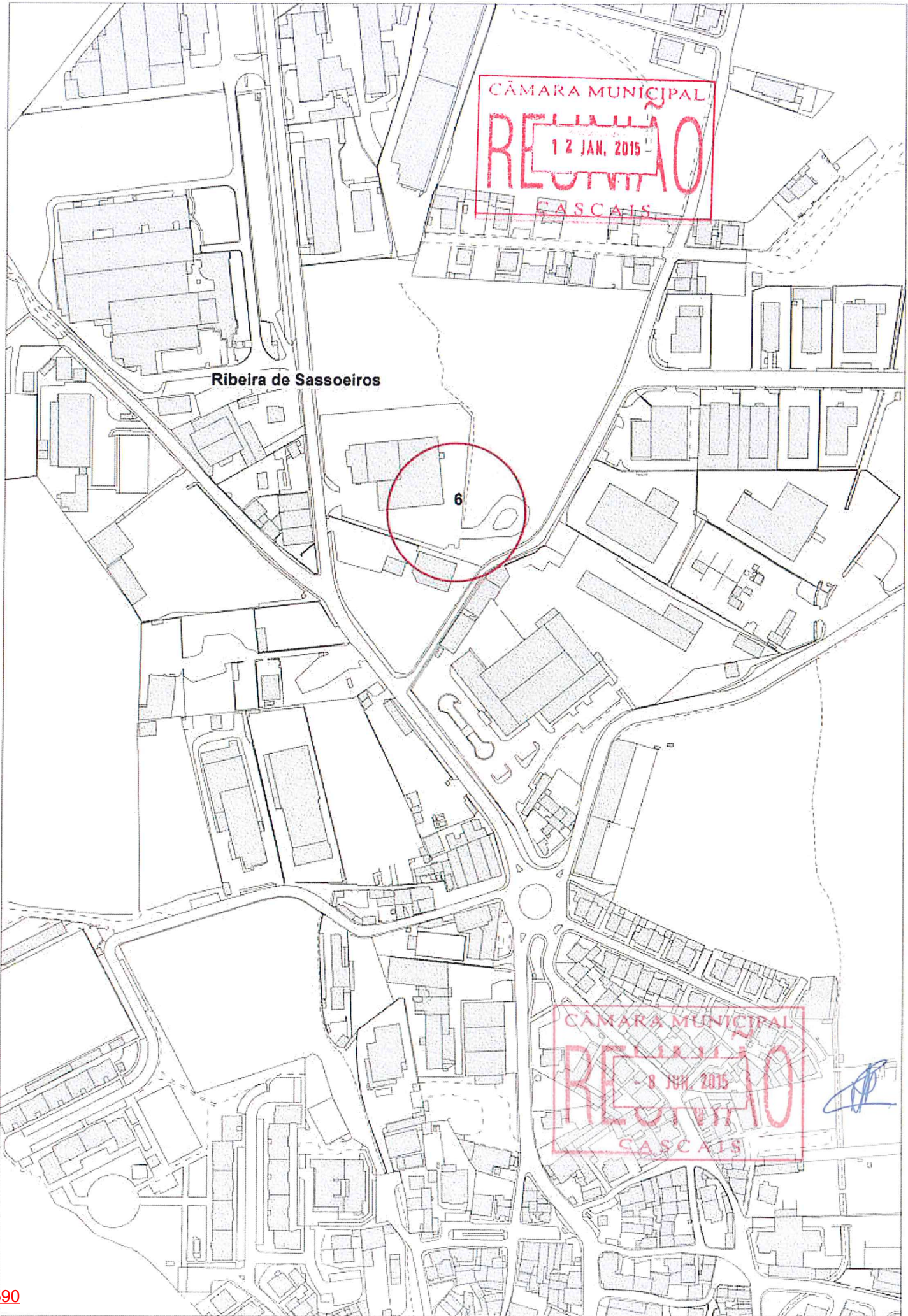


Ribeira de Sassoeiros

5

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RELEVANTO
8 JUN. 2015
CASCAIS



Ribeira de Sassoeiros

6

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REQUINTO
12 JAN, 2015
CASCAIS

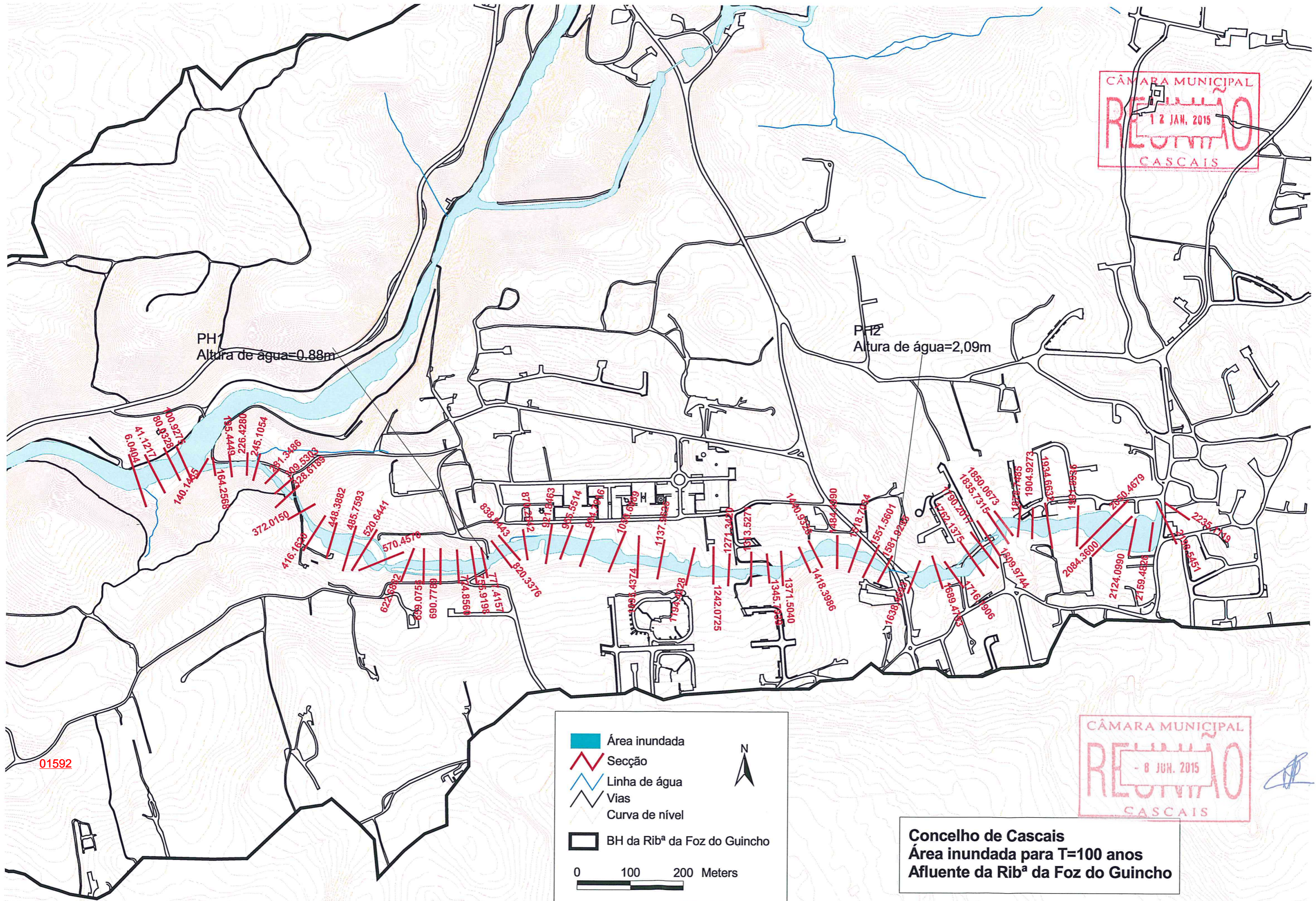
CÂMARA MUNICIPAL
REQUINTO
8 JUN, 2015
CASCAIS



ANEXO II
RESULTADOS DA MODELAÇÃO HIDRÁULICA REALIZADA



A handwritten signature in blue ink, appearing to be a stylized name or set of initials.



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REUNIAO
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PH1
 Altura de água=0,88m

PH2
 Altura de água=2,09m

■ Área inundada
⚡ Secção
⚡ Linha de água
⚡ Vias
 Curva de nível
 BH da Ribª da Foz do Guincho

0 100 200 Meters

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 - 8 JUN. 2015
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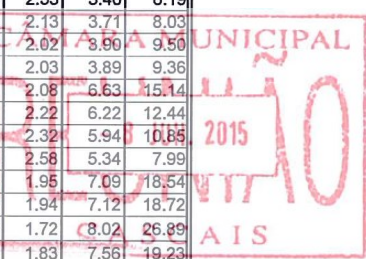
Concelho de Cascais
Área inundada para T=100 anos
Afluente da Ribª da Foz do Guincho

01592

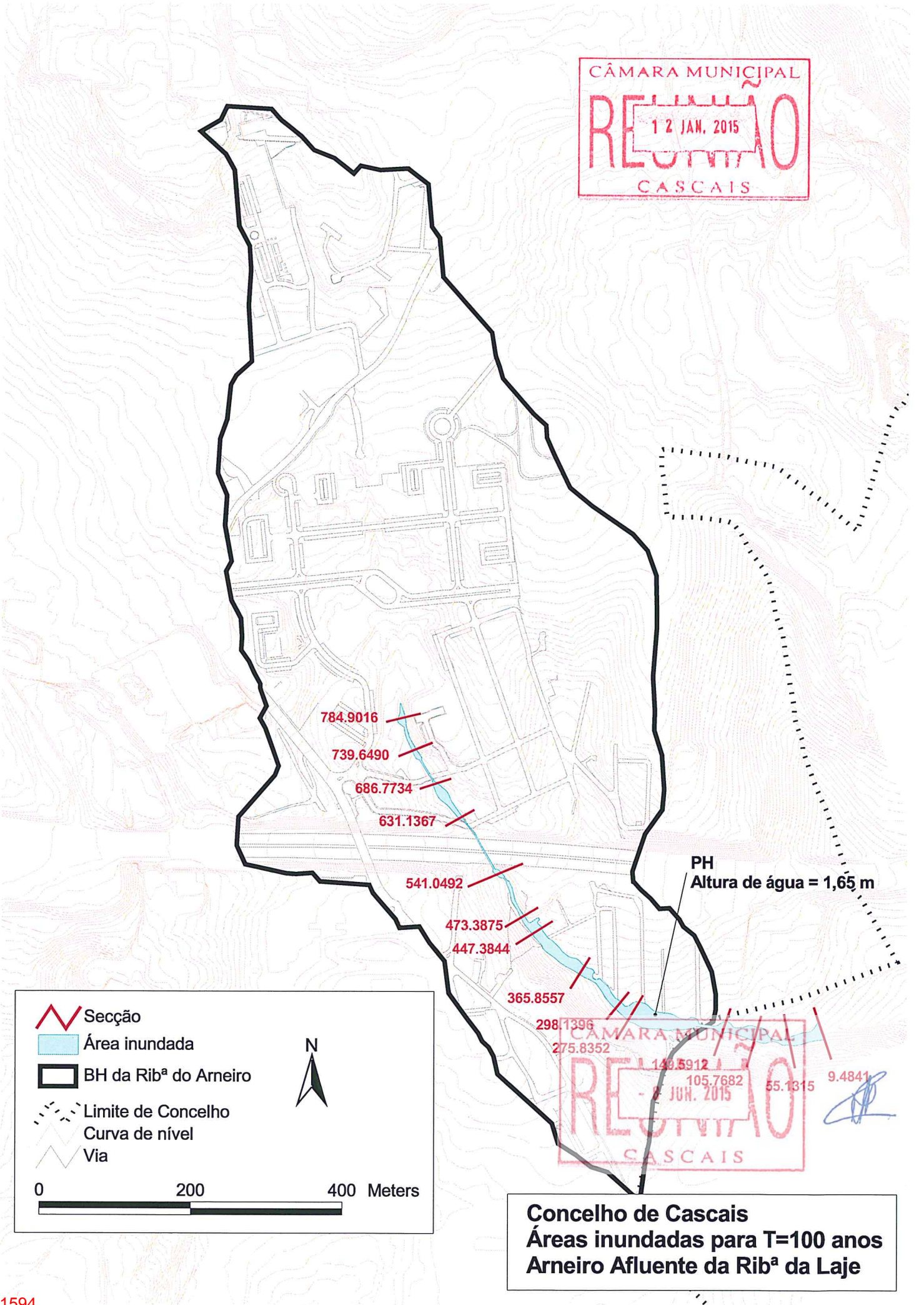
RIBEIRA DE FOZ DO GUINCHO
RESULTADOS DA SIMULAÇÃO PARA T=100 ANOS



Sentido escoamento	Linha de água	Secção	Caudal	Cota terreno	Nível água	Altura água	Declive	Velocidade	Área molhada	Largura superficial	
			(m³/s)	(m)	(m)	(m)	(m/m)	(m/s)	(m²)	(m)	
montante	ME2 (efluente)	2235.112	3.40	92.87	93.11	0.24	0.0133	1.10	3.62	25.90	
		2198.545	3.40	92.40	92.60	0.20	0.0131	0.96	5.63	54.78	
		2159.483	3.40	92.00	92.17	0.17	0.0034	0.51	7.88	58.95	
		2124.099	3.40	91.86	92.03	0.17	0.0106	0.71	5.25	64.58	
		2084.360	3.40	91.35	91.57	0.22	0.0187	1.25	3.17	24.56	
		2050.468	3.40	91.00	91.13	0.13	0.0055	0.55	6.61	56.95	
		1991.894	3.40	90.70	90.79	0.09	0.0112	0.61	5.61	63.52	
		1934.663	3.40	90.00	90.17	0.17	0.0113	0.91	3.94	27.11	
		1904.927	3.40	89.62	89.84	0.22	0.0191	1.09	3.16	22.83	
		1878.748	3.40	89.13	89.41	0.28	0.0086	1.11	3.28	14.00	
		1850.067	3.40	89.00	89.17	0.17	0.0170	1.10	3.29	24.56	
		1835.732	3.40	88.76	88.91	0.15	0.0245	1.05	3.40	33.01	
		1809.974	3.40	87.45	87.71	0.26	0.0226	1.26	2.70	16.95	
		1790.202	6.30	86.18	86.51	0.33	0.0201	1.46	4.35	21.59	
		1762.138	6.30	85.00	85.35	0.35	0.0041	0.87	7.64	27.34	
		1716.191	6.30	84.71	85.05	0.34	0.0195	1.47	4.42	22.06	
		1689.479	6.30	83.56	83.81	0.25	0.0206	1.32	4.90	30.99	
		1638.469	6.30	81.00	81.82	0.82	0.0032	0.90	7.03	16.76	
		1630.000	PH2	81.00	81.82	2.09			2.27	0.07	
		1581.930	6.30	79.23	79.74	0.51	0.0181	1.78	3.54	11.18	
		1551.560	6.30	78.00	78.32	0.32	0.0190	1.59	3.97	15.53	
		1518.703	6.30	77.00	77.52	0.52	0.0078	1.20	5.25	15.93	
		1484.499	6.30	76.93	77.19	0.26	0.0213	1.38	4.56	23.83	
		1440.933	6.30	75.55	75.97	0.42	0.0191	1.66	3.79	13.81	
		1418.399	6.30	75.00	75.33	0.33	0.0197	1.51	4.16	17.93	
		1371.504	6.30	73.00	73.37	0.37	0.0189	1.65	3.81	13.85	
		1345.794	6.30	72.00	72.52	0.52	0.0100	1.22	5.17	18.52	
		1313.527	6.30	71.87	72.18	0.31	0.0205	1.45	4.33	20.37	
		1271.342	6.30	70.24	70.73	0.49	0.0187	1.69	3.74	13.17	
		1242.073	6.30	70.00	70.27	0.27	0.0207	1.43	4.41	21.53	
		1194.423	6.30	68.00	68.39	0.39	0.0208	1.51	4.17	18.74	
		1137.963	6.30	66.17	66.55	0.38	0.0207	1.47	4.30	20.13	
		1095.437	7.90	65.00	65.50	0.50	0.0129	1.55	5.11	15.47	
		1050.689	7.90	64.56	64.93	0.37	0.0088	0.99	8.00	35.64	
		994.792	7.90	64.00	64.31	0.31	0.0110	1.16	6.81	28.21	
955.551	7.90	63.80	63.98	0.18	0.0114	0.95	8.33	47.97			
921.846	7.90	63.34	63.58	0.24	0.0233	1.22	6.49	44.00			
870.254	7.90	61.00	61.29	0.29	0.0195	1.56	5.07	20.73			
838.944	7.90	60.00	60.28	0.28	0.0194	1.56	5.05	20.43			
820.338	7.90	59.40	59.81	0.41	0.0196	1.53	5.15	21.71			
800.338	7.90	58.60	59.41	0.81	0.0007	0.61	16.25	31.76			
794.000	PH1	58.60	59.48	0.88			1.94	0.25			
777.416	7.90	58.08	58.50	0.42	0.0188	1.66	4.77	17.35			
755.920	7.90	58.00	58.21	0.21	0.0208	1.42	5.58	27.63			
724.856	7.90	56.25	56.60	0.35	0.0201	1.51	5.24	23.12			
690.779	7.90	54.00	54.31	0.31	0.0193	1.59	4.97	19.57			
659.076	7.90	53.13	53.55	0.42	0.0089	1.14	6.92	25.16			
622.688	7.90	53.00	53.19	0.19	0.0212	1.33	5.93	32.73			
570.457	7.90	51.36	51.73	0.37	0.0205	1.46	5.41	25.32			
520.644	7.90	50.24	50.63	0.39	0.0101	1.09	7.25	30.87			
485.759	7.90	49.97	50.16	0.19	0.0226	1.29	6.15	37.53			
448.388	7.90	48.71	49.01	0.30	0.0213	1.32	6.02	38.66			
416.162	7.90	46.89	47.34	0.45	0.0188	1.68	4.70	16.63			
372.015	7.90	44.00	44.73	0.73	0.0158	2.33	3.40	6.19			
328.619	7.90	40.04	40.92	0.88	0.0162	2.13	3.71	8.03			
309.530	7.90	38.92	39.47	0.55	0.0165	2.02	3.90	9.50			
281.349	7.90	37.00	37.53	0.53	0.0166	2.03	3.89	9.36			
245.105	13.80	34.15	34.97	0.82	0.0161	2.08	6.63	15.14			
226.428	13.80	33.22	34.08	0.86	0.0155	2.22	6.22	12.44			
195.445	13.80	29.68	30.90	1.22	0.0155	2.32	5.94	10.85			
164.257	13.80	24.89	25.81	0.92	0.0150	2.58	5.34	7.99			
140.143	13.80	23.00	23.77	0.77	0.0168	1.95	7.09	18.54			
100.927	13.80	21.00	21.63	0.63	0.0168	1.94	7.12	18.72			
80.033	13.80	21.00	21.37	0.37	0.0182	1.72	8.02	26.89			
41.122	13.80	20.00	21.08	1.08	0.0143	1.83	7.56	19.23			
6.040	13.80	19.26	20.45	1.19	0.0010	0.66	20.81	34.16			



CÂMARA MUNICIPAL
REQUISITO
12 JAN. 2015
CASCAIS



Secção

Área inundada

BH da Ribª do Arneiro

Limite de Concelho

Curva de nível

Via

0 200 400 Meters

PH
Altura de água = 1,65 m

CÂMARA MUNICIPAL
REQUISITO
105.7682
- 8 JUN. 2015
CASCAIS

9.4841

Concelho de Cascais
Áreas inundadas para T=100 anos
Arneiro Afluente da Ribª da Laje

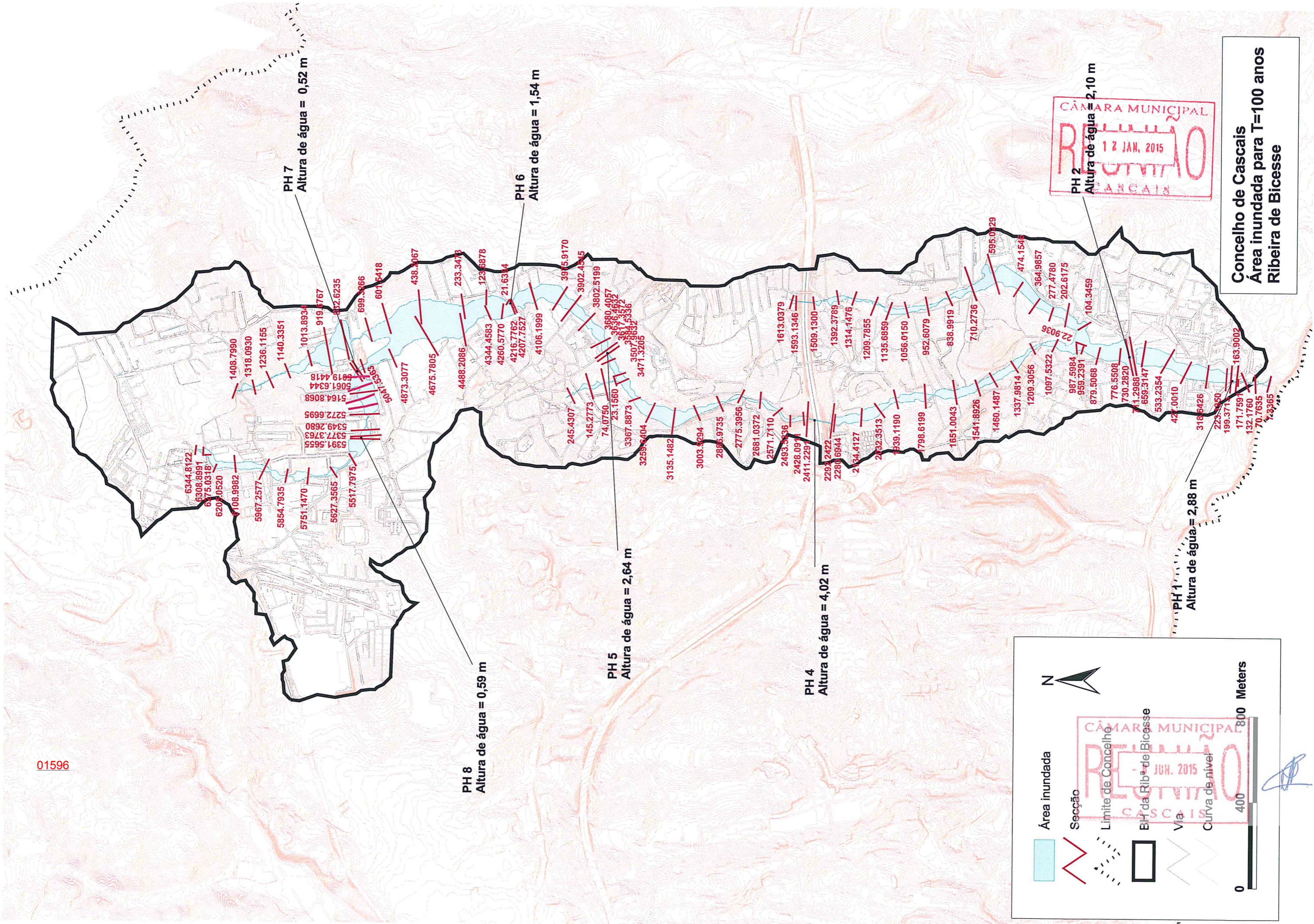
RIBEIRA DE "ARNEIRO" AFLUENTE RIBEIRA DA LAJE
 RESULTADOS DA SIMULAÇÃO PARA T=100 ANOS



Sentido escoamento	Linha de água	Secção	Caudal	Cota terreno	Nível água	Altura água	Declive	Velocidade	Área molhada	largura superficial	
			(m ³ /s)	(m)	(m)	(m)					(m/m)
montante	ARNEIRO afluente rib ^a Laje	784.902	9.50	71.52	72.76	1.24	0.0117	2.72	5.73	11.26	
		739.649	9.50	69.48	70.46	0.98	0.0440	4.50	2.68	5.23	
		686.773	9.50	67.56	68.54	0.98	0.0400	4.38	2.72	5.39	
		631.137	9.50	66.57	67.80	1.23	0.0202	3.44	3.45	5.29	
		541.049	9.50	60.53	61.29	0.76	0.0727	5.23	2.36	6.89	
		473.387	9.50	57.51	58.47	0.96	0.0423	4.51	2.72	5.00	
		447.384	14.80	56.56	57.66	1.10	0.0397	4.53	5.75	15.07	
		365.856	14.80	53.59	54.64	1.05	0.0393	4.46	5.67	13.06	
		298.140	14.80	50.61	51.77	1.16	0.0433	4.65	5.07	11.51	
		275.835	14.80	49.60	51.25	1.65	0.0026	1.71	19.02	29.15	
		200.000	PH	49.60	51.25	1.65		2.91	0.89		
		149.591	14.80	45.67	46.66	0.99	0.0130	2.95	8.76	16.81	
jusante	ARNEIRO afluente rib ^a Laje	105.768	14.80	42.49	43.42	0.93	0.0674	5.54	4.68	14.80	
		55.132	14.80	40.17	41.02	0.85	0.0477	5.04	4.38	10.39	
		9.484	14.80	37.60	39.83	2.23	0.0010	1.23	24.95	25.11	



01596

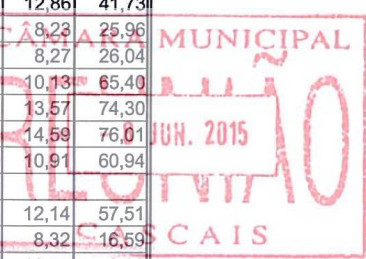


Concelho de Cascais
Área inundada para T=100 anos
Ribeira de Bicesse

**RIBEIRA DE BICESSE
RESULTADOS DA SIMULAÇÃO PARA T=100 ANOS**



Sentido escoamento	Linha de água	Secção	Caudal	Cota terreno	Nível água	Altura água	Declive	Velocidade	Área molhada	Largura superficial	
			(m3/s)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
montante	MEZ (afluente)	1613,038	4,70	59,62	60,19	0,57	0,0090	1,61	6,22	34,07	
		1593,135	4,70	59,14	59,69	0,55	0,0248	2,55	3,26	38,05	
		1509,130	4,70	56,20	56,71	0,51	0,0451	3,23	1,46	3,60	
		1392,379	4,70	54,54	55,25	0,71	0,0081	1,75	4,95	25,31	
		1314,148	4,70	52,46	52,85	0,39	0,1086	4,34	1,08	2,93	
		1209,786	4,70	49,52	50,18	0,66	0,0154	2,27	2,71	10,92	
		1135,686	4,70	48,52	49,18	0,66	0,0132	2,08	3,84	27,04	
		1056,015	7,80	47,20	47,96	0,76	0,0158	2,46	5,80	25,14	
		952,608	7,80	45,61	46,42	0,81	0,0141	2,41	5,61	20,62	
		838,992	7,80	42,54	43,19	0,65	0,0482	3,95	2,37	8,60	
		710,274	7,80	40,57	41,29	0,72	0,0107	2,03	8,44	36,91	
		595,023	7,80	37,92	38,41	0,49	0,0641	3,76	4,47	40,83	
		474,155	7,80	35,67	36,37	0,70	0,0096	1,91	9,65	46,49	
		364,986	7,80	33,55	34,14	0,59	0,0395	3,42	4,73	35,36	
		277,478	7,80	31,90	32,35	0,45	0,0124	1,58	9,06	33,78	
		202,618	7,80	30,71	31,18	0,47	0,0185	2,16	9,13	59,53	
104,346	7,80	28,65	29,29	0,64	0,0181	2,43	7,72	51,66			
22,904	7,80	26,87	28,38	1,51	0,0002	0,40	44,10	71,80			
montante	ME1 (afluente)	1408,799	3,10	123,73	124,28	0,55	0,0070	1,37	4,78	37,34	
		1318,093	3,10	117,47	117,60	0,13	1,9217	9,40	0,33	2,68	
		1236,116	3,10	113,17	113,61	0,44	0,0318	2,50	1,24	2,98	
		1140,335	3,10	107,08	107,35	0,27	0,1491	4,15	0,75	2,84	
		1013,893	3,10	103,57	104,12	0,55	0,0132	1,85	2,67	27,12	
		919,677	3,10	102,62	103,21	0,59	0,0084	1,53	4,10	33,56	
		832,624	3,80	101,91	102,24	0,33	0,0157	1,57	8,54	139,32	
		699,327	3,80	100,51	101,14	0,63	0,0059	1,36	6,80	56,03	
		601,542	3,80	99,66	100,45	0,79	0,0009	0,61	16,57	72,97	
		438,207	3,80	99,62	100,24	0,62	0,0019	0,81	12,31	65,87	
		233,347	3,80	98,50	99,12	0,62	0,0169	2,22	1,80	4,84	
		123,688	3,80	97,58	98,54	0,96	0,0004	0,48	17,39	43,58	
		21,639	3,80	96,55	98,54	1,99	0,0000	0,13	66,17	66,38	
montante	MD1 (afluente)	245,431	2,20	91,65	92,05	0,40	0,0209	1,93	1,14	3,04	
		145,277	2,20	88,67	89,01	0,34	0,0434	2,49	0,88	2,99	
		74,075	2,20	86,76	87,17	0,41	0,0213	1,95	1,13	2,97	
		23,156	2,20	84,80	85,08	0,28	0,0736	2,96	0,74	2,86	
Bicesse (montante)		6344,812	3,60	123,01	123,87	0,86	0,0016	0,85	4,22	5,17	
		6308,899	3,60	122,97	123,80	0,83	0,0020	0,95	4,00	8,83	
		6275,032	3,60	122,87	123,78	0,91	0,0009	0,72	10,12	30,41	
		6205,052	3,60	122,85	123,42	0,57	0,0155	2,05	1,94	7,53	
		6108,998	3,60	121,62	122,23	0,61	0,0111	1,81	2,80	15,12	
		5967,258	5,20	119,26	119,91	0,65	0,0200	2,50	3,29	22,01	
		5854,793	5,20	115,52	116,01	0,49	0,0567	3,57	1,46	3,24	
		5751,147	5,20	111,52	112,08	0,56	0,0304	2,86	2,70	17,89	
		5627,356	5,20	109,62	110,25	0,63	0,0107	1,87	5,96	35,06	
		5517,797	5,20	107,52	108,18	0,66	0,0199	2,56	2,38	7,97	
		5391,565	5,20	106,57	106,98	0,41	0,0151	1,80	8,72	90,68	
		5377,376	5,20	106,36	106,57	0,21	0,0246	1,05	4,96	43,89	
		5370,000	PH 8	106,36	106,95	0,59			2,61	1,99	
		5349,268	5,20	106,00	106,22	0,22	0,0233	1,15	4,51	33,11	
		5272,670	14,50	104,60	105,49	0,89	0,0092	2,18	12,86	41,73	
		5232,670	14,50	103,71	104,94	1,23	0,0152	2,11	8,23	25,96	
		5192,670	14,50	103,27	104,60	1,33	0,0141	2,07	8,27	26,04	
		5164,807	14,50	103,10	104,23	1,13	0,0224	2,36	10,13	65,40	
		5137,806	14,50	102,76	103,93	1,17	0,0129	1,96	13,57	74,30	
		5087,806	14,50	102,21	103,39	1,18	0,0114	1,75	14,59	76,01	
		5061,634	14,50	102,15	102,37	0,22	0,0214	1,33	10,91	60,94	
		5055,000	PH 7	102,15	102,67	0,52					
		5047,536	14,50	101,87	102,71	0,84	0,0078	1,71	12,14	57,51	
		5019,442	14,50	101,33	102,73	1,40	0,0096	2,69	8,32	16,59	
		4873,308	14,50	100,49	101,39	0,90	0,0088	2,11	16,77	58,26	
		4675,780	14,50	99,76	100,47	0,71	0,0034	1,15	37,74	174,43	
		4488,209	14,50	98,57	99,44	0,87	0,0087	1,98	20,97	103,49	
4344,458	14,50	97,68	98,71	1,03	0,0037	1,49	26,11	86,00			
4260,577	14,50	97,37	98,53	1,16	0,0017	1,13	30,88	68,27			

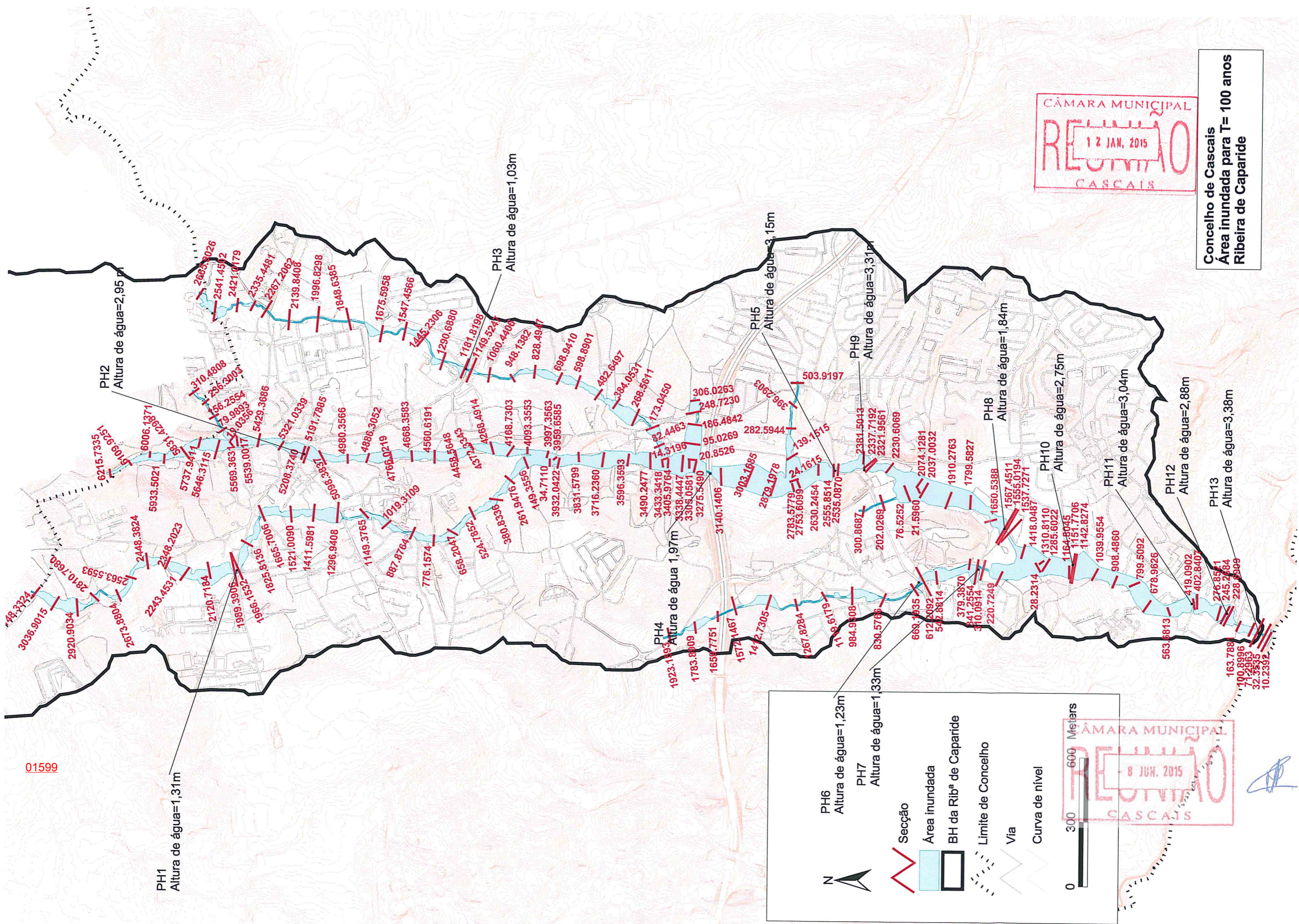


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jusante	Bicesse (interm.1)	4216,776	20,90	97,00	98,54	1,54	0,0001	0,33	74,13	75,20	
		4210,000	PH 6	97,00	98,54	1,54		2,78	7,51		
		4207,753	20,90	96,85	97,51	0,66	0,0069	1,31	15,99	38,91	
		4106,200	20,90	95,76	96,59	0,83	0,0130	2,49	21,20	74,39	
		3975,917	20,90	93,57	94,54	0,97	0,0108	2,49	21,14	66,75	
		3902,454	20,90	92,61	93,73	1,12	0,0100	2,65	18,37	48,25	
		3802,520	20,90	91,44	92,63	1,19	0,0114	2,79	16,15	40,17	
		3680,406	20,90	89,02	90,13	1,11	0,0285	4,18	8,92	23,93	
		3636,463	20,90	87,75	90,39	2,64	0,0001	0,25	103,52	91,29	
		3630,000	PH 5	87,75	90,39	2,64		3,64	5,74		
		3617,357	20,90	87,30	88,22	0,92	0,0234	3,44	6,07	8,22	
		3584,534	20,90	86,48	87,63	1,15	0,0200	3,81	10,33	23,17	
		3507,963	20,90	84,73	85,42	0,69	0,0450	4,37	9,84	30,26	
		3471,320	23,70	83,80	84,99	1,19	0,0111	2,82	17,79	42,86	
		3367,887	23,70	81,64	82,76	1,12	0,0324	4,3	10,54	30,07	
	3259,640	23,70	79,50	80,76	1,26	0,0155	3,36	17,44	59,06		
	3135,148	23,70	78,90	79,81	0,91	0,0054	1,65	32,38	80,55		
	3003,929	23,70	77,55	78,57	1,02	0,0149	2,92	16,2	34,94		
	2886,974	23,70	74,50	75,78	1,28	0,0286	4,2	9,05	16,54		
	2775,396	23,70	71,89	73,38	1,49	0,0167	4,01	9,66	17,09		
	2681,037	23,70	68,67	69,57	0,90	0,0722	5,91	5,2	10,74		
	2571,711	23,70	62,61	63,86	1,25	0,0435	5,35	6,01	9,88		
	2493,524	23,70	60,52	61,90	1,38	0,0254	4,18	8,62	14,78		
	2428,091	26,00	57,00	60,49	3,49	0,0005	0,94	32,06	17,79		
	2411,229	26,00	56,50	60,52	4,02	0,0001	0,53	50,83	20,9		
	2400,000	PH 4	56,50	60,52	4,02		4,85	5,34			
	2292,242	26,00	53,20	54,20	1,00	0,0193	3,17	8,19	11,13		
	2280,694	26,00	52,96	54,13	1,17	0,0201	3,66	14,85	35,27		
	2134,413	26,00	49,63	50,54	0,91	0,0298	4,02	14,56	45,01		
	2032,351	26,00	46,69	47,61	0,92	0,0295	3,89	14,42	41,01		
	1939,119	26,00	43,65	45,15	1,50	0,0183	4,21	10,52	19,2		
	1798,620	27,50	40,52	41,62	1,10	0,0351	4,79	11,82	32,4		
	1651,004	27,50	38,52	39,58	1,06	0,0147	3,05	18,61	39,35		
	1541,893	27,50	36,61	38,06	1,45	0,0116	3,26	16,29	27,93		
	1460,149	27,50	35,54	36,55	1,01	0,0273	4,06	13,98	33,48		
	1337,981	27,50	33,60	34,64	1,04	0,0146	2,96	19,15	40,54		
	1209,306	27,50	30,52	31,92	1,40	0,0212	4,34	10,23	14,73		
	1097,532	27,50	28,79	29,96	1,17	0,0192	3,59	14,82	29,84		
	987,598	27,50	26,79	28,42	1,63	0,0043	2,27	25,66	36,60		
959,239	36,10	26,16	27,97	1,81	0,0118	3,49	17,94	22,30			
879,507	36,10	25,56	26,98	1,42	0,0026	1,61	47,73	65,32			
776,551	36,10	25,04	26,28	1,24	0,0138	3,24	24,93	50,68			
730,282	36,10	24,01	26,11	2,10	0,0000	0,14	278,56	184,45			
725,000	PH 2	24,01	26,11	2,10		3,25	5,10				
711,299	36,10	23,57	24,13	0,56	0,0152	1,82	26,03	94,11			
659,315	36,10	22,32	23,33	1,01	0,0107	2,62	33,28	80,73			
533,235	36,10	20,56	21,85	1,29	0,0116	3,15	28,93	67,04			
427,001	36,10	18,68	19,55	0,87	0,0419	4,46	19,17	60,22			
318,643	36,10	16,77	17,77	1,00	0,0163	3,25	25,85	60,11			
223,195	36,10	14,61	16,76	2,15	0,0053	2,94	27,26	39,63			
199,371	36,10	14,10	16,98	2,88	0,0003	0,49	74,11	68,88			
190,000	PH 1	14,10	16,98	2,88		1,95	18,56				
171,759	36,10	13,75	16,67	2,92	0,0002	0,61	79,15	77,26			
163,900	36,10	13,64	15,88	2,24	0,0182	3,95	9,14	5,79			
132,176	36,10	13,20	14,81	1,61	0,0302	4,72	7,65	6,48			
70,763	36,10	12,00	13,85	1,85	0,0223	3,15	11,47	17,32			
7,337	36,10	11,00	13,19	2,19	0,0008	0,96	41,27	43,31			



01599



CÂMARA MUNICIPAL
REGISTADO
 12 JAN, 2015
 CASCAIS

Concelho de Cascais
 Área inundada para T= 100 anos
 Ribeira de Caparide

PH6
Altura de água=1,23m

PH7
Altura de água=1,33m

PH13
Altura de água=3,38m

PH12
Altura de água=2,88m

PH11
Altura de água=3,04m

PH10
Altura de água=2,75m

PH8
Altura de água=1,84m

PH9
Altura de água=3,31m

PH5
Altura de água=3,15m

PH3
Altura de água=1,03m

PH4
Altura de água 1,97m

PH2
Altura de água=2,95m

PH1
Altura de água=1,31m

Seção

Área inundada

BH da Rib^a de Caparide

Limite de Concelho

Via

Curva de nível

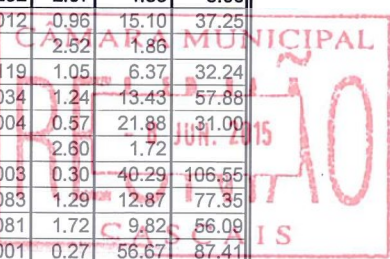
0 300 600 Meters

CÂMARA MUNICIPAL
REGISTADO
 8 JUN, 2015
 CASCAIS



RIBEIRA DE CAPARIDE
 RESULTADOS DA SIMULAÇÃO PARA T=100 ANOS

Sentido escoamento	Linha de água	Secção	Caudal (m³/s)	Cota terreno (m)	Nível água (m)	Altura água (m)	Declive (m/m)	Velocidade (m/s)	Área molhada (m²)	Largura superficial (m)
montante	ME4 (afluente)	503.920	5.10	68.03	68.76	0.73	0.0120	2.13	3.16	9.79
		396.290	5.10	62.05	62.80	0.75	0.0134	2.23	2.69	8.58
		282.594	5.10	54.48	55.25	0.77	0.0112	2.01	3.50	12.16
		139.152	5.10	47.87	48.60	0.73	0.0114	2.03	3.68	14.59
		24.162	5.10	44.54	46.32	1.78	0.0000	0.15	75.55	82.32
	ME3 (afluente)	306.026	3.40	65.08	66.01	0.93	0.0017	0.95	6.20	19.79
		248.723	3.40	65.00	65.53	0.53	0.0216	2.25	1.51	3.06
		186.484	3.40	56.44	57.03	0.59	0.0055	1.28	6.71	60.94
		95.027	3.40	50.75	51.32	0.57	0.0058	1.29	6.76	63.96
		20.853	3.40	49.34	50.61	1.27	0.0001	0.33	22.65	46.22
		ME2 (afluente)	2665.903	2.00	119.06	119.44	0.38	0.0208	1.88	1.07
	2541.450		2.00	115.24	115.63	0.39	0.0204	1.88	1.06	2.99
	2421.018		2.00	112.26	112.61	0.35	0.0209	1.82	1.10	3.25
	2335.448		2.00	109.50	109.87	0.37	0.0215	1.89	1.06	2.93
	2267.206		2.00	107.53	107.92	0.39	0.0207	1.89	1.06	2.93
	2139.841		2.00	104.17	104.56	0.39	0.0203	1.87	1.07	2.87
	1996.830		2.00	101.70	102.12	0.42	0.0076	1.26	1.83	12.93
	1848.639		2.00	100.26	100.69	0.43	0.0158	1.74	1.15	2.98
	1675.596		2.00	97.58	97.97	0.39	0.0156	1.66	1.21	3.27
	1547.457		2.00	95.94	96.39	0.45	0.0093	1.37	2.31	19.35
1445.231	2.00		94.51	94.89	0.38	0.0205	1.87	1.07	3.01	
1290.688	2.00		90.89	91.26	0.37	0.0219	1.90	1.05	2.91	
1181.820	9.50		89.26	90.29	1.03	0.0005	0.38	30.17	73.95	
1175.000	PH 3		89.26	90.29	1.03			1.92	1.04	
1149.525	9.50		89.25	89.87	0.62	0.0181	1.80	5.26	16.30	
1060.441	9.50		84.48	85.57	1.09	0.0106	2.38	5.86	14.37	
948.138	9.50		80.69	81.76	1.07	0.0142	2.90	3.73	5.39	
828.495	9.50		74.94	75.91	0.97	0.0105	2.43	6.33	15.68	
698.941	9.50		71.63	72.50	0.87	0.0093	2.11	9.45	33.07	
598.890	9.50		68.50	69.48	0.98	0.0087	2.26	7.63	20.72	
482.650	9.50	64.77	65.60	0.83	0.0103	2.24	8.45	27.51		
384.053	11.30	62.49	63.33	0.84	0.0100	2.13	11.69	41.72		
268.561	11.30	59.23	60.15	0.92	0.0082	1.98	14.10	58.99		
173.045	11.30	55.54	56.41	0.87	0.0091	2.10	12.02	40.92		
82.446	11.30	51.62	52.65	1.03	0.0118	2.47	7.73	18.50		
14.320	11.30	49.60	51.86	2.26	0.0002	0.57	36.27	30.94		
ME1 (afluente)	310.481	3.50	101.71	102.31	0.60	0.0184	2.23	1.58	3.62	
	236.300	3.50	95.83	96.37	0.54	0.0226	2.29	1.53	2.89	
	156.255	3.50	90.56	91.10	0.54	0.0218	2.28	1.54	2.93	
	79.989	3.50	86.72	87.30	0.58	0.0158	2.14	1.75	4.86	
	19.036	3.50	83.34	84.29	0.95	0.0007	0.60	12.34	37.22	
MD3 (afluente)	1923.159	2.80	67.60	68.07	0.47	0.0206	2.07	1.35	2.98	
	1783.891	2.80	65.01	65.61	0.60	0.0067	1.39	3.62	30.34	
	1659.775	2.80	61.60	62.13	0.53	0.0131	1.77	1.58	3.27	
	1572.147	2.80	60.58	61.08	0.50	0.0173	1.97	1.42	2.99	
	1412.730	2.80	57.81	58.28	0.47	0.0213	2.11	1.33	2.95	
	1267.828	2.80	54.49	54.95	0.46	0.0215	2.09	1.34	3.02	
	1119.618	2.80	48.58	49.03	0.45	0.0208	2.06	1.36	3.14	
	984.931	2.80	44.74	45.32	0.58	0.0066	1.36	3.84	33.72	
	830.577	2.80	40.89	41.36	0.47	0.0202	2.07	1.35	3.00	
	669.193	6.70	37.57	38.80	1.23	0.0012	0.96	15.10	37.25	
	660.000	PH 6	37.57	38.80	1.23			1.86		
	612.209	6.70	35.45	35.89	0.44	0.0119	1.05	6.37	32.24	
	542.881	6.70	34.48	35.32	0.84	0.0034	1.24	13.43	57.88	
	379.387	6.70	33.45	34.78	1.33	0.0004	0.57	21.88	31.00	
	370.000	PH 7	33.45	34.78	1.33			1.72		
	341.255	6.70	33.29	33.88	0.59	0.0003	0.30	40.29	106.55	
	310.091	6.70	32.67	33.25	0.58	0.0083	1.29	12.87	77.35	
	220.725	6.70	31.57	32.28	0.71	0.0081	1.72	9.82	56.09	
	28.231	6.70	29.69	31.13	1.44	0.0001	0.27	56.67	87.41	

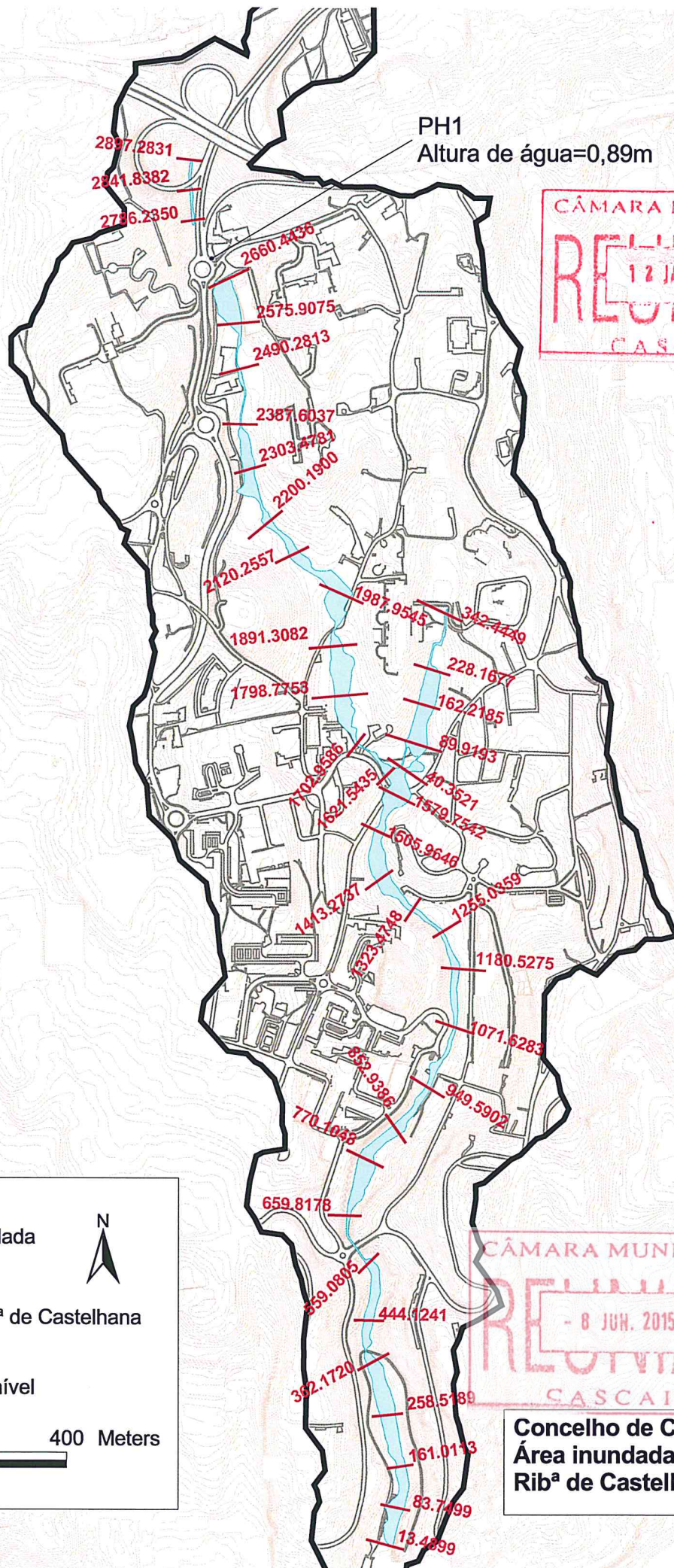


Sentido escoamento	Linha de água	Secção	Caudal (m³/s)	Cota terreno (m)	Nível água (m)	Altura água (m)	Declive (m/m)	Velocidade (m/s)	Área molhada (m²)	Largura superficial (m)	
MD2 (afluente)		300.869	0.90	39.66	39.89	0.23	0.0197	1.36	0.66	2.96	
		202.027	0.90	37.52	37.84	0.32	0.0082	1.06	0.85	2.81	
		76.525	0.90	36.50	37.54	1.04	0.0000	0.05	45.95	136.52	
		21.596	0.90	36.08	37.54	1.46	0.0000	0.09	20.10	32.85	
MD1 (afluente)		3148.332	8.20	122.90	123.70	0.80	0.0096	2.07	7.54	27.73	
		3036.901	8.20	120.35	121.04	0.69	0.0089	1.81	10.23	46.66	
		2920.903	8.20	118.89	119.92	1.03	0.0069	1.87	8.88	35.24	
		2810.768	10.80	115.55	116.40	0.85	0.0091	2.13	9.60	29.41	
		2673.880	10.80	111.77	112.56	0.79	0.0120	2.46	8.65	24.82	
		2563.559	10.80	107.55	108.53	0.98	0.0109	2.5	7.32	16.73	
		2448.382	10.80	102.13	103.09	0.96	0.0084	2.06	11.27	39.33	
		2348.202	10.80	99.43	100.84	1.41	0.0030	1.66	12.23	24.19	
		2243.453	10.80	99.52	100.26	0.74	0.0102	2.03	12.90	55.12	
		2120.718	10.80	97.95	98.74	0.79	0.0107	2.14	11.04	40.30	
		1989.391	15.00	96.59	97.90	1.31	0.0001	0.32	66.41	100.75	
		1980.000	PH 1	96.59	97.90	1.31		1.91	3.10		
		1966.153	15.00	96.58	97.50	0.92	0.0026	1.23	28.75	75.30	
		1825.814	15.00	95.58	96.79	1.21	0.0094	2.66	10.48	22.91	
		1665.701	15.00	93.40	94.32	0.92	0.0116	2.53	12.40	34.10	
		1521.009	15.00	91.21	92.16	0.95	0.0114	2.47	12.53	34.29	
		1411.598	15.00	88.51	89.60	1.09	0.0093	2.48	12.82	33.99	
		1296.941	15.70	86.51	87.36	0.85	0.0104	2.23	17.67	64.01	
		1149.377	15.70	83.58	84.74	1.16	0.0086	2.38	14.33	38.95	
		1019.311	15.70	81.50	82.68	1.18	0.0093	2.57	12.41	30.45	
		887.876	15.70	78.69	80.33	1.64	0.0082	2.69	9.27	20.99	
		776.157	15.70	76.52	77.70	1.18	0.0094	2.64	11.97	28.47	
		658.205	15.70	73.51	74.46	0.95	0.0098	2.34	15.03	45.09	
		524.785	15.70	69.46	70.89	1.43	0.0081	2.66	10.67	22.85	
		380.834	15.70	64.50	65.74	1.24	0.0095	2.71	10.89	23.68	
		261.948	15.70	60.40	61.77	1.37	0.0108	2.9	8.46	14.41	
		149.356	15.70	58.51	59.47	0.96	0.0098	2.35	16.09	52.05	
	34.711	15.70	56.51	58.56	2.05	0.0004	0.78	44.14	55.79		
Caparide (montante)		6215.734	60.70	97.51	100.04	2.53	0.0112	4.68	21.46	15.57	
		6109.925	60.70	93.60	95.84	2.24	0.0131	4.69	21.38	16.02	
		6006.137	60.70	91.56	93.34	1.78	0.0112	3.77	28.76	26.79	
		5933.502	60.70	89.60	91.87	2.27	0.0108	4.28	27.51	27.64	
		5831.430	60.70	87.63	89.21	1.58	0.0144	4.01	33.61	50.19	
		5737.941	60.70	85.46	87.16	1.70	0.0133	3.88	31.71	40.12	
		5646.311	60.70	83.70	85.37	1.67	0.0083	3.20	42.87	59.67	
		5569.363	60.70	82.51	84.39	1.88	0.0108	3.87	33.69	42.23	
		5539.002	63.40	81.53	83.83	2.30	0.0077	3.83	39.54	50.20	
		5429.369	63.40	79.60	81.81	2.21	0.0114	4.35	28.05	27.79	
		5321.034	63.40	77.53	80.44	2.91	0.0066	3.81	35.66	38.66	
Caparide (inter.1)		5208.374	63.40	76.56	79.51	2.95	0.0005	0.95	80.52	66.63	
		5200.000	PH 2	76.56	79.51	2.95		3.51	9.50		
		5191.788	63.40	76.56	78.28	1.72	0.0080	2.71	35.50	61.80	
		5098.384	63.40	74.20	75.97	1.77	0.0118	3.83	38.14	56.15	
		4980.357	63.40	71.51	73.89	2.38	0.0099	4.30	29.34	29.35	
		4886.305	63.40	70.53	72.63	2.10	0.0113	4.19	30.72	34.09	
		4766.022	63.40	68.60	70.61	2.01	0.0108	3.96	33.67	39.80	
		4668.358	63.40	67.51	69.20	1.69	0.0142	4.08	31.53	39.02	
		4560.619	63.40	64.60	67.11	2.51	0.0100	4.13	30.80	33.26	
		4458.565	63.40	63.53	65.85	2.32	0.0084	3.93	36.92	45.76	
		4372.334	63.40	62.45	64.52	2.07	0.0139	4.40	24.74	21.50	
		4268.491	63.40	60.70	62.66	1.96	0.0100	3.87	38.79	54.00	
		4168.730	63.40	58.55	61.11	2.56	0.0068	3.49	39.98	51.27	
		4093.355	63.40	57.45	59.98	2.53	0.0126	4.71	21.50	14.81	
		3997.356	63.40	56.52	58.68	2.16	0.0103	4.15	33.21	39.56	
		3959.659	63.40	55.57	58.45	2.88	0.0026	2.42	54.11	42.42	
	Caparide (inter.2)		3932.042	83.20	55.58	58.13	2.55	0.0075	3.81	46.37	44.88
			3831.580	83.20	54.40	56.55	2.15	0.0106	3.99	40.87	39.01
			3716.236	83.20	53.60	55.33	1.73	0.0126	3.93	51.89	79.25
		3596.359	83.20	51.67	53.66	1.99	0.0137	4.16	43.19	56.08	
		3490.248	83.20	50.59	52.46	1.87	0.0077	3.26	57.74	73.83	
(inter.3)		3433.342	83.20	49.54	51.81	2.27	0.0093	3.85	50.14	62.03	
		3405.976	91.40	49.52	51.47	1.95	0.0125	4.29	50.32	67.15	
		3338.445	91.40	48.51	50.98	2.47	0.0026	2.24	103.89	113.70	
	3305.058	91.40	48.51	50.52	2.01	0.0124	4.31	46.24	53.19		



Sentido escoamento	Linha de água	Secção	Caudal (m³/s)	Cota terreno (m)	Nível água (m)	Altura água (m)	Declive (m/m)	Velocidade (m/s)	Área molhada (m²)	Largura superficial
										(m)
jusante	Caparide (inter.4)	3275.549	92.70	48.51	50.24	1.73	0.0113	3.68	55.26	70.30
		3140.141	92.70	46.54	48.75	2.21	0.0081	3.76	62.25	83.39
		3003.169	92.70	46.00	47.80	1.80	0.0058	2.72	83.10	113.66
		2879.198	92.70	45.60	47.00	1.40	0.0077	2.70	75.16	105.93
		2783.578	92.70	44.47	46.33	1.86	0.0056	2.70	68.22	66.19
	Caparide (inter.5)	2753.610	95.90	44.40	46.16	1.76	0.0057	2.73	69.72	66.45
		2630.245	95.90	43.49	45.36	1.87	0.0076	3.22	63.23	67.67
		2555.851	95.90	42.00	45.15	3.15	0.0012	1.71	107.88	107.66
		2550.000	PH 5	42.00	45.15	3.15		4.05	14.58	
		2535.087	95.90	41.51	43.93	2.42	0.0061	3.42	43.16	56.25
		2381.501	95.90	39.43	42.46	3.03	0.0021	2.24	84.01	53.23
		2337.719	95.90	39.00	42.31	3.31	0.0019	2.22	88.38	103.99
		2335.000	PH 9	39.00	42.31	3.31		3.66	17.19	
		2321.956	95.90	39.00	41.14	2.14	0.0083	3.29	32.42	52.42
		2230.607	95.90	37.50	39.73	2.23	0.0095	3.91	52.81	53.89
	Caparide (inter.6)	2074.128	95.90	35.89	37.92	2.03	0.0128	4.40	50.98	65.12
		2037.003	96.60	35.82	37.29	1.47	0.0088	3.25	75.93	116.57
		1910.276	96.60	34.53	36.23	1.70	0.0058	2.64	80.37	95.70
		1799.583	96.60	33.70	35.44	1.74	0.0096	3.31	62.50	79.96
		1650.539	96.60	31.58	33.51	1.93	0.0162	4.46	40.97	41.90
		1567.451	96.60	31.00	32.84	1.84	0.0002	0.49	340.39	372.02
		1565.000	PH 8	31.00	32.84	1.84		0.72	9.02	
		1555.019	96.60	30.93	32.80	1.87	0.0003	0.67	381.93	510.29
		1537.727	96.60	30.70	32.53	1.83	0.0115	3.86	58.16	83.91
		1418.049	96.60	29.53	31.62	2.09	0.0029	2.17	102.71	105.04
	Caparide (jusante)	1310.811	96.60	29.52	31.07	1.55	0.0088	3.08	65.18	77.57
		1285.602	107.80	28.68	30.97	2.29	0.0040	2.63	96.95	107.25
		1164.805	107.80	27.68	30.03	2.35	0.0116	4.42	55.61	63.14
		1151.771	107.80	27.61	30.36	2.75	0.0003	0.94	254.73	221.28
		1145.000	PH 10	27.61	30.36	2.75		4.13	10.08	
		1142.827	107.80	27.58	29.23	1.65	0.0059	2.57	74.78	132.91
		1039.955	107.80	26.58	28.72	2.14	0.0107	4.13	55.41	56.66
		908.486	107.80	25.71	27.50	1.79	0.0084	3.39	68.56	79.89
		799.509	107.80	24.60	26.48	1.88	0.0091	3.60	71.25	89.05
		678.963	107.80	23.53	25.41	1.88	0.0069	3.12	76.38	85.95
		563.681	107.80	21.52	24.47	2.95	0.0075	4.38	56.22	54.70
		419.090	107.80	20.54	23.58	3.04	0.0005	1.15	152.01	99.77
		415.000	PH 11	20.54	23.58	3.04		3.94	12.18	
		402.841	107.80	20.00	22.15	2.15	0.0061	3.44	54.30	72.75
		276.852	107.80	17.69	20.25	2.56	0.0083	4.24	66.97	80.56
245.268		107.80	17.50	20.38	2.88	0.0005	1.18	180.90	147.32	
240.000		PH 12	17.50	20.38	2.88		3.25	13.18		
228.691		107.80	17.42	19.44	2.02	0.0075	3.00	47.79	77.58	
163.788		107.80	15.73	18.68	2.95	0.0082	4.37	60.10	62.23	
100.900		107.80	13.47	16.60	3.13	0.0105	5.21	41.70	32.35	
71.296	107.80	12.60	16.05	3.45	0.0013	2.01	75.83	68.44		
70.000	PH 13	12.60	15.98	3.38		3.90	8.43			
32.353	107.80	12.55	14.58	2.03	0.0118	3.65	29.55	21.84		
10.239	107.80	10.06	12.49	2.43	0.0008	1.39	122.14	48.84		





PH1
Altura de água=0,89m

CÂMARA MUNICIPAL
RECONSTITUÍDO
12 JAN. 2015
CASCAIS

CÂMARA MUNICIPAL
RECONSTITUÍDO
- 8 JUN. 2015
CASCAIS

Área inundada

 Secção

 BH da Rib^a de Castelhana

 Vias

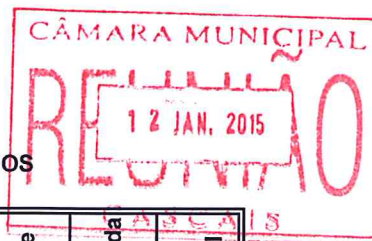
 Curva de nível

N

0 200 400 Meters

Concelho de Cascais
Área inundada para T=100 anos
Rib^a de Castelhana

RIBEIRA DE CASTELHANA
RESULTADOS DA SIMULAÇÃO PARA T=100 ANOS

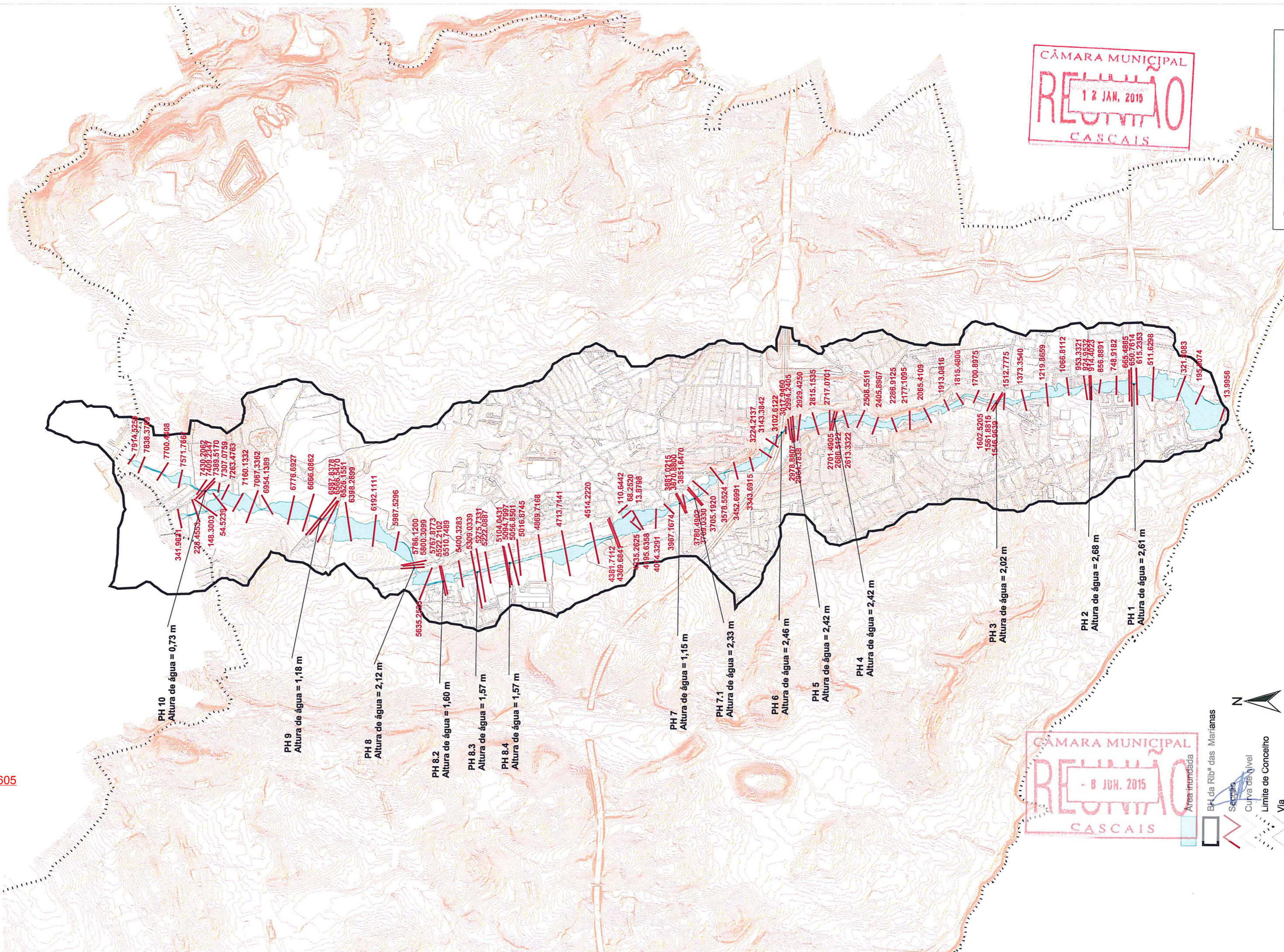


Sentido escoamento	Linha de água	Secção	Caudal (m ³ /s)	Cota terreno (m)	Nível água (m)	Altura água (m)	Declive (m/m)	Velocidade (m/s)	Área molhada (m ²)	Largura superficial (m)	
montante	CASTELHANA (montante)	2897.283	2.00	95.00	95.34	0.34	0.0197	1.59	1.26	4.94	
		2841.838	2.00	90.00	90.33	0.33	0.0195	1.63	1.23	4.57	
		2786.235	2.00	87.00	87.89	0.89	0.0014	0.67	3.00	5.33	
		2780.000	PH 1	87.00	87.89	0.89		2x1.97	2x0.51		
		2660.444	2.00	80.32	80.61	0.29	0.0199	1.52	1.32	5.62	
		2575.907	2.00	76.50	76.86	0.36	0.0224	1.89	1.06	3.00	
		2490.281	2.00	72.64	73.00	0.36	0.0224	1.88	1.06	2.98	
		2387.604	2.00	69.49	69.87	0.38	0.0216	1.88	1.06	2.92	
		2303.478	2.00	67.46	67.85	0.39	0.0212	1.90	1.05	2.89	
		2200.190	4.90	65.00	65.68	0.68	0.0096	1.92	4.24	16.93	
		2120.256	4.90	62.53	63.31	0.78	0.0086	1.80	4.55	18.97	
		1987.955	4.90	59.77	60.41	0.64	0.0109	2.01	3.97	13.87	
		1891.308	4.90	57.74	58.44	0.70	0.0088	1.84	4.71	21.04	
		1798.775	4.90	56.74	57.25	0.51	0.0125	1.86	5.41	26.57	
		1702.959	4.90	54.72	55.45	0.73	0.0149	2.27	2.55	6.41	
		1621.544	4.90	52.23	52.94	0.71	0.0128	2.21	2.74	7.75	
jusante	CASTELHANA (jusante)	1579.754	8.90	51.73	52.48	0.75	0.0091	1.92	10.84	46.34	
		1505.965	8.90	49.03	49.93	0.90	0.0108	2.26	6.57	18.63	
		1413.274	8.90	46.29	47.06	0.77	0.0104	2.07	8.45	28.93	
		1323.475	8.90	42.56	43.67	1.11	0.0085	2.32	5.17	9.47	
		1255.036	11.60	41.71	42.84	1.13	0.0123	3.01	5.02	7.01	
		1180.527	11.60	39.56	40.96	1.40	0.0050	2.12	8.76	14.63	
		1071.628	11.60	38.80	39.92	1.12	0.0179	2.71	4.28	5.72	
		949.590	11.60	36.60	37.68	1.08	0.0124	2.84	5.77	9.39	
		852.939	11.60	34.71	35.73	1.02	0.0102	2.45	8.46	20.42	
		770.105	11.60	33.53	34.85	1.32	0.0028	1.54	15.57	32.23	
		659.818	13.10	32.56	33.90	1.34	0.0131	3.10	5.10	6.71	
		559.081	13.10	30.17	31.30	1.13	0.0111	2.67	7.93	14.92	
		444.124	13.10	27.48	28.70	1.22	0.0099	2.62	8.39	17.47	
		362.172	13.10	26.08	27.18	1.10	0.0108	2.50	9.16	20.59	
		258.519	13.10	23.34	24.33	0.99	0.0106	2.49	10.43	27.26	
		161.011	13.10	20.55	21.61	1.06	0.0116	2.70	8.18	16.24	
83.750	13.10	19.56	20.28	0.72	0.0144	2.40	11.27	34.24			
13.490	13.10	16.39	17.35	0.96	0.0005	0.44	37.18	41.37			



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CÂMARA MUNICIPAL
REUNIÃO
12 JAN. 2015
CASCAIS

CÂMARA MUNICIPAL
REUNIÃO
- 8 JUN. 2015
CASCAIS

Area inundada

BH da Ribª das Marianas

Secção

Curva de nível

Limite de Concelho

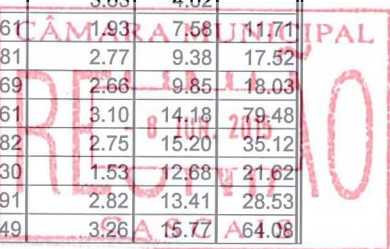
Via

Concelho de Cascais

RIBEIRA DE MARIANAS
RESULTADOS DA SIMULAÇÃO PARA T=100 ANOS




Sentido escoamento	Linha de água	Seção	Caudal (m³/s)	Cota terreno (m)	Nível água (m)	Altura água (m)	Declive (m/m)	Velocidade (m/s)	Área molhada (m²)	Largura superficial (m)	
montante	ME1	110.644	8.60	81.69	82.41	0.72	0.0062	1.79	14.84	86.62	
		68.252	8.60	80.57	81.14	0.57	0.0291	3.35	7.01	58.44	
		13.880	8.60	80.00	80.77	0.77	0.0084	2.13	11.78	78.34	
	MD1 afluente	341.983	1.70	115.34	115.50	0.16	0.0160	1.21	3.69	51.02	
		228.455	1.70	112.07	112.61	0.54	0.0042	1.17	1.55	12.75	
		148.300	1.70	111.74	111.80	0.06	0.0108	0.50	5.87	90.67	
	MARIANAS (montante)	54.524	1.70	110.08	110.41	0.33	0.0189	1.92	0.89	2.84	
		7914.526	1.50	116.09	116.41	0.32	0.0160	1.72	0.87	2.84	
		7838.377	1.50	114.73	115.12	0.39	0.0087	1.42	1.05	2.92	
		7700.441	1.50	113.51	113.98	0.47	0.0050	1.19	1.26	2.97	
		7571.767	1.50	112.85	113.36	0.51	0.0041	1.11	1.36	8.59	
		7430.206	1.50	112.35	112.66	0.31	0.0156	1.70	0.88	2.98	
		7409.235	1.50	111.82	112.55	0.73	0.0000	0.04	56.04	140.68	
		7400.000	PH 10	111.82	112.55	0.73		1.91			
		7389.517	1.50	111.67	111.82	0.15	0.0144	0.82	1.83	19.72	
		7307.076	1.50	110.24	110.56	0.32	0.0157	1.72	0.87	2.91	
		MARIANAS (intermédio)	7263.476	5.60	109.50	110.19	0.69	0.0050	1.54	10.53	70.04
			7160.133	5.60	108.57	109.19	0.62	0.0108	2.13	7.64	74.80
			7067.336	7.80	107.90	108.58	0.68	0.0068	1.80	14.25	92.85
			6954.139	7.80	106.61	107.62	1.01	0.0020	1.28	15.53	47.02
			6776.693	7.80	106.50	107.17	0.67	0.0059	1.63	16.56	116.78
			6666.086	7.80	105.58	106.31	0.73	0.0084	2.08	10.76	60.67
			6587.838	7.80	105.00	106.18	1.18	0.0000	0.04	240.66	309.68
			6580.000	PH 9	105.00	106.18	1.18		2.44		
			6566.547	7.80	104.89	105.43	0.54	0.0001	0.16	98.84	242.49
	6526.155		7.80	104.51	105.31	0.80	0.0059	1.87	11.30	53.75	
	6398.270		12.20	103.51	104.30	0.79	0.0036	1.43	29.94	150.46	
	6192.111		12.20	102.55	103.31	0.76	0.0080	1.99	20.70	117.02	
	5987.530		12.20	100.50	101.26	0.76	0.0108	2.43	14.53	71.99	
	5800.310		13.90	98.56	100.47	1.91	0.0004	0.86	41.65	61.65	
	5786.120		13.90	98.37	100.49	2.12	0.0000	0.15	160.46	139.52	
	5780.000		PH 8	98.37	100.49	2.12		3.27			
	5767.877		13.90	98.15	99.19	1.04	0.0083	2.40	5.78	7.40	
	5635.252		14.60	96.89	97.38	0.49	0.0344	3.20	13.35	86.52	
	5522.210		14.60	95.15	96.75	1.60	0.0000	0.07	236.59	172.09	
	5520.000		PH 8.2	95.15	96.75	1.60		3.63	4.02		
	5510.749		14.60	95.00	95.79	0.79	0.0111	2.42	6.04	10.30	
	5400.328		14.60	93.48	94.56	1.08	0.0009	0.85	48.70	122.25	
	5309.034		14.60	93.00	94.57	1.57	0.0000	0.05	401.69	310.96	
	5300.000		PH 8.3	93.00	94.57	1.57		3.63	4.02		
	5275.733		14.60	92.00	92.99	0.99	0.0052	1.70	19.24	102.75	
	5222.089		14.60	90.41	91.38	0.97	0.0243	4.11	5.58	13.60	
	5104.043		14.60	89.54	90.96	1.42	0.0019	1.55	20.14	29.81	
	5094.800		14.60	89.45	91.02	1.57	0.0000	0.26	117.07	203.02	
	5090.000		PH 8.4	89.45	91.02	1.57		3.63	4.02		
	5056.850		14.60	89.00	90.04	1.04	0.0061	1.93	7.58	11.71	
5016.874	14.60		88.60	89.79	1.19	0.0081	2.77	9.38	17.52		
4869.717	14.60		86.53	87.79	1.26	0.0069	2.66	9.85	18.03		
4713.714	14.60		85.50	86.32	0.82	0.0161	3.10	14.18	79.48		
4514.222	18.20		83.61	84.68	1.07	0.0082	2.75	15.20	35.12		
4381.711	18.20	81.66	82.85	1.19	0.0030	1.53	12.68	21.62			
4369.684	18.20	81.52	82.68	1.16	0.0091	2.82	13.41	28.53			
4235.262	18.20	80.04	80.95	0.91	0.0149	3.26	15.77	64.08			




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Sentido escoamento	Linha de água	Secção	Caudal (m ³ /s)	Cota terreno (m)	Nível água (m)	Altura água (m)	Declive (m/m)	Velocidade (m/s)	Área molhada (m ²)	Largura superficial (m)	
jusante	MARIANAS (jusante)	4195.636	24.40	79.73	80.53	0.80	0.0100	2.54	27.68	91.20	
		4074.329	24.40	77.88	78.91	1.03	0.0191	3.88	13.70	33.35	
		3967.167	24.40	75.53	76.68	1.15	0.0218	4.57	10.59	23.00	
		3881.021	24.40	73.40	74.55	1.15	0.0002	0.50	67.69	91.08	
		3880.000	PH 7	73.40	74.55	1.15		8.97	2.72		
		3870.880	24.40	73.07	73.94	0.87	0.0019	1.07	26.76	56.41	
		3851.647	24.40	72.66	73.87	1.21	0.0039	2.04	29.35	54.24	
		3780.490	24.40	71.60	73.93	2.33	0.0000	0.22	156.80	99.57	
		3775.000	PH 7.1	71.60	73.93	2.33		3.42	7.13		
		3769.033	24.40	71.45	72.30	0.85	0.0108	2.16	11.82	29.94	
		3705.192	24.40	70.57	71.67	1.10	0.0136	3.58	17.23	45.27	
		3578.552	26.80	68.47	69.82	1.35	0.0037	2.04	35.05	72.49	
		3452.699	26.80	66.03	67.53	1.50	0.0184	4.27	11.96	25.37	
		3343.691	26.80	65.53	66.45	0.92	0.0187	3.60	18.89	54.59	
		3224.214	26.80	63.52	64.92	1.40	0.0116	3.63	18.57	51.33	
		3143.384	33.80	62.10	64.28	2.18	0.0003	0.70	79.25	67.58	
		3102.612	33.80	61.70	64.16	2.46	0.0010	1.40	24.32	15.23	
		3100.000	PH 6	61.70	64.16	2.46		3.59	9.42		
		3017.946	33.80	60.90	63.03	2.13	0.0018	1.84	21.31	30.14	
		2994.240	33.80	60.67	62.37	1.70	0.0122	4.37	13.32	14.90	
		2978.881	33.80	60.45	62.87	2.42	0.0001	0.43	126.31	118.74	
		2975.000	PH 5	60.45	62.87	2.42		3.50	9.67		
		2964.784	33.80	60.15	61.05	0.90	0.0269	4.55	7.43	8.72	
		2929.425	33.80	59.49	60.34	0.85	0.0767	6.84	13.47	59.07	
		2815.153	33.80	57.45	59.20	1.75	0.0015	1.54	53.45	65.97	
		2717.070	33.80	57.01	59.17	2.16	0.0002	0.67	102.43	76.17	
		2701.490	33.80	56.75	59.17	2.42	0.0000	0.29	122.07	85.69	
		2695.000	PH 4	56.75	59.17	2.42		4.10	8.24		
		2686.512	33.80	56.05	57.00	0.95	0.0113	2.20	15.35	31.28	
		2613.332	33.80	55.48	56.71	1.23	0.0073	2.71	30.94	59.29	
		2508.552	33.80	53.80	54.82	1.02	0.0282	4.94	16.25	38.63	
		2405.897	38.30	51.54	53.14	1.60	0.0059	2.88	32.20	52.21	
		2286.912	38.30	50.49	51.80	1.31	0.0146	4.06	23.98	51.35	
		2177.110	38.30	48.52	50.05	1.53	0.0161	4.52	17.99	30.49	
		2065.411	38.30	47.52	48.76	1.24	0.0153	3.98	21.22	36.38	
		1913.082	38.30	44.59	46.30	1.71	0.0135	4.48	16.03	20.90	
		1815.481	38.30	41.61	43.23	1.62	0.0272	5.83	13.17	35.93	
		1700.898	38.30	37.60	39.04	1.44	0.0396	6.71	8.84	12.33	
		1602.521	39.10	35.75	37.28	1.53	0.0244	5.43	13.96	23.85	
		1561.882	39.10	34.95	36.97	2.02	0.0003	0.64	69.69	89.09	
		1555.000	PH 3	34.95	36.97	2.02		3.45	11.34		
		1546.964	39.10	34.50	36.06	1.56	0.0008	0.96	48.70	73.54	
		1512.777	39.10	33.69	35.67	1.98	0.0077	3.70	24.03	36.86	
		1373.354	39.10	30.66	32.37	1.71	0.0206	5.56	11.23	12.81	
		1219.866	39.10	28.79	29.98	1.19	0.0278	5.19	19.28	49.72	
		1066.811	39.10	25.59	26.88	1.29	0.0253	5.33	14.57	23.08	
		953.332	45.40	22.49	24.46	1.97	0.0163	5.59	14.10	16.24	
924.953	45.40	22.15	24.83	2.68	0.0008	1.14	63.66	94.21			
920.000	PH 2	22.15	24.83	2.68		5.50	8.25				
914.402	45.40	21.90	23.31	1.41	0.0085	2.30	23.35	59.13			
856.889	45.40	21.51	22.59	1.08	0.0230	4.50	24.77	53.46			
748.918	45.40	19.60	21.61	2.01	0.0013	1.65	73.43	89.22			
665.489	46.60	19.50	21.61	2.11	0.0001	0.47	238.43	197.00			
650.761	46.60	19.00	21.61	2.61	0.0000	0.10	541.39	248.98			
640.000	PH 1	19.00	21.61	2.61		4.82	9.66				
615.235	46.60	18.07	19.32	1.25	0.0113	2.26	20.63	40.33			
511.630	46.60	15.54	16.53	0.99	0.0392	5.62	25.42	88.16			
321.808	46.60	11.75	12.81	1.06	0.0207	4.39	32.40	94.05			
195.807	46.60	8.61	10.02	1.41	0.0223	5.26	20.21	36.30			
13.996	46.60	5.49	7.77	2.28	0.0010	1.58	82.66	92.38			


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



 Secção


 Área inundada

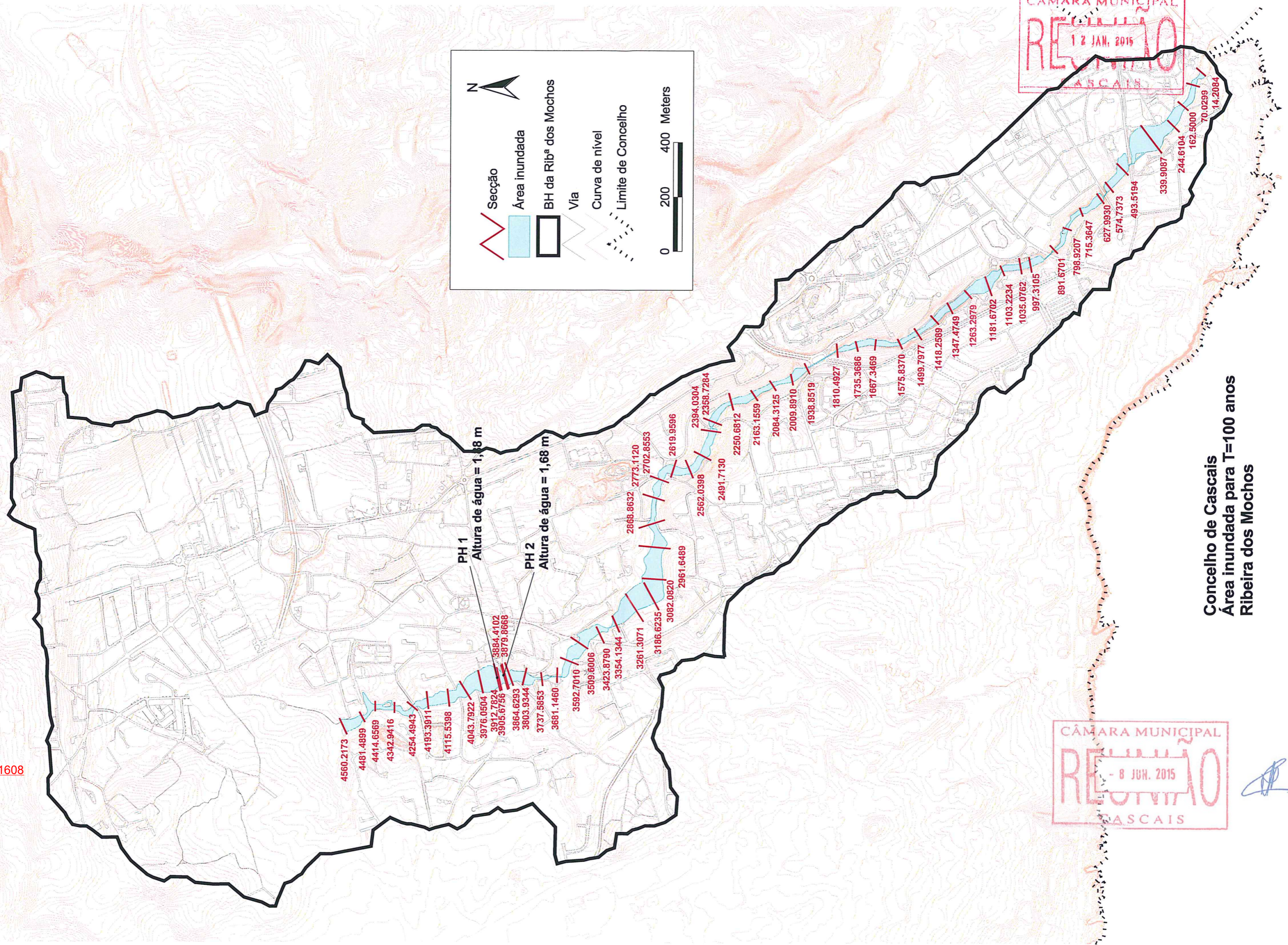
 BH da Rib^a dos Mochos

 Via

 Curva de nível

 Limite de Concelho





CÂMARA MUNICIPAL
RECEBIMOS
 12 JAN, 2015
 CASCAIS

Concelho de Cascais
Área inundada para T=100 anos
Ribeira dos Mochos

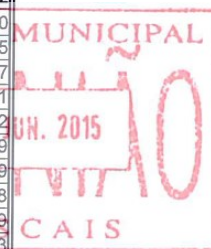
CÂMARA MUNICIPAL
RECEBIMOS
 8 JUN, 2015
 CASCAIS



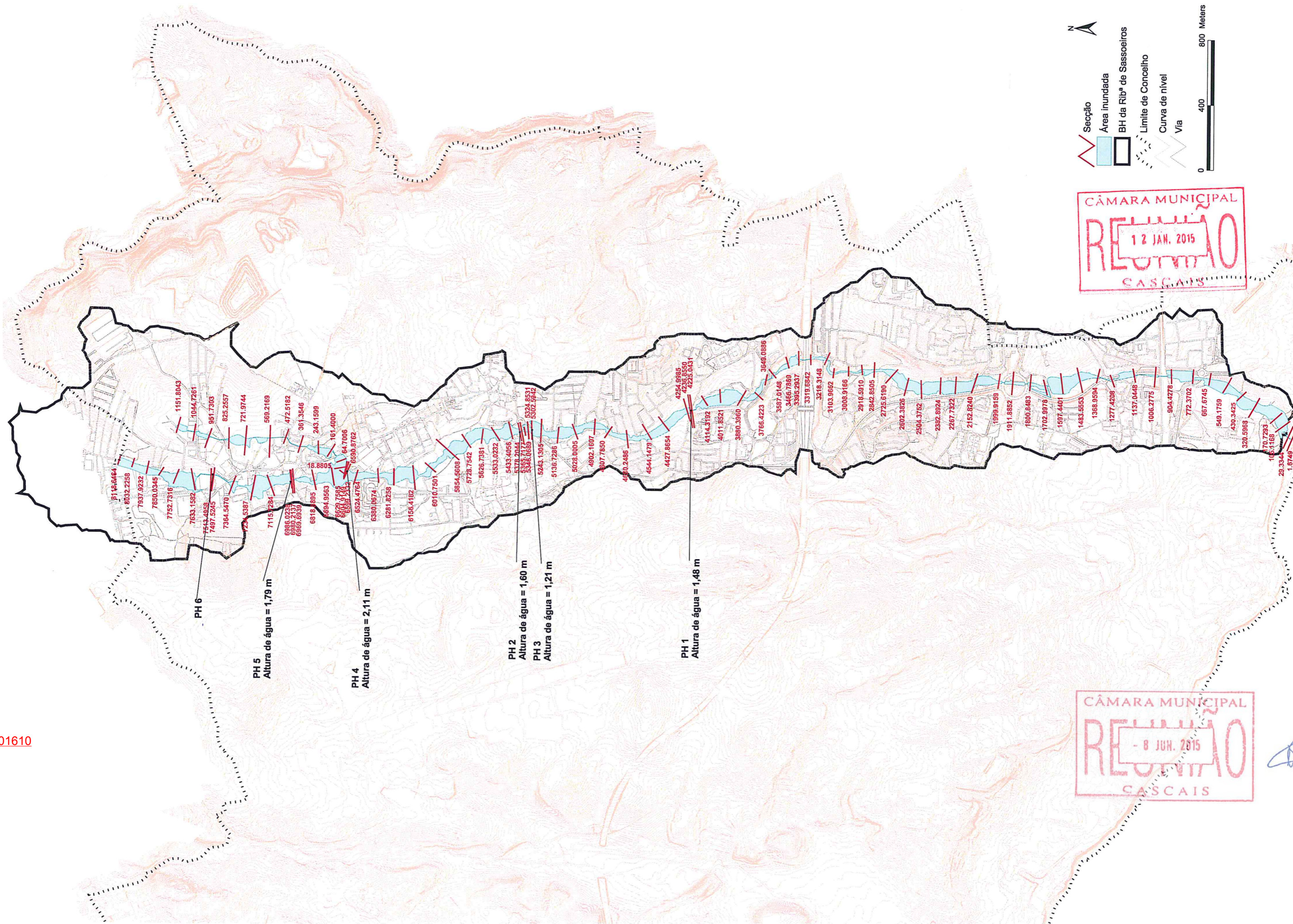
RIBEIRA DOS MOCHOS
RESULTADOS DA SIMULAÇÃO PARA T=100 ANOS



Sentido escoamento	Secção	Caudal (m³/s)	Cota terreno (m)	Nível água (m)	Altura água (m)	Declive (m/m)	Velocidade (m/s)	Área molhada (m²)	Largura superficial (m)	
montante	4560.217	12.00	57.70	58.50	0.80	0.0021	1.04	24.32	54.49	
	4481.490	12.00	56.84	58.11	1.27	0.0037	1.80	11.67	18.15	
	4414.657	12.00	56.66	57.69	1.03	0.0093	2.46	8.66	18.63	
	4342.942	12.00	55.70	57.31	1.61	0.0018	1.48	14.16	17.28	
	4254.494	12.00	55.64	56.78	1.14	0.0103	2.67	6.97	13.60	
	4193.391	12.00	55.50	56.32	0.82	0.0035	1.38	19.15	47.16	
	4115.540	12.00	55.13	55.98	0.85	0.0051	1.66	16.25	44.31	
	4043.792	16.70	54.67	55.46	0.79	0.0118	2.29	16.08	47.54	
	3976.050	16.70	53.73	55.13	1.40	0.0003	0.54	63.87	81.16	
	3912.782	16.70	53.47	55.12	1.65	0.0001	0.43	78.17	76.87	
	3905.676	16.70	53.24	55.12	1.88	0.0001	0.43	81.96	76.17	
	3900.000	PH 1	53.24	55.12	1.88		3.08	1.29		
	3884.410	16.70	52.80	54.40	1.60	0.0009	1.01	33.80	38.96	
	3879.867	16.70	52.72	54.40	1.68	0.0003	0.69	45.22	47.84	
	3870.000	PH 2	52.72	54.40	1.68		2.92	3.33		
	3864.629	16.70	52.49	53.31	0.82	0.0101	2.23	14.02	41.03	
	3803.934	16.70	51.57	52.39	0.82	0.0127	2.43	14.61	41.17	
	3737.585	16.70	49.53	50.68	1.15	0.0232	4.00	5.76	9.09	
	3681.146	16.70	49.06	49.59	0.53	0.0054	1.35	28.25	91.97	
	3592.701	16.70	47.57	48.88	1.31	0.0050	2.03	15.39	24.53	
	3509.601	16.70	46.53	48.29	1.76	0.0012	1.20	28.89	40.06	
	3423.879	16.70	46.26	47.28	1.02	0.0084	2.16	15.48	34.79	
	3354.134	16.70	45.47	46.68	1.21	0.0074	2.18	15.70	35.50	
	3261.307	16.70	45.23	46.09	0.86	0.0060	1.69	24.02	76.71	
	3186.624	16.70	44.59	45.58	0.99	0.0058	1.73	25.39	88.44	
	3082.082	16.70	44.12	45.01	0.89	0.0073	1.83	21.84	71.12	
	2961.649	16.70	42.66	43.75	1.09	0.0058	1.98	19.64	50.10	
	2868.863	16.70	41.27	43.22	1.95	0.0021	1.58	19.90	27.70	
	2773.112	16.70	40.97	42.81	1.84	0.0034	1.99	16.27	27.13	
	2702.855	16.70	40.41	42.36	1.95	0.0051	2.50	10.03	16.70	
	2619.960	16.70	40.19	41.57	1.38	0.0134	3.01	9.94	26.34	
	2562.040	16.70	39.42	40.44	1.02	0.0097	2.41	13.34	27.11	
	2491.713	16.70	38.43	39.71	1.28	0.0070	2.35	13.80	25.90	
	2394.030	16.70	37.93	39.12	1.19	0.0034	1.64	20.71	35.56	
	2358.728	16.70	37.51	38.67	1.16	0.0105	2.73	11.74	25.54	
	2250.681	30.70	35.50	37.23	1.73	0.0110	3.58	14.28	16.33	
	2163.156	30.70	34.29	36.07	1.78	0.0067	2.76	20.39	23.86	
	2084.313	30.70	33.55	35.16	1.61	0.0132	3.43	14.86	18.58	
	2009.891	30.70	32.00	34.14	2.14	0.0016	1.53	34.47	26.86	
	1938.852	30.70	31.45	33.22	1.77	0.0123	3.86	12.00	11.35	
	1810.493	30.70	27.50	29.13	1.63	0.0338	5.17	7.61	7.82	
	1735.369	30.70	26.65	27.73	1.08	0.0505	5.46	9.83	20.09	
	1667.347	30.70	25.68	27.02	1.34	0.0165	3.38	14.97	20.44	
	1575.837	30.70	23.59	24.96	1.37	0.0257	4.59	11.02	16.14	
	1499.798	30.70	22.50	24.11	1.61	0.0122	3.55	14.36	16.69	
1418.259	30.70	21.54	22.83	1.29	0.0207	3.95	13.85	22.03		
1347.475	30.70	20.50	21.89	1.39	0.0092	2.83	19.92	26.91		
1263.298	30.70	19.67	21.00	1.33	0.0132	3.27	16.93	24.88		
1181.670	30.70	18.90	20.29	1.39	0.0044	1.91	32.79	50.92		
1103.223	30.70	17.75	19.35	1.60	0.0137	3.69	13.39	15.20		
1035.076	30.70	16.55	18.08	1.53	0.0108	3.15	16.87	21.45		
997.311	32.20	16.27	18.08	1.81	0.0023	1.74	33.05	28.97		
891.670	32.20	14.51	16.40	1.89	0.0148	4.29	10.48	8.71		
798.921	32.20	12.60	14.08	1.48	0.0338	5.27	9.02	12.32		
715.365	32.20	10.62	12.10	1.48	0.0113	3.33	16.52	19.29		
627.993	32.20	9.84	11.29	1.45	0.0070	2.45	23.98	31.29		
574.737	32.20	9.61	10.79	1.18	0.0092	2.62	21.89	29.68		
493.519	32.20	9.02	10.31	1.29	0.0041	1.69	34.46	47.39		
339.909	32.20	8.60	9.52	0.92	0.0144	2.69	31.32	102.43		
244.610	32.20	6.50	7.75	1.25	0.0164	3.49	19.10	37.27		
162.500	32.20	4.54	6.25	1.71	0.0097	3.44	16.76	20.20		
70.030	32.20	3.69	5.26	1.57	0.0128	3.75	14.91	18.28		
14.208	32.20	1.40	2.98	1.58	0.0060	2.54	23.57	27.97		
14.208	32.20	1.40	2.98	1.58	0.0060	2.54	23.57	27.97		



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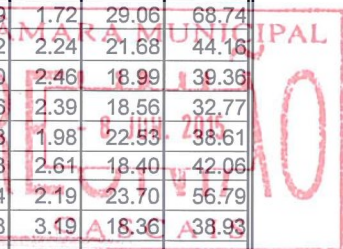
CÂMARA MUNICIPAL
RECEBIMOS
12 JAN. 2015
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CÂMARA MUNICIPAL
RECEBIMOS
- 8 JUN. 2015
CASCAIS



RIBEIRA DE SASSOEIROS
 RESULTADOS DA SIMULAÇÃO PARA T=100 ANOS

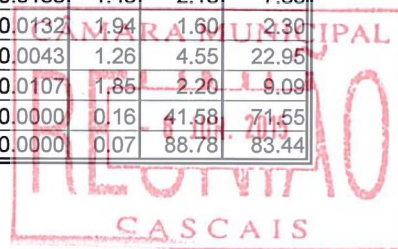
Sentido escoamento	Linha de água	Secção	Caudal	Cota terreno	Nível água	Altura água	Declive	Velocidade	Área secção	Largura superficial			
			(m³/s)	(m)	(m)	(m)	(m/m)	(m/s)	(m²)	(m)			
montante	SASSOEIROS montante	8118.646	3.60	118.72	119.52	0.80	0.0008	0.63	13.91	47.92			
		8032.226	3.60	118.63	119.25	0.62	0.0086	1.67	4.10	19.26			
		7937.923	3.60	117.51	118.26	0.75	0.0108	1.87	2.85	14.66			
		7850.034	3.60	116.19	116.68	0.49	0.0008	0.39	13.22	30.34			
		7752.732	3.60	115.56	116.25	0.69	0.0026	0.95	9.19	44.92			
		7633.158	3.60	115.44	116.01	0.57	0.0006	0.39	21.26	97.85			
		7513.496	3.60	115.20	115.90	0.70	0.0005	0.48	18.76	76.57			
		7497.525	3.60	115.17	115.86	0.69	0.0037	1.06	10.73	101.54			
		7364.547	3.60	114.59	115.22	0.63	0.0069	1.45	6.44	52.51			
		7234.539	8.40	113.50	114.36	0.86	0.0043	1.38	17.53	84.50			
		7115.728	8.40	112.84	113.66	0.82	0.0063	1.57	13.81	62.35			
		6986.024	8.40	111.53	113.23	1.70	0.0002	0.49	44.30	79.35			
		6980.214	8.40	111.45	113.24	1.79	0.0000	0.16	104.60	124.62			
		6975.000	PH 5	111.45	113.24	1.79			3.00	2.80			
		6969.694	8.40	111.30	111.70	0.40	0.0172	1.41	5.97	26.56			
		6818.890	8.40	108.50	109.42	0.92	0.0096	2.16	7.67	22.90			
		6694.956	8.40	107.49	108.66	1.17	0.0002	0.40	59.60	163.18			
		6629.758	8.40	106.71	108.66	1.95	0.0000	0.18	102.48	107.77			
		jusante	SASSOEIROS jusante	6604.915	16.60	106.58	108.66	2.08	0.0000	0.10	447.50	481.17	
				6600.915	16.60	106.58	108.66	2.08	0.0000	0.15	286.04	261.92	
				6599.233	16.60	106.55	108.66	2.11	0.0000	0.14	322.38	320.36	
				6595.000	PH 4	106.55	108.66	2.11			3.26	2.94	
				6590.876	16.60	106.50	107.29	0.79	0.0083	1.87	18.11	73.89	
				6524.476	16.60	105.66	106.81	1.15	0.0047	1.76	21.66	49.10	
				6380.067	16.60	104.57	105.78	1.21	0.0118	2.93	11.14	22.18	
				6281.826	16.60	103.87	104.54	0.67	0.0086	1.83	22.16	77.63	
6156.418	16.60			102.47	103.41	0.94	0.0105	2.29	20.94	88.69			
6010.750	16.60			100.62	101.72	1.10	0.0156	3.05	11.41	30.12			
5854.561	19.80			98.43	99.62	1.19	0.0064	1.99	25.19	70.56			
5728.754	19.80			97.58	98.82	1.24	0.0058	2.09	23.31	55.34			
5626.738	19.80			97.02	98.04	1.02	0.0061	1.81	25.94	69.35			
5533.023	21.20			96.42	97.25	0.83	0.0134	2.36	21.57	70.48			
5433.406	21.20			94.86	95.92	1.06	0.0071	2.06	27.10	80.23			
5378.204	21.20			93.63	95.23	1.60	0.0133	1.89	11.25	24.47			
5370.000	PH 2			93.63	95.23	1.60			2.56	5.54			
5365.718	21.20			93.55	94.82	1.27	0.0064	2.21	15.40	47.10			
5346.069	21.20			93.41	94.38	0.97	0.0288	3.79	11.73	31.99			
5324.853	21.20			93.00	94.24	1.24	0.0099	2.39	18.94	69.55			
5302.594	21.20			92.93	94.14	1.21	0.0009	0.68	37.63	101.81			
5300.000	PH 3			92.93	94.14	1.21			2.49	1.20			
5243.131	21.20			92.54	93.20	0.66	0.0193	1.44	15.01	73.94			
5136.729	21.20			90.50	91.58	1.08	0.0049	1.72	29.06	68.74			
5028.001	21.20			89.54	90.90	1.36	0.0062	2.24	21.68	44.16			
4902.161	21.20			88.50	89.87	1.37	0.0080	2.46	18.99	39.36			
4807.785	21.20			87.46	88.93	1.47	0.0066	2.39	18.56	32.77			
4680.249	21.20			86.66	88.10	1.44	0.0048	1.98	22.53	38.61			
4544.148	21.20			85.42	86.76	1.34	0.0093	2.61	18.40	42.06			
4427.865	21.20			84.43	85.77	1.34	0.0064	2.19	23.70	56.79			
4254.998	25.80			82.52	83.81	1.29	0.0128	3.19	18.36	38.93			
4236.855	25.80			82.25	83.73	1.48	0.0003	0.52	52.63	62.02			
4230.000	PH 1			82.25	83.73	1.48			2.87	1.06			
4225.043	25.80			82.10	82.85	0.75	0.0118	1.78	14.53	33.56			
4114.319	25.80	80.51	81.60	1.09	0.0116	2.61	22.51	53.69					
4011.852	25.80	79.51	80.51	1.00	0.0084	2.13	28.23	71.04					



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Sentido escoamento	Linha de água	Secção	Caudal	Cota terreno	Nível água	Altura água	Declive	Velocidade	Área secção	Largura superficial
			(m³/s)	(m)	(m)	(m)			(m²)	(m)
jusante	SASSOEIROC	3880.396	25.80	77.51	78.92	1.41	0.0110	2.97	18.94	37.69
		3766.422	25.80	75.49	77.70	2.21	0.0035	2.14	24.33	31.35
		3649.089	25.80	74.50	76.51	2.01	0.0115	3.56	12.58	17.62
		3587.015	25.80	72.53	73.56	1.03	0.0532	5.39	8.01	15.57
		3466.787	25.80	69.47	70.80	1.33	0.0278	4.26	11.51	23.76
		3395.294	28.60	68.27	69.77	1.50	0.0158	3.64	16.77	43.84
		3319.684	28.60	66.32	68.37	2.05	0.0133	3.82	11.04	10.05
		3218.315	28.60	61.14	62.67	1.53	0.0494	6.19	6.70	11.71
		3103.966	28.60	54.17	55.68	1.51	0.0634	6.32	6.52	11.06
		3008.917	28.60	48.42	50.02	1.60	0.0616	6.70	5.11	5.54
		2918.591	28.60	45.46	46.84	1.38	0.0436	5.91	7.48	10.32
		2842.851	31.00	42.51	43.96	1.45	0.0373	5.93	8.35	11.06
		2725.619	31.00	38.06	38.95	0.89	0.0574	4.49	15.63	55.67
		2602.383	31.00	35.51	36.84	1.33	0.0106	2.51	28.25	66.40
		2504.375	31.00	34.50	35.58	1.08	0.0198	3.44	22.14	60.30
		2382.892	31.00	32.51	33.83	1.32	0.0074	2.36	31.00	64.09
		2267.732	31.00	31.32	32.53	1.21	0.0065	2.01	35.02	74.02
		2152.824	31.00	30.24	31.39	1.15	0.0201	3.20	22.95	75.18
		1999.916	31.00	25.51	26.98	1.47	0.0142	3.57	14.44	15.80
		1911.885	36.90	23.36	24.98	1.62	0.0118	3.41	18.20	17.71
		1800.848	36.90	21.50	24.46	2.96	0.0017	1.91	43.66	49.75
		1702.998	36.90	21.51	23.77	2.26	0.0092	3.78	19.20	23.25
		1597.440	36.90	20.04	21.38	1.34	0.0096	2.76	37.28	102.58
		1483.555	36.90	18.45	20.02	1.57	0.0140	3.41	24.84	50.26
		1368.959	37.10	15.37	17.68	2.31	0.0056	2.85	21.54	16.19
		1277.421	37.10	14.49	16.44	1.95	0.0116	3.97	14.78	11.00
		1137.045	37.10	13.29	15.57	2.28	0.0143	4.21	12.98	8.84
		1006.278	39.10	11.49	14.45	2.96	0.0028	2.35	26.39	12.35
		904.428	39.10	11.43	13.53	2.10	0.0159	4.13	15.09	14.15
		772.370	39.10	11.12	12.88	1.76	0.0141	3.97	18.61	23.12
		667.674	39.10	10.01	11.72	1.71	0.0115	2.96	27.20	45.68
		549.176	39.10	8.22	10.40	2.18	0.0100	3.34	30.33	71.74
		430.342	39.10	7.81	9.11	1.30	0.0041	1.80	46.43	72.80
		320.597	39.10	6.47	8.30	1.83	0.0077	2.94	30.61	54.31
		170.729	39.10	5.75	7.76	2.01	0.0006	0.88	85.34	73.06
		105.117	39.10	5.54	7.73	2.19	0.0003	0.76	102.11	75.48
	29.334	39.10	5.50	7.69	2.19	0.0004	0.87	80.86	88.40	
	1.675	39.10	5.38	7.59	2.21	0.0020	1.47	37.89	66.25	
	SASSOEIROS afluente	1151.804	3.10	118.50	119.26	0.76	0.0045	1.28	5.12	31.50
		1044.726	3.10	118.10	118.78	0.68	0.0028	0.93	9.68	75.21
		951.730	3.10	117.52	118.22	0.70	0.0076	1.59	3.63	23.03
		825.256	3.10	115.48	116.11	0.63	0.0162	2.09	1.93	12.63
721.974		3.10	114.50	115.14	0.64	0.0062	1.35	5.39	43.92	
569.217		3.10	113.00	113.66	0.66	0.0216	2.32	1.34	2.13	
472.518		3.10	112.52	112.80	0.28	0.0153	1.45	2.13	7.63	
361.355		3.10	110.58	111.33	0.75	0.0132	1.94	1.60	2.30	
243.160		3.10	108.89	109.68	0.79	0.0043	1.26	4.55	22.95	
161.400		3.10	108.46	109.15	0.69	0.0107	1.85	2.20	9.09	
64.701		3.10	107.51	108.66	1.15	0.0000	0.16	41.58	71.55	
18.881		3.10	106.90	108.66	1.76	0.0000	0.07	88.78	83.44	



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ANEXO III
CARTA DE ÁREAS INUNDÁVEIS DO CONCELHO DE CASCAIS

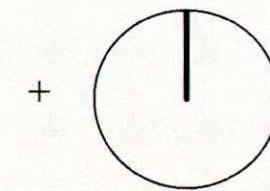


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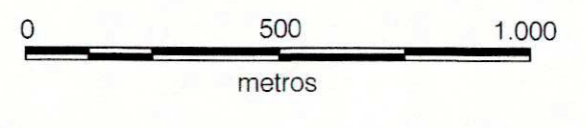
-99.000.00 +

-104.000.00 +

-109.000.00 +



- LEGENDA**
- LIMITE DE CONCELHO
 - LINHA DE ÁGUA INTEGRADA EM REN
 - LINHA DE ÁGUA CANALIZADA (NÃO REN)
 - LINHA DE ÁGUA NÃO INTEGRADA EM REN
 - ÁREA INUNDÁVEL



RENCASCAIS
 DIREÇÃO MUNICIPAL DE PLANEAMENTO
 TERRITÓRIO E GESTÃO URBANÍSTICA
 DIVISÃO DO SISTEMA DE INFORMAÇÃO GEOGRÁFICA

CASCAIS
 12 JUN 2015
 SETEMBRO 2014

**CARTA DE ÁREAS INUNDÁVEIS DO
 CONCELHO DE CASCAIS**

1:15 000

ZONAS AMEAÇADAS PELAS CHEIAS

01814