



Prefeitura Municipal de Ipauimir  
Governo Municipal  
CNPJ nº 07.520.141/0001-84



# ANEXO I

## PROJETOS E PLANILHAS ORÇAMENTÁRIAS

Tomada de Preços n. 2021.05.06.1

T

ESTADO DO CEARÁ



PREFEITURA MUNICIPAL DE IPAUMIRIM  
SEINFRA - SECRETARIA DE INFRAESTRUTURA



# PROJETO BÁSICO E EXECUTIVO

*PROPONENTE: PREFEITURA MUNICIPAL DE IPAUMIRIM - CEARÁ  
OBRA : RECUPERAÇÃO E/OU ADEQUAÇÃO EM ESTRADAS VICINAIS NO  
MUNICIPIO DE IPAUMIRIM - CEARÁ*

*Richardson Jorge Dantas  
Engenheiro Civil  
CREA 53913*



PREFEITURA MUNICIPAL DE IPAUMIRIM  
SEINFRA – SECRETARIA DE INFRAESTRUTURA

MEMORIAL DESCRITIVO

PROPONENTE: **PREFEITURA MUNICIPAL DE IPAUMIRIM**

OBRA : **RECUPERAÇÃO E/OU ADEQUAÇÃO EM ESTRADAS VICINAIS NO MUNICIPIO DE IPAUMIRIM - CEARÁ**

LOCAL: **SEDE – ZONA RURAL**

1.0 NORMAS E GENERALIDADES

1.1 OBJETIVO

Este caderno de encargos tem por objetivo estabelecer as condições técnicas através das normas e especificações para materiais e serviços que gerenciarão o desenvolvimento da obra de **RECUPERAÇÃO E/OU ADEQUAÇÃO EM ESTRADAS VICINAIS NO MUNICIPIO DE IPAUMIRIM - CEARÁ**, localizado na sede, zona RURAL em IPAUMIRIM/CE, pela PREFEITURA MUNICIPAL DE IPAUMIRIM.

1.2 HISTÓRICO DA OBRA - DISPOSIÇÕES GERAIS

As especificações foram elaboradas de acordo com o decreto N° 92.100 de 10.12.85 e destinam-se a regulamentar o fornecimento de materiais e a execução dos serviços.

Os serviços deverão ser executados por mão de obra qualificada e deverão obedecer rigorosamente as instruções contidas neste Caderno de Encargos, bem como as contidas nas disposições cabíveis do Decreto N° 92.100 de 10.12.85 e as normas e métodos da ABNT.

1.3 CONTRATO - DISPOSIÇÕES CONTRATUAIS

As disposições referentes a pagamento, paralisação da obra, prazos, reajustamento, multas e sanções, recebimento ou rejeição de serviços, responsabilidades por danos a terceiros e, de modo geral, as relações entre a secretaria de obras do município e a empreiteira, acham-se consubstanciadas no Edital de Licitação, no contrato e nos dispositivos legais concernentes à matéria.

Este caderno de encargos, os projetos, especificações e o orçamento da empreiteira fazem parte integrante do contrato, valendo como se nele estivessem transcritos, devendo esta circunstância constar do Edital de Licitação.

1.5 NORMAS

Fazem parte integrante deste caderno de encargos, independentemente de transcrições, todas as normas (NBRS) da Associação Brasileira de Normas Técnicas (ABNT) que tenham relação com os serviços objeto do contrato.

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**1.6 ASSISTÊNCIA TÉCNICA ADMINISTRATIVA**

A empreiteira se obriga a, sob as responsabilidades legais vigentes, prestar toda a assistência técnica e administrativa necessária a imprimir andamento conveniente às obras e serviços. **Além de obedecer ao gerenciamento dos resíduos da construção durante a obra de instalação em acordo com o código de posturas do município.**

A responsabilidade técnica da obra será de profissional pertencente ao quadro de pessoal da empresa, devidamente habilitado e destinado no CREA local.

**1.7 FISCALIZAÇÃO**

A Secretaria de Infraestrutura do Município fará fiscalizações periódicas, com autoridade para exercerem em nome da prefeitura ou órgão financiador, toda e qualquer ação de orientação geral.

A empreiteira é obrigada a facilitar execuções dos serviços contratados, facultando à fiscalização o acesso a todas as partes da obra. Obriga-se, ainda, a facilitar a vistoria de materiais em depósitos ou quaisquer dependências onde os mesmos se encontrem.

**1.8 MATERIAIS, MÃO DE OBRA E EQUIPAMENTOS**

Todo material a ser utilizado na obra deverá ser de primeira qualidade. A mão de obra deverá ser idônea, de modo a reunir uma equipe homogênea que assegure o bom andamento dos serviços. Deverão ter no canteiro todo equipamento mecânico e ferramental necessário ao desempenho dos serviços.

**1.9 DISPOSIÇÕES GERAIS**

Estas especificações têm por objetivo estabelecer e determinar condições e tipos de materiais a serem empregados, assim como fornecer detalhes construtivos acerca dos serviços que ocorrerão por ocasião da obra. Qualquer discrepância entre estas especificações e o projeto será dirimida pela fiscalização.

**1.10 INÍCIO**

Os serviços serão iniciados dentro de no máximo 05 (cinco corridos) dias a contar da data da assinatura do contrato e emissão da ordem de serviço.

**1.11 PRAZO**

O prazo para execução da obra será o que constar no contrato, de acordo com o estipulado nas instruções da licitação.

**1.12 SERVIÇOS EXTRAORDINÁRIOS**

Possíveis acréscimos de serviços a serem executados, deverão ser de prévio conhecimento e aprovação por escrito da fiscalização, que deles dará ciência à administração da Secretaria de Infraestrutura do Município ou órgão financiador. Para a execução de qualquer aditivo de serviços, a empreiteira deverá apresentar projetos com as alterações reivindicadas, bem como planilha orçamentária com memória de cálculo dos serviços acrescidos.

*Richardson Jorge Dantas*  
**Engenheiro Civil**  
CREA 53913





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É propósito também, deste Caderno, elaborar procedimentos e rotinas para a execução destes trabalhos, a fim de assegurar o cumprimento do Cronograma físico-financeiro, a qualidade da execução, a racionalidade, economia e segurança, tanto dos usuários, como dos funcionários da empresa contratada.

**II - DISPOSIÇÕES GERAIS**

1. Estas especificações foram elaboradas de acordo com o decreto Nº 92.100 de 10.12.85 e destinam-se a regulamentar o fornecimento de materiais e a execução dos serviços.
2. Os serviços serão executados por mão de obra qualificada e deverão obedecer rigorosamente as instruções contidas neste Caderno de Encargos, bem como as contidas nas disposições cabíveis do Decreto N º 92.100 de 10.12.85 e as normas e métodos da ABNT.
3. Integrarão o contrato a ser assinado entre as partes, independentemente de sua transcrição naquele instrumento, o Edital de Concorrência, este Caderno de Encargos e Especificações e as pranchas nele discriminadas.
4. A execução dos serviços terá a fiscalização técnica, através de profissional (is) devidamente habilitado (s) e designado(s).
5. A presença da fiscalização na obra não diminuirá a responsabilidade da empresa contratada em quaisquer ocorrências, atos, erros ou omissões verificadas no desenvolvimento dos trabalhos ou a ele relacionadas.
6. Quando, sob qualquer justificativa, se fizer necessária alguma alteração nas especificações, substituição de algum material por seu equivalente ou qualquer outra alteração na execução daquilo que está projetado, deverá ser apresentada solicitação escrita à fiscalização da obra, minuciosamente justificada, além dos catálogos e ensaios técnicos emitidos por laboratórios qualificados. Entende-se por equivalentes os materiais ou equipamentos que possuam mesma função, mesmas características físicas e mesmo desempenho técnico. As solicitações de equivalência deverão ser feitas em tempo hábil para que não prejudiquem o andamento dos serviços e não darão causa a possíveis prorrogações de prazos.
7. A Contratada deverá ter a frente dos serviços: responsável técnico devidamente habilitado; mestre de obras ou encarregado, que deverá permanecer no serviço durante todas as horas de trabalho; e pessoal especializado de comprovada competência. A substituição de qualquer empregado da contratada por solicitação da fiscalização deverá ser atendida com presteza e eficiência.
8. A empresa manterá no canteiro de obras um Diário de Obras para o registro de todas as ocorrências de serviço e troca de comunicações rotineiras entre a Contratada e o Contratante.
9. Caberá à Contratada a responsabilidade pelo cumprimento das prescrições referentes às leis trabalhistas, de previdência social, de segurança contra acidentes de trabalho, bem como a manutenção de seguro em companhia indicada ou sorteada pelo Instituto de Resseguros do Brasil, de forma que cubra todo o pessoal do serviço durante o período de execução.
10. A Contratada empregará boa técnica na execução dos serviços, com materiais de primeira qualidade, de acordo com o previsto no projeto e nas especificações.
11. Todas as despesas relativas à instalação da obra, execução dos serviços, materiais, mão de obra, equipamentos e ferramentas, óleos lubrificantes, combustíveis e fretes, transportes horizontais e verticais,

  
**Richardson Jorge Dantas**  
**Engenheiro Civil**  
**CREA 53913**

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### PREFEITURA MUNICIPAL DE IPAUMIRIM SEINFRA – SECRETARIA DE INFRAESTRUTURA

impostos, taxas e emolumentos, leis sociais etc., bem como providências quanto à legalização da obra perante os órgãos municipais, estaduais ou federais, correrão por conta da Contratada.

12. Quando exigido pela legislação devido ao tipo da obra ou serviços, a Contratada deverá obter todo e qualquer tipo de licença junto aos órgãos fiscalizadores e às concessionárias de serviços públicos para a execução destes serviços, bem como, após sua execução, os documentos que certifiquem que estão legalizados perante estes órgãos e concessionárias.

13. É vedada a sub-empregada global das obras ou serviços.

14. A Contratada ficará responsável por quaisquer danos que venha causar a terceiros ou ao patrimônio da Prefeitura municipal de Ipaumirim, reparando às suas custas os mesmos, durante ou após a execução dos serviços contratados, sem que lhe caiba nenhuma indenização por parte da Prefeitura municipal de Ipaumirim.

15. Os serviços serão pagos de acordo com o cronograma físico/financeiro e planilha orçamentária aprovados pela Prefeitura municipal de Ipaumirim, através da fiscalização da obra, não se admitindo o pagamento de materiais entregues, mas somente de serviços executados.

16. Os serviços rejeitados pela fiscalização devido ao uso de materiais que não sejam os especificados e/ou materiais que não sejam qualificados como de primeira qualidade ou serviços considerados como mal executados, deverão ser refeitos corretamente, com o emprego de materiais aprovados pela fiscalização e com a devida mão de obra qualificada e em tempo hábil para que não venham a prejudicar o cronograma global dos serviços, arcando a contratada com o ônus decorrente do fato.

17. No caso de dúvidas, erros, incoerências ou divergências que possam ser levantadas através deste Caderno de Encargos e Especificações ou projetos, a fiscalização deverá ser obrigatória e oficialmente consultada para que tome as devidas providências.

18. Todos os serviços e recomposições, não explicitos nestas especificações bem como nos desenhos, mas necessários para a execução dos serviços contratados e ao perfeito acabamento das áreas existentes, de forma a resultar num todo único e acabado, serão de responsabilidade da contratada.

19. Os locais afetados pelos serviços deverão ser mantidos, pela contratada, em perfeito estado de limpeza durante o prazo de execução da obra.

20. Deverá ser realizada, pelas firmas licitantes, minuciosa vistoria aos locais onde serão desenvolvidos os serviços, para que o proponente tenha conhecimento das condições ambientais e técnicas em que deverão se desenvolver os trabalhos, inclusive relativamente às instalações provisórias.

21. Qualquer pedido de esclarecimento em relação a eventuais dúvidas na interpretação do presente edital e seus anexos deverá ser encaminhado por escrito à Comissão Especial de Licitação.

#### 1.0 – SERVIÇOS PRELIMINARES

##### 1.1- PLACA DE OBRA EM CHAPA DE AÇO GALVANIZADO.

Deverá ser fornecida e instalada em chapa galvanizada nº 22 nas dimensões (2,00x3,00)m, no modelo e padrão determinados pela administração municipal, cuja estrutura será em sarrafo de madeira não aparelhada (2,5 x 7,0cm) em maçaranduba, Angelim ou equivalente da região e pontalete de madeira não aparelhada (7,5 x 7,5 cm) em Pinus, mista ou equivalente da região, sendo engastada no solo por meio de concreto magro para lastro, traço 1:4,5:4,5 (cimento/ areia média/ brita 1).

Deverá ser instalada até o 05º dia corrido, contados a partir do início da obra.

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CREA 53913



**PREFEITURA MUNICIPAL DE IPAUMIRIM  
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Ficará a cargo exclusivo da Contratada a instalação de uma Placa da Obra com a identificação dos responsáveis técnicos da empresa contratada.

**2.0 – ADEQUAÇÃO DE VIAS VICINAIS**

**2.1 – DESMATAMENTO DE JAZIDA.**

Deverá ser totalmente limpo o local da jazida para posterior remoção de material, com auxílio de trator de esteiras e servente.

**2.2 – INDENIZAÇÃO DE JAZIDA.**

Deverá ser indenizado o proprietário da propriedade onde será retirado o material a ser utilizado.

**2.3- LOCAÇÃO DA OBRA COM AUXÍLIO TOPOGRÁFICO**

Deverá ser locada a obra com auxílio de nível e teodolito.

**2.4 - ESCAVAÇÃO CARGA TRANSP. 1-CAT 3001 A 4000M**

A escavação, carga e transporte deverá ser conduzida com auxílio de máquinas e caminhão basculante apropriados para uma boa fluidez na obra.

**2.5- ESPALHAMENTO DE PIÇARRA**

Deverá ser usado o trator de esteiras com lâminas para espalhar a piçarra conforme indicado no projeto, com o abaloamento com vala lateral para o escoamento.

**2.6 – COMPACTAÇÃO MECÂNICA A 95% DO PROCTOR NORMAL**

A compactação deverá ocorrer após o espalhamento com auxílio de máquinas adequadas conforme norma.

**IPAUMIRIM, 26 DE ABRIL DE 2021.**

  
**Richardson Jorge Dantas**  
Engenheiro Civil  
CREA 53913





**ESTADO DO CEARÁ**  
**PREFEITURA MUNICIPAL DE IPAUMIRIM**

TOMADOR/PROPONENTE: PREFEITURA MUNICIPAL DE IPAUMIRIM/CE  
 PLANO DE TRABALHO : 1067509-63  
 EMPREENDIMENTO: RECUPERAÇÃO E/OU ADEQUAÇÃO EM ESTRADAS VICINAIS NO MUNICÍPIO DE IPAUMIRIM - CEARÁ  
 DATA: 26 DE ABRIL DE 2021  
 FONTE DE PREÇOS: COMPOSIÇÃO PRÓPRIA  
 SINAPI : JUNHO/2019-DESONARADO  
 SEINFRA : AGOSTO/2019- 26.1  
 BDI: 25,60%

**PLANILHA ORÇAMENTÁRIA**

ITEM	CÓD	DESCRIÇÃO	UND	QTD	UNIT	PREÇO		
						TOTAL SEM BDI	UNIT COM BDI	TOTAL COM BDI
1.0		SERVIÇOS PRELIMINARES						
1.1	74209/001 (SINAPI - NACIONAL)	PLACA DE OBRA EM CHAPA DE AÇO GALVANIZADO	M <sup>2</sup>	6,00	R\$ 344,59	R\$ 2.067,54	R\$ 432,81	R\$ 2.596,86
						R\$ 2.067,54		R\$ 2.596,86
<b>COMUNIDADE BANANEIRAS</b>								
<b>ADEQUAÇÃO DE VIAS VICINAIS</b>								
2.0								
2.1	C3160	DESMATAMENTO DE JAZIDA	M2	337,77	R\$ 0,33	R\$ 111,46	R\$ 0,41	R\$ 138,49
2.2	C2840	INDENIZAÇÃO DE JAZIDA	M3	3377,68	R\$ 1,12	R\$ 3.783,00	R\$ 1,41	R\$ 4.762,53
2.3	C2872	LOCAÇÃO DA OBRA COM AUXÍLIO TOPOGRÁFICO (ÁREA >5000 M2)	HA	3,38	R\$ 434,74	R\$ 1.469,42	R\$ 546,04	R\$ 1.845,62
2.4	C3168	ESCAVAÇÃO CARGA TRANSP. 1-CAT 3001 A 4000M	M3	3377,68	R\$ 15,47	R\$ 52.252,71	R\$ 19,43	R\$ 65.628,32
2.5	CXXXX	ESPALHAMENTO DE PIÇARRA	M3	3377,68	R\$ 3,41	R\$ 11.517,89	R\$ 4,28	R\$ 14.456,47
2.6	41721	COMPACTAÇÃO MECANICA A 95% DO PROCTOR NORMAL	M3	3377,68	R\$ 3,09	R\$ 10.437,03	R\$ 3,88	R\$ 13.105,40
						R\$ 79.571,51		R\$ 99.936,82
<b>COMUNIDADE SÃO VICENTE</b>								
<b>ADEQUAÇÃO DE VIAS VICINAIS</b>								
3.0								
3.1	C3160	DESMATAMENTO DE JAZIDA	M2	413,84	R\$ 0,33	R\$ 136,57	R\$ 0,41	R\$ 168,67



**Richardson Jorge Dantas**  
Engenheiro Civil  
CREA-CE 53913







# Cronograma Físico-Financeiro

Nº OPERAÇÃO 1087569-63	Nº SICOMV 854477	PROGRAMA DESENVOLVIMENTO REGIONAL, TERRITORIAL APOIO A PROJETOS DE DESENVOLVIMENTO SUSTENTÁVEL	AÇÃO / MODALIDADE APOIO A PROJETOS DE DESENVOLVIMENTO SUSTENTÁVEL	DATA ASSINATURA 31/12/2019
PROPOSTANTE / TOMADOR PREFEITURA MUNICIPAL DE IPAUMIRIM	MUNICÍPIO / UF IPAUMIRIM / CEARA	LOCALIDADE / ENDEREÇO RUA CORONEL GUSTAVO LIMA, 230, CENTRO.	OBJETO RECUPERAÇÃO E/OU ADEQUAÇÃO DE ESTRADAS VICINAIS NO MUC DE IPAUMIRIM	

Nº do Evento	Título dos Eventos	Mês 01	Mês 02	Mês 03	Mês 04	Mês 05	Mês 06	Mês 07	Mês 08	Mês 09
1	Administração Local	12,37%	11,48%	11,48%	10,55%	10,55%	10,55%	10,55%	11,23%	11,23%
2	SERVIÇOS PRELIMINARES	R\$ 35.905,40	R\$ 33.314,00	R\$ 33.314,29	R\$ 30.608,53	R\$ 30.608,53	R\$ 30.613,99	R\$ 30.613,99	R\$ 32.592,30	R\$ 32.592,59
3	BANANEIRAS	%	23,86%	35,34%	45,89%	55,43%	66,98%	77,54%	88,77%	100,00%
4	SÃO VICENTE	R\$	R\$ 69.219,39	R\$ 102.533,68	R\$ 133.142,21	R\$ 163.750,74	R\$ 194.364,73	R\$ 224.978,72	R\$ 257.571,02	R\$ 290.163,61
5	SERROTE									

A administração local será proporcional a execução dos demais eventos, independentemente de frentes de obra;

Ítem abater e número do período em que os eventos serão concluídos (medição por eventos)

1	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
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IPAUMIRIM / CEARÁ, 07 de abril de 2021  
Local e Data

*Richardson Jorge Dantas*  
Responsável Técnico: **Richardson Jorge Dantas**  
CREA / CAV: 53913

**Richardson Jorge Dantas**  
Engenheiro Civil  
CREA-CE 53913





**ESTADO DO CEARÁ**  
**PREFEITURA MUNICIPAL DE IPAUMIRIM**

**EMPREENDIMENTO: RECUPERAÇÃO E/OU ADEQUAÇÃO EM ESTRADAS VICINAIS NO MUNICÍPIO DE IPAUMIRIM - CEARÁ**  
**LOCAL: DIVERSAS ESTRADAS VICINAIS**

**RESUMO DO ORÇAMENTO**

ITEM	SERVIÇOS	% TOTAL	TOTAL
1.0	SERVIÇOS PRELIMINARES	0,89%	R\$ 2.596,86
2.0	COMUNIDADE BANANEIRAS	34,44%	R\$ 99.936,82
3.0	COMUNIDADE SÃO VICENTE	42,20%	R\$ 122.445,04
4.0	COMUNIDADE SERROTE	22,46%	R\$ 65.184,89
	<b>TOTAL</b>	<b>100,00%</b>	<b>R\$ 290.163,61</b>

  
RICHARDSON JORGE DANTAS  
ENGENHEIRO CIVIL  
CREA 53913



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PREFEITURA MUNICIPAL DE IPAUMIRIM  
TOMADOR/PROPOSTANTE: PREFEITURA MUNICIPAL DE IPAUMIRIM/CE  
EMPREENDIMENTO: RECUPERAÇÃO E/OU ADEQUAÇÃO EM ESTRADAS VICINAIS NO MUNICÍPIO DE IPAUMIRIM - CEARÁ



### MEMORIAL DE CÁLCULO DOS QUANTITATIVOS

1.0 1.0 SERVIÇOS PRELIMINARES										
1.1	74209/1	PLACA DE OBRA EM CHAPA DE AÇO GALVANIZADO								
		Comprimento	x	Altura	x	Quantidade	=	Área		
		3,00	x	2,00	x	1,00	=	6,00	M2	
						Total	=	6,00	M2	
SÍTIO BANANEIRA										
2.0 2.0 ADEQUAÇÃO DE VIAS VICINAIS										
2.1	C3160	DESMATAMENTO DE JAZIDA								
		Comprimento	x	Largura	x	Quantidade	=	Área		
		10,00	x	33,78	x	1,00	=	337,77	M2	
						Total	=	337,77	M2	
2.2	C2840	INDENIZAÇÃO DE JAZIDA								
2.4	C2895 (SEINFRA)	ESCAVAÇÃO CARGA TRANSP. 1-CAT 3001 A 4000M								
2.5	CXXXX	ESPALHAMENTO DE PIÇARRA								
2.6	41721	COMPACTAÇÃO MECÂNICA A 95% DO PROCTOR NORMAL								
		Comprimento	x	Largura MÉDIA	x	ALTURA	=	Área		
		6755,37	x	5,00	x	0,10	=	3377,68	M3	
						Total	=	3377,68	M3	
2.3	C2872	LOCAÇÃO DA OBRA COM AUXÍLIO TOPOGRÁFICO (ÁREA > 5000 M2)								
		Comprimento	x	Largura MÉDIA	x	FATOR DE CONVERSÃO	=	Área		
	2.4	6755,37	x	5,00	x	0,0001	=	3,38	HÁ	
						Total	=	3,38	HÁ	
SÍTIO SÃO VICENTE										
3.0 3.0 ADEQUAÇÃO DE VIAS VICINAIS										
3.1	C3160	DESMATAMENTO DE JAZIDA								
		Comprimento	x	Largura	x	Quantidade	=	Área		
		10,00	x	41,38	x	1,00	=	413,84	M2	
						Total	=	413,84	M2	
3.2	C2840	INDENIZAÇÃO DE JAZIDA								
3.4	C2895 (SEINFRA)	ESCAVAÇÃO CARGA TRANSP. 1-CAT 3001 A 4000M								
3.5	CXXXX	ESPALHAMENTO DE PIÇARRA								
3.6	41721	COMPACTAÇÃO MECÂNICA A 95% DO PROCTOR NORMAL								
		Comprimento	x	Largura MÉDIA	x	ALTURA	=	Área		
		8276,89	x	5,00	x	0,10	=	4138,44	M3	
						Total	=	4138,44	M3	
3.3	C2872	LOCAÇÃO DA OBRA COM AUXÍLIO TOPOGRÁFICO (ÁREA > 5000 M2)								
		Comprimento	x	Largura MÉDIA	x	FATOR DE CONVERSÃO	=	Área		
	3.4	8276,89	x	5,00	x	0,0001	=	4,14	HÁ	
						Total	=	4,14	HÁ	
SÍTIO SERROTE										
4.0 4.0 ADEQUAÇÃO DE VIAS VICINAIS										
4.1	C3160	DESMATAMENTO DE JAZIDA								
		Comprimento	x	Largura	x	Quantidade	=	Área		
		10,00	x	44,00	x	1,00	=	440,02	M2	
						Total	=	440,02	M2	

*Richardson Jorge Dantas*  
Engenheiro Civil  
CREA-CE 53913





4.2	C2840	INDENIZAÇÃO DE JAZIDA
4.4	C2895 (SEINFRA)	ESCAVAÇÃO CARGA TRANSP. 1-CAT 3001 A 4000M
4.5	CXXXX	ESPALHAMENTO DE PIÇARRA
4.6	41721	COMPACTAÇÃO MECÂNICA A 95% DO PROCTOR NORMAL

<b>SÍTIO SERROTE</b>	<b>Comprimento</b>	x	<b>Largura MÉDIA</b>	x	<b>ALTURA</b>	=	<b>Área</b>	
	4400,23	x	5,00	x	0,10	=	2200,11	M3
					<b>Total</b>	=	<b>2200,11</b>	<b>M3</b>

4.3	C2872	LOCAÇÃO DA OBRA COM AUXÍLIO TOPOGRÁFICO (ÁREA >5000 M2)
-----	-------	---

4.4	<b>Comprimento</b>	x	<b>Largura MÉDIA</b>	x	<b>FATOR DE CONVERSÃO</b>	=	<b>Área</b>	
	4400,23	x	5,00	x	0,0001	=	2,20	HÁ
					<b>Total</b>	=	<b>2,20</b>	<b>HÁ</b>

  
RICHARDSON JORGE DANTAS  
ENGENHEIRO CIVIL  
CREA 53913



ESTADO DO CEARÁ  
PREFEITURA MUNICIPAL DE IPAUMIRIM



TOMADOR/PROPONENTE: PREFEITURA MUNICIPAL DE IPAUMIRIM/CE  
EMPREENHIMENTO: RECUPERAÇÃO E/OU ADEQUAÇÃO EM ESTRADAS VICINAIS NO MUNICÍPIO DE IPAUMIRIM - CEARÁ  
LOCAL: DIVERSAS ESTRADAS VICINAIS

COMPOSIÇÕES ANALÍTICAS

1.0						
CANT	74209/1	PLACA DE OBRA EM CHAPA DE AÇO GALVANIZADO	M2	QUANT	PREÇO UNIT	PREÇO TOTAL
INSUMO	4417	SARRAFO DE MADEIRA NAO APARELHADA *2.5 X 7* CM, MACARANDUBA, ANGELIM OU EQUIVALENTE DA REGIAO	M	1,00	4,67	4,67
INSUMO	4491	PEÇA DE MADEIRA NATIVA / REGIONAL 7,5 X 7,5CM (3X3) NAO APARELHADA (P/FORMA)	M	4,00	4,98	19,92
INSUMO	4813	PLACA DE OBRA (PARA CONSTRUCAO CIVIL) EM CHAPA GALVANIZADA *N. 22*, DE *2,0 X 1,125* M	M2	1,00	272,50	272,50
INSUMO	5075	PREGO DE AÇO POLIDO COM CABECA 18 X 30 (2 3/4 X 10)	KG	0,11	12,71	1,39
COMPOSICAO	88262	CARPINTEIRO DE FORMAS COM ENCARGOS COMPLEMENTARES	H	1,00	17,18	17,18
COMPOSICAO	88316	SERVENTE COM ENCARGOS COMPLEMENTARES	H	2,00	13,32	26,64
COMPOSICAO	94962	CONCRETO MAGRO PARA LASTRO, TRAÇÃO 1:4,5:4,5 (CIMENTO/AREIA MÉDIA/ BRITA 1) - PREPARO MECÂNICO COM BETONEIRA 400 L. AF_07/2016	M3	0,01	229,58	2,29
					TOTAL	R\$ 344,59

CANT	41721	COMPACTAÇÃO MECÂNICA A 95% DO PROCTOR NORMAL	M3	SEM CADERNO TÉCNICO ATRIBUÍDO		
COMPOSICAO	5664	ROLO COMPACTADOR VIBRATÓRIO DE UM CILINDRO AÇO LISO, POTÊNCIA 80 HP, PESO OPERACIONAL MÁXIMO 5.1 T, IMPACTO DINÂMICO 16,15 / 9,5 T, LARGURA DE TRABALHO 1,68 M - CHP DIURNO. AF_06/2014	CHP	0,0043478	95,58	0,43
COMPOSICAO	5901	CAMINHÃO PIPA 10.000 L TRUCADO, PESO BRUTO TOTAL 23.000 KG, CARGA ÚTIL MÁXIMA 15.935 KG, DISTÂNCIA ENTRE EIXOS 4,8 M, POTÊNCIA 230 CV, INCLUSIVE TANQUE DE AÇO PARA TRANSPORTE DE ÁGUA - CHP DIURNO. AF_06/2014	CHD	0,0090522	174,86	1,68
COMPOSICAO	5903	CAMINHÃO PIPA 10.000 L TRUCADO, PESO BRUTO TOTAL 23.000 KG, CARGA ÚTIL MÁXIMA 15.935 KG, DISTÂNCIA ENTRE EIXOS 4,8 M, POTÊNCIA 230 CV, INCLUSIVE TANQUE DE AÇO PARA TRANSPORTE DE ÁGUA - CHI DIURNO. AF_06/2014	CHI	0,0033913	35,63	0,12
COMPOSICAO	5932	MOTONIVELADORA POTÊNCIA BÁSICA LÍQUIDA (PRIMEIRA MARCHA) 125 HP, PESO BRUTO 13032 KG, LARGURA DA LÂMINA DE 3,7 M - CHP DIURNO. AF_06/2014	CHP	0,0015652	157,61	0,24
COMPOSICAO	5934	MOTONIVELADORA POTÊNCIA BÁSICA LÍQUIDA (PRIMEIRA MARCHA) 125 HP, PESO BRUTO 13032 KG, LARGURA DA LÂMINA DE 3,7 M - CHI DIURNO. AF_06/2014	CHI	0,0027626	55,21	0,15
COMPOSICAO	88316	SERVENTE COM ENCARGOS COMPLEMENTARES	H	0,0130433	13,32	0,17
COMPOSICAO	96020	TRATOR DE PNEUS COM POTÊNCIA DE 122 CV, TRAÇÃO 4X4, COM GRADE DE DISCOS ACOPLADA - CHP DIURNO. AF_02/2017	CHP	0,0021739	109,40	0,23
COMPOSICAO	96021	TRATOR DE PNEUS COM POTÊNCIA DE 122 CV, TRAÇÃO 4X4, COM GRADE DE DISCOS ACOPLADA - CHI DIURNO. AF_02/2017	CHI	0,0021739	34,29	0,07
					TOTAL	R\$ 3,09

RICHARDSON JORGE DANTAS  
ENGENHEIRO CIVIL  
CREA 53913



ESTADO DO CEARÁ  
PREFEITURA MUNICIPAL DE IPAUMIRIM

TOMADOR/PROPOSTANTE: PREFEITURA MUNICIPAL DE IPAUMIRIM/CE  
EMPENHAMENTO: RECUPERAÇÃO E/OU ADEQUAÇÃO EM ESTRADAS VICINAS NO MUNICÍPIO DE IPAUMIRIM - CEARÁ  
LOCAL: DIVERSAS ESTRADAS VICINAS



COMPOSIÇÕES ANALÍTICAS

**2.1**  
**CS100 - DEBARRIAMENTO DE JAZIDA - MZ**  
EQUIPAMENTOS (HORARIO):

Unidade	Coefficiente	Preço	Total	
10596	TRATOR DE ESTERAS D'ALUMINA E ESC. HP 155 (CHP)	0.0000	78.2057	0.0000
10779	TRATOR DE ESTERAS D'ALUMINA E ESC. HP 155 (CHP)	0.0013	223.3047	0.2964
Total			0.2964	

MAO DE OBRA

12543	SERVENTE	0.0026	13.2100	0.0349
Total			0.0349	
Total Simples:			0.33	
Encargos Sociais:			INCLUSO	
Valor BDI:			0,00	
Valor Geral:			0,33	

**2.2**  
**CS104 - INDENIZAÇÃO DE JAZIDA - MZ**  
MATERIAIS

Unidade	Coefficiente	Preço	Total	
12554	INDENIZAÇÃO DE JAZIDA	1.0000	1.1200	1.1200
Total			1.1200	
Total Simples:			1,12	
Encargos Sociais:			INCLUSO	
Valor BDI:			0,00	
Valor Geral:			1,12	

**2.3**  
**3872 - LOCAÇÃO DA OBRA COM AUXÍLIO TOPOGRÁFICO (ÁREA 7500 M2) - MZ**  
EQUIPAMENTOS (HORARIO):

Unidade	Coefficiente	Preço	Total	
10700	CAMBIONETE SAVEIRO (CHP)	2.0000	68.7278	136.4568
10756	NÍVEL (CHP)	4.0000	0.5025	2.0101
10779	TEODOLITO (CHP)	4.0000	1.4133	5.6530
Total			147.3187	

MAO DE OBRA

10037	AJUDANTE	4.0000	14.5200	58.0800
12382	NIVELADOR	4.0000	21.4800	85.9400
12445	TOPOGRAFIA	5.0000	28.7000	143.5600
Total			267.4300	
Total Simples:			434,74	
Encargos Sociais:			INCLUSO	
Valor BDI:			0,00	
Valor Geral:			434,74	

**2.4**  
**CS105 - ERVAÇÃO CARGA TRANSP. 1 CXY 5001 A 49000 - MZ**  
EQUIPAMENTOS (HORARIO):

Unidade	Coefficiente	Preço	Total	
10578	CAMBIONETE BASCULANTE 12 M3 (CHP)	0.0084	47.1079	0.4634
10588	CARREGADORA DE PNEUS HP 180 (CHP)	0.0002	89.7735	0.0175
10686	TRATOR DE ESTERAS D'ALUMINA E ESC. HP 155 (CHP)	0.0000	78.2057	0.0000
10688	CAMBIONETE BASCULANTE 12 M3 (CHP)	0.0000	143.6482	0.0145
10710	CARREGADORA DE PNEUS HP 180 (CHP)	0.0098	261.5503	2.5128
10779	TRATOR DE ESTERAS D'ALUMINA E ESC. HP 155 (CHP)	0.0088	223.3047	2.1803
Total			15.0776	

MAO DE OBRA

12543	SERVENTE	0.0794	15.2100	0.3895
Total			0.3895	
Total Simples:			16,47	
Encargos Sociais:			INCLUSO	
Valor BDI:			0,00	
Valor Geral:			16,47	

**2.5**  
**CS106 - ESPALHAMENTO DE PIÇAMA - MZ**  
EQUIPAMENTOS (HORARIO):

Unidade	Coefficiente	Preço	Total	
10779	TRATOR DE ESTERAS D'ALUMINA E ESC. HP 155 (CHP)	0.0130	223.3000	2.6708
Total			2.6708	

MAO DE OBRA

12543	SERVENTE	0.0558	13.2100	0.7338
Total			0.7338	
Total Simples:			3,41	
Encargos Sociais:			INCLUSO	
Valor BDI:			0,00	
Valor Geral:			3,41	

*Richardson Jorge Dantas*  
RICHARDSON JORGE DANTAS  
ENGENHEIRO CIVIL  
CREA 51913



ESTADO DO CEARÁ  
PREFEITURA MUNICIPAL DE IPAUMIRIM



EMPREENDIMENTO: RECUPERAÇÃO E/OU ADEQUAÇÃO EM ESTRADAS VICINAIS NO MUNICÍPIO DE IPAUMIRIM - CEARÁ  
LOCAL: DIVERSAS ESTRADAS VICINAIS

ENCARGOS SOCIAIS



GOVERNO DO  
ESTADO DO CEARÁ  
Secretaria de Infraestrutura

ENCARGOS SOCIAIS - HORISTAS E MENSALISTAS - TABELA SEINFRA 026.1 (DESONERADA) E 026					
CÓDIGO	DESCRIÇÃO	TABELA 026.1		TABELA 026	
		HORISTAS %	MENSALISTAS %	HORISTAS %	MENSALISTAS %
<b>A</b>	<b>ENCARGOS SOCIAIS BÁSICOS</b>	<b>16,80</b>	<b>16,80</b>	<b>36,80</b>	<b>36,80</b>
A1	INSS	0,00	0,00	20,00	20,00
A2	SESI	1,50	1,50	1,50	1,50
A3	SENAI	1,00	1,00	1,00	1,00
A4	INCRA	0,20	0,20	0,20	0,20
A5	SEBRAE	0,60	0,60	0,00	0,60
A6	SALÁRIO EDUCAÇÃO	2,50	2,50	2,50	2,50
A7	SEGURO DE ACIDENTES	3,00	3,00	3,00	3,00
A8	FGTS	8,00	8,00	8,00	8,00
<b>B</b>	<b>ENCARGOS SOCIAIS C/ INCIDÊNCIA DE A</b>	<b>44,97</b>	<b>16,84</b>	<b>44,97</b>	<b>16,84</b>
B1	DESCANSO SEMANAL REMUNERADO	17,85	0,00	17,85	0,00
B2	FERIADOS	3,71	0,00	3,71	0,00
B3	AUXÍLIO ENFERMIDADE	0,92	0,71	0,92	0,71
B4	13º SALÁRIO	10,83	8,33	10,83	8,33
B5	LICENÇA PATERNIDADE	0,07	0,06	0,07	0,06
B6	FALTAS JUSTIFICADAS	0,72	0,56	0,72	0,56
B7	DIAS DE CHUVAS	1,55	0,00	1,55	0,00
B8	AUXÍLIO ACIDENTE DE TRABALHO	0,11	0,06	0,11	0,06
B9	FÉRIAS GOZADAS	9,18	7,07	9,18	7,07
B10	SALÁRIO MATERNIDADE	0,03	0,02	0,03	0,02
<b>C</b>	<b>ENCARGOS SOCIAIS S/ INCIDÊNCIA DE A</b>	<b>15,41</b>	<b>11,86</b>	<b>15,41</b>	<b>11,86</b>
C1	AVISO PRÉVIO INDENIZADO	5,60	4,31	5,60	4,31
C2	AVISO PRÉVIO TRABALHADO	0,13	0,10	0,13	0,10
C3	FÉRIAS INDENIZADAS	4,40	3,39	4,40	3,39
C4	DEPOSITO DE RESCISÃO S/ JUSTA CAUSA	4,81	3,70	4,81	3,70
C5	INDENIZAÇÃO ADICIONAL	0,47	0,36	0,47	0,36
<b>D</b>	<b>REINCIDÊNCIAS DE UM GRUPO SOBRE O OUTRO</b>	<b>8,02</b>	<b>3,19</b>	<b>17,65</b>	<b>6,58</b>
D1	REINCIDÊNCIA DE GRUPO A SOBRE GRUPO B	7,55	2,83	16,55	6,20
D2	REINCIDÊNCIA DE GRUPO A SOBRE AVISO PRÉVIO TRABALHADO E REINCIDÊNCIA DO FGTS SOBRE AVISO PRÉVIO INDENIZADO	0,47	0,36	0,50	0,38
<b>TOTAL (A+B+C+D)</b>		<b>85,20</b>	<b>48,69</b>	<b>114,23</b>	<b>72,08</b>

RICHARDSON JORGE DANTAS  
ENGENHEIRO CIVIL  
CREA 53913





**ESTADO DO CEARÁ**  
**PREFEITURA MUNICIPAL DE IPAUMIRIM**



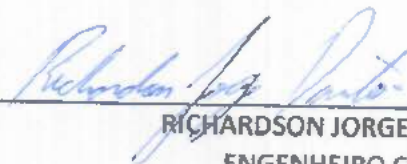
TOMADOR/PROPONENTE: PREFEITURA MUNICIPAL DE IPAUMIRIM/CE  
CONTRATO: PT 1067509-63

EMPREENDIMENTO: RECUPERAÇÃO E/OU ADEQUAÇÃO DE ESTRADA VICINAIS NO MUNICÍPIO DE IPAUMIRIM-CE

**COMPOSIÇÃO DE BDI**

COD	DESCRIÇÃO	%
	<b>Despesas Indiretas</b>	
AC	Administração central	3,80
DF	Despesas financeiras	1,02
R	Riscos	0,50
	<b>Benefício</b>	
S + G	Garantia/seguros	0,32
L	Lucro	6,78
	<b>Impostos</b>	
I	PIS	10,15
	COFINS	0,65
	ISS	3,00
	CPRB ( 2%, Apenas quando tiver desoneração INSS)	2,00
		4,50
	<b>TOTAL DOS IMPOSTOS</b>	<b>10,15</b>
	<b>BDI =</b>	<b>25,60%</b>

$$BDI = \frac{(1 + AC + S + R + G)(1 + DF)(1 + L)}{(1 - I)} - 1$$



**RICHARDSON JORGE DANTAS**  
ENGENHEIRO CIVIL  
CREA 53913



Anotação de Responsabilidade Técnica - ART  
Lei nº 6.496, de 7 de dezembro de 1977

**CREA-CE**

ART OBRA / SERVIÇOS  
Nº CE20200646941

Página 1/1



Conselho Regional de Engenharia e Agronomia do Ceará

INICIAL

1. Responsável Técnico  
**RICHARDSON JORGE DANTAS**  
Título profissional: **ENGENHEIRO CIVIL**

RNP: 0613469194  
Registro: 0613469194CE

2. Dados do Contrato  
Contratante: **PREFEITURA MUNICIPAL DE IPAUMIRIM**  
**RUA RUA CORONEL GUSTAVO LIMA**  
Complemento:  
Cidade: **Ipauimirim** Bairro: **CENTRO**  
UF: **CE**  
CPF/CNPJ: **07.520.141/0001-84**  
Nº: **230**  
CEP: **63340000**  
ART Vinculada: **CE20160024436**  
Contrato: **Não especificado** Celebrado em:  
Valor: **R\$ 5.988,00** Tipo de contratante: **Pessoa Jurídica de Direito Público**  
Ação Institucional: **NENHUMA - NÃO OPTANTE**

3. Dados da Obra/Serviço  
**OUTROS DIVERSAS ESTRADAS VICINAIS** Nº: **SN**  
Complemento:  
Cidade: **IPAUMIRIM** Bairro: **ZONA RURAL**  
UF: **CE** CEP: **63340000**  
Data de início: **26/06/2020** Previsão de término: **28/08/2020** Coordenadas Geográficas: **-6.782318, -38.707701**  
Finalidade: **Infraestrutura** Código: **Não Especificado**  
Proprietário: **PREFEITURA MUNICIPAL DE IPAUMIRIM** CPF/CNPJ: **07.520.141/0001-84**

4. Atividade Técnica

Atividade	Quantidade	Unidade
7 - Condução de serviço técnico		
80 - Projeto > GEOTECNIA E GEOLOGIA DA ENGENHARIA > OBRAS DE TERRA > DE OBRAS DE TERRA > #3.3.1.9 - TERRAPLENAGEM	3,00	un
35 - Elaboração de orçamento > GEOTECNIA E GEOLOGIA DA ENGENHARIA > OBRAS DE TERRA > DE OBRAS DE TERRA > #3.3.1.9 - TERRAPLENAGEM	3,00	un
19 - Fiscalização		
80 - Fiscalização de obra > GEOTECNIA E GEOLOGIA DA ENGENHARIA > OBRAS DE TERRA > DE OBRAS DE TERRA > #3.3.1.9 - TERRAPLENAGEM	3,00	un

Após a conclusão das atividades técnicas o profissional deverá proceder a baixa desta ART

5. Observações  
ART DE PROJETO BASICO, ORÇAMENTO E FISCALIZAÇÃO DO PIÇARRAMENTO EM DIVERSAS ESTRADAS VICINAIS NO MUNICIPIO DE IPAUMIRIM - CEARÁ, CUJO PLANO DE TRABALHO É 1067509-63.

6. Declarações  
- Declaro que estou cumprindo as regras de acessibilidade previstas nas normas técnicas da ABNT, na legislação específica e no decreto n. 5296/2004.

7. Entidade de Classe  
NENHUMA - NÃO OPTANTE

8. Assinaturas  
Declaro serem verdadeiras as informações acima  
Local \_\_\_\_\_ de \_\_\_\_\_ de \_\_\_\_\_  
\_\_\_\_\_ data \_\_\_\_\_  
**RICHARDSON JORGE DANTAS - CPF: 049.058.973-32**  
**PREFEITURA MUNICIPAL DE IPAUMIRIM - CNPJ: 07.520.141/0001-84**

9. Informações  
\* A ART é válida somente quando quitada, mediante apresentação do comprovante do pagamento ou conferência no site do Crea.

10. Valor  
Valor da ART: **R\$ 88,78** Registrada em: **06/07/2020** Valor pago: **R\$ 88,78** Nosso Número: **8214082770**

A autenticidade desta ART pode ser verificada em: <https://crea-ce.sitac.com.br/publicar/>, com a chave: 76xWA  
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faleconcep@crea-ce.org.br  
Fax: (85) 3453-5804







QUANTITATIVOS DE MATERIAL



PREFEITURA MUNICIPAL DE IPAUMIRIM

COMUNIDADE BANANEIRAS

VOLUME 10 cm DE BASE

ESTACAS	DIST. ACUMULADO	LARGURA	COTA TN	C. ATERRO	VOL. TIME	DISTÂNCIA	V. ACUMULADO
0	0	5	313,4775	313,5775	0,5		
1	20	5	312,0782	312,1782	0,5	20	10
1+16,116	36,116	5	311,4964	311,5964	0,5	16,116	8,058
2	40	5	311,0596	311,1596	0,5	3,884	1,942
3	60	5	310,3119	310,4119	0,5	20	10
3+8,315	68,315	5	309,5642	309,6642	0,5	8,315	4,1575
4	80	5	309,4998	309,5998	0,5	11,685	5,8425
5	100	5	308,9339	309,0339	0,5	20	10
6	120	5	308,3975	308,4975	0,5	20	10
6+1,722	121,722	5	308,2531	308,3531	0,5	1,722	0,861
7	140	5	307,1729	307,2729	0,5	18,278	9,139
7+17,327	157,327	5	306,6312	306,7312	0,5	17,327	8,6635
8	160	5	305,2646	305,3646	0,5	2,673	1,3365
9	180	5	303,6197	303,7197	0,5	20	10
9+10,028	190,028	5	303,2805	303,3805	0,5	10,028	5,014
10	200	5	302,5719	302,6719	0,5	9,972	4,986
10+12,002	212,002	5	302,5129	302,6129	0,5	12,002	6,001
11	220	5	302,1543	302,2543	0,5	7,998	3,999
11+16,707	236,707	5	302,1508	302,2508	0,5	16,707	8,3535
12	240	5	302,0597	302,1597	0,5	3,293	1,6465
13	260	5	301,9677	302,0677	0,5	20	10
13+0,195	260,195	5	301,8756	301,9756	0,5	0,195	0,0975
14	280	5	301,797	301,897	0,5	19,805	9,9025
15	300	5	301,8317	301,9317	0,5	20	10
16	320	5	302,0701	302,1701	0,5	20	10
16+17,089	337,089	5	302,3084	302,4084	0,5	17,089	8,5445
17	340	5	302,4122	302,5122	0,5	2,911	1,4555
18	360	5	302,5655	302,6655	0,5	20	10
19	380	5	302,769	302,869	0,5	20	10
19+8,706	388,706	5	302,8836	302,9836	0,5	8,706	4,353
20	400	5	303,3398	303,4398	0,5	11,294	5,647
20+14,990	414,99	5	303,3431	303,4431	0,5	14,99	7,495
21	420	5	304,4682	304,5682	0,5	5,01	2,505
21+19,940	439,94	5	304,8047	304,9047	0,5	19,94	9,97
22	440	5	306,6521	306,7521	0,5	0,06	0,03
23	460	5	307,6196	307,7196	0,5	20	10
23+5,983	465,983	5	308,5539	308,6539	0,5	5,983	2,9915
24	480	5	308,587	308,687	0,5	14,017	7,0085
24+7,341	487,341	5	310,4738	310,5738	0,5	7,341	3,6705
25	500	5	310,9263	311,0263	0,5	12,659	6,3295
25+0,449	500,449	5	312,1924	312,2924	0,5	0,449	0,2245
26	520	5	312,9047	313,0047	0,5	19,551	9,7755
26+4,689	524,689	5	312,2586	312,3586	0,5	4,689	2,3445

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27	540	5	312,4844	312,5844	0,5	15,311	7,6555
27+8.614	548.614	5	313,3656	313,4656	0,5	8,614	4,307
27+15.400	555,4	5	313,4559	313,5559	0,5	6,786	3,393
28	560	5	314,3398	314,4398	0,5	4,6	2,3
28+17,957	577,957	5	315,1475	315,2475	0,5	17,957	8,9785
29	580	5	315,1888	315,2888	0,5	2,043	1,0215
30	600	5	315,6682	315,7682	0,5	20	10
30+18,277	618,277	5	315,8642	315,9642	0,5	18,277	9,1385
31	620	5	315,609	315,709	0,5	1,723	0,8615
32	640	5	315,1772	315,2772	0,5	20	10
32+8,176	648,176	5	314,9227	315,0227	0,5	8,176	4,088
33	660	5	314,6069	314,7069	0,5	11,824	5,912
34	680	5	313,8373	313,9373	0,5	20	10
34+11,792	691,792	5	313,2213	313,3213	0,5	11,792	5,896
35	700	5	313,0789	313,1789	0,5	8,208	4,104
36	720	5	312,3654	312,4654	0,5	20	10
36+16,007	736,007	5	312,2017	312,3017	0,5	16,007	8,0035
37	740	5	311,2146	311,3146	0,5	3,998	1,9965
38	760	5	309,9336	310,0336	0,5	20	10
38+4,589	764,589	5	308,6525	308,7525	0,5	4,589	2,2945
39	780	5	307,8764	307,9764	0,5	15,411	7,7055
40	800	5	307,0579	307,1579	0,5	20	10
41	820	5	305,5094	305,6094	0,5	20	10
41+12,117	832,117	5	305,0958	305,1958	0,5	12,117	6,0585
42	840	5	303,4692	303,5692	0,5	7,883	3,9415
42+14,914	854,914	5	301,8427	301,9427	0,5	14,914	7,457
43	860	5	300,9295	301,0295	0,5	5,086	2,543
44	880	5	300,563	300,663	0,5	20	10
45	900	5	299,7272	299,8272	0,5	20	10
45+11,228	911,228	5	299,2693	299,3693	0,5	11,228	5,614
46	920	5	299,1715	299,2715	0,5	8,772	4,386
47	940	5	298,955	299,055	0,5	20	10
47+10,959	950,959	5	298,822	298,922	0,5	10,959	5,4795
48	960	5	298,7431	298,8431	0,5	9,041	4,5205
49	980	5	298,5383	298,6383	0,5	20	10
49+12,294	992,294	5	298,3336	298,4336	0,5	12,294	6,147
50	1000	5	298,1288	298,2288	0,5	7,706	3,853
51	1020	5	297,924	298,024	0,5	20	10
52	1040	5	297,8435	297,9435	0,5	20	10
53	1060	5	297,7666	297,8666	0,5	20	10
54	1080	5	297,64	297,74	0,5	20	10
54+7,863	1087,863	5	297,5134	297,6134	0,5	7,863	3,9315
55	1100	5	297,3867	297,4867	0,5	12,137	6,0685
56	1120	5	297,3723	297,4723	0,5	20	10
57	1140	5	297,2844	297,3844	0,5	20	10
58	1160	5	297,1851	297,2851	0,5	20	10
58+2,279	1162,279	5	297,1402	297,2402	0,5	2,279	1,1395
59	1180	5	297,0862	297,1862	0,5	17,721	8,8605
60	1200	5	296,9875	297,0875	0,5	20	10



60+9,052	1209,052	5	296,8889	296,9889	0,5	9,052	4,326
61	1220	5	296,7902	296,8902	0,5	10,948	5,474
62	1240	5	296,7646	296,8646	0,5	20	10
63	1260	5	296,6737	296,7737	0,5	20	10
64	1280	5	296,5509	296,6509	0,5	20	10
64+5,187	1285,187	5	296,4372	296,5372	0,5	5,187	2,5935
65	1300	5	296,4312	296,5312	0,5	14,813	7,4065
66	1320	5	296,3495	296,4495	0,5	20	10
66+18,534	1338,534	5	296,2858	296,3858	0,5	18,534	9,267
67	1340	5	296,2776	296,3776	0,5	1,466	0,733
68	1360	5	296,2405	296,3405	0,5	20	10
68+15,604	1375,604	5	296,2034	296,3034	0,5	15,604	7,802
69	1380	5	296,1663	296,2663	0,5	4,396	2,198
70	1400	5	296,1291	296,2291	0,5	20	10
71	1420	5	296,1136	296,2136	0,5	20	10
72	1440	5	296,118	296,218	0,5	20	10
73	1460	5	296,1256	296,2256	0,5	20	10
73+8,361	1468,361	5	296,1331	296,2331	0,5	8,361	4,1805
74	1480	5	296,1407	296,2407	0,5	11,639	5,8195
75	1500	5	296,1439	296,2439	0,5	20	10
76	1520	5	296,1269	296,2269	0,5	20	10
77	1540	5	296,0972	296,1972	0,5	20	10
77+8,511	1548,511	5	296,0676	296,1676	0,5	8,511	4,2555
78	1560	5	296,0659	296,1659	0,5	11,489	5,7445
79	1580	5	296,0309	296,1309	0,5	20	10
80	1600	5	295,9939	296,0939	0,5	20	10
80+1,134	1601,134	5	295,9568	296,0568	0,5	1,134	0,567
81	1620	5	295,9471	296,0471	0,5	18,866	9,433
82	1640	5	295,99	296,09	0,5	20	10
83	1660	5	296,0481	296,1481	0,5	20	10
83+5,253	1665,253	5	296,1063	296,2063	0,5	5,253	2,6265
84	1680	5	296,1644	296,2644	0,5	14,747	7,3735
85	1700	5	296,1872	296,2872	0,5	20	10
86	1720	5	296,1509	296,2509	0,5	20	10
87	1740	5	296,0912	296,1912	0,5	20	10
87+7,827	1747,827	5	296,0315	296,1315	0,5	7,827	3,9135
88	1760	5	296,0245	296,1245	0,5	12,173	6,0865
89	1780	5	296,0183	296,1183	0,5	20	10
90	1800	5	296,0113	296,1113	0,5	20	10
90+2,350	1802,35	5	296,0043	296,1043	0,5	2,35	1,175
91	1820	5	295,9986	296,0986	0,5	17,65	8,825
92	1840	5	295,9938	296,0938	0,5	20	10
93	1860	5	295,9682	296,0682	0,5	20	10
93+16,277	1876,277	5	295,9426	296,0426	0,5	16,277	8,1385
94	1880	5	295,917	296,017	0,5	3,723	1,8615
95	1900	5	295,8914	295,9914	0,5	20	10
96	1920	5	295,8879	295,9879	0,5	20	10
97	1940	5	295,9244	296,0244	0,5	20	10
98	1960	5	295,9666	296,0666	0,5	20	10

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98+2,709	1962,709	5	295,9815	296,0815	0,5	2,709	
99	1980	5	295,7505	295,8505	0,5	17,291	
100	2000	5	295,3941	295,4941	0,5	20	
100+7,034	2007,034	5	295,0377	295,1377	0,5	7,034	3,517
101	2020	5	294,6814	294,7814	0,5	12,966	6,483
102	2040	5	294,325	294,425	0,5	20	10
103	2060	5	294,1121	294,2121	0,5	20	10
104	2080	5	294,078	294,178	0,5	20	10
105	2100	5	293,9933	294,0933	0,5	20	10
105+11,949	2111,949	5	293,9086	294,0086	0,5	11,949	5,9745
106	2120	5	293,824	293,924	0,5	8,051	4,0255
107	2140	5	293,7393	293,8393	0,5	20	10
108	2160	5	293,6546	293,7546	0,5	20	10
109	2180	5	293,6475	293,7475	0,5	20	10
110	2200	5	293,5408	293,6408	0,5	20	10
111	2220	5	293,4243	293,5243	0,5	20	10
111+1,678	2221,678	5	293,3079	293,4079	0,5	1,678	0,839
112	2240	5	293,2069	293,3069	0,5	18,322	9,161
113	2260	5	293,1979	293,2979	0,5	20	10
114	2280	5	293,1303	293,2303	0,5	20	10
114+17,336	2297,336	5	293,0628	293,1628	0,5	17,336	8,668
115	2300	5	292,9952	293,0952	0,5	2,664	1,332
116	2320	5	292,9894	293,0894	0,5	20	10
117	2340	5	292,9424	293,0424	0,5	20	10
118	2360	5	292,8909	292,9909	0,5	20	10
118+1,717	2361,717	5	292,8394	292,9394	0,5	1,717	0,8585
119	2380	5	292,8165	292,9165	0,5	18,283	9,1415
120	2400	5	292,8403	292,9403	0,5	20	10
121	2420	5	292,8833	292,9833	0,5	20	10
121+8,912	2428,912	5	292,9263	293,0263	0,5	8,912	4,456
122	2440	5	292,9693	293,0693	0,5	11,088	5,544
123	2460	5	293,0015	293,1015	0,5	20	10
124	2480	5	293,0528	293,1528	0,5	20	10
125	2500	5	293,2578	293,3578	0,5	20	10
125+14,995	2514,995	5	293,4628	293,5628	0,5	14,995	7,4975
126	2520	5	293,6207	293,7207	0,5	5,005	2,5025
127	2540	5	293,7573	293,8573	0,5	20	10
128	2560	5	294,352	294,452	0,5	20	10
128+15,407	2575,407	5	294,6655	294,7655	0,5	15,407	7,7035
129	2580	5	295,3047	295,4047	0,5	4,593	2,2965
130	2600	5	296,6566	296,7566	0,5	20	10
130+10,544	2610,544	5	297,6496	297,7496	0,5	10,544	5,272
131	2620	5	297,5105	297,6105	0,5	9,456	4,728
132	2640	5	296,9867	297,0867	0,5	20	10
132+14,689	2654,689	5	296,619	296,719	0,5	14,689	7,3445
133	2660	5	296,7269	296,8269	0,5	5,311	2,6555
134	2680	5	297,0634	297,1634	0,5	20	10
134+14,039	2694,039	5	297,1385	297,2385	0,5	14,039	7,0195
135	2700	5	297,885	297,985	0,5	5,961	2,9805

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135+18,593	2718,593	5	298,1597	298,2597	0,5	18,593	9,2965
136	2720	5	298,9268	299,0268	0,5	1,407	0,7035
136+13,996	2733,996	5	298,9078	299,0078	0,5	13,996	6,998
137	2740	5	298,7901	298,8901	0,5	5,004	3,002
137+16,770	2756,77	5	298,6958	298,7958	0,5	16,77	8,385
138	2760	5	298,6136	298,7136	0,5	3,23	1,615
139	2780	5	298,1987	298,2987	0,5	20	10
139+16,036	2796,036	5	297,977	298,077	0,5	16,036	8,018
140	2800	5	297,9337	298,0337	0,5	3,964	1,982
141	2820	5	297,8408	297,9408	0,5	20	10
141+10,691	2830,691	5	297,8048	297,9048	0,5	10,691	5,3455
142	2840	5	296,8967	296,9967	0,5	9,309	4,6545
143	2860	5	296,1344	296,2344	0,5	20	10
143+7,733	2867,733	5	295,6806	295,7806	0,5	7,733	3,8665
144	2880	5	294,7451	294,8451	0,5	12,267	6,1335
144+10,298	2890,298	5	294,4419	294,5419	0,5	10,298	5,149
145	2900	5	294,3613	294,4613	0,5	9,702	4,851
146	2920	5	294,2422	294,3422	0,5	20	10
146+6,482	2926,482	5	294,123	294,223	0,5	6,482	3,241
147	2940	5	294,118	294,218	0,5	13,518	6,759
148	2960	5	294,1246	294,2246	0,5	20	10
149	2980	5	294,1316	294,2316	0,5	20	10
149+0,833	2980,833	5	294,1385	294,2385	0,5	0,833	0,4165
150	3000	5	294,1454	294,2454	0,5	19,167	9,5835
151	3020	5	294,15	294,25	0,5	20	10
152	3040	5	294,2069	294,3069	0,5	20	10
153	3060	5	294,3769	294,4769	0,5	20	10
153+13,302	3073,302	5	294,4565	294,5565	0,5	13,302	6,651
154	3080	5	294,7012	294,8012	0,5	6,698	3,349
155	3100	5	295,161	295,261	0,5	20	10
155+9,360	3109,36	5	295,6209	295,7209	0,5	9,36	4,68
156	3120	5	295,6761	295,7761	0,5	10,64	5,32
157	3140	5	298,2645	298,3645	0,5	20	10
158	3160	5	300,0373	300,1373	0,5	20	10
158+2,402	3162,402	5	300,7527	300,8527	0,5	2,402	1,201
159	3180	5	302,5532	302,6532	0,5	17,598	8,799
159+12,054	3192,054	5	303,9457	304,0457	0,5	12,054	6,027
160	3200	5	304,4031	304,5031	0,5	7,946	3,973
161	3220	5	306,422	306,522	0,5	20	10
161+15,469	3235,469	5	307,1054	307,2054	0,5	15,469	7,7345
162	3240	5	307,9763	308,0763	0,5	4,531	2,2655
163	3260	5	308,9943	309,0943	0,5	20	10
163+6,770	3266,77	5	309,1422	309,2422	0,5	6,77	3,385
164	3280	5	309,7946	309,8946	0,5	13,23	6,615
164+15,464	3295,464	5	310,1177	310,2177	0,5	15,464	7,732
165	3300	5	310,417	310,517	0,5	4,536	2,268
166	3320	5	310,5884	310,6884	0,5	20	10
166+9,908	3329,908	5	311,2038	311,3038	0,5	9,908	4,954
167	3340	5	312,0692	312,1692	0,5	10,092	5,046

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167+5,778	3345,778	5	312,5158	312,6158	0,5	5,778	2,489
168	3360	5	313,0428	313,1428	0,5	14,222	7,111
169	3380	5	314,1319	314,2319	0,5	20	10
169+10,321	3390,321	5	314,8006	314,9006	0,5	10,321	5,1605
170	3400	5	314,9049	315,0049	0,5	9,679	4,8395
171	3420	5	315,0327	315,1327	0,5	20	10
171+12,281	3432,281	5	314,1976	314,2976	0,5	12,281	6,1405
172	3440	5	312,6144	312,7144	0,5	7,719	3,8595
172+9,451	3449,451	5	312,4458	312,5458	0,5	9,451	4,7255
173	3460	5	311,4656	311,5656	0,5	10,549	5,2745
174	3480	5	310,4568	310,5568	0,5	20	10
174+2,130	3482,13	5	310,4125	310,5125	0,5	2,13	1,065
175	3500	5	309,8613	309,9613	0,5	17,87	8,935
175+18,392	3518,392	5	309,3101	309,4101	0,5	18,392	9,196
176	3520	5	309,1746	309,2746	0,5	1,608	0,804
177	3540	5	308,4952	308,5952	0,5	20	10
178	3560	5	307,5943	307,6943	0,5	20	10
178+4,916	3564,916	5	306,9248	307,0248	0,5	4,916	2,458
179	3580	5	306,7071	306,8071	0,5	15,084	7,542
180	3600	5	305,8596	305,9596	0,5	20	10
180+14,863	3614,863	5	305,0122	305,1122	0,5	14,863	7,4315
181	3620	5	304,1647	304,2647	0,5	5,137	2,5685
182	3640	5	303,8856	303,9856	0,5	20	10
183	3660	5	302,7995	302,8995	0,5	20	10
184	3680	5	301,18	301,28	0,5	20	10
184+6,587	3686,587	5	299,8776	299,9776	0,5	6,587	3,2935
185	3700	5	299,3909	299,4909	0,5	13,413	6,7065
186	3720	5	296,9055	297,0055	0,5	20	10
186+16,084	3736,084	5	296,5156	296,6156	0,5	16,084	8,042
187	3740	5	296,1117	296,2117	0,5	3,916	1,958
188	3760	5	295,6326	295,7326	0,5	20	10
188+3,138	3763,138	5	295,1535	295,2535	0,5	3,138	1,569
189	3780	5	295,0726	295,1726	0,5	16,862	8,431
190	3800	5	295,1871	295,2871	0,5	20	10
191	3820	5	295,3249	295,4249	0,5	20	10
191+3,379	3823,379	5	295,4627	295,5627	0,5	3,379	1,6895
192	3840	5	295,6004	295,7004	0,5	16,621	8,3105
193	3860	5	295,7382	295,8382	0,5	20	10
194	3880	5	295,876	295,976	0,5	20	10
195	3900	5	296,0089	296,1089	0,5	20	10
196	3920	5	296,0481	296,1481	0,5	20	10
197	3940	5	297,1567	297,2567	0,5	20	10
197+19,293	3959,293	5	298,2654	298,3654	0,5	19,293	9,6465
198	3960	5	298,3493	298,4493	0,5	0,707	0,3535
199	3980	5	299,344	299,444	0,5	20	10
200	4000	5	300,4202	300,5202	0,5	20	10
200+1,514	4001,514	5	300,4709	300,5709	0,5	1,514	0,757
201	4020	5	300,1542	300,2542	0,5	18,486	9,243
202	4040	5	299,8218	299,9218	0,5	20	10

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202+0,943	4040,943	5	299,7584	299,8584	0,5	0,943	0,4715
203	4060	5	299,3541	299,4541	0,5	19,057	9,5285
204	4080	5	298,9535	299,0535	0,5	20	10
204+3,812	4083,812	5	298,7468	298,8468	0,5	3,812	1,906
205	4100	5	297,7029	297,8029	0,5	16,188	8,094
205+16,041	4116,041	5	297,4553	297,5553	0,5	16,041	8,0205
206	4120	5	297,3024	297,4024	0,5	3,959	1,9795
207	4140	5	297,1019	297,2019	0,5	20	10
207+4,743	4144,743	5	296,9014	297,0014	0,5	4,743	2,3715
208	4160	5	296,701	296,801	0,5	15,257	7,6285
209	4180	5	296,7009	296,8009	0,5	20	10
210	4200	5	297,9806	298,0806	0,5	20	10
211	4220	5	298,0319	298,1319	0,5	20	10
211+0,007	4220,007	5	299,0095	299,1095	0,5	0,007	0,0035
212	4240	5	300,028	300,128	0,5	19,993	9,9965
212+0,802	4240,802	5	300,3772	300,4772	0,5	0,802	0,401
213	4260	5	299,234	299,334	0,5	19,198	9,599
214	4280	5	299,0685	299,1685	0,5	20	10
214+6,858	4286,858	5	298,8337	298,9337	0,5	6,858	3,429
215	4300	5	298,6346	298,7346	0,5	13,142	6,571
215+1,903	4301,903	5	299,0443	299,1443	0,5	1,903	0,9515
216	4320	5	300,8032	300,9032	0,5	18,097	9,0485
216+15,341	4335,341	5	302,2333	302,3333	0,5	15,341	7,6705
217	4340	5	302,4472	302,5472	0,5	4,659	2,3295
218	4360	5	303,4606	303,5606	0,5	20	10
218+16,262	4376,262	5	303,4449	303,5449	0,5	16,262	8,131
219	4380	5	303,3079	303,4079	0,5	3,738	1,869
219+17,713	4397,713	5	303,171	303,271	0,5	17,713	8,8565
220	4400	5	303,1188	303,2188	0,5	2,287	1,1435
221	4420	5	302,9159	303,0159	0,5	20	10
222	4440	5	302,5884	302,6884	0,5	20	10
222+7,614	4447,614	5	302,4342	302,5342	0,5	7,614	3,807
223	4460	5	302,0211	302,1211	0,5	12,386	6,193
224	4480	5	301,2407	301,3407	0,5	20	10
224+9,412	4489,412	5	300,4603	300,5603	0,5	9,412	4,706
225	4500	5	300,2888	300,3888	0,5	10,588	5,294
226	4520	5	299,8504	299,9504	0,5	20	10
227	4540	5	299,2885	299,3885	0,5	20	10
227+4,397	4544,397	5	299,2401	299,3401	0,5	4,397	2,1985
228	4560	5	298,0338	298,1338	0,5	15,603	7,8015
229	4580	5	296,7139	296,8139	0,5	20	10
229+1,723	4581,723	5	296,4903	296,5903	0,5	1,723	0,8615
230	4600	5	295,0137	295,1137	0,5	18,277	9,1385
231	4620	5	293,2359	293,3359	0,5	20	10
231+3,388	4623,388	5	292,2076	292,3076	0,5	3,388	1,694
232	4640	5	292,059	292,159	0,5	16,612	8,306
233	4660	5	291,7065	291,8065	0,5	20	10
233+11,569	4671,569	5	291,354	291,454	0,5	11,569	5,7845
234	4680	5	291,0542	291,1542	0,5	8,431	4,2155

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235	4700	5	291,0651	291,1651	0,5		
236	4720	5	291,1376	291,2376	0,5	20	
236+17,009	4737,009	5	291,2102	291,3102	0,5	20	10
237	4740	5	291,2348	291,3348	0,5	17,009	8,5045
238	4760	5	291,5758	291,6758	0,5	2,991	1,4955
239	4780	5	291,8648	291,9648	0,5	20	10
239+6,785	4786,785	5	292,7273	292,8273	0,5	20	10
240	4800	5	294,1794	294,2794	0,5	6,785	3,3925
240+11,197	4811,197	5	294,4068	294,5068	0,5	13,215	6,6075
241	4820	5	295,2767	295,3767	0,5	11,197	5,5985
241+14,822	4834,822	5	295,2683	295,3683	0,5	8,803	4,4015
242	4840	5	294,4106	294,5106	0,5	14,822	7,411
242+19,803	4859,803	5	293,6211	293,7211	0,5	5,178	2,589
243	4860	5	293,6014	293,7014	0,5	19,803	9,9015
244	4880	5	293,3529	293,4529	0,5	0,197	0,0985
244+18,411	4898,411	5	293,1237	293,2237	0,5	20	10
245	4900	5	292,98	293,08	0,5	18,411	9,2055
246	4920	5	291,1303	291,2303	0,5	1,589	0,7945
246+18,446	4938,446	5	290,3047	290,4047	0,5	20	10
247	4940	5	290,2051	290,3051	0,5	18,446	9,223
248	4960	5	290,0251	290,1251	0,5	1,554	0,777
248+8,927	4968,927	5	289,8452	289,9452	0,5	20	10
249	4980	5	289,6652	289,7652	0,5	8,927	4,4635
250	5000	5	289,4853	289,5853	0,5	11,073	5,5365
251	5020	5	289,3556	289,4556	0,5	20	10
252	5040	5	289,4143	289,5143	0,5	20	10
253	5060	5	289,6242	289,7242	0,5	20	10
253+14,412	5074,412	5	289,8341	289,9341	0,5	20	10
254	5080	5	289,8553	289,9553	0,5	14,412	7,206
255	5100	5	289,7936	289,8936	0,5	5,588	2,794
256	5120	5	289,7249	289,8249	0,5	20	10
256+2,016	5122,016	5	289,6562	289,7562	0,5	20	10
257	5140	5	289,5876	289,6876	0,5	2,016	1,008
258	5160	5	289,5189	289,6189	0,5	17,984	8,992
259	5180	5	289,4502	289,5502	0,5	20	10
260	5200	5	289,4478	289,5478	0,5	20	10
261	5220	5	289,3553	289,4553	0,5	20	10
262	5240	5	289,3245	289,4245	0,5	20	10
262+0,706	5240,706	5	289,3005	289,4005	0,5	20	10
263	5260	5	289,265	289,365	0,5	0,706	0,353
263+6,425	5266,425	5	289,2607	289,3607	0,5	19,294	9,647
264	5280	5	289,3675	289,4675	0,5	6,425	3,2125
265	5300	5	289,4892	289,5892	0,5	13,575	6,7875
265+2,456	5302,456	5	289,6109	289,7109	0,5	20	10
266	5320	5	289,7126	289,8126	0,5	2,456	1,228
267	5340	5	289,8543	289,9543	0,5	17,544	8,772
268	5360	5	289,976	290,076	0,5	20	10
269	5380	5	290,0977	290,1977	0,5	20	10
270	5400	5	290,1581	290,2581	0,5	20	10

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271	3420	5	290,5391	290,6391	0,5	20	
272	3440	5	291,295	291,395	0,5	20	
272+9,921	5449,921	5	292,051	292,151	0,5	9,921	4,9605
273	3460	5	292,2931	292,3931	0,5	10,079	5,0395
274	3480	5	292,679	292,779	0,5	20	10
275	3500	5	293,2466	293,3466	0,5	20	10
275+6,405	5506,405	5	293,8143	293,9143	0,5	6,405	3,2025
276	3520	5	294,2724	294,3724	0,5	13,595	6,7975
277	3540	5	294,3881	294,4881	0,5	20	10
278	3560	5	294,988	295,088	0,5	20	10
278+16,141	5576,141	5	295,5878	295,6878	0,5	16,141	8,0705
279	3580	5	296,1877	296,2877	0,5	3,859	1,9295
280	3600	5	296,3779	296,4779	0,5	20	10
281	3620	5	297,4695	297,5695	0,5	20	10
282	3640	5	298,3641	298,4641	0,5	20	10
282+6,342	5646,342	5	298,64	298,74	0,5	6,342	3,171
283	3660	5	298,9588	299,0588	0,5	13,658	6,829
283+11,193	5671,193	5	298,986	299,086	0,5	11,193	5,5965
284	3680	5	299,009	299,109	0,5	8,807	4,4035
284+10,173	5690,173	5	299,2078	299,3078	0,5	10,173	5,0865
285	3700	5	299,548	299,648	0,5	9,827	4,9135
285+8,316	5708,316	5	299,5712	299,6712	0,5	8,316	4,158
286	3720	5	299,4864	299,5864	0,5	11,684	5,842
287	3740	5	299,3953	299,4953	0,5	20	10
287+1,364	5741,364	5	299,3043	299,4043	0,5	1,364	0,682
288	3760	5	299,2133	299,3133	0,5	18,636	9,318
289	3780	5	299,1861	299,2861	0,5	20	10
290	3800	5	299,4826	299,5826	0,5	20	10
291	3820	5	299,9053	300,0053	0,5	20	10
291+5,970	5825,97	5	300,1108	300,2108	0,5	5,97	2,985
292	3840	5	300,4871	300,5871	0,5	14,03	7,015
293	3860	5	301,2194	301,3194	0,5	20	10
293+9,725	5869,725	5	301,3031	301,4031	0,5	9,725	4,8625
294	3880	5	301,8966	301,9966	0,5	10,275	5,1375
295	3900	5	302,5666	302,6666	0,5	20	10
295+2,285	5902,285	5	302,6781	302,7781	0,5	2,285	1,1425
296	3920	5	303,4825	303,5825	0,5	17,715	8,8575
297	3940	5	304,1862	304,2862	0,5	20	10
297+3,329	5943,329	5	304,4068	304,5068	0,5	3,329	1,6645
298	3960	5	304,9535	305,0535	0,5	16,671	8,3355
298+14,583	5974,583	5	305,032	305,132	0,5	14,583	7,2915
299	3980	5	305,075	305,175	0,5	5,417	2,7085
299+13,427	5993,427	5	304,3645	304,4645	0,5	13,427	6,7135
300	6000	5	304,3132	304,4132	0,5	6,573	3,2865
300+3,601	6003,601	5	304,0202	304,1202	0,5	3,601	1,8005
301	6020	5	303,7088	303,8088	0,5	16,399	8,1995
301+1,185	6021,185	5	303,531	303,631	0,5	1,185	0,5925
302	6040	5	303,5926	303,6926	0,5	18,815	9,4075
303	6060	5	303,7362	303,8362	0,5	20	10

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303+11,420	6071,42	5	303,7791	303,8791	0,5	11,42	
304	6080	5	302,706	302,806	0,5	8,58	4,240
305	6100	5	301,4674	301,5674	0,5	20	10
305+5,969	6105,969	5	300,9292	301,0292	0,5	5,969	2,9845
306	6120	5	298,101	298,201	0,5	14,031	7,0155
306+16,194	6136,194	5	297,1942	297,2942	0,5	16,194	8,097
307	6140	5	296,8025	296,9025	0,5	3,806	1,903
308	6160	5	296,226	296,326	0,5	20	10
308+6,413	6166,413	5	295,6495	295,7495	0,5	6,413	3,2065
309	6180	5	295,3762	295,4762	0,5	13,587	6,7935
310	6200	5	295,4422	295,5422	0,5	20	10
311	6220	5	295,5676	295,6676	0,5	20	10
311+9,482	6229,482	5	295,693	295,793	0,5	9,482	4,741
312	6240	5	295,7514	295,8514	0,5	10,518	5,259
313	6260	5	296,1097	296,2097	0,5	20	10
314	6280	5	296,6053	296,7053	0,5	20	10
314+9,320	6289,32	5	297,1373	297,2373	0,5	9,32	4,66
315	6300	5	299,1716	299,2716	0,5	10,68	5,34
315+14,770	6314,77	5	301,2059	301,3059	0,5	14,77	7,385
316	6320	5	301,3266	301,4266	0,5	5,23	2,615
317	6340	5	303,4236	303,5236	0,5	20	10
318	6360	5	303,7607	303,8607	0,5	20	10
318+1,186	6361,186	5	304,7515	304,8515	0,5	1,186	0,593
319	6380	5	305,9189	306,0189	0,5	18,814	9,407
319+3,024	6383,024	5	307,0087	307,1087	0,5	3,024	1,512
320	6400	5	307,0068	307,1068	0,5	16,976	8,488
321	6420	5	306,9775	307,0775	0,5	20	10
321+18,671	6438,671	5	306,9482	307,0482	0,5	18,671	9,3355
322	6440	5	306,9394	307,0394	0,5	1,329	0,6645
323	6460	5	306,9948	307,0948	0,5	20	10
324	6480	5	307,0739	307,1739	0,5	20	10
324+5,990	6485,99	5	307,153	307,253	0,5	5,99	2,995
325	6500	5	307,158	307,258	0,5	14,01	7,005
326	6520	5	307,3478	307,4478	0,5	20	10
327	6540	5	307,4341	307,5341	0,5	20	10
327+1,265	6541,265	5	307,5924	307,6924	0,5	1,265	0,6325
328	6560	5	307,7466	307,8466	0,5	18,735	9,3675
328+8,512	6568,512	5	307,9032	308,0032	0,5	8,512	4,256
329	6580	5	308,2584	308,3584	0,5	11,488	5,744
329+11,183	6591,183	5	308,6135	308,7135	0,5	11,183	5,5915
330	6600	5	308,7771	308,8771	0,5	8,817	4,4085
331	6620	5	309,0002	309,1002	0,5	20	10
332	6640	5	309,4136	309,5136	0,5	20	10
332+9,209	6649,209	5	309,7916	309,8916	0,5	9,209	4,6045
333	6660	5	309,8157	309,9157	0,5	10,791	5,3955
334	6680	5	310,0938	310,1938	0,5	20	10
334+18,282	6698,282	5	310,0916	310,1916	0,5	18,282	9,141
335	6700	5	309,7078	309,8078	0,5	1,718	0,859
335+19,849	6719,849	5	309,4134	309,5134	0,5	19,849	9,9245

336	6720	5	278.3482	278.4482	0,5	0,151	0,0755
337	6740	5	278.3236	278.4236	0,5	20	10
337+15.367	6755,367	5	278.1211	278.2211	0,5	15,367	7,6835
<b>TOTAL</b>	<b>6755,367</b>					<b>6755,367</b>	<b>337,2835</b>



  
 RICHARDSON JORGE DANTAS  
 ENGENHEIRO CIVIL  
 CREA 53913



0	PI0	0,000	9.250.100,1000	538.002,2432	314,3767	181°18'09"
1		20,000	9.250.100,5545	537.982,2484	314,0293	181°18'08"
1+16,116	PI1	36,116	9.250.100,9208	537.966,1365	313,7493	181°34'20"
2		40,000	9.250.101,0457	537.962,2545	313,4775	181°50'32"
3		60,000	9.250.101,6686	537.942,2649	312,0782	181°50'32"
3+8,315	PI2	68,315	9.250.101,9559	537.933,9541	311,4964	185°56'52"
4		80,000	9.250.103,9956	537.922,4486	311,0596	190°03'12"
5		100,000	9.250.107,4869	537.902,7557	310,3119	190°03'12"
6		120,000	9.250.110,9782	537.883,0627	309,5642	190°03'12"
6+1,722	PI3	121,722	9.250.111,2788	537.881,3669	309,4998	184°39'31"
7		140,000	9.250.111,0440	537.863,0907	308,9339	179°15'51"
7+17,327	PI4	157,327	9.250.110,8215	537.845,7651	308,3975	172°29'24"
8		160,000	9.250.110,1820	537.843,1748	308,2531	165°42'57"
9		180,000	9.250.105,2273	537.823,7931	307,1729	165°42'57"
9+10,028	PI5	190,028	9.250.102,7530	537.814,0747	306,6312	164°12'16"
10		200,000	9.250.099,7866	537.804,5546	305,2646	162°41'35"
10+12,002	PI6	212,002	9.250.096,2162	537.793,0964	303,6197	164°07'50"
11		220,000	9.250.094,2228	537.785,3504	303,2805	165°34'05"
11+16,707	PI7	236,707	9.250.090,0590	537.769,1709	302,5719	174°56'41"
12		240,000	9.250.090,3072	537.765,8869	302,5129	184°19'16"
13		260,000	9.250.091,8141	537.745,9438	302,1543	184°19'16"
13+0,195	PI8	260,195	9.250.091,8288	537.745,7492	302,1508	191°33'05"
14		280,000	9.250.098,2052	537.726,9988	302,0597	198°46'53"
15		300,000	9.250.104,6443	537.708,0638	301,9677	198°46'53"
16		320,000	9.250.111,0835	537.689,1287	301,8756	198°46'53"
16+17,089	PI9	337,089	9.250.116,5855	537.672,9495	301,7970	200°48'46"
17		340,000	9.250.117,7156	537.670,2669	301,8317	202°50'38"
18		360,000	9.250.125,4800	537.651,8356	302,0701	202°50'38"
19		380,000	9.250.133,2444	537.633,4043	302,3084	202°50'38"
19+8,706	PI10	388,706	9.250.136,6244	537.625,3809	302,4122	209°44'41"
20		400,000	9.250.143,3652	537.616,3194	302,5655	216°38'44"
20+14,990	PI11	414,990	9.250.152,3122	537.604,2923	302,7690	217°41'36"
21		420,000	9.250.155,4475	537.600,3846	302,8836	218°44'28"
21+19,940	PI12	439,940	9.250.167,9263	537.584,8314	303,3398	210°46'26"
22		440,000	9.250.167,9494	537.584,7766	303,3431	202°52'23"
23		460,000	9.250.175,7232	537.566,3492	304,4682	202°52'23"
23+5,983	PI13	465,983	9.250.178,0488	537.560,8366	304,8047	195°27'33"
24		480,000	9.250.180,0105	537.546,9576	306,6521	188°02'43"
24+7,341	PI14	487,341	9.250.181,0379	537.539,6892	307,6196	188°36'15"
25		500,000	9.250.183,0539	537.527,1914	308,5539	189°09'48"
25+0,449	PI15	500,449	9.250.183,1253	537.526,7486	308,5870	183°43'15"
26		520,000	9.250.182,5379	537.507,2060	310,4738	178°16'42"
26+4,689	PI16	524,689	9.250.182,3970	537.502,5193	310,9263	170°50'38"
27		540,000	9.250.178,0253	537.487,8455	312,1924	163°24'35"
27+8,614	PI17	548,614	9.250.175,5658	537.479,5903	312,9047	173°32'20"
27+15,400	PI18	555,400	9.250.175,9999	537.472,8183	312,2586	179°43'22"
28		560,000	9.250.175,6612	537.468,2305	312,4844	175°46'39"
28+17,957	PI19	577,957	9.250.174,3390	537.450,3221	313,3656	184°49'53"





29		580,000	9.250.174,8292	537.448,3389	313,4559	193°53'06"
30		600,000	9.250.179,6288	537.428,9233	314,3398	193°53'06"
30+18,277	PI20	618,277	9.250.184,0149	537.411,1799	315,1475	197°59'38"
31		620,000	9.250.184,6630	537.409,5840	315,1888	202°06'09"
32		640,000	9.250.192,1884	537.391,0538	315,6682	202°06'09"
32+8,176	PI21	648,176	9.250.195,2648	537.383,4784	315,8642	204°33'05"
33		660,000	9.250.200,6327	537.372,9433	315,6090	207°00'00"
34		680,000	9.250.209,7124	537.355,1232	315,1772	207°00'00"
34+11,792	PI22	691,792	9.250.215,0660	537.344,6162	314,9227	216°24'28"
35		700,000	9.250.220,9518	537.338,8957	314,6069	225°48'56"
36		720,000	9.250.235,2938	537.324,9563	313,8373	225°48'56"
36+16,007	PI23	736,007	9.250.246,7723	537.313,8000	313,2213	226°57'03"
37		740,000	9.250.249,7438	537.311,1325	313,0789	228°05'11"
38		760,000	9.250.264,6269	537.297,7723	312,3654	228°05'11"
38+4,589	PI24	764,589	9.250.268,0420	537.294,7066	312,2017	220°06'08"
39		780,000	9.250.276,2354	537.281,6545	311,2146	212°07'06"
40		800,000	9.250.286,8687	537.264,7154	309,9336	212°07'06"
41		820,000	9.250.297,5021	537.247,7763	308,6525	212°07'06"
41+12,117	PI25	832,117	9.250.303,9445	537.237,5135	307,8764	213°42'40"
42		840,000	9.250.308,5000	537.231,0805	307,0579	215°18'14"
42+14,914	PI26	854,914	9.250.317,1191	537.218,9090	305,5094	218°08'15"
43		860,000	9.250.320,4537	537.215,0691	305,0958	220°58'16"
44		880,000	9.250.333,5673	537.199,9683	303,4692	220°58'16"
45		900,000	9.250.346,6809	537.184,8675	301,8427	220°58'16"
45+11,228	PI27	911,228	9.250.354,0429	537.176,3898	300,9295	204°30'51"
46		920,000	9.250.355,2724	537.167,7045	300,5630	188°03'25"
47		940,000	9.250.358,0755	537.147,9019	299,7272	188°03'25"
47+10,959	PI28	950,959	9.250.359,6115	537.137,0510	299,2693	187°07'17"
48		960,000	9.250.360,5857	537.128,0627	299,1715	186°11'09"
49		980,000	9.250.362,7407	537.108,1792	298,9550	186°11'09"
49+12,294	PI29	992,294	9.250.364,0654	537.095,9568	298,8220	189°47'51"
50		1000,000	9.250.365,8525	537.088,4608	298,7431	193°24'34"
51		1020,000	9.250.370,4907	537.069,0061	298,5383	193°24'34"
52		1040,000	9.250.375,1289	537.049,5513	298,3336	193°24'34"
53		1060,000	9.250.379,7671	537.030,0966	298,1288	193°24'34"
54		1080,000	9.250.384,4053	537.010,6418	297,9240	193°24'34"
54+7,863	PI30	1087,863	9.250.386,2287	537.002,9935	297,8435	190°57'07"
55		1100,000	9.250.388,0216	536.990,9893	297,7666	188°29'41"
56		1120,000	9.250.390,9759	536.971,2087	297,6400	188°29'41"
57		1140,000	9.250.393,9302	536.951,4281	297,5134	188°29'41"
58		1160,000	9.250.396,8846	536.931,6476	297,3867	188°29'41"
58+2,279	PI31	1162,279	9.250.397,2212	536.929,3937	297,3723	188°34'51"
59		1180,000	9.250.399,8916	536.911,8749	297,2844	188°40'01"
60		1200,000	9.250.402,9054	536.892,1033	297,1851	188°40'01"
60+9,052	PI32	1209,052	9.250.404,2695	536.883,1546	297,1402	191°10'37"
61		1220,000	9.250.406,8600	536.872,5176	297,0862	193°41'14"
62		1240,000	9.250.411,5924	536.853,0855	296,9875	193°41'14"
63		1260,000	9.250.416,3248	536.833,6535	296,8889	193°41'14"





64		1280,000	9.250.421,0572	536.814,2214	296,7902	193°41'14"
64+5,187	PI33	1285,187	9.250.422,2845	536.809,1819	296,7646	196°19'29"
65		1300,000	9.250.427,0979	536.795,1726	296,6737	198°57'43"
66		1320,000	9.250.433,5968	536.776,2579	296,5509	198°57'43"
66+18,534	PI34	1338,534	9.250.439,6193	536.758,7295	296,4372	195°04'52"
67		1340,000	9.250.439,9040	536.757,2916	296,4312	191°12'01"
68		1360,000	9.250.443,7888	536.737,6725	296,3495	191°12'01"
68+15,604	PI35	1375,604	9.250.446,8196	536.722,3662	296,2858	185°24'11"
69		1380,000	9.250.446,7894	536.717,9698	296,2776	179°36'22"
70		1400,000	9.250.446,6519	536.697,9703	296,2405	179°36'22"
71		1420,000	9.250.446,5143	536.677,9707	296,2034	179°36'22"
72		1440,000	9.250.446,3768	536.657,9712	296,1663	179°36'22"
73		1460,000	9.250.446,2393	536.637,9717	296,1291	179°36'22"
73+8,361	PI36	1468,361	9.250.446,1818	536.629,6106	296,1136	184°34'55"
74		1480,000	9.250.448,1144	536.618,1334	296,1180	189°33'29"
75		1500,000	9.250.451,4353	536.598,4111	296,1256	189°33'29"
76		1520,000	9.250.454,7562	536.578,6887	296,1331	189°33'29"
77		1540,000	9.250.458,0771	536.558,9664	296,1407	189°33'29"
77+8,511	PI37	1548,511	9.250.459,4903	536.550,5736	296,1439	201°49'28"
78		1560,000	9.250.465,9300	536.541,0589	296,1269	214°05'27"
79		1580,000	9.250.477,1402	536.524,4959	296,0972	214°05'27"
80		1600,000	9.250.488,3503	536.507,9329	296,0676	214°05'27"
80+1,134	PI38	1601,134	9.250.488,9859	536.506,9939	296,0659	212°50'08"
81		1620,000	9.250.498,8658	536.490,9217	296,0309	211°34'48"
82		1640,000	9.250.509,3396	536.473,8835	295,9939	211°34'48"
83		1660,000	9.250.519,8134	536.456,8453	295,9568	211°34'48"
83+5,253	PI39	1665,253	9.250.522,5643	536.452,3702	295,9471	211°30'32"
84		1680,000	9.250.530,2559	536.439,7879	295,9900	211°26'15"
85		1700,000	9.250.540,6873	536.422,7237	296,0481	211°26'15"
86		1720,000	9.250.551,1186	536.405,6596	296,1063	211°26'15"
87		1740,000	9.250.561,5500	536.388,5954	296,1644	211°26'15"
87+7,827	PI40	1747,827	9.250.565,6321	536.381,9177	296,1872	203°18'03"
88		1760,000	9.250.568,8165	536.370,1681	296,1509	196°09'52"
89		1780,000	9.250.574,0483	536.350,8645	296,0912	195°09'52"
90		1800,000	9.250.579,2801	536.331,5609	296,0315	195°09'52"
90+2,350	PI41	1802,350	9.250.579,8947	536.329,2932	296,0245	185°59'26"
91		1820,000	9.250.578,9146	536.311,6700	296,0183	176°49'00"
92		1840,000	9.250.577,8040	536.291,7009	296,0113	176°49'00"
93		1860,000	9.250.576,6934	536.271,7317	296,0043	176°49'00"
93+16,277	PI42	1876,277	9.250.575,7895	536.255,4799	295,9986	183°00'24"
94		1880,000	9.250.576,3845	536.251,8047	295,9938	189°11'47"
95		1900,000	9.250.579,5810	536.232,0618	295,9682	189°11'47"
96		1920,000	9.250.582,7774	536.212,3188	295,9426	189°11'47"
97		1940,000	9.250.585,9738	536.192,5759	295,9170	189°11'47"
98		1960,000	9.250.589,1702	536.172,8330	295,8914	189°11'47"
98+2,709	PI43	1962,709	9.250.589,6032	536.170,1587	295,8879	193°28'01"
99		1980,000	9.250.594,8709	536.153,6898	295,9244	197°44'14"
100		2000,000	9.250.600,9640	536.134,6405	295,9666	197°44'14"



100+7,034	PI44	2007,034	9.250.603,1070	536.127,9407	295,9815	185°35'09"
101		2020,000	9.250.601,6244	536.115,0599	295,7505	173°26'03"
102		2040,000	9.250.599,3375	536.095,1911	295,3941	173°26'03"
103		2060,000	9.250.597,0507	536.075,3223	295,0377	173°26'03"
104		2080,000	9.250.594,7638	536.055,4535	294,6814	173°26'03"
105		2100,000	9.250.592,4769	536.035,5847	294,3250	173°26'03"
105+11,949	PI45	2111,949	9.250.591,1106	536.023,7143	294,1121	173°03'16"
106		2120,000	9.250.590,0840	536.015,7287	294,0780	172°40'29"
107		2140,000	9.250.587,5340	535.995,8920	293,9933	172°40'29"
108		2160,000	9.250.584,9839	535.976,0552	293,9086	172°40'29"
109		2180,000	9.250.582,4339	535.956,2184	293,8240	172°40'29"
110		2200,000	9.250.579,8838	535.936,3817	293,7393	172°40'29"
111		2220,000	9.250.577,3338	535.916,5449	293,6546	172°40'29"
111+1,678	PI46	2221,678	9.250.577,1198	535.914,8805	293,6475	170°45'36"
112		2240,000	9.250.573,5753	535.896,9047	293,5408	168°50'43"
113		2260,000	9.250.569,7061	535.877,2826	293,4243	168°50'43"
114		2280,000	9.250.565,8369	535.857,6604	293,3079	168°50'43"
114+17,336	PI47	2297,336	9.250.562,4831	535.840,6519	293,2069	173°38'55"
115		2300,000	9.250.562,4111	535.837,9889	293,1979	178°27'07"
116		2320,000	9.250.561,8708	535.817,9962	293,1303	178°27'07"
117		2340,000	9.250.561,3305	535.798,0035	293,0628	178°27'07"
118		2360,000	9.250.560,7902	535.778,0108	292,9952	178°27'07"
118+1,717	PI48	2361,717	9.250.560,7438	535.776,2946	292,9894	180°35'39"
119		2380,000	9.250.561,6167	535.758,0323	292,9424	182°44'11"
120		2400,000	9.250.562,5715	535.738,0551	292,8909	182°44'11"
121		2420,000	9.250.563,5263	535.718,0779	292,8394	182°44'11"
121+8,912	PI49	2428,912	9.250.563,9518	535.709,1756	292,8165	189°09'52"
122		2440,000	9.250.566,9320	535.698,4961	292,8403	195°35'32"
123		2460,000	9.250.572,3078	535.679,2321	292,8833	195°35'32"
124		2480,000	9.250.577,6836	535.659,9681	292,9263	195°35'32"
125		2500,000	9.250.583,0594	535.640,7041	292,9693	195°35'32"
125+14,995	PI50	2514,995	9.250.587,0899	535.626,2610	293,0015	201°49'03"
126		2520,000	9.250.589,4429	535.621,8436	293,0528	208°02'35"
127		2540,000	9.250.598,8456	535.604,1917	293,2578	208°02'35"
128		2560,000	9.250.608,2483	535.586,5398	293,4628	208°02'35"
128+15,407	PI51	2575,407	9.250.615,4917	535.572,9414	293,6207	214°57'15"
129		2580,000	9.250.618,5568	535.569,5211	293,7573	221°51'55"
130		2600,000	9.250.631,9045	535.554,6268	294,3520	221°51'55"
130+10,544	PI52	2610,544	9.250.638,9416	535.546,7743	294,6655	221°54'07"
131		2620,000	9.250.645,2611	535.539,7406	295,3047	221°56'18"
132		2640,000	9.250.658,6277	535.524,8633	296,6566	221°56'18"
132+14,689	PI53	2654,689	9.250.668,4451	535.513,9364	297,6496	219°00'35"
133		2660,000	9.250.671,5727	535.509,6444	297,5105	216°04'53"
134		2680,000	9.250.683,3514	535.493,4808	296,9867	216°04'53"
134+14,039	PI54	2694,039	9.250.691,6193	535.482,1348	296,6190	217°44'14"
135		2700,000	9.250.695,4024	535.477,5280	296,7269	219°23'35"
135+18,593	PI55	2718,593	9.250.707,2019	535.463,1595	297,0634	239°04'26"
136		2720,000	9.250.708,5824	535.462,8850	297,1385	258°45'16"





136+13,996	PI56	2733,996	9.250.722,3092	535.460,1557	297,8850	286°52'47"
137		2740,000	9.250.728,2908	535.460,6795	298,1597	275°00'17"
137+16,770	PI57	2756,770	9.250.744,9967	535.462,1425	298,9268	273°25'48"
138		2760,000	9.250.748,2252	535.462,2471	298,9078	271°51'18"
139		2780,000	9.250.768,2147	535.462,8945	298,7901	271°51'18"
139+16,036	PI58	2796,036	9.250.784,2419	535.463,4136	298,6958	268°52'08"
140		2800,000	9.250.788,1960	535.463,1289	298,6136	265°52'57"
141		2820,000	9.250.808,1444	535.461,6929	298,1987	265°52'57"
141+10,691	PI59	2830,691	9.250.818,8077	535.460,9253	297,9770	265°00'30"
142		2840,000	9.250.828,0681	535.459,9739	297,9337	264°08'04"
143		2860,000	9.250.847,9634	535.457,9300	297,8408	264°08'04"
143+7,733	PI60	2867,733	9.250.865,6563	535.457,1397	297,8048	253°02'29"
144		2880,000	9.250.866,4818	535.451,3711	296,8967	241°56'54"
144+10,298	PI61	2890,298	9.250.875,5698	535.446,5284	296,1344	231°13'40"
145		2900,000	9.250.881,6719	535.439,1515	295,6806	220°30'27"
146		2920,000	9.250.894,8628	535.423,9451	294,7451	220°30'27"
146+6,482	PI62	2926,482	9.250.899,0733	535.419,0166	294,4419	209°59'57"
147		2940,000	9.250.903,5836	535.406,2734	294,3613	199°29'27"
148		2960,000	9.250.910,2567	535.387,4195	294,2422	199°29'27"
149		2980,000	9.250.916,9298	535.368,5656	294,1230	199°29'27"
149+0,833	PI63	2980,833	9.250.917,2078	535.367,7800	294,1180	197°06'21"
150		3000,000	9.250.922,0782	535.349,2424	294,1246	194°43'15"
151		3020,000	9.250.927,1604	535.329,8989	294,1316	194°43'15"
152		3040,000	9.250.932,2426	535.310,5554	294,1385	194°43'15"
153		3060,000	9.250.937,3248	535.291,2119	294,1454	194°43'15"
153+13,302	PI64	3073,302	9.250.940,7050	535.278,3462	294,1500	194°29'57"
154		3080,000	9.250.942,3568	535.271,8554	294,2069	194°16'39"
155		3100,000	9.250.947,2891	535.252,4732	294,3769	194°16'39"
155+9,360	PI65	3109,360	9.250.949,5974	535.243,4026	294,4565	183°00'47"
156		3120,000	9.250.948,0703	535.232,8724	294,7012	171°44'54"
157		3140,000	9.250.945,1999	535.213,0795	295,1610	171°44'54"
158		3160,000	9.250.942,3295	535.193,2865	295,6209	171°44'54"
158+2,402	PI66	3162,402	9.250.941,9848	535.190,9099	295,6761	173°35'14"
159		3180,000	9.250.940,5814	535.173,3674	298,2645	175°25'33"
159+12,054	PI67	3192,054	9.250.939,6201	535.161,3522	300,0373	181°25'14"
160		3200,000	9.250.940,6456	535.153,4723	300,7527	187°24'54"
161		3220,000	9.250.943,2268	535.133,6395	302,5532	187°24'54"
161+15,469	PI68	3235,469	9.250.945,2231	535.118,3003	303,9457	196°06'49"
162		3240,000	9.250.947,1247	535.114,1872	304,4031	204°48'43"
163		3260,000	9.250.955,5175	535.096,0334	306,4220	204°48'43"
163+6,770	PI69	3266,770	9.250.958,3584	535.089,8884	307,1054	209°08'58"
164		3280,000	9.250.965,6580	535.078,8543	307,9763	213°29'13"
164+15,464	PI70	3295,464	9.250.974,1902	535.065,9572	308,9943	219°06'46"
165		3300,000	9.250.977,3830	535.062,7351	309,1422	224°44'20"
166		3320,000	9.250.991,4605	535.048,5287	309,7946	224°44'20"
166+9,908	PI71	3329,908	9.250.998,4343	535.041,4911	310,1177	239°12'43"
167		3340,000	9.251.008,1203	535.038,6560	310,4170	253°41'07"
167+5,778	PI72	3345,778	9.251.013,6660	535.037,0328	310,5884	259°46'41"



168		3380,000	9.251.027,9507	535.036,0088	311,2038	265°52'15"
169		3380,000	9.251.047,7988	535.034,5687	312,0692	265°52'15"
169+10,321	PI73	3390,321	9.251.058,0934	535.033,8255	312,5158	268°52'10"
170		3400,000	9.251.067,7668	535.034,1410	313,0428	271°52'05"
171		3420,000	9.251.087,7562	535.034,7930	314,1319	271°52'05"
171+12,281	PI74	3432,281	9.251.100,0310	535.035,1934	314,8006	265°20'59"
172		3440,000	9.251.107,6035	535.033,6983	314,9049	258°49'52"
172+9,451	PI75	3449,451	9.251.116,8750	535.031,8677	315,0327	254°41'01"
173		3460,000	9.251.126,8216	535.028,3524	314,1976	250°32'09"
174		3480,000	9.251.145,6786	535.021,6881	312,6144	250°32'09"
174+2,130	PI76	3482,130	9.251.147,6865	535.020,9785	312,4458	238°27'07"
175		3500,000	9.251.160,6208	535.008,6475	311,4656	226°22'04"
175+18,392	PI77	3518,392	9.251.173,9326	534.995,9566	310,4568	215°40'41"
176		3520,000	9.251.174,6119	534.994,4990	310,4125	204°59'19"
177		3540,000	9.251.183,0607	534.976,3712	309,8613	204°59'19"
178		3560,000	9.251.191,5094	534.958,2433	309,3101	204°59'19"
178+4,916	PI78	3564,916	9.251.193,5861	534.953,7875	309,1746	200°32'17"
179		3580,000	9.251.197,7660	534.939,2942	308,4952	196°05'16"
180		3600,000	9.251.203,3082	534.920,0774	307,5943	196°05'16"
180+14,863	PI79	3614,863	9.251.207,4267	534.905,7969	306,9248	193°33'31"
181		3620,000	9.251.208,4096	534.900,7544	306,7071	191°01'47"
182		3640,000	9.251.212,2359	534.881,1238	305,8596	191°01'47"
183		3660,000	9.251.216,0623	534.861,4932	305,0122	191°01'47"
184		3680,000	9.251.219,8886	534.841,8627	304,1647	191°01'47"
184+6,587	PI80	3686,587	9.251.221,1488	534.835,3973	303,8856	192°25'15"
185		3700,000	9.251.224,3510	534.822,3722	302,7995	193°48'44"
186		3720,000	9.251.229,1259	534.802,9505	301,1800	193°48'44"
186+16,084	PI81	3736,084	9.251.232,9657	534.787,3320	299,8776	193°41'14"
187		3740,000	9.251.233,8841	534.783,5248	299,3909	193°33'44"
188		3760,000	9.251.238,5742	534.764,0825	296,9055	193°33'44"
188+3,138	PI82	3763,138	9.251.239,3100	534.761,0322	296,5156	194°42'43"
189		3780,000	9.251.243,9186	534.744,8120	296,1117	195°51'41"
190		3800,000	9.251.249,3849	534.725,5735	295,6326	195°51'41"
191		3820,000	9.251.254,8511	534.706,3350	295,1535	195°51'41"
191+3,379	PI83	3823,379	9.251.255,7747	534.703,0845	295,0726	196°13'23"
192		3840,000	9.251.260,5187	534.687,1551	295,1871	196°35'04"
193		3860,000	9.251.266,2273	534.667,9871	295,3249	196°35'04"
194		3880,000	9.251.271,9358	534.648,8191	295,4627	196°35'04"
195		3900,000	9.251.277,6444	534.629,6511	295,6004	196°35'04"
196		3920,000	9.251.283,3529	534.610,4831	295,7382	196°35'04"
197		3940,000	9.251.289,0615	534.591,3151	295,8760	196°35'04"
197+19,293	PI84	3959,293	9.251.294,5682	534.572,8247	296,0089	195°52'43"
198		3960,000	9.251.294,7533	534.572,1423	296,0481	195°10'23"
199		3980,000	9.251.299,9880	534.552,8395	297,1567	195°10'23"
200		4000,000	9.251.305,2227	534.533,5367	298,2654	195°10'23"
200+1,514	PI85	4001,514	9.251.305,6188	534.532,0760	298,3493	193°21'43"
201		4020,000	9.251.309,3206	534.513,9639	299,3440	191°33'04"
202		4040,000	9.251.313,3254	534.494,3689	300,4202	191°33'04"





202+0,943	PI86	4040,943	9.251.313,5142	534.493,4452	300,4709	190°25'02"
203		4060,000	9.251.316,5884	534.474,6376	300,1542	189°17'00"
204		4080,000	9.251.319,8147	534.454,8996	299,8218	189°17'00"
204+3,812	PI87	4083,812	9.251.320,4296	534.451,1379	299,7584	187°48'32"
205		4100,000	9.251.322,2157	534.435,0483	299,3541	186°20'04"
205+16,041	PI88	4116,041	9.251.323,9855	534.419,1056	298,9535	179°20'30"
206		4120,000	9.251.323,4584	534.415,1815	298,7468	172°20'56"
207		4140,000	9.251.320,7955	534.395,3596	297,7029	172°20'56"
207+4,743	PI89	4144,743	9.251.320,1640	534.390,6584	297,4553	172°00'19"
208		4160,000	9.251.317,9515	534.375,5631	297,3024	171°39'42"
209		4180,000	9.251.315,0511	534.355,7745	297,1019	171°39'42"
210		4200,000	9.251.312,1508	534.335,9859	296,9014	171°39'42"
211		4220,000	9.251.309,2504	534.316,1973	296,7010	171°39'42"
211+0,007	PI90	4220,007	9.251.309,2494	534.316,1906	296,7009	168°20'52"
212		4240,000	9.251.304,0862	534.296,8756	297,9806	165°02'02"
212+0,802	PI91	4240,802	9.251.303,8791	534.296,1007	298,0319	167°11'14"
213		4260,000	9.251.300,3281	534.277,2341	299,0095	169°20'26"
214		4280,000	9.251.296,6287	534.257,5792	300,0280	169°20'26"
214+6,858	PI92	4286,858	9.251.295,3602	534.250,8399	300,3772	175°22'30"
215		4300,000	9.251.295,6835	534.237,7015	299,2340	181°24'34"
215+1.903	PI93	4301,903	9.251.295,7303	534.235,7989	299,0685	180°31'47"
216		4320,000	9.251.295,6198	534.217,7024	298,8337	179°39'00"
216+15,341	PI94	4335,341	9.251.295,5261	534.202,3617	298,6346	177°35'50"
217		4340,000	9.251.295,1641	534.197,7168	299,0443	175°32'39"
218		4360,000	9.251.293,6104	534.177,7772	300,8032	175°32'39"
218+16,262	PI95	4376,262	9.251.292,3470	534.161,5648	302,2333	171°54'22"
219		4380,000	9.251.291,5868	534.157,9045	302,4472	168°16'05"
219+17,713	PI96	4397,713	9.251.287,9851	534.140,5612	303,4606	166°23'02"
220		4400,000	9.251.287,3740	534.138,3577	303,4449	164°30'00"
221		4420,000	9.251.282,0293	534.119,0851	303,3079	164°30'00"
222		4440,000	9.251.276,6846	534.099,8125	303,1710	164°30'00"
222+7,614	PI97	4447,614	9.251.274,6498	534.092,4753	303,1188	172°59'42"
223		4460,000	9.251.274,9718	534.080,0936	302,9159	181°29'24"
224		4480,000	9.251.275,4919	534.060,1003	302,5884	181°29'24"
224+9,412	PI98	4489,412	9.251.275,7366	534.050,6920	302,4342	189°52'38"
225		4500,000	9.251.279,0551	534.040,6370	302,0211	198°15'52"
226		4520,000	9.251.285,3231	534.021,6446	301,2407	198°15'52"
227		4540,000	9.251.291,5912	534.002,6522	300,4603	198°15'52"
227+4,397	PI99	4544,397	9.251.292,9691	533.998,4771	300,2888	198°03'22"
228		4560,000	9.251.297,7513	533.983,6246	299,8504	197°50'51"
229		4580,000	9.251.303,8810	533.964,5870	299,2885	197°50'51"
229+1,723	PI100	4581,723	9.251.304,4091	533.962,9469	299,2401	194°48'16"
230		4600,000	9.251.308,1346	533.945,0537	298,0338	191°45'40"
231		4620,000	9.251.312,2112	533.925,4736	296,7139	191°45'40"
231+3,388	PI101	4623,388	9.251.312,9017	533.922,1572	296,4903	191°27'59"
232		4640,000	9.251.316,1203	533.905,8595	295,0137	191°10'18"
233		4660,000	9.251.319,9953	533.886,2384	293,2359	191°10'18"
233+11,569	PI102	4671,569	9.251.322,2368	533.874,8885	292,2076	189°57'54"



234		4680,000	9.251.323,5205	533.866,5560	292,0590	188°45'29"
235		4700,000	9.251.326,5658	533.846,7892	291,7065	188°45'29"
236		4720,000	9.251.329,6111	533.827,0224	291,3540	188°45'29"
236+17,009	PI103	4737,009	9.251.332,2009	533.810,2120	291,0542	186°30'41"
237		4740,000	9.251.332,4234	533.807,2290	291,0651	184°15'53"
238		4760,000	9.251.333,9107	533.787,2844	291,1376	184°15'53"
239		4780,000	9.251.335,3980	533.767,3397	291,2102	184°15'53"
239+6,785	PI104	4786,785	9.251.335,9026	533.760,5738	291,2348	174°16'30"
240		4800,000	9.251.332,3232	533.747,8525	291,5758	164°17'07"
240+11,197	PI105	4811,197	9.251.329,2906	533.737,0742	291,8648	154°26'17"
241		4820,000	9.251.324,1900	533.729,8993	292,7273	144°35'28"
241+14,822	PI106	4834,822	9.251.315,6020	533.717,8188	294,1794	135°40'34"
242		4840,000	9.251.311,4537	533.714,7199	294,4068	126°45'39"
242+19,803	PI107	4859,803	9.251.295,5884	533.702,8680	295,2767	128°20'06"
243		4860,000	9.251.295,4376	533.702,7419	295,2683	129°54'33"
244		4880,000	9.251.280,0963	533.689,9104	294,4106	129°54'33"
244+18,411	PI108	4898,411	9.251.265,9737	533.678,0982	293,6211	132°30'52"
245		4900,000	9.251.264,8527	533.676,9725	293,6014	135°07'11"
246		4920,000	9.251.250,7402	533.662,8008	293,3529	135°07'11"
246+18,446	PI109	4938,446	9.251.237,7241	533.649,7302	293,1237	131°08'46"
247		4940,000	9.251.236,4859	533.648,7913	292,9800	127°10'21"
248		4960,000	9.251.220,5495	533.636,7070	291,1303	127°10'21"
248+8,927	PI110	4968,927	9.251.213,4366	533.631,3134	290,3047	122°45'07"
249		4980,000	9.251.203,6896	533.626,0583	290,2051	118°19'53"
250		5000,000	9.251.186,0853	533.616,5669	290,0251	118°19'53"
251		5020,000	9.251.168,4809	533.607,0755	289,8452	118°19'53"
252		5040,000	9.251.150,8766	533.597,5841	289,6652	118°19'53"
253		5060,000	9.251.133,2722	533.588,0927	289,4853	118°19'53"
253+14,412	PI111	5074,412	9.251.120,5868	533.581,2533	289,3556	118°36'06"
254		5080,000	9.251.115,6931	533.578,5550	289,4143	118°52'19"
255		5100,000	9.251.098,1791	533.568,8979	289,6242	118°52'19"
256		5120,000	9.251.080,6650	533.559,2409	289,8341	118°52'19"
256+2,016	PI112	5122,016	9.251.078,8997	533.558,2675	289,8553	126°02'12"
257		5140,000	9.251.065,7902	533.545,9562	289,7936	133°12'06"
258		5160,000	9.251.051,2112	533.532,2648	289,7249	133°12'06"
259		5180,000	9.251.036,6322	533.518,5735	289,6562	133°12'06"
260		5200,000	9.251.022,0532	533.504,8822	289,5876	133°12'06"
261		5220,000	9.251.007,4742	533.491,1908	289,5189	133°12'06"
262		5240,000	9.250.992,8952	533.477,4995	289,4502	133°12'06"
262+0,706	PI113	5240,706	9.250.992,3804	533.477,0161	289,4478	137°58'44"
263		5260,000	9.250.980,7036	533.461,6569	289,3553	142°45'22"
263+6,425	PI114	5266,425	9.250.976,8149	533.456,5420	289,3245	146°16'21"
264		5280,000	9.250.969,9843	533.444,8110	289,3005	149°47'20"
265		5300,000	9.250.959,9205	533.427,5275	289,2650	149°47'20"
265+2,456	PI115	5302,456	9.250.958,6849	533.425,4054	289,2607	153°00'34"
266		5320,000	9.250.951,6133	533.409,3493	289,3675	156°13'48"
267		5340,000	9.250.943,5520	533.391,0459	289,4892	156°13'48"
268		5360,000	9.250.935,4907	533.372,7425	289,6109	156°13'48"





269		5380,000	9.250.927,4293	533.354,4391	289,7326	156°13'48"
270		5400,000	9.250.919,3680	533.336,1356	289,8543	156°13'48"
271		5420,000	9.250.911,3067	533.317,8322	289,9760	156°13'48"
272		5440,000	9.250.903,2453	533.299,5288	290,0977	156°13'48"
272+8,921	PI116	5449,921	9.250.899,2465	533.290,4494	290,1581	154°02'26"
273		5460,000	9.250.894,4916	533.281,5625	290,5391	151°51'04"
274		5480,000	9.250.885,0563	533.263,9280	291,2950	151°51'04"
275		5500,000	9.250.875,6210	533.246,2935	292,0510	151°51'04"
275+6,405	PI117	5506,405	9.250.872,5995	533.240,6464	292,2931	153°03'39"
276		5520,000	9.250.866,6975	533.228,3990	292,6790	154°16'15"
277		5540,000	9.250.858,0151	533.210,3819	293,2466	154°16'15"
278		5560,000	9.250.849,3327	533.192,3647	293,8143	154°16'15"
278+16,141	PI118	5576,141	9.250.842,3255	533.177,8238	294,2724	153°38'29"
279		5580,000	9.250.840,5744	533.174,3853	294,3881	153°00'44"
280		5600,000	9.250.831,4984	533.156,5632	294,9880	153°00'44"
281		5620,000	9.250.822,4223	533.138,7412	295,5878	153°00'44"
282		5640,000	9.250.813,3463	533.120,9191	296,1877	153°00'44"
282+6,342	PI119	5646,342	9.250.810,4683	533.115,2678	296,3779	153°32'18"
283		5660,000	9.250.804,4948	533.102,9853	297,4895	154°03'52"
283+11,193	PI120	5671,193	9.250.799,5993	533.092,9194	298,3641	148°38'08"
284		5680,000	9.250.794,3246	533.085,8669	298,6400	143°12'24"
284+10,173	PI121	5690,173	9.250.788,2316	533.077,7202	298,9588	120°23'17"
285		5700,000	9.250.778,4904	533.076,4258	298,9860	97°34'10"
285+8,316	PI122	5708,316	9.250.770,2474	533.075,3304	299,0090	95°34'42"
286		5720,000	9.250.758,5858	533.074,5993	299,2078	93°35'15"
287		5740,000	9.250.738,6250	533.073,3478	299,5480	93°35'15"
287+1,364	PI123	5741,364	9.250.737,2639	533.073,2625	299,5712	92°32'50"
288		5760,000	9.250.718,6341	533.072,7724	299,4864	91°30'25"
289		5780,000	9.250.698,6410	533.072,2464	299,3953	91°30'25"
290		5800,000	9.250.678,6479	533.071,7205	299,3043	91°30'25"
291		5820,000	9.250.658,6549	533.071,1945	299,2133	91°30'25"
291+5,970	PI124	5825,970	9.250.652,6870	533.071,0375	299,1861	83°52'57"
292		5840,000	9.250.638,7405	533.069,5081	299,4826	96°15'29"
293		5860,000	9.250.618,8597	533.067,3279	299,9053	96°15'29"
293+9,725	PI125	5869,725	9.250.609,1923	533.066,2678	300,1108	96°04'56"
294		5880,000	9.250.598,9722	533.065,2106	300,4871	95°54'22"
295		5900,000	9.250.579,0784	533.063,1526	301,2194	95°54'22"
295+2,285	PI126	5902,285	9.250.576,8059	533.062,9175	301,3031	95°54'27"
296		5920,000	9.250.558,1846	533.061,0937	301,8966	95°54'33"
297		5940,000	9.250.539,2909	533.059,0347	302,5666	95°54'33"
297+3,329	PI127	5943,329	9.250.535,9792	533.058,6919	302,6781	97°50'37"
298		5960,000	9.250.519,5508	533.055,8607	303,4825	99°46'40"
298+14,583	PI128	5974,583	9.250.505,1801	533.053,3842	304,1862	106°49'37"
299		5980,000	9.250.500,2262	533.051,1914	304,4068	113°52'33"
299+13,427	PI129	5993,427	9.250.487,9484	533.045,7569	304,9535	121°41'38"
300		6000,000	9.250.482,8772	533.041,5747	305,0320	129°30'44"
300+3,601	PI130	6003,601	9.250.480,0993	533.039,2838	305,0750	136°09'57"
301		6020,000	9.250.470,1887	533.026,2179	304,3645	142°49'09"





301+1,185	PI131	6021,185	9.250.469,4725	533.025,2737	304,3132	150°10'44"
302		6040,000	9.250.462,2840	533.007,8862	304,0202	157°32'18"
303		6060,000	9.250.454,6427	532.989,4035	303,7088	157°32'18"
303+11,420	PI132	6071,420	9.250.450,2797	532.978,8503	303,5310	158°33'01"
304		6080,000	9.250.447,2835	532.970,8100	303,5926	159°33'43"
305		6100,000	9.250.440,2996	532.952,0690	303,7362	159°33'43"
305+5,969	PI133	6105,969	9.250.438,2151	532.946,4753	303,7791	158°58'03"
306		6120,000	9.250.433,0439	532.933,4325	302,7060	158°22'22"
306+16,194	PI134	6136,194	9.250.427,0755	532.918,3787	301,4674	160°24'40"
307		6140,000	9.250.425,9277	532.914,7497	300,9292	162°26'57"
308		6160,000	9.250.419,8967	532.895,6807	298,1010	162°26'57"
308+6,413	PI135	6166,413	9.250.417,9629	532.889,5664	297,1942	164°25'30"
309		6180,000	9.250.414,7682	532.876,3601	296,8025	166°24'04"
310		6200,000	9.250.410,0658	532.856,9208	296,2260	166°24'04"
311		6220,000	9.250.405,3633	532.837,4815	295,6495	166°24'04"
311+9,482	PI136	6229,482	9.250.403,1339	532.828,2655	295,3762	167°09'36"
312		6240,000	9.250.400,9325	532.817,9802	295,4422	167°55'08"
313		6260,000	9.250.396,7466	532.798,4232	295,5676	167°55'08"
314		6280,000	9.250.392,5607	532.778,8661	295,6930	167°55'08"
314+9,320	PI137	6289,320	9.250.390,6100	532.769,7524	295,7514	167°12'49"
315		6300,000	9.250.388,1183	532.759,3673	296,1097	166°30'29"
315+14,770	PI138	6314,770	9.250.384,6723	532.745,0046	296,6053	166°15'39"
316		6320,000	9.250.383,4083	532.739,9299	297,1373	166°00'50"
317		6340,000	9.250.378,5746	532.720,5229	299,1716	166°00'50"
318		6360,000	9.250.373,7408	532.701,1158	301,2059	166°00'50"
318+1,186	PI139	6361,186	9.250.373,4541	532.699,9648	301,3266	162°34'17"
319		6380,000	9.250.366,7514	532.682,3854	303,4236	159°07'45"
319+3,024	PI140	6383,024	9.250.365,6739	532.679,5594	303,7607	156°31'24"
320		6400,000	9.250.358,2104	532.664,3126	304,7515	153°55'03"
321		6420,000	9.250.349,4171	532.646,3494	305,9189	153°55'03"
321+18,671	PI141	6438,671	9.250.341,2082	532.629,5799	307,0087	155°31'46"
322		6440,000	9.250.340,6919	532.628,3551	307,0068	157°08'28"
323		6460,000	9.250.332,9226	532.609,9258	306,9775	157°08'28"
324		6480,000	9.250.325,1534	532.591,4966	306,9482	157°08'28"
324+5,990	PI142	6485,990	9.250.322,8263	532.585,9765	306,9394	155°39'47"
325		6500,000	9.250.316,7257	532.573,3651	306,9948	154°11'07"
326		6520,000	9.250.308,0164	532.555,3610	307,0739	154°11'07"
327		6540,000	9.250.299,3071	532.537,3568	307,1530	154°11'07"
327+1,265	PI143	6541,265	9.250.298,7564	532.536,2183	307,1580	163°44'27"
328		6560,000	9.250.296,5694	532.517,6111	307,3478	173°17'47"
328+8,512	PI144	6568,512	9.250.295,5757	532.509,1568	307,4341	182°59'06"
329		6580,000	9.250.298,0960	532.497,9492	307,5924	192°40'24"
329+11,183	PI145	6591,183	9.250.300,5495	532.487,0384	307,7466	198°27'49"
330		6600,000	9.250.304,1713	532.478,9999	307,9032	204°15'15"
331		6620,000	9.250.312,3870	532.460,7652	308,2584	204°15'15"
332		6640,000	9.250.320,6026	532.442,5306	308,6135	204°15'15"
332+9,209	PI146	6649,209	9.250.324,3857	532.434,1341	308,7771	202°32'06"
333		6660,000	9.250.328,2203	532.424,0478	309,0002	200°48'57"

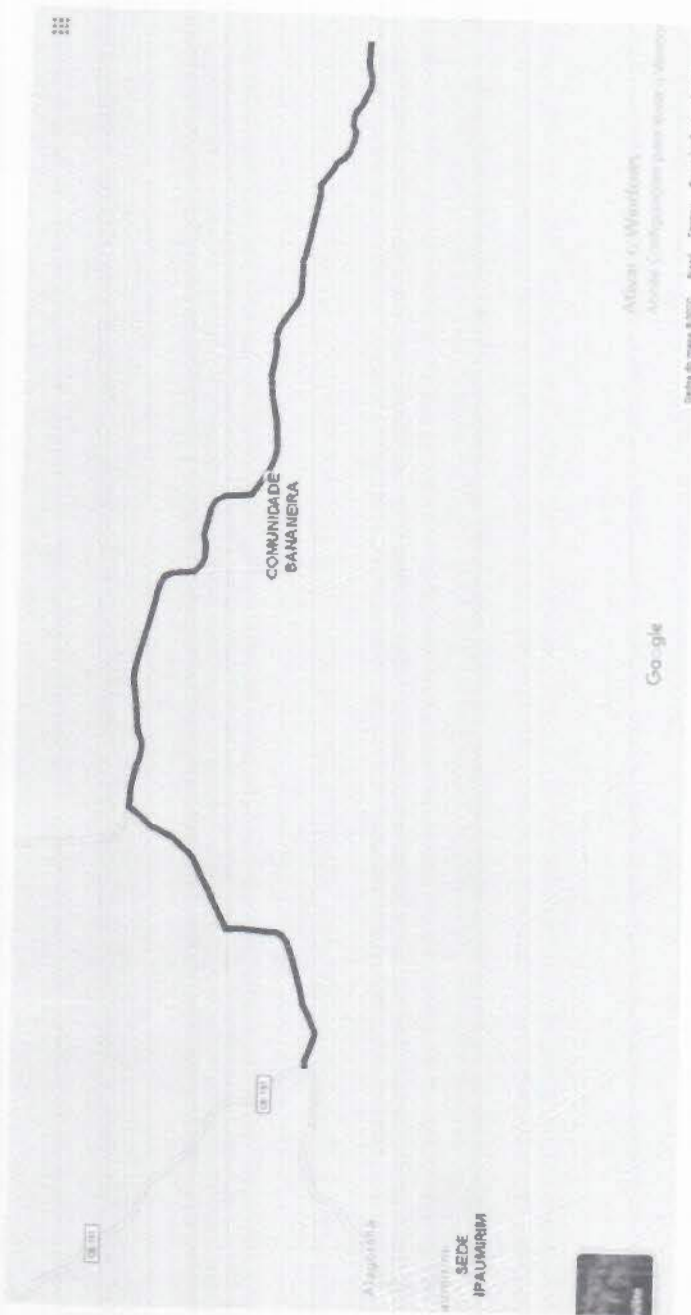


334		6680,000	9.250.335,3277	532.405,3533	309,4136	200°48'57"
334+18,282	PI147	6698,282	9.250.341,8246	532.388,2642	309,7916	196°10'55"
335		6700,000	9.250.342,1684	532.386,5814	309,8157	191°32'53"
335+19,849	PI148	6719,849	9.250.346,1419	532.367,1346	310,0938	187°56'03"
336		6720,000	9.250.346,1533	532.366,9836	310,0916	184°19'13"
337		6740,000	9.250.347,6600	532.347,0404	309,7078	184°19'13"
337+15,367	PI149	6755,367	9.250.348,8176	532.331,7175	309,4134	184°19'13"

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 RICHARDSON JORGE DANTAS  
 ENGENHEIRO CIVIL  
 CREA 53913



IMAGEM GOOGLE MAPS



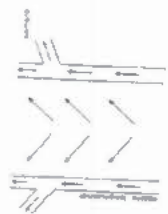
LEGENDA DE CURVAS

- CURVA PRIMARIA
- CURVA MESTRA
- TIRACADO

**Richardson Jorge Dantas**  
 Engenheiro Civil  
 CREA-CE 53913



DETALHE DE VALETA E SANGRIA



DETALHE DE TRANSVERSAL DE CORTE



ANDA  
P. 2500000 3.4  
1:50000 1000

FIM DE TRECHO

COORDENADA UTM  
NORTE 9 250 348 8176  
LESTE 502 331 7175

INICIO DE TRECHO  
COORDENADA UTM  
NORTE 9 250 100 1000  
LESTE 508 002 2432





PERFIL TRANSVERSAL COMPLETO



IMAGEM GOOGLE MAPS

LEGENDA DE CURVAS

- CURVA PRIMÁRIA
- CURVA MESTRA
- TRAÇADO

**Richardson Jorge Dantas**  
**Engenheiro Civil**  
**CREA-CE 539413**

CASA		PREFEITURA MUNICIPAL DE IBAIARA	
ENDEREÇO			
COMUNIDADE BAIXADA DO ZINCO EVEL		BARRAGEM DO CARIÁ	
TRACADO		Pavimento	
Distância em m		1 215,34	
Escala		1:250	
Data		14/03/2023	
Projeto		Projeto	
Arquiteto		RJD	





QUANTITATIVOS DE MATERIAL

PREFEITURA MUNICIPAL DE IPAUMIRIM

COMUNIDADE SÃO VICENTE

VOLUME 10 cm DE BASE

ESTACAS	DIST. ACUMULADO	LARGURA	COTA TN	C. ATERRO	VOLUME	DISTÂNCIA	V. ACUMULADO
0	0	5	289,513	289,615	0,5		
1	20	5	290,9396	291,0396	0,5	20	10
1+11,581	31,581	5	291,7646	291,8646	0,5	11,581	5,7905
2	40	5	292,0999	292,1999	0,5	8,419	4,2095
3	60	5	292,8963	292,9963	0,5	20	10
3+3,713	63,713	5	293,0442	293,1442	0,5	3,713	1,8565
4	80	5	293,4362	293,5362	0,5	16,287	8,1435
5	100	5	293,9177	294,0177	0,5	20	10
5+2,395	102,395	5	293,9753	294,0753	0,5	2,395	1,1975
6	120	5	293,9749	294,0749	0,5	17,605	8,8025
6+17,808	137,808	5	293,9745	294,0745	0,5	17,808	8,904
7	140	5	293,9849	294,0849	0,5	2,192	1,096
8	160	5	294,08	294,18	0,5	20	10
9	180	5	294,1751	294,2751	0,5	20	10
10	200	5	294,2702	294,3702	0,5	20	10
11	220	5	294,3653	294,4653	0,5	20	10
11+3,236	223,236	5	294,3807	294,4807	0,5	3,236	1,618
12	240	5	294,5767	294,6767	0,5	16,764	8,382
12+0,522	240,522	5	294,5828	294,6828	0,5	0,522	0,261
13	260	5	293,7354	293,8354	0,5	19,478	9,739
13+2,777	262,777	5	293,6146	293,7146	0,5	2,777	1,3885
14	280	5	292,8563	292,9563	0,5	17,223	8,6115
14+11,401	291,401	5	292,3544	292,4544	0,5	11,401	5,7005
15	300	5	292,4744	292,5744	0,5	8,599	4,2995
16	320	5	292,7534	292,8534	0,5	20	10
17	340	5	293,0324	293,1324	0,5	20	10
17+0,710	340,71	5	293,0423	293,1423	0,5	0,71	0,355
18	360	5	295,5115	295,6115	0,5	19,29	9,645
18+10,818	370,818	5	296,8964	296,9964	0,5	10,818	5,409
19	380	5	297,0437	298,0437	0,5	9,182	4,591
19+19,055	399,055	5	300,1174	300,2174	0,5	19,055	9,5275
20	400	5	300,1945	300,2945	0,5	0,945	0,4725
21	420	5	301,8261	301,9261	0,5	20	10
21+9,245	429,245	5	302,5803	302,6803	0,5	9,245	4,6225
22	440	5	303,1662	303,2662	0,5	10,755	5,3775
22+7,687	447,687	5	303,5849	303,6849	0,5	7,687	3,8435
23	460	5	303,885	303,985	0,5	12,313	6,1565
24	480	5	304,3725	304,4725	0,5	20	10
24+8,241	488,241	5	304,5734	304,6734	0,5	8,241	4,1205
25	500	5	304,7305	304,8305	0,5	11,759	5,8795
26	520	5	304,9976	305,0976	0,5	20	10
26+9,952	529,952	5	305,1305	305,2305	0,5	9,952	4,976
27	540	5	304,6211	304,7211	0,5	10,048	5,024

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27+19,445	559,445	5	303,6352	303,7352	0,5	19,445	9,7225
28	560	5	303,6518	303,7518	0,5	0,555	0,2775
29	580	5	304,2502	304,3502	0,5	20	10
29+17,235	597,235	5	304,7659	304,8659	0,5	17,235	8,6175
30	600	5	304,7661	304,8661	0,5	2,765	1,3825
30+18,532	618,532	5	304,6395	304,7395	0,5	18,532	9,266
31	620	5	304,5769	304,6769	0,5	1,468	0,734
31+19,693	639,693	5	303,737	303,837	0,5	19,693	9,8465
32	640	5	303,707	303,807	0,5	0,307	0,1535
33	660	5	301,7525	301,8525	0,5	20	10
33+0,284	660,284	5	301,7248	301,8248	0,5	0,284	0,142
34	680	5	299,3256	299,4256	0,5	19,716	9,858
34+5,894	685,894	5	298,6084	298,7084	0,5	5,894	2,947
35	700	5	298,1861	298,2861	0,5	14,106	7,053
35+18,413	718,413	5	297,6348	297,7348	0,5	18,413	9,2065
36	720	5	297,4981	297,5981	0,5	1,587	0,7935
36+15,988	735,988	5	296,1214	296,2214	0,5	15,988	7,994
37	740	5	295,81	295,91	0,5	4,012	2,006
37+13,511	753,511	5	294,7616	294,8616	0,5	13,511	6,7555
38	760	5	294,9957	295,0957	0,5	6,489	3,2445
38+5,515	765,515	5	295,1947	295,2947	0,5	5,515	2,7575
39	780	5	296,4497	296,5497	0,5	14,485	7,2425
39+4,607	784,607	5	296,8489	296,9489	0,5	4,607	2,3035
40	800	5	297,4542	297,5542	0,5	15,393	7,6965
41	820	5	298,3408	298,4408	0,5	20	10
41+7,386	827,386	5	298,4774	298,5774	0,5	7,386	3,693
42	840	5	298,0632	298,1632	0,5	12,614	6,307
43	860	5	297,4064	297,5064	0,5	20	10
44	880	5	296,7496	296,8496	0,5	20	10
44+0,797	880,797	5	296,7234	296,8234	0,5	0,797	0,3985
45	900	5	295,5396	295,6396	0,5	19,203	9,6015
45+13,351	913,351	5	294,7166	294,8166	0,5	13,351	6,6755
46	920	5	294,0985	294,1985	0,5	6,649	3,3245
47	940	5	292,2395	292,3395	0,5	20	10
47+8,697	948,697	5	291,4311	291,5311	0,5	8,697	4,3485
48	960	5	290,8321	290,9321	0,5	11,303	5,6515
49	980	5	289,7723	289,8723	0,5	20	10
49+0,494	980,494	5	289,7461	289,8461	0,5	0,494	0,247
50	1000	5	289,5287	289,6287	0,5	19,506	9,753
51	1020	5	289,3059	289,4059	0,5	20	10
51+2,411	1022,411	5	289,279	289,379	0,5	2,411	1,2055
52	1040	5	289,5707	289,6707	0,5	17,589	8,7945
53	1060	5	289,9023	290,0023	0,5	20	10
53+17,166	1077,166	5	290,187	290,287	0,5	17,166	8,583
54	1080	5	290,5846	290,6846	0,5	2,834	1,417
55	1100	5	293,3904	293,4904	0,5	20	10
55+7,669	1107,669	5	294,4673	294,5673	0,5	7,669	3,8345
56	1120	5	294,5897	294,6897	0,5	12,331	6,1655
57	1140	5	294,7882	294,8882	0,5	20	10



Comissão Permanente de Licitação  
 FLS. 63  
 Q

57+2,518	1142,518	5	294,8132	294,9132	0,5	2,518	1,259
58	1160	5	294,0245	294,1245	0,5	17,482	8,741
59	1180	5	293,1221	293,2221	0,5	20	10
59+0,529	1180,529	5	293,0982	293,1982	0,5	0,529	0,2645
60	1200	5	292,2627	292,3627	0,5	19,471	9,7355
60+8,170	1208,17	5	291,9121	292,0121	0,5	8,17	4,085
61	1220	5	291,8311	291,9311	0,5	11,83	5,915
62	1240	5	291,6942	291,7942	0,5	20	10
62+0,759	1240,759	5	291,689	291,789	0,5	0,759	0,3795
63	1260	5	290,7011	290,8011	0,5	19,241	9,6205
64	1280	5	289,6742	289,7742	0,5	20	10
64+14,062	1294,062	5	288,9522	289,0522	0,5	14,062	7,031
65	1300	5	288,7377	288,8377	0,5	5,938	2,969
66	1320	5	288,0154	288,1154	0,5	20	10
66+8,330	1328,33	5	287,7145	287,8145	0,5	8,33	4,165
67	1340	5	287,714	287,814	0,5	11,67	5,835
68	1360	5	287,7133	287,8133	0,5	20	10
68+1,947	1361,947	5	287,7132	287,8132	0,5	1,947	0,9735
69	1380	5	288,9018	289,0018	0,5	18,053	9,0265
69+0,712	1380,712	5	288,9487	289,0487	0,5	0,712	0,356
69+10,408	1390,408	5	289,1852	289,2852	0,5	9,696	4,848
70	1400	5	288,4984	288,5984	0,5	9,592	4,796
70+8,479	1408,479	5	287,8912	287,9912	0,5	8,479	4,2395
71	1420	5	288,0751	288,1751	0,5	11,521	5,7605
72	1440	5	288,3944	288,4944	0,5	20	10
72+8,297	1448,297	5	288,5268	288,6268	0,5	8,297	4,1485
73	1460	5	288,0939	288,1939	0,5	11,703	5,8515
74	1480	5	287,3541	287,4541	0,5	20	10
74+0,743	1480,743	5	287,3266	287,4266	0,5	0,743	0,3715
75	1500	5	287,3	287,4	0,5	19,257	9,6285
75+10,751	1510,751	5	287,2851	287,3851	0,5	10,751	5,3755
75+17,250	1517,25	5	287,3546	287,4546	0,5	6,499	3,2495
76	1520	5	287,3766	287,4766	0,5	2,75	1,375
76+11,155	1531,155	5	287,4656	287,5656	0,5	11,155	5,5775
77	1540	5	287,5489	287,6489	0,5	8,845	4,4225
77+10,241	1550,241	5	287,6453	287,7453	0,5	10,241	5,1205
78	1560	5	287,8521	287,9521	0,5	9,759	4,8795
78+16,014	1576,014	5	288,1915	288,2915	0,5	16,014	8,007
79	1580	5	288,7151	288,8151	0,5	3,986	1,993
79+17,004	1597,004	5	290,9485	291,0485	0,5	17,004	8,502
80	1600	5	290,9248	291,0248	0,5	2,996	1,498
80+14,577	1614,577	5	290,8092	290,9092	0,5	14,577	7,2885
81	1620	5	290,7144	290,8144	0,5	5,423	2,7115
82	1640	5	290,3646	290,4646	0,5	20	10
82+0,603	1640,603	5	290,3541	290,4541	0,5	0,603	0,3015
83	1660	5	290,8225	290,9225	0,5	19,397	9,6985
83+17,254	1677,254	5	291,2392	291,3392	0,5	17,254	8,627
84	1680	5	291,1895	291,2895	0,5	2,746	1,373
84+16,308	1696,308	5	290,8942	290,9942	0,5	16,308	8,154

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85	1700	5	290,7908	290,8908	0,5	3,692	1,846
86	1720	5	290,2305	290,3305	0,5	20	10
86+2.300	1722,3	5	290,1661	290,2661	0,5	2,3	1,15
87	1740	5	289,5674	289,6674	0,5	17,7	8,85
87+8.133	1748,133	5	289,2923	289,3923	0,5	8,133	4,0665
88	1760	5	289,2079	289,3079	0,5	11,867	5,9335
89	1780	5	289,0657	289,1657	0,5	20	10
89+14.452	1794,452	5	288,963	289,063	0,5	14,452	7,226
90	1800	5	288,6644	288,7644	0,5	5,548	2,774
91	1820	5	287,588	287,688	0,5	20	10
91+7.258	1827,258	5	287,1974	287,2974	0,5	7,258	3,629
92	1840	5	287,431	287,531	0,5	12,742	6,371
93	1860	5	287,7976	287,8976	0,5	20	10
93+4.521	1864,521	5	287,8805	287,9805	0,5	4,521	2,2605
94	1880	5	288,374	288,474	0,5	15,479	7,7395
95	1900	5	289,0117	289,1117	0,5	20	10
95+3.541	1903,541	5	289,1246	289,2246	0,5	3,541	1,7705
96	1920	5	291,6731	291,7731	0,5	16,459	8,2295
96+2.243	1922,243	5	292,0205	292,1205	0,5	2,243	1,1215
97	1940	5	292,7463	292,8463	0,5	17,757	8,8785
98	1960	5	293,5639	293,6639	0,5	20	10
98+10.182	1970,182	5	293,9801	294,0801	0,5	10,182	5,091
99	1980	5	294,1999	294,2999	0,5	9,818	4,909
100	2000	5	294,6478	294,7478	0,5	20	10
100+10.698	2010,698	5	294,8873	294,9873	0,5	10,698	5,349
101	2020	5	296,632	296,732	0,5	9,302	4,651
101+6.532	2026,532	5	297,8571	297,9571	0,5	6,532	3,266
101+14.083	2034,083	5	295,753	295,853	0,5	7,551	3,7755
102	2040	5	296,1171	296,2171	0,5	5,917	2,9585
103	2060	5	297,3479	297,4479	0,5	20	10
103+17.142	2077,142	5	298,4028	298,5028	0,5	17,142	8,571
104	2080	5	300,4413	300,5413	0,5	2,858	1,429
105	2100	5	301,9923	302,0923	0,5	20	10
105+12.212	2112,212	5	302,9394	303,0394	0,5	12,212	6,106
106	2120	5	303,3576	303,4576	0,5	7,788	3,894
107	2140	5	304,4317	304,5317	0,5	20	10
108	2160	5	305,5057	305,6057	0,5	20	10
108+5.739	2165,739	5	305,8139	305,9139	0,5	5,739	2,8695
109	2180	5	305,4157	305,5157	0,5	14,261	7,1305
110	2200	5	304,8573	304,9573	0,5	20	10
110+16.928	2216,928	5	304,3847	304,4847	0,5	16,928	8,464
111	2220	5	304,1613	304,2613	0,5	3,072	1,536
112	2240	5	302,7073	302,8073	0,5	20	10
112+3.374	2243,374	5	302,462	302,562	0,5	3,374	1,687
113	2260	5	302,1623	302,2623	0,5	16,626	8,313
113+6.815	2266,815	5	302,0394	302,1394	0,5	6,815	3,4075
114	2280	5	303,2888	303,3888	0,5	13,185	6,5925
114+7.684	2287,684	5	304,0168	304,1168	0,5	7,684	3,842
115	2300	5	304,8628	304,9628	0,5	12,316	6,158

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116	2320	5	306,2367	306,3367	0,5	20	
116+10,504	2330,504	5	306,9582	307,0582	0,5	10,504	5,152
117	2340	5	307,3301	307,4301	0,5	9,496	4,748
117-17,634	2357,634	5	308,0207	308,1207	0,5	17,634	8,817
118	2360	5	307,974	308,074	0,5	2,366	1,183
119	2380	5	307,579	307,679	0,5	20	10
119+13,346	2393,346	5	307,3154	307,4154	0,5	13,346	6,673
120	2400	5	306,8171	306,9171	0,5	6,654	3,327
121	2420	5	305,3196	305,4196	0,5	20	10
121+15,839	2435,839	5	304,1336	304,2336	0,5	15,839	7,9195
122	2440	5	303,6633	303,7633	0,5	4,161	2,0805
123	2460	5	301,4026	301,5026	0,5	20	10
123+15,843	2475,843	5	299,6118	299,7118	0,5	15,843	7,9215
124	2480	5	299,3211	299,4211	0,5	4,157	2,0785
125	2500	5	297,9226	298,0226	0,5	20	10
125+10,422	2510,422	5	297,1938	297,2938	0,5	10,422	5,211
126	2520	5	297,5833	297,6833	0,5	9,578	4,789
126+14,670	2534,67	5	298,18	298,28	0,5	14,67	7,335
127	2540	5	298,667	298,767	0,5	5,33	2,665
128	2560	5	300,4942	300,5942	0,5	20	10
128+3,847	2563,847	5	300,8456	300,9456	0,5	3,847	1,9235
129	2580	5	301,1112	301,2112	0,5	16,153	8,0765
130	2600	5	301,4401	301,5401	0,5	20	10
130+16,554	2616,554	5	301,7123	301,8123	0,5	16,554	8,277
131	2620	5	302,0481	302,1481	0,5	3,446	1,723
132	2640	5	303,9972	304,0972	0,5	20	10
132+4,895	2644,895	5	304,4742	304,5742	0,5	4,895	2,4475
133	2660	5	305,4361	305,5361	0,5	15,105	7,5525
134	2680	5	306,7098	306,8098	0,5	20	10
134+10,948	2690,948	5	307,407	307,507	0,5	10,948	5,474
135	2700	5	307,6086	307,7086	0,5	9,052	4,526
135+16,374	2716,374	5	307,9734	308,0734	0,5	16,374	8,187
136	2720	5	308,037	308,137	0,5	3,626	1,813
137	2740	5	308,3877	308,4877	0,5	20	10
138	2760	5	308,7384	308,8384	0,5	20	10
138+6,154	2766,154	5	308,8463	308,9463	0,5	6,154	3,077
139	2780	5	308,6323	308,7323	0,5	13,846	6,923
140	2800	5	308,3231	308,4231	0,5	20	10
141	2820	5	308,014	308,114	0,5	20	10
141+9,481	2829,481	5	307,8674	307,9674	0,5	9,481	4,7405
142	2840	5	307,7447	307,8447	0,5	10,519	5,2595
143	2860	5	307,5115	307,6115	0,5	20	10
143+14,998	2874,998	5	307,3366	307,4366	0,5	14,998	7,499
144	2880	5	307,2902	307,3902	0,5	5,002	2,501
145	2900	5	307,1045	307,2045	0,5	20	10
145+14,894	2914,894	5	306,9662	307,0662	0,5	14,894	7,447
146	2920	5	306,9852	307,0852	0,5	5,106	2,553
147	2940	5	306,7425	306,8425	0,5	20	10
148	2960	5	306,4998	306,5998	0,5	20	10



149	2980	5	306,257	306,357	0,5	20	10
150	3000	5	306,0143	306,1143	0,5	20	10
150+19,194	3019,194	5	305,7813	305,8813	0,5	19,194	9,397
151	3020	5	305,784	305,884	0,5	0,806	0,403
152	3040	5	305,8509	305,9509	0,5	20	10
152+1,447	3041,447	5	305,8557	305,9557	0,5	1,447	0,7235
153	3060	5	306,0905	306,1905	0,5	18,553	9,2765
154	3080	5	306,3435	306,4435	0,5	20	10
155	3100	5	306,5966	306,6966	0,5	20	10
155+13,508	3113,508	5	306,7675	306,8675	0,5	13,508	6,754
156	3120	5	307,1305	307,2305	0,5	6,492	3,246
157	3140	5	308,2489	308,3489	0,5	20	10
157+12,462	3152,462	5	308,9458	309,0458	0,5	12,462	6,231
158	3160	5	309,4013	309,5013	0,5	7,538	3,769
159	3180	5	310,6098	310,7098	0,5	20	10
159+18,785	3198,785	5	311,7449	311,8449	0,5	18,785	9,3925
160	3200	5	311,7519	311,8519	0,5	1,215	0,6075
161	3220	5	311,8676	311,9676	0,5	20	10
161+4,362	3224,362	5	311,8928	311,9928	0,5	4,362	2,181
162	3240	5	311,4023	311,5023	0,5	15,638	7,819
163	3260	5	310,8136	310,9136	0,5	20	10
163+0,304	3260,304	5	310,8047	310,9047	0,5	0,304	0,152
164	3280	5	310,1621	310,2621	0,5	19,696	9,848
164+4,904	3284,904	5	310,0021	310,1021	0,5	4,904	2,452
164+18,128	3298,128	5	310,0278	310,1278	0,5	13,224	6,612
165	3300	5	309,9712	310,0712	0,5	1,872	0,936
165+18,769	3318,769	5	309,404	309,504	0,5	18,769	9,3845
166	3320	5	309,3593	309,4593	0,5	1,231	0,6155
167	3340	5	308,6372	308,7372	0,5	20	10
168	3360	5	307,9149	308,0149	0,5	20	10
168+6,911	3366,911	5	307,6653	307,7653	0,5	6,911	3,4555
169	3380	5	307,0449	307,1449	0,5	13,089	6,5445
169+13,808	3393,808	5	306,3903	306,4903	0,5	13,808	6,904
170	3400	5	306,1319	306,2319	0,5	6,192	3,096
170+11,481	3411,481	5	305,6525	305,7525	0,5	11,481	5,7405
171	3420	5	305,2238	305,3238	0,5	8,519	4,2595
171+11,297	3431,297	5	304,6552	304,7552	0,5	11,297	5,6485
172	3440	5	304,2595	304,3595	0,5	8,703	4,3515
173	3460	5	303,3502	303,4502	0,5	20	10
173+12,373	3472,373	5	302,7876	302,8876	0,5	12,373	6,1865
174	3480	5	302,6583	302,7583	0,5	7,627	3,8135
175	3500	5	302,3193	302,4193	0,5	20	10
176	3520	5	301,9803	302,0803	0,5	20	10
177	3540	5	301,6413	301,7413	0,5	20	10
178	3560	5	301,3023	301,4023	0,5	20	10
179	3580	5	300,9633	301,0633	0,5	20	10
179+4,616	3584,616	5	300,885	300,985	0,5	4,616	2,308
180	3600	5	300,7724	300,8724	0,5	15,384	7,692
181	3620	5	300,626	300,726	0,5	20	10



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182	3640	5	300,4796	300,5796	0,5	20	
183	3660	5	300,3332	300,4332	0,5	20	
184	3680	5	300,1868	300,2868	0,5	20	
184+7,101	3687,101	5	300,1348	300,2348	0,5	20	10
185	3700	5	300,2453	300,3453	0,5	7,101	3,5505
186	3720	5	300,4166	300,5166	0,5	12,899	6,4495
186+13,011	3733,011	5	300,5281	300,6281	0,5	20	10
187	3740	5	300,6575	300,7575	0,5	13,011	6,5055
188	3760	5	301,0278	301,1278	0,5	6,989	3,4945
189	3780	5	301,3981	301,4981	0,5	20	10
190	3800	5	301,7684	301,8684	0,5	20	10
190+1,154	3801,154	5	301,7898	301,8898	0,5	20	10
191	3820	5	302,1436	302,2436	0,5	1,154	0,577
191+4,934	3824,934	5	302,2362	302,3362	0,5	18,846	9,423
191+18,411	3838,411	5	301,8485	301,9485	0,5	4,934	2,467
192	3840	5	301,7432	301,8432	0,5	13,477	6,7385
193	3860	5	300,4176	300,5176	0,5	1,589	0,7945
194	3880	5	299,0919	299,1919	0,5	20	10
194+12,660	3892,66	5	298,2528	298,3528	0,5	20	10
195	3900	5	297,6993	297,7993	0,5	12,66	6,33
196	3920	5	296,191	296,291	0,5	7,34	3,67
197	3940	5	294,6828	294,7828	0,5	20	10
197+1,957	3941,957	5	294,5352	294,6352	0,5	20	10
197+17,751	3957,751	5	293,3744	293,4744	0,5	1,957	0,9785
198	3960	5	293,2996	293,3996	0,5	15,794	7,897
199	3980	5	292,6341	292,7341	0,5	2,249	1,1245
199+6,836	3986,836	5	292,4066	292,5066	0,5	20	10
200	4000	5	291,9527	292,0527	0,5	6,836	3,418
201	4020	5	291,2632	291,3632	0,5	13,164	6,582
201+11,662	4031,662	5	290,8611	290,9611	0,5	20	10
202	4040	5	289,7766	289,8766	0,5	11,662	5,831
202+5,761	4045,761	5	289,0272	289,1272	0,5	8,338	4,169
202+19,278	4059,278	5	288,6319	288,7319	0,5	5,761	2,8805
203	4060	5	288,678	288,778	0,5	13,517	6,7585
204	4080	5	289,9558	290,0558	0,5	0,722	0,361
204+1,866	4081,866	5	290,075	290,175	0,5	20	10
205	4100	5	289,2937	289,3937	0,5	1,866	0,933
206	4120	5	288,4319	288,5319	0,5	18,134	9,067
206+3,204	4123,204	5	288,2939	288,3939	0,5	20	10
207	4140	5	287,9386	288,0386	0,5	3,204	1,602
207+9,687	4149,687	5	287,7337	287,8337	0,5	16,796	8,398
208	4160	5	287,9992	288,0992	0,5	9,687	4,8435
209	4180	5	288,0992	288,1992	0,5	10,313	5,1565
209+9,543	4189,543	5	288,514	288,614	0,5	20	10
210	4200	5	288,7596	288,8596	0,5	9,543	4,7715
210+8,852	4208,852	5	289,0957	289,1957	0,5	10,457	5,2285
211	4220	5	289,3602	289,4602	0,5	8,852	4,426
212	4240	5	289,281	289,381	0,5	11,148	5,574
212+11,279	4251,279	5	289,1032	289,2032	0,5	20	10
		5	288,9705	289,0705	0,5	11,279	5,6395

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213	4260	5	288,9694	289,0694	0,5	8,721	4,3505
214	4280	5	288,9659	289,0669	0,5	20	10
215	4300	5	288,9644	289,0644	0,5	2,45	1,225
215+2,450	4302,45	5	288,9641	289,0641	0,5	17,55	8,775
216	4320	5	288,6893	288,7893	0,5	20	10
217	4340	5	288,3762	288,4762	0,5	5,593	2,7965
217+5,593	4345,593	5	288,2886	288,3886	0,5	14,407	7,2035
218	4360	5	287,7976	287,8976	0,5	20	10
219	4380	5	287,1159	287,2159	0,5	1,836	0,918
219+1,836	4381,836	5	287,0533	287,1533	0,5	18,164	9,082
220	4400	5	286,3835	286,4835	0,5	4,956	2,478
220+4,956	4404,956	5	286,2007	286,3007	0,5	15,044	7,522
221	4420	5	285,0791	285,1791	0,5	20	10
222	4440	5	283,5879	283,6879	0,5	4,323	2,1615
222+4,323	4444,323	5	283,2656	283,3656	0,5	15,677	7,8385
223	4460	5	281,7788	281,8788	0,5	7,851	3,9255
223+7,851	4467,851	5	281,0341	281,1341	0,5	12,149	6,0745
224	4480	5	280,2846	280,3846	0,5	16,829	8,4145
224+16,829	4496,829	5	279,2464	279,3464	0,5	3,171	1,5855
225	4500	5	279,3449	279,4449	0,5	14,211	7,1055
225+14,211	4514,211	5	279,7862	279,8862	0,5	5,789	2,8945
226	4520	5	280,0743	280,1743	0,5	3,238	1,619
226+3,238	4523,238	5	280,2355	280,3355	0,5	16,762	8,381
227	4540	5	280,3053	280,4053	0,5	20	10
228	4560	5	280,3887	280,4887	0,5	20	10
229	4580	5	280,472	280,572	0,5	5,6	2,8
229+5,600	4585,6	5	280,4953	280,5953	0,5	14,4	7,2
230	4600	5	280,4545	280,5545	0,5	20	10
231	4620	5	280,3978	280,4978	0,5	11,564	5,782
231+11,564	4631,564	5	280,365	280,465	0,5	8,436	4,218
232	4640	5	280,4344	280,5344	0,5	14,276	7,138
232+14,276	4654,276	5	280,5518	280,6518	0,5	5,724	2,862
233	4660	5	280,8643	280,9643	0,5	20	10
234	4680	5	281,956	282,056	0,5	15,799	7,8995
234+15,799	4695,799	5	282,8185	282,9185	0,5	4,201	2,1005
235	4700	5	282,8934	282,9934	0,5	20	10
236	4720	5	283,3966	283,4966	0,5	20	10
237	4740	5	283,8999	283,9999	0,5	2,273	1,1365
237+2,273	4742,273	5	283,9571	284,0571	0,5	17,727	8,8635
238	4760	5	283,1613	283,2613	0,5	20	10
239	4780	5	282,2634	282,3634	0,5	20	10
240	4800	5	281,3656	281,4656	0,5	3,869	1,9345
240+3,869	4803,869	5	281,1919	281,2919	0,5	16,131	8,0655
241	4820	5	280,4932	280,5932	0,5	9,209	4,6045
241+9,209	4829,209	5	280,0943	280,1943	0,5	10,791	5,3955
242	4840	5	280,1168	280,2168	0,5	20	10
243	4860	5	280,1585	280,2585	0,5	18,729	9,3645
243+18,729	4878,729	5	280,1975	280,2975	0,5	1,271	0,6355
244	4880	5	280,2228	280,3228	0,5		

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245	4900	5	280,6217	280,7217	0,5	20	
245+9,317	4909,317	5	280,8075	280,9075	0,5	9,317	4,6485
246	4920	5	280,4254	280,5254	0,5	10,683	5,3415
247	4940	5	279,7101	279,8101	0,5	20	10
247+15,622	4955,622	5	279,1514	279,2514	0,5	15,622	7,811
248	4960	5	278,9782	279,0782	0,5	4,378	2,189
249	4980	5	278,1868	278,2868	0,5	20	10
249+2,154	4982,154	5	278,1015	278,2015	0,5	2,154	1,077
250	5000	5	278,1088	278,2088	0,5	17,846	8,923
251	5020	5	278,117	278,217	0,5	20	10
252	5040	5	278,1252	278,2252	0,5	20	10
253	5060	5	278,1334	278,2334	0,5	20	10
253+1,747	5061,747	5	278,1341	278,2341	0,5	1,747	0,8735
254	5080	5	278,0979	278,1979	0,5	18,253	9,1265
255	5100	5	278,0582	278,1582	0,5	20	10
255+17,910	5117,91	5	278,0226	278,1226	0,5	17,91	8,955
256	5120	5	278,0192	278,1192	0,5	2,09	1,045
257	5140	5	277,9862	278,0862	0,5	20	10
257+4,952	5144,952	5	277,978	278,078	0,5	4,952	2,476
258	5160	5	278,0012	278,1012	0,5	15,048	7,524
259	5180	5	278,0321	278,1321	0,5	20	10
259+3,123	5183,123	5	278,0369	278,1369	0,5	3,123	1,5615
260	5200	5	278,0521	278,1521	0,5	16,877	8,4385
260+10,710	5210,71	5	278,0617	278,1617	0,5	10,71	5,355
261	5220	5	278,1639	278,2639	0,5	9,29	4,645
261+8,800	5228,8	5	278,2608	278,3608	0,5	8,8	4,4
262	5240	5	277,9123	278,0123	0,5	11,2	5,6
262+0,576	5240,576	5	277,8944	277,9944	0,5	0,576	0,288
263	5260	5	277,7632	277,8632	0,5	19,424	9,712
264	5280	5	277,628	277,728	0,5	20	10
264+0,224	5280,224	5	277,6265	277,7265	0,5	0,224	0,112
264+15,432	5295,432	5	277,6598	277,7598	0,5	15,208	7,604
265	5300	5	277,687	277,787	0,5	4,568	2,284
265+7,556	5307,556	5	277,7319	277,8319	0,5	7,556	3,778
266	5320	5	277,9861	278,0861	0,5	12,444	6,222
267	5340	5	278,3946	278,4946	0,5	20	10
268	5360	5	278,8032	278,9032	0,5	20	10
268+8,361	5368,361	5	278,9983	279,0983	0,5	8,361	4,1805
269	5380	5	279,9223	280,0223	0,5	11,639	5,8195
269+16,819	5396,819	5	281,2575	281,3575	0,5	16,819	8,4095
270	5400	5	281,4345	281,5345	0,5	3,181	1,5905
270+8,996	5408,996	5	281,9348	282,0348	0,5	8,996	4,498
271	5420	5	281,9413	282,0413	0,5	11,004	5,502
272	5440	5	281,9532	282,0532	0,5	20	10
272+7,490	5447,49	5	281,0576	282,0576	0,5	7,49	3,745
273	5460	5	282,0671	282,1671	0,5	12,51	6,255
274	5480	5	282,2423	282,3423	0,5	20	10
275	5500	5	282,4174	282,5174	0,5	20	10
276	5520	5	282,5925	282,6925	0,5	20	10

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276+6,691	5526,691	5	282,6511	282,7511	0,5	6,691	3,435
277	5540	5	282,9431	283,0431	0,5	13,309	6,6525
277+16,293	5556,293	5	283,3005	283,4005	0,5	16,293	8,1465
278	5560	5	283,3	281,4	0,5	3,707	1,8535
279	5580	5	283,2971	283,3971	0,5	20	10
279+4,283	5584,283	5	283,2965	283,3965	0,5	4,283	2,1415
280	5600	5	282,344	282,444	0,5	15,717	7,8585
280+19,499	5619,499	5	281,1623	281,2623	0,5	19,499	9,7495
281	5620	5	281,1385	281,2385	0,5	0,501	0,2505
282	5640	5	280,1901	280,2901	0,5	20	10
282+19,586	5659,586	5	279,2614	279,3614	0,5	19,586	9,793
283	5660	5	279,2341	279,3341	0,5	0,414	0,207
284	5680	5	277,914	278,014	0,5	20	10
284+1,030	5681,03	5	277,846	277,946	0,5	1,03	0,515
285	5700	5	277,7641	277,8641	0,5	18,97	9,485
286	5720	5	277,6777	277,7777	0,5	20	10
286+1,357	5721,357	5	277,6718	277,7718	0,5	1,357	0,6785
287	5740	5	277,803	277,903	0,5	18,643	9,3215
288	5760	5	277,9438	278,0438	0,5	20	10
289	5780	5	278,0846	278,1846	0,5	20	10
290	5800	5	278,2254	278,3254	0,5	20	10
291	5820	5	278,3661	278,4661	0,5	20	10
291+8,888	5828,888	5	278,4287	278,5287	0,5	8,888	4,444
292	5840	5	278,6376	278,7376	0,5	11,112	5,556
293	5860	5	279,0136	279,1136	0,5	20	10
293+19,108	5879,108	5	279,3729	279,4729	0,5	19,108	9,554
294	5880	5	279,3999	279,4999	0,5	0,892	0,446
295	5900	5	280,0055	280,1055	0,5	20	10
296	5920	5	280,6111	280,7111	0,5	20	10
296+19,625	5939,625	5	281,2054	281,3054	0,5	19,625	9,8125
297	5940	5	281,2127	281,3127	0,5	0,375	0,1875
298	5960	5	281,6008	281,7008	0,5	20	10
299	5980	5	281,989	282,089	0,5	20	10
300	6000	5	282,3771	282,4771	0,5	20	10
300+1,278	6001,278	5	282,4019	282,5019	0,5	1,278	0,639
301	6020	5	282,7328	282,8328	0,5	18,722	9,361
302	6040	5	283,0862	283,1862	0,5	20	10
303	6060	5	283,4396	283,5396	0,5	20	10
303+12,974	6072,974	5	283,6589	283,7689	0,5	12,974	6,487
304	6080	5	283,5483	283,6483	0,5	7,026	3,513
305	6100	5	283,205	283,305	0,5	20	10
306	6120	5	282,8617	282,9617	0,5	20	10
306+8,204	6128,204	5	282,7209	282,8209	0,5	8,204	4,102
307	6140	5	282,4657	282,5657	0,5	11,796	5,898
308	6160	5	282,0331	282,1331	0,5	20	10
309	6180	5	281,6004	281,7004	0,5	20	10
310	6200	5	281,1678	281,2678	0,5	20	10
310+3,961	6203,961	5	281,0821	281,1821	0,5	3,961	1,9805
311	6220	5	279,8654	279,9654	0,5	16,039	8,0195





312	6240	5	278,3482	278,4482	0,5	20	
312+0,324	6240,324	5	278,3236	278,4236	0,5	0,324	0,162
313	6260	5	278,1211	278,2211	0,5	19,676	9,838
313+14,821	6274,821	5	277,9686	278,0686	0,5	14,821	7,4105
314	6280	5	277,9812	278,0812	0,5	5,179	2,5895
314+10,049	6290,049	5	278,0056	278,1056	0,5	10,049	5,0245
315	6300	5	277,7094	277,8094	0,5	9,951	4,9755
316	6320	5	277,1141	277,2141	0,5	20	10
317	6340	5	276,5189	276,6189	0,5	20	10
318	6360	5	275,9236	276,0236	0,5	20	10
318+1,922	6361,922	5	275,8664	275,9664	0,5	1,922	0,961
319	6380	5	275,1536	275,2536	0,5	18,078	9,039
320	6400	5	274,3649	274,4649	0,5	20	10
320+10,381	6410,381	5	273,9556	274,0556	0,5	10,381	5,1905
321	6420	5	273,8915	273,9915	0,5	9,619	4,8095
322	6440	5	273,7583	273,8583	0,5	20	10
323	6460	5	273,625	273,725	0,5	20	10
324	6480	5	273,4918	273,5918	0,5	20	10
324+19,524	6499,524	5	273,3617	273,4617	0,5	19,524	9,762
325	6500	5	273,3611	273,4611	0,5	0,476	0,238
326	6520	5	273,3356	273,4356	0,5	20	10
327	6540	5	273,3102	273,4102	0,5	20	10
328	6560	5	273,2847	273,3847	0,5	20	10
328+1,019	6561,019	5	273,2834	273,3834	0,5	1,019	0,5095
329	6580	5	273,1901	273,2901	0,5	18,981	9,4905
330	6600	5	273,0917	273,1917	0,5	20	10
331	6620	5	272,9934	273,0934	0,5	20	10
331+14,932	6634,932	5	272,92	273,02	0,5	14,932	7,466
332	6640	5	272,9379	273,0379	0,5	5,068	2,534
333	6660	5	272,8611	272,9611	0,5	20	10
334	6680	5	272,7842	272,8842	0,5	20	10
335	6700	5	272,7074	272,8074	0,5	20	10
336	6720	5	272,6305	272,7305	0,5	20	10
336+0,070	6720,07	5	272,6303	272,7303	0,5	0,07	0,035
337	6740	5	273,5602	273,6602	0,5	19,93	9,965
337+14,773	6754,773	5	274,2494	274,3494	0,5	14,773	7,3865
338	6760	5	274,0655	274,1655	0,5	5,227	2,6135
339	6780	5	273,362	273,462	0,5	20	10
339+0,976	6780,976	5	273,3276	273,4276	0,5	0,976	0,488
340	6800	5	272,9247	273,0247	0,5	19,024	9,512
340+19,066	6819,066	5	272,521	272,621	0,5	19,066	9,533
341	6820	5	272,5343	272,6343	0,5	0,934	0,467
342	6840	5	272,8186	272,9186	0,5	20	10
343	6860	5	273,1029	273,2029	0,5	20	10
343+13,549	6873,549	5	273,2955	273,3955	0,5	13,549	6,7745
344	6880	5	273,5625	273,6625	0,5	6,451	3,2255
345	6900	5	274,3904	274,4904	0,5	20	10
345+12,356	6912,356	5	274,9019	275,0019	0,5	12,356	6,178
346	6920	5	274,7748	274,8748	0,5	7,644	3,822





347	6940	5	274,4421	274,5421	0,5	20	
347+7,956	6947,956	5	274,3098	274,4098	0,5	7,956	3,978
348	6960	5	274,4572	274,5572	0,5	12,044	6,022
349	6980	5	274,7019	274,8019	0,5	20	10
349+16,538	6996,538	5	274,9042	275,0042	0,5	16,538	8,269
350	7000	5	275,1849	275,2849	0,5	3,462	1,731
350+8,514	7008,514	5	275,8752	275,9752	0,5	8,514	4,257
350+17,291	7017,291	5	276,7875	276,8875	0,5	8,777	4,3885
351	7020	5	276,979	277,079	0,5	2,709	1,3545
351+18,726	7038,726	5	278,3032	278,4032	0,5	18,726	9,363
352	7040	5	278,3738	278,4738	0,5	1,274	0,637
353	7060	5	279,4827	279,5827	0,5	20	10
353+13,608	7073,608	5	280,2372	280,3372	0,5	13,608	6,804
354	7080	5	280,0421	280,1421	0,5	6,392	3,196
355	7100	5	279,4317	279,5317	0,5	20	10
356	7120	5	278,8213	278,9213	0,5	20	10
356+9,639	7129,639	5	278,5271	278,6271	0,5	9,639	4,8195
357	7140	5	277,9437	278,0437	0,5	10,361	5,1805
358	7160	5	276,8175	276,9175	0,5	20	10
358+13,453	7173,453	5	276,06	276,16	0,5	13,453	6,7265
359	7180	5	275,5812	275,6812	0,5	6,547	3,2735
360	7200	5	274,1186	274,2186	0,5	20	10
360+17,781	7217,781	5	272,8182	272,9182	0,5	17,781	8,8905
361	7220	5	272,787	272,887	0,5	2,219	1,1095
361+16,660	7236,66	5	272,5526	272,6526	0,5	16,66	8,33
362	7240	5	272,5157	272,6157	0,5	3,34	1,67
363	7260	5	272,2948	272,3948	0,5	20	10
364	7280	5	272,0739	272,1739	0,5	20	10
364+18,717	7298,717	5	271,8672	271,9672	0,5	18,717	9,3585
365	7300	5	271,8635	271,9635	0,5	1,283	0,6415
366	7320	5	271,8062	271,9062	0,5	20	10
367	7340	5	271,7488	271,8488	0,5	20	10
367+14,811	7354,811	5	271,7063	271,8063	0,5	14,811	7,4055
368	7360	5	271,7401	271,8401	0,5	5,189	2,5945
369	7380	5	271,8705	271,9705	0,5	20	10
370	7400	5	272,0008	272,1008	0,5	20	10
371	7420	5	272,1311	272,2311	0,5	20	10
371+8,862	7428,862	5	272,1889	272,2889	0,5	8,862	4,431
372	7440	5	272,3147	272,4147	0,5	11,138	5,569
373	7460	5	272,5405	272,6405	0,5	20	10
374	7480	5	272,7663	272,8663	0,5	20	10
374+0,175	7480,175	5	272,7683	272,8683	0,5	0,175	0,0875
375	7500	5	273,1623	273,2623	0,5	19,825	9,9125
375+10,588	7510,588	5	273,3727	273,4727	0,5	10,588	5,294
376	7520	5	273,2605	273,3605	0,5	9,412	4,706
377	7540	5	273,0219	273,1219	0,5	20	10
378	7560	5	272,7834	272,8834	0,5	20	10
378+3,012	7563,012	5	272,7475	272,8475	0,5	3,012	1,506
379	7580	5	272,531	272,631	0,5	16,988	8,494

Comissão Permanente de Licitação  
 FLS. 73  
 12/12

380	7600	5	272,2761	272,3761	0,5	20	10
380+7,606	7607,606	5	272,1792	272,2792	0,5	7,606	3,803
381	7620	5	272,2491	272,3491	0,5	12,394	6,197
382	7640	5	272,2825	272,3825	0,5	20	10
382+14,111	7654,111	5	272,306	272,406	0,5	14,111	7,0555
383	7660	5	272,2927	272,3927	0,5	5,889	2,9445
384	7680	5	272,2474	272,3474	0,5	20	10
385	7700	5	272,2022	272,3022	0,5	20	10
386	7720	5	272,157	272,257	0,5	20	10
386+6,831	7726,831	5	272,1415	272,2415	0,5	6,831	3,4155
387	7740	5	271,9095	272,0095	0,5	13,169	6,5845
388	7760	5	271,5571	271,6571	0,5	20	10
389	7780	5	271,2047	271,3047	0,5	20	10
389+16,972	7796,972	5	270,9057	271,0057	0,5	16,972	8,486
390	7800	5	270,8923	270,9923	0,5	3,028	1,514
391	7820	5	270,8037	270,9037	0,5	20	10
392	7840	5	270,7151	270,8151	0,5	20	10
393	7860	5	270,6266	270,7266	0,5	20	10
394	7880	5	270,538	270,638	0,5	20	10
394+1,687	7881,687	5	270,5305	270,6305	0,5	1,687	0,8435
395	7900	5	270,6503	270,7503	0,5	18,313	9,1565
396	7920	5	270,781	270,881	0,5	20	10
396+3,220	7923,22	5	270,8021	270,9021	0,5	3,22	1,61
397	7940	5	270,7783	270,8783	0,5	16,78	8,39
398	7960	5	270,7499	270,8499	0,5	20	10
399	7980	5	270,7215	270,8215	0,5	20	10
400	8000	5	270,6931	270,7931	0,5	20	10
400+11,682	8011,682	5	270,6765	270,7765	0,5	11,682	5,841
401	8020	5	270,743	270,843	0,5	8,318	4,159
402	8040	5	270,9028	271,0028	0,5	20	10
402+10,821	8050,821	5	270,9893	271,0893	0,5	10,821	5,4105
403	8060	5	271,0912	271,1912	0,5	9,179	4,5895
403+12,866	8072,866	5	271,2341	271,3341	0,5	12,866	6,433
404	8080	5	271,55	271,65	0,5	7,134	3,567
405	8100	5	272,4355	272,5355	0,5	20	10
406	8120	5	273,321	273,421	0,5	20	10
406+1,389	8121,389	5	273,3825	273,4825	0,5	1,389	0,6945
407	8140	5	274,2676	274,3676	0,5	18,611	9,3055
407+6,956	8146,956	5	275,2852	275,3852	0,5	6,956	3,478
408	8160	5	275,8578	275,9578	0,5	13,044	6,522
408+14,442	8174,442	5	276,4917	276,5917	0,5	14,442	7,221
409	8180	5	276,6058	276,7058	0,5	5,558	2,779
410	8200	5	277,0162	277,1162	0,5	20	10
411	8220	5	277,4267	277,5267	0,5	20	10
411+7,461	8227,461	5	277,5798	277,6798	0,5	7,461	3,7305
412	8240	5	277,9887	278,0887	0,5	12,539	6,2695
412+14,617	8254,617	5	278,4654	278,5654	0,5	14,617	7,3085
413	8260	5	278,434	278,534	0,5	5,383	2,6915
413+16,889	8276,889	5	278,3356	278,4356	0,5	16,889	8,4445

TOTAL	8276,889				315,5	8276,889	4138,4445
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*Richardson Jorge Dantas*  
 RICHARDSON JORGE DANTAS  
 ENGENHEIRO CIVIL  
 CREA 53913







0	PI0	0,000	9.249.898,6963	530.532,6835	280,5150	206°16'39"
1		20,000	9.249.907,5497	530.514,7503	290,9396	206°16'39"
1+11,581	PI1	31,581	9.249.912,6771	530.504,3656	291,7646	205°09'37"
2		40,000	9.249.916,1070	530.496,6775	292,0999	204°02'35"
3		60,000	9.249.924,2555	530.478,4128	292,8963	204°02'35"
3+3,713	PI2	63,713	9.249.925,7683	530.475,0218	293,0442	206°35'18"
4		80,000	9.249.933,6974	530.460,7954	293,4362	209°08'00"
5		100,000	9.249.943,4343	530.443,3256	293,9177	209°08'00"
5+2,395	PI3	102,395	9.249.944,6002	530.441,2337	293,9753	204°18'36"
6		120,000	9.249.950,4731	530.424,6370	293,9749	199°29'13"
6+17,808	PI4	137,808	9.249.956,4138	530.407,8490	293,9745	199°39'52"
7		140,000	9.249.957,1578	530.405,7872	293,9849	199°50'31"
8		160,000	9.249.963,9464	530.386,9746	294,0800	199°50'31"
9		180,000	9.249.970,7349	530.368,1620	294,1751	199°50'31"
10		200,000	9.249.977,5235	530.349,3493	294,2702	199°50'31"
11		220,000	9.249.984,3121	530.330,5367	294,3653	199°50'31"
11+3,236	PI5	223,236	9.249.985,4104	530.327,4930	294,3807	207°28'46"
12		240,000	9.249.995,0540	530.313,7802	294,5767	215°07'01"
12+0,522	PI6	240,522	9.249.995,3543	530.313,3532	294,5828	225°57'20"
13		260,000	9.250.011,6516	530.302,6861	293,7354	236°47'39"
13+2,777	PI7	262,777	9.250.013,9753	530.301,1652	293,6146	241°27'49"
14		280,000	9.250.029,7254	530.294,1967	292,8563	246°08'00"
14+11,401	PI8	291,401	9.250.040,1510	530.289,5839	292,3544	250°12'47"
15		300,000	9.250.048,4294	530.287,2559	292,4744	254°17'35"
16		320,000	9.250.067,6826	530.281,8415	292,7534	254°17'35"
17		340,000	9.250.086,9358	530.276,4272	293,0324	254°17'35"
17+0,710	PI9	340,710	9.250.087,6196	530.276,2349	293,0423	258°51'49"
18		360,000	9.250.106,7827	530.274,0293	295,5115	263°26'04"
18+10,818	PI10	370,818	9.250.117,5302	530.272,7923	296,8964	263°02'59"
19		380,000	9.250.126,6367	530.271,6201	297,9437	262°39'55"
19+19,055	PI11	399,055	9.250.145,5361	530.269,1874	300,1174	262°10'52"
20		400,000	9.250.146,4708	530.269,0510	300,1945	261°41'49"
21		420,000	9.250.166,2612	530.266,1628	301,8261	261°41'49"
21+9,245	PI12	429,245	9.250.175,4092	530.264,8278	302,5803	254°02'50"
22		440,000	9.250.185,2646	530.260,5216	303,1662	246°23'51"
22+7,687	PI13	447,687	9.250.192,3085	530.257,4438	303,5849	237°38'15"
23		460,000	9.250.201,5840	530.249,3459	303,8850	228°52'39"
24		480,000	9.250.216,6500	530.236,1924	304,3725	228°52'39"
24+8,241	PI14	488,241	9.250.222,8677	530.230,7728	304,5734	229°48'01"
25		500,000	9.250.231,9606	530.223,3283	304,7305	230°43'23"
26		520,000	9.250.247,4425	530.210,6669	304,9976	230°43'23"
26+9,952	PI15	529,952	9.250.255,1467	530.204,3663	305,1305	230°11'44"
27		540,000	9.250.262,8060	530.197,8634	304,6211	229°40'05"
27+19,445	PI16	559,445	9.250.277,6294	530.185,2780	303,6352	228°57'31"
28		560,000	9.250.278,0431	530.184,9087	303,6518	228°14'57"
29		580,000	9.250.292,9641	530.171,5909	304,2502	228°14'57"
29+17,235	PI17	597,235	9.250.305,8221	530.160,1144	304,7659	230°03'52"
30		600,000	9.250.307,9975	530.158,4074	304,7661	231°52'47"



Estaca	Descrição	Progressão	Norte	Este	Cota	Azimute
30+18,532	PI18	618,532	9.250.322,5768	530.146,9675	304,6395	232°16'52"
31		620,000	9.250.323,7445	530.146,0774	304,5769	232°40'56"
31+19,693	PI19	639,693	9.250.339,4061	530.134,1388	303,7370	230°47'23"
32		640,000	9.250.339,6374	530.133,9370	303,7070	228°53'50"
33		660,000	9.250.354,7080	530.120,7888	301,7525	228°53'50"
33+0,284	PI20	660,284	9.250.354,9217	530.120,6023	301,7248	228°53'17"
34		680,000	9.250.369,7745	530.107,6358	299,3256	228°52'45"
34+5,894	PI21	685,894	9.250.374,2143	530.103,7599	298,6084	229°27'33"
35		700,000	9.250.385,0266	530.094,6998	298,1861	230°02'20"
35+18,413	PI22	718,413	9.250.399,1396	530.082,8740	297,6348	230°19'43"
36		720,000	9.250.400,3665	530.081,8669	297,4981	230°37'05"
36+15,988	PI23	735,988	9.250.412,7238	530.071,7230	296,1214	230°32'02"
37		740,000	9.250.415,8177	530.069,1680	295,8100	230°26'58"
37+13,511	PI24	753,511	9.250.426,2356	530.060,5647	294,7616	229°54'01"
38		760,000	9.250.431,1588	530.056,3377	294,9957	229°21'03"
38+5,515	PI25	765,515	9.250.435,3433	530.052,7449	295,1947	230°15'13"
39		780,000	9.250.446,6249	530.043,6501	296,4497	231°09'23"
39+4,607	PI26	784,607	9.250.450,2132	530.040,7705	296,8489	231°42'32"
40		800,000	9.250.462,3860	530.031,3492	297,4542	232°15'41"
41		820,000	9.250.478,2023	530.019,1080	298,2408	232°15'41"
41+7,386	PI27	827,386	9.250.484,0431	530.014,5874	298,4774	232°43'50"
42		840,000	9.250.494,1436	530.007,0312	298,0632	233°11'59"
43		860,000	9.250.510,1582	529.995,0507	297,4064	233°11'59"
44		880,000	9.250.526,1728	529.983,0701	296,7496	233°11'59"
44+0,797	PI28	880,797	9.250.526,8112	529.982,5925	296,7234	232°58'17"
45		900,000	9.250.542,0952	529.970,9674	295,5396	232°44'36"
45+13,351	PI29	913,351	9.250.552,7215	529.962,8850	294,7166	232°41'57"
46		920,000	9.250.558,0076	529.958,8515	294,0985	232°39'18"
47		940,000	9.250.573,9075	529.946,7193	292,2395	232°39'18"
47+8,697	PI30	948,697	9.250.580,8218	529.941,4434	291,4311	232°45'22"
48		960,000	9.250.589,8316	529.934,6188	290,8321	232°51'27"
49		980,000	9.250.605,7743	529.922,5428	289,7723	232°51'27"
49+0,494	PI31	980,494	9.250.606,1680	529.922,2446	289,7461	232°52'10"
50		1000,000	9.250.621,7220	529.910,4733	289,5287	232°52'53"
51		1020,000	9.250.637,6698	529.898,4040	289,3059	232°52'53"
51+2,411	PI32	1022,411	9.250.639,5923	529.896,9490	289,2790	233°23'15"
52		1040,000	9.250.653,8029	529.886,5841	289,5707	233°53'37"
53		1060,000	9.250.669,9614	529.874,7983	289,9023	233°53'37"
53+17,166	PI33	1077,166	9.250.683,8300	529.864,6828	290,1870	234°31'15"
54		1080,000	9.250.686,1559	529.863,0632	290,5846	235°08'53"
55		1100,000	9.250.702,5685	529.851,6340	293,3904	235°08'53"
55+7,669	PI34	1107,669	9.250.708,8620	529.847,2515	294,4673	234°33'36"
56		1120,000	9.250.718,8343	529.839,9986	294,5897	233°58'18"
57		1140,000	9.250.735,0089	529.828,2349	294,7882	233°58'18"
57+2,518	PI35	1142,518	9.250.737,0456	529.826,7536	294,8132	235°54'33"
58		1160,000	9.250.751,8460	529.817,4502	294,0245	237°50'49"
59		1180,000	9.250.768,7786	529.806,8065	293,1221	237°50'49"
59+0,529	PI36	1180,529	9.250.769,2268	529.806,5248	293,0982	237°54'56"





Estaca	Convergência	Projeção	Nome	Eixo	Cota	Ângulo
60		1200,000	9.250.785,7359	529.796,2023	292,2627	237°59'02"
60+8,170	PI37	1208,170	9.250.792,6632	529.791,8710	291,9121	237°53'28"
61		1220,000	9.250.802,6735	529.785,5667	291,8311	237°47'53"
62		1240,000	9.250.819,5970	529.774,9087	291,6942	237°47'53"
62+0,759	PI38	1240,759	9.250.820,2394	529.774,5041	291,6890	238°13'53"
63		1260,000	9.250.836,6737	529.764,4979	290,7011	238°39'52"
64		1280,000	9.250.853,7564	529.754,0969	289,6742	238°39'52"
64+14,062	PI39	1294,062	9.250.865,7673	529.746,7840	288,9522	240°14'38"
65		1300,000	9.250.871,0016	529.743,9801	288,7377	241°49'23"
66		1320,000	9.250.888,6315	529.734,5362	288,0154	241°49'23"
66+8,330	PI40	1328,330	9.250.895,9743	529.730,6028	287,7145	245°07'03"
67		1340,000	9.250.906,8257	529.726,3090	287,7140	248°24'43"
68		1360,000	9.250.925,4228	529.718,9504	287,7133	248°24'43"
68+1,947	PI41	1361,947	9.250.927,2329	529.718,2341	287,7132	244°07'27"
69		1380,000	9.250.942,8417	529.709,1629	288,9018	239°50'12"
69+0,712	PI42	1380,712	9.250.943,4572	529.708,8052	288,9487	232°26'25"
69+10,408	PI43	1390,408	9.250.950,3188	529.701,9541	289,1852	221°03'22"
70		1400,000	9.250.956,1004	529.694,3007	288,4984	217°04'07"
70+8,479	PI44	1408,479	9.250.961,2114	529.687,5351	287,8912	210°54'32"
71		1420,000	9.250.966,0346	529.677,0724	288,0751	204°44'57"
72		1440,000	9.250.974,4075	529.658,9094	288,3944	204°44'57"
72+8,297	PI45	1448,297	9.250.977,8811	529.651,3744	288,5268	201°58'26"
73		1460,000	9.250.981,7296	529.640,3224	288,0939	199°11'56"
74		1480,000	9.250.988,3065	529.621,4347	287,3541	199°11'56"
74+0,743	PI46	1480,743	9.250.988,5507	529.620,7334	287,3266	195°51'02"
75		1500,000	9.250.992,7195	529.601,9327	287,3000	192°30'08"
75+10,751	PI47	1510,751	9.250.995,0468	529.591,4370	287,2851	180°46'03"
75+17,250	PI48	1517,250	9.250.993,8104	529.585,0568	287,3546	161°35'23"
76		1520,000	9.250.992,6110	529.582,5816	287,3766	154°08'48"
76+11,155	PI49	1531,155	9.250.987,7465	529.572,5428	287,4656	146°44'50"
77		1540,000	9.250.981,9845	529.565,8325	287,5489	139°20'51"
77+10,241	PI50	1550,241	9.250.975,3130	529.558,0632	287,6453	136°23'50"
78		1560,000	9.250.968,2276	529.551,3519	287,8521	133°26'49"
78+16,014	PI51	1576,014	9.250.956,6015	529.540,3396	288,1915	143°57'44"
79		1580,000	9.250.954,8839	529.536,7422	288,7151	154°28'39"
79+17,004	PI52	1597,004	9.250.947,5574	529.521,3974	290,9485	170°24'17"
80		1600,000	9.250.947,8878	529.518,4198	290,9248	186°19'54"
80+14,577	PI53	1614,577	9.250.949,4954	529.503,9317	290,8092	199°31'27"
81		1620,000	9.250.952,4264	529.499,3691	290,7144	212°43'00"
82		1640,000	9.250.963,2361	529.482,5420	290,3646	212°43'00"
82+0,603	PI54	1640,603	9.250.963,5620	529.482,0348	290,3541	217°43'32"
83		1660,000	9.250.976,7249	529.467,7874	290,8225	222°44'03"
83+17,254	PI55	1677,254	9.250.988,4334	529.455,1142	291,2392	255°55'36"
84		1680,000	9.250.991,0279	529.456,0136	291,1895	289°07'08"
84+16,308	PI56	1696,308	9.251.006,4367	529.461,3551	290,8942	294°57'37"
85		1700,000	9.251.009,6076	529.463,2455	290,7908	300°48'06"
86		1720,000	9.251.026,7866	529.473,4868	290,2305	300°48'06"
86+2,300	PI57	1722,300	9.251.028,7622	529.474,6646	290,1661	287°52'27"





Estaca	Descrição	Projeção	Norte	Este	Cota	Acumulo
87		1740,000	9.251.046,3962	529.476,1909		
87+8,133	PI58	1748,133	9.251.054,4985	529.476,8922	289,5674	274°56'49"
88		1760,000	9.251.066,3648	529.476,7316	289,2923	272°05'09"
89		1780,000	9.251.086,3630	529.476,4610	289,2079	269°13'29"
89+14,452	PI59	1794,452	9.251.100,8134	529.476,2655	289,0657	269°13'29"
90		1800,000	9.251.106,3381	529.476,7757	288,9630	272°15'03"
91		1820,000	9.251.126,2534	529.476,6150	288,6644	275°16'36"
91+7,258	PI60	1827,258	9.251.133,4805	529.479,2825	287,5880	275°16'36"
92		1840,000	9.251.146,2219	529.479,4186	287,1974	272°56'39"
93		1860,000	9.251.166,2208	529.479,6321	287,4310	270°36'43"
93+4,521	PI61	1864,521	9.251.170,7415	529.479,6804	287,7976	270°36'43"
94		1880,000	9.251.186,1235	529.481,4105	287,8805	273°30'52"
95		1900,000	9.251.205,9982	529.483,6459	288,3740	276°25'02"
95+3,541	PI62	1903,541	9.251.209,5167	529.484,0416	289,0117	276°25'02"
96		1920,000	9.251.225,8919	529.485,7031	289,1246	276°06'19"
96+2,243	PI63	1922,243	9.251.228,1238	529.485,9295	291,6731	275°47'37"
97		1940,000	9.251.245,0159	529.480,4563	292,0205	263°55'13"
98		1960,000	9.251.264,0421	529.474,2915	292,7463	252°02'49"
98+10,182	PI64	1970,182	9.251.273,7283	529.471,1531	293,5639	252°02'49"
99		1980,000	9.251.282,7836	529.467,3589	293,9801	249°39'24"
100		2000,000	9.251.301,2298	529.459,6298	294,1999	247°15'58"
100+10,698	PI65	2010,698	9.251.311,0965	529.455,4956	294,6478	247°15'58"
101		2020,000	9.251.316,6038	529.447,9990	294,8873	231°47'03"
101+6,532	PI66	2026,532	9.251.320,4709	529.442,7349	296,6320	216°18'07"
101+14,083	PI67	2034,083	9.251.323,4875	529.435,8126	297,8571	209°55'26"
102		2040,000	9.251.324,1887	529.429,9372	295,7530	195°10'34"
103		2060,000	9.251.326,5586	529.410,0781	296,1171	186°48'20"
103+17,142	PI68	2077,142	9.251.328,5899	529.393,0571	297,3479	186°48'20"
104		2080,000	9.251.330,1998	529.390,6953	298,4028	200°32'34"
105		2100,000	9.251.341,4645	529.374,1695	300,4413	214°16'48"
105+12,212	PI69	2112,212	9.251.348,3427	529.364,0789	301,9923	214°16'48"
106		2120,000	9.251.353,7734	529.358,4965	302,9394	219°14'43"
107		2140,000	9.251.367,7194	529.344,1609	303,3576	224°12'39"
108		2160,000	9.251.381,6654	529.329,8253	304,4317	224°12'39"
108+5,739	PI70	2165,739	9.251.385,6672	529.325,7117	305,5067	224°12'39"
109		2180,000	9.251.393,3730	529.313,7118	305,8139	218°27'32"
110		2200,000	9.251.404,1798	529.296,8829	305,4157	212°42'24"
110+16,928	PI71	2216,928	9.251.413,3264	529.282,6393	304,8573	212°42'24"
111		2220,000	9.251.414,9014	529.280,0012	304,3847	211°46'23"
112		2240,000	9.251.425,1540	529.262,8290	304,1613	210°50'21"
112+3,374	PI72	2243,374	9.251.426,8837	529.259,9320	302,7073	210°50'21"
113		2260,000	9.251.435,8786	529.245,9494	302,4620	211°47'45"
113+6,815	PI73	2266,815	9.251.439,5654	529.240,2182	302,1623	212°45'10"
114		2280,000	9.251.446,6562	529.229,1018	302,0394	212°38'34"
114+7,684	PI74	2287,684	9.251.450,7882	529.222,6240	303,2888	212°31'57"
115		2300,000	9.251.457,3453	529.212,1980	304,0168	212°20'58"
116		2320,000	9.251.467,9928	529.195,2679	304,8628	212°09'59"
116+10,504	PI75	2330,504	9.251.473,5851	529.186,3759	306,2367	212°09'59"
					306,9582	211°50'29"



Alota	Descrição	Progressão	Norte	Este	Cota	Ângulo
117		2340,000	9.251.478,5489	529.178,2809		
117+17,634	PI76	2357,634	9.251.487,7670	529.163,2482	307,3301	211°31'00"
118		2360,000	9.251.488,9585	529.161,2040	308,0207	210°52'35"
119		2380,000	9.251.499,0298	529.143,9249	307,9740	210°14'11"
119+13,346	PI77	2393,346	9.251.505,7503	529.132,3948	307,5790	210°14'11"
120		2400,000	9.251.509,0391	529.126,6100	307,3154	209°55'40"
121		2420,000	9.251.518,9237	529.109,2234	306,8171	209°37'09"
121+15,839	PI78	2435,839	9.251.526,7519	529.095,4541	305,3186	209°37'09"
122		2440,000	9.251.529,0911	529.092,0129	304,1336	211°54'47"
123		2460,000	9.251.540,3348	529.075,4727	303,6633	214°12'25"
123+15,843	PI79	2475,843	9.251.549,2415	529.062,3702	301,4026	214°12'25"
124		2480,000	9.251.551,2599	529.058,7362	299,6118	211°37'41"
125		2500,000	9.251.560,9712	529.041,2522	299,3211	209°02'58"
125+10,422	PI80	2510,422	9.251.566,0318	529.032,1411	297,9226	209°02'58"
126		2520,000	9.251.571,1965	529.024,0751	297,1938	210°50'26"
126+14,670	PI81	2534,670	9.251.579,1071	529.011,7209	297,5833	212°37'55"
127		2540,000	9.251.581,9117	529.007,1882	298,1800	212°11'22"
128		2560,000	9.251.592,4351	528.990,1806	298,6670	211°44'49"
128+3,847	PI82	2563,847	9.251.594,4590	528.986,9096	300,4942	211°44'49"
129		2580,000	9.251.603,0981	528.973,2604	300,8456	212°02'21"
130		2600,000	9.251.613,7944	528.956,3611	301,1112	212°19'53"
130+16,554	PI83	2616,554	9.251.622,6477	528.942,3736	301,4401	212°19'53"
131		2620,000	9.251.624,3774	528.939,3930	301,7123	211°13'44"
132		2640,000	9.251.634,4156	528.922,0946	302,0481	210°07'35"
132+4,895	PI84	2644,895	9.251.636,8723	528.917,8610	303,9972	210°07'35"
133		2660,000	9.251.644,1035	528.904,5991	304,4742	209°21'51"
134		2680,000	9.251.653,6780	528.887,0398	305,4361	208°36'07"
134+10,948	PI85	2690,948	9.251.658,9192	528.877,4276	306,7098	208°36'07"
135		2700,000	9.251.665,4248	528.871,1339	307,4070	217°16'31"
135+16,374	PI86	2716,374	9.251.677,1928	528.859,7493	307,6086	225°56'55"
136		2720,000	9.251.680,3314	528.857,9326	307,9734	232°56'34"
137		2740,000	9.251.697,6408	528.847,9135	308,0370	239°56'12"
138		2760,000	9.251.714,9502	528.837,8943	308,3877	239°56'12"
138+6,154	PI87	2766,154	9.251.720,2762	528.834,8115	308,7384	239°56'12"
139		2780,000	9.251.732,2035	528.827,7769	308,8463	239°42'22"
140		2800,000	9.251.749,4317	528.817,6208	308,6323	239°28'32"
141		2820,000	9.251.766,6599	528.807,4626	308,3231	239°28'32"
141+9,481	PI88	2829,481	9.251.774,8267	528.802,6473	308,0140	239°28'32"
142		2840,000	9.251.783,8853	528.797,2996	307,8674	239°27'36"
143		2860,000	9.251.801,1081	528.787,1322	307,7447	239°26'41"
143+14,998	PI89	2874,998	9.251.814,0231	528.779,5079	307,5115	239°26'41"
144		2880,000	9.251.818,2031	528.776,7598	307,3366	238°03'40"
145		2900,000	9.251.834,9149	528.765,7728	307,2902	236°40'39"
145+14,894	PI90	2914,894	9.251.847,3599	528.757,5910	307,1045	236°40'39"
146		2920,000	9.251.851,5287	528.754,6421	306,9662	235°42'05"
147		2940,000	9.251.867,8565	528.743,0921	306,9852	234°43'31"
148		2960,000	9.251.884,1844	528.731,5422	306,7425	234°43'31"
149		2980,000	9.251.900,5122	528.719,9922	306,4998	234°43'31"





Estaca	Descrição	Projeção	Norte	Leste	Cota	Azimuth
150		3000,000	9.251.916,8401	528.708,4423	306,0143	234°43'31"
150+19,194	PI91	3019,194	9.251.932,5102	528.697,3576	305,7813	241°46'22"
151		3020,000	9.251.933,2614	528.697,0665	305,7840	248°49'13"
152		3040,000	9.251.951,9105	528.689,8406	305,8509	248°49'13"
152+1,447	PI92	3041,447	9.251.953,2598	528.689,3178	305,8557	253°11'46"
153		3060,000	9.251.971,3780	528.685,3249	306,0905	257°34'19"
154		3080,000	9.251.990,9093	528.681,0207	306,3435	257°34'19"
155		3100,000	9.252.010,4407	528.676,7164	306,5966	257°34'19"
155+13,508	PI93	3113,508	9.252.023,6325	528.673,8092	306,7675	253°59'14"
156		3120,000	9.252.029,7481	528.671,6319	307,1305	250°24'09"
157		3140,000	9.252.048,5895	528.664,9237	308,2489	250°24'09"
157+12,462	PI94	3152,462	9.252.060,3300	528.660,7437	308,9458	250°04'09"
158		3160,000	9.252.067,4011	528.658,1330	309,4013	249°44'08"
159		3180,000	9.252.086,1632	528.651,2060	310,6098	249°44'08"
159+18,785	PI95	3198,785	9.252.103,7852	528.644,6999	311,7449	238°53'23"
160		3200,000	9.252.104,6889	528.643,8874	311,7519	228°02'37"
161		3220,000	9.252.119,5620	528.630,5161	311,8676	228°02'37"
161+4,362	PI96	3224,362	9.252.122,8060	528.627,5997	311,8928	228°14'25"
162		3240,000	9.252.134,5066	528.617,2249	311,4023	228°26'14"
163		3260,000	9.252.149,4712	528.603,9561	310,8136	228°26'14"
163+0,304	PI97	3260,304	9.252.149,6986	528.603,7545	310,8047	225°15'29"
164		3280,000	9.252.162,8981	528.589,1356	310,1621	222°04'45"
164+4,904	PI98	3284,904	9.252.166,1845	528.585,4958	310,0021	217°58'59"
164+18,128	PI99	3298,128	9.252.173,5574	528.574,5183	310,0278	205°39'36"
165		3300,000	9.252.174,1183	528.572,7320	309,9712	197°25'59"
165+18,769	PI100	3318,769	9.252.179,7413	528.554,8252	309,4040	190°40'53"
166		3320,000	9.252.179,8257	528.553,5969	309,3595	183°55'47"
167		3340,000	9.252.181,1964	528.533,6440	308,6372	183°55'47"
168		3360,000	9.252.182,5670	528.513,6910	307,9149	183°55'47"
168+6,911	PI101	3366,911	9.252.183,0407	528.506,7961	307,6653	183°32'10"
169		3380,000	9.252.183,7582	528.493,7269	307,0449	183°08'33"
169+13,808	PI102	3393,808	9.252.184,5152	528.479,9396	306,3905	186°08'46"
170		3400,000	9.252.185,4998	528.473,8265	306,1319	189°08'58"
170+11,481	PI103	3411,481	9.252.187,3254	528.462,4914	305,6525	198°36'34"
171		3420,000	9.252.191,3339	528.454,9745	305,2238	208°04'09"
171+11,297	PI104	3431,297	9.252.196,6495	528.445,0064	304,6552	215°15'01"
172		3440,000	9.252.202,5216	528.438,5828	304,2595	222°25'53"
173		3460,000	9.252.216,0157	528.423,8211	303,3502	222°25'53"
173+12,373	PI105	3472,373	9.252.224,3642	528.414,6884	302,7876	221°37'31"
174		3480,000	9.252.229,3494	528.408,9168	302,6583	220°49'08"
175		3500,000	9.252.242,4229	528.393,7812	302,3193	220°49'08"
176		3520,000	9.252.255,4963	528.378,6457	301,9803	220°49'08"
177		3540,000	9.252.268,5697	528.363,5101	301,6413	220°49'08"
178		3560,000	9.252.281,6432	528.348,3746	301,3023	220°49'08"
179		3580,000	9.252.294,7166	528.333,2390	300,9633	220°49'08"
179+4,616	PI106	3584,616	9.252.297,7343	528.329,7453	300,8850	221°29'33"
180		3600,000	9.252.308,0609	528.318,3430	300,7724	222°09'58"
181		3620,000	9.252.321,4866	528.303,5190	300,6260	222°09'58"





Estaca	Descrição	Progressiva	Norte	Este	Oeste	Azimute
182		3640,000	9.252.334,9122	528.288,6949	300,4796	222°09'58"
183		3660,000	9.252.348,3378	528.273,8709	300,3332	222°09'58"
184		3680,000	9.252.361,7635	528.259,0468	300,1868	222°09'58"
184+7,101	PI107	3687,101	9.252.366,5303	528.253,7835	300,1348	218°56'36"
185		3700,000	9.252.374,0611	528.243,3112	300,2453	215°43'13"
186		3720,000	9.252.385,7377	528.227,0737	300,4166	215°43'13"
186+13,011	PI108	3733,011	9.252.393,3337	528.216,5106	300,5281	219°24'31"
187		3740,000	9.252.398,1090	528.211,4070	300,6575	223°05'49"
188		3760,000	9.252.411,7737	528.196,8030	301,0278	223°05'49"
189		3780,000	9.252.425,4384	528.182,1990	301,3981	223°05'49"
190		3800,000	9.252.439,1030	528.167,5950	301,7684	223°05'49"
190+1,154	PI109	3801,154	9.252.439,8916	528.166,7522	301,7898	228°33'20"
191		3820,000	9.252.455,1409	528.155,6786	302,1436	234°00'51"
191+4,934	PI110	3824,934	9.252.459,1333	528.152,7795	302,2362	241°13'38"
191+18,411	PI111	3838,411	9.252.471,6677	528.147,8270	301,8485	249°38'43"
192		3840,000	9.252.473,1686	528.147,3058	301,7432	250°51'00"
193		3860,000	9.252.492,0617	528.140,7450	300,4176	250°51'00"
194		3880,000	9.252.510,9550	528.134,1841	299,0919	250°51'00"
194+12,660	PI112	3892,660	9.252.522,9142	528.130,0312	298,2528	248°31'39"
195		3900,000	9.252.529,6305	528.127,0697	297,6993	246°12'18"
196		3920,000	9.252.547,9304	528.119,0004	296,1910	246°12'18"
197		3940,000	9.252.566,2303	528.110,9311	294,6828	246°12'18"
197+1,957	PI113	3941,957	9.252.568,0208	528.110,1416	294,5352	243°28'23"
197+17,751	PI114	3957,751	9.252.581,8000	528.102,4221	293,3744	242°36'51"
198		3960,000	9.252.583,8296	528.101,4534	293,2996	244°29'14"
199		3980,000	9.252.601,8794	528.092,8392	292,6341	244°29'14"
199+6,836	PI115	3986,836	9.252.608,0486	528.089,8949	292,4066	252°16'12"
200		4000,000	9.252.621,0149	528.087,6209	291,9527	260°03'10"
201		4020,000	9.252.640,7143	528.084,1660	291,2632	260°03'10"
201+11,662	PI116	4031,662	9.252.652,2013	528.082,1514	290,8611	262°24'17"
202		4040,000	9.252.660,5041	528.081,3895	289,7766	264°45'24"
202+5,761	PI117	4045,761	9.252.666,2411	528.080,8630	289,0272	266°35'57"
202+19,278	PI118	4059,278	9.252.679,7529	528.080,4954	288,6319	270°12'47"
203		4060,000	9.252.680,4745	528.080,5204	288,6780	271°59'04"
204		4080,000	9.252.700,4625	528.081,2130	289,9558	271°59'04"
204+1,866	PI119	4081,866	9.252.702,3273	528.081,2776	290,0750	273°17'55"
205		4100,000	9.252.720,4027	528.082,7360	289,2937	274°36'47"
206		4120,000	9.252.740,3379	528.084,3445	288,4319	274°36'47"
206+3,204	PI120	4123,204	9.252.743,5313	528.084,6022	288,2939	263°16'19"
207		4140,000	9.252.759,4992	528.079,3926	287,9386	251°55'50"
207+9,687	PI121	4149,687	9.252.768,7086	528.076,3879	287,7337	251°35'35"
208		4160,000	9.252.778,4744	528.073,0739	287,9992	251°15'20"
209		4180,000	9.252.797,4137	528.066,6470	288,5140	251°15'20"
209+9,543	PI122	4189,543	9.252.806,4503	528.063,5805	288,7596	249°15'46"
210		4200,000	9.252.816,0954	528.059,5399	289,0957	247°16'11"
210+8,852	PI123	4208,852	9.252.824,2594	528.056,1197	289,3802	239°54'07"
211		4220,000	9.252.833,1082	528.049,3382	289,2810	232°32'04"
212		4240,000	9.252.848,9625	528.037,1725	289,1032	232°32'04"



Estaca	Designação	Progressão	Norte	Este	Cota	Azimuth
212+11,279	PI124	4251,279	9.252.857,9350	528.030,3116		
213		4260,000	9.252.864,9430	528.025,1211	288,9705	233°00'16"
214		4280,000	9.252.881,0148	528.013,2174	288,9694	233°28'27"
215		4300,000	9.252.897,0866	528.001,3137	288,9669	233°28'27"
215+2,450	PI125	4302,450	9.252.899,0550	527.999,8558	288,9644	233°28'27"
216		4320,000	9.252.913,0605	527.989,2792	288,9641	233°12'27"
217		4340,000	9.252.929,0207	527.977,2264	288,8893	232°56'27"
217+5,593	PI126	4345,593	9.252.933,4843	527.973,8556	288,3762	232°56'27"
218		4360,000	9.252.943,5470	527.963,5457	288,2886	228°37'22"
219		4380,000	9.252.957,5166	527.949,2331	287,7976	274°18'18"
219+1,836	PI127	4381,836	9.252.958,7992	527.947,9190	287,1159	224°18'18"
220		4400,000	9.252.973,8854	527.937,8033	287,0533	230°13'52"
220+4,956	PI128	4404,956	9.252.978,0018	527.935,0432	286,3835	236°09'26"
221		4420,000	9.252.991,9758	527.929,4713	286,2007	242°12'33"
222		4440,000	9.253.010,5534	527.922,0638	285,0791	248°15'40"
222+4,323	PI129	4444,323	9.253.014,5694	527.920,4625	283,5879	248°15'40"
223		4460,000	9.253.028,1018	527.912,5487	283,2656	243°58'16"
223+7,851	PI130	4467,851	9.253.034,8793	527.908,5852	281,7788	239°40'51"
224		4480,000	9.253.043,9532	527.900,5071	281,0341	234°00'06"
224+16,829	PI131	4496,829	9.253.056,5228	527.889,3170	280,2846	228°19'22"
225		4500,000	9.253.058,0078	527.886,5152	279,2464	218°07'23"
225+14,211	PI132	4514,211	9.253.064,6625	527.873,9590	279,3449	207°55'24"
226		4520,000	9.253.067,5131	527.868,9201	279,7862	208°42'38"
226+3,238	PI133	4523,238	9.253.069,1074	527.866,1019	280,0743	209°29'51"
227		4540,000	9.253.077,4763	527.851,5785	280,2355	209°43'29"
228		4560,000	9.253.087,4618	527.834,2496	280,3053	209°57'07"
229		4580,000	9.253.097,4472	527.816,9207	280,3887	209°57'07"
229+5,600	PI134	4585,600	9.253.100,2432	527.812,0686	280,4720	209°57'07"
230		4600,000	9.253.108,0316	527.799,9566	280,4953	211°20'49"
231		4620,000	9.253.118,8487	527.783,1344	280,4545	212°44'32"
231+11,564	PI135	4631,564	9.253.125,1032	527.773,4078	280,3978	212°44'32"
232		4640,000	9.253.132,0260	527.768,5867	280,3650	223°56'39"
232+14,276	PI136	4654,276	9.253.143,7409	527.760,4284	280,4344	235°08'47"
233		4660,000	9.253.149,0531	527.758,2961	280,5518	241°38'16"
234		4680,000	9.253.167,6137	527.750,8458	280,8643	248°07'46"
234+15,799	PI137	4695,799	9.253.182,2759	527.744,9604	281,9560	248°07'46"
235		4700,000	9.253.185,6156	527.742,4125	282,8185	240°23'41"
236		4720,000	9.253.201,5166	527.730,2816	282,8934	232°39'35"
237		4740,000	9.253.217,4176	527.718,1507	283,3966	232°39'35"
237+2,273	PI138	4742,273	9.253.219,2247	527.716,7720	283,8999	232°39'35"
238		4760,000	9.253.234,5805	527.707,9150	283,9571	236°20'32"
239		4780,000	9.253.251,9053	527.697,9224	283,1613	240°01'28"
240		4800,000	9.253.269,2301	527.687,9298	282,2634	240°01'28"
240+3,869	PI139	4803,869	9.253.272,5812	527.685,9970	281,3656	240°01'28"
241		4820,000	9.253.285,0616	527.675,7763	281,1919	235°21'16"
241+9,209	PI140	4829,209	9.253.292,1865	527.669,9414	280,4932	230°41'04"
242		4840,000	9.253.298,8096	527.661,4223	280,0943	224°16'25"
243		4860,000	9.253.311,0850	527.645,6326	280,1168	217°51'46"
					280,1585	217°51'46"





Estaca	Descrição	Projeção	Norte	Este	Cota	Azimute
243+18,720	PI141	4878,720	9.253.322,5804	527.630,8463	280,1975	216°33'27"
244		4880,000	9.253.323,3139	527.629,8085	280,2228	215°15'08"
245		4900,000	9.253.334,8575	527.613,4761	280,6217	215°15'08"
246+9,317	PI142	4909,317	9.253.340,2348	527.605,8679	280,8075	211°50'45"
246		4920,000	9.253.345,3225	527.596,4738	280,4254	208°26'22"
247		4940,000	9.253.354,8471	527.578,9874	279,7101	208°26'22"
247+15,622	PI143	4955,622	9.253.362,2870	527.565,1502	279,1514	216°02'37"
248		4960,000	9.253.365,3084	527.561,9826	278,9782	223°38'51"
249		4980,000	9.253.379,1129	527.547,5107	278,1868	223°38'51"
249+2,154	PI144	4982,154	9.253.380,5999	527.545,9517	278,1015	225°36'45"
250		5000,000	9.253.393,7733	527.533,9132	278,1088	227°34'39"
251		5020,000	9.253.408,5371	527.520,4214	278,1170	227°34'39"
252		5040,000	9.253.423,3009	527.506,9295	278,1252	227°34'39"
253		5060,000	9.253.438,0647	527.493,4376	278,1334	227°34'39"
253+1,747	PI145	5061,747	9.253.439,3540	527.492,2594	278,1341	229°20'16"
254		5080,000	9.253.453,5592	527.480,7964	278,0979	231°05'53"
255		5100,000	9.253.469,1236	527.468,2367	278,0582	231°05'53"
255+17,910	PI146	5117,910	9.253.483,0618	527.456,9892	278,0226	225°47'11"
256		5120,000	9.253.484,4183	527.455,3995	278,0192	220°28'28"
257		5140,000	9.253.497,4005	527.440,1856	277,9862	220°28'28"
257+4,952	PI147	5144,952	9.253.500,6151	527.436,4184	277,9780	219°29'48"
258		5160,000	9.253.509,9864	527.424,6451	278,0012	218°31'08"
259		5180,000	9.253.522,4418	527.408,9971	278,0321	218°31'08"
259+3,123	PI148	5183,123	9.253.524,3871	527.406,5532	278,0369	216°04'38"
260		5200,000	9.253.533,7351	527.392,5022	278,0521	213°38'07"
260+10,710	PI149	5210,710	9.253.539,6672	527.383,5856	278,0617	203°00'48"
261		5220,000	9.253.541,6608	527.374,5116	278,1639	192°23'28"
261+8,800	PI150	5228,800	9.253.543,5492	527.365,9162	278,2608	205°24'59"
262		5240,000	9.253.550,5122	527.357,1442	277,9123	218°26'30"
262+0,576	PI151	5240,576	9.253.550,8705	527.356,6928	277,8944	232°54'18"
263		5260,000	9.253.568,7985	527.349,2185	277,7632	247°22'06"
264		5280,000	9.253.587,2584	527.341,5224	277,6280	247°22'06"
264+0,224	PI152	5280,224	9.253.587,4652	527.341,4362	277,6265	237°39'17"
264+15,432	PI153	5295,432	9.253.598,7567	527.331,2483	277,6598	215°40'02"
265		5300,000	9.253.600,5703	527.327,0560	277,6870	203°23'36"
265+7,556	PI154	5307,556	9.253.603,5704	527.320,1209	277,7319	196°06'34"
266		5320,000	9.253.605,4797	527.307,8245	277,9861	188°49'33"
267		5340,000	9.253.608,5483	527.288,0613	278,3946	188°49'33"
268		5360,000	9.253.611,6169	527.268,2981	278,8032	188°49'33"
268+8,361	PI155	5368,361	9.253.612,8997	527.260,0362	278,9983	190°14'57"
269		5380,000	9.253.615,2545	527.248,6378	279,9223	191°40'20"
269+16,819	PI156	5396,819	9.253.618,6571	527.232,1670	281,2575	202°12'02"
270		5400,000	9.253.620,3772	527.229,4907	281,4345	212°43'43"
270+8,996	PI157	5408,996	9.253.625,2408	527.221,9231	281,9348	227°00'53"
271		5420,000	9.253.634,8932	527.216,6387	281,9413	241°18'03"
272		5440,000	9.253.652,4363	527.207,0345	281,9532	241°18'03"
272+7,490	PI158	5447,490	9.253.659,0059	527.203,4379	281,9576	237°49'38"
273		5460,000	9.253.669,1721	527.196,1471	282,0671	234°21'13"





Estaca	Descrição	Programa	Nova	Fora	Cota	Azimute
274		5480,000	9.253.685,4247	527.184,4015	282,2423	234°21'13"
275		5500,000	9.253.701,6772	527.172,8358	282,4174	234°21'13"
276		5520,000	9.253.717,9298	527.161,1801	282,5925	234°21'13"
276+6,691	PI159	5526,691	9.253.723,3673	527.157,2806	282,6511	243°39'37"
277		5540,000	9.253.736,0923	527.153,3822	282,9431	252°58'01"
277+16,293	PI160	5556,293	9.253.751,6702	527.148,6097	283,3005	261°08'09"
278		5560,000	9.253.755,3774	527.148,5647	283,3000	269°18'17"
279		5580,000	9.253.775,3759	527.148,3221	283,2971	269°18'17"
279+4,283	PI161	5584,283	9.253.779,6587	527.148,2701	283,2965	273°20'22"
280		5600,000	9.253.795,2456	527.150,2874	282,3440	277°22'27"
280+19,499	PI162	5619,499	9.253.814,5830	527.152,7900	281,1623	283°32'18"
281		5620,000	9.253.815,0550	527.152,9590	281,1385	289°42'09"
282		5640,000	9.253.833,8841	527.159,7018	280,1901	289°42'09"
282+19,586	PI163	5659,586	9.253.852,3232	527.166,3049	279,2614	276°04'18"
283		5660,000	9.253.852,7338	527.166,2504	279,2341	262°26'26"
284		5680,000	9.253.872,5600	527.163,6193	277,9140	262°26'26"
284+1,030	PI164	5681,030	9.253.873,5810	527.163,4838	277,8460	245°39'17"
285		5700,000	9.253.887,8693	527.151,0056	277,7641	228°52'08"
286		5720,000	9.253.902,9335	527.137,8499	277,6777	228°52'08"
286+1,357	PI165	5721,357	9.253.903,9556	527.136,9573	277,6718	227°59'53"
287		5740,000	9.253.917,6184	527.124,2731	277,8030	227°07'38"
288		5760,000	9.253.932,2757	527.110,6657	277,9438	227°07'38"
289		5780,000	9.253.946,9331	527.097,0582	278,0846	227°07'38"
290		5800,000	9.253.961,5904	527.083,4508	278,2254	227°07'38"
291		5820,000	9.253.976,2477	527.069,8433	278,3661	227°07'38"
291+8,888	PI166	5828,888	9.253.982,7614	527.063,7962	278,4287	222°20'41"
292		5840,000	9.253.989,5355	527.054,9878	278,6376	217°33'44"
293		5860,000	9.254.001,7280	527.039,1339	279,0136	217°33'44"
293+19,108	PI167	5879,108	9.254.013,3766	527.023,9872	279,3729	207°50'30"
294		5880,000	9.254.013,6540	527.023,1394	279,3999	198°07'17"
295		5900,000	9.254.019,8747	527.004,1314	280,0055	198°07'17"
296		5920,000	9.254.026,0953	526.985,1234	280,6111	198°07'17"
296+19,625	PI168	5939,625	9.254.032,1994	526.966,4715	281,2054	204°32'42"
297		5940,000	9.254.032,3922	526.966,1502	281,2127	210°58'06"
298		5960,000	9.254.042,6835	526.949,0012	281,6008	210°58'06"
299		5980,000	9.254.052,9748	526.931,8522	281,9890	210°58'06"
300		6000,000	9.254.063,2661	526.914,7032	282,3771	210°58'06"
300+1,278	PI169	6001,278	9.254.063,9237	526.913,6074	282,4019	215°36'36"
301		6020,000	9.254.076,0209	526.899,3185	282,7328	220°15'07"
302		6040,000	9.254.088,9439	526.884,0543	283,0862	220°15'07"
303		6060,000	9.254.101,8669	526.868,7900	283,4396	220°15'07"
303+12,974	PI170	6072,974	9.254.110,2499	526.858,8882	283,6689	221°57'12"
304		6080,000	9.254.115,1001	526.853,8047	283,5483	223°39'17"
305		6100,000	9.254.128,9063	526.839,3344	283,2050	223°39'17"
306		6120,000	9.254.142,7125	526.824,8641	282,8617	223°39'17"
306+8,204	PI171	6128,204	9.254.148,3759	526.818,9283	282,7209	214°13'48"
307		6140,000	9.254.153,3247	526.808,2208	282,4657	204°48'20"
308		6160,000	9.254.161,7156	526.790,0661	282,0331	204°48'20"



Estaca	Descrição	Projeção	Norte	Este	Cota	Azimute
309		6180,000	9.254.170,1064	526.771,9114	281,6094	204°48'20"
310		6200,000	9.254.178,4972	526.753,7566	281,1678	204°48'20"
310+3,961	PI172	6203,961	9.254.180,1589	526.750,1614	281,0821	213°36'17"
311		6220,000	9.254.190,9750	526.738,3177	279,8654	222°24'13"
312		6240,000	9.254.204,4620	526.723,5495	278,3482	222°24'13"
312+0,324	PI173	6240,324	9.254.204,6803	526.723,3104	278,3236	226°48'04"
313		6260,000	9.254.220,0144	526.710,9808	278,1211	231°11'55"
313+14,821	PI174	6274,821	9.254.231,5651	526.701,6934	277,9686	238°43'11"
314		6280,000	9.254.236,3048	526.699,6070	277,9812	246°14'26"
314+10,049	PI175	6290,049	9.254.245,5018	526.695,5584	278,0056	255°16'06"
315		6300,000	9.254.255,4039	526.694,5694	277,7094	264°17'46"
316		6320,000	9.254.275,3048	526.692,5817	277,1141	264°17'46"
317		6340,000	9.254.295,2058	526.690,5940	276,5189	264°17'46"
318		6360,000	9.254.315,1068	526.688,6063	275,9236	264°17'46"
318+1,922	PI176	6361,922	9.254.317,0190	526.688,4153	275,8664	256°03'39"
319		6380,000	9.254.333,7602	526.681,5921	275,1536	247°49'32"
320		6400,000	9.254.352,2810	526.674,0435	274,3649	247°49'32"
320+10,381	PI177	6410,381	9.254.361,8943	526.670,1254	273,9556	243°08'01"
321		6420,000	9.254.370,0906	526.665,0912	273,8915	238°26'29"
322		6440,000	9.254.387,1327	526.654,6238	273,7583	238°26'29"
323		6460,000	9.254.404,1748	526.644,1564	273,6250	238°26'29"
324		6480,000	9.254.421,2169	526.633,6890	273,4918	238°26'29"
324+19,524	PI178	6499,524	9.254.437,8536	526.623,4706	273,3617	237°52'00"
325		6500,000	9.254.438,2540	526.623,2135	273,3611	237°17'32"
326		6520,000	9.254.455,0827	526.612,4064	273,3356	237°17'32"
327		6540,000	9.254.471,9114	526.601,5993	273,3102	237°17'32"
328		6560,000	9.254.488,7402	526.590,7922	273,2847	237°17'32"
328+1,019	PI179	6561,019	9.254.489,5975	526.590,2416	273,2834	232°06'41"
329		6580,000	9.254.503,4637	526.577,2797	273,1901	226°55'49"
330		6600,000	9.254.518,0742	526.563,6219	273,0917	226°55'49"
331		6620,000	9.254.532,6847	526.549,9642	272,9934	226°55'49"
331+14,932	PI180	6634,932	9.254.543,5926	526.539,7676	272,9200	226°59'13"
332		6640,000	9.254.547,3020	526.536,3138	272,9379	227°02'36"
333		6660,000	9.254.561,9394	526.522,6849	272,8611	227°02'36"
334		6680,000	9.254.576,5768	526.509,0561	272,7842	227°02'36"
335		6700,000	9.254.591,2142	526.495,4272	272,7074	227°02'36"
336		6720,000	9.254.605,8517	526.481,7983	272,6305	227°02'36"
336+0,070	PI181	6720,070	9.254.605,9026	526.481,7509	272,6303	229°10'35"
337		6740,000	9.254.621,4589	526.469,2920	273,5602	231°18'33"
337+14,773	PI182	6754,773	9.254.632,9896	526.460,0572	274,2494	238°12'58"
338		6760,000	9.254.637,7317	526.457,8584	274,0655	245°07'25"
339		6780,000	9.254.655,8761	526.449,4452	273,3620	245°07'25"
339+0,976	PI183	6780,976	9.254.656,7620	526.449,0344	273,3276	242°25'28"
340		6800,000	9.254.673,1910	526.439,4437	272,9247	239°43'30"
340+19,066	PI184	6819,066	9.254.689,6563	526.429,8318	272,5210	236°29'25"
341		6820,000	9.254.690,4051	526.429,2728	272,5343	233°15'19"
342		6840,000	9.254.706,4312	526.417,3078	272,8186	233°15'19"
343		6860,000	9.254.722,4574	526.405,3428	273,1029	233°15'19"





Estaca	Descrição	Progressiva	Norte	Este	Oeste	Azimute
343+13,549	PI185	6873,549	9.254.733,3145	526.397,2370	273,2955	234°07'20"
344		6880,000	9.254.738,5980	526.393,5359	273,5625	234°59'20"
345		6900,000	9.254.754,9788	526.382,0612	274,3904	234°59'20"
345+12,356	PI186	6912,356	9.254.765,0989	526.374,9721	274,9019	231°33'06"
346		6920,000	9.254.770,7897	526.369,8687	274,7748	228°06'52"
347		6940,000	9.254.785,6793	526.356,5158	274,4421	228°06'52"
347+7,956	PI187	6947,956	9.254.791,6024	526.351,2040	274,3098	234°27'57"
348		6960,000	9.254.802,1176	526.345,3314	274,4572	240°49'02"
349		6980,000	9.254.819,5790	526.335,5795	274,7019	240°49'02"
349+16,538	PI188	6996,538	9.254.834,0179	526.327,5156	274,9042	235°47'24"
350		7000,000	9.254.836,6993	526.325,3258	275,1849	230°45'46"
350+8,514	PI189	7008,514	9.254.843,2940	526.319,9402	275,8752	226°42'00"
350+17,291	PI190	7017,291	9.254.849,2391	526.313,4834	276,7875	221°42'50"
351		7020,000	9.254.851,0087	526.311,4326	276,9790	220°47'26"
351+18,726	PI191	7038,726	9.254.863,2422	526.297,2552	278,3032	227°32'38"
352		7040,000	9.254.864,2768	526.296,5117	278,3738	234°17'51"
353		7060,000	9.254.880,5180	526.284,8401	279,4827	234°17'51"
353+13,608	PI192	7073,608	9.254.891,5687	526.276,8987	280,2372	240°48'07"
354		7080,000	9.254.897,4656	526.274,4327	280,0421	247°18'22"
355		7100,000	9.254.915,9172	526.266,7166	279,4317	247°18'22"
356		7120,000	9.254.934,3688	526.259,0005	278,8213	247°18'22"
356+9,639	PI193	7129,639	9.254.943,2619	526.255,2816	278,5271	241°14'43"
357		7140,000	9.254.951,7679	526.249,3663	277,9437	235°11'04"
358		7160,000	9.254.968,1878	526.237,9476	276,8175	235°11'04"
358+13,453	PI194	7173,453	9.254.979,2327	526.230,2667	276,0600	217°52'24"
359		7180,000	9.254.981,5321	526.224,1369	275,5812	200°33'44"
360		7200,000	9.254.988,5566	526.205,4111	274,1186	200°33'44"
360+17,781	PI195	7217,781	9.254.994,8018	526.188,7625	272,8182	205°42'52"
361		7220,000	9.254.995,9401	526.186,8581	272,7870	210°52'01"
361+16,660	PI196	7236,660	9.255.004,4875	526.172,5577	272,5526	218°04'14"
362		7240,000	9.255.006,8604	526.170,2074	272,5157	225°16'26"
363		7260,000	9.255.021,0700	526.156,1330	272,2948	225°16'26"
364		7290,000	9.255.035,2795	526.142,0586	272,0739	225°16'26"
364+18,717	PI197	7298,717	9.255.048,5772	526.128,8875	271,8672	230°51'44"
365		7300,000	9.255.049,6469	526.128,1781	271,8635	236°27'02"
366		7320,000	9.255.066,3151	526.117,1250	271,8062	236°27'02"
367		7340,000	9.255.082,9832	526.106,0719	271,7488	236°27'02"
367+14,811	PI198	7354,811	9.255.095,3271	526.097,8863	271,7063	239°47'29"
368		7360,000	9.255.099,9557	526.095,5413	271,7401	243°07'55"
369		7380,000	9.255.117,7967	526.086,5026	271,8705	243°07'55"
370		7400,000	9.255.135,6377	526.077,4639	272,0008	243°07'55"
371		7420,000	9.255.153,4787	526.068,4251	272,1311	243°07'55"
371+8,862	PI199	7428,862	9.255.161,3842	526.064,4200	272,1889	242°22'42"
372		7440,000	9.255.171,1838	526.059,1268	272,3147	241°37'28"
373		7460,000	9.255.188,7809	526.049,6218	272,5405	241°37'28"
374		7480,000	9.255.206,3779	526.040,1169	272,7663	241°37'28"
374+0,175	PI200	7480,175	9.255.206,5319	526.040,0337	272,7683	240°05'56"
375		7500,000	9.255.223,4487	526.029,6968	273,1623	238°34'24"





Estaca	Descrição	Projeção	Nova	Estm	Cota	Azimute
375+10,588	PI201	7510,588	9.255.232,4834	526.024,1763	273,3727	226°40'06"
376		7520,000	9.255.237,8501	526.016,4440	273,2605	214°45'47"
377		7540,000	9.255.249,2538	526.000,0137	273,0219	214°45'47"
378		7560,000	9.255.260,6574	525.983,5833	272,7834	214°45'47"
378+3,012	PI202	7563,012	9.255.262,3747	525.981,1091	272,7475	218°38'42"
379		7580,000	9.255.273,8577	525.968,5895	272,5310	222°31'38"
380		7600,000	9.255.287,3765	525.953,8504	272,2761	222°31'38"
380+7,606	PI203	7607,606	9.255.292,5177	525.948,2451	272,1792	225°51'33"
381		7620,000	9.255.301,8987	525.940,1451	272,2491	229°11'28"
382		7640,000	9.255.317,0365	525.927,0743	272,2825	229°11'28"
382+14,111	PI204	7654,111	9.255.327,7173	525.917,8520	272,3060	224°49'46"
383		7660,000	9.255.331,5391	525.913,3721	272,2927	220°28'04"
384		7680,000	9.255.344,5196	525.898,1567	272,2474	220°28'04"
385		7700,000	9.255.357,5000	525.882,9413	272,2022	220°28'04"
386		7720,000	9.255.370,4804	525.867,7259	272,1570	220°28'04"
386+6,831	PI205	7726,831	9.255.374,9139	525.862,5290	272,1415	217°40'41"
387		7740,000	9.255.382,4463	525.851,7270	271,9095	214°53'19"
388		7760,000	9.255.393,8859	525.835,3216	271,5571	214°53'19"
389		7780,000	9.255.405,3256	525.818,9163	271,2047	214°53'19"
389+16,972	PI206	7796,972	9.255.415,0332	525.804,9948	270,9057	217°35'23"
390		7800,000	9.255.416,9914	525.802,6851	270,8923	220°17'27"
391		7820,000	9.255.429,9247	525.787,4296	270,8037	220°17'27"
392		7840,000	9.255.442,8581	525.772,1742	270,7151	220°17'27"
393		7860,000	9.255.455,7914	525.756,9188	270,6266	220°17'27"
394		7880,000	9.255.468,7248	525.741,6633	270,5380	220°17'27"
394+1,687	PI207	7881,687	9.255.469,8159	525.740,3763	270,5305	221°17'56"
395		7900,000	9.255.482,1423	525.726,8332	270,6503	222°18'26"
396		7920,000	9.255.495,6044	525.712,0423	270,7810	222°18'26"
396+3,220	PI208	7923,220	9.255.497,7719	525.709,6608	270,8021	224°34'26"
397		7940,000	9.255.510,0120	525.698,1829	270,7783	226°50'26"
398		7960,000	9.255.524,6011	525.684,5023	270,7499	226°50'26"
399		7980,000	9.255.539,1901	525.670,8217	270,7215	226°50'26"
400		8000,000	9.255.553,7792	525.657,1411	270,6931	226°50'26"
400+11,682	PI209	8011,682	9.255.562,3004	525.649,1505	270,6765	224°54'27"
401		8020,000	9.255.567,9708	525.643,0643	270,7430	222°58'28"
402		8040,000	9.255.581,6043	525.628,4311	270,9028	222°58'28"
402+10,821	PI210	8050,821	9.255.588,9807	525.620,5138	270,9893	216°15'12"
403		8060,000	9.255.593,5051	525.612,5274	271,0912	209°31'57"
403+12,866	PI211	8072,866	9.255.599,8471	525.601,3328	271,2341	205°08'32"
404		8080,000	9.255.602,3748	525.594,6619	271,5500	200°45'08"
405		8100,000	9.255.609,4613	525.575,9595	272,4355	200°45'08"
406		8120,000	9.255.616,5479	525.557,2570	273,3210	200°45'08"
406+1,389	PI212	8121,389	9.255.617,0399	525.555,9586	273,3825	208°55'54"
407		8140,000	9.255.628,2694	525.541,1166	274,7676	217°06'40"
407+6,956	PI213	8146,956	9.255.632,4662	525.535,5696	275,2852	219°02'35"
408		8160,000	9.255.641,0197	525.525,7213	275,8578	220°58'30"
408+14,442	PI214	8174,442	9.255.650,4899	525.514,8175	276,4917	218°42'40"
409		8180,000	9.255.653,7917	525.510,3467	276,6058	216°26'49"



Estaca	Descrição	Progressiva	Norte	Este	Oeste	Azimute
410		8200,000	9.255.665,6732	525.494,2586	277,0162	216°26'49"
411		8220,000	9.255.677,5548	525.478,1704	277,4267	216°26'49"
411+7,461	PI215	8227,461	9.255.681,9874	525.472,1685	277,5798	209°35'52"
412		8240,000	9.255.686,8359	525.460,6052	277,9887	202°44'54"
412+14,617	PI216	8254,617	9.255.692,4880	525.447,1255	278,4654	211°29'24"
413		8260,000	9.255.695,9650	525.443,0157	278,4340	220°13'54"
413+16,889	PI217	8276,889	9.255.706,8732	525.430,1220	278,3356	220°13'54"

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