



Cascais
Câmara Municipal

D P E
Departamento
De Planeamento
Estratégico

DORT

Divisão de Ordenamento de Território

Parceiros:



Brisa BRISA AUTOESTRADAS DE PORTUGAL, S.A.

Obs.:

Assunto:

PLANO DE PORMENOR para a Instalação da Sede Nacional da BRISA
AUTOESTRADAS DE PORTUGAL, S.A. em S.Domingos de Rana

Local:

QUINTA DA TORRE DA AGUILHA

Assunto:

Relatório Técnico dos Trabalhos de Topografia

Fase:

VERSÃO FINAL

Versão:

Escala:

Data:

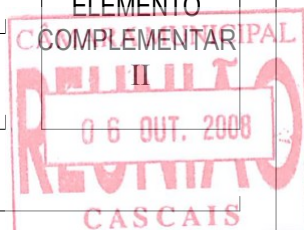
OUTUBRO.2008

Folha Nº.:

ELEMENTO

O Técnico:

Código:





Brisa
Engenharia e Gestão

MEMORANDO

LEVANTAMENTO CLÁSSICO DOS EDIFÍCIOS DA SEDE, CENTRO OPERACIONAL DE CARCAVELOS, TERRENO ADJACENTE, A NORTE, RESPECTIVOS ARRUAMENTOS E INFRA-ESTRUTURAS

O levantamento clássico foi efectuado tendo como base o apoio topográfico facultado pelos vértices de duas poligonais fechadas em que a primeira saiu e fechou nos vértices "CA 03" e "CA 04" que fazem parte de uma poligonal observada pela CENORPLAN para o alargamento e beneficiação para 2x3 vias na A5 entre o Nó de Carcavelos e o Nó de Alcabideche.

Importa referir que os vértices CA 03, CA 04 e consequentemente os das duas poligonais que neles se apoiaram apresentam coordenadas rectangulares com origem no Ponto Central, Elipsóide de HAYFORD, sistema de projecção de GAUSS, referidas no DATUM Lisboa e foram cotados com nivelamento geométrico, com dupla altura do nível evitando o contra-nivelamento, por arrastamento da cota do vértice "BRISA 22" da poligonal de implantação aquando da construção da A5, junto à vedação, entre a Praça de Portagem e o Seminário.

Na observação do presente levantamento foram utilizados, devidamente rectificadlos, um teodolito Wild T2, um distanciómetro Wild DI 1600 e um nível Wild NA2.

São Domingos de Rana, 7 de Outubro de 2003

Carlos A. M. Oliveira, Geómetra

Brisa - Engenharia e Gestão, SA

Av. do Forte, 3 - Edifício Suelcia III - Piso 3 - 2795-504 Cascais de Portugal Tel. 21 444 85 00 Fax 21 005 82 97 www.brisa.pt
Sede: Quinta da Torre de Agulha - Edifício Brisa 2785-595 São Domingos de Rana

MOR. CASCAIS n.º 7430 - NIPC 501 01 07 - Capital Social 8.100.000,00 Euro





cenorplan

BRISA S.A.

A5 - AUTO-ESTRADA DA COSTA DO ESTORIL

**LANÇO ESTÁDIO NACIONAL / CASCAIS
NÓ DE CARCAVELOS / NÓ DE ALCABIDECHE
ALARGAMENTO E BENEFICIAÇÃO PARA 2x3 VIAS**

**PROJECTO DE EXECUÇÃO N.º 1
TERRAPLENAGENS**

PARTE 1.3 - TOPOGRAFIA E ELEMENTOS DE IMPLANTAÇÃO

VOLUME 1 - NOTA PRÉVIA

JUNHO 2000





BRISA SA - A5 - LANÇO ESTÁDIO NACIONAL / CASCAIS - NÓ DE CARCAVELOS / NÓ DE ALCABIDECHE - ALARGAMENTO E BENEFICIAÇÃO PARA 2x3 VIAS
PROJECTO DE EXECUÇÃO N.º 1 - TERRAPLENAGENS - PARTE 1.3 - TOPOGRAFIA E ELEMENTOS DE IMPLANTAÇÃO

APRESENTAÇÃO

0200_11_000_1E_01A





BRISA SA – A5 – LANÇO ESTÁDIO NACIONAL / CASCAIS – NÓ DE CARCAVELOS / NÓ DE ALCABIDECHE – ALARGAMENTO E BENEFICIAÇÃO PARA 2x3 VIAS
PROJECTO DE EXECUÇÃO N.º 1 – TERRAPLENAGENS - PARTE 1.3 – TOPOGRAFIA E ELEMENTOS DE IMPLANTAÇÃO

BRISA AUTO ESTRADAS DE PORTUGAL, SA
A5 - AUTO-ESTRADA DA COSTA DO ESTORIL

LANÇO ESTÁDIO NACIONAL / CASCAIS
NÓ DE CARCAVELOS / NÓ DE ALCABIDECHE
ALARGAMENTO E BENEFICIAÇÃO PARA 2x3 VIAS

PROJECTO DE EXECUÇÃO N.º 1
TERRAPLENAGENS

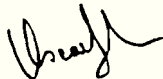
PARTE 1.3 – TOPOGRAFIA E ELEMENTOS DE IMPLANTAÇÃO

A CENORPLAN, Planeamento e Projectos Lda. apresenta a Parte 1.3 – Topografia e Elementos de Implantação do Projecto de Execução n.º 1 – Terraplenagens relativo ao Alargamento e Beneficiação para 2 x 3 vias do trecho Nó de Carcavelos / Nó de Alcabideche do Lanço Estádio Nacional / Cascais da A5 – Auto-Estrada da Costa do Estoril, o qual é constituído pelos seguinte elementos:

- Volume 1 - Nota Prévia
- Volume 2 - Perfis Transversais à Escala 1:200
- Volume 3 - Plantas Topográficas das Obras de Arte à Escala 1:200
- Volume 4 - Plantas Topográficas à Escala 1:1000
- Volume 5 - Plantas Topográficas de Pormenor à Escala 1:500

Os trabalhos de campo e o tratamento analítico dos elementos obtidos foram realizados pela firma APLITOP – Topografia Aplicada Lda..

Lisboa, Junho de 2000

M^o O Coordenador do Projecto


José António Pinto Amaral do Vale
(Eng.º Civil)





BRISA SA - A5 - LANÇ. ESTÁDIO NACIONAL / CASCAIS - NÓ DE CARCAVELOS / NÓ DE ALCABIDECHÉ - ALARGAMENTO E BENEFICIAÇÃO PARA 2x3 VIAS
PROJECTO DE EXECUÇÃO N.º 1 - TERRAPLENAGENS - PARTE 1.3 - TOPOGRAFIA E ELEMENTOS DE IMPLANTAÇÃO

ÍNDICE



ÍNDICE

TEXTO

	Pag.
1 - INTRODUÇÃO.....	1
2 – ACÇÕES DESENVOLVIDAS	3
2.1 – POLIGONAL DE IMPLANTAÇÃO.....	3
2.1.1 – Reconhecimento e materialização	3
2.1.2 – Observação das poligonais	4
2.1.3 – Cálculo das poligonais.....	4
2.2 – PIQUETAGEM DA DIRECTRIZ.....	4
2.3 – PERFIS TRANSVERSAIS	5
2.4 – LEVANTAMENTOS TOPOGRÁFICOS DAS OBRAS DE ARTE	5
2.5 – RESTITUIÇÃO AEROFOTOGRAMÉTRICA.....	5
2.5.1 – Apoio aerofotogramétrico	5
2.5.2 – Plantas topográficas à escala 1:1000	5
2.5.3 – Plantas topográficas de pormenor à escala 1:500.....	6
2.6 – LEVANTAMENTO DAS COORDENADAS DA VEDAÇÃO	6

QUADROS

QUADRO 1 – Poligonal de Apoio

QUADRO 2 – Programa de Implantação

QUADRO 3 – Piquetagem do Eixo – Cotas de Implantação das Estacas

QUADRO 4 – Coordenadas de Implantação da Vedação

ANEXOS

ANEXO 1 – Fichas de Identificação dos Vértices de Apoio

ANEXO 2 – Cálculo das Poligonais de Implantação

ANEXO 3 – Relatório da Orientação dos Modelos

DESENHOS

1 – C1B.E.013.00.01 - Esboço Corográfico

2 – C1B.E.013.10.01 - Poligonal de Implantação. Planta de Conjunto





BRISA SA - A5 - LANÇO ESTÁDIO NACIONAL / CASCAIS - NÓ DE CARCAVELOS / NÓ DE ALCABIDELHE - ALARGAMENTO E BENEFICIAÇÃO PARA 2x3 VIAS
PROJECTO DE EXECUÇÃO N.º 1 - TERRAPLENAGENS - PARTE 1.3 - TOPOGRAFIA E ELEMENTOS DE IMPLANTAÇÃO

TEXTO

C200_11166_1E_01A





1 - INTRODUÇÃO

A presente Parte 1.3 do Projecto de Execução n.º 1 (PE1) diz respeito aos trabalhos topográficos realizados no âmbito do Alargamento e Beneficiação para 2x3 vias do trecho Nó de Carcavelos / Nó de Alcabideche do Lanço Estádio Nacional / Cascais da A5 – Auto-Estrada da Costa do Estoril, designadamente ao:

- Estabelecimento e materialização da poligonal de apoio e de implantação;
- Piquetagem de pontos da directriz do sublanço, equidistanciados de 25 m;
- Levantamento de perfis transversais da auto-estrada;
- Levantamento topográfico de pormenor dos locais de implantação das obras de arte (passagens superiores, passagens inferiores e passagens hidráulicas de grandes dimensões);
- Levantamento topográfico da zona dos trabalhos a obter por restituição aerofotogramétrica;
- Levantamento topográfico de pormenor das zonas dos nós de ligação.

Foram assim executadas as seguintes tarefas:

- Levantamento de perfis transversais equidistanciados de 25 m entre o Km 14+100 e o Km 23+550 (quilometragem real);
- Restituição à escala 1:1000 para a elaboração das plantas topográficas de uma faixa com uma largura média de 170 m em secção corrente entre o Km 14+100 e o Km 23+550, sendo alargada na zona dos nós, obtida por restituição aerofotogramétrica a partir de fotografia aérea à escala 1:5000 (aproximada) especialmente executada para o efeito em Março de 1999.
- Levantamento topográfico de pormenor à escala 1:500 das zonas dos nós de ligação designadamente do Nó de Carcavelos e do Nó do Estoril;



- Levantamento topográfico de pormenor à escala 1:200 das seguintes obras de arte:

PASSAGENS SUPERIORES	PASSAGENS INFERIORES	PASSAGENS HIDRÁULICAS
PS 032 (PS 10) ao Km 14+925	PI 035 (PI 12) ao Km 15+450	PH 031 (PH 6.3) ao Km 14+250
PS 033 (PS 10E) ao Km 15+080	PI 037 (PI 12A) ao Km 15+765	PH 036 (PH 7.3) ao Km 15+500
PS 034 (PS 11) ao Km 15+110	PI 038 (PI 13) ao Km 16+200	PH 046 (PH 11.3) ao Km 19+430
PS 040 (PS 14B) ao Km 16+975	PI 039 (PI 14) ao Km 16+250	
PS 041 (PS 15) AO Km 17+575	PI 044 (PI 19) ao Km 18+810	
VIAD. DE CAPARIDE (Encontros)	PI 047 (PI 21) ao Km 19+650	
PS 043 (PS 18) ao Km 18+375	PI 056 (PI 25) ao Km 22+625	
PS 045 (PS 20) ao Km 19+150		
PS 049 (PS 21C) ao Km 20+140		
PS 050 (PS 21D) ao Km 20+235		
PS 051 (PS 21) ao Km 20+885		
PS 052 (PS 22A) ao Km 20+960		
PS 053 (PS 23) ao Km 21+680		
PS 054 (PS 24) ao Km 22+140		
PS 055 (PS 24A) ao Km 22+370		
PS 057 (PS 25A) ao Km 22+855		
PS 058 (PS 26) ao km 23+375		

- Levantamento de pontos de implantação da vedação a partir das plantas topográficas, confirmadas e completadas com levantamentos em locais específicos e com o apoio dos perfis transversais.





2 – ACÇÕES DESENVOLVIDAS

2.1 – POLIGONAL DE IMPLANTAÇÃO

2.1.1 – Reconhecimento e materialização

Para a realização dos referidos levantamentos foram estabelecidas duas poligonais de apoio, ligadas à Rede Geodésica Nacional, as quais englobam 27 marcos, sendo 24 marcos de apoio local e 3 marcos geodésicos (PENASALVAS, BICESSE e JOÃO CIDREIRA) apresentando-se no Quadro 1 as respectivas coordenadas de implantação.

Assim, a primeira poligonal parte do vértice geodésico de Penas Alvas, tem um vértice de passagem exterior ao traçado (DP1) e contem os vértices da poligonal de CA 01 a CA 11, fechando directamente no vértice geodésico de Bicesse. Por outro lado, a segunda poligonal parte do vértice CA11 (da primeira poligonal) e contem os vértices CA 12 a CA 24, fechando directamente no vértice geodésico João Cidreira. De cada um dos vértices materializados apresentam-se em anexo as respectivas “Fichas de Identificação”.

Dada a existência de obras de arte e outros pormenores construtivos duradouros ao longo de todo o traçado e a curtas distâncias entre si, foi possível a materialização de todos os vértices das poligonais com recurso a pregos de aço cravados em betão e destacados por meio de um rectângulo pintado com tinta branca sobre o qual foi inscrita a respectiva identificação com tinta vermelha.

A identificação de cada vértice da poligonal foi materializada por três conjuntos de letras e algarismos do tipo A5 CA 01 em que:

- A5 identifica a via em estudo (A5 – Auto-Estrada da Costa do Estoril);
- CA identifica o trecho em estudo;
- 01 identifica de uma forma ordenada e sequencial o vértice da poligonal no conjunto total de vértices das poligonais observadas.



2.1.2 – Observação das poligonais

A observação das duas poligonais foi feita com uma estação total TC 1600 (1 segundo centesimal directo), devidamente aferida, com leituras directa e inversa e com observações recíprocas.

Em todas as observações e em simultâneo, foram utilizados três tripés devidamente rectificadas e dois prismas reflectores.

2.1.3 – Cálculo das poligonais

O Cálculo das observações de cada uma das poligonais foi executado em programa específico contemplando todas as compensações devidas e recomendadas pelo IPCC.

Tendo em atenção que o objectivo final dos trabalhos é o apoio topográfico às obras de alargamento de uma via já existente, e que de acordo com informações fornecidas pela BRISA no projecto inicial foi utilizado referência as coordenadas do sistema "DATUM LISBOA" foi então o mesmo novamente adoptado para a realização destes trabalhos.

Em anexo apresentam-se as listagens de cálculo de cada uma das poligonais e dos respectivos resultados.

2.2 – PIQUETAGEM DA DIRECTRIZ

Com base em ficheiros constituídos com as coordenadas das poligonais e da directriz projectada e utilizando estações totais com programas específicos para piquetagens, foram implantados a partir dos vértices das poligonais de implantação, todos os pontos definidores da directriz equidistanciados de 25 m, de acordo com os elementos apresentados no Quadro 2 e materializados com recurso a estacas de madeira e que serviram posteriormente de apoio para a observação dos perfis transversais.

No Quadro 3 apresenta-se listagem com as coordenadas de implantação das diferentes estacas, assim como as cotas determinadas na base e no topo e a respectiva altura.



2.3 – PERFIS TRANSVERSAIS

Com o apoio nas estacas implantadas para o efeito, foram observados perfis transversais equidistanciados de 25 m cumprindo as especificações técnicas já habituais para este tipo de estudos e projectos apresentando-se no Volume 2 os respectivos esquemas à escala 1:200 a que correspondem os Desenhos n.º 1 a 49 (C1B.E.013.30.01 a 49).

2.4 – LEVANTAMENTOS TOPOGRÁFICOS DAS OBRAS DE ARTE

Também com base nas poligonais de implantação e utilizando estações totais TC 1010, procedeu-se à execução dos levantamentos topográficos de todas as obras de arte (passagens superiores, passagens inferiores, passagens de peões e passagens hidráulicas de grandes dimensões) e ainda as áreas de implantação dos encontros do Viaduto de Caparide. A escala adoptada foi 1:200 e o método de representação foi o habitualmente adoptado em conformidade com os critérios acordados no sentido da representação conjunta de planos sobrepostos a considerar no desenvolvimento dos estudos, apresentando-se no Volume 3 os referidos levantamentos a que correspondem os Desenhos n.º 1 a 16 (C1B.E.015.15.01 a 16).

2.5 – RESTITUIÇÃO AEROFOTOGRAMÉTRICA

2.5.1 – Apoio aerofotogramétrico

Ainda a partir dos vértices das poligonais de implantação e também com recurso à utilização de estações totais, foram coordenados os pontos fotogramétricos, por forma a apoiar topograficamente todos os modelos directamente no campo.

2.5.2 – Plantas topográficas à escala 1:1000

Para a obtenção das plantas topográficas à escala 1:1000 a que se referem os Desenhos n.º 1 a 11 (C1B.E.014.11.01 a 11) apresentados no Volume 4, procedeu-se à restituição aerofotogramétrica a partir de fotografia aérea à escala 1:5000 (aproximada) especialmente executada para o efeito, em

restituidor WILD A8, convertido para restituição analítica processada com programas SYSTEMAP e MICROSTATION, tendo a edição final sido processada em AUTOCAD de acordo com as normas do IPCC.

Em anexo apresentam-se cópias dos relatórios de orientação de cada um dos modelos elaborados.

2.5.3 – Plantas topográficas de pormenor à escala 1:500

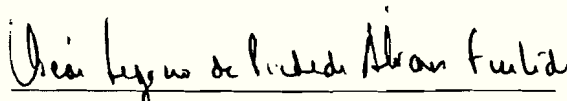
Os levantamentos topográficos de pormenor à escala 1:500 da zona do Nó de Carcavelos e do Nó do Estoril, apresentam-se nos Desenhos n.º 1 a 3 (C1B.E.016.11.01 a 03) que integram o Volume 5.

2.6 – LEVANTAMENTO DAS COORDENADAS DA VEDAÇÃO

Com o objectivo de se proceder a uma comparação da implantação da vedação com os limites de expropriação procedeu-se ao levantamento de pontos ao longo da vedação existente cujos resultados se apresentam no Quadro 4.

É de salientar que estes elementos foram obtidos a partir das plantas topográficas e confirmados em pontos localizados e também a partir a localização das vedações obtidas nos levantamentos dos perfis transversais.

Lisboa, Junho de 2000



Óscar Ligório da Piedade Álvares Furtado

(Eng.º Civil)





BRISA SA - A5 - LANÇO ESTÁDIO NACIONAL / CASCAIS - NÓ DE CARCAVELOS / NÓ DE ALCABIDECHES - ALARGAMENTO E BENEFICIAÇÃO PARA 2x3 VIAS
PROJECTO DE EXECUÇÃO N.º 1 - TERRAPLENAGENS - PARTE 1.3 - TOPOGRAFIA E ELEMENTOS DE IMPLANTAÇÃO

QUADROS



ALARGAMENTO E BENEFICIAÇÃO PARA 2X3 VIAS

IDENTIFICAÇÃO DOS VÉRTICES DA POLIGONAL DE IMPLANTAÇÃO

VÉRTICE N.º	MERIDIANA M	PERPENDICULAR P	COTA N
CA00	-103 913.288	-105 896.794	78.169
CA01	-104 294.103	-105 955.650	76.820
CA02	-104 499.886	-105 979.218	79.257
CA03	-104 873.903	-105 962.317	83.584
CA04	-105 384.221	-105 899.967	70.346
CA05	-105 667.128	-105 839.875	72.229
CA06	-106 010.036	-105 562.717	87.907
CA07	-106 367.643	-105 302.002	92.686
CA08	-106 562.671	-104 994.670	96.074
CA09	-107 085.194	-104 696.278	69.885
CA10	-107 406.289	-104 689.635	57.600
CA11	-107 869.625	-104 800.371	76.246
CA12	-108 322.542	-104 771.777	71.232
CA13	-108 656.403	-104 762.887	84.324
CA14	-109 129.782	-104 843.491	76.873
CA15	-109 638.668	-104 692.534	92.401
CA16	-109 867.310	-104 397.149	98.535
CA17	-110 093.491	-104 008.150	111.335
CA18	-110 301.252	-103 845.342	102.423
CA19	-110 741.312	-103 712.030	95.350
CA20	-111 172.292	-103 876.782	101.937
CA21	-111 409.046	-103 914.324	107.720
CA22	-111 671.208	-103 803.574	107.349
CA23	-111 847.710	-103 677.660	112.385
CA24	-112 358.330	-103 743.966	102.195
PENASALVAS	-102 495.720	-104 719.190	105.400
BICESSE	-108 211.600	-103 975.700	131.820
JOÃO CIDREIRA	-112 277.080	-104 317.660	114.950

L N E C
D V C
NUCLEO DE TRÁFEGO E SEGURANÇA RODOVIÁRIA

*** PROJECTO DE VIAS DE COMUNICAÇÃO * IMPLANTAÇÃO ***

A5 - AUTO ESTRADA DA COSTA DO ESTORIL
LANÇO ESTÁDIO NACIONAL / CASCAIS
NÓ DE CARCAVELOS / NÓ DE ALCABIDECHE

ENTIDADE - BRISA

REQUERENTE - CENORPLAN



IMPLANTAÇÃO	POR	RUMO	E	DISTÂNCIA	OU	POR	INTERSECÇÃO

* VÉRTICE DA	* RUMO DO	* PONTOS A	* RUMO DE	* ÂNGULO	* DISTÂNCIA	*	
* POLIGONAL	* LADO DA	* IMPLANTAR	* * * *	* * * *	* DE	*	
* (I)	* POLIGONAL*	* KM(J)	* IMPLANT.*	* AZIMUTAL*	* IMPLANTAÇÃO*	*	
* COORDENADAS	* para tras*	* COORDENADAS	* I	* I	* I	*	
* M(I) P(I)	* R(I)	* M(J) P(J)	* R'	* A =R'-R	* D	*	
* (metros)	* (grados)	* (metros)	* (grados)	* (grados)	* (metros)	*	

* PENASALVAS	* * *	* * *	* * *	* * *	* * *	*	
* M-102495.720	* * *	* * *	* * *	* * *	* * *	*	
* P-104719.190	* * *	* * *	* * *	* * *	* * *	*	

* CAO	* 29.100	*-> KM 14100.00*	* 282.930	* 253.830	* 122.968	*	
* M-103913.288	* * *	*M-104031.862	* * *	* * *	* * *	*	
* P-105896.794	* * *	*P-105929.372	* * *	* * *	* * *	*	
* * *	* * *	*-> KM 14125.00*	* 285.819	* 256.719	* 147.211	*	
* * *	* * *	*M-104056.862	* * *	* * *	* * *	*	
* * *	* * *	*P-105929.316	* * *	* * *	* * *	*	
* * *	* * *	*-> KM 14150.00*	* 287.887	* 258.787	* 171.672	*	
* * *	* * *	*M-104081.862	* * *	* * *	* * *	*	
* * *	* * *	*P-105929.261	* * *	* * *	* * *	*	
* * *	* * *	*-> KM 14175.00*	* 289.439	* 260.339	* 196.269	*	
* * *	* * *	*M-104106.862	* * *	* * *	* * *	*	
* * *	* * *	*P-105929.205	* * *	* * *	* * *	*	
* * *	* * *	*-> KM 14200.00*	* 290.644	* 261.544	* 220.956	*	
* * *	* * *	*M-104131.862	* * *	* * *	* * *	*	
* * *	* * *	*P-105929.150	* * *	* * *	* * *	*	
* * *	* * *	*-> KM 14225.00*	* 291.607	* 262.507	* 245.706	*	
* * *	* * *	*M-104156.862	* * *	* * *	* * *	*	
* * *	* * *	*P-105929.094	* * *	* * *	* * *	*	
* * *	* * *	*-> KM 14250.00*	* 292.393	* 263.293	* 270.503	*	
* * *	* * *	*M-104181.862	* * *	* * *	* * *	*	
* * *	* * *	*P-105929.039	* * *	* * *	* * *	*	
* * *	* * *	*-> KM 14275.00*	* 293.048	* 263.947	* 295.332	*	
* * *	* * *	*M-104206.861	* * *	* * *	* * *	*	
* * *	* * *	*P-105928.983	* * *	* * *	* * *	*	

* CA1	* 90.238	*-> KM 14100.00*	* 93.642	* 3.404	* 263.554	*	
* M-104294.103	* * *	*M-104031.862	* * *	* * *	* * *	*	
* P-105955.650	* * *	*P-105929.372	* * *	* * *	* * *	*	
* * *	* * *	*-> KM 14125.00*	* 92.962	* 2.724	* 238.698	*	
* * *	* * *	*M-104056.862	* * *	* * *	* * *	*	
* * *	* * *	*P-105929.316	* * *	* * *	* * *	*	
* * *	* * *	*-> KM 14150.00*	* 92.125	* 1.887	* 213.875	*	
* * *	* * *	*M-104081.862	* * *	* * *	* * *	*	
* * *	* * *	*P-105929.261	* * *	* * *	* * *	*	
* * *	* * *	*-> KM 14175.00*	* 91.068	* 0.830	* 189.099	*	
* * *	* * *	*M-104106.862	* * *	* * *	* * *	*	
* * *	* * *	*P-105929.205	* * *	* * *	* * *	*	
* * *	* * *	*-> KM 14200.00*	* 89.693	* 399.455	* 164.391	*	
* * *	* * *	*M-104131.862	* * *	* * *	* * *	*	
* * *	* * *	*P-105929.150	* * *	* * *	* * *	*	



M(I)	P(I)	R(I)	M(J)	P(J)	R'	A=R'-R	D
			-> KM 14225.00		87.832	397.594	139.787
			*M-104156.862				
			*P-105929.094				
			-> KM 14250.00		85.180	394.942	115.352
			*M-104181.862				
			*P-105929.039				
			-> KM 14275.00		81.115	390.877	91.227
			*M-104206.861				
			*P-105928.983				
			-> KM 14300.00		74.182	383.944	67.736
			*M-104231.861				
			*P-105928.927				
			-> KM 14325.00		60.314	370.076	45.870
			*M-104256.861				
			*P-105928.872				
			-> KM 14350.00		27.248	337.010	29.495
			*M-104281.861				
			*P-105928.816				
			-> KM 14375.00		371.797	281.559	29.762
			*M-104306.861				
			*P-105928.761				
			-> KM 14400.00		339.458	249.220	46.386
			*M-104331.861				
			*P-105928.705				
			-> KM 14425.00		325.865	235.627	68.320
			*M-104356.861				
			*P-105928.650				
			-> KM 14450.00		319.039	228.800	91.834
			*M-104381.861				
			*P-105928.594				
			-> KM 14475.00		315.022	224.784	115.972
			*M-104406.861				
			*P-105928.538				
			-> KM 14500.00		312.396	222.158	140.411
			*M-104431.861				
			*P-105928.483				
			-> KM 14525.00		310.550	220.312	165.019
			*M-104456.861				
			*P-105928.427				
			-> KM 14550.00		309.185	218.947	189.729
			*M-104481.861				
			*P-105928.372				
			-> KM 14575.00		308.134	217.896	214.507
			*M-104506.861				
			*P-105928.316				
			-> KM 14600.00		307.301	217.063	239.330
			*M-104531.861				
			*P-105928.261				
			-> KM 14625.00		306.625	216.387	264.187
			*M-104556.861				
			*P-105928.205				
			-> KM 14650.00		306.066	215.828	289.069
			*M-104581.861				
			*P-105928.149				



M(I)	P(I)	R(I)	M(J)	P(J)	R'	A=R'-R	D
CA2		92.740	*-> KM 14375.00*		83.721	390.981	199.491
M-104499.866			*M-104306.861				
P-105979.218			*P-105928.761				
			-> KM 14400.00		81.407	388.667	175.434
			*M-104331.861				
			*P-105928.705				
			-> KM 14425.00		78.362	385.622	151.682
			*M-104356.861				
			*P-105928.650				
			-> KM 14450.00		74.201	381.461	128.405
			*M-104381.861				
			*P-105928.594				
			-> KM 14475.00		68.237	375.497	105.917
			*M-104406.861				
			*P-105928.538				
			-> KM 14500.00		59.195	366.455	84.845
			*M-104431.861				
			*P-105928.483				
			-> KM 14525.00		44.728	351.988	66.552
			*M-104456.861				
			*P-105928.427				
			-> KM 14550.00		21.666	328.926	53.940
			*M-104481.861				
			*P-105928.372				
			-> KM 14575.00		391.306	298.566	51.380
			*M-104506.861				
			*P-105928.316				
			-> KM 14600.00		364.307	271.567	60.169
			*M-104531.861				
			*P-105928.261				
			-> KM 14625.00		346.478	253.738	76.490
			*M-104556.861				
			*P-105928.205				
			-> KM 14650.00		335.462	242.722	96.598
			*M-104581.861				
			*P-105928.149				
			-> KM 14675.00		328.377	235.637	118.581
			*M-104606.860				
			*P-105928.094				
			-> KM 14700.00		323.548	230.809	141.569
			*M-104631.860				
			*P-105928.038				
			-> KM 14725.00		320.082	227.343	165.143
			*M-104656.860				
			*P-105927.983				
			-> KM 14750.00		317.488	224.748	189.084
			*M-104681.860				
			*P-105927.927				
CA3		102.875	*-> KM 14650.00*		92.585	389.711	294.034
M-104873.903			*M-104581.861				
P-105962.317			*P-105928.149				
			-> KM 14675.00		91.886	389.011	269.227
			*M-104606.860				
			*P-105928.094				



* M(I)	* P(I)	* R(I)	* M(J)	* P(J)	* R'	* A=R'-R	* D
*	*	*	*	*	*	*	*
*	*	*	*-> KM 14700.00*	*	91.044	* 388.169	* 244.458
*	*	*	*M-104631.860	*	*	*	*
*	*	*	*P-105928.038	*	*	*	*
*	*	*	*-> KM 14725.00*	*	90.012	* 387.137	* 219.742
*	*	*	*M-104656.860	*	*	*	*
*	*	*	*P-105927.983	*	*	*	*
*	*	*	*-> KM 14750.00*	*	88.719	* 385.845	* 195.098
*	*	*	*M-104681.860	*	*	*	*
*	*	*	*P-105927.927	*	*	*	*
*	*	*	*-> KM 14775.00*	*	87.054	* 384.179	* 170.557
*	*	*	*M-104706.860	*	*	*	*
*	*	*	*P-105927.872	*	*	*	*
*	*	*	*-> KM 14800.00*	*	84.831	* 381.956	* 146.173
*	*	*	*M-104731.860	*	*	*	*
*	*	*	*P-105927.816	*	*	*	*
*	*	*	*-> KM 14825.00*	*	81.723	* 378.848	* 122.038
*	*	*	*M-104756.860	*	*	*	*
*	*	*	*P-105927.760	*	*	*	*
*	*	*	*-> KM 14850.00*	*	77.102	* 374.227	* 98.336
*	*	*	*M-104781.860	*	*	*	*
*	*	*	*P-105927.705	*	*	*	*
*	*	*	*-> KM 14875.00*	*	69.618	* 366.744	* 75.476
*	*	*	*M-104806.860	*	*	*	*
*	*	*	*P-105927.649	*	*	*	*
*	*	*	*-> KM 14900.00*	*	56.052	* 353.178	* 54.528
*	*	*	*M-104831.860	*	*	*	*
*	*	*	*P-105927.594	*	*	*	*
*	*	*	*-> KM 14925.00*	*	29.007	* 326.133	* 38.730
*	*	*	*M-104856.860	*	*	*	*
*	*	*	*P-105927.538	*	*	*	*
*	*	*	*-> KM 14950.00*	*	385.703	* 282.829	* 35.731
*	*	*	*M-104881.860	*	*	*	*
*	*	*	*P-105927.483	*	*	*	*
*	*	*	*-> KM 14975.00*	*	351.813	* 248.939	* 47.995
*	*	*	*M-104906.860	*	*	*	*
*	*	*	*P-105927.427	*	*	*	*
*	*	*	*-> KM 15000.00*	*	334.543	* 231.668	* 67.677
*	*	*	*M-104931.860	*	*	*	*
*	*	*	*P-105927.371	*	*	*	*
*	*	*	*-> KM 15025.00*	*	325.417	* 222.543	* 90.039
*	*	*	*M-104956.860	*	*	*	*
*	*	*	*P-105927.316	*	*	*	*
*	*	*	*-> KM 15050.00*	*	319.989	* 217.115	* 113.506
*	*	*	*M-104981.860	*	*	*	*
*	*	*	*P-105927.260	*	*	*	*
*	*	*	*-> KM 15075.00*	*	316.437	* 213.562	* 137.514
*	*	*	*M-105006.859	*	*	*	*
*	*	*	*P-105927.205	*	*	*	*
*	*	*	*-> KM 15100.00*	*	313.947	* 211.072	* 161.824
*	*	*	*M-105031.859	*	*	*	*
*	*	*	*P-105927.149	*	*	*	*
*	*	*	*-> KM 15125.00*	*	312.109	* 209.234	* 166.316
*	*	*	*M-105056.859	*	*	*	*
*	*	*	*P-105927.093	*	*	*	*
*	*	*	*-> KM 15150.00*	*	310.698	* 207.824	* 210.927
*	*	*	*M-105081.859	*	*	*	*
*	*	*	*P-105927.038	*	*	*	*



M(I)	P(I)	R(I)	M(J)	P(J)	R'	A=R'-R	D
*	*	*	*	*	*	*	*
*	*	*	*-> KM 16775.00*		362.227	* 222.122 *	151.462
*	*	*	*M-106452.331		*	*	*
*	*	*	*P-105176.428		*	*	*
*	*	*	*-> KM 16800.00*		361.832	* 221.728 *	176.442
*	*	*	*M-106467.203		*	*	*
*	*	*	*P-105156.332		*	*	*
*	*	*	*-> KM 16825.00*		361.511	* 221.407 *	201.424
*	*	*	*M-106482.136		*	*	*
*	*	*	*P-105136.282		*	*	*
*	*	*	*-> KM 16850.00*		361.215	* 221.110 *	226.404
*	*	*	*M-106497.201		*	*	*
*	*	*	*P-105116.331		*	*	*
*	*	*	*-> KM 16875.00*		360.913	* 220.809 *	251.378
*	*	*	*M-106512.467		*	*	*
*	*	*	*P-105096.534		*	*	*
*	*	*	*-> KM 16900.00*		360.587	* 220.483 *	276.342
*	*	*	*M-106528.003		*	*	*
*	*	*	*P-105076.948		*	*	*

CA8		164.002	*-> KM 16700.00*		163.557	* 399.556 *	287.330
M-106562.671		*	*M-106407.029		*	*	*
P-104994.670		*	*P-105236.195		*	*	*
*	*	*	*-> KM 16725.00*		164.094	* 0.093 *	262.438
*	*	*	*M-106422.378		*	*	*
*	*	*	*P-105216.462		*	*	*
*	*	*	*-> KM 16750.00*		164.645	* 0.644 *	237.532
*	*	*	*M-106437.434		*	*	*
*	*	*	*P-105196.504		*	*	*
*	*	*	*-> KM 16775.00*		165.266	* 1.264 *	212.629
*	*	*	*M-106452.331		*	*	*
*	*	*	*P-105176.428		*	*	*
*	*	*	*-> KM 16800.00*		166.040	* 2.039 *	187.746
*	*	*	*M-106467.203		*	*	*
*	*	*	*P-105156.332		*	*	*
*	*	*	*-> KM 16825.00*		167.081	* 3.080 *	162.911
*	*	*	*M-106482.136		*	*	*
*	*	*	*P-105136.282		*	*	*
*	*	*	*-> KM 16850.00*		168.571	* 4.569 *	138.158
*	*	*	*M-106497.201		*	*	*
*	*	*	*P-105116.331		*	*	*
*	*	*	*-> KM 16875.00*		170.848	* 6.847 *	113.564
*	*	*	*M-106512.467		*	*	*
*	*	*	*P-105096.534		*	*	*
*	*	*	*-> KM 16900.00*		174.613	* 10.611 *	89.283
*	*	*	*M-106528.003		*	*	*
*	*	*	*P-105076.948		*	*	*
*	*	*	*-> KM 16925.00*		181.531	* 17.530 *	65.709
*	*	*	*M-106543.875		*	*	*
*	*	*	*P-105057.633		*	*	*
*	*	*	*-> KM 16950.00*		196.346	* 32.345 *	44.054
*	*	*	*M-106560.144		*	*	*
*	*	*	*P-105038.651		*	*	*
*	*	*	*-> KM 16975.00*		232.444	* 68.442 *	29.093
*	*	*	*M-106576.864		*	*	*
*	*	*	*P-105020.066		*	*	*



M(I)	P(I)	R(I)	M(J)	P(J)	R'	A=R'-R	D
*	*	*	*	*	*	*	*
*	*	*	*-> KM 17000.00*		285.571	* 121.569 *	32.195
*	*	*	*M-106594.043		*	*	*
*	*	*	*P-105001.905		*	*	*
*	*	*	*-> KM 17025.00*		313.427	* 149.426 *	50.110
*	*	*	*M-106611.671		*	*	*
*	*	*	*P-104984.179		*	*	*
*	*	*	*-> KM 17050.00*		324.994	* 160.992 *	72.589
*	*	*	*M-106629.737		*	*	*
*	*	*	*P-104966.898		*	*	*
*	*	*	*-> KM 17075.00*		330.589	* 166.587 *	96.483
*	*	*	*M-106648.229		*	*	*
*	*	*	*P-104950.075		*	*	*
*	*	*	*-> KM 17100.00*		333.624	* 169.622 *	120.945
*	*	*	*M-106667.135		*	*	*
*	*	*	*P-104933.720		*	*	*
*	*	*	*-> KM 17125.00*		335.365	* 171.363 *	145.680
*	*	*	*M-106686.445		*	*	*
*	*	*	*P-104917.842		*	*	*
*	*	*	*-> KM 17150.00*		336.368	* 172.366 *	170.555
*	*	*	*M-106706.145		*	*	*
*	*	*	*P-104902.451		*	*	*
*	*	*	*-> KM 17175.00*		336.912	* 172.911 *	195.506
*	*	*	*M-106726.224		*	*	*
*	*	*	*P-104887.558		*	*	*
*	*	*	*-> KM 17200.00*		337.153	* 173.151 *	220.493
*	*	*	*M-106746.669		*	*	*
*	*	*	*P-104873.172		*	*	*
*	*	*	*-> KM 17225.00*		337.183	* 173.181 *	245.493
*	*	*	*M-106767.468		*	*	*
*	*	*	*P-104859.301		*	*	*
*	*	*	*-> KM 17250.00*		337.060	* 173.058 *	270.486
*	*	*	*M-106788.606		*	*	*
*	*	*	*P-104845.955		*	*	*
*	*	*	*-> KM 17275.00*		336.823	* 172.821 *	295.464
*	*	*	*M-106810.072		*	*	*
*	*	*	*P-104833.141		*	*	*

CA9		133.032	*-> KM 17300.00*		129.097	* 396.065 *	282.321
M-107085.194			*M-106831.851		*	*	*
P-104696.278			*P-104820.867		*	*	*
*	*	*	*-> KM 17325.00*		128.904	* 395.872 *	257.335
*	*	*	*M-106853.930		*	*	*
*	*	*	*P-104809.142		*	*	*
*	*	*	*-> KM 17350.00*		128.841	* 395.809 *	232.337
*	*	*	*M-106876.295		*	*	*
*	*	*	*P-104797.972		*	*	*
*	*	*	*-> KM 17375.00*		128.956	* 395.923 *	207.340
*	*	*	*M-106898.933		*	*	*
*	*	*	*P-104787.365		*	*	*
*	*	*	*-> KM 17400.00*		129.319	* 396.287 *	182.366
*	*	*	*M-106921.828		*	*	*
*	*	*	*P-104777.327		*	*	*
*	*	*	*-> KM 17425.00*		130.050	* 397.018 *	157.442
*	*	*	*M-106944.968		*	*	*
*	*	*	*P-104767.865		*	*	*



M(I)	P(I)	R(I)	M(J)	P(J)	R'	A=R'-R	D
*	*	*	*	*	*	*	*
*	*	*	*-> KM 17450.00*		131.353	* 398.321	* 132.619
*	*	*	*M-106968.336			*	*
*	*	*	*P-104758.984			*	*
*	*	*	*-> KM 17475.00*		133.619	* 0.587	* 107.985
*	*	*	*M-106991.920			*	*
*	*	*	*P-104750.690			*	*
*	*	*	*-> KM 17500.00*		137.675	* 4.643	* 83.731
*	*	*	*M-107015.703			*	*
*	*	*	*P-104742.988			*	*
*	*	*	*-> KM 17525.00*		145.581	* 12.549	* 60.340
*	*	*	*M-107039.671			*	*
*	*	*	*P-104735.883			*	*
*	*	*	*-> KM 17550.00*		163.485	* 30.453	* 39.408
*	*	*	*M-107063.810			*	*
*	*	*	*P-104729.379			*	*
*	*	*	*-> KM 17575.00*		206.784	* 73.752	* 27.358
*	*	*	*M-107088.104			*	*
*	*	*	*P-104723.481			*	*
*	*	*	*-> KM 17600.00*		256.988	* 123.956	* 35.041
*	*	*	*M-107112.537			*	*
*	*	*	*P-104718.192			*	*
*	*	*	*-> KM 17625.00*		279.587	* 146.554	* 54.688
*	*	*	*M-107137.095			*	*
*	*	*	*P-104713.515			*	*
*	*	*	*-> KM 17650.00*		289.151	* 156.119	* 77.693
*	*	*	*M-107161.762			*	*
*	*	*	*P-104709.454			*	*
*	*	*	*-> KM 17675.00*		293.904	* 160.872	* 101.795
*	*	*	*M-107186.523			*	*
*	*	*	*P-104706.011			*	*
*	*	*	*-> KM 17700.00*		296.517	* 163.485	* 126.358
*	*	*	*M-107211.363			*	*
*	*	*	*P-104703.187			*	*
*	*	*	*-> KM 17725.00*		298.017	* 164.984	* 151.144
*	*	*	*M-107236.265			*	*
*	*	*	*P-104700.986			*	*
*	*	*	*-> KM 17750.00*		298.868	* 165.836	* 176.048
*	*	*	*M-107261.214			*	*
*	*	*	*P-104699.407			*	*
*	*	*	*-> KM 17775.00*		299.311	* 166.279	* 201.014
*	*	*	*M-107286.196			*	*
*	*	*	*P-104698.453			*	*
*	*	*	*-> KM 17800.00*		299.480	* 166.448	* 226.007
*	*	*	*M-107311.193			*	*
*	*	*	*P-104698.123			*	*
*	*	*	*-> KM 17825.00*		299.457	* 166.425	* 251.005
*	*	*	*M-107336.190			*	*
*	*	*	*P-104698.419			*	*
*	*	*	*-> KM 17850.00*		299.294	* 166.262	* 275.996
*	*	*	*M-107361.173			*	*
*	*	*	*P-104699.339			*	*

CA10		* 101.317	*-> KM 17600.00*		106.169	* 4.853	* 295.137
M-107406.289		*	*M-107112.537			*	*
P-104689.635		*	*P-104718.192			*	*



M(I)	P(I)	R(I)	M(J)	P(J)	R'	A=R'-R	D
*	*	*	*	*	*	*	*
*	*	*	*-> KM 17625.00*	105.633	*	4.316	270.251
*	*	*	*M-107137.095	*	*	*	*
*	*	*	*P-104713.515	*	*	*	*
*	*	*	*-> KM 17650.00*	105.149	*	3.832	245.329
*	*	*	*M-107161.762	*	*	*	*
*	*	*	*P-104709.454	*	*	*	*
*	*	*	*-> KM 17675.00*	104.735	*	3.418	220.375
*	*	*	*M-107186.523	*	*	*	*
*	*	*	*P-104706.011	*	*	*	*
*	*	*	*-> KM 17700.00*	104.419	*	3.102	195.397
*	*	*	*M-107211.363	*	*	*	*
*	*	*	*P-104703.187	*	*	*	*
*	*	*	*-> KM 17725.00*	104.244	*	2.927	170.402
*	*	*	*M-107236.265	*	*	*	*
*	*	*	*P-104700.986	*	*	*	*
*	*	*	*-> KM 17750.00*	104.282	*	2.965	145.404
*	*	*	*M-107261.214	*	*	*	*
*	*	*	*P-104699.407	*	*	*	*
*	*	*	*-> KM 17775.00*	104.666	*	3.349	120.416
*	*	*	*M-107286.196	*	*	*	*
*	*	*	*P-104698.453	*	*	*	*
*	*	*	*-> KM 17800.00*	105.667	*	4.350	95.474
*	*	*	*M-107311.193	*	*	*	*
*	*	*	*P-104698.123	*	*	*	*
*	*	*	*-> KM 17825.00*	107.936	*	6.619	70.647
*	*	*	*M-107336.190	*	*	*	*
*	*	*	*P-104698.419	*	*	*	*
*	*	*	*-> KM 17850.00*	113.488	*	12.171	46.148
*	*	*	*M-107361.173	*	*	*	*
*	*	*	*P-104699.339	*	*	*	*
*	*	*	*-> KM 17875.00*	132.394	*	31.077	23.090
*	*	*	*M-107386.124	*	*	*	*
*	*	*	*P-104700.884	*	*	*	*
*	*	*	*-> KM 17900.00*	221.625	*	120.308	14.229
*	*	*	*M-107411.030	*	*	*	*
*	*	*	*P-104703.051	*	*	*	*
*	*	*	*-> KM 17925.00*	268.104	*	166.787	33.730
*	*	*	*M-107435.873	*	*	*	*
*	*	*	*P-104705.836	*	*	*	*
*	*	*	*-> KM 17950.00*	278.025	*	176.708	57.766
*	*	*	*M-107460.648	*	*	*	*
*	*	*	*P-104709.181	*	*	*	*
*	*	*	*-> KM 17975.00*	281.709	*	180.392	82.446
*	*	*	*M-107485.355	*	*	*	*
*	*	*	*P-104712.998	*	*	*	*
*	*	*	*-> KM 18000.00*	283.463	*	182.147	107.310
*	*	*	*M-107509.999	*	*	*	*
*	*	*	*P-104717.197	*	*	*	*
*	*	*	*-> KM 18025.00*	284.413	*	183.096	132.247
*	*	*	*M-107534.592	*	*	*	*
*	*	*	*P-104721.691	*	*	*	*
*	*	*	*-> KM 18050.00*	284.977	*	183.660	157.214
*	*	*	*M-107559.146	*	*	*	*
*	*	*	*P-104726.392	*	*	*	*
*	*	*	*-> KM 18075.00*	285.843	*	184.026	182.196
*	*	*	*M-107583.677	*	*	*	*
*	*	*	*P-104731.213	*	*	*	*



M(I)	P(I)	R(I)	M(J)	P(J)	R'	A=R'-R	D
			-> KM 18100.00		285.610	184.293	207.182
			*M-107608.201				
			*P-104736.068				
			-> KM 18125.00		285.831	184.515	232.170
			*M-107632.733				
			*P-104740.881				
			-> KM 18150.00		286.037	184.720	257.158
			*M-107657.286				
			*P-104745.586				
			-> KM 18175.00		286.246	184.929	282.142
			*M-107681.872				
			*P-104750.117				
CA11		85.065	*-> KM 18075.00*		84.893	399.828	294.192
M-107869.625			*M-107583.677				
P-104800.371			*P-104731.213				
			-> KM 18100.00		84.646	399.581	269.216
			*M-107608.201				
			*P-104736.068				
			-> KM 18125.00		84.337	399.272	244.248
			*M-107632.733				
			*P-104740.881				
			-> KM 18150.00		83.925	398.860	219.293
			*M-107657.286				
			*P-104745.586				
			-> KM 18175.00		83.350	398.285	194.362
			*M-107681.872				
			*P-104750.117				
			-> KM 18200.00		82.514	397.449	169.477
			*M-107706.501				
			*P-104754.405				
			-> KM 18225.00		81.254	396.189	144.670
			*M-107731.182				
			*P-104758.385				
			-> KM 18250.00		79.278	394.212	120.007
			*M-107755.920				
			*P-104761.994				
			-> KM 18275.00		76.031	390.966	95.611
			*M-107780.711				
			*P-104765.217				
			-> KM 18300.00		70.260	385.195	71.764
			*M-107805.550				
			*P-104768.052				
			-> KM 18325.00		58.543	373.477	49.281
			*M-107830.429				
			*P-104770.499				
			-> KM 18350.00		30.197	345.132	31.267
			*M-107855.344				
			*P-104772.556				
			-> KM 18375.00		375.349	290.284	28.238
			*M-107880.288				
			*P-104774.224				
			-> KM 18400.00		338.794	253.728	43.451
			*M-107905.255				
			*P-104775.502				



M(I)	P(I)	R(I)	M(J)	P(J)	R'	A=R'-R	D
*	*	*	*	*	*	*	*
*	*	*	*-> KM 18425.00*		323.984	* 238.919	* 65.185
*	*	*	*M-107930.239		*	*	*
*	*	*	*P-104776.390		*	*	*
*	*	*	*-> KM 18450.00*		317.044	* 231.978	* 88.771
*	*	*	*M-107955.234		*	*	*
*	*	*	*P-104776.888		*	*	*
*	*	*	*-> KM 18475.00*		313.260	* 228.195	* 113.052
*	*	*	*M-107980.234		*	*	*
*	*	*	*P-104776.994		*	*	*
*	*	*	*-> KM 18500.00*		310.997	* 225.932	* 137.656
*	*	*	*M-108005.232		*	*	*
*	*	*	*P-104776.711		*	*	*
*	*	*	*-> KM 18525.00*		309.573	* 224.508	* 162.431
*	*	*	*M-108030.223		*	*	*
*	*	*	*P-104776.037		*	*	*
*	*	*	*-> KM 18550.00*		308.647	* 223.582	* 187.301
*	*	*	*M-108055.201		*	*	*
*	*	*	*P-104775.008		*	*	*
*	*	*	*-> KM 18575.00*		308.025	* 222.960	* 212.225
*	*	*	*M-108080.166		*	*	*
*	*	*	*P-104773.689		*	*	*
*	*	*	*-> KM 18600.00*		307.593	* 222.528	* 237.179
*	*	*	*M-108105.119		*	*	*
*	*	*	*P-104772.149		*	*	*
*	*	*	*-> KM 18625.00*		307.281	* 222.216	* 262.149
*	*	*	*M-108130.061		*	*	*
*	*	*	*P-104770.454		*	*	*
*	*	*	*-> KM 18650.00*		307.043	* 221.978	* 287.128
*	*	*	*M-108154.998		*	*	*
*	*	*	*P-104768.672		*	*	*

CA12		8.800	*-> KM 18525.00*		100.928	* 92.128	* 292.350
M-108322.542			*M-108030.223		*	*	*
P-104771.777			*P-104776.037		*	*	*
*	*	*	*-> KM 18550.00*		100.769	* 91.970	* 267.361
*	*	*	*M-108055.201		*	*	*
*	*	*	*P-104775.008		*	*	*
*	*	*	*-> KM 18575.00*		100.502	* 91.703	* 242.384
*	*	*	*M-108080.166		*	*	*
*	*	*	*P-104773.689		*	*	*
*	*	*	*-> KM 18600.00*		100.109	* 91.309	* 217.423
*	*	*	*M-108105.119		*	*	*
*	*	*	*P-104772.149		*	*	*
*	*	*	*-> KM 18625.00*		99.562	* 90.763	* 192.486
*	*	*	*M-108130.061		*	*	*
*	*	*	*P-104770.454		*	*	*
*	*	*	*-> KM 18650.00*		98.820	* 90.021	* 167.573
*	*	*	*M-108154.998		*	*	*
*	*	*	*P-104768.672		*	*	*
*	*	*	*-> KM 18675.00*		97.811	* 89.011	* 142.693
*	*	*	*M-108179.933		*	*	*
*	*	*	*P-104766.871		*	*	*
*	*	*	*-> KM 18700.00*		96.393	* 87.594	* 117.861
*	*	*	*M-108204.870		*	*	*
*	*	*	*P-104765.103		*	*	*



M(I)	P(I)	R(I)	M(J)	P(J)	R'	A=R'-R	D
*	*	*	*	*	*	*	*
*	*	*	*-> KM 18725.00*		94.275	* 85.475 *	93.105
*	*	*	*M-108229.813	*		*	*
*	*	*	*P-104763.415	*		*	*
*	*	*	*-> KM 18750.00*		90.745	* 81.946 *	68.501
*	*	*	*M-108254.764	*		*	*
*	*	*	*P-104761.854	*		*	*
*	*	*	*-> KM 18775.00*		83.555	* 74.756 *	44.286
*	*	*	*M-108279.725	*		*	*
*	*	*	*P-104760.464	*		*	*
*	*	*	*-> KM 18800.00*		61.139	* 52.339 *	21.777
*	*	*	*M-108304.698	*		*	*
*	*	*	*P-104759.294	*		*	*
*	*	*	*-> KM 18825.00*		368.811	* 360.012 *	15.172
*	*	*	*M-108329.681	*		*	*
*	*	*	*P-104758.390	*		*	*
*	*	*	*-> KM 18850.00*		326.129	* 317.329 *	35.042
*	*	*	*M-108354.674	*		*	*
*	*	*	*P-104757.795	*		*	*
*	*	*	*-> KM 18875.00*		315.560	* 306.760 *	58.880
*	*	*	*M-108379.672	*		*	*
*	*	*	*P-104757.529	*		*	*
*	*	*	*-> KM 18900.00*		310.888	* 302.088 *	83.346
*	*	*	*M-108404.672	*		*	*
*	*	*	*P-104757.592	*		*	*
*	*	*	*-> KM 18925.00*		308.152	* 299.352 *	108.011
*	*	*	*M-108429.669	*		*	*
*	*	*	*P-104757.984	*		*	*
*	*	*	*-> KM 18950.00*		306.279	* 297.479 *	132.761
*	*	*	*M-108454.658	*		*	*
*	*	*	*P-104758.705	*		*	*
*	*	*	*-> KM 18975.00*		304.862	* 296.063 *	157.553
*	*	*	*M-108479.636	*		*	*
*	*	*	*P-104759.755	*		*	*
*	*	*	*-> KM 19000.00*		303.718	* 294.918 *	182.367
*	*	*	*M-108504.598	*		*	*
*	*	*	*P-104761.133	*		*	*
*	*	*	*-> KM 19025.00*		302.747	* 293.948 *	207.190
*	*	*	*M-108529.539	*		*	*
*	*	*	*P-104762.839	*		*	*
*	*	*	*-> KM 19050.00*		301.894	* 293.095 *	232.017
*	*	*	*M-108554.456	*		*	*
*	*	*	*P-104764.874	*		*	*
*	*	*	*-> KM 19075.00*		301.126	* 292.326 *	256.842
*	*	*	*M-108579.344	*		*	*
*	*	*	*P-104767.236	*		*	*
*	*	*	*-> KM 19100.00*		300.419	* 291.619 *	281.668
*	*	*	*M-108604.199	*		*	*
*	*	*	*P-104769.925	*		*	*

CA13		101.695	*-> KM 18875.00*		98.768	* 89.073 *	276.783
M-108656.403			*M-108379.672	*		*	*
P-104762.887			*P-104757.529	*		*	*
			-> KM 18900.00		98.661	* 89.966 *	251.787
			*M-108404.672	*		*	*
			*P-104757.592	*		*	*



```

*****
* M(I) P(I) * R(I) * M(J) P(J) * R' * A=R'-R * D *
*****
*
* *
* *-> KM 18925.00* 98.624 * 396.929 * 226.787 *
* *M-108429.669 *
* *P-104757.984 *
* *
* *-> KM 18950.00* 98.681 * 396.986 * 201.788 *
* *M-108454.658 *
* *P-104758.705 *
* *
* *-> KM 18975.00* 98.872 * 397.177 * 176.795 *
* *M-108479.636 *
* *P-104759.755 *
* *
* *-> KM 19000.00* 99.264 * 397.570 * 151.815 *
* *M-108504.598 *
* *P-104761.133 *
* *
* *-> KM 19025.00* 99.976 * 398.281 * 126.864 *
* *M-108529.539 *
* *P-104762.839 *
* *
* *-> KM 19050.00* 101.241 * 399.546 * 101.966 *
* *M-108554.456 *
* *P-104764.874 *
* *
* *-> KM 19075.00* 103.589 * 1.894 * 77.182 *
* *M-108579.344 *
* *P-104767.236 *
* *
* *-> KM 19100.00* 108.531 * 6.837 * 52.676 *
* *M-108604.199 *
* *P-104769.925 *
* *
* *-> KM 19125.00* 122.401 * 20.706 * 29.174 *
* *M-108629.016 *
* *P-104772.942 *
* *
* *-> KM 19150.00* 187.746 * 86.051 * 13.649 *
* *M-108653.792 *
* *P-104776.284 *
* *
* *-> KM 19175.00* 258.168 * 156.474 * 27.935 *
* *M-108678.521 *
* *P-104779.950 *
* *
* *-> KM 19200.00* 273.123 * 171.428 * 51.307 *
* *M-108703.205 *
* *P-104783.910 *
* *
* *-> KM 19225.00* 278.387 * 176.693 * 75.771 *
* *M-108727.849 *
* *P-104788.119 *
* *
* *-> KM 19250.00* 280.944 * 179.249 * 100.523 *
* *M-108752.456 *
* *P-104792.529 *
* *
* *-> KM 19275.00* 282.409 * 180.714 * 125.390 *
* *M-108777.036 *
* *P-104797.096 *
* *
* *-> KM 19300.00* 283.341 * 181.646 * 150.308 *
* *M-108801.594 *
* *P-104801.773 *
* *
* *-> KM 19325.00* 283.983 * 182.289 * 175.254 *
* *M-108826.140 *
* *P-104806.515 *
* *
* *-> KM 19350.00* 284.461 * 182.766 * 200.214 *
* *M-108850.683 *
* *P-104811.272 *
* *
* *-> KM 19375.00* 284.859 * 183.164 * 225.179 *
* *M-108875.244 *
* *P-104815.938 *
*

```



M(I)	P(I)	R(I)	M(J)	P(J)	R'	A=R'-R	D
			-> KM 19400.00		285.241	183.546	250.139
			*M-108899.850				
			*P-104820.359				
			-> KM 19425.00		285.648	183.953	275.082
			*M-108924.524				
			*P-104824.379				
			-> KM 19450.00		286.106	184.411	299.996
			*M-108949.283				
			*P-104827.841				
CA14		89.263	*-> KM 19350.00*		92.683	3.420	280.953
M-109129.782			*M-108850.683				
P-104843.491			*P-104811.272				
			-> KM 19375.00		93.135	3.872	256.025
			*M-108875.244				
			*P-104815.938				
			-> KM 19400.00		93.617	4.354	231.093
			*M-108899.850				
			*P-104820.359				
			-> KM 19425.00		94.089	4.826	206.146
			*M-108924.524				
			*P-104824.379				
			-> KM 19450.00		94.494	5.231	181.176
			*M-108949.283				
			*P-104827.841				
			-> KM 19475.00		94.734	5.471	156.186
			*M-108974.130				
			*P-104830.587				
			-> KM 19500.00		94.649	5.386	131.188
			*M-108999.057				
			*P-104832.478				
			-> KM 19525.00		93.989	4.726	106.219
			*M-109024.036				
			*P-104633.477				
			-> KM 19550.00		92.228	2.965	81.352
			*M-109049.035				
			*P-104833.584				
			-> KM 19575.00		87.938	398.675	56.777
			*M-109074.021				
			*P-104632.798				
			-> KM 19600.00		75.701	386.438	33.209
			*M-109098.963				
			*P-104831.121				
			-> KM 19625.00		24.140	334.877	16.079
			*M-109123.830				
			*P-104828.554				
			-> KM 19650.00		349.247	259.984	26.292
			*M-109148.592				
			*P-104825.121				
			-> KM 19675.00		330.464	241.201	48.957
			*M-109173.240				
			*P-104820.948				
			-> KM 19700.00		324.301	235.039	73.276
			*M-109197.784				
			*P-104816.195				



M(I)	P(I)	R(I)	M(J)	P(J)	R'	A=R'-R	D
			-> KM 19725.00		321.504	* 232.241	97.996
			*M-109222.241				
			*P-104811.016				
			-> KM 19750.00		319.977	* 230.714	122.857
			*M-109246.640				
			*P-104805.568				
			-> KM 19775.00		319.016	* 229.753	147.775
			*M-109271.013				
			*P-104800.004				
			-> KM 19800.00		318.336	* 229.073	172.717
			*M-109295.384				
			*P-104794.430				
			-> KM 19825.00		317.828	* 228.565	197.673
			*M-109319.754				
			*P-104788.855				
			-> KM 19850.00		317.434	* 228.171	222.639
			*M-109344.125				
			*P-104783.280				
			-> KM 19875.00		317.119	* 227.856	247.613
			*M-109368.496				
			*P-104777.705				
			-> KM 19900.00		316.862	* 227.599	272.590
			*M-109392.866				
			*P-104772.131				
			-> KM 19925.00		316.652	* 227.389	297.573
			*M-109417.233				
			*P-104766.540				
CA15	118.358		*-> KM 19875.00*		119.441	* 1.083	283.279
M-109638.668			*M-109368.496				
P-104692.534			*P-104777.705				
			-> KM 19900.00		119.937	* 1.579	258.369
			*M-109392.866				
			*P-104772.131				
			-> KM 19925.00		120.534	* 2.175	233.475
			*M-109417.233				
			*P-104766.540				
			-> KM 19950.00		121.204	* 2.846	208.584
			*M-109441.548				
			*P-104760.731				
			-> KM 19975.00		121.863	* 3.505	183.666
			*M-109465.727				
			*P-104754.378				
			-> KM 20000.00		122.370	* 4.012	158.706
			*M-109469.660				
			*P-104747.161				
			-> KM 20025.00		122.482	* 4.124	133.709
			*M-109513.210				
			*P-104738.778				
			-> KM 20050.00		121.836	* 3.477	108.743
			*M-109536.259				
			*P-104729.105				
			-> KM 20075.00		119.756	* 1.397	83.941
			*M-109558.736				
			*P-104718.167				



M(I)	P(I)	R(I)	M(J)	P(J)	R'	A=R'-R	D
*	*	*	*	*	*	*	*
*	*	*	*-> KM 20100.00*		114.498	* 396.139	* 59.637
*	*	*	*M-109580.571		*	*	*
*	*	*	*P-104705.998		*	*	*
*	*	*	*-> KM 20125.00*		100.176	* 381.817	* 36.972
*	*	*	*M-109601.696		*	*	*
*	*	*	*P-104692.636		*	*	*
*	*	*	*-> KM 20150.00*		54.522	* 336.163	* 22.000
*	*	*	*M-109622.047		*	*	*
*	*	*	*P-104678.121		*	*	*
*	*	*	*-> KM 20175.00*		393.889	* 275.531	* 30.175
*	*	*	*M-109641.560		*	*	*
*	*	*	*P-104662.498		*	*	*
*	*	*	*-> KM 20200.00*		372.533	* 254.175	* 51.431
*	*	*	*M-109660.176		*	*	*
*	*	*	*P-104645.816		*	*	*
*	*	*	*-> KM 20225.00*		365.216	* 246.858	* 75.383
*	*	*	*M-109677.837		*	*	*
*	*	*	*P-104628.126		*	*	*
*	*	*	*-> KM 20250.00*		362.320	* 243.962	* 100.065
*	*	*	*M-109694.496		*	*	*
*	*	*	*P-104609.490		*	*	*
*	*	*	*-> KM 20275.00*		361.179	* 242.820	* 124.983
*	*	*	*M-109710.246		*	*	*
*	*	*	*P-104590.078		*	*	*
*	*	*	*-> KM 20300.00*		360.789	* 242.430	* 149.968
*	*	*	*M-109725.307		*	*	*
*	*	*	*P-104570.124		*	*	*
*	*	*	*-> KM 20325.00*		360.712	* 242.354	* 174.968
*	*	*	*M-109739.922		*	*	*
*	*	*	*P-104549.841		*	*	*
*	*	*	*-> KM 20350.00*		360.728	* 242.370	* 199.967
*	*	*	*M-109754.347		*	*	*
*	*	*	*P-104529.423		*	*	*
*	*	*	*-> KM 20375.00*		360.746	* 242.388	* 224.967
*	*	*	*M-109768.757		*	*	*
*	*	*	*P-104508.994		*	*	*
*	*	*	*-> KM 20400.00*		360.761	* 242.403	* 249.967
*	*	*	*M-109783.166		*	*	*
*	*	*	*P-104488.564		*	*	*
*	*	*	*-> KM 20425.00*		360.773	* 242.415	* 274.967
*	*	*	*M-109797.576		*	*	*
*	*	*	*P-104468.135		*	*	*
*	*	*	*-> KM 20450.00*		360.783	* 242.425	* 299.967
*	*	*	*M-109811.986		*	*	*
*	*	*	*P-104447.705		*	*	*

CA16		158.065	*-> KM 20225.00*		156.264	* 398.199	* 298.748
M-109867.310		*	*M-109677.837		*	*	*
F-104397.149		*	*P-104628.126		*	*	*
		*	*-> KM 20250.00*		156.511	* 398.446	* 273.776
		*	*M-109694.496		*	*	*
		*	*P-104609.490		*	*	*
		*	*-> KM 20275.00*		156.501	* 398.436	* 248.776
		*	*M-109710.246		*	*	*
		*	*P-104590.078		*	*	*



M(I)	P(I)	R(I)	M(J)	P(J)	R'	A=R'-R	D
*	*	*	*	*	*	*	*
*	*	*	*-> KM 20300.00*		156.240	* 398.175	* 223.797
*	*	*	*M-109725.307		*	*	*
*	*	*	*P-104570.124		*	*	*
*	*	*	*-> KM 20325.00*		155.736	* 397.671	* 198.853
*	*	*	*M-109739.922		*	*	*
*	*	*	*P-104549.841		*	*	*
*	*	*	*-> KM 20350.00*		155.003	* 396.938	* 173.946
*	*	*	*M-109754.347		*	*	*
*	*	*	*P-104529.423		*	*	*
*	*	*	*-> KM 20375.00*		154.017	* 395.952	* 149.070
*	*	*	*M-109768.757		*	*	*
*	*	*	*P-104508.994		*	*	*
*	*	*	*-> KM 20400.00*		152.635	* 394.570	* 124.245
*	*	*	*M-109783.166		*	*	*
*	*	*	*P-104488.564		*	*	*
*	*	*	*-> KM 20425.00*		150.566	* 392.501	* 99.508
*	*	*	*M-109797.576		*	*	*
*	*	*	*P-104468.135		*	*	*
*	*	*	*-> KM 20450.00*		147.135	* 389.070	* 74.944
*	*	*	*M-109811.986		*	*	*
*	*	*	*P-104447.705		*	*	*
*	*	*	*-> KM 20475.00*		140.406	* 382.341	* 50.810
*	*	*	*M-109826.395		*	*	*
*	*	*	*P-104427.276		*	*	*
*	*	*	*-> KM 20500.00*		122.328	* 364.263	* 28.223
*	*	*	*M-109840.805		*	*	*
*	*	*	*P-104406.846		*	*	*
*	*	*	*-> KM 20525.00*		53.799	* 295.734	* 16.171
*	*	*	*M-109855.214		*	*	*
*	*	*	*P-104386.417		*	*	*
*	*	*	*-> KM 20550.00*		395.281	* 237.216	* 31.248
*	*	*	*M-109869.624		*	*	*
*	*	*	*P-104365.987		*	*	*
*	*	*	*-> KM 20575.00*		380.045	* 221.980	* 54.234
*	*	*	*M-109884.033		*	*	*
*	*	*	*P-104345.558		*	*	*
*	*	*	*-> KM 20600.00*		374.025	* 215.960	* 78.462
*	*	*	*M-109898.443		*	*	*
*	*	*	*P-104325.128		*	*	*
*	*	*	*-> KM 20625.00*		370.860	* 212.795	* 103.059
*	*	*	*M-109912.853		*	*	*
*	*	*	*P-104304.699		*	*	*
*	*	*	*-> KM 20650.00*		366.919	* 210.854	* 127.813
*	*	*	*M-109927.262		*	*	*
*	*	*	*P-104284.269		*	*	*
*	*	*	*-> KM 20675.00*		367.607	* 209.542	* 152.647
*	*	*	*M-109941.672		*	*	*
*	*	*	*P-104263.840		*	*	*
*	*	*	*-> KM 20700.00*		366.664	* 208.599	* 177.527
*	*	*	*M-109956.081		*	*	*
*	*	*	*P-104243.410		*	*	*
*	*	*	*-> KM 20725.00*		365.952	* 207.887	* 202.437
*	*	*	*M-109970.491		*	*	*
*	*	*	*P-104222.981		*	*	*
*	*	*	*-> KM 20750.00*		365.396	* 207.331	* 227.368
*	*	*	*M-109984.901		*	*	*
*	*	*	*P-104202.551		*	*	*



M(I)	P(I)	R(I)	M(J)	P(J)	R'	A=R'-R	D
*	*	*	*	*	*	*	*
*	*	*	*-> KM 21075.00*	335.742	*	169.270	110.796
*	*	*	*M-110187.279	*	*	*	*
*	*	*	*P-103949.163	*	*	*	*
*	*	*	*-> KM 21100.00*	337.707	*	171.235	135.507
*	*	*	*M-110205.916	*	*	*	*
*	*	*	*P-103932.501	*	*	*	*
*	*	*	*-> KM 21125.00*	338.756	*	172.285	160.387
*	*	*	*M-110225.064	*	*	*	*
*	*	*	*P-103916.430	*	*	*	*
*	*	*	*-> KM 21150.00*	339.256	*	172.784	185.349
*	*	*	*M-110244.705	*	*	*	*
*	*	*	*P-103900.965	*	*	*	*
*	*	*	*-> KM 21175.00*	339.400	*	172.929	210.344
*	*	*	*M-110264.820	*	*	*	*
*	*	*	*P-103886.121	*	*	*	*
*	*	*	*-> KM 21200.00*	339.303	*	172.831	235.341
*	*	*	*M-110285.389	*	*	*	*
*	*	*	*P-103871.913	*	*	*	*
*	*	*	*-> KM 21225.00*	339.033	*	172.562	260.318
*	*	*	*M-110306.392	*	*	*	*
*	*	*	*P-103858.354	*	*	*	*
*	*	*	*-> KM 21250.00*	338.637	*	172.165	285.260
*	*	*	*M-110327.808	*	*	*	*
*	*	*	*P-103845.458	*	*	*	*

CA18	142.315	*-> KM 20975.00*	148.756	*	6.441	*	253.963
M-110301.252	*	*M-110118.198	*	*	*	*	*
P-103845.342	*	*P-104021.377	*	*	*	*	*
*	*	*-> KM 21000.00*	148.142	*	5.827	*	229.072
*	*	*M-110134.616	*	*	*	*	*
*	*	*P-104002.525	*	*	*	*	*
*	*	*-> KM 21025.00*	147.620	*	5.305	*	204.137
*	*	*M-110151.611	*	*	*	*	*
*	*	*P-103984.192	*	*	*	*	*
*	*	*-> KM 21050.00*	147.229	*	4.914	*	179.165
*	*	*M-110169.171	*	*	*	*	*
*	*	*P-103966.399	*	*	*	*	*
*	*	*-> KM 21075.00*	147.035	*	4.720	*	154.171
*	*	*M-110187.279	*	*	*	*	*
*	*	*P-103949.163	*	*	*	*	*
*	*	*-> KM 21100.00*	147.149	*	4.835	*	129.173
*	*	*M-110205.916	*	*	*	*	*
*	*	*P-103932.501	*	*	*	*	*
*	*	*-> KM 21125.00*	147.796	*	5.481	*	104.202
*	*	*M-110225.064	*	*	*	*	*
*	*	*P-103916.430	*	*	*	*	*
*	*	*-> KM 21150.00*	149.476	*	7.161	*	79.319
*	*	*M-110244.705	*	*	*	*	*
*	*	*P-103900.965	*	*	*	*	*
*	*	*-> KM 21175.00*	153.580	*	11.266	*	54.683
*	*	*M-110264.820	*	*	*	*	*
*	*	*P-103886.121	*	*	*	*	*
*	*	*-> KM 21200.00*	165.736	*	23.421	*	30.946
*	*	*M-110285.389	*	*	*	*	*
*	*	*P-103871.913	*	*	*	*	*



M(I)	P(I)	R(I)	M(J)	P(J)	R'	A=R'-R	D
*	*	*	*	*	*	*	*
*	*	*	*-> KM 21225.00*		223.950	* 81.635	* 13.990
*	*	*	*M-110306.392		*	*	*
*	*	*	*P-103858.354		*	*	*
*	*	*	*-> KM 21250.00*		299.722	* 157.407	* 26.556
*	*	*	*M-110327.808		*	*	*
*	*	*	*P-103845.458		*	*	*
*	*	*	*-> KM 21275.00*		315.612	* 173.297	* 49.856
*	*	*	*M-110349.616		*	*	*
*	*	*	*P-103833.238		*	*	*
*	*	*	*-> KM 21300.00*		320.583	* 178.268	* 74.399
*	*	*	*M-110371.796		*	*	*
*	*	*	*P-103821.705		*	*	*
*	*	*	*-> KM 21325.00*		322.581	* 180.266	* 99.251
*	*	*	*M-110394.325		*	*	*
*	*	*	*P-103810.671		*	*	*
*	*	*	*-> KM 21350.00*		323.379	* 181.064	* 124.212
*	*	*	*M-110417.182		*	*	*
*	*	*	*P-103800.746		*	*	*
*	*	*	*-> KM 21375.00*		323.576	* 181.261	* 149.207
*	*	*	*M-110440.344		*	*	*
*	*	*	*P-103791.340		*	*	*
*	*	*	*-> KM 21400.00*		323.432	* 181.117	* 174.204
*	*	*	*M-110463.789		*	*	*
*	*	*	*P-103782.662		*	*	*
*	*	*	*-> KM 21425.00*		323.074	* 180.759	* 199.181
*	*	*	*M-110487.493		*	*	*
*	*	*	*P-103774.721		*	*	*
*	*	*	*-> KM 21450.00*		322.574	* 180.259	* 224.125
*	*	*	*M-110511.434		*	*	*
*	*	*	*P-103767.525		*	*	*
*	*	*	*-> KM 21475.00*		321.975	* 179.660	* 249.025
*	*	*	*M-110535.588		*	*	*
*	*	*	*P-103761.080		*	*	*

CA19		118.726	*-> KM 21400.00*		115.866	* 397.139	* 286.370
M-110741.312		*	*M-110463.789		*	*	*
P-103712.030		*	*P-103782.662		*	*	*
*	*	*	*-> KM 21425.00*		115.415	* 396.689	* 261.446
*	*	*	*M-110487.493		*	*	*
*	*	*	*P-103774.721		*	*	*
*	*	*	*-> KM 21450.00*		115.080	* 396.354	* 236.482
*	*	*	*M-110511.434		*	*	*
*	*	*	*P-103767.525		*	*	*
*	*	*	*-> KM 21475.00*		114.900	* 396.174	* 211.491
*	*	*	*M-110535.588		*	*	*
*	*	*	*P-103761.080		*	*	*
*	*	*	*-> KM 21500.00*		114.939	* 396.213	* 186.492
*	*	*	*M-110559.931		*	*	*
*	*	*	*P-103755.393		*	*	*
*	*	*	*-> KM 21525.00*		115.298	* 396.572	* 161.513
*	*	*	*M-110584.440		*	*	*
*	*	*	*P-103750.469		*	*	*
*	*	*	*-> KM 21550.00*		116.152	* 397.425	* 136.593
*	*	*	*M-110609.092		*	*	*
*	*	*	*P-103746.314		*	*	*



```

*****
*  M(I)  P(I)  *  R(I)  *  M(J)  P(J)  *  R'   *  A=R'-R  *  D   *
*****
*          *          *          *          *          *          *
*          *          *-> KM 21575.00* 117.827 * 399.101 * 111.806 *
*          *          *M-110633.861 *          *          *          *
*          *          *P-103742.931 *          *          *          *
*          *          *-> KM 21600.00* 121.011 * 2.285 * 87.301 *
*          *          *M-110658.723 *          *          *          *
*          *          *P-103740.323 *          *          *          *
*          *          *-> KM 21625.00* 127.394 * 8.668 * 63.440 *
*          *          *M-110683.655 *          *          *          *
*          *          *P-103738.494 *          *          *          *
*          *          *-> KM 21650.00* 142.079 * 23.352 * 41.399 *
*          *          *M-110708.632 *          *          *          *
*          *          *P-103737.444 *          *          *          *
*          *          *-> KM 21675.00* 181.124 * 62.398 * 26.292 *
*          *          *M-110733.630 *          *          *          *
*          *          *P-103737.175 *          *          *          *
*          *          *-> KM 21700.00* 237.785 * 119.059 * 30.952 *
*          *          *M-110758.623 *          *          *          *
*          *          *P-103737.688 *          *          *          *
*          *          *-> KM 21725.00* 263.870 * 145.144 * 50.137 *
*          *          *M-110783.589 *          *          *          *
*          *          *P-103738.981 *          *          *          *
*          *          *-> KM 21750.00* 274.042 * 155.316 * 73.190 *
*          *          *M-110808.502 *          *          *          *
*          *          *P-103741.053 *          *          *          *
*          *          *-> KM 21775.00* 278.774 * 160.048 * 97.389 *
*          *          *M-110833.338 *          *          *          *
*          *          *P-103743.903 *          *          *          *
*          *          *-> KM 21800.00* 281.211 * 162.484 * 122.038 *
*          *          *M-110858.073 *          *          *          *
*          *          *P-103747.528 *          *          *          *
*          *          *-> KM 21825.00* 282.491 * 163.764 * 146.891 *
*          *          *M-110882.682 *          *          *          *
*          *          *P-103751.923 *          *          *          *
*          *          *-> KM 21850.00* 283.111 * 164.384 * 171.842 *
*          *          *M-110907.142 *          *          *          *
*          *          *P-103757.086 *          *          *          *
*          *          *-> KM 21875.00* 283.321 * 164.595 * 196.834 *
*          *          *M-110931.429 *          *          *          *
*          *          *P-103763.010 *          *          *          *
*          *          *-> KM 21900.00* 283.261 * 164.535 * 221.832 *
*          *          *M-110955.520 *          *          *          *
*          *          *P-103769.688 *          *          *          *
*          *          *-> KM 21925.00* 283.026 * 164.300 * 246.816 *
*          *          *M-110979.407 *          *          *          *
*          *          *P-103777.061 *          *          *          *
*          *          *-> KM 21950.00* 282.691 * 163.965 * 271.779 *
*          *          *M-111003.107 *          *          *          *
*          *          *P-103785.017 *          *          *          *
*          *          *-> KM 21975.00* 282.305 * 163.579 * 296.719 *
*          *          *M-111026.643 *          *          *          *
*          *          *P-103793.444 *          *          *          *
*****
*  CA20          * 76.755 *-> KM 21850.00* 73.005 * 396.250 * 290.915 *
*  M-111172.292 *          *M-110907.142 *          *          *          *
*  P-103876.782 *          *P-103757.086 *          *          *          *
  
```



M(I)	P(I)	R(I)	M(J)	P(J)	R'	A=R'-R	D
*	*	*	*	*	*	*	*
*	*	*	*-> KM 21875.00*		71.907	* 395.152	* 266.381
*	*	*	*M-110931.429	*		*	*
*	*	*	*P-103763.010	*		*	*
*	*	*	*-> KM 21900.00*		70.788	* 394.033	* 241.783
*	*	*	*M-110955.520	*		*	*
*	*	*	*P-103769.688	*		*	*
*	*	*	*-> KM 21925.00*		69.624	* 392.869	* 217.138
*	*	*	*M-110979.407	*		*	*
*	*	*	*P-103777.061	*		*	*
*	*	*	*-> KM 21950.00*		68.361	* 391.606	* 192.469
*	*	*	*M-111003.107	*		*	*
*	*	*	*P-103785.017	*		*	*
*	*	*	*-> KM 21975.00*		66.914	* 390.159	* 167.806
*	*	*	*M-111026.643	*		*	*
*	*	*	*P-103793.444	*		*	*
*	*	*	*-> KM 22000.00*		65.137	* 388.382	* 143.183
*	*	*	*M-111050.048	*		*	*
*	*	*	*P-103802.231	*		*	*
*	*	*	*-> KM 22025.00*		62.766	* 386.011	* 118.659
*	*	*	*M-111073.356	*		*	*
*	*	*	*P-103811.271	*		*	*
*	*	*	*-> KM 22050.00*		59.269	* 382.514	* 94.343
*	*	*	*M-111096.608	*		*	*
*	*	*	*P-103820.456	*		*	*
*	*	*	*-> KM 22075.00*		53.412	* 376.657	* 70.496
*	*	*	*M-111119.845	*		*	*
*	*	*	*P-103829.676	*		*	*
*	*	*	*-> KM 22100.00*		41.663	* 364.908	* 47.906
*	*	*	*M-111143.131	*		*	*
*	*	*	*P-103838.774	*		*	*
*	*	*	*-> KM 22125.00*		12.378	* 335.623	* 29.786
*	*	*	*M-111166.537	*		*	*
*	*	*	*P-103847.557	*		*	*
*	*	*	*-> KM 22150.00*		355.106	* 278.351	* 27.517
*	*	*	*M-111190.128	*		*	*
*	*	*	*P-103855.828	*		*	*
*	*	*	*-> KM 22175.00*		319.804	* 243.049	* 43.766
*	*	*	*M-111213.957	*		*	*
*	*	*	*P-103863.386	*		*	*
*	*	*	*-> KM 22200.00*		306.516	* 229.761	* 66.111
*	*	*	*M-111238.057	*		*	*
*	*	*	*P-103870.027	*		*	*
*	*	*	*-> KM 22225.00*		300.874	* 224.119	* 90.154
*	*	*	*M-111262.438	*		*	*
*	*	*	*P-103875.545	*		*	*
*	*	*	*-> KM 22250.00*		298.304	* 221.549	* 114.812
*	*	*	*M-111287.063	*		*	*
*	*	*	*P-103879.841	*		*	*
*	*	*	*-> KM 22275.00*		297.211	* 220.456	* 139.715
*	*	*	*M-111311.873	*		*	*
*	*	*	*P-103882.900	*		*	*
*	*	*	*-> KM 22300.00*		296.932	* 220.178	* 164.703
*	*	*	*M-111336.804	*		*	*
*	*	*	*P-103884.715	*		*	*
*	*	*	*-> KM 22325.00*		297.146	* 220.391	* 189.694
*	*	*	*M-111361.795	*		*	*
*	*	*	*P-103885.283	*		*	*



```

*****
* M(I) P(I) * R(I) * M(J) P(J) * R' * A=R'-R * D *
*****
*
*
* -> KM 22350.00* 297.681 * 220.926 * 214.633 *
* M-111386.783 * * * *
* P-103884.600 * * * *
* -> KM 22375.00* 298.435 * 221.680 * 239.486 *
* M-111411.706 * * * *
* P-103882.669 * * * *
* -> KM 22400.00* 299.346 * 222.591 * 264.223 *
* M-111436.501 * * * *
* P-103879.495 * * * *
* -> KM 22425.00* 300.374 * 223.619 * 288.820 *
* M-111461.107 * * * *
* P-103875.086 * * * *
*****
* CA21 * 89.989 * -> KM 22150.00* 83.378 * 393.389 * 226.598 *
* M-111409.046 * * M-111190.128 * * * *
* P-103914.324 * * P-103855.828 * * * *
* -> KM 22175.00* 83.741 * 393.752 * 201.629 *
* M-111213.957 * * * *
* P-103863.386 * * * *
* -> KM 22200.00* 83.862 * 393.874 * 176.634 *
* M-111238.057 * * * *
* P-103870.027 * * * *
* -> KM 22225.00* 83.538 * 393.549 * 151.650 *
* M-111262.438 * * * *
* P-103875.545 * * * *
* -> KM 22250.00* 82.461 * 392.473 * 126.763 *
* M-111287.063 * * * *
* P-103879.841 * * * *
* -> KM 22275.00* 80.089 * 390.100 * 102.128 *
* M-111311.873 * * * *
* P-103882.900 * * * *
* -> KM 22300.00* 75.237 * 385.249 * 78.074 *
* M-111336.804 * * * *
* P-103884.715 * * * *
* -> KM 22325.00* 64.916 * 374.928 * 55.462 *
* M-111361.795 * * * *
* P-103885.283 * * * *
* -> KM 22350.00* 40.925 * 350.937 * 37.137 *
* M-111386.783 * * * *
* P-103884.600 * * * *
* -> KM 22375.00* 394.663 * 304.674 * 31.767 *
* M-111411.706 * * * *
* P-103882.669 * * * *
* -> KM 22400.00* 357.502 * 267.514 * 44.349 *
* M-111436.501 * * * *
* P-103879.495 * * * *
* -> KM 22425.00* 341.117 * 251.128 * 65.192 *
* M-111461.107 * * * *
* P-103875.086 * * * *
* -> KM 22450.00* 333.802 * 243.813 * 88.615 *
* M-111485.461 * * * *
* P-103869.453 * * * *
* -> KM 22475.00* 330.266 * 240.277 * 112.987 *
* M-111509.503 * * * *
* P-103862.609 * * * *
    
```



M(I)	P(I)	R(I)	M(J)	P(J)	R'	A=R'-R	D
			*-> KM 22500.00		328.561	238.572	137.760
			*M-111533.174				
			*P-103854.573				
			*-> KM 22525.00		327.861	237.873	162.703
			*M-111556.415				
			*P-103845.370				
			*-> KM 22550.00		327.729	237.740	187.699
			*M-111579.220				
			*P-103835.130				
			*-> KM 22575.00		327.903	237.914	212.692
			*M-111601.633				
			*P-103824.058				
			*-> KM 22600.00		328.232	238.243	237.664
			*M-111623.721				
			*P-103812.350				
CA22	125.446		*-> KM 22375.00		118.834	393.388	271.288
M-111671.208			*M-111411.706				
P-103803.574			*P-103882.669				
			*-> KM 22400.00		119.917	394.470	246.681
			*M-111436.501				
			*P-103879.495				
			*-> KM 22425.00		120.886	395.439	221.938
			*M-111461.107				
			*P-103875.086				
			*-> KM 22450.00		121.698	396.252	197.084
			*M-111485.461				
			*P-103869.453				
			*-> KM 22475.00		122.284	396.838	172.144
			*M-111509.503				
			*P-103862.609				
			*-> KM 22500.00		122.531	397.084	147.154
			*M-111533.174				
			*P-103854.573				
			*-> KM 22525.00		122.229	396.783	122.165
			*M-111556.415				
			*P-103845.370				
			*-> KM 22550.00		121.038	395.592	97.250
			*M-111579.220				
			*P-103835.130				
			*-> KM 22575.00		118.228	392.782	72.528
			*M-111601.633				
			*P-103824.058				
			*-> KM 22600.00		111.634	386.188	48.291
			*M-111623.721				
			*P-103812.350				
			*-> KM 22625.00		91.658	366.212	25.862
			*M-111645.568				
			*P-103800.195				
			*-> KM 22650.00		15.570	290.124	16.279
			*M-111667.266				
			*P-103787.779				
			*-> KM 22675.00		364.395	238.949	33.379
			*M-111688.918				
			*P-103775.281				



M(I)	P(I)	R(I)	M(J)	P(J)	R'	A=R'-R	D
*	*	*	*	*	*	*	*
*	*	*	*-> KM 22700.00	*	351.015	* 225.569	* 56.654
*	*	*	*M-111710.625	*	*	*	*
*	*	*	*P-103762.880	*	*	*	*
*	*	*	*-> KM 22725.00	*	345.286	* 219.840	* 80.901
*	*	*	*M-111732.489	*	*	*	*
*	*	*	*P-103750.757	*	*	*	*
*	*	*	*-> KM 22750.00	*	341.900	* 216.454	* 105.413
*	*	*	*M-111754.602	*	*	*	*
*	*	*	*P-103739.097	*	*	*	*
*	*	*	*-> KM 22775.00	*	339.441	* 213.995	* 130.000
*	*	*	*M-111777.047	*	*	*	*
*	*	*	*P-103728.089	*	*	*	*
*	*	*	*-> KM 22800.00	*	337.384	* 211.937	* 154.575
*	*	*	*M-111799.889	*	*	*	*
*	*	*	*P-103717.932	*	*	*	*
*	*	*	*-> KM 22825.00	*	335.492	* 210.046	* 179.078
*	*	*	*M-111823.170	*	*	*	*
*	*	*	*P-103708.829	*	*	*	*
*	*	*	*-> KM 22850.00	*	333.674	* 208.228	* 203.474
*	*	*	*M-111846.875	*	*	*	*
*	*	*	*P-103700.896	*	*	*	*
*	*	*	*-> KM 22875.00	*	331.904	* 206.458	* 227.745
*	*	*	*M-111870.947	*	*	*	*
*	*	*	*P-103694.157	*	*	*	*
*	*	*	*-> KM 22900.00	*	330.169	* 204.723	* 251.875
*	*	*	*M-111895.326	*	*	*	*
*	*	*	*P-103688.631	*	*	*	*
*	*	*	*-> KM 22925.00	*	328.458	* 203.012	* 275.849
*	*	*	*M-111919.951	*	*	*	*
*	*	*	*P-103684.329	*	*	*	*

CA23		139.444	*-> KM 22650.00	*	134.877	* 395.434	* 211.381
M-111847.710			*M-111667.266	*	*	*	*
P-103677.680			*P-103787.779	*	*	*	*
*	*	*	*-> KM 22675.00	*	135.085	* 395.642	* 186.389
*	*	*	*M-111688.918	*	*	*	*
*	*	*	*P-103775.281	*	*	*	*
*	*	*	*-> KM 22700.00	*	135.402	* 395.958	* 161.404
*	*	*	*M-111710.625	*	*	*	*
*	*	*	*P-103762.880	*	*	*	*
*	*	*	*-> KM 22725.00	*	135.982	* 396.539	* 136.441
*	*	*	*M-111732.489	*	*	*	*
*	*	*	*P-103750.757	*	*	*	*
*	*	*	*-> KM 22750.00	*	137.122	* 397.679	* 111.540
*	*	*	*M-111754.602	*	*	*	*
*	*	*	*P-103739.097	*	*	*	*
*	*	*	*-> KM 22775.00	*	139.448	* 0.004	* 86.801
*	*	*	*M-111777.047	*	*	*	*
*	*	*	*P-103728.089	*	*	*	*
*	*	*	*-> KM 22800.00	*	144.542	* 5.099	* 62.507
*	*	*	*M-111799.889	*	*	*	*
*	*	*	*P-103717.932	*	*	*	*
*	*	*	*-> KM 22825.00	*	157.520	* 18.076	* 39.654
*	*	*	*M-111823.170	*	*	*	*
*	*	*	*P-103708.829	*	*	*	*



M(I)	P(I)	R(I)	M(J)	P(J)	R'	A=R'-R	D
*	*	*	*	*	*	*	*
*			*-> KM 22850.00*		197.711	58.268	23.231
*			*M-111846.875		*	*	*
*			*P-103700.896		*	*	*
*			*-> KM 22875.00*		260.733	121.290	28.486
*			*M-111870.947		*	*	*
*			*P-103694.157		*	*	*
*			*-> KM 22900.00*		285.609	146.165	48.859
*			*M-111895.326		*	*	*
*			*P-103688.631		*	*	*
*			*-> KM 22925.00*		294.157	154.713	72.546
*			*M-111919.951		*	*	*
*			*P-103684.329		*	*	*
*			*-> KM 22950.00*		297.650	158.206	97.115
*			*M-111944.759		*	*	*
*			*P-103681.264		*	*	*
*			*-> KM 22975.00*		299.080	159.636	121.993
*			*M-111969.690		*	*	*
*			*P-103679.443		*	*	*
*			*-> KM 23000.00*		299.485	160.041	146.976
*			*M-111994.681		*	*	*
*			*P-103678.869		*	*	*
*			*-> KM 23025.00*		299.309	159.866	171.969
*			*M-112019.669		*	*	*
*			*P-103679.546		*	*	*
*			*-> KM 23050.00*		298.775	159.331	196.919
*			*M-112044.593		*	*	*
*			*P-103681.470		*	*	*

CA24		91.782	*-> KM 23075.00*		87.108	395.326	294.969
M-112358.330			*M-112069.389		*	*	*
P-103743.966			*P-103684.638		*	*	*
			-> KM 23100.00		86.957	395.176	269.981
			*M-112093.995		*	*	*
			*P-103689.040		*	*	*
			-> KM 23125.00		87.083	395.301	244.988
			*M-112118.368		*	*	*
			*P-103694.597		*	*	*
			-> KM 23150.00		87.521	395.739	220.040
			*M-112142.504		*	*	*
			*P-103701.109		*	*	*
			-> KM 23175.00		88.323	396.542	195.178
			*M-112166.426		*	*	*
			*P-103708.368		*	*	*
			-> KM 23200.00		89.572	397.790	170.436
			*M-112190.176		*	*	*
			*P-103716.172		*	*	*
			-> KM 23225.00		91.398	399.617	145.848
			*M-112213.811		*	*	*
			*P-103724.320		*	*	*
			-> KM 23250.00		94.044	2.263	121.468
			*M-112237.393		*	*	*
			*P-103732.619		*	*	*
			-> KM 23275.00		96.016	6.234	97.406
			*M-112260.971		*	*	*
			*P-103740.931		*	*	*



ENTIDADE:BRISA

REQUERENTE:CENORPLAN

A5 - AUTO ESTRADA DA COSTA DO-ESTORIL
SUBLANÇO CARCAVELOS / CASCAIS

PROJECTO DE IMPLANTAÇÃO



ALARGAMENTO E BENEFICIAÇÃO PARA 2X3 VIAS

PIQUETAGEM DO EIXO
COTAS DE IMPLANTAÇÃO DAS ESTACAS

Km	M	P	COTA NO TOPO DA ESTACA	ALTURA DA ESTACA	COTA NA BASE DA-ESTACA
14100	-104031.862	-105929.372	74.057	0.290	73.767
14125	-104056.862	-105929.316	74.394	0.250	74.144
14150	-104081.862	-105929.261	74.796	0.250	74.546
14175	-104106.862	-105929.205	75.273	0.290	74.983
14200	-104131.862	-105929.150	75.571	0.280	75.291
14225	-104156.862	-105929.094	75.937	0.300	75.637
14250	-104181.862	-105929.039	76.231	0.310	75.921
14275	-104206.861	-105928.983	76.276	0.000	76.276
14300	-104231.861	-105928.927	76.486	0.000	76.486
14325	-104256.861	-105928.872	77.596	0.000	77.596
14350	-104281.861	-105928.816	77.045	0.000	77.045
14375	-104306.861	-105928.761	77.290	0.000	77.290
14400	-104331.861	-105928.705	77.552	0.000	77.552
14425	-104356.861	-105928.650	77.791	0.000	77.791
14450	-104381.861	-105928.594	78.043	0.000	78.043
14475	-104406.861	-105928.538	78.289	0.000	78.289
14500	-104431.861	-105928.483	78.537	0.000	78.537
14525	-104456.861	-105928.427	78.784	0.000	78.784
14550	-104481.861	-105928.372	79.061	0.000	79.061
14575	-104506.861	-105928.316	79.142	0.000	79.142
14600	-104531.861	-105928.261	78.894	0.000	78.894
14625	-104556.861	-105928.205	78.633	0.000	78.633
14650	-104581.861	-105928.149	78.378	0.000	78.378
14675	-104606.860	-105928.094	78.225	0.000	78.225
14700	-104631.860	-105928.038	78.095	0.000	78.095
14725	-104656.860	-105927.983	77.981	0.000	77.981
14750	-104681.860	-105927.927	77.866	0.000	77.866
14775	-104706.860	-105927.872	77.723	0.000	77.723
14800	-104731.860	-105927.816	77.611	0.000	77.611
14825	-104756.860	-105927.760	78.031	0.000	78.031
14850	-104781.860	-105927.705	77.589	0.250	77.339
14875	-104806.860	-105927.649	77.353	0.190	77.163
14900	-104831.860	-105927.594	77.351	0.250	77.101
14925	-104856.860	-105927.538	77.203	0.240	76.963
14950	-104881.860	-105927.483	77.189	0.270	76.919
14975	-104906.860	-105927.427	76.922	0.200	76.722
15000	-104931.860	-105927.371	76.903	0.260	76.643
15025	-104956.860	-105927.316	76.684	0.250	76.434
15050	-104981.860	-105927.260	76.513	0.250	76.263
15075	-105006.859	-105927.205	76.440	0.300	76.140
15100	-105031.859	-105927.149	76.238	0.240	75.998
15125	-105056.859	-105927.093	76.024	0.230	75.794
15150	-105081.859	-105927.038	75.956	0.250	75.706
15175	-105106.859	-105926.982	75.620	0.220	75.400
15200	-105131.859	-105926.927	75.345	0.260	75.085
15225	-105156.859	-105926.871	75.037	0.250	74.787
15250	-105181.859	-105926.813	74.630	0.240	74.390
15275	-105206.859	-105926.699	74.214	0.250	73.964
15300	-105231.857	-105926.432	73.835	0.260	73.575
15325	-105256.852	-105925.915	73.354	0.220	73.134

ALARGAMENTO E BENEFICIAÇÃO PARA 2X3 VIAS

PIQUETAGEM DO EIXO
COTAS DE IMPLANTAÇÃO DAS ESTACAS

Km	M	P	COTA NO TOPO DA ESTACA	ALTURA DA ESTACA	COTA NA BASE DA ESTACA
15350	-105281.837	-105925.051	72.993	0.240	72.753
15375	-105306.802	-105923.742	72.472	0.240	72.232
15400	-105331.733	-105921.891	72.024	0.240	71.784
15425	-105356.608	-105919.403	71.495	0.230	71.265
15450	-105381.405	-105916.228	70.752	0.000	70.752
15475	-105406.104	-105912.366	70.608	0.200	70.408
15500	-105430.686	-105907.819	70.159	0.230	69.929
15525	-105455.132	-105902.591	69.785	0.210	69.575
15550	-105479.424	-105896.687	69.566	0.250	69.316
15575	-105503.543	-105890.109	69.373	0.230	69.143
15600	-105527.469	-105882.865	69.383	0.210	69.173
15625	-105551.185	-105874.959	69.143	0.000	69.143
15650	-105574.672	-105866.397	69.437	0.000	69.437
15675	-105597.913	-105857.186	70.094	0.290	69.804
15700	-105620.889	-105847.333	70.562	0.270	70.292
15725	-105643.582	-105836.846	71.306	0.280	71.026
15750	-105665.975	-105825.732	72.210	0.270	71.940
15775	-105688.051	-105814.001	72.953	0.000	72.953
15800	-105709.792	-105801.661	74.109	0.250	73.859
15825	-105731.182	-105788.723	75.151	0.250	74.901
15850	-105752.209	-105775.201	76.209	0.220	75.989
15875	-105772.896	-105761.164	77.485	0.260	77.225
15900	-105793.287	-105746.700	78.549	0.250	78.299
15925	-105813.430	-105731.894	79.602	0.240	79.362
15950	-105833.379	-105716.827	80.673	0.230	80.443
15975	-105853.191	-105701.579	81.827	0.240	81.587
16000	-105872.924	-105686.229	82.839	0.230	82.609
16025	-105892.633	-105670.850	83.801	0.230	83.571
16050	-105912.343	-105655.470	84.724	0.280	84.444
16075	-105932.053	-105640.090	85.563	0.270	85.293
16100	-105951.762	-105624.711	86.252	0.240	86.012
16125	-105971.472	-105609.331	86.934	0.270	86.664
16150	-105991.181	-105593.951	87.556	0.260	87.296
16175	-106010.891	-105578.572	88.095	0.280	87.815
16200	-106030.600	-105563.192	88.659	0.280	88.379
16225	-106050.310	-105547.812	88.962	0.260	88.702
16250	-106070.019	-105532.433	89.343	0.320	89.023
16275	-106089.729	-105517.053	89.619	0.290	89.329
16300	-106109.439	-105501.674	89.879	0.280	89.599
16325	-106129.148	-105486.294	90.088	0.270	89.818
16350	-106148.858	-105470.914	90.280	0.250	90.030
16375	-106168.567	-105455.535	90.450	0.260	90.190
16400	-106188.277	-105440.155	90.736	0.240	90.496
16425	-106207.986	-105424.775	91.037	0.290	90.747
16450	-106227.692	-105409.390	91.230	0.270	90.960
16475	-106247.327	-105393.916	91.457	0.280	91.177
16500	-106266.786	-105378.221	91.723	0.250	91.473
16525	-106285.953	-105362.171	92.040	0.300	91.740
16550	-106304.714	-105345.648	92.143	0.270	91.873
16575	-106323.009	-105328.612	92.303	0.290	92.013

ALARGAMENTO E BENEFICIAÇÃO PARA 2X3 VIAS

PIQUETAGEM DO EIXO
COTAS DE IMPLANTAÇÃO DAS ESTACAS

Km	M	P	COTA NO TOPO DA ESTACA	ALTURA DA ESTACA	COTA NA BASE DA ESTACA
16600	-106340.824	-105311.074	92.442	0.270	92.172
16625	-106358.146	-105293.048	92.308	0.000	92.308
16650	-106374.960	-105274.548	92.460	0.250	92.210
16675	-106391.253	-105255.588	92.365	0.240	92.125
16700	-106407.029	-105236.195	92.337	0.290	92.047
16725	-106422.378	-105216.462	92.168	0.230	91.938
16750	-106437.434	-105196.504	92.021	0.280	91.741
16775	-106452.331	-105176.428	91.849	0.280	91.569
16800	-106467.203	-105156.332	91.474	0.220	91.254
16825	-106482.136	-105136.282	91.203	0.270	90.933
16850	-106497.201	-105116.331	90.882	0.280	90.602
16875	-106512.467	-105096.534	90.435	0.250	90.185
16900	-106528.003	-105076.948	90.023	0.230	89.793
16925	-106543.875	-105057.633	89.477	0.230	89.247
16950	-106560.144	-105038.651	89.042	0.330	88.712
16975	-106576.864	-105020.066	88.382	0.230	88.152
17000	-106594.043	-105001.905	87.788	0.290	87.498
17025	-106611.671	-104984.179	87.169	0.290	86.879
17050	-106629.737	-104966.898	86.428	0.270	86.158
17075	-106648.229	-104950.075	85.606	0.220	85.386
17100	-106667.135	-104933.720	84.616	0.000	84.616
17125	-106686.445	-104917.842	83.798	0.000	83.798
17150	-106706.145	-104902.451	83.101	0.230	82.871
17175	-106726.224	-104887.558	82.230	0.230	82.000
17200	-106746.669	-104873.172	81.269	0.280	80.989
17225	-106767.468	-104859.301	80.185	0.280	79.905
17250	-106788.606	-104845.955	79.045	0.270	78.775
17275	-106810.072	-104833.141	77.963	0.230	77.733
17300	-106831.851	-104820.867	76.870	0.320	76.550
17325	-106853.930	-104809.142	75.717	0.290	75.427
17350	-106876.295	-104797.972	74.426	0.240	74.186
17375	-106898.933	-104787.365	73.223	0.300	72.923
17400	-106921.828	-104777.327	71.958	0.290	71.668
17425	-106944.968	-104767.865	70.694	0.260	70.434
17450	-106968.336	-104758.984	69.439	0.270	69.169
17475	-106991.920	-104750.690	68.198	0.240	67.958
17500	-107015.703	-104742.988	66.942	0.240	66.702
17525	-107039.671	-104735.883	65.691	0.250	65.441
17550	-107063.810	-104729.379	64.514	0.300	64.214
17575	-107088.104	-104723.481	63.211	0.270	62.941
17600	-107112.537	-104718.192	62.176	0.250	61.926
17625	-107137.095	-104713.515	61.249	0.290	60.959
17650	-107161.762	-104709.454	60.377	0.270	60.107
17675	-107186.523	-104706.011	59.608	0.260	59.348
17700	-107211.363	-104703.187	58.628	0.000	58.628
17725	-107236.265	-104700.986	58.093	0.000	58.093
17750	-107261.214	-104699.407	57.622	0.000	57.622
17775	-107286.196	-104698.453	57.283	0.000	57.283
17800	-107311.193	-104698.123	57.026	0.000	57.026
17825	-107336.190	-104698.419	56.879	0.000	56.879

ALARGAMENTO E BENEFICIAÇÃO PARA 2X3 VIAS

PIQUETAGEM DO EIXO
COTAS DE IMPLANTAÇÃO DAS ESTACAS

Km	M	P	COTA NO TOPO DA ESTACA	ALTURA DA ESTACA	COTA NA BASE DA ESTACA
17850	-107361.173	-104699.339	56.815	0.000	56.815
17875	-107386.124	-104700.884	56.873	0.000	56.873
17900	-107411.030	-104703.051	57.182	0.280	56.902
17925	-107435.873	-104705.836	57.573	0.340	57.233
17950	-107460.648	-104709.181	57.892	0.330	57.562
17975	-107485.355	-104712.998	58.383	0.340	58.043
18000	-107509.999	-104717.197	58.995	0.320	58.675
18025	-107534.592	-104721.691	59.631	0.310	59.321
18050	-107559.146	-104726.392	60.360	0.300	60.060
18075	-107583.677	-104731.213	61.205	0.280	60.925
18100	-107608.201	-104736.068	61.921	0.300	61.621
18125	-107632.733	-104740.881	62.651	0.260	62.391
18150	-107657.286	-104745.586	63.407	0.290	63.117
18175	-107681.872	-104750.117	64.137	0.270	63.867
18200	-107706.501	-104754.405	64.778	0.240	64.538
18225	-107731.182	-104758.385	65.458	0.280	65.178
18250	-107755.920	-104761.994	66.030	0.240	65.790
18275	-107780.711	-104765.217	66.667	0.300	66.367
18300	-107805.550	-104768.052	67.142	0.230	66.912
18325	-107830.429	-104770.499	67.545	0.240	67.305
18350	-107855.344	-104772.556	68.082	0.240	67.842
18375	-107880.288	-104774.224	68.430	0.280	68.150
18400	-107905.255	-104775.502	68.770	0.280	68.490
18425	-107930.239	-104776.390	69.080	0.280	68.800
18450	-107955.234	-104776.888	69.388	0.240	69.148
18475	-107980.234	-104776.994	69.626	0.300	69.326
18500	-108005.232	-104776.711	69.863	0.260	69.603
18525	-108030.223	-104776.037	70.009	0.300	69.709
18550	-108055.201	-104775.008	70.123	0.280	69.843
18575	-108080.166	-104773.689	70.317	0.270	70.047
18600	-108105.119	-104772.149	70.435	0.280	70.155
18625	-108130.061	-104770.454	70.520	0.270	70.250
18650	-108154.998	-104768.672	70.664	0.280	70.384
18675	-108179.933	-104766.871	70.731	0.280	70.451
18700	-108204.870	-104765.103	70.807	0.210	70.597
18725	-108229.813	-104763.415	70.981	0.240	70.741
18750	-108254.764	-104761.854	70.828	0.000	70.828
18775	-108279.725	-104760.464	70.972	0.000	70.972
18800	-108304.698	-104759.294	71.470	0.270	71.200
18825	-108329.681	-104758.390	71.743	0.290	71.453
18850	-108354.674	-104757.795	71.948	0.190	71.758
18875	-108379.672	-104757.529	72.486	0.260	72.226
18900	-108404.672	-104757.592	72.965	0.260	72.705
18925	-108429.669	-104757.984	73.645	0.270	73.375
18950	-108454.658	-104758.705	74.306	0.260	74.046
18975	-108479.636	-104759.755	74.975	0.220	74.755
19000	-108504.598	-104761.133	75.637	0.300	75.337
19025	-108529.539	-104762.839	76.269	0.340	75.929
19050	-108554.456	-104764.874	76.746	0.320	76.426
19075	-108579.344	-104767.236	77.007	0.230	76.777

ALARGAMENTO E BENEFICIAÇÃO PARA 2X3 VIAS

PIQUETAGEM DO EIXO
COTAS DE IMPLANTAÇÃO DAS ESTACAS

Km	M	P	COTA NO TOPO DA ESTACA	ALTURA DA ESTACA	COTA NA BASE DA ESTACA
19100	-108604.199	-104769.925	77.437	0.290	77.147
19125	-108629.016	-104772.942	77.685	0.250	77.435
19150	-108653.792	-104776.284	77.872	0.300	77.572
19175	-108678.521	-104779.950	78.005	0.280	77.725
19200	-108703.205	-104783.910	78.083	0.320	77.763
19225	-108727.849	-104788.119	77.975	0.250	77.725
19250	-108752.456	-104792.529	78.014	0.300	77.714
19275	-108777.036	-104797.096	77.937	0.320	77.617
19300	-108801.594	-104801.773	77.820	0.360	77.460
19325	-108826.140	-104806.515	77.647	0.320	77.327
19350	-108850.683	-104811.272	77.431	0.280	77.151
19375	-108875.244	-104815.938	77.068	0.000	77.068
19400	-108899.850	-104820.359	77.050	0.300	76.750
19425	-108924.524	-104824.379	76.902	0.260	76.642
19450	-108949.283	-104827.841	76.844	0.300	76.544
19475	-108974.130	-104830.587	76.694	0.300	76.394
19500	-108999.057	-104832.478	76.614	0.270	76.344
19525	-109024.036	-104833.477	76.510	0.250	76.260
19550	-109049.035	-104833.584	76.392	0.350	76.042
19575	-109074.021	-104832.798	76.318	0.320	75.998
19600	-109098.963	-104831.121	76.297	0.320	75.977
19625	-109123.830	-104828.554	76.314	0.280	76.034
19650	-109148.592	-104825.121	76.251	0.000	76.251
19675	-109173.240	-104820.948	76.535	0.000	76.535
19700	-109197.784	-104816.195	77.144	0.290	76.854
19725	-109222.241	-104811.016	77.597	0.280	77.317
19750	-109246.640	-104805.568	78.066	0.320	77.746
19775	-109271.013	-104800.004	78.488	0.330	78.158
19800	-109295.384	-104794.430	78.987	0.340	78.647
19825	-109319.754	-104788.855	79.338	0.330	79.008
19850	-109344.125	-104783.280	79.695	0.310	79.385
19875	-109368.496	-104777.705	80.012	0.270	79.742
19900	-109392.866	-104772.131	80.586	0.330	80.256
19925	-109417.233	-104766.540	81.035	0.350	80.685
19950	-109441.548	-104760.731	81.465	0.350	81.115
19975	-109465.727	-104754.378	81.916	0.350	81.566
20000	-109489.660	-104747.161	82.309	0.290	82.019
20025	-109513.210	-104738.778	82.664	0.320	82.344
20050	-109536.259	-104729.105	83.182	0.320	82.862
20075	-109558.736	-104718.167	83.605	0.360	83.245
20100	-109580.571	-104705.998	83.924	0.320	83.604
20125	-109601.696	-104692.636	84.402	0.270	84.132
20150	-109622.047	-104678.121	84.872	0.300	84.572
20175	-109641.560	-104662.498	85.309	0.320	84.989
20200	-109660.176	-104645.816	85.764	0.320	85.444
20225	-109677.837	-104628.126	86.197	0.290	85.907
20250	-109694.496	-104609.490	86.578	0.340	86.238
20275	-109710.246	-104590.078	87.048	0.320	86.726
20300	-109725.307	-104570.124	87.512	0.350	87.162
20325	-109739.922	-104549.841	87.937	0.340	87.597

ALARGAMENTO E BENEFICIAÇÃO PARA 2X3 VIAS

PIQUETAGEM DO EIXO
 COTAS DE IMPLANTAÇÃO DAS ESTACAS

Km	M	P	COTA NO TOPO DA ESTACA	ALTURA DA ESTACA	COTA NA BASE DA ESTACA
20350	-109754.347	-104529.423	88.357	0.330	88.027
20375	-109768.757	-104508.994	88.699	0.300	88.399
20400	-109783.166	-104488.564	89.123	0.270	88.853
20425	-109797.576	-104468.135	89.690	0.340	89.350
20450	-109811.986	-104447.705	90.234	0.330	89.904
20475	-109826.395	-104427.276	90.767	0.370	90.397
20500	-109840.805	-104406.846	91.197	0.250	90.947
20525	-109855.214	-104386.417	91.960	0.360	91.600
20550	-109869.624	-104365.987	92.533	0.340	92.193
20575	-109884.033	-104345.558	93.210	0.350	92.860
20600	-109898.443	-104325.128	93.747	0.240	93.507
20625	-109912.853	-104304.699	94.257	0.000	94.257
20650	-109927.262	-104284.269	95.293	0.320	94.973
20675	-109941.672	-104263.840	96.102	0.350	95.752
20700	-109956.081	-104243.410	96.620	0.230	96.390
20725	-109970.491	-104222.981	97.629	0.330	97.299
20750	-109984.901	-104202.551	98.320	0.320	98.000
20775	-109999.310	-104182.122	99.111	0.290	98.821
20800	-110013.720	-104161.692	99.737	0.260	99.477
20825	-110028.130	-104141.263	100.566	0.330	100.236
20850	-110042.565	-104120.852	101.108	0.280	100.828
20875	-110057.111	-104100.519	101.594	0.190	101.404
20900	-110071.859	-104080.333	102.159	0.230	101.929
20925	-110086.899	-104060.363	102.667	0.220	102.447
20950	-110102.318	-104040.685	103.021	0.320	102.701
20975	-110118.198	-104021.377	103.371	0.350	103.021
21000	-110134.616	-104002.525	103.541	0.300	103.241
21025	-110151.611	-103984.192	103.718	0.280	103.438
21050	-110169.171	-103966.399	103.820	0.300	103.520
21075	-110187.279	-103949.163	103.501	0.000	103.501
21100	-110205.916	-103932.501	103.479	0.000	103.479
21125	-110225.064	-103916.430	103.399	0.000	103.399
21150	-110244.705	-103900.965	103.481	0.310	103.171
21175	-110264.820	-103886.121	103.213	0.320	102.893
21200	-110285.389	-103871.913	102.862	0.290	102.572
21225	-110306.392	-103858.354	102.490	0.310	102.180
21250	-110327.808	-103845.458	102.050	0.350	101.700
21275	-110349.616	-103833.238	101.460	0.260	101.200
21300	-110371.796	-103821.705	100.798	0.260	100.538
21325	-110394.325	-103810.871	100.104	0.270	99.834
21350	-110417.182	-103800.746	99.252	0.250	99.002
21375	-110440.344	-103791.340	98.385	0.250	98.135
21400	-110463.789	-103782.662	97.539	0.250	97.289
21425	-110487.493	-103774.721	96.638	0.270	96.368
21450	-110511.434	-103767.525	95.692	0.250	95.442
21475	-110535.588	-103761.080	94.769	0.260	94.509
21500	-110559.931	-103755.393	93.780	0.290	93.490
21525	-110584.440	-103750.469	92.797	0.280	92.517
21550	-110609.092	-103746.314	91.788	0.340	91.448
21575	-110633.861	-103742.931	90.780	0.320	90.460

ALARGAMENTO E BENEFICIAÇÃO PARA 2X3 VIAS

PIQUETAGEM DO EIXO
COTAS DE IMPLANTAÇÃO DAS ESTACAS

Km	M	P	COTA NO TOPO DA ESTACA	ALTURA DA ESTACA	COTA NA BASE DA ESTACA
21600	-110658.723	-103740.323	89.898	0.330	89.568
21625	-110683.655	-103738.494	89.087	0.300	88.787
21650	-110708.632	-103737.444	88.433	0.330	88.103
21675	-110733.630	-103737.175	87.822	0.300	87.522
21700	-110758.623	-103737.688	87.502	0.300	87.202
21725	-110783.589	-103738.981	87.180	0.340	86.840
21750	-110808.502	-103741.053	86.987	0.350	86.637
21775	-110833.338	-103743.903	86.883	0.320	86.563
21800	-110858.073	-103747.528	86.959	0.250	86.709
21825	-110882.682	-103751.923	87.160	0.350	86.810
21850	-110907.142	-103757.086	87.506	0.360	87.146
21875	-110931.429	-103763.010	87.910	0.350	87.560
21900	-110955.520	-103769.688	88.622	0.350	88.272
21925	-110979.407	-103777.061	89.195	0.260	88.935
21950	-111003.107	-103785.017	89.910	0.280	89.630
21975	-111026.643	-103793.444	90.654	0.310	90.344
22000	-111050.048	-103802.231	91.353	0.290	91.063
22025	-111073.356	-103811.271	91.792	0.000	91.792
22050	-111096.608	-103820.456	92.455	0.000	92.455
22075	-111119.845	-103829.676	93.523	0.340	93.183
22100	-111143.131	-103838.774	94.168	0.260	93.908
22125	-111166.537	-103847.557	94.951	0.320	94.631
22150	-111190.128	-103855.828	95.688	0.280	95.408
22175	-111213.957	-103863.386	95.993	0.000	95.993
22200	-111238.057	-103870.027	97.062	0.290	96.772
22225	-111262.438	-103875.545	97.716	0.280	97.436
22250	-111287.063	-103879.841	98.410	0.280	98.130
22275	-111311.873	-103882.900	99.119	0.280	98.839
22300	-111336.804	-103884.715	99.804	0.300	99.504
22325	-111361.795	-103885.283	100.554	0.270	100.284
22350	-111386.783	-103884.600	101.264	0.260	101.004
22375	-111411.706	-103882.669	101.901	0.270	101.631
22400	-111436.501	-103879.495	102.656	0.290	102.366
22425	-111461.107	-103875.086	103.237	0.270	102.967
22450	-111485.461	-103869.453	103.919	0.270	103.649
22475	-111509.503	-103862.609	104.560	0.280	104.280
22500	-111533.174	-103854.573	105.155	0.300	104.855
22525	-111556.415	-103845.370	105.618	0.260	105.358
22550	-111579.220	-103835.130	106.152	0.320	105.832
22575	-111601.633	-103824.058	106.523	0.300	106.223
22600	-111623.721	-103812.350	106.588	0.000	106.588
22625	-111645.568	-103800.195	106.866	0.000	106.866
22650	-111667.266	-103787.779	107.484	0.320	107.164
22675	-111688.918	-103775.281	107.592	0.290	107.302
22700	-111710.625	-103762.880	107.777	0.290	107.487
22725	-111732.489	-103750.757	107.877	0.300	107.577
22750	-111754.602	-103739.097	107.817	0.260	107.557
22775	-111777.047	-103728.089	107.905	0.300	107.605
22800	-111799.889	-103717.932	107.858	0.295	107.563
22825	-111823.170	-103708.829	107.808	0.340	107.468

ALARGAMENTO E BENEFICIAÇÃO PARA 2X3 VIAS

PIQUETAGEM DO EIXO
 COTAS DE IMPLANTAÇÃO DAS ESTACAS

Km	M	P	COTA NO TOPO DA ESTACA	ALTURA DA ESTACA	COTA NA BASE DA ESTACA
22850	-111846.875	-103700.896	107.641	0.330	107.311
22875	-111870.947	-103694.157	107.412	0.290	107.122
22900	-111895.326	-103688.631	107.001	0.280	106.721
22925	-111919.951	-103684.329	106.730	0.300	106.430
22950	-111944.759	-103681.264	106.307	0.270	106.037
22975	-111969.690	-103679.443	105.907	0.280	105.627
23000	-111994.681	-103678.869	105.395	0.260	105.135
23025	-112019.669	-103679.546	104.879	0.310	104.569
23050	-112044.593	-103681.470	104.268	0.260	104.008
23075	-112069.389	-103684.638	103.590	0.260	103.330
23100	-112093.995	-103689.040	103.008	0.290	102.718
23125	-112118.368	-103694.597	102.148	0.240	101.908
23150	-112142.504	-103701.109	101.385	0.300	101.085
23175	-112166.426	-103708.368	100.536	0.290	100.246
23200	-112190.176	-103716.172	99.711	0.300	99.411
23225	-112213.811	-103724.320	98.902	0.300	98.602
23250	-112237.393	-103732.619	98.103	0.320	97.783
23275	-112260.971	-103740.931	97.208	0.270	96.938
23300	-112284.548	-103749.244	96.304	0.260	96.044
23325	-112308.126	-103757.556	95.442	0.330	95.112
23350	-112331.704	-103765.869	94.555	0.320	94.235
23375	-112355.281	-103774.181	93.636	0.270	93.366
23400	-112378.859	-103782.494	92.753	0.270	92.483
23425	-112402.436	-103790.806	91.658	0.000	91.658
23450	-112426.014	-103799.119	90.811	0.000	90.811
23475	-112449.591	-103807.431	89.899	0.000	89.899
23500	-112473.169	-103815.744	89.359	0.300	89.059
23525	-112496.747	-103824.056	88.444	0.300	88.144
23550	-112520.324	-103832.369	87.240	0.300	86.940

ALARGAMENTO E BENEFICIAÇÃO PARA 2X3 VIAS

COORDENADAS DE IMPLANTAÇÃO DA VEDAÇÃO

(Situação Existente com Perfil de 2x2 vias)

(ABRIL/MAIO 1999)

LADO ESQUERDO CASCAIS - LISBOA			LADO DIREITO LISBOA - CASCAIS		
IDENTIFICAÇÃO DO PONTO	COORDENADAS		IDENTIFICAÇÃO DO PONTO	COORDENADAS	
	M	P		M	P
1	-104 031.932	-105 960.798	2	-104 031.788	-105 895.977
3	-104 056.926	-105 957.945	4	-104 056.809	-105 905.457
5	-104 081.919	-105 954.851	6	-104 081.807	-105 904.563
7	-104 122.950	-105 950.195	8	-104 106.806	-105 903.944
9	-104 156.912	-105 951.604	10	-104 131.807	-105 904.479
11	-104 181.914	-105 952.460	12	-104 156.808	-105 904.969
13	-104 231.921	-105 955.946	14	-104 181.809	-105 905.469
15	-104 256.929	-105 959.388	16	-104 197.295	-105 905.359
17	-104 281.937	-105 962.981	18	-104 201.607	-105 905.328
19	-104 306.946	-105 966.653	20	-104 206.808	-105 905.291
21	-104 331.953	-105 969.988	22	-104 231.798	-105 900.641
23	-104 356.962	-105 974.088	24	-104 256.787	-105 895.900
25	-104 381.977	-105 980.474	26	-104 281.781	-105 892.790
27	-104 406.991	-105 986.781	28	-104 306.773	-105 889.268
29	-104 432.005	-105 993.265	30	-104 331.765	-105 885.795
31	-104 457.014	-105 996.825	32	-104 356.756	-105 881.479
33	-104 482.020	-105 999.768	34	-104 406.735	-105 872.118
35	-104 524.164	-106 004.799	36	-104 431.724	-105 867.223
37	-104 573.300	-106 003.694	38	-104 456.714	-105 862.439
39	-104 631.960	-105 973.052	40	-104 481.700	-105 857.785
41	-104 646.208	-105 980.914	42	-104 502.835	-105 853.902
43	-104 680.341	-105 975.874	44	-104 588.692	-105 878.136
45	-104 706.988	-105 985.324	46	-104 588.444	-105 881.984
47	-105 156.939	-105 962.619	48	-104 606.765	-105 885.607
49	-105 162.780	-105 960.170	50	-104 631.772	-105 888.406
51	-105 207.068	-105 956.737	52	-104 656.774	-105 889.362
53	-105 232.282	-105 954.718	54	-104 681.775	-105 889.639
55	-105 257.519	-105 950.646	56	-104 706.768	-105 886.560
57	-105 296.938	-105 943.840	58	-104 731.762	-105 883.688
59	-105 333.296	-105 939.968	60	-104 744.309	-105 879.710
61	-105 358.667	-105 937.472	62	-104 970.413	-105 899.189
63	-105 378.337	-105 935.550	64	-105 013.704	-105 901.504
65	-105 410.162	-105 936.150	66	-105 304.452	-105 886.246
67	-105 436.141	-105 935.181	68	-105 329.103	-105 891.484
69	-105 461.457	-105 930.283	70	-105 353.771	-105 894.503
71	-105 486.267	-105 923.226	72	-105 378.714	-105 897.299
73	-105 511.077	-105 916.297	74	-105 386.412	-105 898.162
75	-105 535.576	-105 908.358	76	-105 398.719	-105 896.556
77	-105 559.465	-105 898.691	78	-105 407.083	-105 889.032

ALARGAMENTO E BENEFICIAÇÃO PARA 2X3 VIAS

COORDENADAS DE IMPLANTAÇÃO DA VEDAÇÃO
(Situação Existente com Perfil de 2x2 vias)
(ABRIL/MAIO 1999)

LADO ESQUERDO CASCAIS - LISBOA			LADO DIREITO LISBOA - CASCAIS		
IDENTIFICAÇÃO DO PONTO	COORDENADAS		IDENTIFICAÇÃO DO PONTO	COORDENADAS	
	M	P		M	P
79	-105 583.275	-105 889.017	80	-105 425.850	-105 883.563
81	-105 607.406	-105 880.201	82	-105 449.249	-105 876.835
83	-105 630.833	-105 869.659	84	-105 462.423	-105 874.045
85	-105 653.119	-105 856.752	86	-105 474.307	-105 874.127
87	-105 657.040	-105 854.700	88	-105 496.826	-105 866.759
89	-105 690.234	-105 837.325	90	-105 519.942	-105 859.195
91	-105 698.490	-105 833.004	92	-105 543.494	-105 852.914
93	-105 720.970	-105 820.734	94	-105 567.141	-105 846.596
95	-105 743.407	-105 808.313	96	-105 589.580	-105 836.984
97	-105 765.878	-105 795.862	98	-105 611.647	-105 826.583
99	-105 787.638	-105 782.382	100	-105 633.738	-105 816.299
101	-105 808.321	-105 767.490	102	-105 655.820	-105 805.964
103	-105 828.962	-105 752.710	104	-105 667.740	-105 799.227
105	-105 849.528	-105 737.979	106	-105 694.518	-105 785.654
107	-105 869.918	-105 723.168	108	-105 699.025	-105 783.289
109	-105 889.727	-105 707.771	110	-105 720.254	-105 771.212
111	-105 908.497	-105 691.180	112	-105 740.807	-105 757.966
113	-105 927.262	-105 674.589	114	-105 760.703	-105 743.614
115	-105 946.053	-105 658.031	116	-105 780.628	-105 729.193
117	-105 964.803	-105 641.423	118	-105 800.713	-105 714.850
119	-105 985.166	-105 626.880	120	-105 820.816	-105 700.372
121	-106 004.597	-105 611.144	122	-105 841.125	-105 686.006
123	-106 025.036	-105 596.700	124	-105 861.574	-105 671.678
125	-106 034.774	-105 589.818	126	-105 882.082	-105 657.329
127	-106 036.418	-105 584.517	128	-105 902.603	-105 642.987
129	-106 048.147	-105 575.052	130	-105 921.643	-105 626.750
131	-106 050.272	-105 574.462	132	-105 939.081	-105 608.460
133	-106 061.591	-105 562.269	134	-105 957.884	-105 591.918
135	-106 063.786	-105 558.896	136	-105 971.619	-105 582.380
137	-106 389.922	-105 291.136	138	-105 985.035	-105 581.618
139	-106 409.196	-105 270.580	140	-105 991.227	-105 568.764
141	-106 425.878	-105 251.154	142	-105 999.017	-105 563.355
143	-106 441.430	-105 231.022	144	-106 002.156	-105 560.978
145	-106 455.996	-105 210.358	146	-106 149.542	-105 444.707
147	-106 469.931	-105 189.444	148	-106 173.434	-105 425.314
149	-106 483.853	-105 168.678	150	-106 200.838	-105 404.211
151	-106 496.517	-105 147.053	152	-106 215.345	-105 393.613
153	-106 511.677	-105 127.364	154	-106 250.015	-105 368.286
155	-106 526.100	-105 107.183	156	-106 272.436	-105 346.400

ALARGAMENTO E BENEFICIAÇÃO PARA 2X3 VIAS

COORDENADAS DE IMPLANTAÇÃO DA VEDAÇÃO

(Situação Existente com Perfil de 2x2 vias)

(ABRIL/MAIO 1999)

LADO ESQUERDO CASCAIS - LISBOA			LADO DIREITO LISBOA - CASCAIS		
IDENTIFICAÇÃO DO PONTO	COORDENADAS		IDENTIFICAÇÃO DO PONTO	COORDENADAS	
	M	P		M	P
157	-106 559.884	-105 071.053	158	-106 289.982	-105 329.380
159	-106 577.340	-105 053.739	160	-106 307.546	-105 312.462
161	-106 583.861	-105 047.271	162	-106 324.860	-105 295.302
163	-106 597.241	-105 039.642	164	-106 330.582	-105 289.594
165	-106 602.278	-105 031.225	166	-106 347.608	-105 272.611
167	-106 601.826	-105 026.122	168	-106 359.428	-105 260.821
169	-106 609.772	-105 017.160	170	-106 375.420	-105 242.359
171	-106 627.076	-104 999.886	172	-106 391.408	-105 223.798
173	-106 645.252	-104 983.529	174	-106 407.335	-105 204.966
175	-106 663.565	-104 967.361	176	-106 416.787	-105 194.441
177	-106 681.188	-104 950.382	178	-106 422.013	-105 194.335
179	-106 687.036	-104 942.217	180	-106 478.058	-105 118.429
181	-106 778.236	-104 875.892	182	-106 477.433	-105 115.929
183	-106 801.507	-104 866.965	184	-106 498.067	-105 085.285
185	-106 823.973	-104 857.103	186	-106 512.338	-105 064.316
187	-106 846.418	-104 847.488	188	-106 526.783	-105 043.305
189	-106 868.863	-104 838.131	190	-106 541.393	-105 022.199
191	-106 891.227	-104 828.830	192	-106 556.035	-105 000.723
193	-106 913.490	-104 819.470	194	-106 562.674	-104 993.142
195	-106 935.595	-104 809.828	196	-106 574.338	-104 982.793
197	-106 957.670	-104 800.070	198	-106 593.660	-104 965.814
199	-106 979.679	-104 789.992	200	-106 613.543	-104 949.538
201	-107 010.601	-104 776.451	202	-106 633.178	-104 933.109
203	-107 070.734	-104 756.417	204	-106 652.885	-104 916.826
205	-107 088.227	-104 750.217	206	-106 688.361	-104 889.576
207	-107 097.914	-104 748.112	208	-106 694.582	-104 887.262
209	-107 114.981	-104 740.874	210	-106 715.589	-104 872.839
211	-107 132.049	-104 733.636	212	-106 735.173	-104 856.394
213	-107 562.468	-104 748.179	214	-106 755.341	-104 840.615
215	-107 567.566	-104 748.657	216	-106 775.775	-104 825.059
217	-107 604.029	-104 757.188	218	-106 796.195	-104 809.220
219	-107 628.029	-104 765.083	220	-106 817.044	-104 793.806
221	-107 666.753	-104 776.196	222	-106 837.783	-104 777.797
223	-107 701.715	-104 782.868	224	-106 860.944	-104 766.248
225	-107 739.109	-104 788.096	226	-106 884.643	-104 755.847
227	-107 776.699	-104 798.088	228	-106 909.003	-104 747.050
229	-107 812.407	-104 803.023	230	-106 933.254	-104 738.165
231	-107 853.203	-104 801.207	232	-106 957.744	-104 730.029
233	-107 866.149	-104 800.542	234	-106 982.188	-104 721.873

ALARGAMENTO E BENEFICIAÇÃO PARA 2X3 VIAS

COORDENADAS DE IMPLANTAÇÃO DA VEDAÇÃO

(Situação Existente com Perfil de 2x2 vias)

(ABRIL/MAIO 1999)

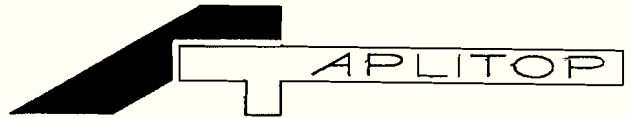
LADO ESQUERDO CASCAIS - LISBOA			LADO DIREITO LISBOA - CASCAIS		
IDENTIFICAÇÃO DO PONTO	COORDENADAS		IDENTIFICAÇÃO DO PONTO	COORDENADAS	
	M	P		M	P
235	-107 884.588	-104 801.322	236	-107 007.209	-104 715.594
237	-107 904.132	-104 801.394	238	-107 032.292	-104 709.799
239	-107 929.538	-104 801.687	240	-107 057.285	-104 703.896
241	-107 954.926	-104 802.383	242	-107 076.586	-104 699.250
243	-107 980.326	-104 803.087	244	-107 085.957	-104 697.194
245	-108 005.718	-104 802.056	246	-107 107.488	-104 693.374
247	-108 010.672	-104 800.029	248	-107 139.005	-104 689.958
249	-108 016.053	-104 799.655	250	-107 402.258	-104 728.174
251	-108 031.053	-104 800.090	252	-107 403.744	-104 716.300
253	-108 056.249	-104 797.080	254	-107 404.106	-104 688.770
255	-108 081.726	-104 800.700	256	-107 413.685	-104 676.405
257	-108 107.385	-104 806.850	258	-107 439.047	-104 680.267
259	-108 132.330	-104 811.937	260	-107 464.223	-104 684.585
261	-108 146.078	-104 813.832	262	-107 489.253	-104 689.088
263	-108 159.336	-104 813.262	264	-107 513.898	-104 695.191
265	-108 167.819	-104 808.905	266	-107 538.431	-104 701.238
267	-108 207.486	-104 802.690	268	-107 567.633	-104 707.679
269	-108 231.994	-104 796.720	270	-107 618.526	-104 683.799
271	-108 256.409	-104 789.520	272	-107 645.120	-104 677.154
273	-108 287.448	-104 779.990	274	-107 670.697	-104 674.410
275	-108 309.730	-104 780.260	276	-107 690.087	-104 677.002
277	-108 326.681	-104 783.283	278	-107 717.611	-104 688.329
279	-108 355.181	-104 787.270	280	-107 740.476	-104 697.986
281	-108 382.218	-104 791.168	282	-107 772.718	-104 714.231
283	-108 429.016	-104 787.330	284	-107 810.420	-104 722.214
285	-108 453.773	-104 783.660	286	-107 852.609	-104 732.115
287	-108 478.626	-104 780.540	288	-107 887.856	-104 748.732
289	-108 503.525	-104 778.488	290	-107 906.376	-104 749.652
291	-108 513.143	-104 776.820	292	-107 930.920	-104 751.831
293	-108 522.509	-104 779.888	294	-107 955.510	-104 754.000
295	-108 552.593	-104 785.978	296	-107 980.160	-104 755.947
297	-108 576.999	-104 790.330	298	-108 004.819	-104 755.183
299	-108 601.355	-104 794.683	300	-108 029.451	-104 753.640
301	-108 649.689	-104 802.709	302	-108 054.197	-104 753.850
303	-108 659.657	-104 804.133	304	-108 079.068	-104 754.670
305	-108 680.000	-104 802.331	306	-108 103.483	-104 747.090
307	-108 724.228	-104 808.774	308	-108 127.794	-104 738.130
309	-108 748.825	-104 812.387	310	-108 167.900	-104 722.797
311	-108 773.418	-104 816.296	312	-108 225.009	-104 719.584



BK:SA SA - A5 - LANÇO ESTÁDIO NACIONAL / CASCAIS - NÓ DE CARCAVELOS / NÓ DE ALCAJÓECHE - ALARGAMENTO E BENEFICIAÇÃO PARA 2x3 VIAS
PROJECTO DE EXECUÇÃO N.º 1 - TERRAPLENAGENS - PARTE 1.3 - TOPOGRAFIA E ELEMENTOS DE IMPLANTAÇÃO

ANEXO 3 – Relatório da Orientação dos Modelos





ISM MODEL FILE DATA PRINTOUT

(SystemMap Version: 4.00)

Model File: c:\dgn\a5\10031004.mod Model Date: 03-30-99
Job File: c:\dgn\a5\a5.job Operator Name:
Control File: Control Units: m
Area Name:

Camera Make: Roll No: < NOT SET > Line:
1
Focal Length: 153.080 Altitude: 765 m
Photo Scale: 5000:1 Model Scale: 3000:1 Comp Scale:
1000:1

Model Extents: Upper Left X: 99999999 Y: 99999999
Lower Right X: 0 Y: 0

Contour Interval: 1.0 m Affine Factor: 1.000000
Earth Curvature Correction: Y Earth Radius: 6380000 m
Global Origin: X: 0 Y: 0 Z: 0

Transformation First Approximations:

Absolute:
Scale Factor: 0.0000000
Kappa: 0.0000 Shift X: 0
Phi: 0.0000 Shift Y: 0
Omega: 0.0000 Shift Z: 0

INSTRUMENT ELEMENT VALUES

Plotter Name: c:\data\wilda8.ins Plotter Type: WILD A8

Table with 3 columns: EXISTING ELEMENTS, CORRECTIONS, NEW ELEMENTS. Rows include Bx, Omega, Phi, Kappa for L and R.

RAW TRANSFORMATION RESULTS

Transformation: Absolute
Scale: 3.10492 Omega: -2.99487 Phi: -0.00019 Kappa: 0.00008
Matrix: -3.072 -0.454 -0.001 -104240.484
0.454 -3.072 -0.000 -106581.603
-0.001 -0.000 3.105 44.360





JOB FILE NOTES

MODEL FILE NOTES

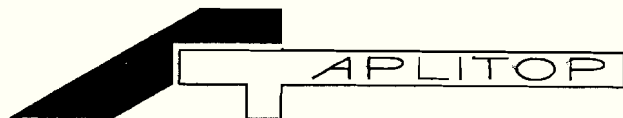
□

MODEL POINT DATA PRINTOUT

POINT ID	GROUND (X)	GROUND (Y)	GROUND (Z)	
OP.RES	RES (X)	RES (Y)	RES (Z)	
	WGT (X)	WGT (Y)	WGT (Z)	
	MODEL (X)	MODEL (Y)	MODEL (Z)	
*	3.1	-104240.520	-106581.610	44.353
	0.01	-0.04	-0.01	-0.01
		1.00	1.00	1.00
		0	0	0
*	4.1	-104630.340	-106554.470	63.252
	0.07	0.05	0.01	0.01
		1.00	1.00	1.00
		125505	9715	6107
*	4.2	-104372.810	-105589.230	82.332
	-0.01	-0.05	0.07	-0.01
		1.00	1.00	1.00
		88865	-309930	12226
*	3.2	-104088.910	-105722.000	90.169
	-0.08	0.03	-0.07	0.01
		1.00	1.00	1.00
		-7810	-281035	14727
Root Mean Square Residuals-	Ground:		0.04	0.05
0.01				
Sum of Residuals -	Ground:		0.00	0.00
-0.00				

□





ISM MODEL FILE DATA PRINTOUT

(SystemMap Version: 4.00)

Model File: c:\dgn\a5\10041005.mod Model Date: 04-01-99
Job File: c:\dgn\a5\a5.job Operator Name:
Control File: Control Units: m
Area Name:

Camera Make: Roll No: < NOT SET > Line:
1
Focal Length: 153.080 Altitude: 765 m
Photo Scale: 5000:1 Model Scale: 3000:1 Comp Scale:
1000:1

Model Extents: Upper Left X: 99999999 Y: 99999999
Lower Right X: 0 Y: 0

Contour Interval: 1.0 m Affine Factor: 1.000000
Earth Curvature Correction: Y Earth Radius: 6380000 m
Global Origin: X: 0 Y: 0 Z:
0

Transformation First Approximations:

Absolute:
Scale Factor: 0.0000000
Kappa: 0.0000 Shift X: 0
Phi: 0.0000 Shift Y: 0
Omega: 0.0000 Shift Z: 0

INSTRUMENT ELEMENT VALUES

Plotter Name: c:\data\wilda8.ins Plotter Type: WILD A8

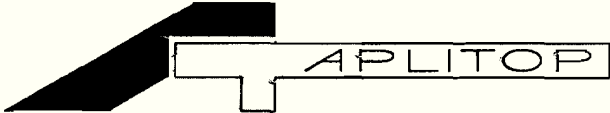
Table with 3 columns: EXISTING ELEMENTS, CORRECTIONS, NEW ELEMENTS. Rows include Bx, Omega, Phi, Kappa for L and R.

RAW TRANSFORMATION RESULTS

Transformation: Absolute
Scale: 3.19934 Omega: -3.00457 Phi: -0.00011 Kappa:
0.00020
Matrix: -3.169 -0.437 -0.000 -104630.648
0.437 -3.169 -0.001 -106554.406
-0.000 -0.001 3.199 63.211

□





JOB FILE NOTES

MODEL FILE NOTES

MODEL POINT DATA PRINTOUT

□

POINT ID	GROUND (X)	GROUND (Y)	GROUND (Z)
OP. RES	RES (X)	RES (Y)	RES (Z)
	WGT (X)	WGT (Y)	WGT (Z)
	MODEL (X)	MODEL (Y)	MODEL (Z)
* 4.1	-104630.600	-106554.330	63.252
0.04	0.05	0.08	0.04
	1.00	1.00	1.00
	0	0	0
* 5.1	-105193.960	-106397.960	60.601
0.18	-0.04	-0.03	-0.05
	1.00	1.00	1.00
	181090	-24400	-785
* 4.2	-104372.650	-105589.200	82.332
-0.08	0.06	-0.08	-0.05
	1.00	1.00	1.00
	-38655	-309900	5926
* 5.2	-104867.200	-105628.960	87.832
-0.13	-0.07	0.03	0.06
	1.00	1.00	1.00
	112735	-276445	7631
Root Mean Square Residuals-	Ground:	0.05	0.06
0.05			
Sum of Residuals -	Ground:	0.00	-0.00
0.00			

□





ISM MODEL FILE DATA PRINTOUT

(SystemMap Version: 4.00)

Model File: c:\dgn\a5\10051006.mod Model Date: 04-08-99
Job File: c:\dgn\a5\a5.job Operator Name: J
Control File: Control Units: m
Area Name:

Camera Make: Roll No: < NOT SET > Line:
1
Focal Length: 153.080 Altitude: 765 m
Photo Scale: 5000:1 Model Scale: 3000:1 Comp Scale:
1000:1

Model Extents: Upper Left X: 99999999 Y: 99999999
Lower Right X: 0 Y: 0

Contour Interval: 1.0 m Affine Factor: 1.000000
Earth Curvature Correction: Y Earth Radius: 6380000 m
Global Origin: X: 0 Y: 0 Z:
0

Transformation First Approximations:

Absolute:
Scale Factor: 0.0000000
Kappa: 0.0000 Shift X: 0
Phi: 0.0000 Shift Y: 0
Omega: 0.0000 Shift Z: 0

INSTRUMENT ELEMENT VALUES

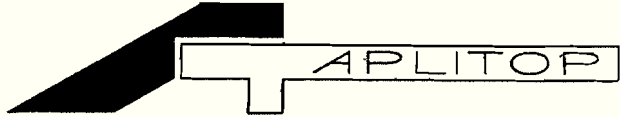
Plotter Name: c:\data\wilda8.ins Plotter Type: WILD A8

Table with 3 columns: EXISTING ELEMENTS, CORRECTIONS, NEW ELEMENTS. Rows include Bx, Omega, Phi, Kappa for L and R.

RAW TRANSFORMATION RESULTS

Transformation: Absolute
Scale: 2.84846 Omega: -3.01390 Phi: -0.00030 Kappa:
0.00001
Matrix: -2.825 -0.363 -0.001 -105194.040
0.363 -2.825 0.000 -106398.070
-0.001 -0.000 2.848 60.556





JOB FILE NOTES

MODEL FILE NOTES

□

MODEL POINT DATA PRINTOUT

POINT ID	GROUND (X)	GROUND (Y)	GROUND (Z)
OP.RES	RES (X)	RES (Y)	RES (Z)
	WGT (X)	WGT (Y)	WGT (Z)
	MODEL (X)	MODEL (Y)	MODEL (Z)
* 5.1	-105193.960	-106397.960	60.601
-0.07	0.08	0.12	0.04
	1.00	1.00	1.00
	0	0	0
* 6.1	-105506.620	-106327.270	71.990
0.11	0.05	-0.00	-0.04
	1.00	1.00	1.00
	112025	-10680	4062
* 5.2	-104867.200	-105628.960	87.832
-0.08	0.14	-0.26	-0.03
	1.00	1.00	1.00
	-79365	-282510	9557
* 6.2	-105383.990	-105577.910	74.889
0.03	-0.28	0.14	0.02
	1.00	1.00	1.00
	102705	-277060	5052
Root Mean Square Residuals-	Ground:	0.16	0.16
0.03			
Sum of Residuals -	Ground:	0.00	0.00
0.00			

□





ISM MODEL FILE DATA PRINTOUT

(SystemMap Version: 4.00)

Model File: c:\dgn\a5\10061007.mod Model Date: 05-01-99
Job File: c:\dgn\a5\a5.job Operator Name:
Control File: c:\dgn\a5\a5.con Control Units: m
Area Name:

Camera Make: Roll No: < NOT SET > Line:
1 Focal Length: 153.080 Altitude: 765 m
Photo Scale: 5000:1 Model Scale: 3000:1 Comp Scale:
1000:1

Model Extents: Upper Left X: 99999999 Y: 99999999
Lower Right X: 0 Y: 0

Contour Interval: 1.0 m Affine Factor: 1.000000
Earth Curvature Correction: N Earth Radius: 6380000 m
Global Origin: X: 0 Y: 0 Z: 0

Transformation First Approximations:

Absolute:
Scale Factor: 0.0000000
Kappa: 0.0000 Shift X: 0
Phi: 0.0000 Shift Y: 0
Omega: 0.0000 Shift Z: 0

INSTRUMENT ELEMENT VALUES

Plotter Name: c:\data\wilda8.ins Plotter Type: WILD A8

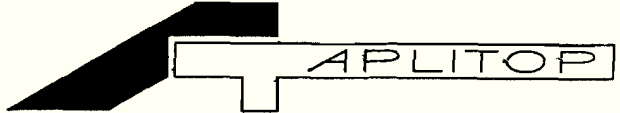
Table with 3 columns: EXISTING ELEMENTS, CORRECTIONS, NEW ELEMENTS. Rows include L Omega, R Omega, and C Phi.

RAW TRANSFORMATION RESULTS

Transformation: Absolute
Scale: 2.91390 Omega: -3.02430 Phi: -0.00023 Kappa: 0.00010
Matrix: -2.894 -0.341 -0.001 -105506.850
0.341 -2.894 -0.000 -106327.300
-0.001 -0.000 2.914 71.896

JOB FILE NOTES





MODEL FILE NOTES

□

MODEL POINT DATA PRINTOUT

POINT ID	GROUND (X)	GROUND (Y)	GROUND (Z)
OP.RES	RES (X)	RES (Y)	RES (Z)
	WGT (X)	WGT (Y)	WGT (Z)
	MODEL (X)	MODEL (Y)	MODEL (Z)
* 6.1	-105506.630	-106327.270	71.990
-0.09	0.22	0.03	0.09
	1.00	1.00	1.00
	0	0	0
* 6.2	-105383.990	-105577.910	74.890
0.04	-0.31	-0.18	-0.12
	1.00	1.00	1.00
	-11880	-260420	1040
* 7.2	-105765.200	-105311.410	72.730
-0.12	0.22	0.18	0.11
	1.00	1.00	1.00
	128914	-335795	246
* 7.1	-105948.600	-106031.840	96.630
0.17	-0.13	-0.04	-0.09
	1.00	1.00	1.00
	162380	-82980	8548

Root Mean Square Residuals- Ground: 0.23 0.13
 0.10
 Sum of Residuals - Ground: 0.00 -0.00
 0.00

□





ISM MODEL FILE DATA PRINTOUT

(SystemMap Version: 4.00)

Model File: c:\dgn\a5\10111010.mod Model Date: 05-11-99
Job File: c:\dgn\a5\a5.job Operator Name:
Control File: c:\dgn\a5\a5.con Control Units: m
Area Name:

Camera Make: c:\data\rc8.cam Roll No: < NOT SET >
Line: 3
Focal Length: 153.080 Altitude: 765 m
Photo Scale: 5000:1 Model Scale: 3000:1 Comp Scale:
1000:1

Model Extents: Upper Left X: 99999999 Y: 99999999
Lower Right X: 0 Y: 0

Contour Interval: 1.0 m Affine Factor: 1.000000
Earth Curvature Correction: Y Earth Radius: 6380000 m
Global Origin: X: 0 Y: 0 Z:
0

Transformation First Approximations:

Absolute:
Scale Factor: 0.0000000
Kappa: 0.0000 Shift X: 0
Phi: 0.0000 Shift Y: 0
Omega: 0.0000 Shift Z: 0

INSTRUMENT ELEMENT VALUES

Plotter Name: c:\data\wilda8.ins Plotter Type: WILD A8

Table with 3 columns: EXISTING ELEMENTS, CORRECTIONS, NEW ELEMENTS. Rows include Omega, Phi, and Kappa for both L and R.

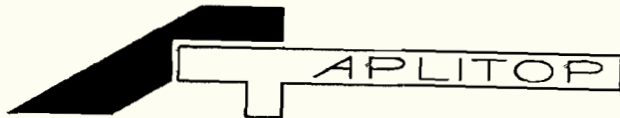
RAW TRANSFORMATION RESULTS

Transformation: Absolute
Scale: 3.22816 Omega: 0.13359 Phi: 0.00010 Kappa:
0.00001
Matrix: 3.199 0.430 -0.000 -107126.400
-0.430 3.199 0.000 -104418.840
0.000 -0.000 3.228 59.430

□

JOB FILE NOTES





MODEL FILE NOTES

□

MODEL POINT DATA PRINTOUT

POINT ID	GROUND (X)	GROUND (Y)	GROUND (Z)
OP.RES	RES (X)	RES (Y)	RES (Z)
	WGT (X)	WGT (Y)	WGT (Z)
	MODEL (X)	MODEL (Y)	MODEL (Z)
* 11.2	-107126.420	-104418.990	59.436
0.02	-0.01	-0.14	0.01
	1.00	1.00	1.00
	0	0	0
* 10.2	-106738.020	-104662.250	88.030
-0.02	0.08	0.01	-0.00
	1.00	1.00	1.00
	129259	-58710	8847
* 11.1	-107344.820	-105292.840	44.367
0.05	-0.19	0.01	-0.02
	1.00	1.00	1.00
	-30935	-277335	-4659
* 10.1	-106789.780	-105302.670	83.094
-0.04	0.12	0.11	0.02
	1.00	1.00	1.00
	139785	-257495	7310

Root Mean Square Residuals- Ground: 0.12 0.09
0.01
Sum of Residuals - Ground: -0.00 0.00
0.00

□





ISM MODEL FILE DATA PRINTOUT

(SystemMap Version: 4.00)

Model File: c:\dgn\a5\10121011.mod Model Date: 05-12-99
Job File: c:\dgn\a5\a5.job Operator Name:
Control File: c:\dgn\a5\a5.con Control Units: m
Area Name:

Camera Make: c:\data\rc8.cam Roll No: < NOT SET >
Line: 3
Focal Length: 153.080 Altitude: 765 m
Photo Scale: 5000:1 Model Scale: 3000:1 Comp Scale: 1000:1

Model Extents: Upper Left X: 99999999 Y: 99999999
Lower Right X: 0 Y: 0

Contour Interval: 1.0 m Affine Factor: 1.000000
Earth Curvature Correction: Y Earth Radius: 6380000 m
Global Origin: X: 0 Y: 0 Z: 0

Transformation First Approximations:

Absolute:
Scale Factor: 0.0000000
Kappa: 0.0000 Shift X: 0
Phi: 0.0000 Shift Y: 0
Omega: 0.0000 Shift Z: 0

INSTRUMENT ELEMENT VALUES

Plotter Name: c:\data\wilda8.ins Plotter Type: WILD A8

Table with 3 columns: EXISTING ELEMENTS, CORRECTIONS, NEW ELEMENTS. Rows include Omega, Phi, and Kappa values for L and R elements.

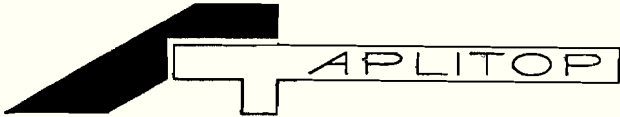
RAW TRANSFORMATION RESULTS

Transformation: Absolute
Scale: 2.89246 Omega: 0.14519 Phi: -0.00007 Kappa: 0.00010
Matrix: 2.862 0.418 0.000 -107680.900
-0.418 2.862 0.000 -104241.850
-0.000 -0.000 2.892 95.571

□

JOB FILE NOTES





MODEL FILE NOTES

□

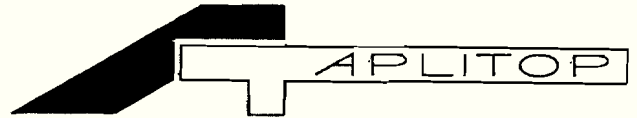
MODEL POINT DATA PRINTOUT

POINT ID	GROUND(X)	GROUND(Y)	GROUND(Z)
OP.RES	RES(X)	RES(Y)	RES(Z)
	WGT(X)	WGT(Y)	WGT(Z)
	MODEL(X)	MODEL(Y)	MODEL(Z)
* 12.2	-107680.890	-104241.950	95.522
0.08	0.01	-0.10	-0.05
	1.00	1.00	1.00
	0	0	0
* 11.2	-107126.420	-104418.990	59.436
0.01	-0.01	0.14	0.05
	1.00	1.00	1.00
	198555	-32905	-12500
* 12.1	-107776.620	-105152.860	64.084
-0.12	0.06	0.12	0.06
	1.00	1.00	1.00
	12810	-316475	-10937
* 11.1	-107344.820	-105292.840	44.367
0.02	-0.06	-0.16	-0.06
	1.00	1.00	1.00
	167555	-342660	-17705
W 12.1	-107776.620	-105152.860	61.730
CHAO			
-0.11	0.15	0.91	0.05
	1.00	1.00	1.00
	12820	-316750	-11749

Root Mean Square Residuals- Ground: 0.05 0.13
0.05
Sum of Residuals - Ground: 0.00 0.00
-0.00

□





ISM MODEL FILE DATA PRINTOUT

(SystemMap Version: 4.00)

Model File: c:\dgn\a5\10131012.mod Model Date: 05-13-99
Job File: c:\dgn\a5\a5.job Operator Name:
Control File: c:\dgn\a5\a5.con Control Units: m
Area Name:

Camera Make: c:\data\rc8.cam Roll No: < NOT SET >
Line: 3
Focal Length: 153.080 Altitude: 765 m
Photo Scale: 5000:1 Model Scale: 3000:1 Comp Scale:
1000:1

Model Extents: Upper Left X: 99999999 Y: 99999999
Lower Right X: 0 Y: 0

Contour Interval: 1.0 m Affine Factor: 1.000000
Earth Curvature Correction: N Earth Radius: 6380000 m
Global Origin: X: 0 Y: 0 Z: 0

Transformation First Approximations:

Absolute:
Scale Factor: 0.0000000
Kappa: 0.0000 Shift X: 0
Phi: 0.0000 Shift Y: 0
Omega: 0.0000 Shift Z: 0

INSTRUMENT ELEMENT VALUES

Plotter Name: c:\data\wilda8.ins Plotter Type: WILD A8

Table with 3 columns: EXISTING ELEMENTS, CORRECTIONS, NEW ELEMENTS. Rows include Omega and Phi values for L and R elements.

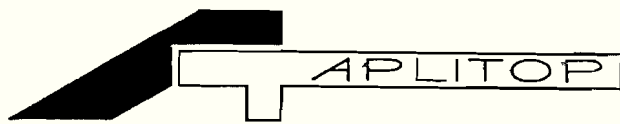
RAW TRANSFORMATION RESULTS

Transformation: Absolute
Scale: 2.92000 Omega: 0.15869 Phi: -0.00011 Kappa: -
0.00004
Matrix: 2.883 0.461 0.000 -108221.650
-0.461 2.883 -0.000 -104411.020
-0.000 0.000 2.920 72.480

□

JOB FILE NOTES





MODEL FILE NOTES

□

MODEL POINT DATA PRINTOUT

POINT ID	GROUND (X)	GROUND (Y)	GROUND (Z)
OP.RES	RES (X)	RES (Y)	RES (Z)
	WGT (X)	WGT (Y)	WGT (Z)
	MODEL (X)	MODEL (Y)	MODEL (Z)
* 13.2	-108221.630	-104410.860	72.340
0.10	0.03	0.16	-0.14
	1.00	1.00	1.00
	0	0	0
* 12.2	-107680.900	-104241.950	95.520
-0.08	-0.06	-0.08	0.08
	1.00	1.00	1.00
	173730	86470	7879
* 12.1	-107776.620	-105152.860	64.080
0.16	0.01	0.03	-0.12
	1.00	1.00	1.00
	190640	-226790	-2806
* 13.1	-108185.690	-105000.340	75.170
-0.18	0.03	-0.11	0.17
	1.00	1.00	1.00
	44040	-197305	874
Root Mean Square Residuals-	Ground:	0.04	0.11
0.13			
Sum of Residuals -	Ground:	-0.00	0.00
0.00			

□





ISM MODEL FILE DATA PRINTOUT

(SystemMap Version: 4.00)

Model File: c:\dgn\a5\10141013.mod Model Date: 05-14-99
Job File: c:\dgn\a5\a5.job Operator Name:
Control File: c:\dgn\a5\a5.con Control Units: m
Area Name:

Camera Make: c:\data\rc8.cam Roll No: < NOT SET >
Line: 3
Focal Length: 153.080 Altitude: 765 m
Photo Scale: 5000:1 Model Scale: 3000:1 Comp Scale: 1000:1

Model Extents: Upper Left X: 99999999 Y: 99999999
Lower Right X: 0 Y: 0

Contour Interval: 1.0 m Affine Factor: 1.000000
Earth Curvature Correction: Y Earth Radius: 6380000 m
Global Origin: X: 0 Y: 0 Z: 0

Transformation First Approximations:

Absolute:
Scale Factor: 0.0000000
Kappa: 0.0000 Shift X: 0
Phi: 0.0000 Shift Y: 0
Omega: 0.0000 Shift Z: 0

INSTRUMENT ELEMENT VALUES

Plotter Name: c:\data\wilda8.ins Plotter Type: WILD A8

Table with 3 columns: EXISTING ELEMENTS, CORRECTIONS, NEW ELEMENTS. Rows include Omega, Phi, and Kappa values for Left and Right elements.

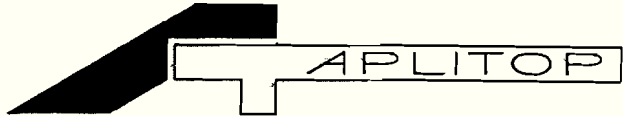
RAW TRANSFORMATION RESULTS

Transformation: Absolute
Scale: 2.91483 Omega: 0.16821 Phi: -0.00008 Kappa: 0.00009
Matrix: 2.874 0.488 0.000 -108561.500
-0.488 2.874 0.000 -104326.110
-0.000 -0.000 2.915 75.854

□

JOB FILE NOTES





MODEL FILE NOTES

□

MODEL POINT DATA PRINTOUT

POINT ID	GROUND (X)	GROUND (Y)	GROUND (Z)
OP.RES	RES (X)	RES (Y)	RES (Z)
	WGT (X)	WGT (Y)	WGT (Z)
	MODEL (X)	MODEL (Y)	MODEL (Z)
* 14.2	-108561.380	-104326.190	76.000
-0.13	0.13	-0.08	0.15
	1.00	1.00	1.00
	0	0	0
* 13.2	-108221.630	-104410.850	72.737
0.18	-0.08	0.09	-0.15
	1.00	1.00	1.00
	119855	-9165	-1011
* 14.1	-108626.940	-104999.460	68.369
0.05	-0.12	-0.03	-0.10
	1.00	1.00	1.00
	16580	-231490	-2555
* 13.1	-108185.690	-105000.340	75.171
-0.16	0.06	0.04	0.15
	1.00	1.00	1.00
	165820	-206475	-293
* CA12	-108323.150	-104771.310	71.230
0.05	0.01	-0.02	-0.05
	1.00	1.00	1.00
	106185	-136885	-1573

Root Mean Square Residuals- Ground: 0.09 0.06
0.12
Sum of Residuals - Ground: 0.00 -0.00
-0.00

□





ISM MODEL FILE DATA PRINTOUT

(SystemMap Version: 4.00)

Model File: c:\dgn\a5\10151014.mod Model Date: 05-17-99
Job File: c:\dgn\a5\a5.job Operator Name:
Control File: c:\dgn\a5\a5.con Control Units: m
Area Name:

Camera Make: c:\data\rc8.cam Roll No: < NOT SET >
Line: 3
Focal Length: 153.080 Altitude: 765 m
Photo Scale: 5000:1 Model Scale: 3000:1 Comp Scale:
1000:1

Model Extents: Upper Left X: 99999999 Y: 99999999
Lower Right X: 0 Y: 0

Contour Interval: 1.0 m Affine Factor: 1.000000
Earth Curvature Correction: N Earth Radius: 6380000 m
Global Origin: X: 0 Y: 0 Z: 0

Transformation First Approximations:

Absolute:
Scale Factor: 0.0000000
Kappa: 0.0000 Shift X: 0
Phi: 0.0000 Shift Y: 0
Omega: 0.0000 Shift Z: 0

INSTRUMENT ELEMENT VALUES

Plotter Name: c:\data\wilda8.ins Plotter Type: WILD A8

Table with 3 columns: EXISTING ELEMENTS, CORRECTIONS, NEW ELEMENTS. Rows include L Omega, R Omega, C Phi, L Phi, R Phi.

RAW TRANSFORMATION RESULTS

Transformation: Absolute
Scale: 3.03148 Omega: 0.18293 Phi: -0.00028 Kappa: 0.00011
Matrix: 2.981 0.551 0.001 -108956.070
-0.551 2.981 0.000 -104395.770
-0.001 -0.000 3.031 98.578

JOB FILE NOTES





MODEL FILE NOTES

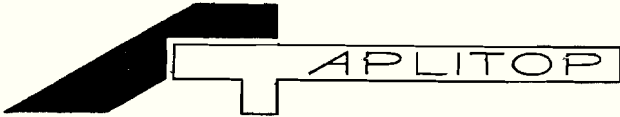
MODEL POINT DATA PRINTOUT

□

POINT ID	GROUND (X)	GROUND (Y)	GROUND (Z)
OP.RES	RES (X)	RES (Y)	RES (Z)
	WGT (X)	WGT (Y)	WGT (Z)
	MODEL (X)	MODEL (Y)	MODEL (Z)
* 15.2	-108956.230	-104395.680	98.550
0.00	-0.16	0.10	-0.03
	1.00	1.00	1.00
	0	0	0
* 14.2	-108561.380	-104326.200	76.000
0.06	0.11	-0.12	0.03
	1.00	1.00	1.00
	123810	46285	-7417
* 14.1	-108626.940	-104999.460	68.370
0.06	-0.03	0.07	-0.03
	1.00	1.00	1.00
	143000	-176085	-9934
* 15.1	-109073.580	-104964.140	67.430
-0.13	0.08	-0.04	0.03
	1.00	1.00	1.00
	-4035	-191400	-10308
Root Mean Square Residuals-	Ground:	0.10	0.09
0.03			
Sum of Residuals -	Ground:	-0.00	0.00
0.00			

□





ISM MODEL FILE DATA PRINTOUT

(SystemMap Version: 4.00)

Model File: c:\dgn\a5\10151016.mod Model Date: 04-15-99
Job File: c:\dgn\a5\a5.job Operator Name:
Control File: c:\dgn\a5\a5.con Control Units: m
Area Name:

Camera Make: c:\data\rc8.cam Roll No: < NOT SET >
Line: 1
Focal Length: 153.080 Altitude: 765 m
Photo Scale: 5000:1 Model Scale: 3000:1 Comp Scale:
1000:1

Model Extents: Upper Left X: 99999999 Y: 99999999
Lower Right X: 0 Y: 0

Contour Interval: 1.0 m Affine Factor: 1.000000
Earth Curvature Correction: N Earth Radius: 6380000 m
Global Origin: X: 0 Y: 0 Z: 0

Transformation First Approximations:

Absolute:
Scale Factor: 0.0000000
Kappa: 0.0000 Shift X: 0
Phi: 0.0000 Shift Y: 0
Omega: 0.0000 Shift Z: 0

INSTRUMENT ELEMENT VALUES

Plotter Name: c:\data\wilda8.ins Plotter Type: WILD A8

Table with 3 columns: EXISTING ELEMENTS, CORRECTIONS, NEW ELEMENTS. Rows include L Omega, R Omega, C Phi, L Phi, R Phi with numerical values.

RAW TRANSFORMATION RESULTS

Transformation: Absolute
Scale: 3.01516 Omega: -2.94283 Phi: 0.00003 Kappa: 0.00021
Matrix: -2.956 -0.595 -0.000 -109073.730
0.595 -2.956 -0.001 -104964.340
0.000 -0.001 3.015 67.332

JOB FILE NOTES





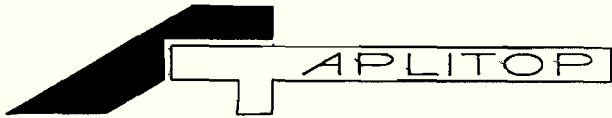
MODEL FILE NOTES

MODEL POINT DATA PRINTOUT

□

POINT ID	GROUND (X)	GROUND (Y)	GROUND (Z)
OP.RES	RES (X)	RES (Y)	RES (Z)
	WGT (X)	WGT (Y)	WGT (Z)
	MODEL (X)	MODEL (Y)	MODEL (Z)
* 1501	-109073.580	-104964.140	67.430
-0.05	0.16	0.20	0.10
	1.00	1.00	1.00
	0	0	0
* 1502	-108956.210	-104395.680	98.550
0.04	-0.05	-0.17	-0.12
	1.00	1.00	1.00
	-975	-192645	10352
<R>	0.000	0.000	0.000
	1.00	1.00	1.00
* 1601	-109583.560	-104950.220	90.820
0.14	-0.19	-0.13	-0.09
	1.00	1.00	1.00
	166630	28740	7822
* 1602	-109468.210	-104524.680	78.770
-0.20	0.08	0.10	0.16
	1.00	1.00	1.00
	157065	-117075	3711
* dg22	-108973.640	-104820.830	76.110
-0.01	0.75	0.35	0.02
	0.00	0.00	1.00
	-22925	-53050	2893
* dg24	-109373.100	-104766.660	79.740
0.09	-0.06	0.19	-0.08
	0.00	0.00	1.00





	110245	-44610	4129		
Root Mean Square Residuals-		Ground:		0.33	0.21
0.10					
Sum of Residuals -		Ground:		0.69	0.54
0.00					
□					

CÂMARA MUNICIPAL
REUNIÃO
21
06 OUT. 2008
CASCAIS



ISM MODEL FILE DATA PRINTOUT

(SystemMap Version: 4.00)

Model File: c:\dgn\a5\10211022.mod Model Date: 04-24-99
Job File: c:\dgn\a5\a5.job Operator Name:
Control File: Control Units: m
Area Name:

Camera Make: Roll No: < NOT SET > Line:
1
Focal Length: 153.080 Altitude: 765 m
Photo Scale: 5000:1 Model Scale: 3000:1 Comp Scale:
1000:1

Model Extents: Upper Left X: 99999999 Y: 99999999
Lower Right X: 0 Y: 0

Contour Interval: 1.0 m Affine Factor: 1.000000
Earth Curvature Correction: Y Earth Radius: 6380000 m
Global Origin: X: 0 Y: 0 Z:
0

Transformation First Approximations:
Absolute:
Scale Factor: 0.0000000
Kappa: 0.0000 Shift X: 0
Phi: 0.0000 Shift Y: 0
Omega: 0.0000 Shift Z: 0

INSTRUMENT ELEMENT VALUES

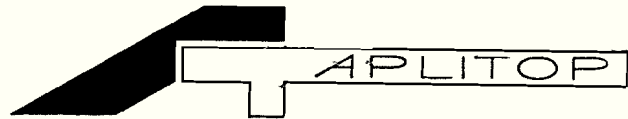
Plotter Name: c:\data\wilda8.ins Plotter Type: WILD A8

Table with 3 columns: EXISTING ELEMENTS, CORRECTIONS, NEW ELEMENTS. Rows include Bx, Omega, Phi, Kappa for both L and R sides.

RAW TRANSFORMATION RESULTS

Transformation: Absolute
Scale: 3.15015 Omega: 2.79157 Phi: -0.00007 Kappa: -
0.00003
Matrix: -2.959 1.080 -0.000 -111223.440
-1.080 -2.959 0.000 -103781.920
-0.000 0.000 3.150 105.312





JOB FILE NOTES

MODEL FILE NOTES

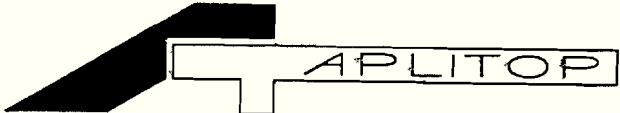
□

MODEL POINT DATA PRINTOUT

POINT ID	GROUND (X)	GROUND (Y)	GROUND (Z)
OP.RES	RES (X)	RES (Y)	RES (Z)
	WGT (X)	WGT (Y)	WGT (Z)
	MODEL (X)	MODEL (Y)	MODEL (Z)
* 20.2	-111223.480	-103781.930	105.265
0.03	-0.03	-0.01	-0.05
	1.00	1.00	1.00
	0	0	0
* 22.1	-111529.270	-103751.050	120.933
-0.05	0.02	-0.02	0.06
	1.00	1.00	1.00
	87840	-42505	4948
* 22.3	-111280.700	-103028.910	119.825
-0.05	-0.02	0.03	0.04
	1.00	1.00	1.00
	-64900	-230770	4598
* 22.2	-111640.580	-103149.210	122.982
0.07	0.03	-0.00	-0.05
	1.00	1.00	1.00
	55520	-234085	5636
Root Mean Square Residuals-	Ground:		0.03 0.02
0.05			
Sum of Residuals -	Ground:		0.00 0.00
0.00			

□





ISM MODEL FILE DATA PRINTOUT

(SystemMap Version: 4.00)

Model File: c:\dgn\a5\10221023.mod Model Date: 04-17-99
Job File: c:\dgn\a5\a5.job Operator Name:
Control File: Control Units: m
Area Name:

Camera Make: Roll No: < NOT SET > Line:
3
Focal Length: 153.080 Altitude: 765 m
Photo Scale: 5000:1 Model Scale: 3000:1 Comp Scale:
1000:1

Model Extents: Upper Left X: 99999999 Y: 99999999
Lower Right X: 0 Y: 0

Contour Interval: 1.0 m Affine Factor: 1.000000
Earth Curvature Correction: Y Earth Radius: 6380000 m
Global Origin: X: 0 Y: 0 Z: 0

Transformation First Approximations:

Absolute:
Scale Factor: 0.0000000
Kappa: 0.0000 Shift X: 0
Phi: 0.0000 Shift Y: 0
Omega: 0.0000 Shift Z: 0

INSTRUMENT ELEMENT VALUES

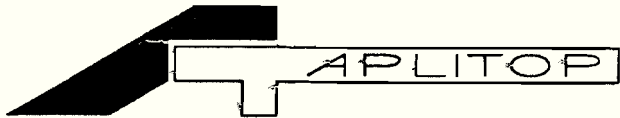
Plotter Name: c:\data\wilda8.ins Plotter Type: WILD A8

Table with 3 columns: EXISTING ELEMENTS, CORRECTIONS, NEW ELEMENTS. Rows include Bx, L Omega, R Omega, C Phi, L Phi, R Phi, L Kappa, R Kappa.

RAW TRANSFORMATION RESULTS

Transformation: Absolute
Scale: 3.05774 Omega: 2.78974 Phi: -0.00005 Kappa: -
0.00004
Matrix: -2.870 1.054 -0.000 -111529.260
-1.054 -2.870 0.000 -103751.060
-0.000 0.000 3.058 120.897





JOB FILE NOTES

MODEL FILE NOTES

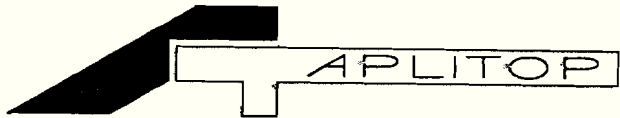
□

MODEL POINT DATA PRINTOUT

POINT ID	GROUND(X)	GROUND(Y)	GROUND(Z)
OP.RES	RES(X)	RES(Y)	RES(Z)
	WGT(X)	WGT(Y)	WGT(Z)
	MODEL(X)	MODEL(Y)	MODEL(Z)
* 22.1	-111529.270	-103751.050	120.933
-0.05	-0.00	0.02	0.04
	1.00	1.00	1.00
	0	0	0
* 23.1	-111801.750	-103919.460	123.082
0.03	0.02	-0.08	-0.03
	1.00	1.00	1.00
	102630	20960	729
* 22.2	-111640.580	-103149.210	122.982
0.02	-0.09	-0.01	-0.02
	1.00	1.00	1.00
	-33690	-197310	695
* 23.2	-112135.350	-103277.550	114.359
0.01	0.08	0.07	0.02
	1.00	1.00	1.00
	132730	-213670	-2130
Root Mean Square Residuals-	Ground:	0.06	0.05
0.03			
Sum of Residuals -	Ground:	-0.00	-0.00
-0.00			

□





ISM MODEL FILE DATA PRINTOUT

(SystemMap Version: 4.00)

Model File: c:\dgn\a5\10231024.mod Model Date: 04-29-99
Job File: c:\dgn\a5\a5.job Operator Name: jbett
Control File: Control Units: m
Area Name:

Camera Make: Roll No: < NOT SET > Line:
1
Focal Length: 153.080 Altitude: 765 m
Photo Scale: 5000:1 Model Scale: 3000:1 Comp Scale:
1000:1

Model Extents: Upper Left X: 99999999 Y: 99999999
Lower Right X: 0 Y: 0

Contour Interval: 1.0 m Affine Factor: 1.000000
Earth Curvature Correction: Y Earth Radius: 6380000 m
Global Origin: X: 0 Y: 0 Z: 0

Transformation First Approximations:

Absolute:
Scale Factor: 0.0000000
Kappa: 0.0000 Shift X: 0
Phi: 0.0000 Shift Y: 0
Omega: 0.0000 Shift Z: 0

INSTRUMENT ELEMENT VALUES

Plotter Name: c:\data\wilda8.ins Plotter Type: WILD A8

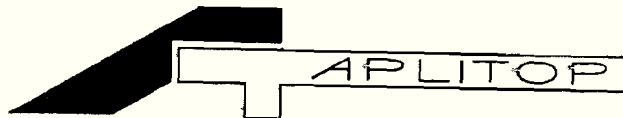
Table with 3 columns: EXISTING ELEMENTS, CORRECTIONS, NEW ELEMENTS. Rows include L Omega, R Omega, and C Phi with their respective values.

RAW TRANSFORMATION RESULTS

Transformation: Absolute
Scale: 2.99925 Omega: 2.79054 Phi: -0.00006 Kappa:
0.00018
Matrix: -2.816 1.031 0.000 -111658.408
-1.031 -2.816 -0.001 -104056.296
-0.000 -0.001 2.999 84.921

JOB FILE NOTES





MODEL FILE NOTES

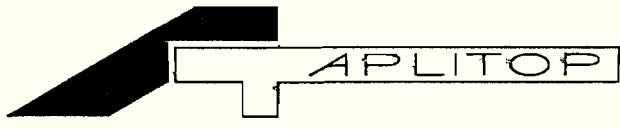
ponto origem=pf24.1

□

MODEL POINT DATA PRINTOUT

POINT ID	GROUND (X)	GROUND (Y)	GROUND (Z)
OP.RES	RES (X)	RES (Y)	RES (Z)
	WGT (X)	WGT (Y)	WGT (Z)
	MODEL (X)	MODEL (Y)	MODEL (Z)
* 231a	-111658.660	-104056.080	84.920
0.05	-0.25	0.22	-0.00
	1.00	1.00	1.00
	0	0	0
<R>	0.000	0.000	0.000
	1.00	1.00	1.00
* 241	-112436.950	-103792.280	90.320
-0.02	0.33	-0.08	0.02
	1.00	1.00	1.00
	213570	-171985	1774
<R>	0.000	0.000	0.000
	1.00	1.00	1.00
* 243	-112230.750	-104287.620	111.570
0.15	0.08	-0.03	-0.06
	1.00	1.00	1.00
	205735	6780	8918
* 232	-112135.360	-103277.560	114.360
0.00	0.12	0.05	-0.09
	1.00	1.00	1.00
	60080	-298495	9796
* 242	-112579.830	-103418.370	113.600
-0.13	-0.32	0.15	0.05
	1.00	1.00	1.00
	215255	-305290	9501





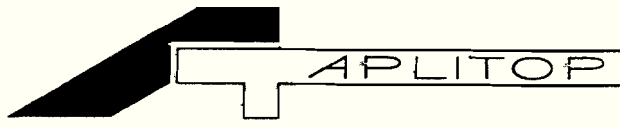
□

MODEL POINT DATA PRINTOUT (cont'd)

POINT ID	GROUND(X)	GROUND(Y)	GROUND(Z)		
OP.RES	RES (X)	RES (Y)	RES (Z)		
	WGT (X)	WGT (Y)	WGT (Z)		
	MODEL (X)	MODEL (Y)	MODEL (Z)		
*	231	-111801.800	-103919.500	123.100	
	-0.05	0.04	-0.30	0.08	
		1.00	1.00	1.00	
		29185	-59370	12695	
Root Mean Square Residuals-		Ground:		0.22	0.17
0.06					
Sum of Residuals -		Ground:		0.00	0.00
0.00					

□





ISM MODEL FILE DATA PRINTOUT

(SystemMap Version: 4.00)

Model File: c:\dgn\a5\60066005.mod Model Date: 05-07-99
Job File: c:\dgn\a5\a5.job Operator Name:
Control File: c:\dgn\a5\a5.con Control Units: m
Area Name:

Camera Make: c:\data\rc8.cam Roll No: < NOT SET >
Line: 3
Focal Length: 153.080 Altitude: 765 m
Photo Scale: 5000:1 Model Scale: 3000:1 Comp Scale: 1000:1

Model Extents: Upper Left X: 99999999 Y: 99999999
Lower Right X: 0 Y: 0

Contour Interval: 1.0 m Affine Factor: 1.000000
Earth Curvature Correction: N Earth Radius: 6380000 m
Global Origin: X: 0 Y: 0 Z: 0

Transformation First Approximations:
Absolute:
Scale Factor: 0.000000
Kappa: 0.0000 Shift X: 0
Phi: 0.0000 Shift Y: 0
Omega: 0.0000 Shift Z: 0

INSTRUMENT ELEMENT VALUES

Plotter Name: c:\data\wildd8.ins Plotter Type: WILD A8

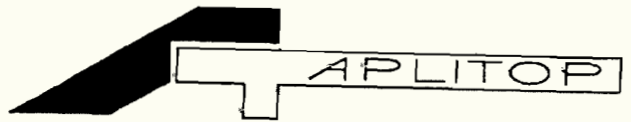
Table with 3 columns: EXISTING ELEMENTS, CORRECTIONS, NEW ELEMENTS. Rows include L Omega, R Omega, and C Phi.

RAW TRANSFORMATION RESULTS

Transformation: Absolute
Scale: 2.73919 Omega: 0.22249 Phi: 0.00039 Kappa: -
0.00003
Matrix: 2.672 0.604 -0.001 -106425.980
-0.604 2.672 0.000 -104772.330
0.001 0.000 2.739 91.485

JOB FILE NOTES





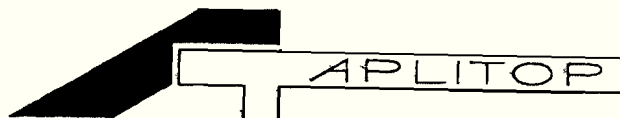
MODEL FILE NOTES

MODEL POINT DATA PRINTOUT

POINT ID	GROUND(X)	GROUND(Y)	GROUND(Z)
OP.RES	RES(X)	RES(Y)	RES(Z)
	WGT(X)	WGT(Y)	WGT(Z)
	MODEL(X)	MODEL(Y)	MODEL(Z)
* 6006.2	-106009.540	-104838.000	84.880
-0.14	0.06	0.00	0.06
	1.00	1.00	1.00
	153550	10160	-2492
* 6005.1	-106191.900	-105565.280	88.350
-0.05	0.14	-0.13	0.00
	1.00	1.00	1.00
	147165	-263455	-1194
* 8.2	-106207.870	-105285.950	90.870
0.05	-0.38	-0.05	-0.08
	1.00	1.00	1.00
	119170	-165265	-236
6700.1	-106426.010	-104772.290	91.450
	1.00	1.00	1.00
* 6007.1	-106426.020	-104772.290	91.450
0.12	-0.04	0.05	-0.03
	1.00	1.00	1.00
	0	0	0
* 6007.2	-106535.480	-105402.870	89.380
0.03	0.21	0.13	0.06
	1.00	1.00	1.00
	11740	-233400	-788

Root Mean Square Residuals- Ground: 0.21 0.09
 0.05
 Sum of Residuals - Ground: 0.00 -0.00
 -0.00





ISM MODEL FILE DATA PRINTOUT

{SystemMap Version: 4.00}

Model File: c:\dgn\a5\60076006.mod Model Date: 05-09-99
Job File: c:\dgn\a5\a5.job Operator Name:
Control File: c:\dgn\a5\a5.con Control Units: m
Area Name:

Camera Make: c:\data\rc8.cam Roll No: < NOT SET >
Line: 3
Focal Length: 153.080 Altitude: 765 m
Photo Scale: 5000:1 Model Scale: 3000:1 Comp Scale:
1000:1

Model Extents: Upper Left X: 99999999 Y: 99999999
Lower Right X: 0 Y: 0

Contour Interval: 1.0 m Affine Factor: 1.000000
Earth Curvature Correction: N Earth Radius: 6380000 m
Global Origin: X: 0 Y: 0 Z: 0

Transformation First Approximations:

Absolute:
Scale Factor: 0.0000000
Kappa: 0.0000 Shift X: 0
Phi: 0.0000 Shift Y: 0
Omega: 0.0000 Shift Z: 0

INSTRUMENT ELEMENT VALUES

Plotter Name: c:\data\wilda8.ins Plotter Type: WILD A8

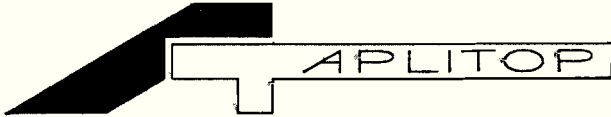
Table with 3 columns: EXISTING ELEMENTS, CORRECTIONS, NEW ELEMENTS. Rows include L Omega, R Omega, and C Phi.

RAW TRANSFORMATION RESULTS

Transformation: Absolute
Scale: 2.73104 Omega: 0.22525 Phi: -0.00028 Kappa: -
0.00011
Matrix: 2.662 0.610 0.001 -106738.110
-0.610 2.662 -0.000 -104662.180
-0.001 0.000 2.731 87.963

JOB FILE NOTES





MODEL FILE NOTES

MODEL POINT DATA PRINTOUT

□

POINT ID	GROUND(X)	GROUND(Y)	GROUND(Z)
OP.RES	RES(X)	RES(Y)	RES(Z)
	WGT(X)	WGT(Y)	WGT(Z)
	MODEL(X)	MODEL(Y)	MODEL(Z)
* 6007.1	-106426.010	-104772.290	91.450
0.07	-0.01	0.12	-0.06
	1.00	1.00	1.00
	120410	-13815	1336
* 6007.2	-106535.480	-105402.870	89.380
0.01	-0.03	0.09	0.08
	1.00	1.00	1.00
	132915	-247815	556
* 10.1	-106789.780	-105302.680	83.090
0.09	-0.06	-0.13	-0.08
	1.00	1.00	1.00
	33950	-232775	-1718
* 10.2	-106738.020	-104662.260	88.030
-0.16	0.10	-0.08	0.07
	1.00	1.00	1.00
	0	0	0

Root Mean Square Residuals- Ground: 0.06 0.10
 0.07
 Sum of Residuals - Ground: 0.00 0.00
 -0.00

□





BRISA SA - A5 - LANÇO ESTÁDIO NACIONAL / CASCAIS - NÓ DE CARCAVELOS / NÓ DE ALCABIDECHE - ALARGAMENTO E BENEFICIAÇÃO PARA 2x3 VIAS
PROJECTO DE EXECUÇÃO N.º 1 - TERRAPLENAGENS - PARTE 1.3 - TOPOGRAFIA E ELEMENTOS DE IMPLANTAÇÃO

DESENHOS

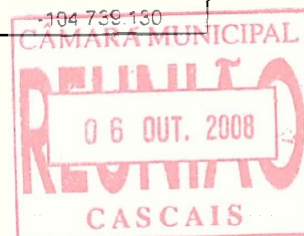




ALARGAMENTO E BENEFICIAÇÃO PARA 2X3 VIAS

COORDENADAS DE IMPLANTAÇÃO DA VEDAÇÃO
 (Situação Existente com Perfil de 2x2 vias)
 (ABRIL/MAIO 1999)

LADO ESQUERDO CASCAIS - LISBOA			LADO DIREITO LISBOA - CASCAIS		
IDENTIFICAÇÃO DO PONTO	COORDENADAS		IDENTIFICAÇÃO DO PONTO	COORDENADAS	
	M	P		M	P
313	-108 797.188	-104 824.706	314	-108 261.684	-104 732.650
315	-108 821.073	-104 832.645	316	-108 277.179	-104 735.012
317	-108 844.220	-104 844.765	318	-108 303.654	-104 734.330
319	-108 867.929	-104 855.291	320	-108 309.963	-104 740.310
321	-108 891.664	-104 867.853	322	-108 311.987	-104 745.103
323	-108 917.330	-104 871.575	324	-108 327.657	-104 732.144
325	-109 023.061	-104 877.500	326	-108 328.839	-104 730.550
327	-109 049.643	-104 878.386	328	-108 356.187	-104 722.891
329	-109 076.319	-104 879.375	330	-108 369.468	-104 721.748
331	-109 115.063	-104 880.928	332	-108 404.963	-104 725.600
333	-109 142.308	-104 892.747	334	-108 436.248	-104 734.266
335	-109 274.915	-104 828.059	336	-108 480.733	-104 737.190
337	-109 287.481	-104 817.751	338	-108 505.999	-104 738.461
339	-109 326.838	-104 819.824	340	-108 531.274	-104 739.710
341	-109 352.730	-104 820.897	342	-108 556.579	-104 740.828
343	-109 375.607	-104 808.794	344	-108 581.906	-104 742.004
345	-109 398.416	-104 796.395	346	-108 607.222	-104 743.606
347	-109 421.365	-104 784.363	348	-108 632.412	-104 746.458
349	-109 425.095	-104 782.407	350	-108 657.454	-104 749.033
351	-109 452.112	-104 781.928	352	-108 667.107	-104 750.025
353	-109 457.443	-104 771.764	354	-108 682.898	-104 751.649
355	-109 483.346	-104 763.985	356	-108 707.864	-104 755.827
357	-109 499.958	-104 776.726	358	-108 732.784	-104 759.969
359	-109 527.710	-104 776.211	360	-108 757.679	-104 763.962
361	-109 554.078	-104 768.465	362	-108 782.978	-104 765.563
363	-109 578.415	-104 755.906	364	-108 805.873	-104 779.503
365	-109 593.925	-104 728.468	366	-108 829.752	-104 787.885
367	-109 612.159	-104 708.202	368	-108 855.371	-104 786.974
369	-109 637.596	-104 698.668	370	-108 879.094	-104 795.230
371	-109 641.613	-104 696.108	372	-108 903.574	-104 796.754
373	-109 645.810	-104 693.412	374	-108 927.926	-104 802.059
375	-109 660.019	-104 684.286	376	-108 952.395	-104 803.187
377	-109 676.295	-104 662.828	378	-108 988.935	-104 804.689
379	-109 690.658	-104 640.234	380	-109 024.782	-104 799.797
381	-110 047.731	-104 165.099	382	-109 048.271	-104 777.294
383	-110 052.364	-104 158.356	384	-109 230.430	-104 785.484
385	-110 066.473	-104 137.830	386	-109 270.525	-104 775.264
387	-110 083.221	-104 110.958	388	-109 303.353	-104 754.187
389	-110 109.930	-104 078.028	390	-109 352.435	-104 739.130



ALARGAMENTO E BENEFICIAÇÃO PARA 2X3 VIAS

COORDENADAS DE IMPLANTAÇÃO DA VEDAÇÃO
 (Situação Existente com Perfil de 2x2 vias)
 (ABRIL/MAIO 1999)

LADO ESQUERDO CASCAIS - LISBOA			LADO DIREITO LISBOA - CASCAIS		
IDENTIFICAÇÃO DO PONTO	COORDENADAS		IDENTIFICAÇÃO DO PONTO	COORDENADAS	
	M	P		M	P
391	-110 119.787	-104 064.782	392	-109 386.871	-104 745.921
393	-110 125.671	-104 056.875	394	-109 412.724	-104 747.093
395	-110 139.003	-104 038.960	396	-109 436.424	-104 740.102
397	-110 155.218	-104 021.034	398	-109 459.778	-104 733.103
399	-110 163.507	-104 012.349	400	-109 482.807	-104 726.157
401	-110 165.457	-104 012.130	402	-109 516.467	-104 714.317
403	-110 210.325	-103 974.480	404	-109 547.155	-104 695.958
405	-110 243.069	-103 938.576	406	-109 567.676	-104 684.301
407	-110 260.227	-103 921.325	408	-109 586.976	-104 675.087
409	-110 292.352	-103 889.371	410	-109 590.831	-104 673.246
411	-110 320.164	-103 880.437	412	-109 611.060	-104 663.589
413	-110 343.923	-103 873.190	414	-109 642.066	-104 636.785
415	-110 367.141	-103 865.691	416	-109 660.932	-104 612.161
417	-110 389.438	-103 856.969	418	-109 671.315	-104 599.993
419	-110 411.452	-103 847.958	420	-109 675.240	-104 595.393
421	-110 433.313	-103 838.754	422	-109 707.782	-104 557.257
423	-110 455.156	-103 829.516	424	-109 722.267	-104 537.301
425	-110 477.173	-103 820.633	426	-109 736.963	-104 517.162
427	-110 499.358	-103 812.065	428	-109 751.642	-104 496.923
429	-110 521.617	-103 803.428	430	-109 766.284	-104 476.657
431	-110 544.028	-103 794.823	432	-109 780.943	-104 456.403
433	-110 566.638	-103 786.274	434	-109 795.611	-104 436.155
435	-110 589.431	-103 777.493	436	-109 810.279	-104 415.909
437	-110 618.318	-103 765.468	438	-109 824.851	-104 395.594
439	-110 661.589	-103 772.483	440	-109 839.549	-104 375.366
441	-110 693.309	-103 777.831	442	-109 854.054	-104 355.005
443	-110 733.941	-103 774.660	444	-109 868.599	-104 334.672
445	-110 737.767	-103 764.076	446	-109 883.120	-104 314.320
447	-110 741.793	-103 763.988	448	-109 897.544	-104 293.901
449	-110 743.935	-103 773.723	450	-109 911.945	-104 273.466
451	-110 757.366	-103 772.474	452	-109 926.668	-104 253.257
453	-110 781.704	-103 766.919	454	-109 941.575	-104 233.178
455	-110 806.464	-103 761.653	456	-109 955.626	-104 212.487
457	-110 830.211	-103 767.845	458	-109 970.279	-104 192.237
459	-110 853.706	-103 774.392	460	-109 985.219	-104 172.163
461	-110 877.005	-103 781.067	462	-109 999.991	-104 152.009
463	-110 900.692	-103 785.447	464	-110 014.773	-104 131.841
465	-110 925.017	-103 787.620	466	-110 029.496	-104 111.571
467	-110 949.425	-103 790.446	468	-110 041.434	-104 089.203

ALARGAMENTO E BENEFICIAÇÃO PARA 2X3 VIAS

COORDENADAS DE IMPLANTAÇÃO DA VEDAÇÃO

(Situação Existente com Perfil de 2x2 vias)

(ABRIL/MAIO 1999)

LADO ESQUERDO CASCAIS - LISBOA			LADO DIREITO LISBOA - CASCAIS		
IDENTIFICAÇÃO DO PONTO	COORDENADAS		IDENTIFICAÇÃO DO PONTO	COORDENADAS	
	M	P		M	P
469	-110 973.156	-103 796.415	470	-110 050.356	-104 064.407
471	-110 995.759	-103 806.152	472	-110 058.568	-104 053.659
473	-111 018.376	-103 815.935	474	-110 072.272	-104 035.724
475	-111 041.274	-103 825.169	476	-110 081.333	-104 023.864
477	-111 064.096	-103 834.875	478	-110 087.041	-104 014.662
479	-111 088.657	-103 840.490	480	-110 092.514	-104 005.840
481	-111 110.684	-103 852.851	482	-110 095.025	-104 001.792
483	-111 134.619	-103 860.909	484	-110 109.860	-103 980.284
485	-111 157.827	-103 871.458	486	-110 136.749	-103 941.708
487	-111 181.630	-103 881.169	488	-110 157.965	-103 917.387
489	-111 209.235	-103 879.246	490	-110 162.058	-103 891.024
491	-111 234.090	-103 885.760	492	-110 224.105	-103 873.944
493	-111 265.597	-103 892.848	494	-110 249.267	-103 864.341
495	-111 310.449	-103 897.434	496	-110 271.523	-103 851.154
497	-111 327.282	-103 899.260	498	-110 293.605	-103 837.850
499	-111 343.101	-103 900.567	500	-110 315.668	-103 824.565
501	-111 352.372	-103 904.684	502	-110 337.829	-103 811.410
503	-111 387.927	-103 906.459	504	-110 359.994	-103 798.114
505	-111 407.424	-103 907.357	506	-110 382.433	-103 785.120
507	-111 410.639	-103 907.505	508	-110 404.954	-103 771.936
509	-111 430.022	-103 908.397	510	-110 443.794	-103 749.525
511	-111 467.124	-103 904.420	512	-110 456.710	-103 747.666
513	-111 493.766	-103 901.666	514	-110 459.504	-103 746.529
515	-111 521.424	-103 900.833	516	-110 467.163	-103 737.347
517	-111 550.012	-103 900.379	518	-110 501.512	-103 732.544
519	-111 766.383	-103 762.176	520	-110 528.508	-103 732.777
521	-111 762.973	-103 758.869	522	-110 555.051	-103 732.926
523	-111 786.619	-103 748.496	524	-110 589.586	-103 728.392
525	-111 808.784	-103 739.154	526	-110 626.692	-103 711.057
527	-111 831.137	-103 730.797	528	-110 655.247	-103 701.314
529	-111 849.276	-103 725.126	530	-110 684.641	-103 691.432
531	-111 858.968	-103 723.757	532	-110 720.731	-103 695.769
533	-111 861.887	-103 722.533	534	-110 733.814	-103 699.363
535	-111 874.511	-103 716.202	536	-110 736.051	-103 700.467
537	-111 900.181	-103 712.836	538	-110 738.861	-103 708.276
539	-111 923.902	-103 710.639	540	-110 743.178	-103 710.650
541	-111 947.430	-103 708.445	542	-110 751.221	-103 705.224
543	-111 978.596	-103 705.839	544	-110 765.032	-103 717.596
545	-112 018.043	-103 710.743	546	-110 810.853	-103 717.294

ALARGAMENTO E BENEFICIAÇÃO PARA 2X3 VIAS

COORDENADAS DE IMPLANTAÇÃO DA VEDAÇÃO
 (Situação Existente com Perfil de 2x2 vias)
 (ABRIL/MAIO 1999)

LADO ESQUERDO CASCAIS - LISBOA			LADO DIREITO LISBOA - CASCAIS		
IDENTIFICAÇÃO DO PONTO	COORDENADAS		IDENTIFICAÇÃO DO PONTO	COORDENADAS	
	M	P		M	P
547	-112 041.301	-103 713.614	548	-110 836.239	-103 721.692
549	-112 076.101	-103 717.924	550	-110 861.556	-103 726.101
551	-112 109.942	-103 728.267	552	-110 886.834	-103 730.607
553	-112 146.341	-103 739.414	554	-110 912.071	-103 735.411
555	-112 191.705	-103 762.058	556	-110 937.105	-103 741.225
557	-112 190.615	-103 764.236	558	-111 151.116	-103 818.009
559	-112 198.346	-103 768.619	560	-111 175.402	-103 823.229
561	-112 275.058	-103 786.293	562	-111 188.246	-103 828.148
563	-112 285.502	-103 795.162	564	-111 198.750	-103 832.170
565	-112 331.301	-103 824.569	566	-111 220.744	-103 840.593
567	-112 343.201	-103 803.299	568	-111 244.185	-103 845.721
569	-112 363.555	-103 809.365	570	-111 267.271	-103 851.416
571	-112 386.853	-103 801.426	572	-111 290.385	-103 857.510
573	-112 396.980	-103 806.272	574	-111 313.794	-103 863.295
575	-112 419.880	-103 816.493	576	-111 337.762	-103 864.637
577	-112 442.773	-103 826.768	578	-111 361.748	-103 865.064
579	-112 465.741	-103 836.814	580	-111 385.711	-103 864.119
581	-112 488.676	-103 846.949	582	-111 402.621	-103 858.210
583	-112 511.562	-103 857.222	584	-111 405.838	-103 857.086
			586	-111 408.967	-103 855.993
			588	-111 433.132	-103 857.544
			590	-111 456.516	-103 852.706
			592	-111 482.252	-103 845.925
			594	-111 499.954	-103 831.990
			596	-111 514.141	-103 802.805
			598	-111 721.110	-103 729.796
			600	-111 722.010	-103 731.446
			602	-111 745.415	-103 721.099
			604	-111 768.951	-103 710.827
			606	-111 792.598	-103 700.536
			608	-111 836.668	-103 681.043
			610	-111 840.024	-103 678.585
			612	-111 844.654	-103 675.194
			614	-111 847.526	-103 674.098
			616	-111 859.508	-103 675.376
			618	-111 891.516	-103 669.636
			620	-111 917.057	-103 664.907
			622	-111 942.678	-103 660.088
			624	-111 968.718	-103 659.181

ALARGAMENTO E BENEFICIAÇÃO PARA 2X3 VIAS

COORDENADAS DE IMPLANTAÇÃO DA VEDAÇÃO

(Situação Existente com Perfil de 2x2 vias)

(ABRIL/MAIO 1999)

LADO ESQUERDO CASCAIS - LISBOA			LADO DIREITO LISBOA - CASCAIS		
IDENTIFICAÇÃO DO PONTO	COORDENADAS		IDENTIFICAÇÃO DO PONTO	COORDENADAS	
	M	P		M	P
			626	-111 994.720	-103 660.190
			628	-112 020.621	-103 661.283
			630	-112 068.090	-103 663.275
			632	-112 097.955	-103 669.678
			634	-112 123.232	-103 675.160
			636	-112 161.068	-103 683.153
			638	-112 196.980	-103 696.034
			640	-112 220.770	-103 704.415
			642	-112 244.700	-103 711.868
			644	-112 268.320	-103 720.068
			646	-112 291.960	-103 728.202
			648	-112 315.590	-103 736.360
			650	-112 457.847	-103 784.014
			652	-112 482.058	-103 790.531
			654	-112 506.297	-103 796.968
			656	-112 530.650	-103 803.081



BRISA SA - A5 - LANÇO ESTÁDIO NACIONAL / CASCAIS - NÓ DE CARCAVELOS / NÓ DE ALCABIDECHE - ALARGAMENTO E BENEFICIAÇÃO PARA 2x3 VIAS
PROJECTO DE EXECUÇÃO N.º 1 - TERRAPLENAGENS - PARTE 1.3 - TOPOGRAFIA E ELEMENTOS DE IMPLANTAÇÃO

ANEXOS

C2C1_0118E1E_01F

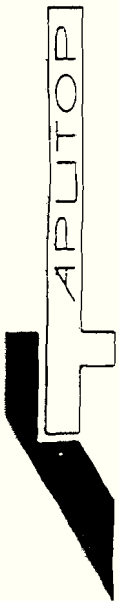




BRISA SA - A5 - LANÇO ESTÁDIO NACIONAL / CASCAIS - NÓ DE CARCAVELOS / NÓ DE ALCABIDECHE - ALARGAMENTO E BENEFICIAÇÃO PARA 2x3 VIAS
PROJECTO DE EXECUÇÃO N.º 1 - TERRAPLENAGENS - PARTE 1.3 - TOPOGRAFIA E ELEMENTOS DE IMPLANTAÇÃO

ANEXO 1 – Fichas de Identificação dos Vértices de Apoio

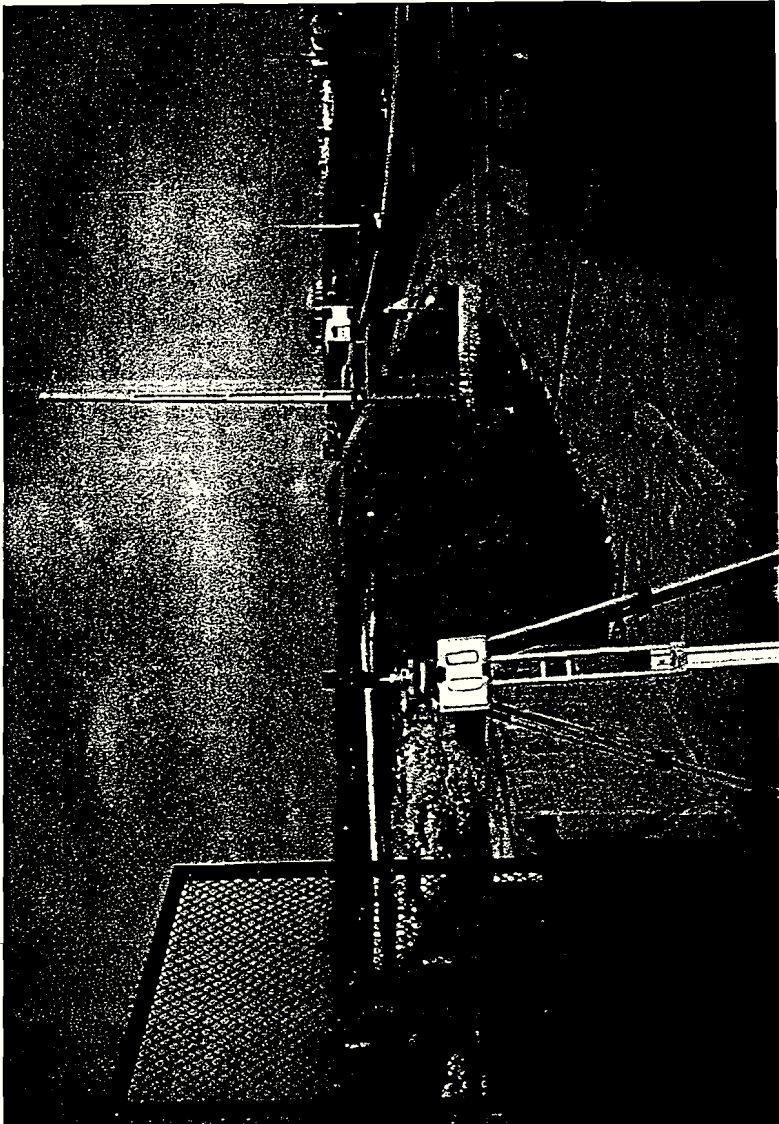




IDENTIFICAÇÃO DOS VÉRTICES DE APOIO

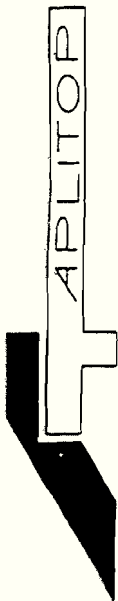
LEVANTAMENTO A5 - A. E. DA COSTA DO ESTORIL CARCAVELOS/ALVIDE

VÉRTICE CA00

<p>M= <u>-103.913,288</u></p> <p>P= <u>-105.896,794</u></p>	<p>N= <u>78,169</u></p> <p>N'= _____</p>
<p>DESCRIÇÃO</p> <p>Prego de aço em betão PK13 + 981 Lado direito</p>	<p>LOCALIZAÇÃO</p> 

CÂMARA MUNICIPAL
REUNIÃO
06 OUT. 2008
CASCAIS

DATA Abril / 1999
OPERADOR Paulo Veloso



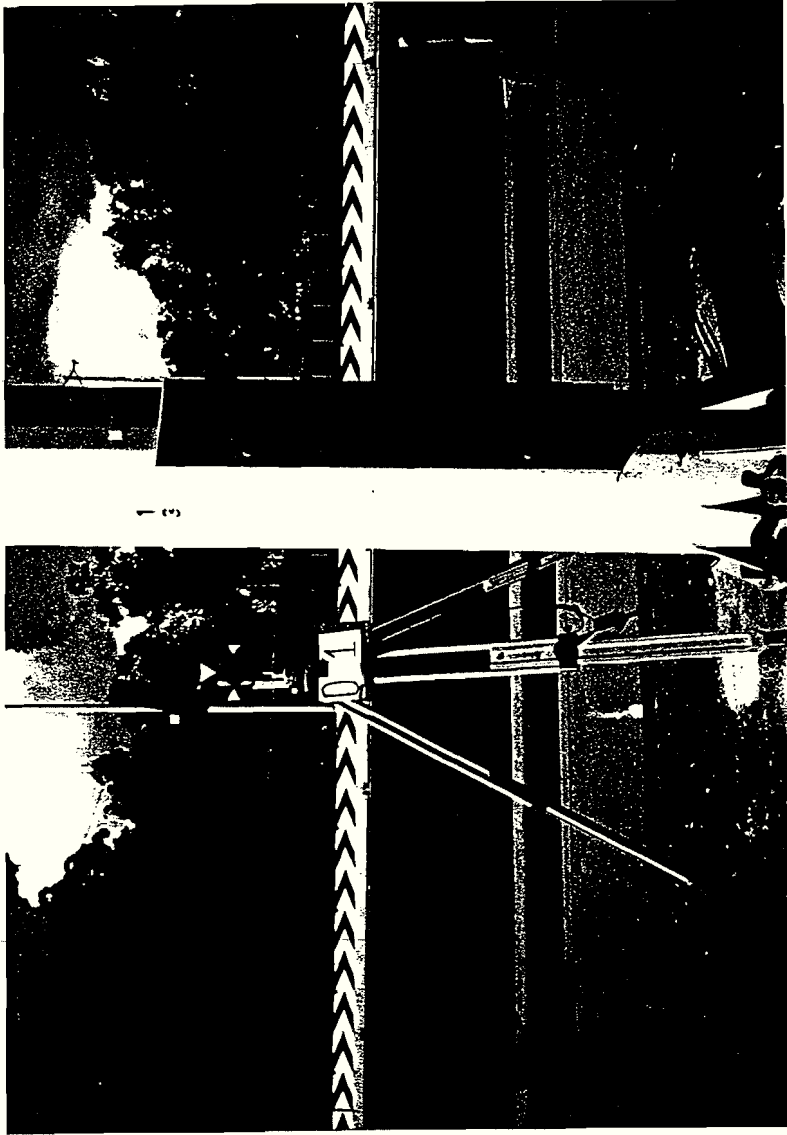
IDENTIFICAÇÃO DOS VÉRTICES DE APOIO

LEVANTAMENTO A5 - A. E. DA COSTA DO ESTORIL CARCAVELOS/ALVIDE

VÉRTICE

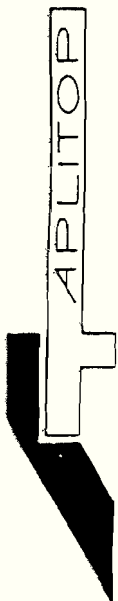
CA01

M=	<u>-104.294,103</u>	N=	<u>76,820</u>
P=	<u>-105.955,650</u>	N'=	<u> </u>

DESCRIÇÃO	LOCALIZAÇÃO
Prego de aço em betão PK14 + 362 Lado esquerdo	

CÂMARA MUNICIPAL
REUNIÃO
06 OUT. 2008
CASCAIS

DATA Abril / 1999
OPERADOR Paulo Veloso

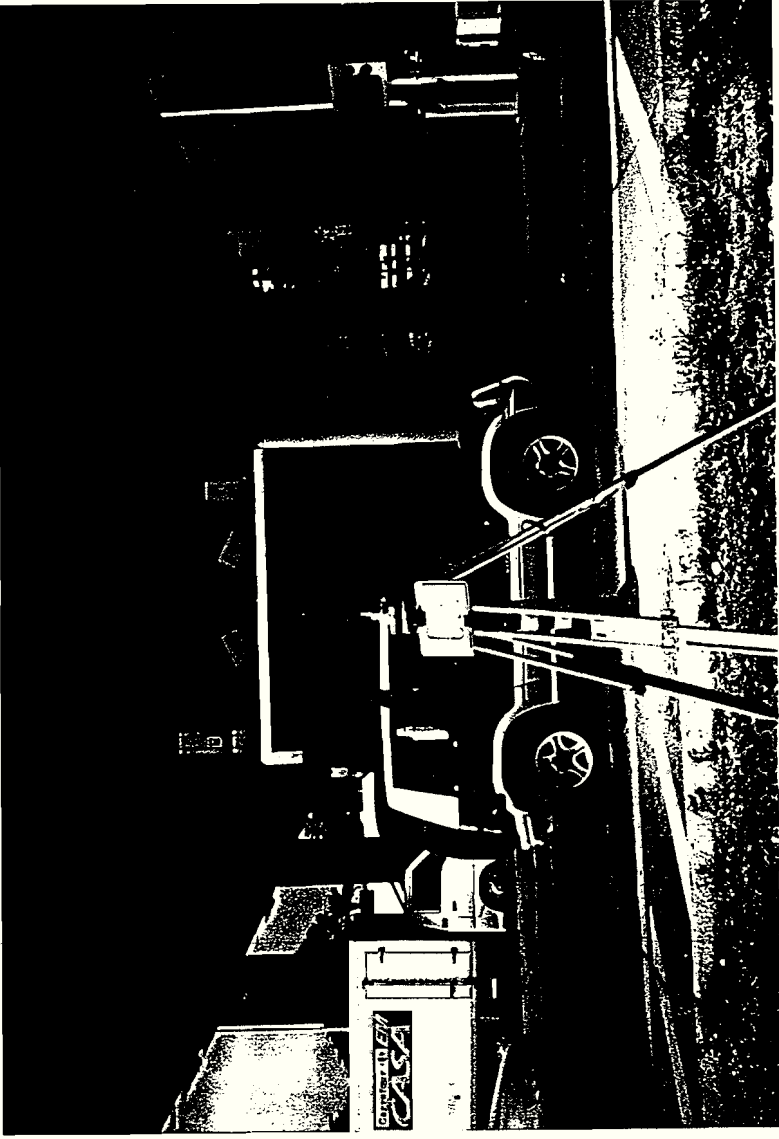


IDENTIFICAÇÃO DOS VÉRTICES DE APOIO

LEVANTAMENTO A5 - A. E. DA COSTA DO ESTORIL CARCAVELOS/ALVÍDE

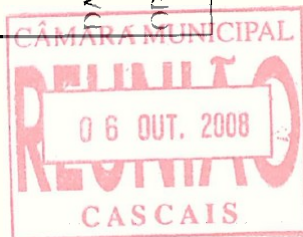
VÉRTICE

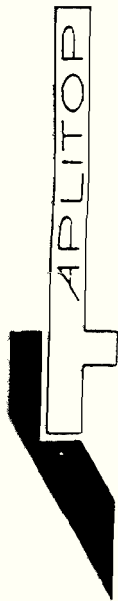
CA02

M= <u>-104.499,886</u> P= <u>-105.979,218</u>	N= <u>79,257</u> N'= _____
DESCRIÇÃO	LOCALIZAÇÃO
Prego de aço em betão PK 74 + 568 Lado esquerdo	

DATA Abril / 1999

OPERADOR Paulo Veloso






IDENTIFICAÇÃO DOS VÉRTICES DE APOIO

LEVANTAMENTO A5 - A. E. DA COSTA DO ESTORIL CARCAVELOS/ALVIDE

VÉRTICE

CA03

<p>M= <u>-104.873,903</u></p> <p>P= <u>-105.962,317</u></p>	<p>N= <u>83,584</u></p> <p>N'= _____</p>
<p>DESCRIÇÃO</p> <p>Prego de aço em betão PK14 + 942 Lado esquerdo</p>	<p>LOCALIZAÇÃO</p> 

DATA Abril / 1999

OPERADOR Paulo Veloso



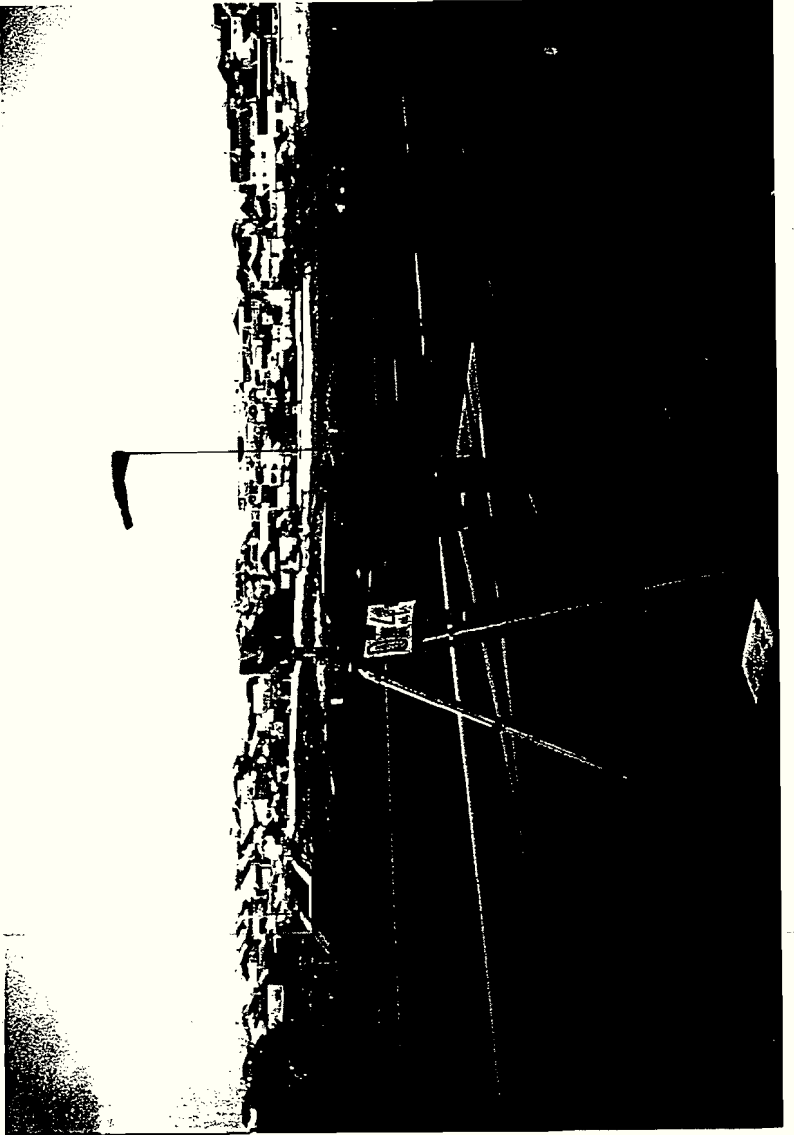


IDENTIFICAÇÃO DOS VÉRTICES DE APOIO

LEVANTAMENTO A5 - A. E. DA COSTA DO ESTORIL CARCAVELOS/ ALVIDE

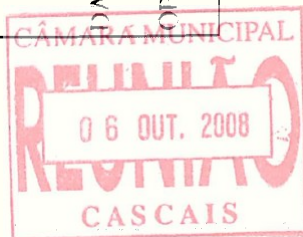
VÉRTICE

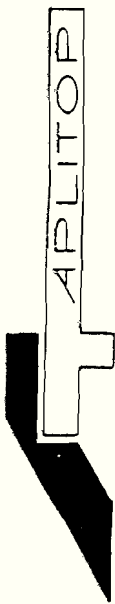
CA04

<p>M# <u>-105.384,221</u></p> <p>N# <u>70,346</u></p> <p>P# <u>-105.899,967</u></p> <p>N# _____</p>	
<p>LOCALIZAÇÃO</p>	
<p>DESCRÇÃO</p> <p><i>Prego de aço em betão</i> PK15 + 455 Lado direito</p>	

DATA Abril / 1999

OPERADOR Paulo Veloso



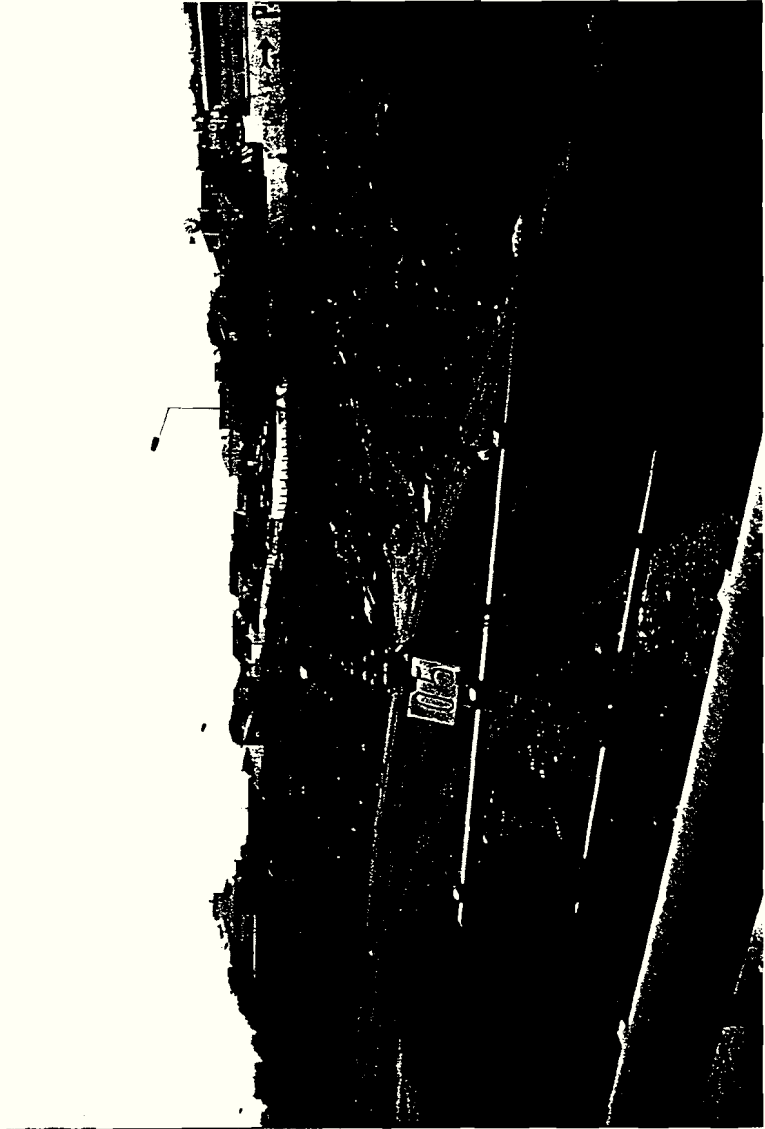


IDENTIFICAÇÃO DOS VÉRTICES DE APOIO

LEVANTAMENTO A5 - A. E. DA COSTA DO ESTORIL CARCAVELOS/ALVIDE

VÉRTICE

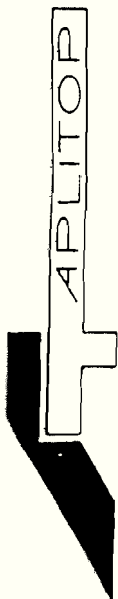
CA05

M=	-105.667,128	N=	72,229
P=	-105.839,875	N'=	
DESCRIÇÃO	LOCALIZAÇÃO		
Prego de aço em betão PK15 + 745 Lado esquerdo			

DATA Abril / 1999

OPERADOR Paulo Veloso

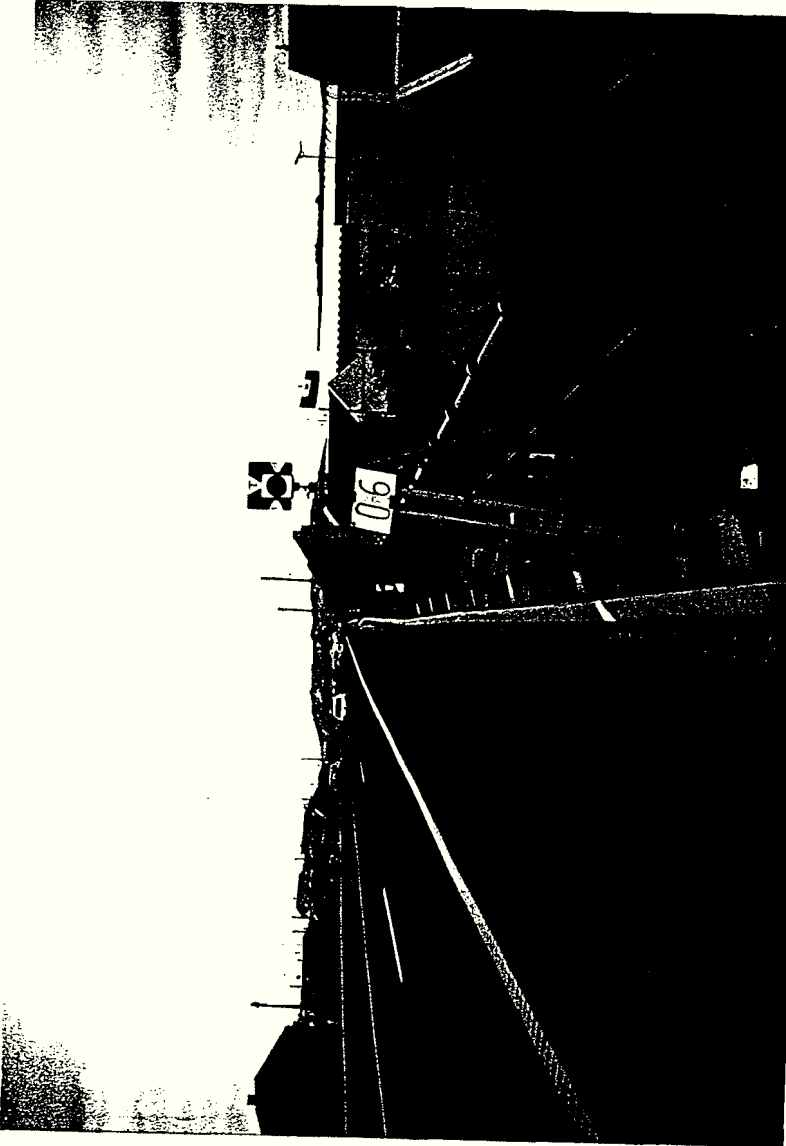


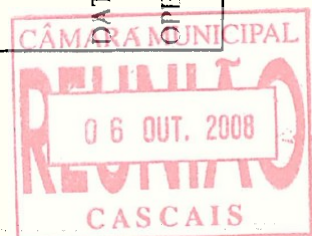


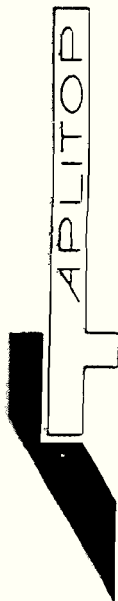
IDENTIFICAÇÃO DOS VÉRTICES DE APOIO

LEVANTAMENTO A5 - A. E. DA COSTA DO ESTORIL CARCAVELOS/ALVIDE

VÉRTICE CA06

M= <u>-106.010,036</u> P= <u>-105.562,717</u>	N= <u>87,907</u> N'= _____
DESCRIÇÃO	LOCALIZAÇÃO
Prego de aço em betão PK16 + 184 Lado direito DATA <u>Abril / 1999</u> OPERADOR <u>Paulo Veloso</u>	



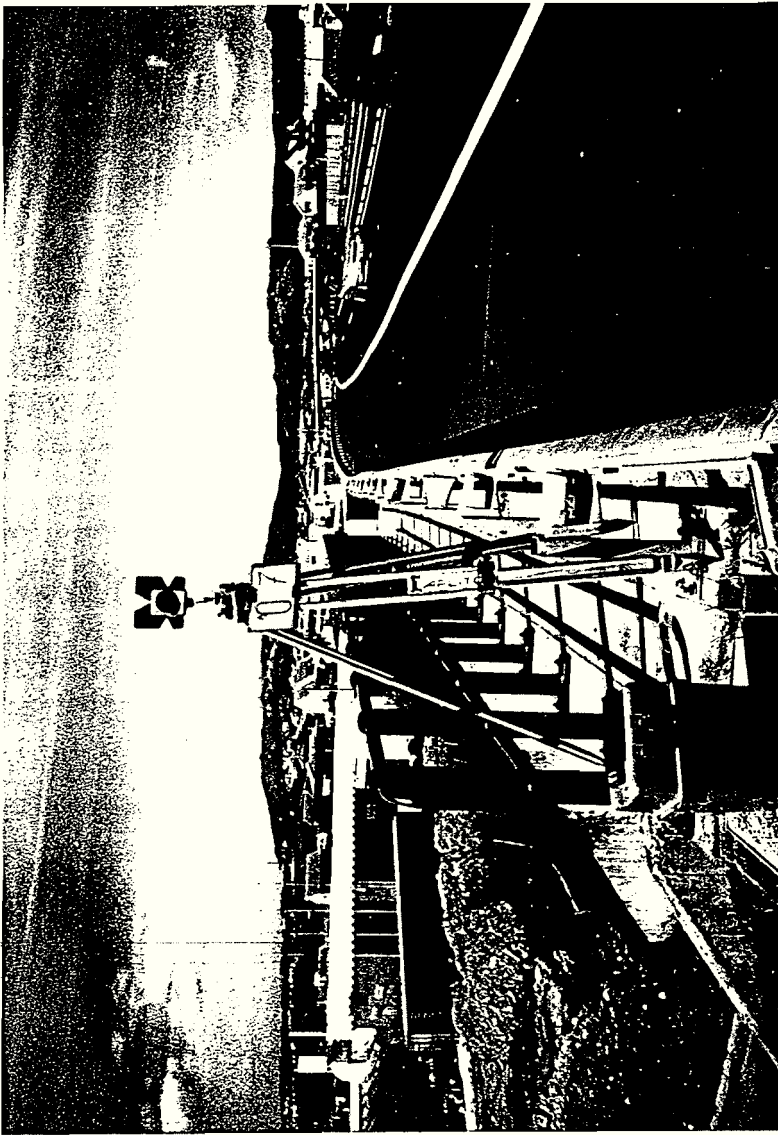


IDENTIFICAÇÃO DOS VÉRTICES DE APOIO

LEVANTAMENTO A5 - A. E. DA COSTA DO ESTORIL CARCAVELOS/ALVIDE

VÉRTICE

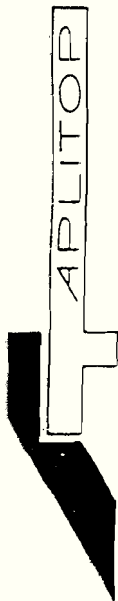
CA07

<p>M= <u>-106.367,643</u></p> <p>P= <u>-105.302,002</u></p>	<p>N= <u>92,686</u></p> <p>N'= _____</p>
<p>DESCRIÇÃO</p>	<p>LOCALIZAÇÃO</p>
<p>Prego de aço em betão PK16 + 625 Lado esquerdo</p>	

DATA Abril / 1999

OPERADOR Paulo Veloso

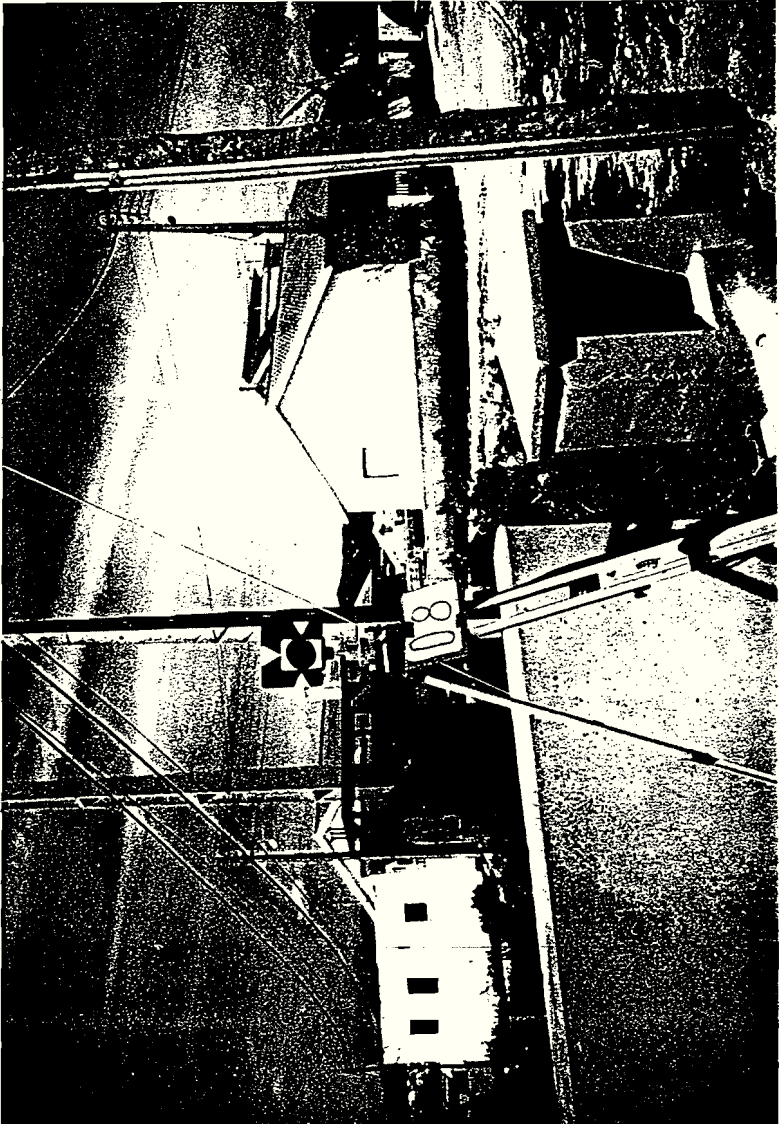




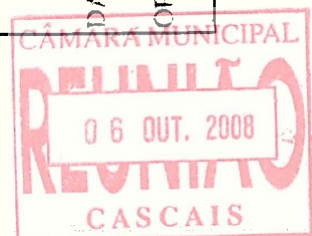
IDENTIFICAÇÃO DOS VÉRTICES DE APOIO

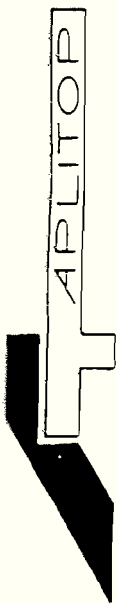
LEVANTAMENTO A5 - A. E. DA COSTA DO ESTORIL CARCAVELOS/ALVIDE

VÉRTICE CA08

<p>M= <u>-106.562,671</u></p> <p>P= <u>-104.994,670</u></p> <p>N= <u>96,074</u></p> <p>N'= _____</p>	<p>LOCALIZAÇÃO</p> 
<p>DESCRIÇÃO</p> <p>Prego de aço em betão PK16 + 984 Lado direito</p>	<p>LOCALIZAÇÃO</p>

DATA Abril / 1999
OPERADOR Paulo Veloso



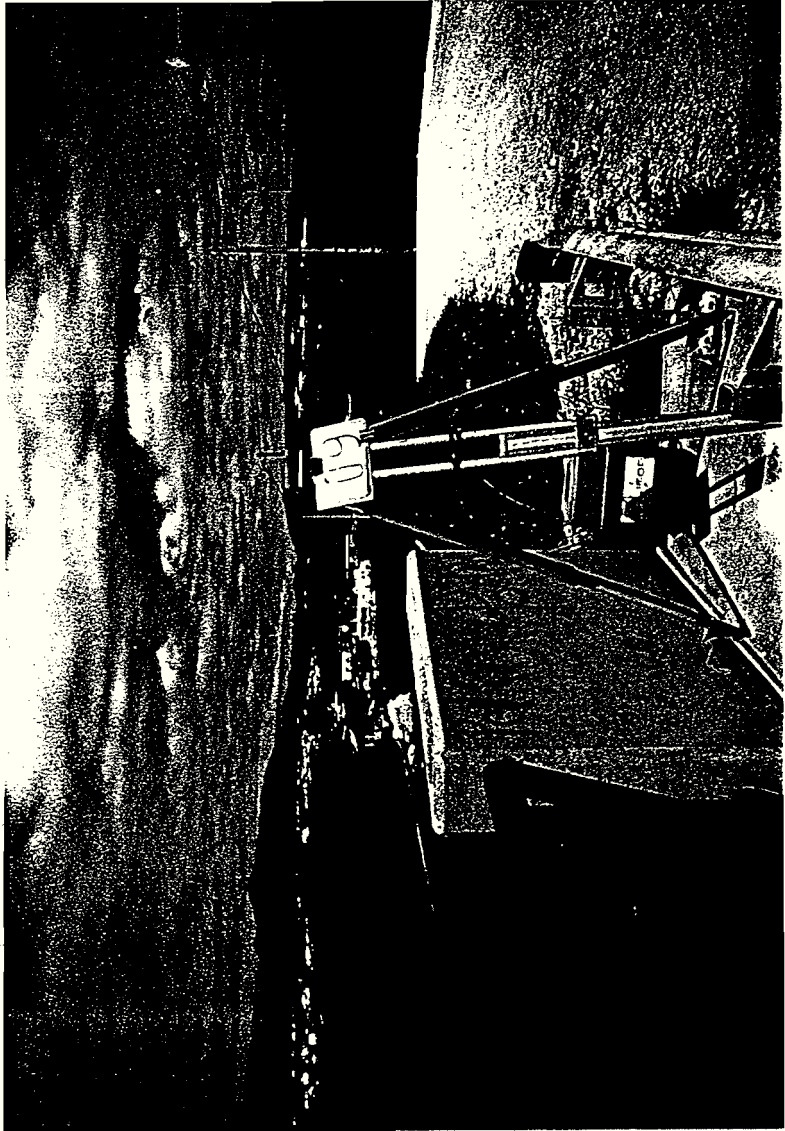


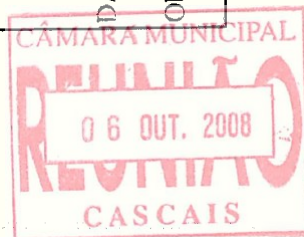
IDENTIFICAÇÃO DOS VÉRTICES DE APOIO

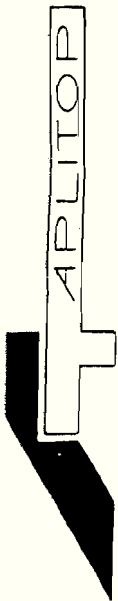
LEVANTAMENTO A5 - A. E. DA COSTA DO ESTORIL CARCAVELOS/ALVIDE

VÉRTICE

CA09

<p>M= <u>-107.085,194</u></p> <p>P= <u>-104.696,278</u></p>	<p>N= <u>69,885</u></p> <p>N'= <u></u></p>
DESCRIÇÃO	LOCALIZAÇÃO
<p>Prego de aço em betão PK17 + 578 Lado direito</p> <p>DATA <u>Abri / 1999</u></p> <p>OPERADOR <u>Paulo Veloso</u></p>	



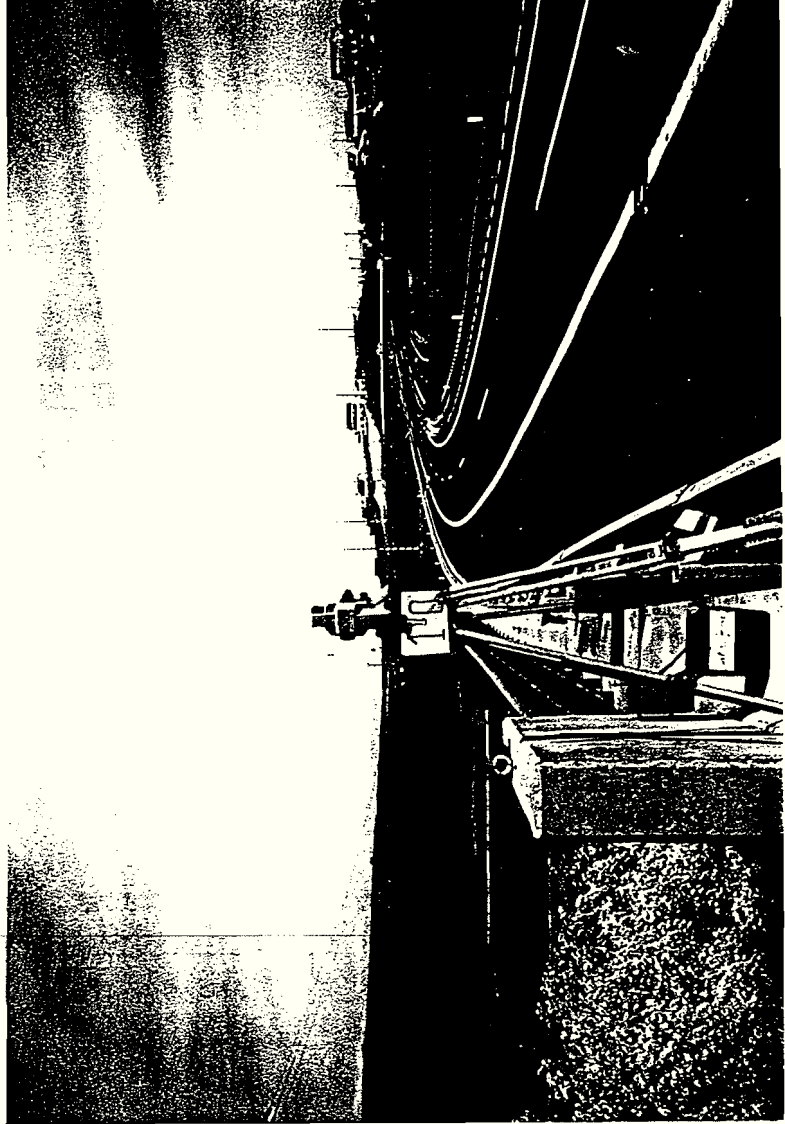


IDENTIFICAÇÃO DOS VÉRTICES DE APOIO

LEVANTAMENTO A5 - A. E. DA COSTA DO ESTORIL CARCAVELOS/ ALVIDE

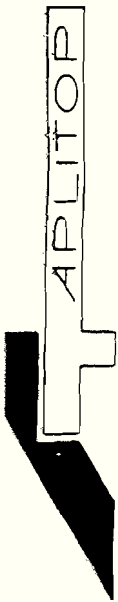
VÉRTICE

CA10

<p>M= <u>-107.406,289</u></p> <p>P= <u>-104.689,635</u></p>	<p>N= <u>57,600</u></p> <p>N'= _____</p>
<p>DESCRIÇÃO</p> <p>Prego de aço em betão PK17 + 894 Lado direito</p>	<p>LOCALIZAÇÃO</p>
	

CÂMARA MUNICIPAL
REUNIÃO
06 OUT. 2008
CASCAIS

DATA Abril / 1999
OPERADOR Paulo Veloso

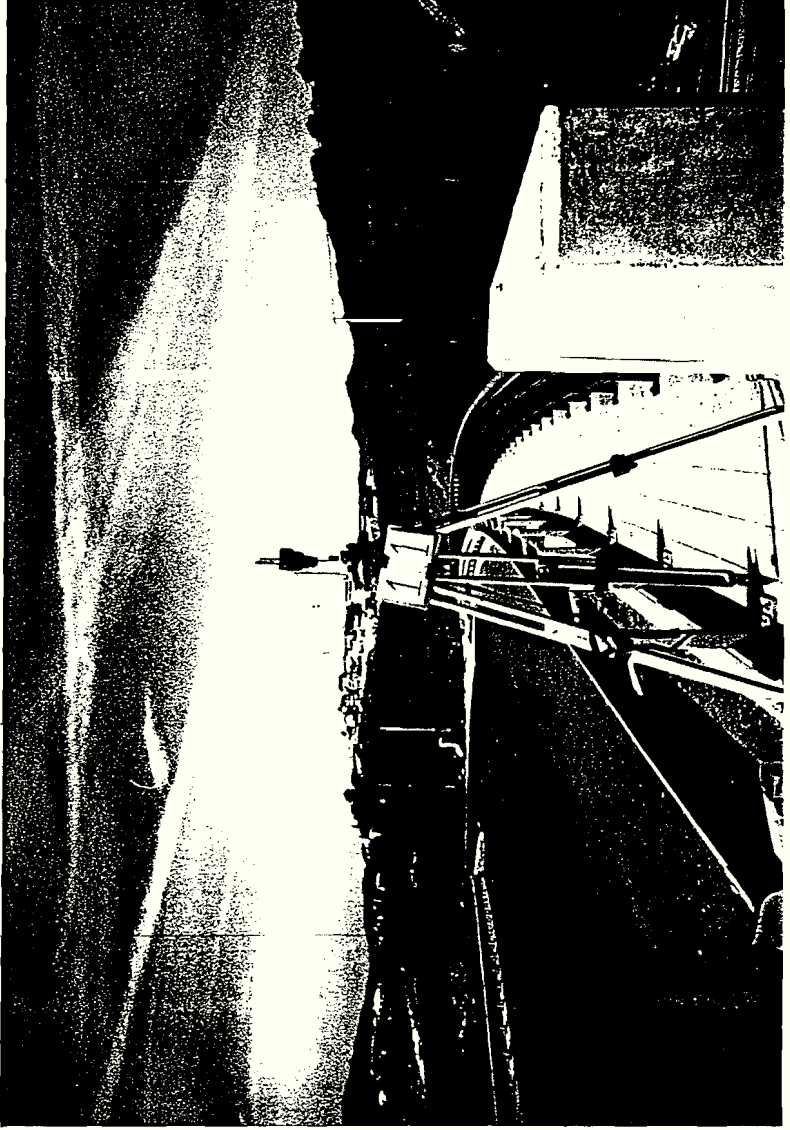


IDENTIFICAÇÃO DOS VÉRTICES DE APOIO

LEVANTAMENTO A5 - A. E. DA COSTA DO ESTORIL CARCAVELOS/ALVIDE

VÉRTICE

CA11

M=	<u>-107.869,625</u>	N=	<u>76,246</u>
P=	<u>-104.800,371</u>	N'=	<u> </u>
DESCRIÇÃO	LOCALIZAÇÃO		
Prego de aço em betão PK18 + 366 Lado esquerdo			
DATA	<u>Abril / 1999</u>	OPERADOR	<u>Paulo Veloso</u>






IDENTIFICAÇÃO DOS VÉRTICES DE APOIO

LEVANTAMENTO A5 - A. E. DA COSTA DO ESTORIL CARCAVELOS/ALVIDE

VÉRTICE CA12

M=	<u>-108.322,542</u>	N=	<u>71,232</u>
P=	<u>-104.771,777</u>	N'=	<u> </u>

DESCRIÇÃO	LOCALIZAÇÃO
Prego de aço em betão PK18 + 817 Lado esquerdo	

CÂMARA MUNICIPAL
REUNIÃO
06 OUT. 2008
CASCAIS

DATA Abril / 1999
OPERADOR Paulo Veloso



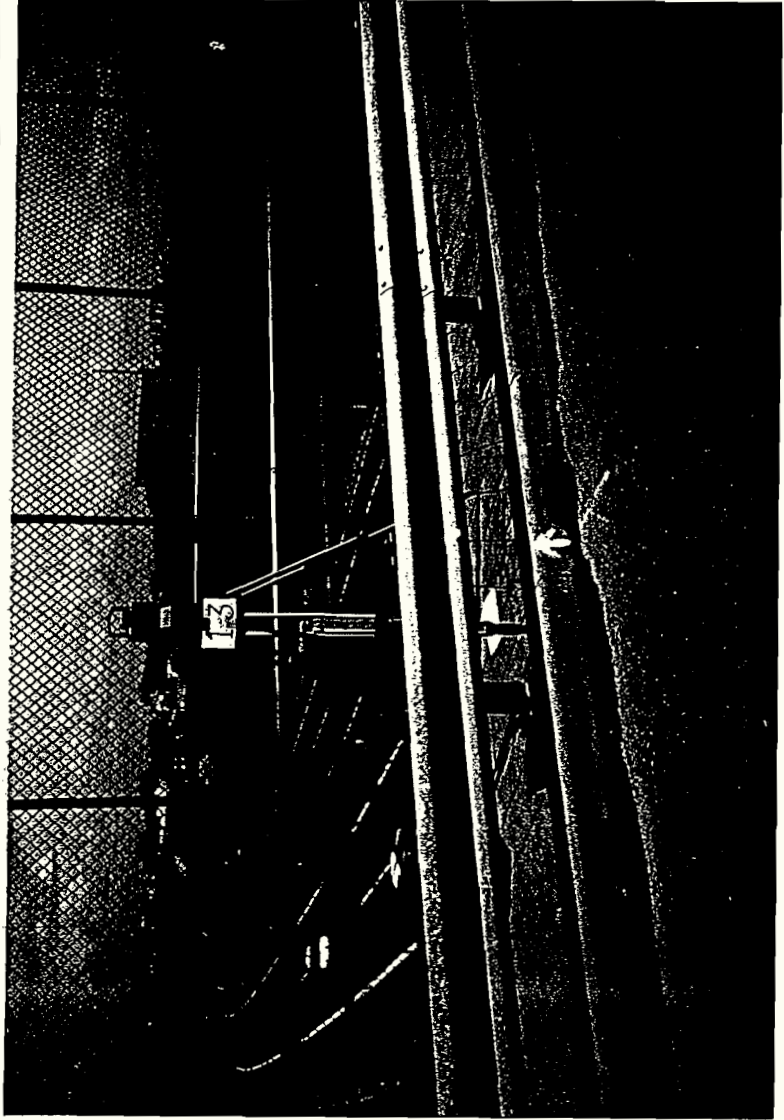
IDENTIFICAÇÃO DOS VÉRTICES DE APOIO

LEVANTAMENTO A5 - A. E. DA COSTA DO ESTORIL CARCAVELOS/ ALVIDE

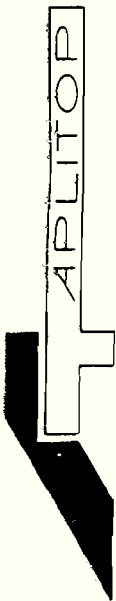
VÉRTICE

CA13

M=	<u>-108.656,403</u>	N=	<u>84,324</u>
P=	<u>-104.762,887</u>	N'=	<u> </u>

DESCRIÇÃO	LOCALIZAÇÃO
Prego de aço em betão PK19 + 151 Lado direito	
DATA	<u>Abril / 1999</u>
OPERADOR	<u>Paulo Veloso</u>



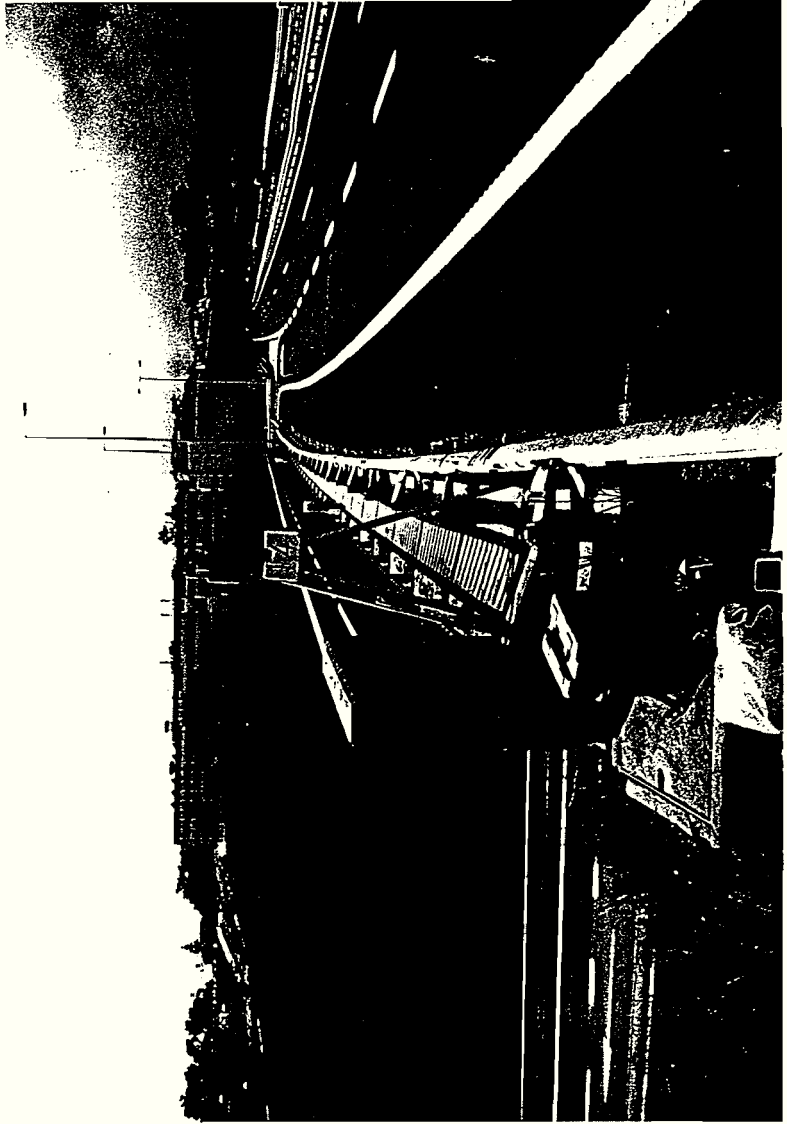


IDENTIFICAÇÃO DOS VÉRTICES DE APOIO

LEVANTAMENTO A5 - A. E. DA COSTA DO ESTORIL CARCAVELOS/ALVIDE

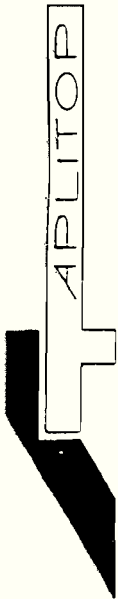
VÉRTICE

CA14

<p>M= <u>-109.129,782</u></p> <p>P= <u>-104.843,491</u></p>	<p>N= <u>76,873</u></p> <p>N'= _____</p>
<p>DESCRIÇÃO</p> <p>Prego de aço em betão PK19 + 629 Lado esquerdo</p>	<p>LOCALIZAÇÃO</p> 

DATA Abril / 1999
OPERADOR Paulo Veloso



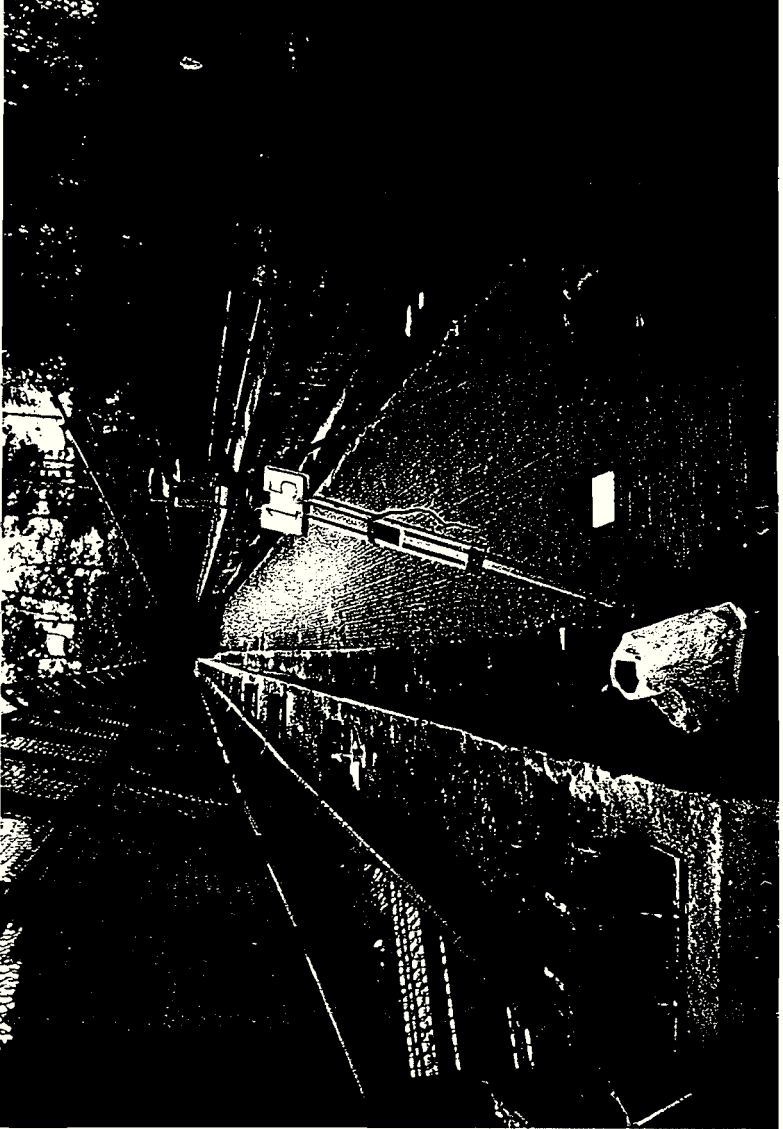


IDENTIFICAÇÃO DOS VÉRTICES DE APOIO

LEVANTAMENTO A5 - A. E. DA COSTA DO ESTORIL CARCAVELOS/ALVIDE

VÉRTICE

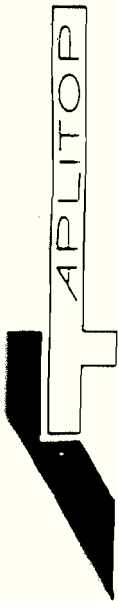
CA15

M= <u>-109.638,668</u> P= <u>-104.692,534</u>	N= <u>92,401</u> N'= _____
DESCRIÇÃO	LOCALIZAÇÃO
Prego de aço em betão PK20 + 154 Lado esquerdo	

DATA Abril / 1999

OPERADOR Paulo Veloso



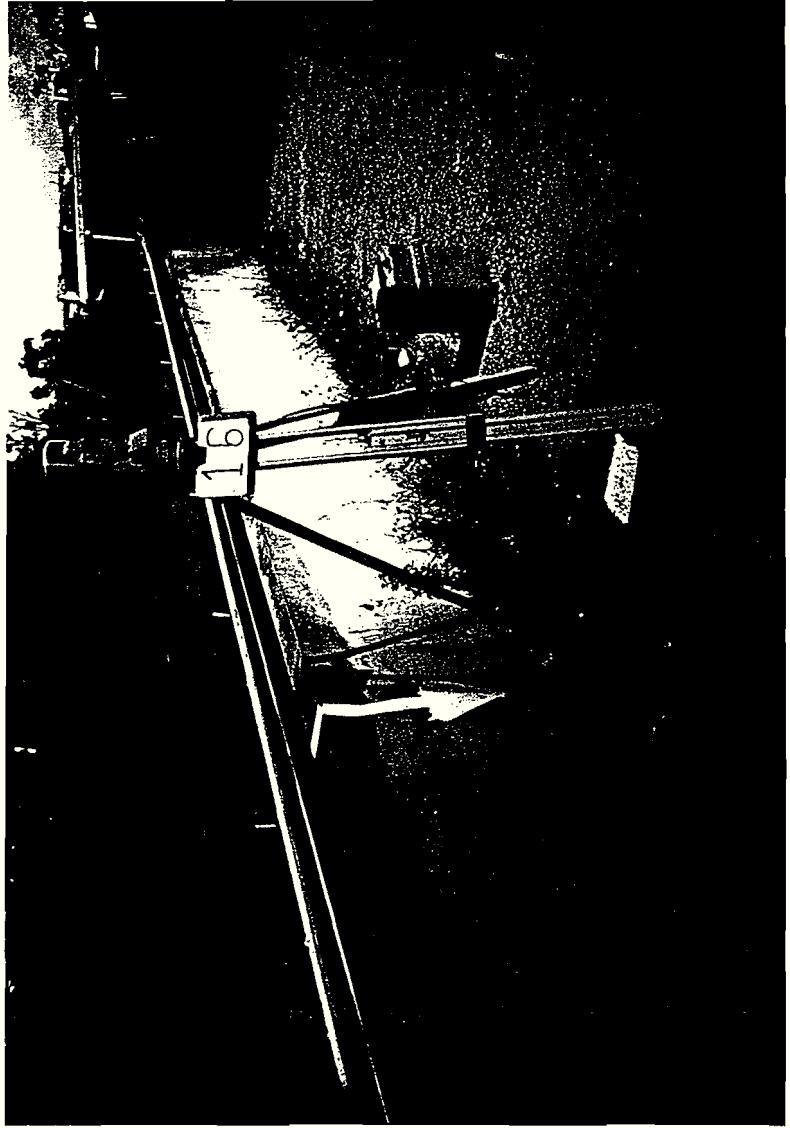


IDENTIFICAÇÃO DOS VÉRTICES DE APOIO

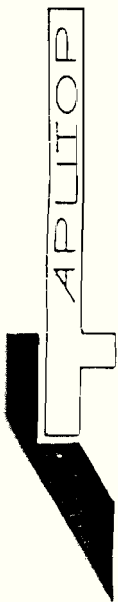
LEVANTAMENTO A5 - A. E. DA COSTA DO ESTORIL CARCAVELOS/ALVIDE

VÉRTICE

CA16

M= <u>-109.867,310</u>	N= <u>98,535</u>
P= <u>-104.397,149</u>	N'= _____
DESCRIÇÃO	LOCALIZAÇÃO
Prego de aço em betão PK20 + 523 Lado esquerdo	
DATA <u>Abril / 1999</u>	OPERADOR <u>Paulo Veloso</u>



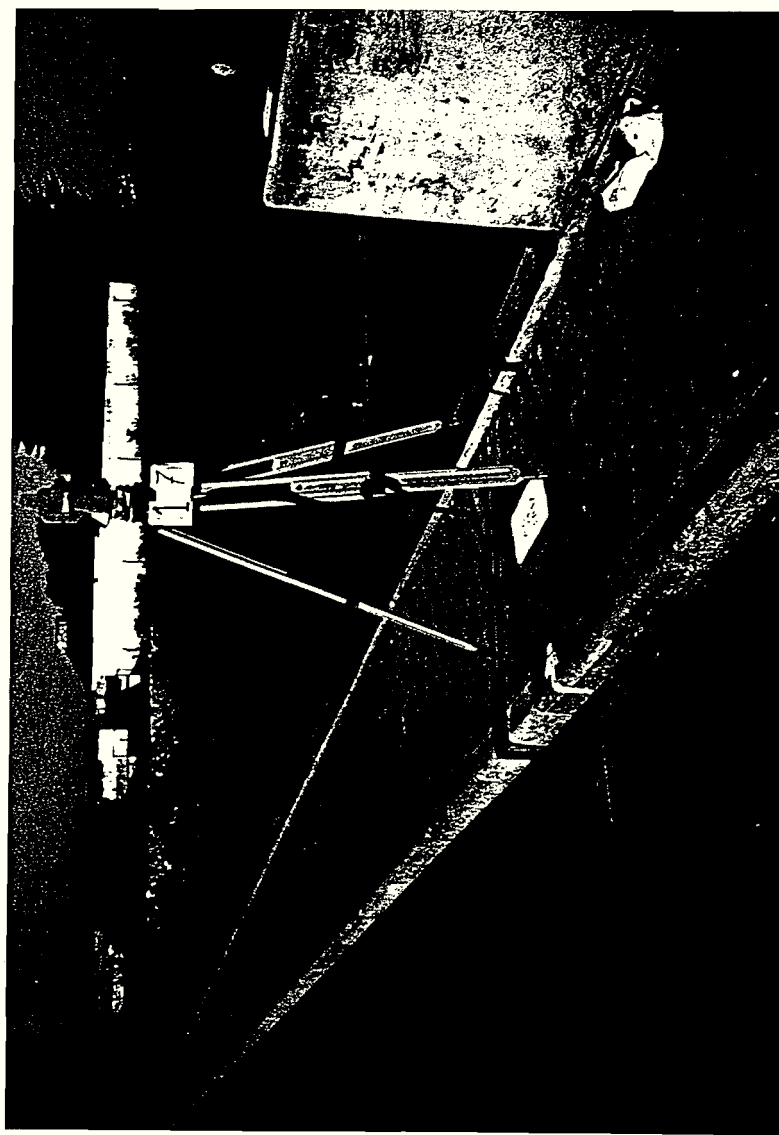


IDENTIFICAÇÃO DOS VÉRTICES DE APOIO

LEVANTAMENTO A5 - A. E. DA COSTA DO ESTORIL CARCAVELOS/ALVIDÉ

VÉRTICE CA17

M= -110.093,491 N= 111,335
P= -104.008,150 N'= _____

DESCRIÇÃO	LOCALIZAÇÃO
<p>Prego de aço em betão PK20 + 970 Lado direito</p> <p>DATA <u>Abril / 1999</u> OPERADOR <u>Paulo Veloso</u></p>	






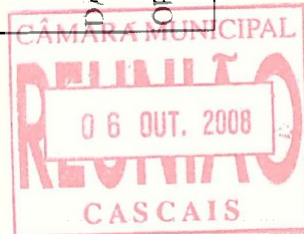
IDENTIFICAÇÃO DOS VÉRTICES DE APOIO

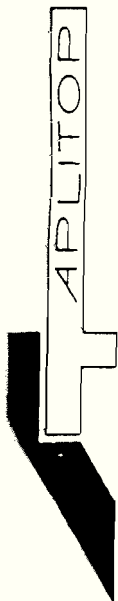
LEVANTAMENTO A5 - A. E. DA COSTA DO ESTORIL CARCAVELOS/ ALVIDE

VÉRTICE

CA18

<p>M= <u>-110.301,252</u></p> <p>N= <u>102,423</u></p> <p>P= <u>-103.845,342</u></p> <p>N'= _____</p>	
DESCRIÇÃO	LOCALIZAÇÃO
<p>Prego de aço em betão PK21 + 227 Lado direito</p> <p>DATA <u>Abril / 1999</u></p> <p>OPERADOR <u>Paulo Veloso</u></p>	





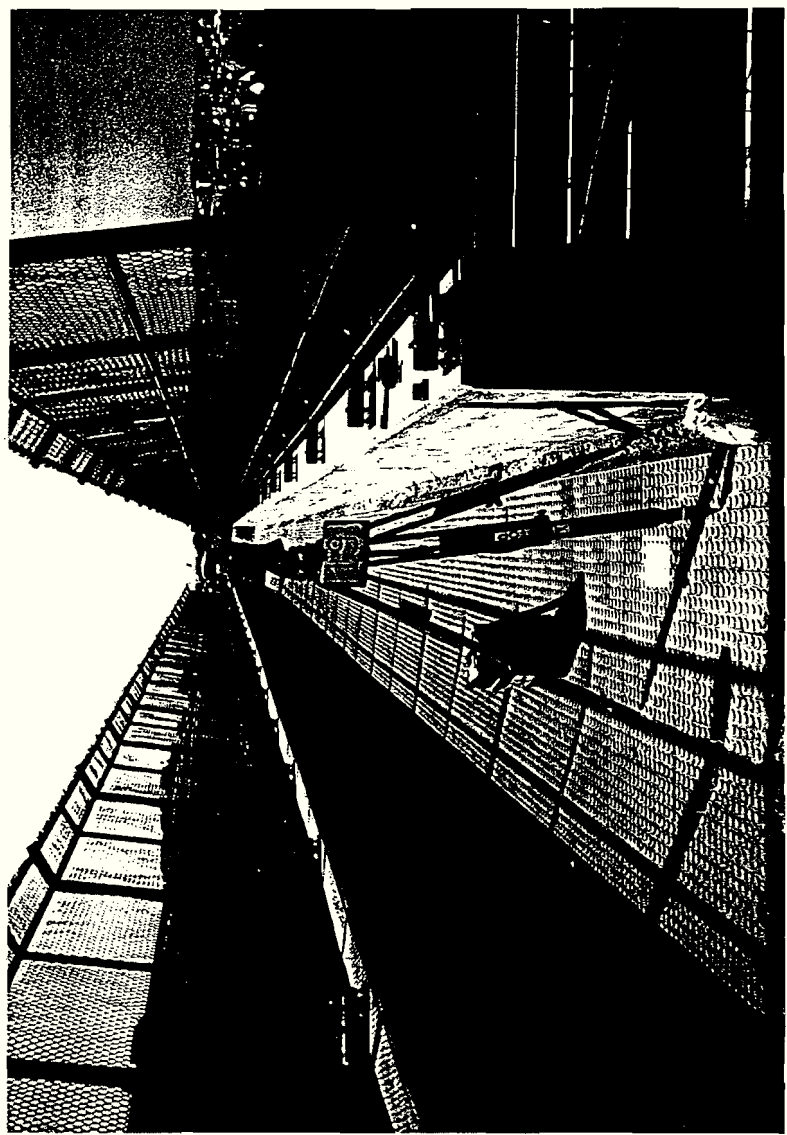
IDENTIFICAÇÃO DOS VÉRTICES DE APOIO

LEVANTAMENTO A5 - A. E. DA COSTA DO ESTORIL CARCAVELOS/ALVIDE

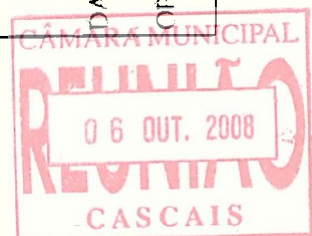
VÉRTICE

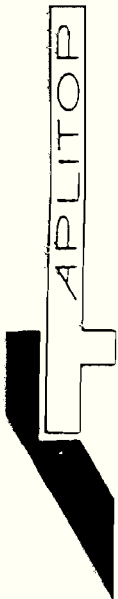
CA19

M=	-110.741,312	N=	95,350
P=	-103.712,030	N'=	

DESCRIÇÃO	LÓCALIZAÇÃO
Prego de aço em betão PK21 + 682 Lado direito	

DATA Abril / 1999
OPERADOR Paulo Veloso



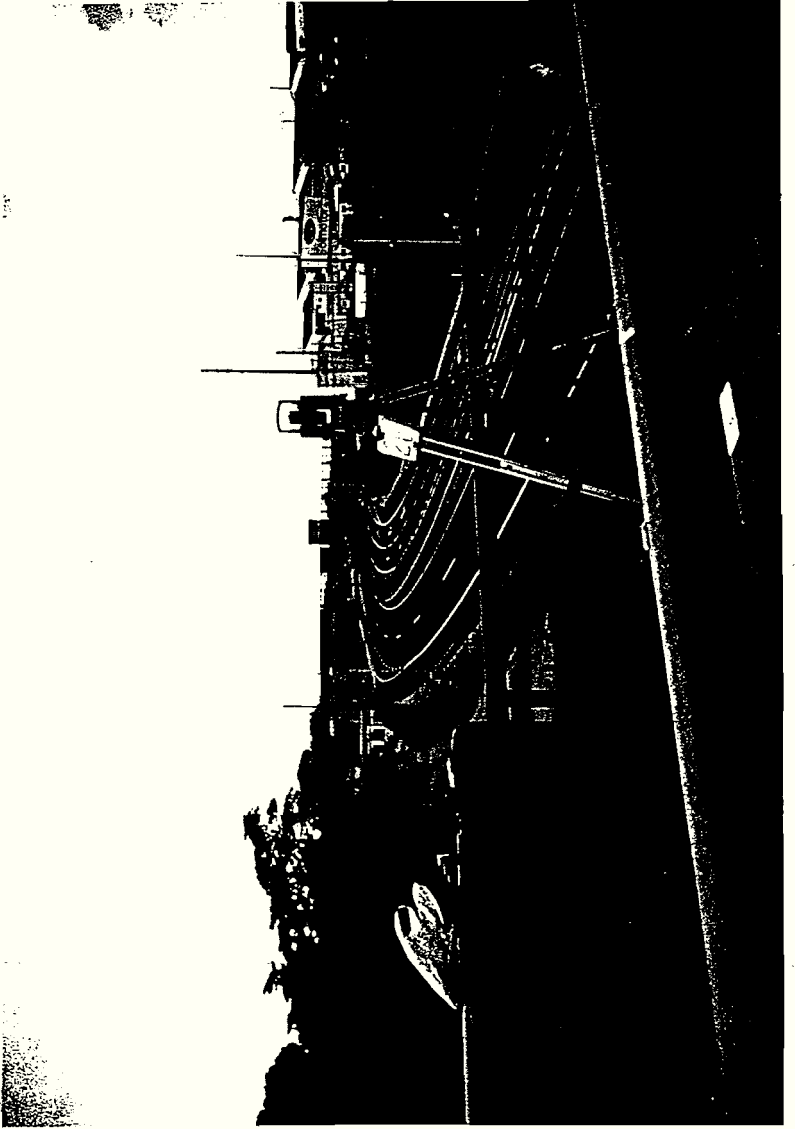


IDENTIFICAÇÃO DOS VÉRTICES DE APOIO

LEVANTAMENTO A5 - A. E. DA COSTA DO ESTORIL CARCAVELOS/ALVIDE

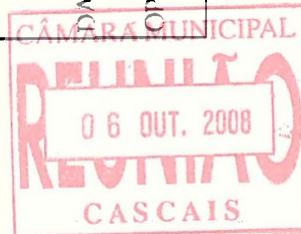
VÉRTICE

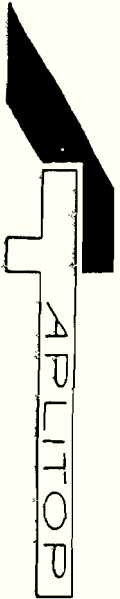
CA20

M= <u>-111.172,292</u>	N= <u>101,937</u>
P= <u>-103.876,782</u>	N'= <u>0</u>
DESCRIÇÃO	LOCALIZAÇÃO
Prego de aço em betão PK22 + 140 Lado esquerdo	

DATA Abril / 1999

OPERADOR Paulo Veloso





IDENTIFICAÇÃO DOS VÉRTICES DE APOIO

LEVANTAMENTO A5 - A. E. DA COSTA DO ESTORIL CARCAVELOS/ALVIDE

VÉRTICE ÇA21



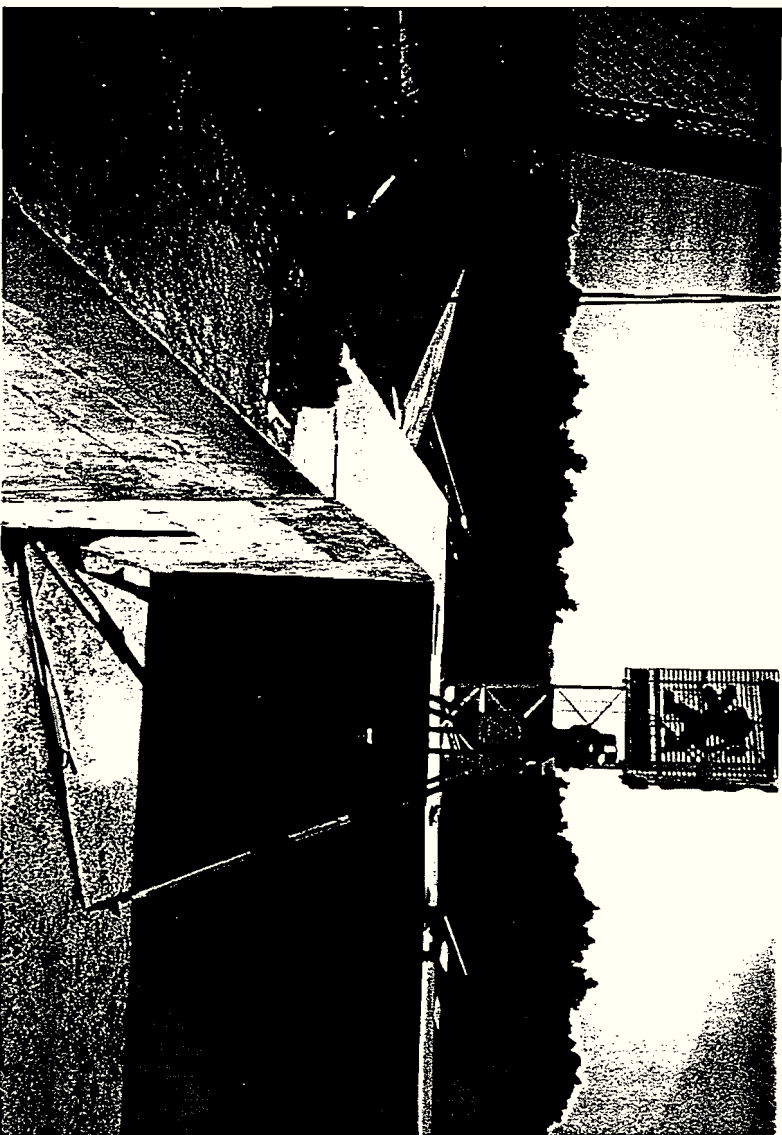
M= -111,409,046
P= -103,914,324

N= 107,720
N'= _____

DESCRIÇÃO

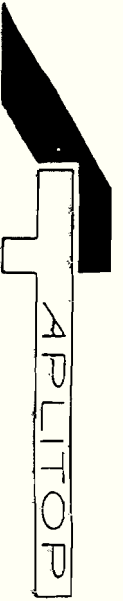
LOCALIZAÇÃO

Prego de aço em betão
PK22 + 370
Lado esquerdo



DATA Abril / 1999

OPERADOR Paulo Veloso



IDENTIFICAÇÃO DOS VÉRTICES DE APOIO

LEVANTAMENTO A5 - A. E. DA COSTA DO ESTORIL CARCAVELOS/ALVIDE

VÉRTICE CA22



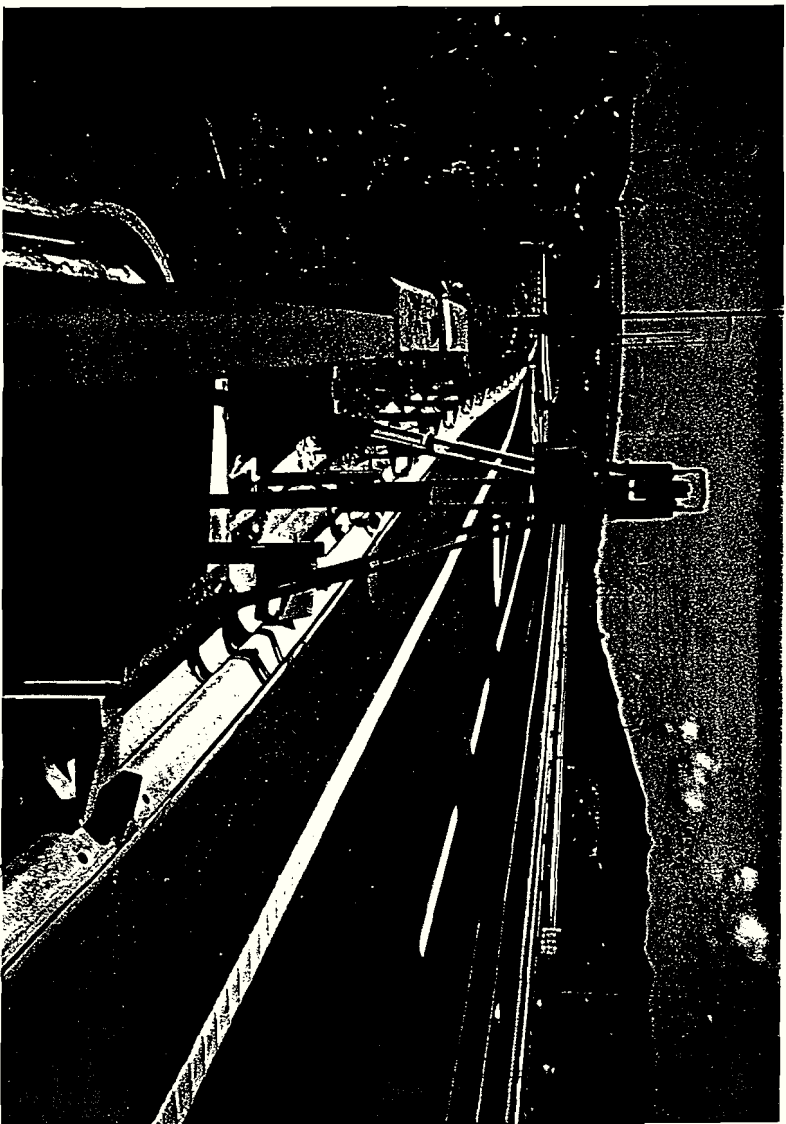
M= -111.671,208
P= -103.803,574

N= 107,349
N'= _____

DESCRIÇÃO

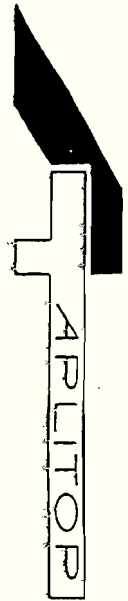
LOCALIZAÇÃO

*Prego de aço em betão
PK22 + 646
Lado esquerdo*



DATA Abril / 1999

OPERADOR Paulo Veloso



IDENTIFICAÇÃO DOS VÉRTICES DE APOIO

LEVANTAMENTO A5 - A E DA COSTA DO ESTORIL CARCAVELOS/ ALVIDE

VÉRTICE CA23



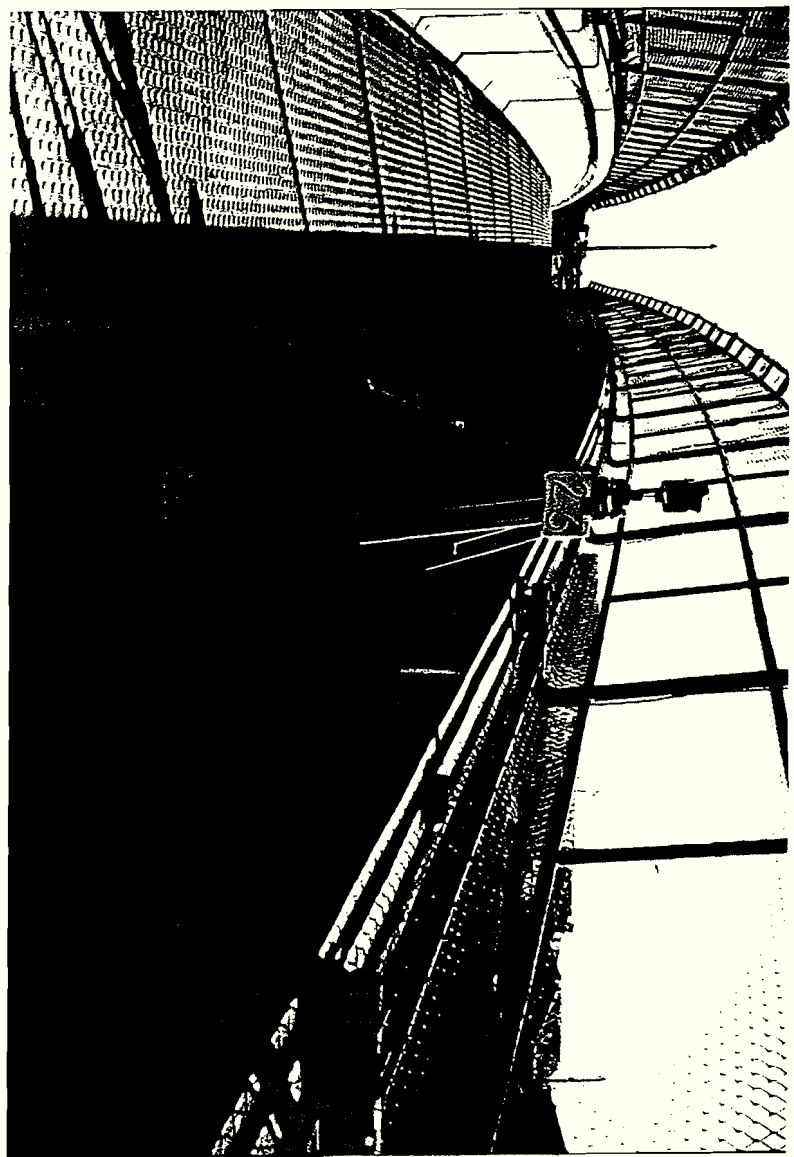
M= -111.847,710
P= -103.677,680

N= 112,385
N'=

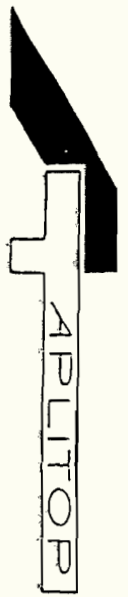
DESCRIÇÃO

LOCALIZAÇÃO

Prego de aço em betão
PK22 +857
Lado direito



DATA Abri / 1999
OPERADOR Paulo Veloso



IDENTIFICAÇÃO DOS VÉRTICES DE APOIO

LEVANTAMENTO A5 - A. E. DA COSTA DO ESTORIL CARCAVELOS/ALVIDE

VÉRTICE CA24



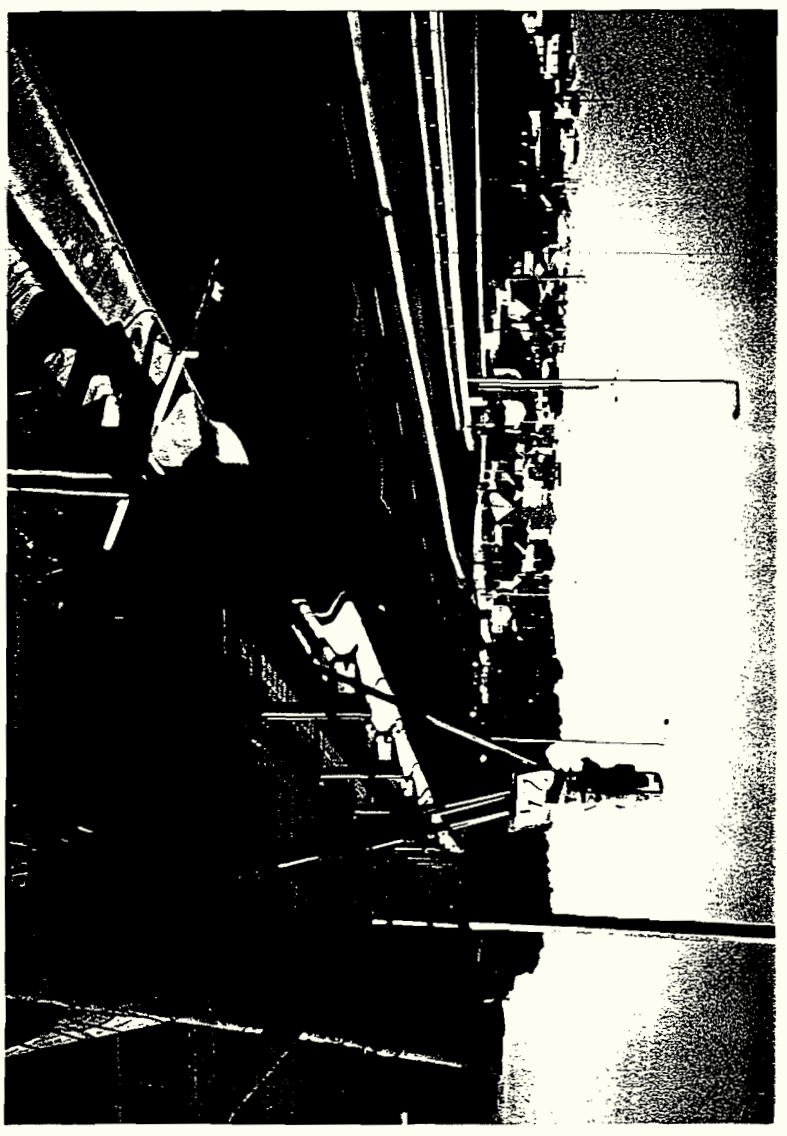
M= -112.358,330
P= -103.743,966

N= 102,195
N'=

DESCRIÇÃO

LOCALIZAÇÃO

Prego de aço em betão
PK23 + 368
Ladc direito



DATA Abril / 1999
OPERADOR Paulo Veloso

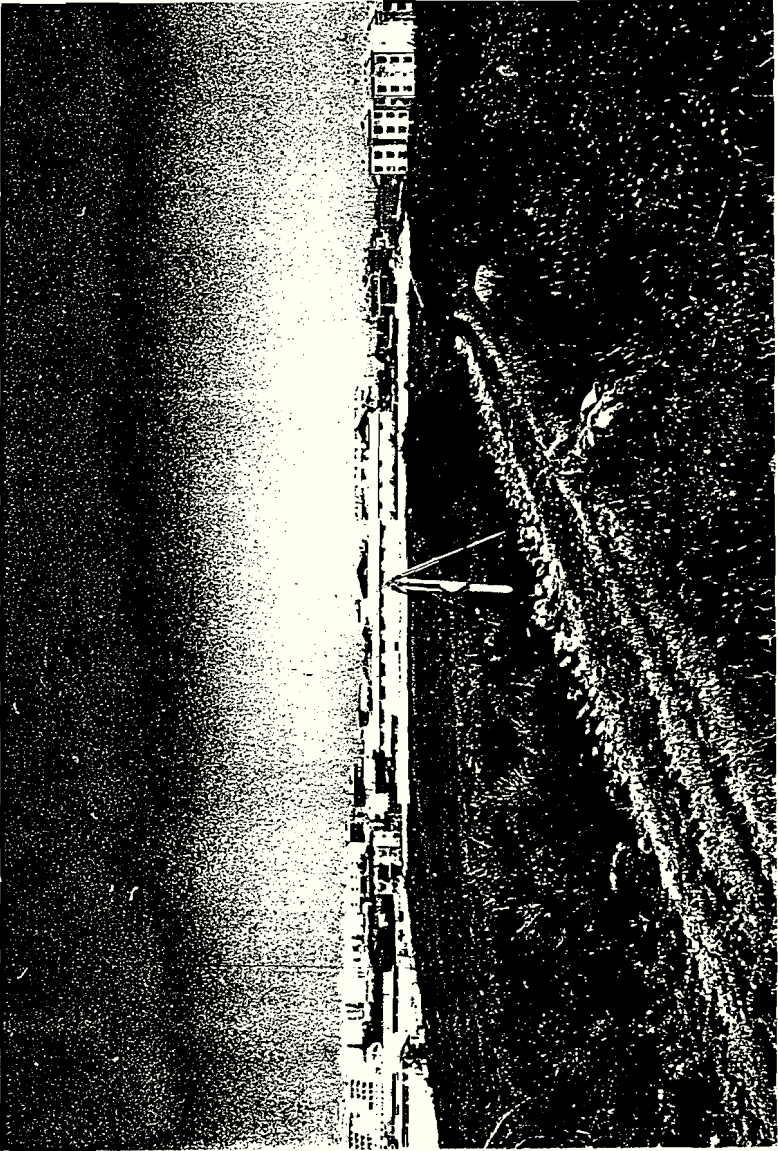


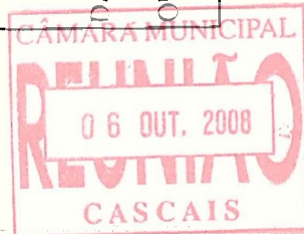
IDENTIFICAÇÃO DOS VÉRTICES DE APOIO

LEVANTAMENTO A5 - A. E. DA COSTA DO ESTORIL CARCAVELOS/ALVIDE

VÉRTICE

DP1

M= <u>-103.676,922</u>	N= <u>96,724</u>
P= <u>-105.416,226</u>	N'= _____
DESCRIÇÃO	LOCALIZAÇÃO
Prego de aço cravado em rocha	
DATA <u>Abril / 1999</u>	OPERADOR <u>Paulo Veloso</u>





BRISA SA - A5 - LANÇO ESTÁDIO NACIONAL / CASCAIS - NÓ DE CARCAVELOS / NÓ DE ALCABIDECHE - ALARGAMENTO E BENEFICIAÇÃO PARA 2x3 VIAS
PROJECTO DE EXECUÇÃO N.º 1 - TERRAPLENAGENS - PARTE 1.3 - TOPOGRAFIA E ELEMENTOS DE IMPLANTAÇÃO

ANEXO 2 – Cálculo das Poligonais de Implantação

0200_111000_1E_01A



APLITOP - TOPOGRAFIA APLICADA, LDA.

CARTOGRAFIA CLÁSSICA E AEROFOTOGRAMÉTRICA
TOPOGRAFIA APLICADA A PROJECTOS E OBRAS
ESTRADAS, CAMINHOS DE FERRO E CADASTRO
ENERGIA, AMBIENTE E RECURSOS NATURAIS
LEVANTAMENTOS ARQUITECTÓNICOS
DESENHO ASSISTIDO POR COMPUTADOR



Alvarás do IPCC 19/96/CT e 11/97/CD

APLITOP

LEVANTAMENTO DE: A5
CARCAV ALVIDE

POLIGONAL: PA BICESSE

VERTICE	MERIDIANA	PERPENDICULAR	COTA(V)	COTA(T)
N.	M	P	Nv	Nt
1 PENASALVAS	-102495.720	-104719.190	105.400	105.400
2 DP1	-103676.922	-105416.226	96.724	96.724
3 CA0	-103913.288	-105096.794	78.169	78.169
4 CA1	-104294.103	-105955.650	76.820	76.820
5 CA2	-104499.886	-105979.218	79.257	79.257
6 CA3	-104873.903	-105962.317	83.584	83.584
7 CA4	-105384.221	-105899.967	70.346	70.346
8 CA5	-105667.128	-105839.875	72.229	72.229
9 CA6	-106010.036	-105562.717	87.907	87.907
10 CA7	-106367.643	-105302.002	92.686	92.686
11 CA8	-106562.671	-104994.670	96.074	96.074
12 CA9	-107085.194	-104696.278	69.885	69.885
13 CA10	-107406.289	-104689.635	57.600	57.600
14 CA11	-107869.625	-104800.371	76.246	76.246
15 BICESSE	-108211.800	-103975.700	131.820	131.820

ERRO FECHO ANGULAR= -0.0033 GR TOLERANCIA ANGULAR= 0.0367 GR

ERRO FECHO LINEAR = 0.146 M
ERRO FECHO EM M = -0.097 M
ERRO FECHO EM P = -0.109 M
ERRO FECHO EM N = 0.035 M TOLERANCIA EM COTA= 0.312 M

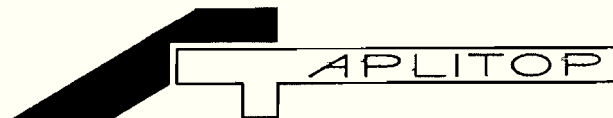
COMPRIMENTO TOTAL= 7216.905 M
PRECISAO = 1: 49302





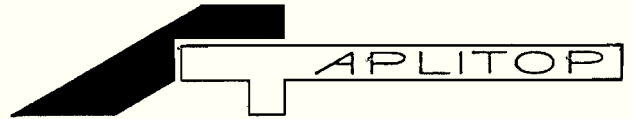
PENASALVAS	1	0.0000	130.3779
DP1	2	38.2561	201.2951
CA0	3	208.6760	69.8139
CA1	4	90.8168	293.3190
CA2	5	58.1176	268.2518
CA3	6	164.2804	369.1448
CA4	7	7.0864	212.6704
CA5	8	156.0396	385.9888
CA6	9	398.5393	195.3691
CA7	10	200.9383	24.8352
CA8	11	194.5671	363.5975
CA9	12	327.5882	95.8739
CA10	13	177.0203	360.7682
CA11	14	23.7669	313.6621
BICESSE	15	174.9589	0.0000





LINHA	1	0.235 1.530	1.530 0.000	1371.422 1371.422	100.3480 99.6743
LINHA	2	1.530 1.685	1.685 1.530	535.818 535.818	102.1899 97.8173
LINHA	3	1.685 1.720	1.720 1.685	385.298 385.298	100.2221 99.7883
LINHA	4	1.720 1.585	1.585 1.720	207.120 207.119	99.2956 100.7113
LINHA	5	1.585 1.610	1.610 1.585	374.385 374.385	99.2636 100.7446
LINHA	6	1.610 1.605	1.605 1.610	514.227 514.227	101.6455 98.3667
LINHA	7	1.605 1.666	1.666 1.605	269.194 269.193	99.5750 100.4314
LINHA	8	1.666 1.650	1.650 1.666	441.134 441.133	97.7497 102.2717
LINHA	9	1.650 1.700	1.700 1.650	442.527 442.526	99.3132 100.7033
LINHA	10	1.700 1.665	1.665 1.700	363.953 363.953	99.4189 100.5927
LINHA	11	1.665 1.690	1.690 1.665	602.216 602.216	102.7713 97.2383
LINHA	12	1.690 1.694	1.694 1.690	321.361 321.362	102.4362 97.5700
LINHA	13	1.694 1.706	1.706 1.694	476.698 476.696	97.5132 102.4986
LINHA	14	1.706 0.235	0.000 1.706	894.337 894.337	96.1673 103.8583





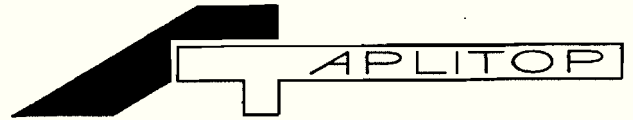
APLITOP

LEVANTAMENTO DE: A5
CARCAV_ALVIDE

RUMO INICIAL=135.6824
RUMO FINAL= 0.0015

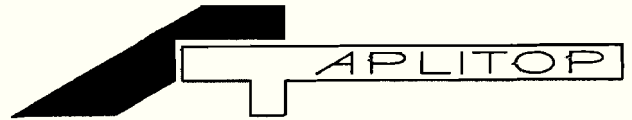
ESTACAO		LEIT. RETAG.	LEIT. FRENTE	RUMOS
PNAS&LVAS	1	0.0000	130.3779	266.0605
DP1	2	38.2561	201.2951	229.0998
CA0	3	208.6760	69.8139	290.2379
CA1	4	90.8168	293.3190	292.7403
CA2	5	58.1176	268.2518	302.6748
CA3	6	164.2604	369.1446	307.7394
CA4	7	7.0664	212.6704	313.3236
CA5	8	156.0396	355.9886	343.2731
CA6	9	398.5393	195.3691	340.1031
CA7	10	280.9383	24.6352	364.0002
CA8	11	194.5671	363.5975	333.0309
CA9	12	327.5662	95.8739	301.3168
CA10	13	177.0203	360.7662	265.0649
CA11	14	23.7669	310.6621	374.9604
VICESSE	15	174.9589	0.0000	





M INICIAL=-102495.720
P INICIAL=-104719.190
Z INICIAL= 105.400
M FINAL=-108211.800
P FINAL=-103975.700
Z FINAL= 131.620



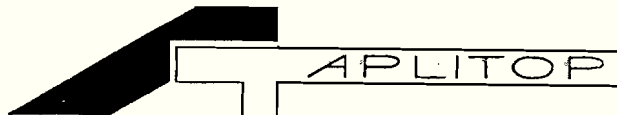


	DNF	DNR
1	-8.665	8.673
2	-18.564	18.542
3	-1.369	1.326
4	2.430	-2.446
5	4.314	-4.345
6	-13.267	13.204
7	1.875	-1.893
8	15.619	-15.741
9	4.737	-4.825
10	3.366	-3.414
11	-26.208	26.166
12	-12.292	12.274
13	18.620	-18.677
14	55.569	-55.567



APLITOP - TOPOGRAFIA APLICADA, LDA.

CARTOGRAFIA CLÁSSICA E AEROFOTOGRAFÉTRICA
 TOPOGRAFIA APLICADA A PROJECTOS E OBRAS
 ESTRADAS, CAMINHOS DE FERRO E CADASTRO
 ENERGIA, AMBIENTE E RECURSOS NATURAIS
 LEVANTAMENTOS ARQUITECTÓNICOS
 DESENHO ASSISTIDO POR COMPUTADOR



Alvarás do IPCC 19/96/CT e 11/97/CD

APLITOP

LEVANTAMENTO DE: AE5
 CARCAVELOS_ALVIDE

POLIGONAL: A5CA11_JOAOCIDREIRA

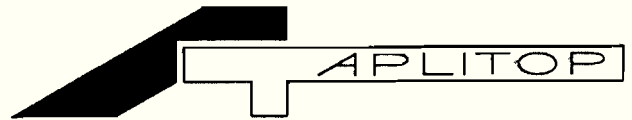
VERTICE	MERIDIANA	PERPENDICULAR	COTA(V)	COTA(T)
N.	M	P	Nv	Nt
1 CA11	-107869.625	-104800.371	76.246	76.246
2 CA12	-108322.542	-104771.777	71.232	71.232
3 CA13	-108656.403	-104762.887	84.324	84.324
4 CA14	-109129.782	-104843.491	76.873	76.873
5 CA15	-109638.668	-104692.534	92.401	92.401
6 CA16	-109867.310	-104397.149	98.535	98.535
7 CA17	-110095.491	-104000.150	111.335	111.335
8 CA18	-110301.252	-103845.342	102.423	102.423
9 CA19	-110741.512	-103712.030	95.350	95.350
10 CA20	-111172.292	-103676.762	101.937	101.937
11 CA21	-111469.046	-103914.324	107.720	107.720
12 CA22	-111671.208	-103805.574	107.349	107.349
13 CA23	-111847.710	-103677.680	112.365	112.365
14 CA24	-112356.330	-103743.966	102.195	102.195
15 JOAOCIDREIRA	-112277.080	-104317.660	114.950	114.950

ERRO FECHO ANGULAR= 0.0054 GR TOLERANCIA ANGULAR= 0.0387 GR

ERRO FECHO LINEAR = 0.294 M
 ERRO FECHO EM M = -0.098 M
 ERRO FECHO EM P = -0.277 M
 ERRO FECHO EM N = 0.074 M TOLERANCIA EM COTA= 0.312 M

COMPRIMENTO TOTAL= 5642.959 M
 PRECISAO = 1: 19164





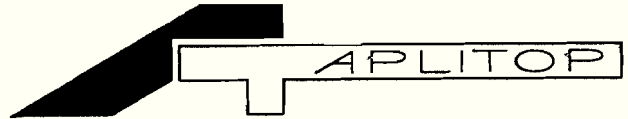
CA11	1	0.0000	242.7149
CA12	2	261.3673	59.0488
CA13	3	177.4683	365.0361
CA14	4	348.0846	177.1788
CA15	5	342.0865	181.7915
CA16	6	101.5357	309.9432
CA17	7	117.1533	292.9962
CA18	8	379.0761	155.4898
CA19	9	399.1414	157.1707
CA20	10	39.7956	253.0306
CA21	11	28.6075	254.2630
CA22	12	47.3818	261.3787
CA23	13	266.2787	16.6202
CA24	14	119.0710	218.5358
JOACIDREIRA	15	391.0431	0.0000





LINHA	1	1.706 1.645	1.715 1.680	453.796 453.797	100.7056 99.2969
LINHA	2	1.645 1.595	1.615 1.645	334.196 334.198	97.5144 102.4899
LINHA	3	1.595 1.584	1.584 1.595	400.198 400.198	100.9944 99.0176
LINHA	4	1.584 1.600	1.600 1.584	530.965 530.967	98.1395 101.8691
LINHA	5	1.600 1.619	1.619 1.600	373.513 373.512	98.9530 101.0522
LINHA	6	1.619 1.687	1.617 1.656	450.061 450.062	98.1916 101.8189
LINHA	7	1.687 1.605	1.605 1.687	264.062 264.061	102.1698 97.8340
LINHA	8	1.605 1.571	1.517 1.605	459.808 459.808	100.9989 99.0172
LINHA	9	1.571 1.665	1.625 1.692	461.397 461.398	99.0063 100.9095
LINHA	10	1.665 1.680	1.680 1.665	239.755 239.755	98.4592 101.5401
LINHA	11	1.680 1.676	1.676 1.650	264.556 264.557	100.0000 99.9210
LINHA	12	1.676 1.593	1.593 1.676	216.821 216.821	96.5455 101.4507
LINHA	13	1.593 1.582	1.582 1.593	514.947 514.947	101.2651 98.7445
LINHA	14	1.582 0.235	0.000 1.582	579.516 579.516	98.7750 101.2302





APLITOP

LEVANTAMENTO DE: A5
CARCAVELOS_ALVIDE

RUMO INICIAL= 61.2986
RUMO FINAL= 0.0015

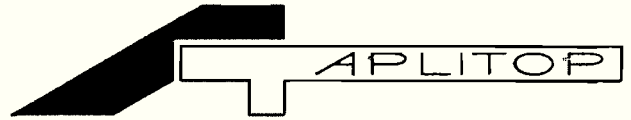
ESTACAO		LEIT. RETAG.	LEIT. FRENTE	RUMOS
CA11	1	0.0000	242.7149	304.0133
CA12	2	261.3673	59.0488	301.6945
CA13	3	177.4683	365.0361	289.2621
CA14	4	348.0846	177.1786	318.3560
CA15	5	342.0868	161.7915	358.0605
CA16	6	101.5357	309.9432	366.4678
CA17	7	117.1533	292.9962	342.3104
CA18	8	379.0761	155.4896	318.7236
CA19	9	399.1414	157.1707	276.7529
CA20	10	39.7956	253.0306	280.9877
CA21	11	28.8075	264.2630	325.4429
CA22	12	47.3518	261.3767	339.4396
CA23	13	265.2767	18.6202	291.7508
CA24	14	119.0710	218.3350	191.0446
JOROCIDREIRA	15	391.0431	0.0000	





M INICIAL--107869.625
P INICIAL--104800.371
Z INICIAL= 76.246
M FINAL--112277.080
P FINAL--104317.660
Z FINAL= 114.950





	DNF	DNR
1	-5.026	4.991
2	13.083	-13.110
3	-7.474	7.414
4	15.518	-15.552
5	6.133	-6.145
6	12.799	-12.812
7	-8.912	8.905
8	-7.054	7.078
9	6.582	-6.604
10	5.791	-5.761
11	-0.364	0.351
12	5.029	-5.047
13	-10.204	10.162
14	12.748	-12.777



Pm=105 500

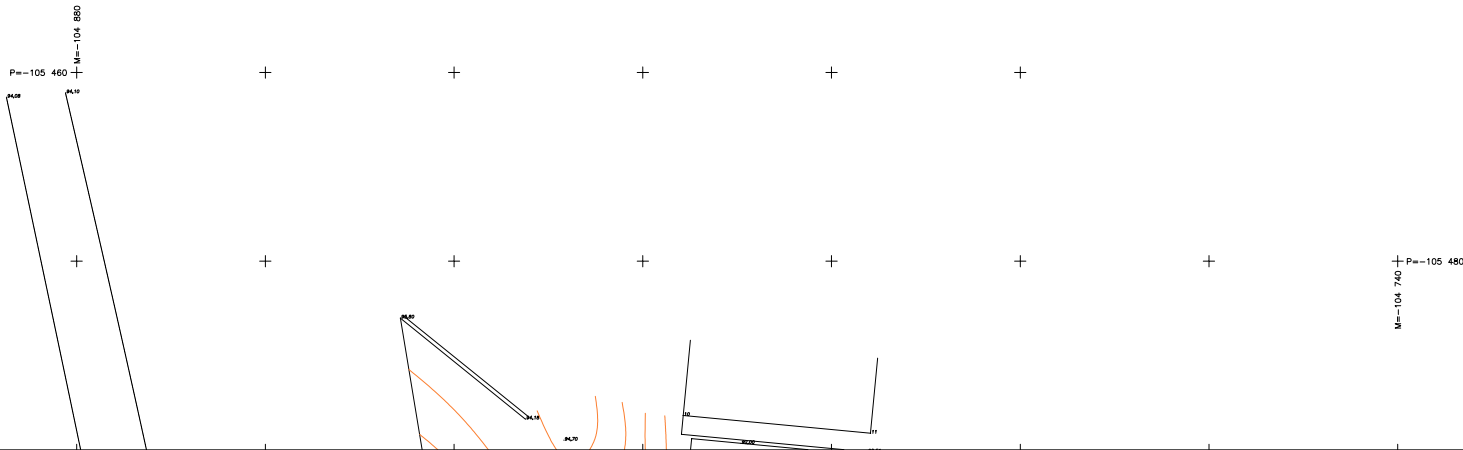


Folha complementar:
A5 AUTO-ESTRADA DA COSTA DO ESTORIL
 SUBLIÇÃO ESTÁDIO NACIONAL/CARVALHOS

Escala:
 1:500

Levante:	Verifica:	Substitui:
Carlos Oliveira	Frederico Almeida	Substituído por:

Desenho:	Organização:	Assinatura:
CENTRO DE COORDENAÇÃO OPERACIONAL	Levantamento Topográfico	02/2008
1/1	1/1	1/1



SIMBOLÓGIA	
	— LINHA CENTRAL
	— BORDA DA ESTRADA
	— CANAL DE DRENAGEM
	— VAZIO
	— VEGETAÇÃO
	— ÁRVORES
	— REDE ELÉTRICA
	— REDE DE TELECOMUNICAÇÃO
	— REDE DE ÁGUA
	— REDE DE ESGOTO
	— RESERVA DE ÁGUA



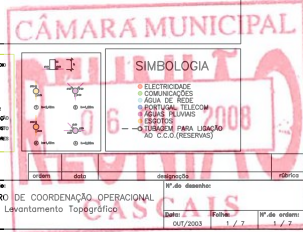
Nome complementar:
A5 AUTO-ESTRADA DA COSTA DO ESTORIL
 SUBLANÇO ESTÁDIO NACIONAL/CARCAVELOS

Escala:
 1:200

Desenhado por:
 Carlos Oliveira
 Verificado por:
 Frederico Almeida

Designado por:
 CENTRO DE COORDENAÇÃO OPERACIONAL
 Levantamento Topográfico

Data: 06/2004
 Folha: 1/2
 Nº de ordem: 1/2





M=104 660
M=105 660



IMPLANTAÇÃO
GRUPO ELECTROGENO DO C.C.O.

Passagem de conduta principal
com vólvulo de segurança

SIMBOLOGIA	
	ÁREA DE INTERVENÇÃO
	REDE ELECTRICA
	REDE DE AGUA
	REDE DE TELECOMUNICAÇÕES
	AGUA DE BEBIDA
	AGUA PLUVIAL
	ESTÁGIO DE TRATAMENTO DE ÁGUA RESIDUAL
	GRUPO ELECTROGENO
	GRUPO ELECTROGENO
	GRUPO ELECTROGENO



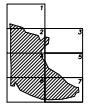
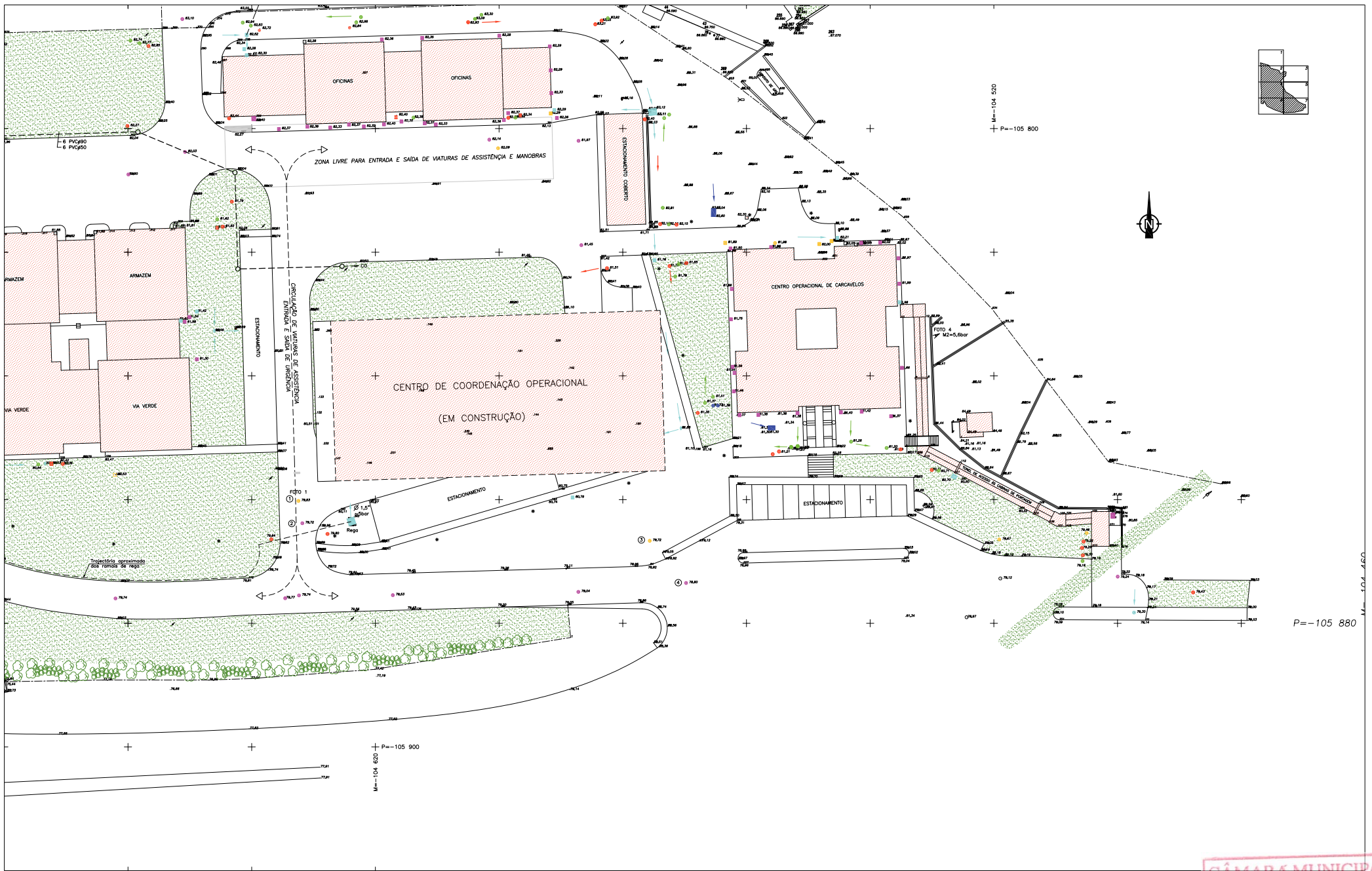
Subs complementares:
A5 AUTO-ESTRADA DA COSTA DO ESTORIL
SUBLANÇO ESTÁDIO NACIONAL/CARCAVELOS

Escala: 1:200

Desenhado: Carlos Oliveira
Revisado: Frederico Almeida
Verificado: [blank]
Aprovado: [blank]
Substituído por: [blank]

Centro de Coordenação Operacional
Levantamento Topográfico

17 de Setembro
06/2003
1/1



P=-105 800

SIMBOLOGIA	
	EDIFÍCIO
	ESTACIONAMENTO
	ÁREA VERDE
	VIA VERDE
	UTILIDADE PÚBLICA
	ALINHAMENTO
	NÍVEL
	ALÇURA
	ALÇURA DE PAVIMENTO
	ALÇURA DE TERRENO
	ALÇURA DE EIXO
	ALÇURA DE CIMA D'ÁGUA
	ALÇURA DE FUNDAMENTO
	ALÇURA DE COTA DE REFERÊNCIA
	ALÇURA DE COTA DE PROJETO
	ALÇURA DE COTA DE EXECUÇÃO
	ALÇURA DE COTA DE VERIFICAÇÃO
	ALÇURA DE COTA DE ENTREGA
	ALÇURA DE COTA DE ABANDONO
	ALÇURA DE COTA DE PROJEÇÃO
	ALÇURA DE COTA DE REALIZAÇÃO



Plano complementar:
A5 AUTO-ESTRADA DA COSTA DO ESTORIL
 SUBLINHAÇÃO ESTÁDIO NACIONAL/CARAVELOS

Escala:
 1:200

Levante:
 Carlos Oliveira
 Desenhado:
 Frederico Almeida

Verificado:
 Substituído:
 Aprovado:
 Substituído por:

Nome do projeto:
 Nome do cliente:
 Nome do responsável:
 Data:
 Folha:
 Nº de ordem:
 Nº de desenho:

