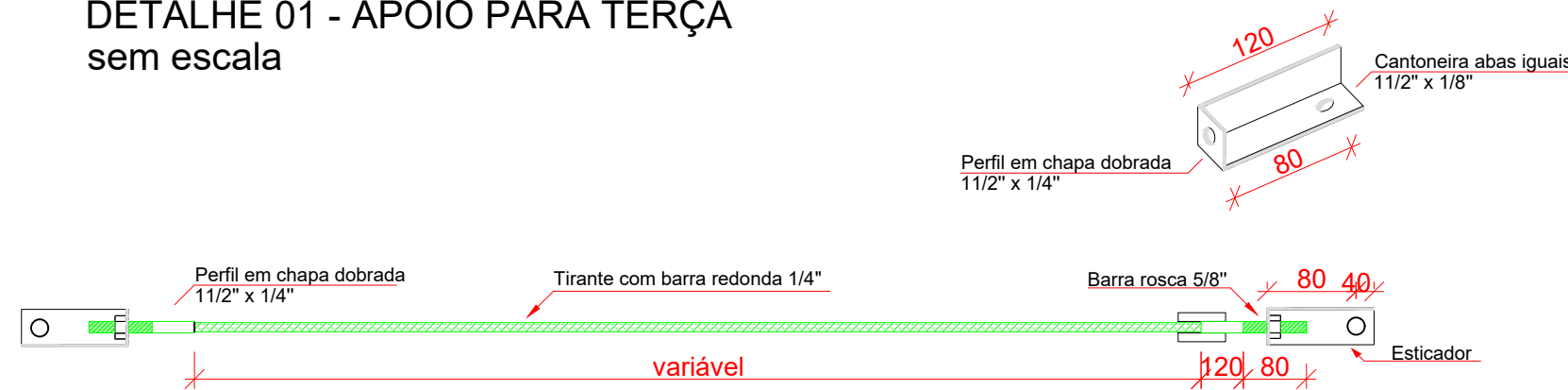
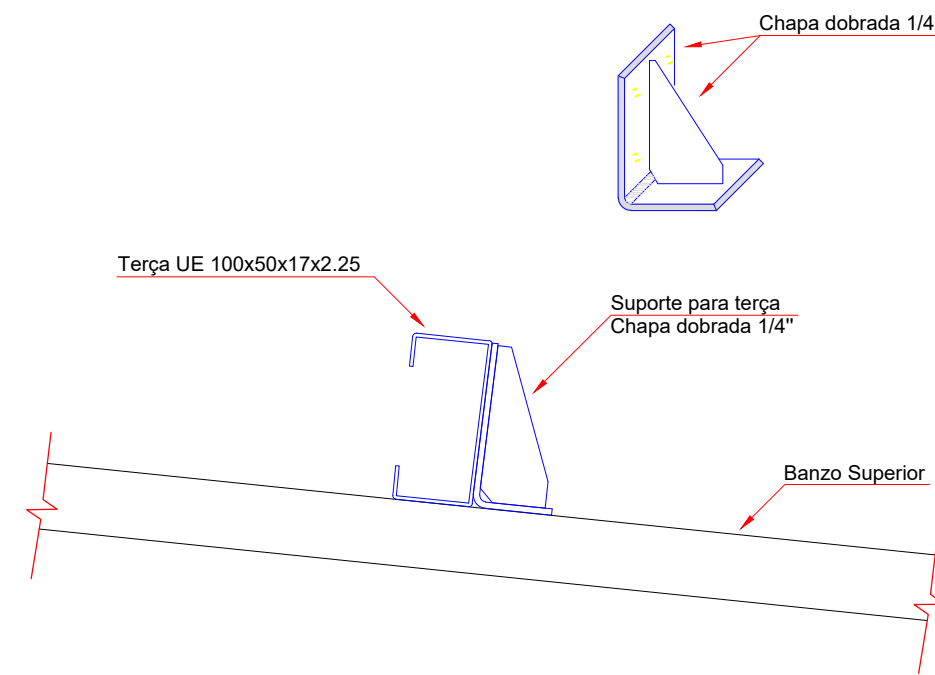


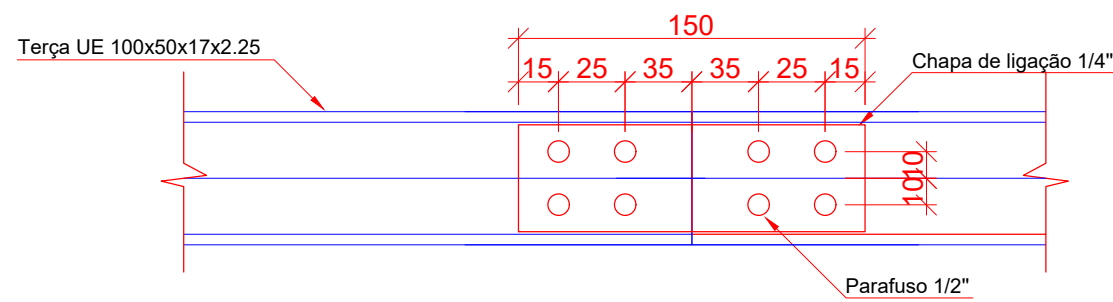
DETALHE 01 - APOIO PARA TERÇA sem escala



DETALHE DO TRAVAMENTO PARA CONTRAVENTO sem escala



DETALHE DE SUPORTE METÁLICO PARA TERÇA sem escala



DETALHE DE LIGAÇÃO DE TERÇAS METÁLICAS sem escala



Tabela resumo											
Material		Série	Perfil	Comprimento			Volume		Peso		
Tipo	Designação			Perfil (m³)	Série (m)	Material (m)	Perfil (m³)	Série (m³)	Material (m³)	Perfil (kg)	Série (kg)
Aço laminado	A-572 345MPa	Barra redonda	1/4"	491.261			0.016			122.13	
		Cantoneira	L 3/4 x 1/8"	146.283	491.261		0.016		127.46	122.13	
					146.283		0.016		127.46		
Aço dobrado	A-36	U	U100X60X3.75	831.343			0.647			5079.50	
			U50X25X1.52, Caixa dupla soldada	8.472			0.002			19.20	
					839.815		0.650		5098.70		
		C	C75X40X15X2.00	6.864			0.002		18.51		
			C100X50X17X2.25, Caixa dupla união genérica	31.473			0.031		243.56		
			C100X50X17X2.25	640.794			0.316		2479.44		
		679.131	1518.946	0.349	0.999	2741.50	7840.20				

#### NOTAS GERAIS

- ESPECIFICAÇÕES DE MATERIAIS:
  - AÇO DOBRADO - A36
  - AÇO LAMINADO - A-572 345 MPa
  - ELETRODOS - AWS E 70-XX
  - PARAFUSOS A325 - ASTM 5/8" X 2"
  - TELHA STANDARD GALVANIZADA ONDULADA #0,50mm
- CONFERIR MEDIDAS EM OBRA ANTES DA FABRICAÇÃO.
- TODAS AS LIGAÇÕES SÃO SOLDADAS.
- AS LIGAÇÕES SOLDADAS DEVEM SER:
  - FILETE DUPLO PARA LIGAÇÕES PERPENDICULARES
  - FILETE OPOSTO E MESMO LADO PARA LIGAÇÃO ENTRE PERFIS
  - CHANFRO EM "V" DE MESMO LADO PARA EMENDA DE PERFIS
- O COMPRIMENTO DA SOLDA É SEMPRE O MESMO COMPRIMENTO DE CONTATO DOS PERFIS.
- A ALTURA MÍNIMA DE SOLDA DEVE SER IGUAL OU MAIOR A MAIOR ESPESSURA DOS PERFIS A SEREM SOLDADOS.
- FAZER PRÉ-MONTAGEM DE TODAS AS PEÇAS DA ESTRUTURA METÁLICA.
- A QUANTIDADE TOTAL DE MATERIAL DEVERÁ SER CONFIRMADO PELO EXECUTOR DA ESTRUTURA METÁLICA PARA FINS DE CONTRATAÇÃO DA MESMA, SENDO DE SUA RESPONSABILIDADE O PESO FINAL CONTRATADO.

#### PREPARO E TRATAMENTO SUPERFÍCIE METÁLICA

- CONSIDERAÇÕES PERFIS METÁLICOS:
  - GRAU DE INTEMPERISMO: GRAU B
  - GRAU DE PREPARAÇÃO DE SUPERFÍCIE DE AÇO POR MEIO DE JATEAMENTO ABRASIVO: GRAU SA 2 (JATEAMENTO ABRASIVO COMERCIAL VISTO A OLHO NU, A SUPERFÍCIE DEVE ESTAR ISENTA DE QUASE TODA A CAREPA DE LAMINAÇÃO, FERRUGEM E MATERIAL ESTRANHO. A SUPERFÍCIE DEVE APRESENTAR, ENTÃO, COLORAÇÃO ACINZENTADA E CORRESPONDER, EM APARÊNCIA, ÀS GRAVURAS COM DESIGNAÇÃO SA 2. ESTA LIMPEZA NÃO SE APLICA A SUPERFÍCIES QUE APRESENTEM GRAU A DE INTEMPERISMO ORIGINAL. PARA AS DEMAIS, OS PADRÕES DE LIMPEZA SÃO: BSA 2, CSA 2 E DSA 2).

- RECOMENDAÇÕES PARA REALIZAR TRATAMENTO:
  - EXECUTAR LIMPEZA PRÉVIA PARA COMO FINALIDADE DE REMOÇÃO DE ÓLEO OU GRAXA.
  - REALIZAR JATEAMENTO ABRASIVO COM AREIA FINA (0,40 MM) PARA REMOVER PARTÍCULAS ESTRANHAS, ESCAMAS DE LAMINAÇÃO E ÓXIDO.
  - APÓS O TRATAMENTO A SUPERFÍCIE DEVE SER LIMPA, IMEDIATAMENTE, COM ASPIRADOR, AR COMPRIMIDO LIMPO E SECO OU ESCOVA LIMPA DE FORMA A REMOVER GRÃOS DE ABRASIVOS E POEIRA.
  - O AR COMPRIMIDO UTILIZADO NA APLICAÇÃO DO JATO ABRASIVO SECO DEVE SER ISENTO DE ÁGUA E DE ÓLEO. O EQUIPAMENTO DEVE SER PROVIDO DE FILTROS E SEPARADORES ADEQUADOS OU, PROVER AQUECIMENTO OU RESFRIAMENTO DO AR, PARA RETIRADA DE ÁGUA E DE ÓLEO.
  - NÃO DEVEM SER INICIADOS TRABALHOS DE JATEAMENTO ABRASIVO QUANDO HOVER EXPECTATIVA DE CHUVA, NEVOEIRO OU QUANDO AS SUPERFÍCIES NÃO ESTIVEREM A UMA TEMPERATURA PELO MENOS 3 °C ACIMA DO PONTO DE ORVALHO, OU QUANDO A UMIDADE RELATIVA DO AR FOR SUPERIOR A 85%. EXCETO PARA AS TINTAS TOLERANTES A SUPERFÍCIES MOLHADAS.

- PINTURA ANTICORROSÃO
  - A APLICAÇÃO DA TINTA DE FUNDO DEVE SER FEITA NO MENOR PRAZO DE TEMPO POSSÍVEL E ENQUANTO A SUPERFÍCIE JATEADA ESTIVER ATENDENDO AO PADRÃO ESPECIFICADO. COM O PASSAR DO TEMPO, A SUPERFÍCIE TENDE A OXIDAR, PODENDO HAVER A NECESSIDADE DE NOVO JATEAMENTO, DEPENDENDO DO PADRÃO ESPECIFICADO, PARA O GRAU DE PREPARAÇÃO DE SUPERFÍCIE.
  - USO DE TINTA ESMALTE EPÓXI PARA ACABAMENTO (EXPECTATIVADE DURABILIDADE 7 A 10 ANOS).

#### NORMAS APLICÁVEIS

- NBR 8800:2008 - PROJETO DE ESTRUTURAS DE AÇO E DE ESTRUTURA MISTA DE AÇO E CONCRETO DE EDIFÍCIOS.
- NBR 14762:2010 - DIMENSIONAMENTO DE ESTRUTURAS DE AÇO CONSTITUÍDAS POR PERFIS FORMADOS A FRIO - PROCEDIMENTO.
- NBR 6123:1988 - FORÇAS DEVIDAS AO VENTO EM EDIFICAÇÕES.
- N0009 - TRATAMENTO DE SUPERFÍCIES DE AÇO COM JATO ABRASIVO E HIDROJATEAMENTO.
- NBR 15158:2016 - LIMPEZA DE SUPERFÍCIES DE AÇO PAOR COMPOSTOS QUÍMICOS.

DETALHAS E COMPRIMENTOS DE CADA BARRA SEGUE NO RELATÓRIO DE ESTRUTURAS METÁLICAS.

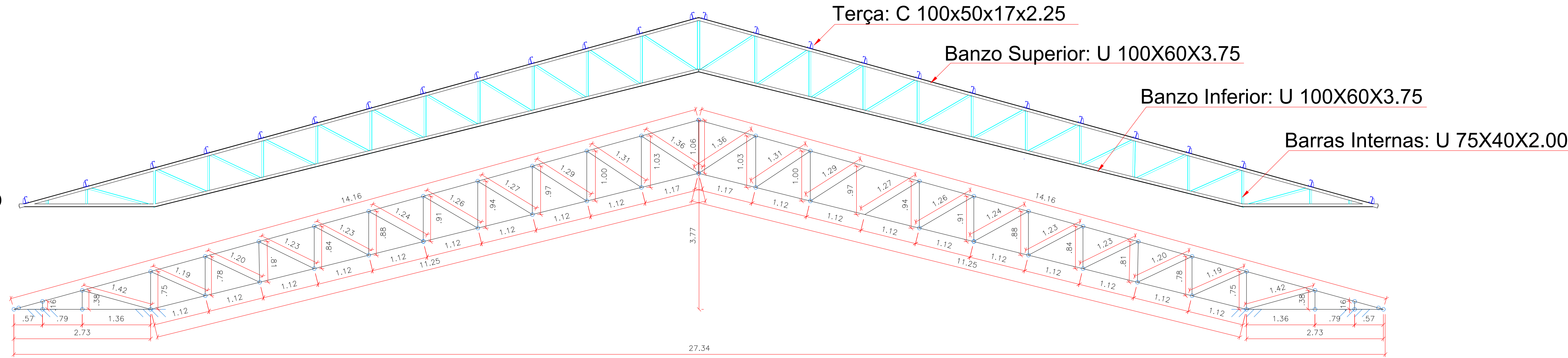
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04	-	-	-
03	-	-	-
02	-	-	-
01	-	-	-
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REVISÃO	DESCRIÇÃO	DATA	RESP.



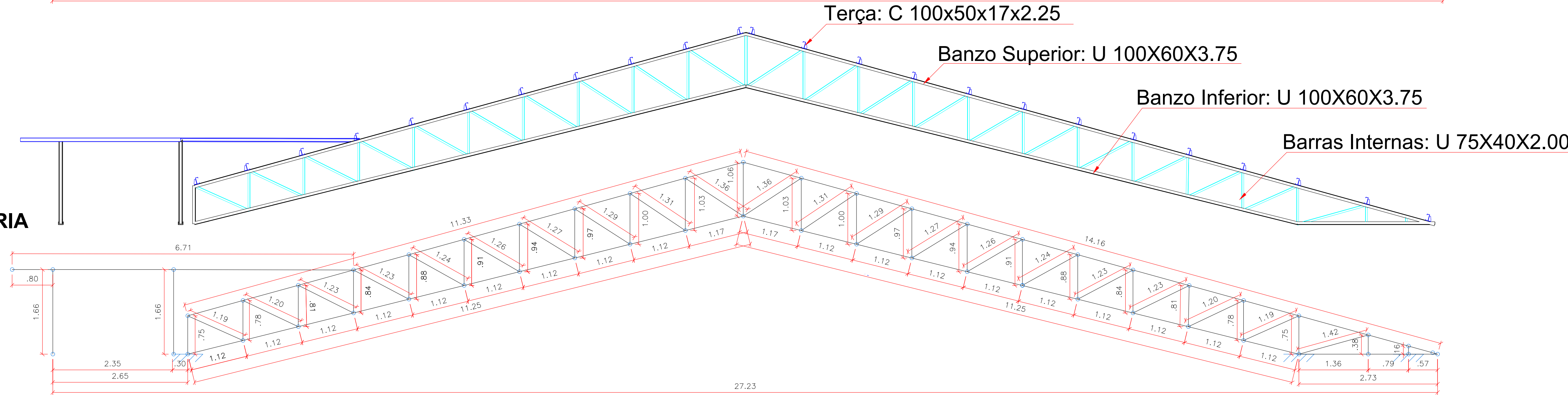
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PROJETO	CENTRO DE EVENTOS - AVENIDA PARANÁ	REVISÃO	R00
ASSUNTO	PROJETO DE ESTRUTURA METÁLICA	DATA	27/12/2023
PROFISSIONAL	JULIO PERIN - CREA/PR-184364/D	DESENHO	JULIO PERIN
SERVICOR/PROJETOR/CALCULADORA DO ARQUIVO		ESCALA	SEM ESCALA



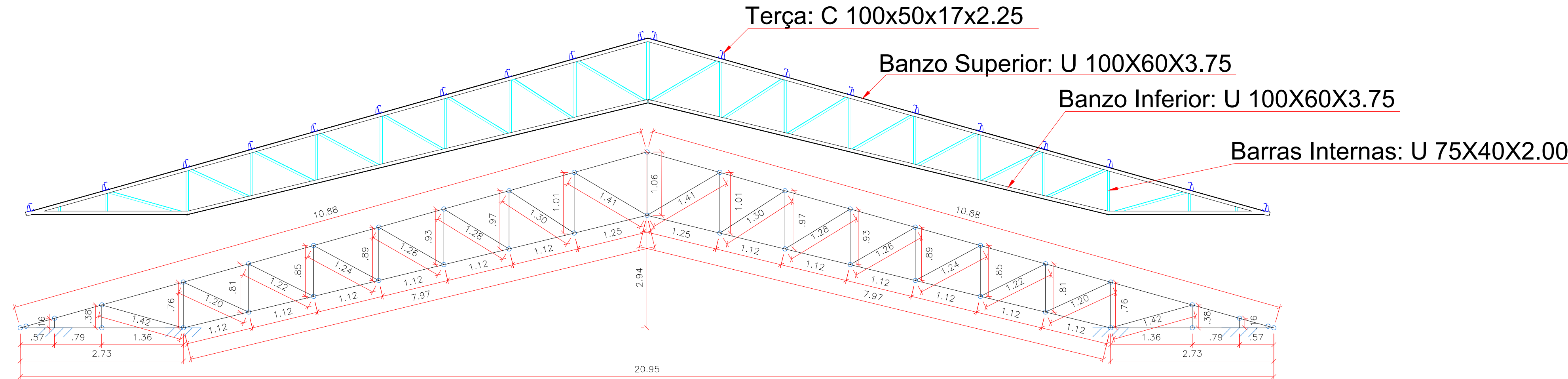
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TS 08 - 09 - 11 - 12 - 13 - 14 -  
15 - 16 - 17



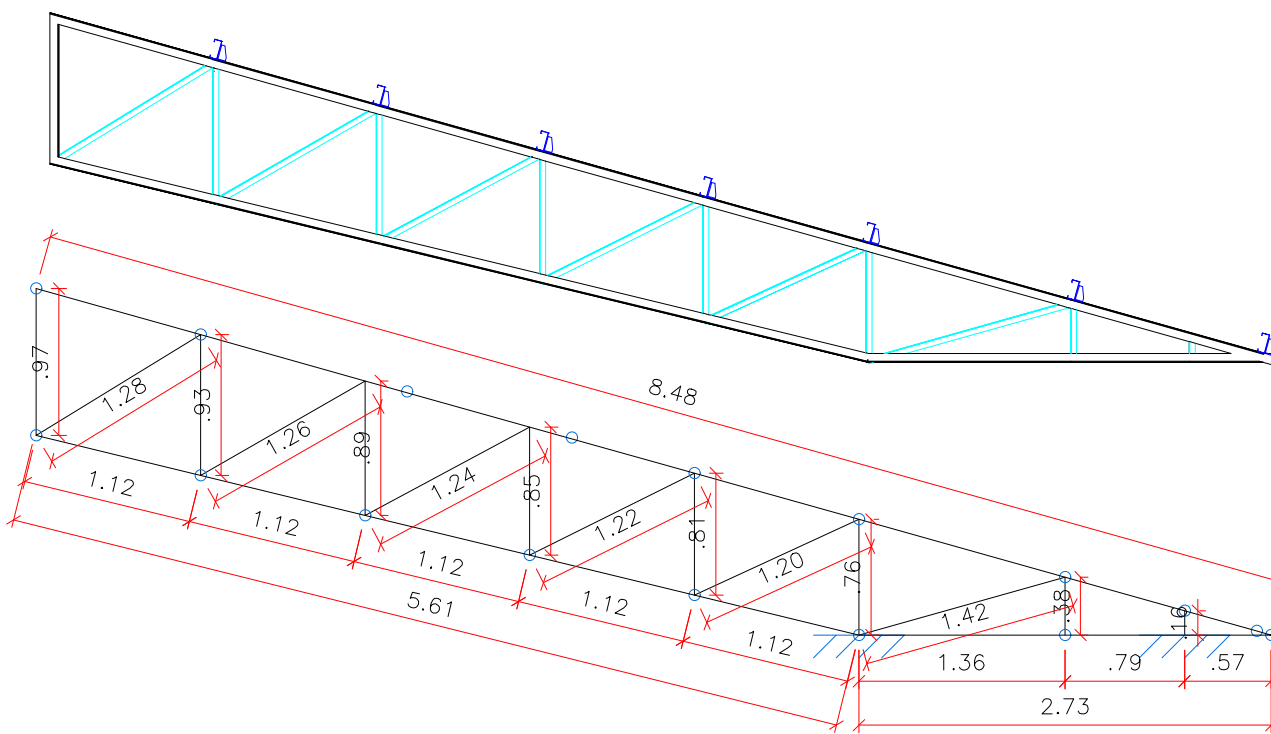
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TS 10



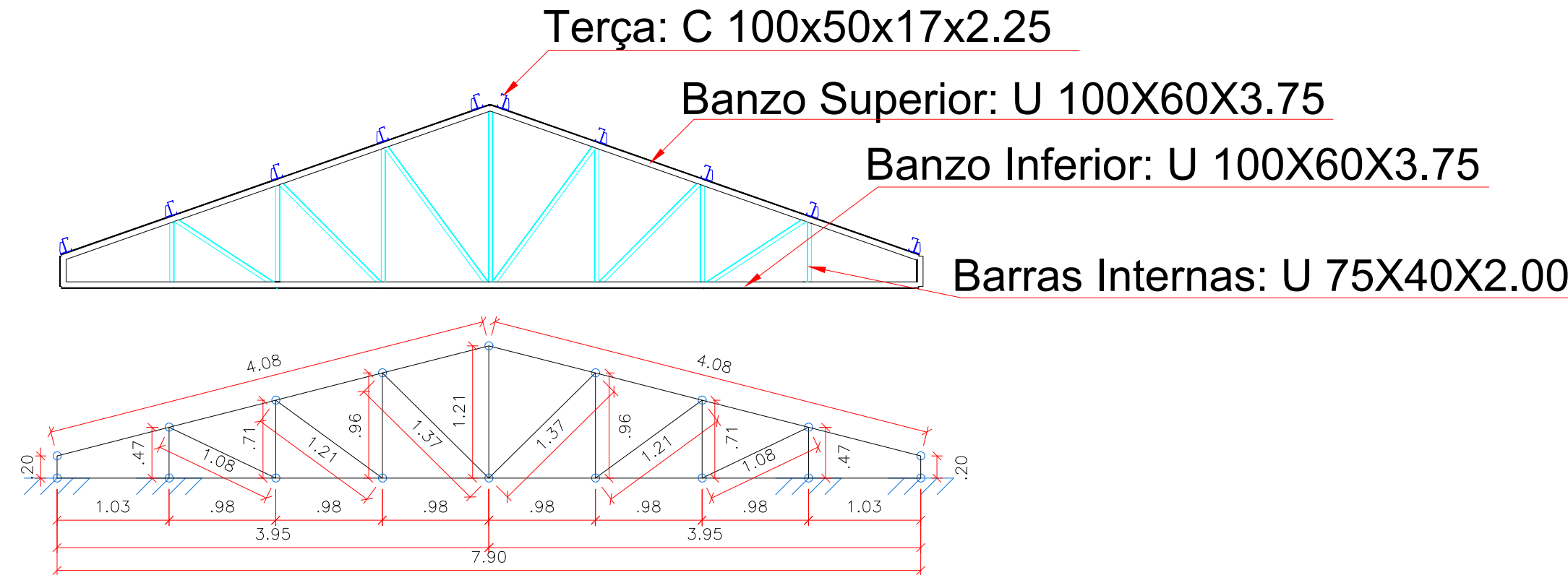
VISTA LADO DIREITO  
TS 01 - 02 - 03 - 04 - 05 - 06



TS 07

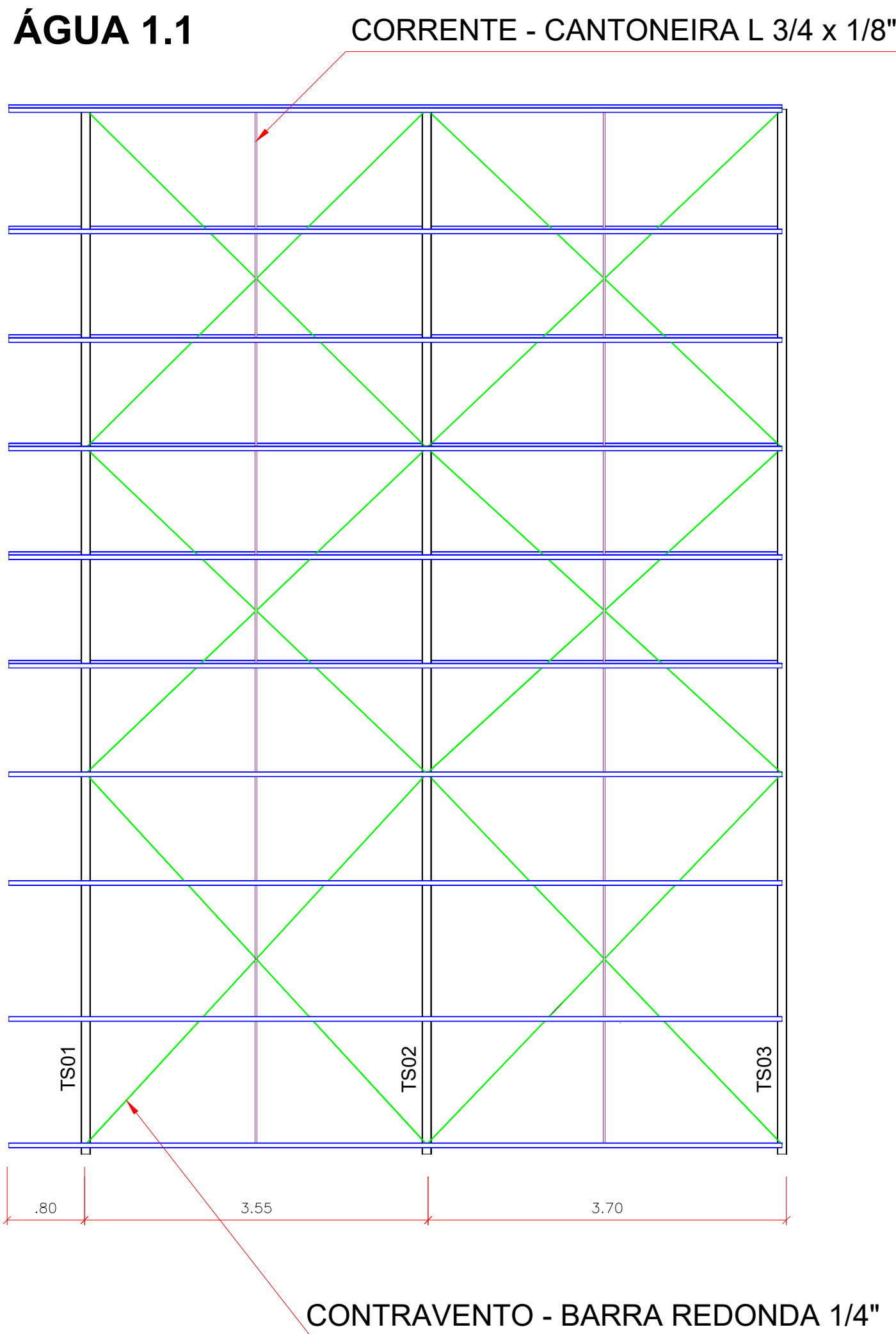


VISTA FRONTAL  
TS 18 - 19 - 20 - 21

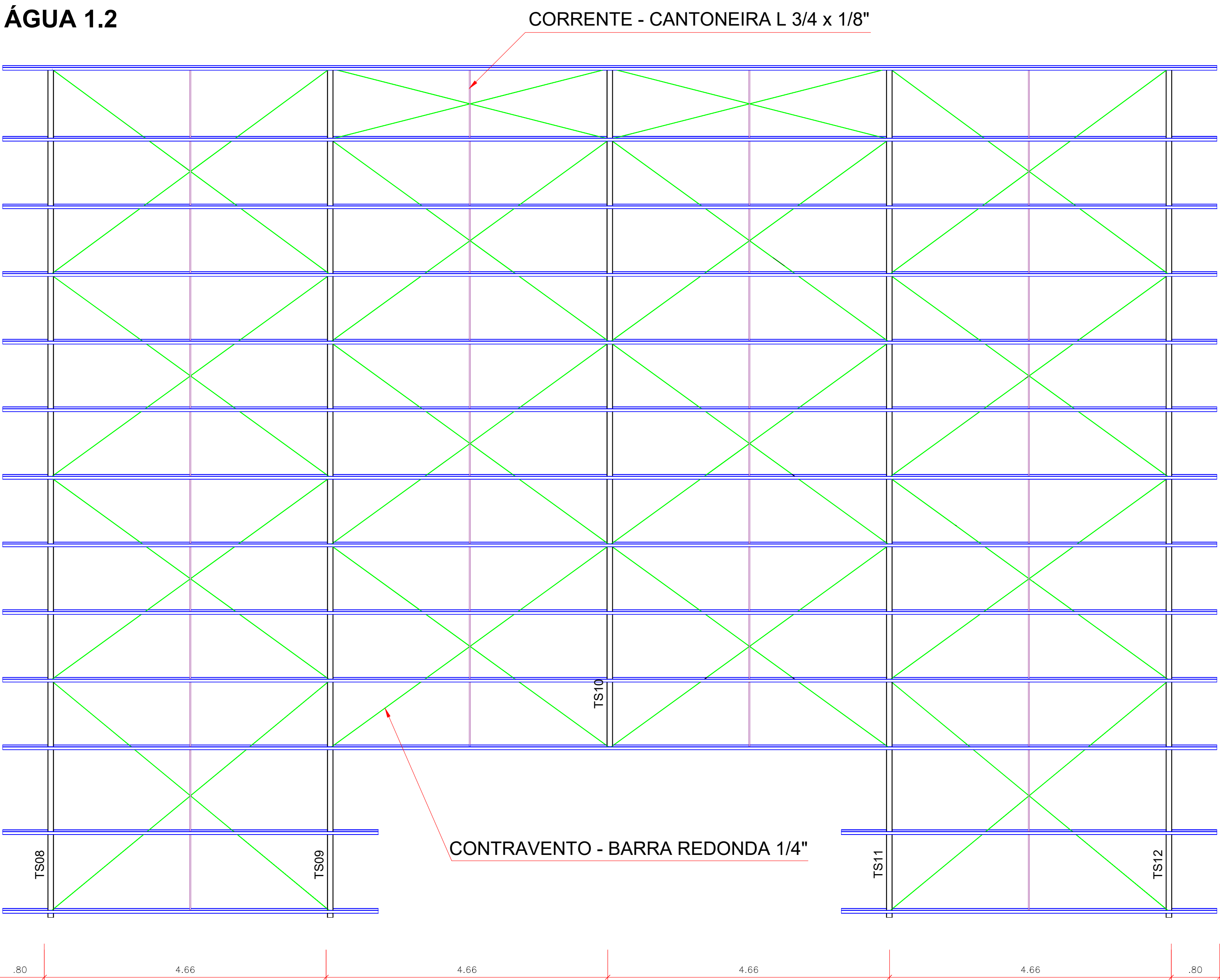


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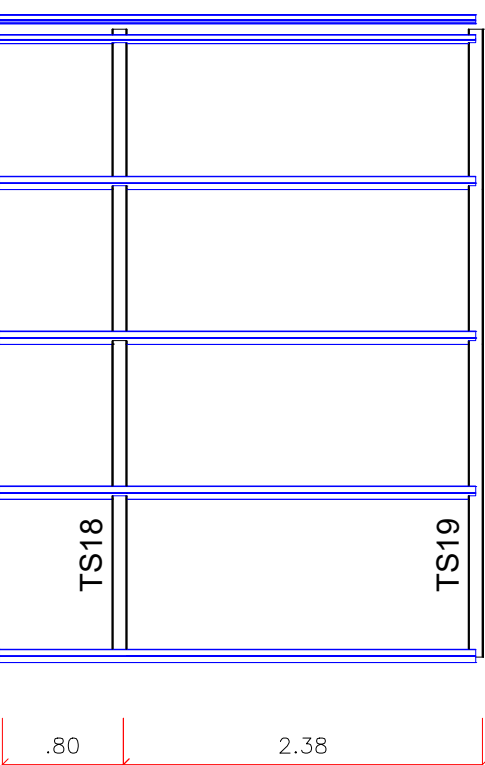
ÁGUA 1.1



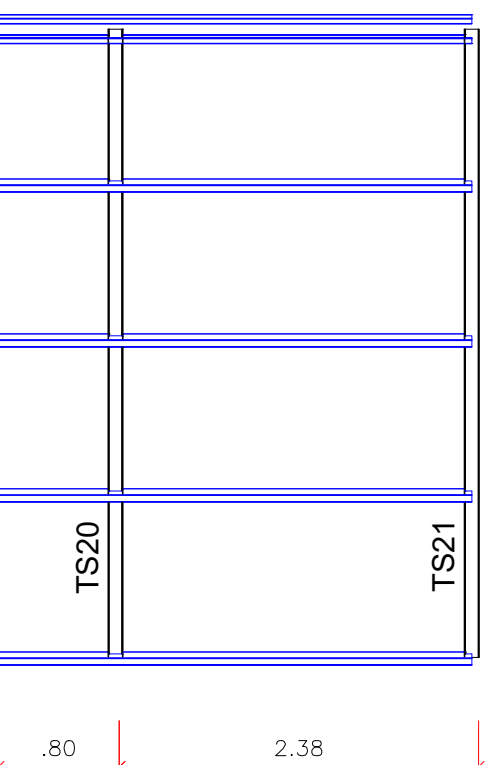
ÁGUA 1.2



ÁGUA 3.1



ÁGUA 3.2



CONFERIR MEDIDAS NO LOCAL - DIREITOS AUTORAIS RESERVADOS			
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REVISÃO	DESCRIÇÃO	DATA	RESP.

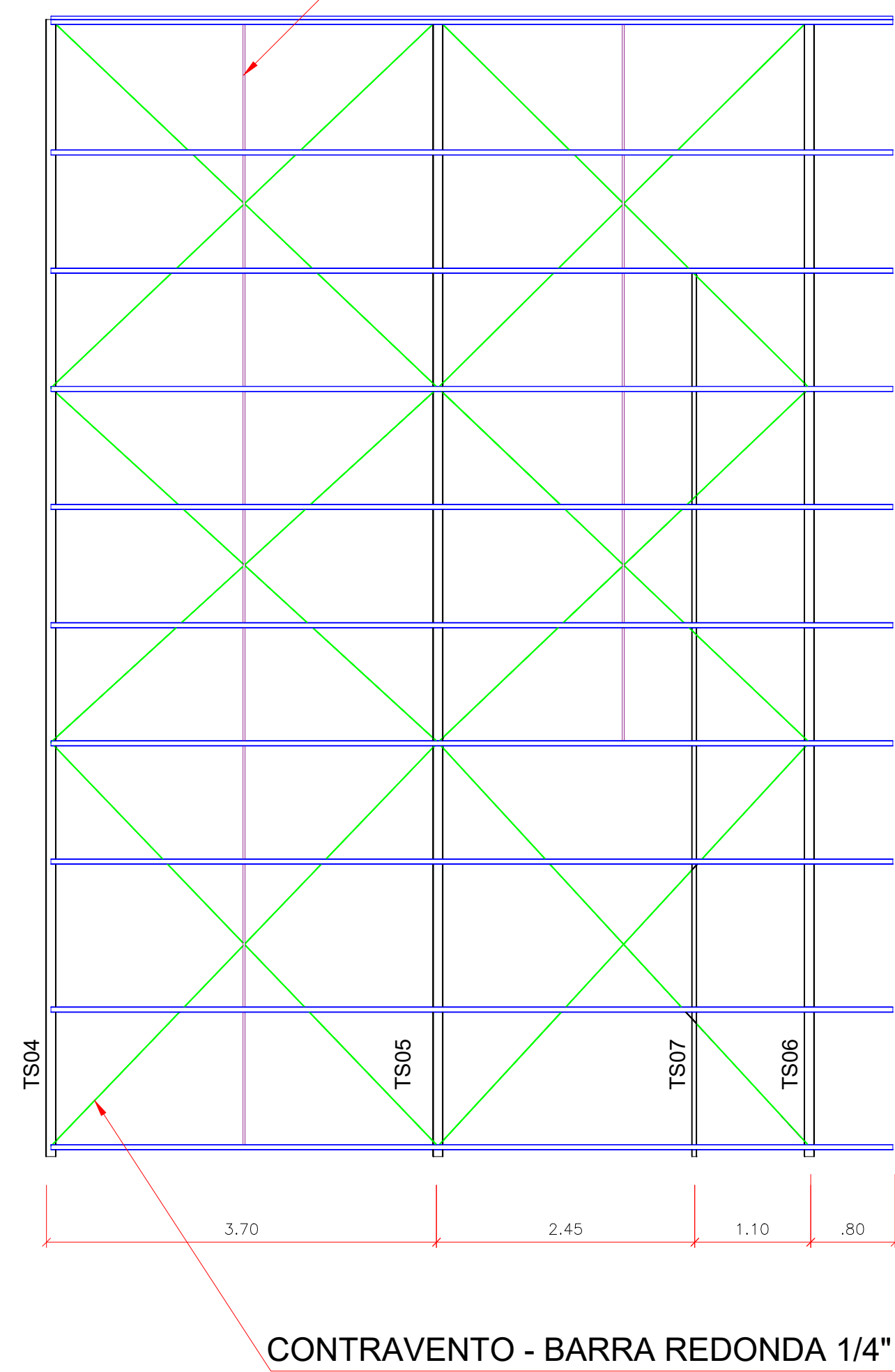


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PROJETO:	CENTRO DE EVENTOS - AVENIDA PARANÁ	REVISÃO:	R00
ASSUNTO:	PROJETO DE ESTRUTURA METÁLICA	DATA:	27/12/2023
PROFISSIONAL:	JULIO PERIN - CREA/PR-184364/D	ESCALA:	1:50
SERVIDOR\PROJETO\CLIENTE\NOME_DO_ARQUIVO	JULIO PERIN		



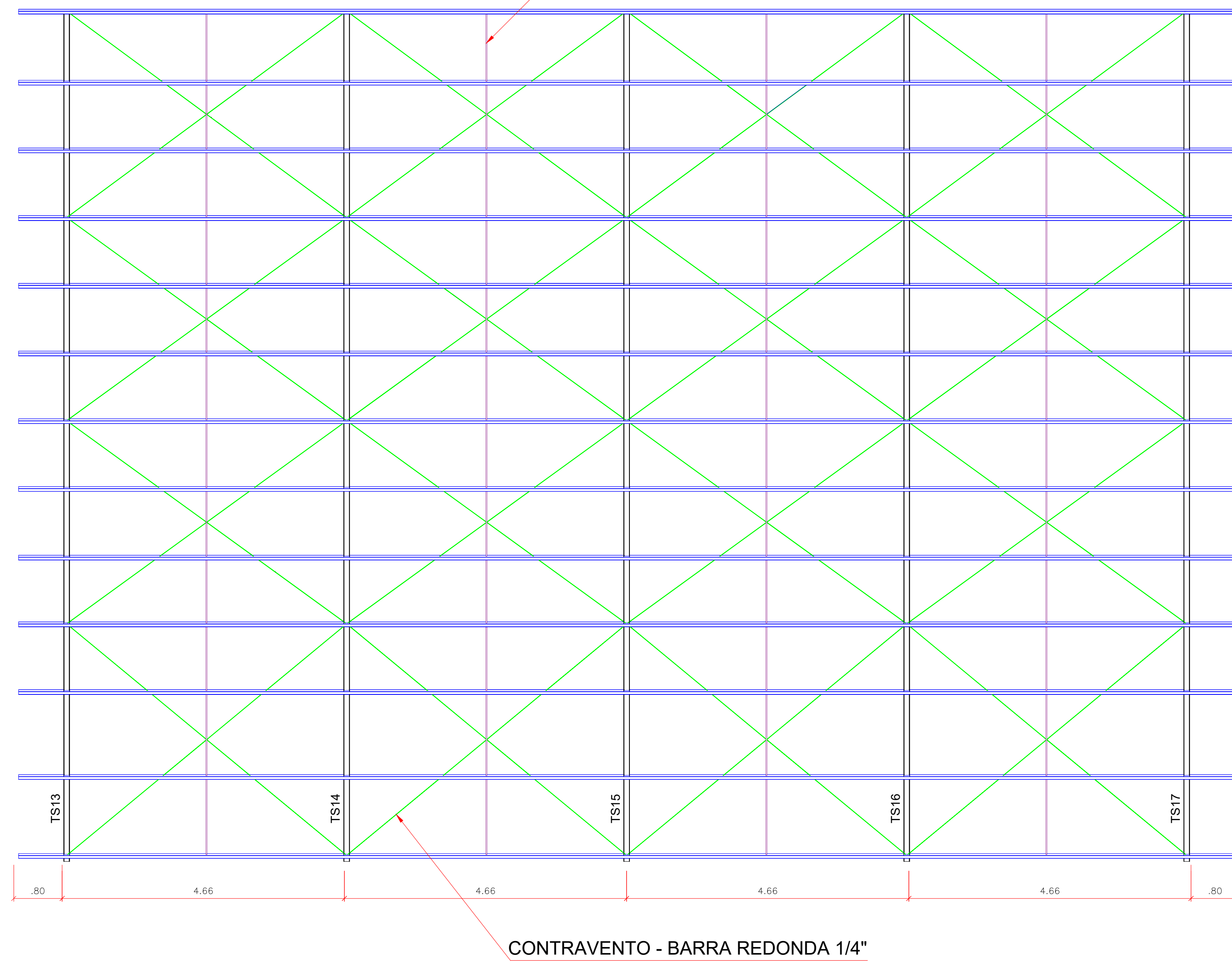
## ÁGUA 2.1

CORRENTE - CANTONEIRA L 3/4 x 1/8"



## ÁGUA 2.2

CORRENTE - CANTONEIRA L 3/4 x 1/8"



CONFERIR MEDIDAS NO LOCAL - DIREITOS AUTORAIS RESERVADOS				
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00	EMIÇÃO INICIAL DO PROJETO		27/12/2023	JULIO PERIN
REVISÃO	DESCRIÇÃO		DATA	RESP.



CLIENTE:	MUNICÍPIO DE FRANCISCO BELTRÃO		
PROJETO:	CENTRO DE EVENTOS - AVENIDA PARANÁ AVENIDA PARANÁ, 1.250, BAIRRO PRESIDENTE KENNEDY		
ASSUNTO:	PROJETO DE ESTRUTURA METÁLICA DETALHAMENTO: ESPAÇAMENTO ENTRE TESOURAS, TIRANTES E CORRENTES		
PROFISSIONAL:	JULIO PERIN - CREA/PR: 184364/D	DESENHO:	JULIO PERIN
SERVIDOR\PROJETOS\CLIENTES\NOME_DO_ARQUIVO			

FOLHA: 04/04

REVISÃO: R00  
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ESCALA: 1:50

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## 1.- DADOS DE OBRA

### 1.1.- Normas consideradas

Aço dobrado: ABNT NBR 14762: 2010

Aços laminados e soldados: ABNT NBR 8800:2008

**Categoria de uso:** Edificações comerciais, de escritórios e de acesso público

### 1.2.- Estados limites

E.L.U. Aço dobrado	NBR 14762: 2010
E.L.U. Aço laminado	NBR 8800: 2008
Deslocamentos	Ações características

#### 1.2.1.- Situações de projeto

Para as distintas situações de projeto, as combinações de ações serão definidas de acordo com os seguintes critérios:

- **Com coeficientes de combinação**

- **Sem coeficientes de combinação**

- Onde:

$G_k$  Ação permanente

$P_k$  Ação de pré-esforço

$Q_k$  Ação variável

$\gamma_G$  Coeficiente parcial de segurança das ações permanentes

$\gamma_P$  Coeficiente parcial de segurança da ação de pré-esforço

$\gamma_{Q,1}$  Coeficiente parcial de segurança da ação variável principal

$\gamma_{Q,i}$  Coeficiente parcial de segurança das ações variáveis de acompanhamento

$\psi_{p,1}$  Coeficiente de combinação da ação variável principal

$\psi_{a,i}$  Coeficiente de combinação das ações variáveis de acompanhamento

Para cada situação de projeto e estado limite, os coeficientes a utilizar serão:

**E.L.U. Aço dobrado: ABNT NBR 14762: 2010**

Normal				
	Coeficientes parciais de segurança ( $\gamma$ )		Coeficientes de combinação ( $\psi$ )	
	Favorável	Desfavorável	Principal ( $\psi_p$ )	Acompanhamento ( $\psi_a$ )
Permanente (G)	1.000	1.250	-	-
Sobrecarga (Q)	0.000	1.500	1.000	0.700
Vento (Q)	0.000	1.400	1.000	0.600

**E.L.U. Aço laminado: ABNT NBR 8800:2008**

Normal				
	Coeficientes parciais de segurança ( $\gamma$ )		Coeficientes de combinação ( $\psi$ )	
	Favorável	Desfavorável	Principal ( $\psi_p$ )	Acompanhamento ( $\psi_a$ )
Permanente (G)	1.000	1.500	-	-
Sobrecarga (Q)	0.000	1.500	1.000	0.700
Vento (Q)	0.000	1.400	1.000	0.600

**Deslocamentos**

Ações variáveis sem sismo		
	Coeficientes parciais de segurança ( $\gamma$ )	
	Favorável	Desfavorável
Permanente (G)	1.000	1.000
Sobrecarga (Q)	0.000	1.000
Vento (Q)	0.000	1.000

## 2.- ESTRUTURA

### 2.1.- Geometria

#### 2.1.1.- Nós

Referências:

$\Delta_x, \Delta_y, \Delta_z$ : Deslocamentos prescritos em eixos globais.

$\theta_x, \theta_y, \theta_z$ : Rotações prescritas em eixos globais.

Cada grau de liberdade marca-se com 'X' se estiver restringido e, caso contrário, com '-'.  
 Cada grau de liberdade marca-se com 'X' se estiver restringido e, caso contrário, com '-'.

Nós										
Referência	Coordenadas			Vínculo c/ exterior						Vinculação interna
	X (m)	Y (m)	Z (m)	$\Delta_x$	$\Delta_y$	$\Delta_z$	$\theta_x$	$\theta_y$	$\theta_z$	
N1	0.000	0.000	3.500	-	-	-	-	-	-	Articulado
N2	0.000	13.650	6.212	-	-	-	-	-	-	Articulado
N3	0.000	27.300	3.500	-	-	-	-	-	-	Articulado
N4	0.000	13.650	7.271	-	-	-	-	-	-	Articulado
N5	0.000	2.727	3.500	X	X	X	X	X	X	Articulado
N6	0.000	24.573	3.500	X	X	X	X	X	X	Articulado
N7	0.000	2.727	4.253	-	-	-	-	-	-	Articulado
N8	0.000	24.573	4.253	-	-	-	-	-	-	Articulado
N9	0.000	3.814	3.770	-	-	-	-	-	-	Articulado
N10	0.000	4.901	4.040	-	-	-	-	-	-	Articulado
N11	0.000	5.988	4.310	-	-	-	-	-	-	Articulado
N12	0.000	7.075	4.580	-	-	-	-	-	-	Articulado

Nós										
Referência	Coordenadas			Vínculo c/ exterior						Vinculação interna
	X (m)	Y (m)	Z (m)	$\Delta_x$	$\Delta_y$	$\Delta_z$	$\theta_x$	$\theta_y$	$\theta_z$	
N13	0.000	9.249	5.119	-	-	-	-	-	-	Articulado
N14	0.000	10.336	5.389	-	-	-	-	-	-	Articulado
N15	0.000	11.423	5.659	-	-	-	-	-	-	Articulado
N16	0.000	12.510	5.929	-	-	-	-	-	-	Articulado
N17	0.000	12.510	6.956	-	-	-	-	-	-	Articulado
N18	0.000	11.423	6.656	-	-	-	-	-	-	Articulado
N19	0.000	10.336	6.355	-	-	-	-	-	-	Articulado
N20	0.000	9.249	6.055	-	-	-	-	-	-	Articulado
N21	0.000	8.162	5.755	-	-	-	-	-	-	Articulado
N22	0.000	7.075	5.455	-	-	-	-	-	-	Articulado
N23	0.000	5.988	5.154	-	-	-	-	-	-	Articulado
N24	0.000	3.814	4.554	-	-	-	-	-	-	Articulado
N25	0.000	1.363	3.500	-	-	-	-	-	-	Articulado
N26	0.000	1.363	3.877	-	-	-	-	-	-	Articulado
N27	0.000	14.790	5.929	-	-	-	-	-	-	Articulado
N28	0.000	15.877	5.659	-	-	-	-	-	-	Articulado
N29	0.000	16.964	5.389	-	-	-	-	-	-	Articulado
N30	0.000	18.051	5.119	-	-	-	-	-	-	Articulado
N31	0.000	19.138	4.849	-	-	-	-	-	-	Articulado
N32	0.000	20.225	4.580	-	-	-	-	-	-	Articulado
N33	0.000	21.312	4.310	-	-	-	-	-	-	Articulado
N34	0.000	22.399	4.040	-	-	-	-	-	-	Articulado
N35	0.000	23.486	3.770	-	-	-	-	-	-	Articulado
N36	0.000	23.486	4.554	-	-	-	-	-	-	Articulado
N37	0.000	22.415	4.849	-	-	-	-	-	-	Articulado
N38	0.000	21.312	5.154	-	-	-	-	-	-	Articulado
N39	0.000	20.225	5.455	-	-	-	-	-	-	Articulado
N40	0.000	19.138	4.854	-	-	-	-	-	-	Articulado
N41	0.000	19.138	5.755	-	-	-	-	-	-	Articulado
N42	0.000	18.051	6.055	-	-	-	-	-	-	Articulado
N43	0.000	16.964	6.355	-	-	-	-	-	-	Articulado
N44	0.000	15.877	6.656	-	-	-	-	-	-	Articulado
N45	0.000	14.790	6.956	-	-	-	-	-	-	Articulado
N46	0.000	25.937	3.500	-	-	-	-	-	-	Articulado
N47	0.000	25.937	3.877	-	-	-	-	-	-	Articulado
N48	0.000	26.727	3.500	X	X	X	X	X	X	Articulado
N49	0.000	0.573	3.500	X	X	X	X	X	X	Articulado
N50	0.000	8.162	4.849	-	-	-	-	-	-	Articulado
N51	0.000	4.901	4.854	-	-	-	-	-	-	Articulado
N52	4.662	0.000	3.500	-	-	-	-	-	-	Articulado
N53	4.662	1.363	3.877	-	-	-	-	-	-	Articulado
N54	4.662	2.727	4.253	-	-	-	-	-	-	Articulado
N55	4.662	3.814	4.554	-	-	-	-	-	-	Articulado
N56	4.662	5.988	5.154	-	-	-	-	-	-	Articulado





Nós										
Referência	Coordenadas			Vínculo c/ exterior						Vinculação interna
	X (m)	Y (m)	Z (m)	$\Delta_x$	$\Delta_y$	$\Delta_z$	$\theta_x$	$\theta_y$	$\theta_z$	
N57	4.662	7.075	5.455	-	-	-	-	-	-	Articulado
N58	4.662	8.162	5.755	-	-	-	-	-	-	Articulado
N59	4.662	9.249	6.055	-	-	-	-	-	-	Articulado
N60	4.662	10.336	6.355	-	-	-	-	-	-	Articulado
N61	4.662	11.423	6.656	-	-	-	-	-	-	Articulado
N62	4.662	12.510	6.956	-	-	-	-	-	-	Articulado
N63	4.662	13.650	7.271	-	-	-	-	-	-	Articulado
N64	4.662	4.901	4.854	-	-	-	-	-	-	Articulado
N65	4.662	13.650	6.212	-	-	-	-	-	-	Articulado
N66	4.662	14.790	6.956	-	-	-	-	-	-	Articulado
N67	4.662	15.877	6.656	-	-	-	-	-	-	Articulado
N68	4.662	16.964	6.355	-	-	-	-	-	-	Articulado
N69	4.662	18.051	6.055	-	-	-	-	-	-	Articulado
N70	4.662	19.138	5.755	-	-	-	-	-	-	Articulado
N71	4.662	20.225	5.455	-	-	-	-	-	-	Articulado
N72	4.662	21.312	5.154	-	-	-	-	-	-	Articulado
N73	4.662	22.415	4.849	-	-	-	-	-	-	Articulado
N74	4.662	23.486	4.554	-	-	-	-	-	-	Articulado
N75	4.662	24.573	4.253	-	-	-	-	-	-	Articulado
N76	4.662	25.937	3.877	-	-	-	-	-	-	Articulado
N77	4.662	27.300	3.500	-	-	-	-	-	-	Articulado
N78	4.662	0.573	3.500	X	X	X	X	X	X	Articulado
N79	4.662	1.363	3.500	-	-	-	-	-	-	Articulado
N80	4.662	2.727	3.500	X	X	X	X	X	X	Articulado
N81	4.662	3.814	3.770	-	-	-	-	-	-	Articulado
N82	4.662	4.901	4.040	-	-	-	-	-	-	Articulado
N83	4.662	5.988	4.310	-	-	-	-	-	-	Articulado
N84	4.662	7.075	4.580	-	-	-	-	-	-	Articulado
N85	4.662	9.249	5.119	-	-	-	-	-	-	Articulado
N86	4.662	10.336	5.389	-	-	-	-	-	-	Articulado
N87	4.662	11.423	5.659	-	-	-	-	-	-	Articulado
N88	4.662	12.510	5.929	-	-	-	-	-	-	Articulado
N89	4.662	8.162	4.849	-	-	-	-	-	-	Articulado
N90	4.662	26.727	3.500	X	X	X	X	X	X	Articulado
N91	4.662	25.937	3.500	-	-	-	-	-	-	Articulado
N92	4.662	24.573	3.500	X	X	X	X	X	X	Articulado
N93	4.662	23.486	3.770	-	-	-	-	-	-	Articulado
N94	4.662	22.399	4.040	-	-	-	-	-	-	Articulado
N95	4.662	21.312	4.310	-	-	-	-	-	-	Articulado
N96	4.662	20.225	4.580	-	-	-	-	-	-	Articulado
N97	4.662	19.138	4.849	-	-	-	-	-	-	Articulado
N98	4.662	18.051	5.119	-	-	-	-	-	-	Articulado
N99	4.662	16.964	5.389	-	-	-	-	-	-	Articulado
N100	4.662	15.877	5.659	-	-	-	-	-	-	Articulado

Nós										
Referência	Coordenadas			Vínculo c/ exterior						Vinculação interna
	X (m)	Y (m)	Z (m)	$\Delta_x$	$\Delta_y$	$\Delta_z$	$\theta_x$	$\theta_y$	$\theta_z$	
N101	4.662	14.790	5.929	-	-	-	-	-	-	Articulado
N102	4.662	19.138	4.854	-	-	-	-	-	-	Articulado
N103	9.323	2.727	4.253	-	-	-	-	-	-	Articulado
N104	9.323	3.814	4.554	-	-	-	-	-	-	Articulado
N105	9.323	5.988	5.154	-	-	-	-	-	-	Articulado
N106	9.323	7.075	5.455	-	-	-	-	-	-	Articulado
N107	9.323	8.162	5.755	-	-	-	-	-	-	Articulado
N108	9.323	9.249	6.055	-	-	-	-	-	-	Articulado
N109	9.323	10.336	6.355	-	-	-	-	-	-	Articulado
N110	9.323	11.423	6.656	-	-	-	-	-	-	Articulado
N111	9.323	12.510	6.956	-	-	-	-	-	-	Articulado
N112	9.323	13.650	7.271	-	-	-	-	-	-	Articulado
N113	9.323	4.901	4.854	-	-	-	-	-	-	Articulado
N114	9.323	13.650	6.212	-	-	-	-	-	-	Articulado
N115	9.323	14.790	6.956	-	-	-	-	-	-	Articulado
N116	9.323	15.877	6.656	-	-	-	-	-	-	Articulado
N117	9.323	16.964	6.355	-	-	-	-	-	-	Articulado
N118	9.323	18.051	6.055	-	-	-	-	-	-	Articulado
N119	9.323	19.138	5.755	-	-	-	-	-	-	Articulado
N120	9.323	20.225	5.455	-	-	-	-	-	-	Articulado
N121	9.323	21.312	5.154	-	-	-	-	-	-	Articulado
N122	9.323	22.415	4.849	-	-	-	-	-	-	Articulado
N123	9.323	23.486	4.554	-	-	-	-	-	-	Articulado
N124	9.323	24.573	4.253	-	-	-	-	-	-	Articulado
N125	9.323	25.937	3.877	-	-	-	-	-	-	Articulado
N126	9.323	27.300	3.500	-	-	-	-	-	-	Articulado
N127	9.323	2.727	3.500	X	X	X	X	X	X	Articulado
N128	9.323	3.814	3.770	-	-	-	-	-	-	Articulado
N129	9.323	4.901	4.040	-	-	-	-	-	-	Articulado
N130	9.323	5.988	4.310	-	-	-	-	-	-	Articulado
N131	9.323	7.075	4.580	-	-	-	-	-	-	Articulado
N132	9.323	9.249	5.119	-	-	-	-	-	-	Articulado
N133	9.323	10.336	5.389	-	-	-	-	-	-	Articulado
N134	9.323	11.423	5.659	-	-	-	-	-	-	Articulado
N135	9.323	12.510	5.929	-	-	-	-	-	-	Articulado
N136	9.323	8.162	4.849	-	-	-	-	-	-	Articulado
N137	9.323	26.727	3.500	X	X	X	X	X	X	Articulado
N138	9.323	25.937	3.500	-	-	-	-	-	-	Articulado
N139	9.323	24.573	3.500	X	X	X	X	X	X	Articulado
N140	9.323	23.486	3.770	-	-	-	-	-	-	Articulado
N141	9.323	22.399	4.040	-	-	-	-	-	-	Articulado
N142	9.323	21.312	4.310	-	-	-	-	-	-	Articulado
N143	9.323	20.225	4.580	-	-	-	-	-	-	Articulado
N144	9.323	19.138	4.849	-	-	-	-	-	-	Articulado





Nós										
Referência	Coordenadas			Vínculo c/ exterior						Vinculação interna
	X (m)	Y (m)	Z (m)	$\Delta_x$	$\Delta_y$	$\Delta_z$	$\theta_x$	$\theta_y$	$\theta_z$	
N145	9.323	18.051	5.119	-	-	-	-	-	-	Articulado
N146	9.323	16.964	5.389	-	-	-	-	-	-	Articulado
N147	9.323	15.877	5.659	-	-	-	-	-	-	Articulado
N148	9.323	14.790	5.929	-	-	-	-	-	-	Articulado
N149	9.323	19.138	4.854	-	-	-	-	-	-	Articulado
N150	13.985	0.000	3.500	-	-	-	-	-	-	Articulado
N151	13.985	1.363	3.877	-	-	-	-	-	-	Articulado
N152	13.985	2.727	4.253	-	-	-	-	-	-	Articulado
N153	13.985	3.814	4.554	-	-	-	-	-	-	Articulado
N154	13.985	4.901	4.854	-	-	-	-	-	-	Articulado
N155	13.985	0.573	3.500	X	X	X	X	X	X	Articulado
N156	13.985	1.363	3.500	-	-	-	-	-	-	Articulado
N157	13.985	2.727	3.500	X	X	X	X	X	X	Articulado
N158	13.985	3.814	3.770	-	-	-	-	-	-	Articulado
N159	13.985	4.901	4.040	-	-	-	-	-	-	Articulado
N160	13.985	5.988	5.154	-	-	-	-	-	-	Articulado
N161	13.985	7.075	5.455	-	-	-	-	-	-	Articulado
N162	13.985	8.162	5.755	-	-	-	-	-	-	Articulado
N163	13.985	5.988	4.310	-	-	-	-	-	-	Articulado
N164	13.985	7.075	4.580	-	-	-	-	-	-	Articulado
N165	13.985	8.162	4.849	-	-	-	-	-	-	Articulado
N166	13.985	9.249	5.119	-	-	-	-	-	-	Articulado
N167	13.985	9.249	6.055	-	-	-	-	-	-	Articulado
N168	13.985	10.336	6.355	-	-	-	-	-	-	Articulado
N169	13.985	11.423	6.656	-	-	-	-	-	-	Articulado
N170	13.985	12.510	6.956	-	-	-	-	-	-	Articulado
N171	13.985	10.336	5.389	-	-	-	-	-	-	Articulado
N172	13.985	11.423	5.659	-	-	-	-	-	-	Articulado
N173	13.985	12.510	5.929	-	-	-	-	-	-	Articulado
N174	13.985	13.650	7.271	-	-	-	-	-	-	Articulado
N175	13.985	13.650	6.212	-	-	-	-	-	-	Articulado
N176	13.985	14.790	6.956	-	-	-	-	-	-	Articulado
N177	13.985	15.877	6.656	-	-	-	-	-	-	Articulado
N178	13.985	16.964	6.355	-	-	-	-	-	-	Articulado
N179	13.985	16.964	5.389	-	-	-	-	-	-	Articulado
N180	13.985	15.877	5.659	-	-	-	-	-	-	Articulado
N181	13.985	14.790	5.929	-	-	-	-	-	-	Articulado
N182	13.985	18.051	6.055	-	-	-	-	-	-	Articulado
N183	13.985	19.138	5.755	-	-	-	-	-	-	Articulado
N184	13.985	20.225	5.455	-	-	-	-	-	-	Articulado
N185	13.985	21.312	5.154	-	-	-	-	-	-	Articulado
N186	13.985	21.312	4.310	-	-	-	-	-	-	Articulado
N187	13.985	20.225	4.580	-	-	-	-	-	-	Articulado
N188	13.985	19.138	4.849	-	-	-	-	-	-	Articulado

Nós										
Referência	Coordenadas			Vínculo c/ exterior						Vinculação interna
	X (m)	Y (m)	Z (m)	$\Delta_x$	$\Delta_y$	$\Delta_z$	$\theta_x$	$\theta_y$	$\theta_z$	
N189	13.985	18.051	5.119	-	-	-	-	-	-	Articulado
N190	13.985	19.138	4.854	-	-	-	-	-	-	Articulado
N191	13.985	22.415	4.849	-	-	-	-	-	-	Articulado
N192	13.985	23.486	4.554	-	-	-	-	-	-	Articulado
N193	13.985	24.573	4.253	-	-	-	-	-	-	Articulado
N194	13.985	25.937	3.877	-	-	-	-	-	-	Articulado
N195	13.985	25.937	3.500	-	-	-	-	-	-	Articulado
N196	13.985	24.573	3.500	X	X	X	X	X	X	Articulado
N197	13.985	23.486	3.770	-	-	-	-	-	-	Articulado
N198	13.985	22.399	4.040	-	-	-	-	-	-	Articulado
N199	13.985	27.300	3.500	-	-	-	-	-	-	Articulado
N200	13.985	26.727	3.500	X	X	X	X	X	X	Articulado
N201	18.646	0.000	3.500	-	-	-	-	-	-	Articulado
N202	18.646	1.363	3.877	-	-	-	-	-	-	Articulado
N203	18.646	2.727	4.253	-	-	-	-	-	-	Articulado
N204	18.646	3.814	4.554	-	-	-	-	-	-	Articulado
N205	18.646	4.901	4.854	-	-	-	-	-	-	Articulado
N206	18.646	0.573	3.500	X	X	X	X	X	X	Articulado
N207	18.646	1.363	3.500	-	-	-	-	-	-	Articulado
N208	18.646	2.727	3.500	X	X	X	X	X	X	Articulado
N209	18.646	3.814	3.770	-	-	-	-	-	-	Articulado
N210	18.646	4.901	4.040	-	-	-	-	-	-	Articulado
N211	18.646	5.988	5.154	-	-	-	-	-	-	Articulado
N212	18.646	7.075	5.455	-	-	-	-	-	-	Articulado
N213	18.646	8.162	5.755	-	-	-	-	-	-	Articulado
N214	18.646	5.988	4.310	-	-	-	-	-	-	Articulado
N215	18.646	7.075	4.580	-	-	-	-	-	-	Articulado
N216	18.646	8.162	4.849	-	-	-	-	-	-	Articulado
N217	18.646	9.249	5.119	-	-	-	-	-	-	Articulado
N218	18.646	9.249	6.055	-	-	-	-	-	-	Articulado
N219	18.646	10.336	6.355	-	-	-	-	-	-	Articulado
N220	18.646	11.423	6.656	-	-	-	-	-	-	Articulado
N221	18.646	12.510	6.956	-	-	-	-	-	-	Articulado
N222	18.646	10.336	5.389	-	-	-	-	-	-	Articulado
N223	18.646	11.423	5.659	-	-	-	-	-	-	Articulado
N224	18.646	12.510	5.929	-	-	-	-	-	-	Articulado
N225	18.646	13.650	7.271	-	-	-	-	-	-	Articulado
N226	18.646	13.650	6.212	-	-	-	-	-	-	Articulado
N227	18.646	14.790	6.956	-	-	-	-	-	-	Articulado
N228	18.646	15.877	6.656	-	-	-	-	-	-	Articulado
N229	18.646	16.964	6.355	-	-	-	-	-	-	Articulado
N230	18.646	16.964	5.389	-	-	-	-	-	-	Articulado
N231	18.646	15.877	5.659	-	-	-	-	-	-	Articulado
N232	18.646	14.790	5.929	-	-	-	-	-	-	Articulado





Nós										
Referência	Coordenadas			Vínculo c/ exterior						Vinculação interna
	X (m)	Y (m)	Z (m)	$\Delta_x$	$\Delta_y$	$\Delta_z$	$\theta_x$	$\theta_y$	$\theta_z$	
N233	18.646	18.051	6.055	-	-	-	-	-	-	Articulado
N234	18.646	19.138	5.755	-	-	-	-	-	-	Articulado
N235	18.646	20.225	5.455	-	-	-	-	-	-	Articulado
N236	18.646	21.312	5.154	-	-	-	-	-	-	Articulado
N237	18.646	21.312	4.310	-	-	-	-	-	-	Articulado
N238	18.646	20.225	4.580	-	-	-	-	-	-	Articulado
N239	18.646	19.138	4.849	-	-	-	-	-	-	Articulado
N240	18.646	18.051	5.119	-	-	-	-	-	-	Articulado
N241	18.646	19.138	4.854	-	-	-	-	-	-	Articulado
N242	18.646	22.415	4.849	-	-	-	-	-	-	Articulado
N243	18.646	23.486	4.554	-	-	-	-	-	-	Articulado
N244	18.646	24.573	4.253	-	-	-	-	-	-	Articulado
N245	18.646	25.937	3.877	-	-	-	-	-	-	Articulado
N246	18.646	25.937	3.500	-	-	-	-	-	-	Articulado
N247	18.646	24.573	3.500	X	X	X	X	X	X	Articulado
N248	18.646	23.486	3.770	-	-	-	-	-	-	Articulado
N249	18.646	22.399	4.040	-	-	-	-	-	-	Articulado
N250	18.646	27.300	3.500	-	-	-	-	-	-	Articulado
N251	18.646	26.727	3.500	X	X	X	X	X	X	Articulado
N252	18.846	13.375	6.438	-	-	-	-	-	-	Articulado
N253	18.846	23.850	3.500	-	-	-	-	-	-	Articulado
N254	18.846	2.900	3.500	-	-	-	-	-	-	Articulado
N255	18.846	5.627	3.500	X	X	X	X	X	X	Articulado
N256	18.846	13.375	5.379	-	-	-	-	-	-	Articulado
N257	18.846	21.123	3.500	X	X	X	X	X	X	Articulado
N258	18.846	5.627	4.265	-	-	-	-	-	-	Articulado
N259	18.846	6.715	3.764	-	-	-	-	-	-	Articulado
N260	18.846	6.715	4.570	-	-	-	-	-	-	Articulado
N261	18.846	7.804	4.028	-	-	-	-	-	-	Articulado
N262	18.846	7.804	4.875	-	-	-	-	-	-	Articulado
N263	18.846	8.892	4.292	-	-	-	-	-	-	Articulado
N264	18.846	8.892	5.181	-	-	-	-	-	-	Articulado
N265	18.846	9.981	4.556	-	-	-	-	-	-	Articulado
N266	18.846	9.981	5.486	-	-	-	-	-	-	Articulado
N267	18.846	11.069	4.820	-	-	-	-	-	-	Articulado
N268	18.846	11.069	5.791	-	-	-	-	-	-	Articulado
N269	18.846	12.158	5.084	-	-	-	-	-	-	Articulado
N270	18.846	12.158	6.097	-	-	-	-	-	-	Articulado
N271	18.846	20.035	3.764	-	-	-	-	-	-	Articulado
N272	18.846	20.035	4.570	-	-	-	-	-	-	Articulado
N273	18.846	18.946	4.028	-	-	-	-	-	-	Articulado
N274	18.846	18.946	4.875	-	-	-	-	-	-	Articulado
N275	18.846	17.858	4.292	-	-	-	-	-	-	Articulado
N276	18.846	17.858	5.181	-	-	-	-	-	-	Articulado

Nós										
Referência	Coordenadas			Vínculo c/ exterior						Vinculação interna
	X (m)	Y (m)	Z (m)	$\Delta_x$	$\Delta_y$	$\Delta_z$	$\theta_x$	$\theta_y$	$\theta_z$	
N277	18.846	16.769	4.556	-	-	-	-	-	-	Articulado
N278	18.846	16.769	5.486	-	-	-	-	-	-	Articulado
N279	18.846	15.681	4.820	-	-	-	-	-	-	Articulado
N280	18.846	15.681	5.791	-	-	-	-	-	-	Articulado
N281	18.846	14.592	5.084	-	-	-	-	-	-	Articulado
N282	18.846	14.592	6.097	-	-	-	-	-	-	Articulado
N283	18.846	22.487	3.500	-	-	-	-	-	-	Articulado
N284	18.846	22.487	3.882	-	-	-	-	-	-	Articulado
N285	18.846	4.263	3.500	-	-	-	-	-	-	Articulado
N286	18.846	4.263	3.882	-	-	-	-	-	-	Articulado
N287	18.846	3.473	3.500	X	X	X	X	X	X	Engastado
N288	18.846	23.277	3.500	X	X	X	X	X	X	Engastado
N289	22.547	4.263	3.882	-	-	-	-	-	-	Articulado
N290	22.547	2.900	3.500	-	-	-	-	-	-	Articulado
N291	22.547	3.473	3.500	X	X	X	X	X	X	Engastado
N292	22.547	4.263	3.500	-	-	-	-	-	-	Articulado
N293	22.547	5.627	4.265	-	-	-	-	-	-	Articulado
N294	22.547	5.627	3.500	X	X	X	X	X	X	Articulado
N295	22.547	6.715	4.570	-	-	-	-	-	-	Articulado
N296	22.547	6.715	3.764	-	-	-	-	-	-	Articulado
N297	22.547	7.804	4.875	-	-	-	-	-	-	Articulado
N298	22.547	7.804	4.028	-	-	-	-	-	-	Articulado
N299	22.547	8.892	5.181	-	-	-	-	-	-	Articulado
N300	22.547	8.892	4.292	-	-	-	-	-	-	Articulado
N301	22.547	9.981	5.486	-	-	-	-	-	-	Articulado
N302	22.547	9.981	4.556	-	-	-	-	-	-	Articulado
N303	22.547	11.069	5.791	-	-	-	-	-	-	Articulado
N304	22.547	11.069	4.820	-	-	-	-	-	-	Articulado
N305	22.547	12.158	5.084	-	-	-	-	-	-	Articulado
N306	22.547	13.375	5.379	-	-	-	-	-	-	Articulado
N307	22.547	12.158	6.097	-	-	-	-	-	-	Articulado
N308	22.547	14.592	5.084	-	-	-	-	-	-	Articulado
N309	22.547	13.375	6.438	-	-	-	-	-	-	Articulado
N310	22.547	14.592	6.097	-	-	-	-	-	-	Articulado
N311	22.547	15.681	4.820	-	-	-	-	-	-	Articulado
N312	22.547	15.681	5.791	-	-	-	-	-	-	Articulado
N313	22.547	16.769	4.556	-	-	-	-	-	-	Articulado
N314	22.547	16.769	5.486	-	-	-	-	-	-	Articulado
N315	22.547	17.858	4.292	-	-	-	-	-	-	Articulado
N316	22.547	17.858	5.181	-	-	-	-	-	-	Articulado
N317	22.547	18.946	4.028	-	-	-	-	-	-	Articulado
N318	22.547	18.946	4.875	-	-	-	-	-	-	Articulado
N319	22.547	20.035	3.764	-	-	-	-	-	-	Articulado
N320	22.547	20.035	4.570	-	-	-	-	-	-	Articulado





Nós										
Referência	Coordenadas			Vínculo c/ exterior						Vinculação interna
	X (m)	Y (m)	Z (m)	$\Delta_x$	$\Delta_y$	$\Delta_z$	$\theta_x$	$\theta_y$	$\theta_z$	
N321	22.547	22.487	3.882	-	-	-	-	-	-	Articulado
N322	22.547	21.123	3.500	X	X	X	X	X	X	Articulado
N323	22.547	22.487	3.500	-	-	-	-	-	-	Articulado
N324	22.547	23.850	3.500	-	-	-	-	-	-	Articulado
N325	22.547	23.277	3.500	X	X	X	X	X	X	Engastado
N326	26.098	4.263	3.882	-	-	-	-	-	-	Articulado
N327	26.098	2.900	3.500	-	-	-	-	-	-	Articulado
N328	26.098	3.473	3.500	X	X	X	X	X	X	Engastado
N329	26.098	4.263	3.500	-	-	-	-	-	-	Articulado
N330	26.098	5.627	4.265	-	-	-	-	-	-	Articulado
N331	26.098	5.627	3.500	X	X	X	X	X	X	Articulado
N332	26.098	6.715	4.570	-	-	-	-	-	-	Articulado
N333	26.098	6.715	3.764	-	-	-	-	-	-	Articulado
N334	26.098	7.804	4.875	-	-	-	-	-	-	Articulado
N335	26.098	7.804	4.028	-	-	-	-	-	-	Articulado
N336	26.098	8.892	5.181	-	-	-	-	-	-	Articulado
N337	26.098	8.892	4.292	-	-	-	-	-	-	Articulado
N338	26.098	9.981	5.486	-	-	-	-	-	-	Articulado
N339	26.098	9.981	4.556	-	-	-	-	-	-	Articulado
N340	26.098	11.069	5.791	-	-	-	-	-	-	Articulado
N341	26.098	11.069	4.820	-	-	-	-	-	-	Articulado
N342	26.098	12.158	5.084	-	-	-	-	-	-	Articulado
N343	26.098	13.375	5.379	-	-	-	-	-	-	Articulado
N344	26.098	12.158	6.097	-	-	-	-	-	-	Articulado
N345	26.098	14.592	5.084	-	-	-	-	-	-	Articulado
N346	26.098	13.375	6.438	-	-	-	-	-	-	Articulado
N347	26.098	14.592	6.097	-	-	-	-	-	-	Articulado
N348	26.098	15.681	4.820	-	-	-	-	-	-	Articulado
N349	26.098	15.681	5.791	-	-	-	-	-	-	Articulado
N350	26.098	16.769	4.556	-	-	-	-	-	-	Articulado
N351	26.098	16.769	5.486	-	-	-	-	-	-	Articulado
N352	26.098	17.858	4.292	-	-	-	-	-	-	Articulado
N353	26.098	17.858	5.181	-	-	-	-	-	-	Articulado
N354	26.098	18.946	4.028	-	-	-	-	-	-	Articulado
N355	26.098	18.946	4.875	-	-	-	-	-	-	Articulado
N356	26.098	20.035	3.764	-	-	-	-	-	-	Articulado
N357	26.098	20.035	4.570	-	-	-	-	-	-	Articulado
N358	26.098	22.487	3.882	-	-	-	-	-	-	Articulado
N359	26.098	21.123	3.500	X	X	X	X	X	X	Articulado
N360	26.098	22.487	3.500	-	-	-	-	-	-	Articulado
N361	26.098	23.850	3.500	-	-	-	-	-	-	Articulado
N362	26.098	23.277	3.500	X	X	X	X	X	X	Engastado
N363	24.998	15.681	4.820	X	X	X	X	X	X	Articulado
N364	24.998	16.769	4.556	-	-	-	-	-	-	Articulado

Nós										
Referência	Coordenadas			Vínculo c/ exterior						Vinculação interna
	X (m)	Y (m)	Z (m)	$\Delta_x$	$\Delta_y$	$\Delta_z$	$\theta_x$	$\theta_y$	$\theta_z$	
N365	24.998	17.858	4.292	-	-	-	-	-	-	Articulado
N366	24.998	18.946	4.028	-	-	-	-	-	-	Articulado
N367	24.998	20.035	3.764	-	-	-	-	-	-	Articulado
N368	24.998	21.123	3.500	X	X	X	X	X	X	Articulado
N369	24.998	15.681	5.791	-	-	-	-	-	-	Articulado
N370	24.998	16.769	5.486	-	-	-	-	-	-	Articulado
N371	24.998	17.858	5.181	-	-	-	-	-	-	Articulado
N372	24.998	18.946	4.875	-	-	-	-	-	-	Articulado
N373	24.998	22.487	3.882	-	-	-	-	-	-	Articulado
N374	24.998	20.035	4.570	-	-	-	-	-	-	Articulado
N375	24.998	23.850	3.500	-	-	-	-	-	-	Articulado
N376	24.998	22.487	3.500	-	-	-	-	-	-	Articulado
N377	24.998	23.277	3.500	X	X	X	X	X	X	Engastado
N378	18.846	21.123	4.265	-	-	-	-	-	-	Articulado
N379	22.547	21.123	4.265	-	-	-	-	-	-	Articulado
N380	26.098	21.123	4.265	-	-	-	-	-	-	Articulado
N381	24.998	21.123	4.265	-	-	-	-	-	-	Articulado
N382	18.846	2.996	3.527	-	-	-	-	-	-	Articulado
N383	26.098	2.996	3.527	-	-	-	-	-	-	Articulado
N384	22.547	2.996	3.527	-	-	-	-	-	-	Articulado
N385	18.846	23.754	3.527	-	-	-	-	-	-	Articulado
N386	26.098	23.754	3.527	-	-	-	-	-	-	Articulado
N387	22.547	23.754	3.527	-	-	-	-	-	-	Articulado
N388	24.998	23.754	3.527	-	-	-	-	-	-	Articulado
N389	0.000	0.098	3.527	-	-	-	-	-	-	Articulado
N390	4.662	0.098	3.527	-	-	-	-	-	-	Articulado
N391	13.985	0.098	3.527	-	-	-	-	-	-	Articulado
N392	18.646	0.098	3.527	-	-	-	-	-	-	Articulado
N393	18.846	3.473	3.661	-	-	-	-	-	-	Articulado
N394	0.000	0.573	3.658	-	-	-	-	-	-	Articulado
N395	4.662	0.573	3.658	-	-	-	-	-	-	Articulado
N396	13.985	0.573	3.658	-	-	-	-	-	-	Articulado
N397	18.646	0.573	3.658	-	-	-	-	-	-	Articulado
N398	22.547	3.473	3.661	-	-	-	-	-	-	Articulado
N399	26.098	3.473	3.661	-	-	-	-	-	-	Articulado
N400	26.098	23.277	3.661	-	-	-	-	-	-	Articulado
N401	24.998	23.277	3.661	-	-	-	-	-	-	Articulado
N402	22.547	23.277	3.661	-	-	-	-	-	-	Articulado
N403	18.846	23.277	3.661	-	-	-	-	-	-	Articulado
N404	13.985	26.727	3.658	-	-	-	-	-	-	Articulado
N405	9.323	26.727	3.658	-	-	-	-	-	-	Articulado
N406	4.662	26.727	3.658	-	-	-	-	-	-	Articulado
N407	0.000	26.727	3.658	-	-	-	-	-	-	Articulado
N408	0.000	27.204	3.527	-	-	-	-	-	-	Articulado



Nós										
Referência	Coordenadas			Vínculo c/ exterior						Vinculação interna
	X (m)	Y (m)	Z (m)	$\Delta_x$	$\Delta_y$	$\Delta_z$	$\theta_x$	$\theta_y$	$\theta_z$	
N409	4.662	27.204	3.527	-	-	-	-	-	-	Articulado
N410	9.323	27.204	3.527	-	-	-	-	-	-	Articulado
N411	13.985	27.204	3.527	-	-	-	-	-	-	Articulado
N412	18.646	27.204	3.527	-	-	-	-	-	-	Articulado
N413	16.315	0.098	3.527	-	-	-	-	-	-	Articulado
N414	16.315	13.650	7.271	-	-	-	-	-	-	Articulado
N415	16.315	1.363	3.877	-	-	-	-	-	-	Articulado
N416	16.315	2.727	4.253	-	-	-	-	-	-	Articulado
N417	16.315	3.814	4.554	-	-	-	-	-	-	Articulado
N418	16.315	5.988	5.154	-	-	-	-	-	-	Articulado
N419	16.315	7.075	5.455	-	-	-	-	-	-	Articulado
N420	16.315	8.162	5.755	-	-	-	-	-	-	Articulado
N421	16.315	9.249	6.055	-	-	-	-	-	-	Articulado
N422	16.315	10.336	6.355	-	-	-	-	-	-	Articulado
N423	16.315	11.423	6.656	-	-	-	-	-	-	Articulado
N424	16.315	12.510	6.956	-	-	-	-	-	-	Articulado
N425	11.654	2.727	4.253	-	-	-	-	-	-	Articulado
N426	11.654	3.814	4.554	-	-	-	-	-	-	Articulado
N427	11.654	5.988	5.154	-	-	-	-	-	-	Articulado
N428	11.654	7.075	5.455	-	-	-	-	-	-	Articulado
N429	11.654	8.162	5.755	-	-	-	-	-	-	Articulado
N430	11.654	9.249	6.055	-	-	-	-	-	-	Articulado
N431	11.654	10.336	6.355	-	-	-	-	-	-	Articulado
N432	11.654	11.423	6.656	-	-	-	-	-	-	Articulado
N433	11.654	12.510	6.956	-	-	-	-	-	-	Articulado
N434	11.654	13.650	7.271	-	-	-	-	-	-	Articulado
N435	6.992	2.727	4.253	-	-	-	-	-	-	Articulado
N436	6.992	3.814	4.554	-	-	-	-	-	-	Articulado
N437	6.992	5.988	5.154	-	-	-	-	-	-	Articulado
N438	6.992	7.075	5.455	-	-	-	-	-	-	Articulado
N439	6.992	8.162	5.755	-	-	-	-	-	-	Articulado
N440	6.992	9.249	6.055	-	-	-	-	-	-	Articulado
N441	6.992	10.336	6.355	-	-	-	-	-	-	Articulado
N442	6.992	11.423	6.656	-	-	-	-	-	-	Articulado
N443	6.992	12.510	6.956	-	-	-	-	-	-	Articulado
N444	6.992	13.650	7.271	-	-	-	-	-	-	Articulado
N445	2.331	0.098	3.527	-	-	-	-	-	-	Articulado
N446	2.331	1.363	3.877	-	-	-	-	-	-	Articulado
N447	2.331	2.727	4.253	-	-	-	-	-	-	Articulado
N448	2.331	3.814	4.554	-	-	-	-	-	-	Articulado
N449	2.331	5.988	5.154	-	-	-	-	-	-	Articulado
N450	2.331	7.075	5.455	-	-	-	-	-	-	Articulado
N451	2.331	8.162	5.755	-	-	-	-	-	-	Articulado
N452	2.331	9.249	6.055	-	-	-	-	-	-	Articulado



Nós										
Referência	Coordenadas			Vínculo c/ exterior						Vinculação interna
	X (m)	Y (m)	Z (m)	$\Delta_x$	$\Delta_y$	$\Delta_z$	$\theta_x$	$\theta_y$	$\theta_z$	
N453	2.331	10.336	6.355	-	-	-	-	-	-	Articulado
N454	2.331	11.423	6.656	-	-	-	-	-	-	Articulado
N455	2.331	12.510	6.956	-	-	-	-	-	-	Articulado
N456	2.331	13.650	7.271	-	-	-	-	-	-	Articulado
N457	2.331	25.937	3.877	-	-	-	-	-	-	Articulado
N458	2.331	24.573	4.253	-	-	-	-	-	-	Articulado
N459	2.331	23.486	4.554	-	-	-	-	-	-	Articulado
N460	2.331	22.415	4.849	-	-	-	-	-	-	Articulado
N461	2.331	21.312	5.154	-	-	-	-	-	-	Articulado
N462	2.331	20.225	5.455	-	-	-	-	-	-	Articulado
N463	2.331	19.138	5.755	-	-	-	-	-	-	Articulado
N464	2.331	18.051	6.055	-	-	-	-	-	-	Articulado
N465	2.331	16.964	6.355	-	-	-	-	-	-	Articulado
N466	2.331	15.877	6.656	-	-	-	-	-	-	Articulado
N467	2.331	14.790	6.956	-	-	-	-	-	-	Articulado
N468	6.992	25.937	3.877	-	-	-	-	-	-	Articulado
N469	6.992	24.573	4.253	-	-	-	-	-	-	Articulado
N470	6.992	23.486	4.554	-	-	-	-	-	-	Articulado
N471	6.992	22.415	4.849	-	-	-	-	-	-	Articulado
N472	6.992	21.312	5.154	-	-	-	-	-	-	Articulado
N473	6.992	20.225	5.455	-	-	-	-	-	-	Articulado
N474	6.992	19.138	5.755	-	-	-	-	-	-	Articulado
N475	6.992	18.051	6.055	-	-	-	-	-	-	Articulado
N476	6.992	16.964	6.355	-	-	-	-	-	-	Articulado
N477	6.992	15.877	6.656	-	-	-	-	-	-	Articulado
N478	6.992	14.790	6.956	-	-	-	-	-	-	Articulado
N479	11.654	25.937	3.877	-	-	-	-	-	-	Articulado
N480	11.654	24.573	4.253	-	-	-	-	-	-	Articulado
N481	11.654	23.486	4.554	-	-	-	-	-	-	Articulado
N482	11.654	22.415	4.849	-	-	-	-	-	-	Articulado
N483	11.654	21.312	5.154	-	-	-	-	-	-	Articulado
N484	11.654	20.225	5.455	-	-	-	-	-	-	Articulado
N485	11.654	19.138	5.755	-	-	-	-	-	-	Articulado
N486	11.654	18.051	6.055	-	-	-	-	-	-	Articulado
N487	11.654	16.964	6.355	-	-	-	-	-	-	Articulado
N488	11.654	15.877	6.656	-	-	-	-	-	-	Articulado
N489	11.654	14.790	6.956	-	-	-	-	-	-	Articulado
N490	16.315	25.937	3.877	-	-	-	-	-	-	Articulado
N491	16.315	24.573	4.253	-	-	-	-	-	-	Articulado
N492	16.315	23.486	4.554	-	-	-	-	-	-	Articulado
N493	16.315	22.415	4.849	-	-	-	-	-	-	Articulado
N494	16.315	21.312	5.154	-	-	-	-	-	-	Articulado
N495	16.315	20.225	5.455	-	-	-	-	-	-	Articulado
N496	16.315	19.138	5.755	-	-	-	-	-	-	Articulado



Nós										
Referência	Coordenadas			Vínculo c/ exterior						Vinculação interna
	X (m)	Y (m)	Z (m)	$\Delta_x$	$\Delta_y$	$\Delta_z$	$\theta_x$	$\theta_y$	$\theta_z$	
N497	16.315	18.051	6.055	-	-	-	-	-	-	Articulado
N498	16.315	16.964	6.355	-	-	-	-	-	-	Articulado
N499	16.315	15.877	6.656	-	-	-	-	-	-	Articulado
N500	16.315	14.790	6.956	-	-	-	-	-	-	Articulado
N501	11.654	4.901	4.854	-	-	-	-	-	-	Articulado
N502	6.992	4.901	4.854	-	-	-	-	-	-	Articulado
N503	16.315	4.901	4.854	-	-	-	-	-	-	Articulado
N504	2.331	4.901	4.854	-	-	-	-	-	-	Articulado
N505	9.323	0.075	3.500	-	-	-	-	-	-	Articulado
N506	8.348	0.075	3.500	-	-	-	-	-	-	Articulado
N507	7.373	0.075	3.500	-	-	-	-	-	-	Articulado
N508	6.398	0.075	3.500	X	X	X	X	X	X	Articulado
N509	5.372	0.075	3.500	X	X	X	X	X	X	Articulado
N510	10.298	0.075	3.500	-	-	-	-	-	-	Articulado
N511	11.273	0.075	3.500	-	-	-	-	-	-	Articulado
N512	12.248	0.075	3.500	X	X	X	X	X	X	Articulado
N513	13.274	0.075	3.500	X	X	X	X	X	X	Articulado
N514	13.274	0.075	3.780	-	-	-	-	-	-	Articulado
N515	9.323	0.075	5.163	-	-	-	-	-	-	Articulado
N516	10.298	0.075	4.822	-	-	-	-	-	-	Articulado
N517	11.273	0.075	4.480	-	-	-	-	-	-	Articulado
N518	12.248	0.075	4.139	-	-	-	-	-	-	Articulado
N519	5.372	0.075	3.780	-	-	-	-	-	-	Articulado
N520	6.398	0.075	4.139	-	-	-	-	-	-	Articulado
N521	7.373	0.075	4.480	-	-	-	-	-	-	Articulado
N522	11.273	2.450	3.500	-	-	-	-	-	-	Articulado
N523	12.248	2.450	3.500	X	X	X	X	X	X	Articulado
N524	13.274	2.450	3.500	X	X	X	X	X	X	Articulado
N525	9.323	2.450	3.500	-	-	-	-	-	-	Articulado
N526	10.298	2.450	3.500	-	-	-	-	-	-	Articulado
N527	13.274	2.450	3.780	-	-	-	-	-	-	Articulado
N528	11.273	2.450	4.480	-	-	-	-	-	-	Articulado
N529	12.248	2.450	4.139	-	-	-	-	-	-	Articulado
N530	9.323	2.450	5.163	-	-	-	-	-	-	Articulado
N531	10.298	2.450	4.822	-	-	-	-	-	-	Articulado
N532	8.348	2.450	3.500	-	-	-	-	-	-	Articulado
N533	7.373	2.450	3.500	-	-	-	-	-	-	Articulado
N534	6.398	2.450	3.500	X	X	X	X	X	X	Articulado
N535	5.372	2.450	3.500	X	X	X	X	X	X	Articulado
N536	7.373	2.450	4.480	-	-	-	-	-	-	Articulado
N537	5.372	2.450	3.780	-	-	-	-	-	-	Articulado
N538	6.398	2.450	4.139	-	-	-	-	-	-	Articulado
N539	24.322	2.996	3.527	-	-	-	-	-	-	Articulado
N540	20.696	2.996	3.527	-	-	-	-	-	-	Articulado

Nós										
Referência	Coordenadas			Vínculo c/ exterior						Vinculação interna
	X (m)	Y (m)	Z (m)	$\Delta_x$	$\Delta_y$	$\Delta_z$	$\theta_x$	$\theta_y$	$\theta_z$	
N541	24.322	4.263	3.882	-	-	-	-	-	-	Articulado
N542	20.696	4.263	3.882	-	-	-	-	-	-	Articulado
N543	20.696	5.627	4.265	-	-	-	-	-	-	Articulado
N544	24.322	5.627	4.265	-	-	-	-	-	-	Articulado
N545	24.322	6.715	4.570	-	-	-	-	-	-	Articulado
N546	20.696	6.715	4.570	-	-	-	-	-	-	Articulado
N547	20.696	7.804	4.875	-	-	-	-	-	-	Articulado
N548	24.322	7.804	4.875	-	-	-	-	-	-	Articulado
N549	24.322	8.892	5.181	-	-	-	-	-	-	Articulado
N550	20.696	8.892	5.181	-	-	-	-	-	-	Articulado
N551	20.696	9.981	5.486	-	-	-	-	-	-	Articulado
N552	24.322	9.981	5.486	-	-	-	-	-	-	Articulado
N553	20.696	11.069	5.791	-	-	-	-	-	-	Articulado
N554	24.322	11.069	5.791	-	-	-	-	-	-	Articulado
N555	20.696	12.158	6.097	-	-	-	-	-	-	Articulado
N556	24.322	12.158	6.097	-	-	-	-	-	-	Articulado
N557	24.322	13.375	6.438	-	-	-	-	-	-	Articulado
N558	20.696	13.375	6.438	-	-	-	-	-	-	Articulado
N559	20.696	14.592	6.097	-	-	-	-	-	-	Articulado
N560	20.696	15.681	5.791	-	-	-	-	-	-	Articulado
N561	20.696	16.769	5.486	-	-	-	-	-	-	Articulado
N562	20.696	17.858	5.181	-	-	-	-	-	-	Articulado
N563	20.696	18.946	4.875	-	-	-	-	-	-	Articulado
N564	20.696	20.035	4.570	-	-	-	-	-	-	Articulado
N565	20.696	21.123	4.265	-	-	-	-	-	-	Articulado
N566	20.696	22.487	3.882	-	-	-	-	-	-	Articulado
N567	20.696	23.754	3.527	-	-	-	-	-	-	Articulado
N568	24.322	20.035	4.570	-	-	-	-	-	-	Articulado
N569	24.322	18.946	4.875	-	-	-	-	-	-	Articulado
N570	24.322	17.858	5.181	-	-	-	-	-	-	Articulado
N571	24.322	16.769	5.486	-	-	-	-	-	-	Articulado
N572	24.322	15.681	5.791	-	-	-	-	-	-	Articulado
N573	24.322	14.592	6.097	-	-	-	-	-	-	Articulado
N574	2.331	27.204	3.527	-	-	-	-	-	-	Articulado
N575	6.992	27.204	3.527	-	-	-	-	-	-	Articulado
N576	11.654	27.204	3.527	-	-	-	-	-	-	Articulado
N577	16.315	27.204	3.527	-	-	-	-	-	-	Articulado
N578	26.898	13.375	6.438	-	-	-	-	-	-	Articulado
N579	26.898	12.158	6.097	-	-	-	-	-	-	Articulado
N580	26.898	11.069	5.791	-	-	-	-	-	-	Articulado
N581	26.898	9.981	5.486	-	-	-	-	-	-	Articulado
N582	26.898	8.892	5.181	-	-	-	-	-	-	Articulado
N583	26.898	7.804	4.875	-	-	-	-	-	-	Articulado
N584	26.898	6.715	4.570	-	-	-	-	-	-	Articulado





Nós										
Referência	Coordenadas			Vínculo c/ exterior						Vinculação interna
	X (m)	Y (m)	Z (m)	$\Delta_x$	$\Delta_y$	$\Delta_z$	$\theta_x$	$\theta_y$	$\theta_z$	
N585	26.898	5.627	4.265	-	-	-	-	-	-	Articulado
N586	26.898	4.263	3.882	-	-	-	-	-	-	Articulado
N587	26.898	2.996	3.527	-	-	-	-	-	-	Articulado
N588	26.898	14.592	6.097	-	-	-	-	-	-	Articulado
N589	26.898	15.681	5.791	-	-	-	-	-	-	Articulado
N590	26.898	16.769	5.486	-	-	-	-	-	-	Articulado
N591	26.898	17.858	5.181	-	-	-	-	-	-	Articulado
N592	26.898	18.946	4.875	-	-	-	-	-	-	Articulado
N593	26.898	20.035	4.570	-	-	-	-	-	-	Articulado
N594	26.898	21.123	4.265	-	-	-	-	-	-	Articulado
N595	26.898	22.487	3.882	-	-	-	-	-	-	Articulado
N596	26.898	23.754	3.527	-	-	-	-	-	-	Articulado
N597	-0.800	13.650	7.271	-	-	-	-	-	-	Articulado
N598	-0.800	12.510	6.956	-	-	-	-	-	-	Articulado
N599	-0.800	11.423	6.656	-	-	-	-	-	-	Articulado
N600	-0.800	10.336	6.355	-	-	-	-	-	-	Articulado
N601	-0.800	9.249	6.055	-	-	-	-	-	-	Articulado
N602	-0.800	8.162	5.755	-	-	-	-	-	-	Articulado
N603	-0.800	7.075	5.455	-	-	-	-	-	-	Articulado
N604	-0.800	5.988	5.154	-	-	-	-	-	-	Articulado
N605	-0.800	4.901	4.854	-	-	-	-	-	-	Articulado
N606	-0.800	3.814	4.554	-	-	-	-	-	-	Articulado
N607	-0.800	2.727	4.253	-	-	-	-	-	-	Articulado
N608	-0.800	1.363	3.877	-	-	-	-	-	-	Articulado
N609	-0.800	0.098	3.527	-	-	-	-	-	-	Articulado
N610	19.446	13.650	7.271	-	-	-	-	-	-	Articulado
N611	19.446	12.510	6.956	-	-	-	-	-	-	Articulado
N612	19.446	11.423	6.656	-	-	-	-	-	-	Articulado
N613	19.446	10.336	6.355	-	-	-	-	-	-	Articulado
N614	19.446	9.249	6.055	-	-	-	-	-	-	Articulado
N615	19.446	8.162	5.755	-	-	-	-	-	-	Articulado
N616	19.446	7.075	5.455	-	-	-	-	-	-	Articulado
N617	19.446	5.988	5.154	-	-	-	-	-	-	Articulado
N618	19.446	4.901	4.854	-	-	-	-	-	-	Articulado
N619	19.446	3.814	4.554	-	-	-	-	-	-	Articulado
N620	19.446	2.727	4.253	-	-	-	-	-	-	Articulado
N621	19.446	1.363	3.877	-	-	-	-	-	-	Articulado
N622	19.446	0.098	3.527	-	-	-	-	-	-	Articulado
N623	13.185	1.363	3.877	-	-	-	-	-	-	Articulado
N624	5.462	1.363	3.877	-	-	-	-	-	-	Articulado
N625	5.462	0.098	3.527	-	-	-	-	-	-	Articulado
N626	13.185	0.098	3.527	-	-	-	-	-	-	Articulado
N627	19.446	14.790	6.956	-	-	-	-	-	-	Articulado
N628	19.446	15.877	6.656	-	-	-	-	-	-	Articulado

Nós										
Referência	Coordenadas			Vínculo c/ exterior						Vinculação interna
	X (m)	Y (m)	Z (m)	$\Delta_x$	$\Delta_y$	$\Delta_z$	$\theta_x$	$\theta_y$	$\theta_z$	
N629	19.446	16.964	6.355	-	-	-	-	-	-	Articulado
N630	19.446	18.051	6.055	-	-	-	-	-	-	Articulado
N631	19.446	19.138	5.755	-	-	-	-	-	-	Articulado
N632	19.446	20.225	5.455	-	-	-	-	-	-	Articulado
N633	19.446	21.312	5.154	-	-	-	-	-	-	Articulado
N634	19.446	22.415	4.849	-	-	-	-	-	-	Articulado
N635	19.446	23.486	4.554	-	-	-	-	-	-	Articulado
N636	19.446	24.573	4.253	-	-	-	-	-	-	Articulado
N637	19.446	25.937	3.877	-	-	-	-	-	-	Articulado
N638	19.446	27.204	3.527	-	-	-	-	-	-	Articulado
N639	-0.800	14.790	6.956	-	-	-	-	-	-	Articulado
N640	-0.800	15.877	6.656	-	-	-	-	-	-	Articulado
N641	-0.800	16.964	6.355	-	-	-	-	-	-	Articulado
N642	-0.800	18.051	6.055	-	-	-	-	-	-	Articulado
N643	-0.800	19.138	5.755	-	-	-	-	-	-	Articulado
N644	-0.800	20.225	5.455	-	-	-	-	-	-	Articulado
N645	-0.800	21.312	5.154	-	-	-	-	-	-	Articulado
N646	-0.800	22.415	4.849	-	-	-	-	-	-	Articulado
N647	-0.800	23.486	4.554	-	-	-	-	-	-	Articulado
N648	-0.800	24.573	4.253	-	-	-	-	-	-	Articulado
N649	-0.800	25.937	3.877	-	-	-	-	-	-	Articulado
N650	-0.800	27.204	3.527	-	-	-	-	-	-	Articulado
N651	18.646	26.727	3.658	-	-	-	-	-	-	Articulado
N652	9.323	-0.725	5.163	-	-	-	-	-	-	Articulado
N653	10.298	-0.725	4.822	-	-	-	-	-	-	Articulado
N654	11.273	-0.725	4.480	-	-	-	-	-	-	Articulado
N655	12.248	-0.725	4.139	-	-	-	-	-	-	Articulado
N656	13.274	-0.725	3.780	-	-	-	-	-	-	Articulado
N657	7.373	-0.725	4.480	-	-	-	-	-	-	Articulado
N658	6.398	-0.725	4.139	-	-	-	-	-	-	Articulado
N659	5.372	-0.725	3.780	-	-	-	-	-	-	Articulado
N660	8.348	0.075	4.822	-	-	-	-	-	-	Articulado
N661	8.348	2.450	4.822	-	-	-	-	-	-	Articulado
N662	8.348	-0.725	4.822	-	-	-	-	-	-	Articulado

## 2.1.2.- Barras

### 2.1.2.1.- Materiais utilizados

Materiais utilizados							
Material		E (kgf/cm <sup>2</sup> )	$\nu$	G (kgf/cm <sup>2</sup> )	$f_y$ (kgf/cm <sup>2</sup> )	$\alpha_t$ (m/m°C)	$\gamma$ (t/m <sup>3</sup> )
Tipo	Designação						
Aço laminado	A-572 345MPa	2038736.0	0.300	784913.4	3516.8	0.000012	7.850
Aço dobrado	A-36	2038736.0	0.300	784129.2	2548.4	0.000012	7.850



Materiais utilizados							
Material		E (kgf/cm²)	ν	G (kgf/cm²)	f <sub>y</sub> (kgf/cm²)	α <sub>t</sub> (m/m°C)	γ (t/m³)
Tipo	Designação						
Notação: E: Módulo de elasticidade ν: Módulo de poisson G: Módulo de corte f <sub>y</sub> : Limite elástico α <sub>t</sub> : Coeficiente de dilatação γ: Peso específico							

### 2.1.2.2.- Descrição

Descrição									
Material		Barra (Ni/Nf)	Peça (Ni/Nf)	Perfil(Série)	Comprimento (m)	$\beta_{xy}$	$\beta_{xz}$	Lb <sub>Sup.</sub> (m)	Lb <sub>Inf.</sub> (m)
Tipo	Designação								
Aço laminado	A-572 345MPa	N383/N295	N383/N295	1/4" (Barra redonda)	5.247	0.00	0.00	-	-
		N295/N338	N295/N338	1/4" (Barra redonda)	4.910	0.00	0.00	-	-
		N338/N309	N338/N309	1/4" (Barra redonda)	5.004	0.00	0.00	-	-
		N266/N309	N266/N309	1/4" (Barra redonda)	5.111	0.00	0.00	-	-
		N295/N266	N295/N266	1/4" (Barra redonda)	5.020	0.00	0.00	-	-
		N382/N295	N382/N295	1/4" (Barra redonda)	5.350	0.00	0.00	-	-
		N384/N260	N384/N260	1/4" (Barra redonda)	5.350	0.00	0.00	-	-
		N260/N301	N260/N301	1/4" (Barra redonda)	5.020	0.00	0.00	-	-
		N301/N252	N301/N252	1/4" (Barra redonda)	5.111	0.00	0.00	-	-
		N301/N346	N301/N346	1/4" (Barra redonda)	5.004	0.00	0.00	-	-
		N332/N301	N332/N301	1/4" (Barra redonda)	4.910	0.00	0.00	-	-
		N384/N332	N384/N332	1/4" (Barra redonda)	5.247	0.00	0.00	-	-
		N153/N212	N153/N212	1/4" (Barra redonda)	5.759	0.00	0.00	-	-
		N212/N168	N212/N168	1/4" (Barra redonda)	5.759	0.00	0.00	-	-
		N168/N225	N168/N225	1/4" (Barra redonda)	5.792	0.00	0.00	-	-
		N219/N174	N219/N174	1/4" (Barra redonda)	5.792	0.00	0.00	-	-
		N161/N219	N161/N219	1/4" (Barra redonda)	5.759	0.00	0.00	-	-
		N204/N161	N204/N161	1/4" (Barra redonda)	5.759	0.00	0.00	-	-
		N385/N320	N385/N320	1/4" (Barra redonda)	5.350	0.00	0.00	-	-
		N320/N278	N320/N278	1/4" (Barra redonda)	5.020	0.00	0.00	-	-
		N278/N309	N278/N309	1/4" (Barra redonda)	5.111	0.00	0.00	-	-
		N351/N309	N351/N309	1/4" (Barra redonda)	5.004	0.00	0.00	-	-
		N320/N351	N320/N351	1/4" (Barra redonda)	4.910	0.00	0.00	-	-
		N386/N320	N386/N320	1/4" (Barra redonda)	5.247	0.00	0.00	-	-
		N387/N357	N387/N357	1/4" (Barra redonda)	5.247	0.00	0.00	-	-
		N357/N314	N357/N314	1/4" (Barra redonda)	4.910	0.00	0.00	-	-
		N314/N346	N314/N346	1/4" (Barra redonda)	5.004	0.00	0.00	-	-
		N314/N252	N314/N252	1/4" (Barra redonda)	5.111	0.00	0.00	-	-
		N272/N314	N272/N314	1/4" (Barra redonda)	5.020	0.00	0.00	-	-
		N387/N272	N387/N272	1/4" (Barra redonda)	5.350	0.00	0.00	-	-
		N74/N39	N74/N39	1/4" (Barra redonda)	5.760	0.00	0.00	-	-
		N39/N68	N39/N68	1/4" (Barra redonda)	5.760	0.00	0.00	-	-
		N68/N4	N68/N4	1/4" (Barra redonda)	5.793	0.00	0.00	-	-
		N43/N63	N43/N63	1/4" (Barra redonda)	5.793	0.00	0.00	-	-
		N71/N43	N71/N43	1/4" (Barra redonda)	5.760	0.00	0.00	-	-
		N36/N71	N36/N71	1/4" (Barra redonda)	5.760	0.00	0.00	-	-





Descrição									
Material		Barra (Ni/Nf)	Peça (Ni/Nf)	Perfil(Série)	Comprimento (m)	$\beta_{xy}$	$\beta_{xz}$	Lb <sup>Sup.</sup> (m)	Lb <sup>Inf.</sup> (m)
Tipo	Designação								
		N123/N71	N123/N71	1/4" (Barra redonda)	5.759	0.00	0.00	-	-
		N71/N117	N71/N117	1/4" (Barra redonda)	5.759	0.00	0.00	-	-
		N117/N63	N117/N63	1/4" (Barra redonda)	5.792	0.00	0.00	-	-
		N68/N112	N68/N112	1/4" (Barra redonda)	5.792	0.00	0.00	-	-
		N120/N68	N120/N68	1/4" (Barra redonda)	5.759	0.00	0.00	-	-
		N74/N120	N74/N120	1/4" (Barra redonda)	5.759	0.00	0.00	-	-
		N192/N120	N192/N120	1/4" (Barra redonda)	5.760	0.00	0.00	-	-
		N120/N178	N120/N178	1/4" (Barra redonda)	5.760	0.00	0.00	-	-
		N178/N112	N178/N112	1/4" (Barra redonda)	5.793	0.00	0.00	-	-
		N117/N174	N117/N174	1/4" (Barra redonda)	5.793	0.00	0.00	-	-
		N184/N117	N184/N117	1/4" (Barra redonda)	5.760	0.00	0.00	-	-
		N123/N184	N123/N184	1/4" (Barra redonda)	5.760	0.00	0.00	-	-
		N243/N184	N243/N184	1/4" (Barra redonda)	5.759	0.00	0.00	-	-
		N184/N229	N184/N229	1/4" (Barra redonda)	5.759	0.00	0.00	-	-
		N229/N174	N229/N174	1/4" (Barra redonda)	5.792	0.00	0.00	-	-
		N178/N225	N178/N225	1/4" (Barra redonda)	5.792	0.00	0.00	-	-
		N235/N178	N235/N178	1/4" (Barra redonda)	5.759	0.00	0.00	-	-
		N192/N235	N192/N235	1/4" (Barra redonda)	5.759	0.00	0.00	-	-
		N19/N63	N19/N63	1/4" (Barra redonda)	5.793	0.00	0.00	-	-
		N57/N19	N57/N19	1/4" (Barra redonda)	5.760	0.00	0.00	-	-
		N24/N57	N24/N57	1/4" (Barra redonda)	5.760	0.00	0.00	-	-
		N55/N22	N55/N22	1/4" (Barra redonda)	5.760	0.00	0.00	-	-
		N22/N60	N22/N60	1/4" (Barra redonda)	5.760	0.00	0.00	-	-
		N60/N4	N60/N4	1/4" (Barra redonda)	5.793	0.00	0.00	-	-
		N408/N74	N408/N74	1/4" (Barra redonda)	6.051	0.00	0.00	-	-
		N409/N36	N409/N36	1/4" (Barra redonda)	6.051	0.00	0.00	-	-
		N409/N123	N409/N123	1/4" (Barra redonda)	6.050	0.00	0.00	-	-
		N411/N123	N411/N123	1/4" (Barra redonda)	6.051	0.00	0.00	-	-
		N411/N243	N411/N243	1/4" (Barra redonda)	6.050	0.00	0.00	-	-
		N410/N74	N410/N74	1/4" (Barra redonda)	6.050	0.00	0.00	-	-
		N412/N192	N412/N192	1/4" (Barra redonda)	6.050	0.00	0.00	-	-
		N410/N192	N410/N192	1/4" (Barra redonda)	6.051	0.00	0.00	-	-
		N413/N415	N413/N414	L 3/4 x 1/8" (Cantoneira)	1.313	0.00	0.00	-	-
		N415/N416	N413/N414	L 3/4 x 1/8" (Cantoneira)	1.415	0.00	0.00	-	-
		N416/N417	N413/N414	L 3/4 x 1/8" (Cantoneira)	1.128	0.00	0.00	-	-
		N417/N503	N413/N414	L 3/4 x 1/8" (Cantoneira)	1.128	0.00	0.00	-	-
		N503/N418	N413/N414	L 3/4 x 1/8" (Cantoneira)	1.128	0.00	0.00	-	-
		N418/N419	N413/N414	L 3/4 x 1/8" (Cantoneira)	1.128	0.00	0.00	-	-
		N419/N420	N413/N414	L 3/4 x 1/8" (Cantoneira)	1.128	0.00	0.00	-	-
		N420/N421	N413/N414	L 3/4 x 1/8" (Cantoneira)	1.128	0.00	0.00	-	-
		N421/N422	N413/N414	L 3/4 x 1/8" (Cantoneira)	1.128	0.00	0.00	-	-
		N422/N423	N413/N414	L 3/4 x 1/8" (Cantoneira)	1.128	0.00	0.00	-	-
		N423/N424	N413/N414	L 3/4 x 1/8" (Cantoneira)	1.128	0.00	0.00	-	-
		N424/N414	N413/N414	L 3/4 x 1/8" (Cantoneira)	1.183	0.00	0.00	-	-
		N445/N446	N445/N456	L 3/4 x 1/8" (Cantoneira)	1.313	0.00	0.00	-	-
		N446/N447	N445/N456	L 3/4 x 1/8" (Cantoneira)	1.415	0.00	0.00	-	-
		N447/N448	N445/N456	L 3/4 x 1/8" (Cantoneira)	1.128	0.00	0.00	-	-



Descrição									
Material		Barra (Ni/Nf)	Peça (Ni/Nf)	Perfil(Série)	Comprimento (m)	$\beta_{xy}$	$\beta_{xz}$	Lb <sub>Sup.</sub> (m)	Lb <sub>Inf.</sub> (m)
Tipo	Designação								
		N448/N504	N445/N456	L 3/4 x 1/8" (Cantoneira)	1.128	0.00	0.00	-	-
		N504/N449	N445/N456	L 3/4 x 1/8" (Cantoneira)	1.128	0.00	0.00	-	-
		N449/N450	N445/N456	L 3/4 x 1/8" (Cantoneira)	1.128	0.00	0.00	-	-
		N450/N451	N445/N456	L 3/4 x 1/8" (Cantoneira)	1.128	0.00	0.00	-	-
		N451/N452	N445/N456	L 3/4 x 1/8" (Cantoneira)	1.128	0.00	0.00	-	-
		N452/N453	N445/N456	L 3/4 x 1/8" (Cantoneira)	1.128	0.00	0.00	-	-
		N453/N454	N445/N456	L 3/4 x 1/8" (Cantoneira)	1.128	0.00	0.00	-	-
		N454/N455	N445/N456	L 3/4 x 1/8" (Cantoneira)	1.128	0.00	0.00	-	-
		N455/N456	N445/N456	L 3/4 x 1/8" (Cantoneira)	1.183	0.00	0.00	-	-
		N435/N436	N435/N444	L 3/4 x 1/8" (Cantoneira)	1.128	0.00	0.00	-	-
		N436/N502	N435/N444	L 3/4 x 1/8" (Cantoneira)	1.128	0.00	0.00	-	-
		N502/N437	N435/N444	L 3/4 x 1/8" (Cantoneira)	1.128	0.00	0.00	-	-
		N437/N438	N435/N444	L 3/4 x 1/8" (Cantoneira)	1.128	0.00	0.00	-	-
		N438/N439	N435/N444	L 3/4 x 1/8" (Cantoneira)	1.128	0.00	0.00	-	-
		N439/N440	N435/N444	L 3/4 x 1/8" (Cantoneira)	1.128	0.00	0.00	-	-
		N440/N441	N435/N444	L 3/4 x 1/8" (Cantoneira)	1.128	0.00	0.00	-	-
		N441/N442	N435/N444	L 3/4 x 1/8" (Cantoneira)	1.128	0.00	0.00	-	-
		N442/N443	N435/N444	L 3/4 x 1/8" (Cantoneira)	1.128	0.00	0.00	-	-
		N443/N444	N435/N444	L 3/4 x 1/8" (Cantoneira)	1.183	0.00	0.00	-	-
		N425/N426	N425/N434	L 3/4 x 1/8" (Cantoneira)	1.128	0.00	0.00	-	-
		N426/N501	N425/N434	L 3/4 x 1/8" (Cantoneira)	1.128	0.00	0.00	-	-
		N501/N427	N425/N434	L 3/4 x 1/8" (Cantoneira)	1.128	0.00	0.00	-	-
		N427/N428	N425/N434	L 3/4 x 1/8" (Cantoneira)	1.128	0.00	0.00	-	-
		N428/N429	N425/N434	L 3/4 x 1/8" (Cantoneira)	1.128	0.00	0.00	-	-
		N429/N430	N425/N434	L 3/4 x 1/8" (Cantoneira)	1.128	0.00	0.00	-	-
		N430/N431	N425/N434	L 3/4 x 1/8" (Cantoneira)	1.128	0.00	0.00	-	-
		N431/N432	N425/N434	L 3/4 x 1/8" (Cantoneira)	1.128	0.00	0.00	-	-
		N432/N433	N425/N434	L 3/4 x 1/8" (Cantoneira)	1.128	0.00	0.00	-	-
		N433/N434	N425/N434	L 3/4 x 1/8" (Cantoneira)	1.183	0.00	0.00	-	-
		N152/N105	N152/N105	1/4" (Barra redonda)	5.760	0.00	0.00	-	-
		N105/N167	N105/N167	1/4" (Barra redonda)	5.760	0.00	0.00	-	-
		N167/N111	N167/N111	1/4" (Barra redonda)	5.760	0.00	0.00	-	-
		N111/N174	N111/N174	1/4" (Barra redonda)	4.810	0.00	0.00	-	-
		N170/N112	N170/N112	1/4" (Barra redonda)	4.810	0.00	0.00	-	-
		N108/N170	N108/N170	1/4" (Barra redonda)	5.760	0.00	0.00	-	-
		N160/N108	N160/N108	1/4" (Barra redonda)	5.760	0.00	0.00	-	-
		N103/N160	N103/N160	1/4" (Barra redonda)	5.760	0.00	0.00	-	-
		N103/N56	N103/N56	1/4" (Barra redonda)	5.759	0.00	0.00	-	-
		N56/N108	N56/N108	1/4" (Barra redonda)	5.759	0.00	0.00	-	-
		N108/N62	N108/N62	1/4" (Barra redonda)	5.759	0.00	0.00	-	-
		N62/N112	N62/N112	1/4" (Barra redonda)	4.809	0.00	0.00	-	-
		N111/N63	N111/N63	1/4" (Barra redonda)	4.809	0.00	0.00	-	-
		N59/N111	N59/N111	1/4" (Barra redonda)	5.759	0.00	0.00	-	-
		N105/N59	N105/N59	1/4" (Barra redonda)	5.759	0.00	0.00	-	-
		N54/N105	N54/N105	1/4" (Barra redonda)	5.759	0.00	0.00	-	-
		N392/N153	N392/N153	1/4" (Barra redonda)	6.049	0.00	0.00	-	-
		N391/N204	N391/N204	1/4" (Barra redonda)	6.049	0.00	0.00	-	-



Descrição									
Material		Barra (Ni/Nf)	Peça (Ni/Nf)	Perfil (Série)	Comprimento (m)	$\beta_{xy}$	$\beta_{xz}$	Lb <sup>Sup.</sup> (m)	Lb <sup>Inf.</sup> (m)
Tipo	Designação								
		N390/N24	N390/N24	1/4" (Barra redonda)	6.050	0.00	0.00	-	-
		N389/N55	N389/N55	1/4" (Barra redonda)	6.050	0.00	0.00	-	-
		N568/N569	N568/N557	L 3/4 x 1/8" (Cantoneira)	1.130	0.00	0.00	-	-
		N569/N570	N568/N557	L 3/4 x 1/8" (Cantoneira)	1.130	0.00	0.00	-	-
		N570/N571	N568/N557	L 3/4 x 1/8" (Cantoneira)	1.130	0.00	0.00	-	-
		N571/N572	N568/N557	L 3/4 x 1/8" (Cantoneira)	1.130	0.00	0.00	-	-
		N572/N573	N568/N557	L 3/4 x 1/8" (Cantoneira)	1.130	0.00	0.00	-	-
		N573/N557	N568/N557	L 3/4 x 1/8" (Cantoneira)	1.264	0.00	0.00	-	-
		N567/N566	N567/N558	L 3/4 x 1/8" (Cantoneira)	1.316	0.00	0.00	-	-
		N566/N565	N567/N558	L 3/4 x 1/8" (Cantoneira)	1.417	0.00	0.00	-	-
		N565/N564	N567/N558	L 3/4 x 1/8" (Cantoneira)	1.130	0.00	0.00	-	-
		N564/N563	N567/N558	L 3/4 x 1/8" (Cantoneira)	1.130	0.00	0.00	-	-
		N563/N562	N567/N558	L 3/4 x 1/8" (Cantoneira)	1.130	0.00	0.00	-	-
		N562/N561	N567/N558	L 3/4 x 1/8" (Cantoneira)	1.130	0.00	0.00	-	-
		N561/N560	N567/N558	L 3/4 x 1/8" (Cantoneira)	1.130	0.00	0.00	-	-
		N560/N559	N567/N558	L 3/4 x 1/8" (Cantoneira)	1.130	0.00	0.00	-	-
		N559/N558	N567/N558	L 3/4 x 1/8" (Cantoneira)	1.264	0.00	0.00	-	-
		N539/N541	N539/N557	L 3/4 x 1/8" (Cantoneira)	1.316	0.00	0.00	-	-
		N541/N544	N539/N557	L 3/4 x 1/8" (Cantoneira)	1.417	0.00	0.00	-	-
		N544/N545	N539/N557	L 3/4 x 1/8" (Cantoneira)	1.130	0.00	0.00	-	-
		N545/N548	N539/N557	L 3/4 x 1/8" (Cantoneira)	1.130	0.00	0.00	-	-
		N548/N549	N539/N557	L 3/4 x 1/8" (Cantoneira)	1.130	0.00	0.00	-	-
		N549/N552	N539/N557	L 3/4 x 1/8" (Cantoneira)	1.130	0.00	0.00	-	-
		N552/N554	N539/N557	L 3/4 x 1/8" (Cantoneira)	1.130	0.00	0.00	-	-
		N554/N556	N539/N557	L 3/4 x 1/8" (Cantoneira)	1.130	0.00	0.00	-	-
		N556/N557	N539/N557	L 3/4 x 1/8" (Cantoneira)	1.264	0.00	0.00	-	-
		N540/N542	N540/N558	L 3/4 x 1/8" (Cantoneira)	1.316	0.00	0.00	-	-
		N542/N543	N540/N558	L 3/4 x 1/8" (Cantoneira)	1.417	0.00	0.00	-	-
		N543/N546	N540/N558	L 3/4 x 1/8" (Cantoneira)	1.130	0.00	0.00	-	-
		N546/N547	N540/N558	L 3/4 x 1/8" (Cantoneira)	1.130	0.00	0.00	-	-
		N547/N550	N540/N558	L 3/4 x 1/8" (Cantoneira)	1.130	0.00	0.00	-	-
		N550/N551	N540/N558	L 3/4 x 1/8" (Cantoneira)	1.130	0.00	0.00	-	-
		N551/N553	N540/N558	L 3/4 x 1/8" (Cantoneira)	1.130	0.00	0.00	-	-
		N553/N555	N540/N558	L 3/4 x 1/8" (Cantoneira)	1.130	0.00	0.00	-	-
		N555/N558	N540/N558	L 3/4 x 1/8" (Cantoneira)	1.264	0.00	0.00	-	-
		N574/N457	N574/N456	L 3/4 x 1/8" (Cantoneira)	1.314	0.00	0.00	-	-
		N457/N458	N574/N456	L 3/4 x 1/8" (Cantoneira)	1.415	0.00	0.00	-	-
		N458/N459	N574/N456	L 3/4 x 1/8" (Cantoneira)	1.128	0.00	0.00	-	-
		N459/N460	N574/N456	L 3/4 x 1/8" (Cantoneira)	1.111	0.00	0.00	-	-
		N460/N461	N574/N456	L 3/4 x 1/8" (Cantoneira)	1.145	0.00	0.00	-	-
		N461/N462	N574/N456	L 3/4 x 1/8" (Cantoneira)	1.128	0.00	0.00	-	-
		N462/N463	N574/N456	L 3/4 x 1/8" (Cantoneira)	1.128	0.00	0.00	-	-
		N463/N464	N574/N456	L 3/4 x 1/8" (Cantoneira)	1.128	0.00	0.00	-	-
		N464/N465	N574/N456	L 3/4 x 1/8" (Cantoneira)	1.128	0.00	0.00	-	-
		N465/N466	N574/N456	L 3/4 x 1/8" (Cantoneira)	1.128	0.00	0.00	-	-
		N466/N467	N574/N456	L 3/4 x 1/8" (Cantoneira)	1.128	0.00	0.00	-	-
		N467/N456	N574/N456	L 3/4 x 1/8" (Cantoneira)	1.183	0.00	0.00	-	-





Descrição									
Material		Barra (Ni/Nf)	Peça (Ni/Nf)	Perfil(Série)	Comprimento (m)	$\beta_{xy}$	$\beta_{xz}$	Lb <sub>Sup.</sub> (m)	Lb <sub>Inf.</sub> (m)
Tipo	Designação								
		N575/N468	N575/N444	L 3/4 x 1/8" (Cantoneira)	1.314	0.00	0.00	-	-
		N468/N469	N575/N444	L 3/4 x 1/8" (Cantoneira)	1.415	0.00	0.00	-	-
		N469/N470	N575/N444	L 3/4 x 1/8" (Cantoneira)	1.128	0.00	0.00	-	-
		N470/N471	N575/N444	L 3/4 x 1/8" (Cantoneira)	1.111	0.00	0.00	-	-
		N471/N472	N575/N444	L 3/4 x 1/8" (Cantoneira)	1.145	0.00	0.00	-	-
		N472/N473	N575/N444	L 3/4 x 1/8" (Cantoneira)	1.128	0.00	0.00	-	-
		N473/N474	N575/N444	L 3/4 x 1/8" (Cantoneira)	1.128	0.00	0.00	-	-
		N474/N475	N575/N444	L 3/4 x 1/8" (Cantoneira)	1.128	0.00	0.00	-	-
		N475/N476	N575/N444	L 3/4 x 1/8" (Cantoneira)	1.128	0.00	0.00	-	-
		N476/N477	N575/N444	L 3/4 x 1/8" (Cantoneira)	1.128	0.00	0.00	-	-
		N477/N478	N575/N444	L 3/4 x 1/8" (Cantoneira)	1.128	0.00	0.00	-	-
		N478/N444	N575/N444	L 3/4 x 1/8" (Cantoneira)	1.183	0.00	0.00	-	-
		N576/N479	N576/N434	L 3/4 x 1/8" (Cantoneira)	1.314	0.00	0.00	-	-
		N479/N480	N576/N434	L 3/4 x 1/8" (Cantoneira)	1.415	0.00	0.00	-	-
		N480/N481	N576/N434	L 3/4 x 1/8" (Cantoneira)	1.128	0.00	0.00	-	-
		N481/N482	N576/N434	L 3/4 x 1/8" (Cantoneira)	1.111	0.00	0.00	-	-
		N482/N483	N576/N434	L 3/4 x 1/8" (Cantoneira)	1.145	0.00	0.00	-	-
		N483/N484	N576/N434	L 3/4 x 1/8" (Cantoneira)	1.128	0.00	0.00	-	-
		N484/N485	N576/N434	L 3/4 x 1/8" (Cantoneira)	1.128	0.00	0.00	-	-
		N485/N486	N576/N434	L 3/4 x 1/8" (Cantoneira)	1.128	0.00	0.00	-	-
		N486/N487	N576/N434	L 3/4 x 1/8" (Cantoneira)	1.128	0.00	0.00	-	-
		N487/N488	N576/N434	L 3/4 x 1/8" (Cantoneira)	1.128	0.00	0.00	-	-
		N488/N489	N576/N434	L 3/4 x 1/8" (Cantoneira)	1.128	0.00	0.00	-	-
		N489/N434	N576/N434	L 3/4 x 1/8" (Cantoneira)	1.183	0.00	0.00	-	-
		N577/N490	N577/N414	L 3/4 x 1/8" (Cantoneira)	1.314	0.00	0.00	-	-
		N490/N491	N577/N414	L 3/4 x 1/8" (Cantoneira)	1.415	0.00	0.00	-	-
		N491/N492	N577/N414	L 3/4 x 1/8" (Cantoneira)	1.128	0.00	0.00	-	-
		N492/N493	N577/N414	L 3/4 x 1/8" (Cantoneira)	1.111	0.00	0.00	-	-
		N493/N494	N577/N414	L 3/4 x 1/8" (Cantoneira)	1.145	0.00	0.00	-	-
		N494/N495	N577/N414	L 3/4 x 1/8" (Cantoneira)	1.128	0.00	0.00	-	-
		N495/N496	N577/N414	L 3/4 x 1/8" (Cantoneira)	1.128	0.00	0.00	-	-
		N496/N497	N577/N414	L 3/4 x 1/8" (Cantoneira)	1.128	0.00	0.00	-	-
		N497/N498	N577/N414	L 3/4 x 1/8" (Cantoneira)	1.128	0.00	0.00	-	-
		N498/N499	N577/N414	L 3/4 x 1/8" (Cantoneira)	1.128	0.00	0.00	-	-
		N499/N500	N577/N414	L 3/4 x 1/8" (Cantoneira)	1.128	0.00	0.00	-	-
		N500/N414	N577/N414	L 3/4 x 1/8" (Cantoneira)	1.183	0.00	0.00	-	-
Aço dobrado	A-36	N1/N389	N1/N4	U100X60X3.75 (U)	0.101	1.00	1.00	-	-
		N389/N394	N1/N4	U100X60X3.75 (U)	0.493	1.00	1.00	-	-
		N394/N26	N1/N4	U100X60X3.75 (U)	0.820	1.00	1.00	-	-
		N26/N7	N1/N4	U100X60X3.75 (U)	1.415	1.00	1.00	-	-
		N7/N24	N1/N4	U100X60X3.75 (U)	1.128	1.00	1.00	-	-
		N24/N51	N1/N4	U100X60X3.75 (U)	1.128	1.00	1.00	-	-
		N51/N23	N1/N4	U100X60X3.75 (U)	1.128	1.00	1.00	-	-
		N23/N22	N1/N4	U100X60X3.75 (U)	1.128	1.00	1.00	-	-
		N22/N21	N1/N4	U100X60X3.75 (U)	1.128	1.00	1.00	-	-
		N21/N20	N1/N4	U100X60X3.75 (U)	1.128	1.00	1.00	-	-



Descrição									
Material		Barra (Ni/Nf)	Peça (Ni/Nf)	Perfil(Série)	Comprimento (m)	$\beta_{xy}$	$\beta_{xz}$	Lb <sup>Sup.</sup> (m)	Lb <sup>Inf.</sup> (m)
Tipo	Designação								
		N20/N19	N1/N4	U100X60X3.75 (U)	1.128	1.00	1.00	-	-
		N19/N18	N1/N4	U100X60X3.75 (U)	1.128	1.00	1.00	-	-
		N18/N17	N1/N4	U100X60X3.75 (U)	1.128	1.00	1.00	-	-
		N17/N4	N1/N4	U100X60X3.75 (U)	1.183	1.00	1.00	-	-
		N2/N4	N2/N4	2xU50X25X1.52([J]) (U)	1.059	1.00	1.00	-	-
		N1/N49	N1/N5	U100X60X3.75 (U)	0.573	1.00	1.00	-	-
		N49/N25	N1/N5	U100X60X3.75 (U)	0.790	1.00	1.00	-	-
		N25/N5	N1/N5	U100X60X3.75 (U)	1.364	1.00	1.00	-	-
		N5/N9	N5/N2	U100X60X3.75 (U)	1.120	1.00	1.00	-	-
		N9/N10	N5/N2	U100X60X3.75 (U)	1.120	1.00	1.00	-	-
		N10/N11	N5/N2	U100X60X3.75 (U)	1.120	1.00	1.00	-	-
		N11/N12	N5/N2	U100X60X3.75 (U)	1.120	1.00	1.00	-	-
		N12/N50	N5/N2	U100X60X3.75 (U)	1.120	1.00	1.00	-	-
		N50/N13	N5/N2	U100X60X3.75 (U)	1.120	1.00	1.00	-	-
		N13/N14	N5/N2	U100X60X3.75 (U)	1.120	1.00	1.00	-	-
		N14/N15	N5/N2	U100X60X3.75 (U)	1.120	1.00	1.00	-	-
		N15/N16	N5/N2	U100X60X3.75 (U)	1.120	1.00	1.00	-	-
		N16/N2	N5/N2	U100X60X3.75 (U)	1.175	1.00	1.00	-	-
		N6/N46	N6/N3	U100X60X3.75 (U)	1.364	1.00	1.00	-	-
		N46/N48	N6/N3	U100X60X3.75 (U)	0.790	1.00	1.00	-	-
		N48/N3	N6/N3	U100X60X3.75 (U)	0.573	1.00	1.00	-	-
		N6/N35	N6/N2	U100X60X3.75 (U)	1.120	1.00	1.00	-	-
		N35/N34	N6/N2	U100X60X3.75 (U)	1.120	1.00	1.00	-	-
		N34/N33	N6/N2	U100X60X3.75 (U)	1.120	1.00	1.00	-	-
		N33/N32	N6/N2	U100X60X3.75 (U)	1.120	1.00	1.00	-	-
		N32/N31	N6/N2	U100X60X3.75 (U)	1.120	1.00	1.00	-	-
		N31/N30	N6/N2	U100X60X3.75 (U)	1.120	1.00	1.00	-	-
		N30/N29	N6/N2	U100X60X3.75 (U)	1.120	1.00	1.00	-	-
		N29/N28	N6/N2	U100X60X3.75 (U)	1.120	1.00	1.00	-	-
		N28/N27	N6/N2	U100X60X3.75 (U)	1.120	1.00	1.00	-	-
		N27/N2	N6/N2	U100X60X3.75 (U)	1.175	1.00	1.00	-	-
		N5/N7	N5/N7	U100X60X3.75 (U)	0.753	1.00	1.00	-	-
		N6/N8	N6/N8	U100X60X3.75 (U)	0.753	1.00	1.00	-	-
		N16/N17	N16/N17	U100X60X3.75 (U)	1.027	1.00	1.00	-	-
		N15/N18	N15/N18	U100X60X3.75 (U)	0.997	1.00	1.00	-	-
		N14/N19	N14/N19	U100X60X3.75 (U)	0.966	1.00	1.00	-	-
		N13/N20	N13/N20	U100X60X3.75 (U)	0.936	1.00	1.00	-	-
		N12/N22	N12/N22	U100X60X3.75 (U)	0.875	1.00	1.00	-	-
		N11/N23	N11/N23	U100X60X3.75 (U)	0.845	1.00	1.00	-	-
		N9/N24	N9/N24	U100X60X3.75 (U)	0.784	1.00	1.00	-	-
		N9/N7	N9/N7	U100X60X3.75 (U)	1.190	1.00	1.00	-	-
		N10/N24	N10/N24	U100X60X3.75 (U)	1.202	1.00	1.00	-	-
		N12/N23	N12/N23	U100X60X3.75 (U)	1.230	1.00	1.00	-	-
		N13/N21	N13/N21	U100X60X3.75 (U)	1.259	1.00	1.00	-	-
		N14/N20	N14/N20	U100X60X3.75 (U)	1.275	1.00	1.00	-	-
		N15/N19	N15/N19	U100X60X3.75 (U)	1.291	1.00	1.00	-	-
		N16/N18	N16/N18	U100X60X3.75 (U)	1.308	1.00	1.00	-	-



Descrição									
Material		Barra (Ni/Nf)	Peça (Ni/Nf)	Perfil(Série)	Comprimento (m)	$\beta_{xy}$	$\beta_{xz}$	Lb <sub>Sup.</sub> (m)	Lb <sub>Inf.</sub> (m)
Tipo	Designação								
		N5/N26	N5/N26	U100X60X3.75 (U)	1.415	1.00	1.00	-	-
		N25/N26	N25/N26	U100X60X3.75 (U)	0.377	1.00	1.00	-	-
		N2/N17	N2/N17	U100X60X3.75 (U)	1.361	1.00	1.00	-	-
		N35/N36	N35/N36	U100X60X3.75 (U)	0.784	1.00	1.00	-	-
		N34/N36	N34/N36	U100X60X3.75 (U)	1.202	1.00	1.00	-	-
		N34/N37	N34/N37	U100X60X3.75 (U)	0.810	1.00	1.00	-	-
		N33/N37	N33/N37	U100X60X3.75 (U)	1.228	1.00	1.00	-	-
		N33/N38	N33/N38	U100X60X3.75 (U)	0.845	1.00	1.00	-	-
		N32/N38	N32/N38	U100X60X3.75 (U)	1.230	1.00	1.00	-	-
		N32/N39	N32/N39	U100X60X3.75 (U)	0.875	1.00	1.00	-	-
		N40/N39	N40/N39	U100X60X3.75 (U)	1.242	1.00	1.00	-	-
		N40/N41	N40/N41	U100X60X3.75 (U)	0.901	1.00	1.00	-	-
		N30/N41	N30/N41	U100X60X3.75 (U)	1.259	1.00	1.00	-	-
		N30/N42	N30/N42	U100X60X3.75 (U)	0.936	1.00	1.00	-	-
		N29/N42	N29/N42	U100X60X3.75 (U)	1.275	1.00	1.00	-	-
		N29/N43	N29/N43	U100X60X3.75 (U)	0.966	1.00	1.00	-	-
		N28/N43	N28/N43	U100X60X3.75 (U)	1.291	1.00	1.00	-	-
		N28/N44	N28/N44	U100X60X3.75 (U)	0.997	1.00	1.00	-	-
		N27/N44	N27/N44	U100X60X3.75 (U)	1.308	1.00	1.00	-	-
		N27/N45	N27/N45	U100X60X3.75 (U)	1.027	1.00	1.00	-	-
		N2/N45	N2/N45	U100X60X3.75 (U)	1.361	1.00	1.00	-	-
		N6/N47	N6/N47	U100X60X3.75 (U)	1.415	1.00	1.00	-	-
		N35/N8	N35/N8	U100X60X3.75 (U)	1.190	1.00	1.00	-	-
		N46/N47	N46/N47	U100X60X3.75 (U)	0.377	1.00	1.00	-	-
		N50/N21	N50/N21	U100X60X3.75 (U)	0.905	1.00	1.00	-	-
		N50/N22	N50/N22	U100X60X3.75 (U)	1.244	1.00	1.00	-	-
		N10/N51	N10/N51	U100X60X3.75 (U)	0.814	1.00	1.00	-	-
		N11/N51	N11/N51	U100X60X3.75 (U)	1.216	1.00	1.00	-	-
		N52/N390	N52/N63	U100X60X3.75 (U)	0.101	1.00	1.00	-	-
		N390/N395	N52/N63	U100X60X3.75 (U)	0.493	1.00	1.00	-	-
		N395/N53	N52/N63	U100X60X3.75 (U)	0.820	1.00	1.00	-	-
		N53/N54	N52/N63	U100X60X3.75 (U)	1.415	1.00	1.00	-	-
		N54/N55	N52/N63	U100X60X3.75 (U)	1.128	1.00	1.00	-	-
		N55/N64	N52/N63	U100X60X3.75 (U)	1.128	1.00	1.00	-	-
		N64/N56	N52/N63	U100X60X3.75 (U)	1.128	1.00	1.00	-	-
		N56/N57	N52/N63	U100X60X3.75 (U)	1.128	1.00	1.00	-	-
		N57/N58	N52/N63	U100X60X3.75 (U)	1.128	1.00	1.00	-	-
		N58/N59	N52/N63	U100X60X3.75 (U)	1.128	1.00	1.00	-	-
		N59/N60	N52/N63	U100X60X3.75 (U)	1.128	1.00	1.00	-	-
		N60/N61	N52/N63	U100X60X3.75 (U)	1.128	1.00	1.00	-	-
		N61/N62	N52/N63	U100X60X3.75 (U)	1.128	1.00	1.00	-	-
		N62/N63	N52/N63	U100X60X3.75 (U)	1.183	1.00	1.00	-	-
		N65/N63	N65/N63	2xU50X25X1.52([I]) (U)	1.059	1.00	1.00	-	-
		N52/N78	N52/N80	U100X60X3.75 (U)	0.573	1.00	1.00	-	-
		N78/N79	N52/N80	U100X60X3.75 (U)	0.790	1.00	1.00	-	-
		N79/N80	N52/N80	U100X60X3.75 (U)	1.364	1.00	1.00	-	-
		N80/N81	N80/N65	U100X60X3.75 (U)	1.120	1.00	1.00	-	-



Descrição									
Material		Barra (Ni/Nf)	Peça (Ni/Nf)	Perfil(Série)	Comprimento (m)	$\beta_{xy}$	$\beta_{xz}$	Lb <sup>Sup.</sup> (m)	Lb <sup>Inf.</sup> (m)
Tipo	Designação								
		N81/N82	N80/N65	U100X60X3.75 (U)	1.120	1.00	1.00	-	-
		N82/N83	N80/N65	U100X60X3.75 (U)	1.120	1.00	1.00	-	-
		N83/N84	N80/N65	U100X60X3.75 (U)	1.120	1.00	1.00	-	-
		N84/N89	N80/N65	U100X60X3.75 (U)	1.120	1.00	1.00	-	-
		N89/N85	N80/N65	U100X60X3.75 (U)	1.120	1.00	1.00	-	-
		N85/N86	N80/N65	U100X60X3.75 (U)	1.120	1.00	1.00	-	-
		N86/N87	N80/N65	U100X60X3.75 (U)	1.120	1.00	1.00	-	-
		N87/N88	N80/N65	U100X60X3.75 (U)	1.120	1.00	1.00	-	-
		N88/N65	N80/N65	U100X60X3.75 (U)	1.175	1.00	1.00	-	-
		N92/N91	N92/N77	U100X60X3.75 (U)	1.364	1.00	1.00	-	-
		N91/N90	N92/N77	U100X60X3.75 (U)	0.790	1.00	1.00	-	-
		N90/N77	N92/N77	U100X60X3.75 (U)	0.573	1.00	1.00	-	-
		N92/N93	N92/N65	U100X60X3.75 (U)	1.120	1.00	1.00	-	-
		N93/N94	N92/N65	U100X60X3.75 (U)	1.120	1.00	1.00	-	-
		N94/N95	N92/N65	U100X60X3.75 (U)	1.120	1.00	1.00	-	-
		N95/N96	N92/N65	U100X60X3.75 (U)	1.120	1.00	1.00	-	-
		N96/N97	N92/N65	U100X60X3.75 (U)	1.120	1.00	1.00	-	-
		N97/N98	N92/N65	U100X60X3.75 (U)	1.120	1.00	1.00	-	-
		N98/N99	N92/N65	U100X60X3.75 (U)	1.120	1.00	1.00	-	-
		N99/N100	N92/N65	U100X60X3.75 (U)	1.120	1.00	1.00	-	-
		N100/N101	N92/N65	U100X60X3.75 (U)	1.120	1.00	1.00	-	-
		N101/N65	N92/N65	U100X60X3.75 (U)	1.175	1.00	1.00	-	-
		N80/N54	N80/N54	U100X60X3.75 (U)	0.753	1.00	1.00	-	-
		N92/N75	N92/N75	U100X60X3.75 (U)	0.753	1.00	1.00	-	-
		N88/N62	N88/N62	U100X60X3.75 (U)	1.027	1.00	1.00	-	-
		N87/N61	N87/N61	U100X60X3.75 (U)	0.997	1.00	1.00	-	-
		N86/N60	N86/N60	U100X60X3.75 (U)	0.966	1.00	1.00	-	-
		N85/N59	N85/N59	U100X60X3.75 (U)	0.936	1.00	1.00	-	-
		N84/N57	N84/N57	U100X60X3.75 (U)	0.875	1.00	1.00	-	-
		N83/N56	N83/N56	U100X60X3.75 (U)	0.845	1.00	1.00	-	-
		N81/N55	N81/N55	U100X60X3.75 (U)	0.784	1.00	1.00	-	-
		N81/N54	N81/N54	U100X60X3.75 (U)	1.190	1.00	1.00	-	-
		N82/N55	N82/N55	U100X60X3.75 (U)	1.202	1.00	1.00	-	-
		N84/N56	N84/N56	U100X60X3.75 (U)	1.230	1.00	1.00	-	-
		N85/N58	N85/N58	U100X60X3.75 (U)	1.259	1.00	1.00	-	-
		N86/N59	N86/N59	U100X60X3.75 (U)	1.275	1.00	1.00	-	-
		N87/N60	N87/N60	U100X60X3.75 (U)	1.291	1.00	1.00	-	-
		N88/N61	N88/N61	U100X60X3.75 (U)	1.308	1.00	1.00	-	-
		N80/N53	N80/N53	U100X60X3.75 (U)	1.415	1.00	1.00	-	-
		N79/N53	N79/N53	U100X60X3.75 (U)	0.377	1.00	1.00	-	-
		N65/N62	N65/N62	U100X60X3.75 (U)	1.361	1.00	1.00	-	-
		N93/N74	N93/N74	U100X60X3.75 (U)	0.784	1.00	1.00	-	-
		N94/N74	N94/N74	U100X60X3.75 (U)	1.202	1.00	1.00	-	-
		N94/N73	N94/N73	U100X60X3.75 (U)	0.810	1.00	1.00	-	-
		N95/N73	N95/N73	U100X60X3.75 (U)	1.228	1.00	1.00	-	-
		N95/N72	N95/N72	U100X60X3.75 (U)	0.845	1.00	1.00	-	-
		N96/N72	N96/N72	U100X60X3.75 (U)	1.230	1.00	1.00	-	-





Descrição									
Material		Barra (Ni/Nf)	Peça (Ni/Nf)	Perfil(Série)	Comprimento (m)	$\beta_{xy}$	$\beta_{xz}$	Lb <sub>Sup.</sub> (m)	Lb <sub>Inf.</sub> (m)
Tipo	Designação								
		N96/N71	N96/N71	U100X60X3.75 (U)	0.875	1.00	1.00	-	-
		N102/N71	N102/N71	U100X60X3.75 (U)	1.242	1.00	1.00	-	-
		N102/N70	N102/N70	U100X60X3.75 (U)	0.901	1.00	1.00	-	-
		N98/N70	N98/N70	U100X60X3.75 (U)	1.259	1.00	1.00	-	-
		N98/N69	N98/N69	U100X60X3.75 (U)	0.936	1.00	1.00	-	-
		N99/N69	N99/N69	U100X60X3.75 (U)	1.275	1.00	1.00	-	-
		N99/N68	N99/N68	U100X60X3.75 (U)	0.966	1.00	1.00	-	-
		N100/N68	N100/N68	U100X60X3.75 (U)	1.291	1.00	1.00	-	-
		N100/N67	N100/N67	U100X60X3.75 (U)	0.997	1.00	1.00	-	-
		N101/N67	N101/N67	U100X60X3.75 (U)	1.308	1.00	1.00	-	-
		N101/N66	N101/N66	U100X60X3.75 (U)	1.027	1.00	1.00	-	-
		N65/N66	N65/N66	U100X60X3.75 (U)	1.361	1.00	1.00	-	-
		N92/N76	N92/N76	U100X60X3.75 (U)	1.415	1.00	1.00	-	-
		N93/N75	N93/N75	U100X60X3.75 (U)	1.190	1.00	1.00	-	-
		N91/N76	N91/N76	U100X60X3.75 (U)	0.377	1.00	1.00	-	-
		N89/N58	N89/N58	U100X60X3.75 (U)	0.905	1.00	1.00	-	-
		N89/N57	N89/N57	U100X60X3.75 (U)	1.244	1.00	1.00	-	-
		N82/N64	N82/N64	U100X60X3.75 (U)	0.814	1.00	1.00	-	-
		N83/N64	N83/N64	U100X60X3.75 (U)	1.216	1.00	1.00	-	-
		N114/N112	N114/N112	2xU50X25X1.52([J]) (U)	1.059	1.00	1.00	-	-
		N126/N410	N126/N112	U100X60X3.75 (U)	0.100	1.00	1.00	-	-
		N410/N405	N126/N112	U100X60X3.75 (U)	0.494	1.00	1.00	-	-
		N405/N125	N126/N112	U100X60X3.75 (U)	0.820	1.00	1.00	-	-
		N125/N124	N126/N112	U100X60X3.75 (U)	1.415	1.00	1.00	-	-
		N124/N123	N126/N112	U100X60X3.75 (U)	1.128	1.00	1.00	-	-
		N123/N122	N126/N112	U100X60X3.75 (U)	1.111	1.00	1.00	-	-
		N122/N121	N126/N112	U100X60X3.75 (U)	1.145	1.00	1.00	-	-
		N121/N120	N126/N112	U100X60X3.75 (U)	1.128	1.00	1.00	-	-
		N120/N119	N126/N112	U100X60X3.75 (U)	1.128	1.00	1.00	-	-
		N119/N118	N126/N112	U100X60X3.75 (U)	1.128	1.00	1.00	-	-
		N118/N117	N126/N112	U100X60X3.75 (U)	1.128	1.00	1.00	-	-
		N117/N116	N126/N112	U100X60X3.75 (U)	1.128	1.00	1.00	-	-
		N116/N115	N126/N112	U100X60X3.75 (U)	1.128	1.00	1.00	-	-
		N115/N112	N126/N112	U100X60X3.75 (U)	1.183	1.00	1.00	-	-
		N127/N128	N127/N114	U100X60X3.75 (U)	1.120	1.00	1.00	-	-
		N128/N129	N127/N114	U100X60X3.75 (U)	1.120	1.00	1.00	-	-
		N129/N130	N127/N114	U100X60X3.75 (U)	1.120	1.00	1.00	-	-
		N130/N131	N127/N114	U100X60X3.75 (U)	1.120	1.00	1.00	-	-
		N131/N136	N127/N114	U100X60X3.75 (U)	1.120	1.00	1.00	-	-
		N136/N132	N127/N114	U100X60X3.75 (U)	1.120	1.00	1.00	-	-
		N132/N133	N127/N114	U100X60X3.75 (U)	1.120	1.00	1.00	-	-
		N133/N134	N127/N114	U100X60X3.75 (U)	1.120	1.00	1.00	-	-
		N134/N135	N127/N114	U100X60X3.75 (U)	1.120	1.00	1.00	-	-
		N135/N114	N127/N114	U100X60X3.75 (U)	1.175	1.00	1.00	-	-
		N139/N138	N139/N126	U100X60X3.75 (U)	1.364	1.00	1.00	-	-
		N138/N137	N139/N126	U100X60X3.75 (U)	0.790	1.00	1.00	-	-
		N137/N126	N139/N126	U100X60X3.75 (U)	0.573	1.00	1.00	-	-



Descrição									
Material		Barra (Ni/Nf)	Peça (Ni/Nf)	Perfil(Série)	Comprimento (m)	$\beta_{xy}$	$\beta_{xz}$	Lb <sup>Sup.</sup> (m)	Lb <sup>Inf.</sup> (m)
Tipo	Designação								
		N139/N140	N139/N114	U100X60X3.75 (U)	1.120	1.00	1.00	-	-
		N140/N141	N139/N114	U100X60X3.75 (U)	1.120	1.00	1.00	-	-
		N141/N142	N139/N114	U100X60X3.75 (U)	1.120	1.00	1.00	-	-
		N142/N143	N139/N114	U100X60X3.75 (U)	1.120	1.00	1.00	-	-
		N143/N144	N139/N114	U100X60X3.75 (U)	1.120	1.00	1.00	-	-
		N144/N145	N139/N114	U100X60X3.75 (U)	1.120	1.00	1.00	-	-
		N145/N146	N139/N114	U100X60X3.75 (U)	1.120	1.00	1.00	-	-
		N146/N147	N139/N114	U100X60X3.75 (U)	1.120	1.00	1.00	-	-
		N147/N148	N139/N114	U100X60X3.75 (U)	1.120	1.00	1.00	-	-
		N148/N114	N139/N114	U100X60X3.75 (U)	1.175	1.00	1.00	-	-
		N127/N103	N127/N103	U100X60X3.75 (U)	0.753	1.00	1.00	-	-
		N139/N124	N139/N124	U100X60X3.75 (U)	0.753	1.00	1.00	-	-
		N135/N111	N135/N111	U100X60X3.75 (U)	1.027	1.00	1.00	-	-
		N134/N110	N134/N110	U100X60X3.75 (U)	0.997	1.00	1.00	-	-
		N133/N109	N133/N109	U100X60X3.75 (U)	0.966	1.00	1.00	-	-
		N132/N108	N132/N108	U100X60X3.75 (U)	0.936	1.00	1.00	-	-
		N131/N106	N131/N106	U100X60X3.75 (U)	0.875	1.00	1.00	-	-
		N130/N105	N130/N105	U100X60X3.75 (U)	0.845	1.00	1.00	-	-
		N128/N104	N128/N104	U100X60X3.75 (U)	0.784	1.00	1.00	-	-
		N128/N103	N128/N103	U100X60X3.75 (U)	1.190	1.00	1.00	-	-
		N129/N104	N129/N104	U100X60X3.75 (U)	1.202	1.00	1.00	-	-
		N131/N105	N131/N105	U100X60X3.75 (U)	1.230	1.00	1.00	-	-
		N132/N107	N132/N107	U100X60X3.75 (U)	1.259	1.00	1.00	-	-
		N133/N108	N133/N108	U100X60X3.75 (U)	1.275	1.00	1.00	-	-
		N134/N109	N134/N109	U100X60X3.75 (U)	1.291	1.00	1.00	-	-
		N135/N110	N135/N110	U100X60X3.75 (U)	1.308	1.00	1.00	-	-
		N114/N111	N114/N111	U100X60X3.75 (U)	1.361	1.00	1.00	-	-
		N140/N123	N140/N123	U100X60X3.75 (U)	0.784	1.00	1.00	-	-
		N141/N123	N141/N123	U100X60X3.75 (U)	1.202	1.00	1.00	-	-
		N141/N122	N141/N122	U100X60X3.75 (U)	0.810	1.00	1.00	-	-
		N142/N122	N142/N122	U100X60X3.75 (U)	1.228	1.00	1.00	-	-
		N142/N121	N142/N121	U100X60X3.75 (U)	0.845	1.00	1.00	-	-
		N143/N121	N143/N121	U100X60X3.75 (U)	1.230	1.00	1.00	-	-
		N143/N120	N143/N120	U100X60X3.75 (U)	0.875	1.00	1.00	-	-
		N149/N120	N149/N120	U100X60X3.75 (U)	1.242	1.00	1.00	-	-
		N149/N119	N149/N119	U100X60X3.75 (U)	0.901	1.00	1.00	-	-
		N145/N119	N145/N119	U100X60X3.75 (U)	1.259	1.00	1.00	-	-
		N145/N118	N145/N118	U100X60X3.75 (U)	0.936	1.00	1.00	-	-
		N146/N118	N146/N118	U100X60X3.75 (U)	1.275	1.00	1.00	-	-
		N146/N117	N146/N117	U100X60X3.75 (U)	0.966	1.00	1.00	-	-
		N147/N117	N147/N117	U100X60X3.75 (U)	1.291	1.00	1.00	-	-
		N147/N116	N147/N116	U100X60X3.75 (U)	0.997	1.00	1.00	-	-
		N148/N116	N148/N116	U100X60X3.75 (U)	1.308	1.00	1.00	-	-
		N148/N115	N148/N115	U100X60X3.75 (U)	1.027	1.00	1.00	-	-
		N114/N115	N114/N115	U100X60X3.75 (U)	1.361	1.00	1.00	-	-
		N139/N125	N139/N125	U100X60X3.75 (U)	1.415	1.00	1.00	-	-
		N140/N124	N140/N124	U100X60X3.75 (U)	1.190	1.00	1.00	-	-



Descrição									
Material		Barra (Ni/Nf)	Peça (Ni/Nf)	Perfil(Série)	Comprimento (m)	$\beta_{xy}$	$\beta_{xz}$	Lb <sub>Sup.</sub> (m)	Lb <sub>Inf.</sub> (m)
Tipo	Designação								
		N138/N125	N138/N125	U100X60X3.75 (U)	0.377	1.00	1.00	-	-
		N136/N107	N136/N107	U100X60X3.75 (U)	0.905	1.00	1.00	-	-
		N136/N106	N136/N106	U100X60X3.75 (U)	1.244	1.00	1.00	-	-
		N129/N113	N129/N113	U100X60X3.75 (U)	0.814	1.00	1.00	-	-
		N130/N113	N130/N113	U100X60X3.75 (U)	1.216	1.00	1.00	-	-
		N150/N391	N150/N174	U100X60X3.75 (U)	0.101	1.00	1.00	-	-
		N391/N396	N150/N174	U100X60X3.75 (U)	0.493	1.00	1.00	-	-
		N396/N151	N150/N174	U100X60X3.75 (U)	0.820	1.00	1.00	-	-
		N151/N152	N150/N174	U100X60X3.75 (U)	1.415	1.00	1.00	-	-
		N152/N153	N150/N174	U100X60X3.75 (U)	1.128	1.00	1.00	-	-
		N153/N154	N150/N174	U100X60X3.75 (U)	1.128	1.00	1.00	-	-
		N154/N160	N150/N174	U100X60X3.75 (U)	1.128	1.00	1.00	-	-
		N160/N161	N150/N174	U100X60X3.75 (U)	1.128	1.00	1.00	-	-
		N161/N162	N150/N174	U100X60X3.75 (U)	1.128	1.00	1.00	-	-
		N162/N167	N150/N174	U100X60X3.75 (U)	1.128	1.00	1.00	-	-
		N167/N168	N150/N174	U100X60X3.75 (U)	1.128	1.00	1.00	-	-
		N168/N169	N150/N174	U100X60X3.75 (U)	1.128	1.00	1.00	-	-
		N169/N170	N150/N174	U100X60X3.75 (U)	1.128	1.00	1.00	-	-
		N170/N174	N150/N174	U100X60X3.75 (U)	1.183	1.00	1.00	-	-
		N157/N158	N157/N175	U100X60X3.75 (U)	1.120	1.00	1.00	-	-
		N158/N159	N157/N175	U100X60X3.75 (U)	1.120	1.00	1.00	-	-
		N159/N163	N157/N175	U100X60X3.75 (U)	1.120	1.00	1.00	-	-
		N163/N164	N157/N175	U100X60X3.75 (U)	1.120	1.00	1.00	-	-
		N164/N165	N157/N175	U100X60X3.75 (U)	1.120	1.00	1.00	-	-
		N165/N166	N157/N175	U100X60X3.75 (U)	1.120	1.00	1.00	-	-
		N166/N171	N157/N175	U100X60X3.75 (U)	1.120	1.00	1.00	-	-
		N171/N172	N157/N175	U100X60X3.75 (U)	1.120	1.00	1.00	-	-
		N172/N173	N157/N175	U100X60X3.75 (U)	1.120	1.00	1.00	-	-
		N173/N175	N157/N175	U100X60X3.75 (U)	1.175	1.00	1.00	-	-
		N157/N152	N157/N152	U100X60X3.75 (U)	0.753	1.00	1.00	-	-
		N158/N153	N158/N153	U100X60X3.75 (U)	0.784	1.00	1.00	-	-
		N158/N152	N158/N152	U100X60X3.75 (U)	1.190	1.00	1.00	-	-
		N159/N153	N159/N153	U100X60X3.75 (U)	1.202	1.00	1.00	-	-
		N157/N151	N157/N151	U100X60X3.75 (U)	1.415	1.00	1.00	-	-
		N156/N151	N156/N151	U100X60X3.75 (U)	0.377	1.00	1.00	-	-
		N164/N161	N164/N161	U100X60X3.75 (U)	0.875	1.00	1.00	-	-
		N163/N160	N163/N160	U100X60X3.75 (U)	0.845	1.00	1.00	-	-
		N164/N160	N164/N160	U100X60X3.75 (U)	1.230	1.00	1.00	-	-
		N165/N162	N165/N162	U100X60X3.75 (U)	0.905	1.00	1.00	-	-
		N165/N161	N165/N161	U100X60X3.75 (U)	1.244	1.00	1.00	-	-
		N159/N154	N159/N154	U100X60X3.75 (U)	0.814	1.00	1.00	-	-
		N163/N154	N163/N154	U100X60X3.75 (U)	1.216	1.00	1.00	-	-
		N172/N169	N172/N169	U100X60X3.75 (U)	0.997	1.00	1.00	-	-
		N171/N168	N171/N168	U100X60X3.75 (U)	0.966	1.00	1.00	-	-
		N166/N167	N166/N167	U100X60X3.75 (U)	0.936	1.00	1.00	-	-
		N166/N162	N166/N162	U100X60X3.75 (U)	1.259	1.00	1.00	-	-
		N171/N167	N171/N167	U100X60X3.75 (U)	1.275	1.00	1.00	-	-



Descrição									
Material		Barra (Ni/Nf)	Peça (Ni/Nf)	Perfil(Série)	Comprimento (m)	$\beta_{xy}$	$\beta_{xz}$	Lb <sup>Sup.</sup> (m)	Lb <sup>Inf.</sup> (m)
Tipo	Designação								
		N172/N168	N172/N168	U100X60X3.75 (U)	1.291	1.00	1.00	-	-
		N173/N169	N173/N169	U100X60X3.75 (U)	1.308	1.00	1.00	-	-
		N175/N174	N175/N174	2xU50X25X1.52([I]) (U)	1.059	1.00	1.00	-	-
		N199/N411	N199/N174	U100X60X3.75 (U)	0.100	1.00	1.00	-	-
		N411/N404	N199/N174	U100X60X3.75 (U)	0.494	1.00	1.00	-	-
		N404/N194	N199/N174	U100X60X3.75 (U)	0.820	1.00	1.00	-	-
		N194/N193	N199/N174	U100X60X3.75 (U)	1.415	1.00	1.00	-	-
		N193/N192	N199/N174	U100X60X3.75 (U)	1.128	1.00	1.00	-	-
		N192/N191	N199/N174	U100X60X3.75 (U)	1.111	1.00	1.00	-	-
		N191/N185	N199/N174	U100X60X3.75 (U)	1.145	1.00	1.00	-	-
		N185/N184	N199/N174	U100X60X3.75 (U)	1.128	1.00	1.00	-	-
		N184/N183	N199/N174	U100X60X3.75 (U)	1.128	1.00	1.00	-	-
		N183/N182	N199/N174	U100X60X3.75 (U)	1.128	1.00	1.00	-	-
		N182/N178	N199/N174	U100X60X3.75 (U)	1.128	1.00	1.00	-	-
		N178/N177	N199/N174	U100X60X3.75 (U)	1.128	1.00	1.00	-	-
		N177/N176	N199/N174	U100X60X3.75 (U)	1.128	1.00	1.00	-	-
		N176/N174	N199/N174	U100X60X3.75 (U)	1.183	1.00	1.00	-	-
		N196/N197	N196/N175	U100X60X3.75 (U)	1.120	1.00	1.00	-	-
		N197/N198	N196/N175	U100X60X3.75 (U)	1.120	1.00	1.00	-	-
		N198/N186	N196/N175	U100X60X3.75 (U)	1.120	1.00	1.00	-	-
		N186/N187	N196/N175	U100X60X3.75 (U)	1.120	1.00	1.00	-	-
		N187/N188	N196/N175	U100X60X3.75 (U)	1.120	1.00	1.00	-	-
		N188/N189	N196/N175	U100X60X3.75 (U)	1.120	1.00	1.00	-	-
		N189/N179	N196/N175	U100X60X3.75 (U)	1.120	1.00	1.00	-	-
		N179/N180	N196/N175	U100X60X3.75 (U)	1.120	1.00	1.00	-	-
		N180/N181	N196/N175	U100X60X3.75 (U)	1.120	1.00	1.00	-	-
		N181/N175	N196/N175	U100X60X3.75 (U)	1.175	1.00	1.00	-	-
		N173/N170	N173/N170	U100X60X3.75 (U)	1.027	1.00	1.00	-	-
		N175/N170	N175/N170	U100X60X3.75 (U)	1.361	1.00	1.00	-	-
		N180/N178	N180/N178	U100X60X3.75 (U)	1.291	1.00	1.00	-	-
		N180/N177	N180/N177	U100X60X3.75 (U)	0.997	1.00	1.00	-	-
		N181/N177	N181/N177	U100X60X3.75 (U)	1.308	1.00	1.00	-	-
		N181/N176	N181/N176	U100X60X3.75 (U)	1.027	1.00	1.00	-	-
		N175/N176	N175/N176	U100X60X3.75 (U)	1.361	1.00	1.00	-	-
		N187/N185	N187/N185	U100X60X3.75 (U)	1.230	1.00	1.00	-	-
		N187/N184	N187/N184	U100X60X3.75 (U)	0.875	1.00	1.00	-	-
		N190/N184	N190/N184	U100X60X3.75 (U)	1.242	1.00	1.00	-	-
		N190/N183	N190/N183	U100X60X3.75 (U)	0.901	1.00	1.00	-	-
		N189/N183	N189/N183	U100X60X3.75 (U)	1.259	1.00	1.00	-	-
		N189/N182	N189/N182	U100X60X3.75 (U)	0.936	1.00	1.00	-	-
		N179/N182	N179/N182	U100X60X3.75 (U)	1.275	1.00	1.00	-	-
		N179/N178	N179/N178	U100X60X3.75 (U)	0.966	1.00	1.00	-	-
		N196/N195	N196/N199	U100X60X3.75 (U)	1.364	1.00	1.00	-	-
		N195/N200	N196/N199	U100X60X3.75 (U)	0.790	1.00	1.00	-	-
		N200/N199	N196/N199	U100X60X3.75 (U)	0.573	1.00	1.00	-	-
		N196/N193	N196/N193	U100X60X3.75 (U)	0.753	1.00	1.00	-	-
		N197/N192	N197/N192	U100X60X3.75 (U)	0.784	1.00	1.00	-	-





Descrição									
Material		Barra (Ni/Nf)	Peça (Ni/Nf)	Perfil(Série)	Comprimento (m)	$\beta_{xy}$	$\beta_{xz}$	Lb <sub>Sup.</sub> (m)	Lb <sub>Inf.</sub> (m)
Tipo	Designação								
		N198/N192	N198/N192	U100X60X3.75 (U)	1.202	1.00	1.00	-	-
		N198/N191	N198/N191	U100X60X3.75 (U)	0.810	1.00	1.00	-	-
		N186/N191	N186/N191	U100X60X3.75 (U)	1.228	1.00	1.00	-	-
		N186/N185	N186/N185	U100X60X3.75 (U)	0.845	1.00	1.00	-	-
		N196/N194	N196/N194	U100X60X3.75 (U)	1.415	1.00	1.00	-	-
		N197/N193	N197/N193	U100X60X3.75 (U)	1.190	1.00	1.00	-	-
		N195/N194	N195/N194	U100X60X3.75 (U)	0.377	1.00	1.00	-	-
		N201/N392	N201/N225	U100X60X3.75 (U)	0.101	1.00	1.00	-	-
		N392/N397	N201/N225	U100X60X3.75 (U)	0.493	1.00	1.00	-	-
		N397/N202	N201/N225	U100X60X3.75 (U)	0.820	1.00	1.00	-	-
		N202/N203	N201/N225	U100X60X3.75 (U)	1.415	1.00	1.00	-	-
		N203/N204	N201/N225	U100X60X3.75 (U)	1.128	1.00	1.00	-	-
		N204/N205	N201/N225	U100X60X3.75 (U)	1.128	1.00	1.00	-	-
		N205/N211	N201/N225	U100X60X3.75 (U)	1.128	1.00	1.00	-	-
		N211/N212	N201/N225	U100X60X3.75 (U)	1.128	1.00	1.00	-	-
		N212/N213	N201/N225	U100X60X3.75 (U)	1.128	1.00	1.00	-	-
		N213/N218	N201/N225	U100X60X3.75 (U)	1.128	1.00	1.00	-	-
		N218/N219	N201/N225	U100X60X3.75 (U)	1.128	1.00	1.00	-	-
		N219/N220	N201/N225	U100X60X3.75 (U)	1.128	1.00	1.00	-	-
		N220/N221	N201/N225	U100X60X3.75 (U)	1.128	1.00	1.00	-	-
		N221/N225	N201/N225	U100X60X3.75 (U)	1.183	1.00	1.00	-	-
		N201/N206	N201/N208	U100X60X3.75 (U)	0.573	1.00	1.00	-	-
		N206/N207	N201/N208	U100X60X3.75 (U)	0.790	1.00	1.00	-	-
		N207/N208	N201/N208	U100X60X3.75 (U)	1.364	1.00	1.00	-	-
		N208/N209	N208/N226	U100X60X3.75 (U)	1.120	1.00	1.00	-	-
		N209/N210	N208/N226	U100X60X3.75 (U)	1.120	1.00	1.00	-	-
		N210/N214	N208/N226	U100X60X3.75 (U)	1.120	1.00	1.00	-	-
		N214/N215	N208/N226	U100X60X3.75 (U)	1.120	1.00	1.00	-	-
		N215/N216	N208/N226	U100X60X3.75 (U)	1.120	1.00	1.00	-	-
		N216/N217	N208/N226	U100X60X3.75 (U)	1.120	1.00	1.00	-	-
		N217/N222	N208/N226	U100X60X3.75 (U)	1.120	1.00	1.00	-	-
		N222/N223	N208/N226	U100X60X3.75 (U)	1.120	1.00	1.00	-	-
		N223/N224	N208/N226	U100X60X3.75 (U)	1.120	1.00	1.00	-	-
		N224/N226	N208/N226	U100X60X3.75 (U)	1.175	1.00	1.00	-	-
		N208/N203	N208/N203	U100X60X3.75 (U)	0.753	1.00	1.00	-	-
		N209/N204	N209/N204	U100X60X3.75 (U)	0.784	1.00	1.00	-	-
		N209/N203	N209/N203	U100X60X3.75 (U)	1.190	1.00	1.00	-	-
		N210/N204	N210/N204	U100X60X3.75 (U)	1.202	1.00	1.00	-	-
		N208/N202	N208/N202	U100X60X3.75 (U)	1.415	1.00	1.00	-	-
		N207/N202	N207/N202	U100X60X3.75 (U)	0.377	1.00	1.00	-	-
		N215/N212	N215/N212	U100X60X3.75 (U)	0.875	1.00	1.00	-	-
		N214/N211	N214/N211	U100X60X3.75 (U)	0.845	1.00	1.00	-	-
		N215/N211	N215/N211	U100X60X3.75 (U)	1.230	1.00	1.00	-	-
		N216/N213	N216/N213	U100X60X3.75 (U)	0.905	1.00	1.00	-	-
		N216/N212	N216/N212	U100X60X3.75 (U)	1.244	1.00	1.00	-	-
		N210/N205	N210/N205	U100X60X3.75 (U)	0.814	1.00	1.00	-	-
		N214/N205	N214/N205	U100X60X3.75 (U)	1.216	1.00	1.00	-	-



Descrição									
Material		Barra (Ni/Nf)	Peça (Ni/Nf)	Perfil(Série)	Comprimento (m)	$\beta_{xy}$	$\beta_{xz}$	Lb <sup>Sup.</sup> (m)	Lb <sup>Inf.</sup> (m)
Tipo	Designação								
		N223/N220	N223/N220	U100X60X3.75 (U)	0.997	1.00	1.00	-	-
		N222/N219	N222/N219	U100X60X3.75 (U)	0.966	1.00	1.00	-	-
		N217/N218	N217/N218	U100X60X3.75 (U)	0.936	1.00	1.00	-	-
		N217/N213	N217/N213	U100X60X3.75 (U)	1.259	1.00	1.00	-	-
		N222/N218	N222/N218	U100X60X3.75 (U)	1.275	1.00	1.00	-	-
		N223/N219	N223/N219	U100X60X3.75 (U)	1.291	1.00	1.00	-	-
		N224/N220	N224/N220	U100X60X3.75 (U)	1.308	1.00	1.00	-	-
		N226/N225	N226/N225	2xU50X25X1.52([I]) (U)	1.059	1.00	1.00	-	-
		N250/N412	N250/N225	U100X60X3.75 (U)	0.100	1.00	1.00	-	-
		N412/N651	N250/N225	U100X60X3.75 (U)	0.494	1.00	1.00	-	-
		N651/N245	N250/N225	U100X60X3.75 (U)	0.820	1.00	1.00	-	-
		N245/N244	N250/N225	U100X60X3.75 (U)	1.415	1.00	1.00	-	-
		N244/N243	N250/N225	U100X60X3.75 (U)	1.128	1.00	1.00	-	-
		N243/N242	N250/N225	U100X60X3.75 (U)	1.111	1.00	1.00	-	-
		N242/N236	N250/N225	U100X60X3.75 (U)	1.145	1.00	1.00	-	-
		N236/N235	N250/N225	U100X60X3.75 (U)	1.128	1.00	1.00	-	-
		N235/N234	N250/N225	U100X60X3.75 (U)	1.128	1.00	1.00	-	-
		N234/N233	N250/N225	U100X60X3.75 (U)	1.128	1.00	1.00	-	-
		N233/N229	N250/N225	U100X60X3.75 (U)	1.128	1.00	1.00	-	-
		N229/N228	N250/N225	U100X60X3.75 (U)	1.128	1.00	1.00	-	-
		N228/N227	N250/N225	U100X60X3.75 (U)	1.128	1.00	1.00	-	-
		N227/N225	N250/N225	U100X60X3.75 (U)	1.183	1.00	1.00	-	-
		N247/N248	N247/N226	U100X60X3.75 (U)	1.120	1.00	1.00	-	-
		N248/N249	N247/N226	U100X60X3.75 (U)	1.120	1.00	1.00	-	-
		N249/N237	N247/N226	U100X60X3.75 (U)	1.120	1.00	1.00	-	-
		N237/N238	N247/N226	U100X60X3.75 (U)	1.120	1.00	1.00	-	-
		N238/N239	N247/N226	U100X60X3.75 (U)	1.120	1.00	1.00	-	-
		N239/N240	N247/N226	U100X60X3.75 (U)	1.120	1.00	1.00	-	-
		N240/N230	N247/N226	U100X60X3.75 (U)	1.120	1.00	1.00	-	-
		N230/N231	N247/N226	U100X60X3.75 (U)	1.120	1.00	1.00	-	-
		N231/N232	N247/N226	U100X60X3.75 (U)	1.120	1.00	1.00	-	-
		N232/N226	N247/N226	U100X60X3.75 (U)	1.175	1.00	1.00	-	-
		N224/N221	N224/N221	U100X60X3.75 (U)	1.027	1.00	1.00	-	-
		N226/N221	N226/N221	U100X60X3.75 (U)	1.361	1.00	1.00	-	-
		N231/N229	N231/N229	U100X60X3.75 (U)	1.291	1.00	1.00	-	-
		N231/N228	N231/N228	U100X60X3.75 (U)	0.997	1.00	1.00	-	-
		N232/N228	N232/N228	U100X60X3.75 (U)	1.308	1.00	1.00	-	-
		N232/N227	N232/N227	U100X60X3.75 (U)	1.027	1.00	1.00	-	-
		N226/N227	N226/N227	U100X60X3.75 (U)	1.361	1.00	1.00	-	-
		N238/N236	N238/N236	U100X60X3.75 (U)	1.230	1.00	1.00	-	-
		N238/N235	N238/N235	U100X60X3.75 (U)	0.875	1.00	1.00	-	-
		N241/N235	N241/N235	U100X60X3.75 (U)	1.242	1.00	1.00	-	-
		N241/N234	N241/N234	U100X60X3.75 (U)	0.901	1.00	1.00	-	-
		N240/N234	N240/N234	U100X60X3.75 (U)	1.259	1.00	1.00	-	-
		N240/N233	N240/N233	U100X60X3.75 (U)	0.936	1.00	1.00	-	-
		N230/N233	N230/N233	U100X60X3.75 (U)	1.275	1.00	1.00	-	-
		N230/N229	N230/N229	U100X60X3.75 (U)	0.966	1.00	1.00	-	-



Descrição									
Material		Barra (Ni/Nf)	Peça (Ni/Nf)	Perfil(Série)	Comprimento (m)	$\beta_{xy}$	$\beta_{xz}$	Lb <sub>Sup.</sub> (m)	Lb <sub>Inf.</sub> (m)
Tipo	Designação								
		N247/N246	N247/N250	U100X60X3.75 (U)	1.364	1.00	1.00	-	-
		N246/N251	N247/N250	U100X60X3.75 (U)	0.790	1.00	1.00	-	-
		N251/N250	N247/N250	U100X60X3.75 (U)	0.573	1.00	1.00	-	-
		N247/N244	N247/N244	U100X60X3.75 (U)	0.753	1.00	1.00	-	-
		N248/N243	N248/N243	U100X60X3.75 (U)	0.784	1.00	1.00	-	-
		N249/N243	N249/N243	U100X60X3.75 (U)	1.202	1.00	1.00	-	-
		N249/N242	N249/N242	U100X60X3.75 (U)	0.810	1.00	1.00	-	-
		N237/N242	N237/N242	U100X60X3.75 (U)	1.228	1.00	1.00	-	-
		N237/N236	N237/N236	U100X60X3.75 (U)	0.845	1.00	1.00	-	-
		N247/N245	N247/N245	U100X60X3.75 (U)	1.415	1.00	1.00	-	-
		N248/N244	N248/N244	U100X60X3.75 (U)	1.190	1.00	1.00	-	-
		N246/N245	N246/N245	U100X60X3.75 (U)	0.377	1.00	1.00	-	-
		N253/N385	N253/N252	U100X60X3.75 (U)	0.100	1.00	1.00	-	-
		N385/N403	N253/N252	U100X60X3.75 (U)	0.495	1.00	1.00	-	-
		N403/N284	N253/N252	U100X60X3.75 (U)	0.820	1.00	1.00	-	-
		N284/N378	N253/N252	U100X60X3.75 (U)	1.417	1.00	1.00	-	-
		N378/N272	N253/N252	U100X60X3.75 (U)	1.130	1.00	1.00	-	-
		N272/N274	N253/N252	U100X60X3.75 (U)	1.130	1.00	1.00	-	-
		N274/N276	N253/N252	U100X60X3.75 (U)	1.130	1.00	1.00	-	-
		N276/N278	N253/N252	U100X60X3.75 (U)	1.130	1.00	1.00	-	-
		N278/N280	N253/N252	U100X60X3.75 (U)	1.130	1.00	1.00	-	-
		N280/N282	N253/N252	U100X60X3.75 (U)	1.130	1.00	1.00	-	-
		N282/N252	N253/N252	U100X60X3.75 (U)	1.264	1.00	1.00	-	-
		N254/N382	N254/N252	U100X60X3.75 (U)	0.100	1.00	1.00	-	-
		N382/N393	N254/N252	U100X60X3.75 (U)	0.495	1.00	1.00	-	-
		N393/N286	N254/N252	U100X60X3.75 (U)	0.820	1.00	1.00	-	-
		N286/N258	N254/N252	U100X60X3.75 (U)	1.417	1.00	1.00	-	-
		N258/N260	N254/N252	U100X60X3.75 (U)	1.130	1.00	1.00	-	-
		N260/N262	N254/N252	U100X60X3.75 (U)	1.130	1.00	1.00	-	-
		N262/N264	N254/N252	U100X60X3.75 (U)	1.130	1.00	1.00	-	-
		N264/N266	N254/N252	U100X60X3.75 (U)	1.130	1.00	1.00	-	-
		N266/N268	N254/N252	U100X60X3.75 (U)	1.130	1.00	1.00	-	-
		N268/N270	N254/N252	U100X60X3.75 (U)	1.130	1.00	1.00	-	-
		N270/N252	N254/N252	U100X60X3.75 (U)	1.264	1.00	1.00	-	-
		N254/N287	N254/N255	U100X60X3.75 (U)	0.573	1.00	1.00	-	-
		N287/N285	N254/N255	U100X60X3.75 (U)	0.790	1.00	1.00	-	-
		N285/N255	N254/N255	U100X60X3.75 (U)	1.364	1.00	1.00	-	-
		N255/N259	N255/N256	U100X60X3.75 (U)	1.120	1.00	1.00	-	-
		N259/N261	N255/N256	U100X60X3.75 (U)	1.120	1.00	1.00	-	-
		N261/N263	N255/N256	U100X60X3.75 (U)	1.120	1.00	1.00	-	-
		N263/N265	N255/N256	U100X60X3.75 (U)	1.120	1.00	1.00	-	-
		N265/N267	N255/N256	U100X60X3.75 (U)	1.120	1.00	1.00	-	-
		N267/N269	N255/N256	U100X60X3.75 (U)	1.120	1.00	1.00	-	-
		N269/N256	N255/N256	U100X60X3.75 (U)	1.253	1.00	1.00	-	-
		N257/N283	N257/N253	U100X60X3.75 (U)	1.364	1.00	1.00	-	-
		N283/N288	N257/N253	U100X60X3.75 (U)	0.790	1.00	1.00	-	-
		N288/N253	N257/N253	U100X60X3.75 (U)	0.573	1.00	1.00	-	-



Descrição									
Material		Barra (Ni/Nf)	Peça (Ni/Nf)	Perfil(Série)	Comprimento (m)	$\beta_{xy}$	$\beta_{xz}$	Lb <sup>Sup.</sup> (m)	Lb <sup>Inf.</sup> (m)
Tipo	Designação								
		N257/N271	N257/N256	U100X60X3.75 (U)	1.120	1.00	1.00	-	-
		N271/N273	N257/N256	U100X60X3.75 (U)	1.120	1.00	1.00	-	-
		N273/N275	N257/N256	U100X60X3.75 (U)	1.120	1.00	1.00	-	-
		N275/N277	N257/N256	U100X60X3.75 (U)	1.120	1.00	1.00	-	-
		N277/N279	N257/N256	U100X60X3.75 (U)	1.120	1.00	1.00	-	-
		N279/N281	N257/N256	U100X60X3.75 (U)	1.120	1.00	1.00	-	-
		N281/N256	N257/N256	U100X60X3.75 (U)	1.253	1.00	1.00	-	-
		N256/N252	N256/N252	2xU50X25X1.52([I]) (U)	1.059	1.00	1.00	-	-
		N255/N258	N255/N258	U100X60X3.75 (U)	0.765	1.00	1.00	-	-
		N285/N286	N285/N286	U100X60X3.75 (U)	0.382	1.00	1.00	-	-
		N255/N286	N255/N286	U100X60X3.75 (U)	1.417	1.00	1.00	-	-
		N259/N258	N259/N258	U100X60X3.75 (U)	1.198	1.00	1.00	-	-
		N259/N260	N259/N260	U100X60X3.75 (U)	0.806	1.00	1.00	-	-
		N261/N260	N261/N260	U100X60X3.75 (U)	1.216	1.00	1.00	-	-
		N261/N262	N261/N262	U100X60X3.75 (U)	0.848	1.00	1.00	-	-
		N263/N262	N263/N262	U100X60X3.75 (U)	1.235	1.00	1.00	-	-
		N263/N264	N263/N264	U100X60X3.75 (U)	0.889	1.00	1.00	-	-
		N265/N264	N265/N264	U100X60X3.75 (U)	1.255	1.00	1.00	-	-
		N265/N266	N265/N266	U100X60X3.75 (U)	0.930	1.00	1.00	-	-
		N267/N266	N267/N266	U100X60X3.75 (U)	1.276	1.00	1.00	-	-
		N267/N268	N267/N268	U100X60X3.75 (U)	0.971	1.00	1.00	-	-
		N269/N268	N269/N268	U100X60X3.75 (U)	1.298	1.00	1.00	-	-
		N269/N270	N269/N270	U100X60X3.75 (U)	1.013	1.00	1.00	-	-
		N256/N270	N256/N270	U100X60X3.75 (U)	1.413	1.00	1.00	-	-
		N256/N282	N256/N282	U100X60X3.75 (U)	1.413	1.00	1.00	-	-
		N281/N282	N281/N282	U100X60X3.75 (U)	1.013	1.00	1.00	-	-
		N281/N280	N281/N280	U100X60X3.75 (U)	1.298	1.00	1.00	-	-
		N279/N280	N279/N280	U100X60X3.75 (U)	0.971	1.00	1.00	-	-
		N279/N278	N279/N278	U100X60X3.75 (U)	1.276	1.00	1.00	-	-
		N277/N278	N277/N278	U100X60X3.75 (U)	0.930	1.00	1.00	-	-
		N277/N276	N277/N276	U100X60X3.75 (U)	1.255	1.00	1.00	-	-
		N275/N276	N275/N276	U100X60X3.75 (U)	0.889	1.00	1.00	-	-
		N275/N274	N275/N274	U100X60X3.75 (U)	1.235	1.00	1.00	-	-
		N273/N274	N273/N274	U100X60X3.75 (U)	0.848	1.00	1.00	-	-
		N273/N272	N273/N272	U100X60X3.75 (U)	1.216	1.00	1.00	-	-
		N271/N272	N271/N272	U100X60X3.75 (U)	0.806	1.00	1.00	-	-
		N257/N284	N257/N284	U100X60X3.75 (U)	1.417	1.00	1.00	-	-
		N283/N284	N283/N284	U100X60X3.75 (U)	0.382	1.00	1.00	-	-
		N290/N384	N290/N309	U100X60X3.75 (U)	0.100	1.00	1.00	-	-
		N384/N398	N290/N309	U100X60X3.75 (U)	0.495	1.00	1.00	-	-
		N398/N289	N290/N309	U100X60X3.75 (U)	0.820	1.00	1.00	-	-
		N289/N293	N290/N309	U100X60X3.75 (U)	1.417	1.00	1.00	-	-
		N293/N295	N290/N309	U100X60X3.75 (U)	1.130	1.00	1.00	-	-
		N295/N297	N290/N309	U100X60X3.75 (U)	1.130	1.00	1.00	-	-
		N297/N299	N290/N309	U100X60X3.75 (U)	1.130	1.00	1.00	-	-
		N299/N301	N290/N309	U100X60X3.75 (U)	1.130	1.00	1.00	-	-
		N301/N303	N290/N309	U100X60X3.75 (U)	1.130	1.00	1.00	-	-





Descrição									
Material		Barra (Ni/Nf)	Peça (Ni/Nf)	Perfil(Série)	Comprimento (m)	$\beta_{xy}$	$\beta_{xz}$	Lb <sub>Sup.</sub> (m)	Lb <sub>Inf.</sub> (m)
Tipo	Designação								
		N303/N307	N290/N309	U100X60X3.75 (U)	1.130	1.00	1.00	-	-
		N307/N309	N290/N309	U100X60X3.75 (U)	1.264	1.00	1.00	-	-
		N290/N291	N290/N294	U100X60X3.75 (U)	0.573	1.00	1.00	-	-
		N291/N292	N290/N294	U100X60X3.75 (U)	0.790	1.00	1.00	-	-
		N292/N294	N290/N294	U100X60X3.75 (U)	1.364	1.00	1.00	-	-
		N292/N289	N292/N289	U100X60X3.75 (U)	0.382	1.00	1.00	-	-
		N294/N289	N294/N289	U100X60X3.75 (U)	1.417	1.00	1.00	-	-
		N294/N296	N294/N306	U100X60X3.75 (U)	1.120	1.00	1.00	-	-
		N296/N298	N294/N306	U100X60X3.75 (U)	1.120	1.00	1.00	-	-
		N298/N300	N294/N306	U100X60X3.75 (U)	1.120	1.00	1.00	-	-
		N300/N302	N294/N306	U100X60X3.75 (U)	1.120	1.00	1.00	-	-
		N302/N304	N294/N306	U100X60X3.75 (U)	1.120	1.00	1.00	-	-
		N304/N305	N294/N306	U100X60X3.75 (U)	1.120	1.00	1.00	-	-
		N305/N306	N294/N306	U100X60X3.75 (U)	1.253	1.00	1.00	-	-
		N294/N293	N294/N293	U100X60X3.75 (U)	0.765	1.00	1.00	-	-
		N296/N293	N296/N293	U100X60X3.75 (U)	1.198	1.00	1.00	-	-
		N296/N295	N296/N295	U100X60X3.75 (U)	0.806	1.00	1.00	-	-
		N298/N295	N298/N295	U100X60X3.75 (U)	1.216	1.00	1.00	-	-
		N298/N297	N298/N297	U100X60X3.75 (U)	0.848	1.00	1.00	-	-
		N300/N297	N300/N297	U100X60X3.75 (U)	1.235	1.00	1.00	-	-
		N300/N299	N300/N299	U100X60X3.75 (U)	0.889	1.00	1.00	-	-
		N302/N299	N302/N299	U100X60X3.75 (U)	1.255	1.00	1.00	-	-
		N302/N301	N302/N301	U100X60X3.75 (U)	0.930	1.00	1.00	-	-
		N304/N301	N304/N301	U100X60X3.75 (U)	1.276	1.00	1.00	-	-
		N305/N303	N305/N303	U100X60X3.75 (U)	1.298	1.00	1.00	-	-
		N305/N307	N305/N307	U100X60X3.75 (U)	1.013	1.00	1.00	-	-
		N322/N319	N322/N306	U100X60X3.75 (U)	1.120	1.00	1.00	-	-
		N319/N317	N322/N306	U100X60X3.75 (U)	1.120	1.00	1.00	-	-
		N317/N315	N322/N306	U100X60X3.75 (U)	1.120	1.00	1.00	-	-
		N315/N313	N322/N306	U100X60X3.75 (U)	1.120	1.00	1.00	-	-
		N313/N311	N322/N306	U100X60X3.75 (U)	1.120	1.00	1.00	-	-
		N311/N308	N322/N306	U100X60X3.75 (U)	1.120	1.00	1.00	-	-
		N308/N306	N322/N306	U100X60X3.75 (U)	1.253	1.00	1.00	-	-
		N306/N309	N306/N309	2xU50X25X1.52([]) (U)	1.059	1.00	1.00	-	-
		N306/N307	N306/N307	U100X60X3.75 (U)	1.413	1.00	1.00	-	-
		N306/N310	N306/N310	U100X60X3.75 (U)	1.413	1.00	1.00	-	-
		N308/N310	N308/N310	U100X60X3.75 (U)	1.013	1.00	1.00	-	-
		N308/N312	N308/N312	U100X60X3.75 (U)	1.298	1.00	1.00	-	-
		N324/N387	N324/N309	U100X60X3.75 (U)	0.100	1.00	1.00	-	-
		N387/N402	N324/N309	U100X60X3.75 (U)	0.495	1.00	1.00	-	-
		N402/N321	N324/N309	U100X60X3.75 (U)	0.820	1.00	1.00	-	-
		N321/N379	N324/N309	U100X60X3.75 (U)	1.417	1.00	1.00	-	-
		N379/N320	N324/N309	U100X60X3.75 (U)	1.130	1.00	1.00	-	-
		N320/N318	N324/N309	U100X60X3.75 (U)	1.130	1.00	1.00	-	-
		N318/N316	N324/N309	U100X60X3.75 (U)	1.130	1.00	1.00	-	-
		N316/N314	N324/N309	U100X60X3.75 (U)	1.130	1.00	1.00	-	-
		N314/N312	N324/N309	U100X60X3.75 (U)	1.130	1.00	1.00	-	-



Descrição									
Material		Barra (Ni/Nf)	Peça (Ni/Nf)	Perfil(Série)	Comprimento (m)	$\beta_{xy}$	$\beta_{xz}$	Lb <sup>Sup.</sup> (m)	Lb <sup>Inf.</sup> (m)
Tipo	Designação								
		N312/N310	N324/N309	U100X60X3.75 (U)	1.130	1.00	1.00	-	-
		N310/N309	N324/N309	U100X60X3.75 (U)	1.264	1.00	1.00	-	-
		N311/N312	N311/N312	U100X60X3.75 (U)	0.971	1.00	1.00	-	-
		N311/N314	N311/N314	U100X60X3.75 (U)	1.276	1.00	1.00	-	-
		N313/N314	N313/N314	U100X60X3.75 (U)	0.930	1.00	1.00	-	-
		N313/N316	N313/N316	U100X60X3.75 (U)	1.255	1.00	1.00	-	-
		N315/N316	N315/N316	U100X60X3.75 (U)	0.889	1.00	1.00	-	-
		N315/N318	N315/N318	U100X60X3.75 (U)	1.235	1.00	1.00	-	-
		N317/N320	N317/N320	U100X60X3.75 (U)	1.216	1.00	1.00	-	-
		N319/N320	N319/N320	U100X60X3.75 (U)	0.806	1.00	1.00	-	-
		N317/N318	N317/N318	U100X60X3.75 (U)	0.848	1.00	1.00	-	-
		N322/N323	N322/N324	U100X60X3.75 (U)	1.364	1.00	1.00	-	-
		N323/N325	N322/N324	U100X60X3.75 (U)	0.790	1.00	1.00	-	-
		N325/N324	N322/N324	U100X60X3.75 (U)	0.573	1.00	1.00	-	-
		N322/N321	N322/N321	U100X60X3.75 (U)	1.417	1.00	1.00	-	-
		N323/N321	N323/N321	U100X60X3.75 (U)	0.382	1.00	1.00	-	-
		N304/N303	N304/N303	U100X60X3.75 (U)	0.971	1.00	1.00	-	-
		N327/N383	N327/N346	U100X60X3.75 (U)	0.100	1.00	1.00	-	-
		N383/N399	N327/N346	U100X60X3.75 (U)	0.495	1.00	1.00	-	-
		N399/N326	N327/N346	U100X60X3.75 (U)	0.820	1.00	1.00	-	-
		N326/N330	N327/N346	U100X60X3.75 (U)	1.417	1.00	1.00	-	-
		N330/N332	N327/N346	U100X60X3.75 (U)	1.130	1.00	1.00	-	-
		N332/N334	N327/N346	U100X60X3.75 (U)	1.130	1.00	1.00	-	-
		N334/N336	N327/N346	U100X60X3.75 (U)	1.130	1.00	1.00	-	-
		N336/N338	N327/N346	U100X60X3.75 (U)	1.130	1.00	1.00	-	-
		N338/N340	N327/N346	U100X60X3.75 (U)	1.130	1.00	1.00	-	-
		N340/N344	N327/N346	U100X60X3.75 (U)	1.130	1.00	1.00	-	-
		N344/N346	N327/N346	U100X60X3.75 (U)	1.264	1.00	1.00	-	-
		N327/N328	N327/N331	U100X60X3.75 (U)	0.573	1.00	1.00	-	-
		N328/N329	N327/N331	U100X60X3.75 (U)	0.790	1.00	1.00	-	-
		N329/N331	N327/N331	U100X60X3.75 (U)	1.364	1.00	1.00	-	-
		N329/N326	N329/N326	U100X60X3.75 (U)	0.382	1.00	1.00	-	-
		N331/N326	N331/N326	U100X60X3.75 (U)	1.417	1.00	1.00	-	-
		N331/N333	N331/N343	U100X60X3.75 (U)	1.120	1.00	1.00	-	-
		N333/N335	N331/N343	U100X60X3.75 (U)	1.120	1.00	1.00	-	-
		N335/N337	N331/N343	U100X60X3.75 (U)	1.120	1.00	1.00	-	-
		N337/N339	N331/N343	U100X60X3.75 (U)	1.120	1.00	1.00	-	-
		N339/N341	N331/N343	U100X60X3.75 (U)	1.120	1.00	1.00	-	-
		N341/N342	N331/N343	U100X60X3.75 (U)	1.120	1.00	1.00	-	-
		N342/N343	N331/N343	U100X60X3.75 (U)	1.253	1.00	1.00	-	-
		N331/N330	N331/N330	U100X60X3.75 (U)	0.765	1.00	1.00	-	-
		N333/N330	N333/N330	U100X60X3.75 (U)	1.198	1.00	1.00	-	-
		N333/N332	N333/N332	U100X60X3.75 (U)	0.806	1.00	1.00	-	-
		N335/N332	N335/N332	U100X60X3.75 (U)	1.216	1.00	1.00	-	-
		N335/N334	N335/N334	U100X60X3.75 (U)	0.848	1.00	1.00	-	-
		N337/N334	N337/N334	U100X60X3.75 (U)	1.235	1.00	1.00	-	-
		N337/N336	N337/N336	U100X60X3.75 (U)	0.889	1.00	1.00	-	-



Descrição									
Material		Barra (Ni/Nf)	Peça (Ni/Nf)	Perfil(Série)	Comprimento (m)	$\beta_{xy}$	$\beta_{xz}$	Lb <sub>Sup.</sub> (m)	Lb <sub>Inf.</sub> (m)
Tipo	Designação								
		N339/N336	N339/N336	U100X60X3.75 (U)	1.255	1.00	1.00	-	-
		N339/N338	N339/N338	U100X60X3.75 (U)	0.930	1.00	1.00	-	-
		N341/N338	N341/N338	U100X60X3.75 (U)	1.276	1.00	1.00	-	-
		N342/N340	N342/N340	U100X60X3.75 (U)	1.298	1.00	1.00	-	-
		N342/N344	N342/N344	U100X60X3.75 (U)	1.013	1.00	1.00	-	-
		N359/N356	N359/N343	U100X60X3.75 (U)	1.120	1.00	1.00	-	-
		N356/N354	N359/N343	U100X60X3.75 (U)	1.120	1.00	1.00	-	-
		N354/N352	N359/N343	U100X60X3.75 (U)	1.120	1.00	1.00	-	-
		N352/N350	N359/N343	U100X60X3.75 (U)	1.120	1.00	1.00	-	-
		N350/N348	N359/N343	U100X60X3.75 (U)	1.120	1.00	1.00	-	-
		N348/N345	N359/N343	U100X60X3.75 (U)	1.120	1.00	1.00	-	-
		N345/N343	N359/N343	U100X60X3.75 (U)	1.253	1.00	1.00	-	-
		N343/N346	N343/N346	2xU50X25X1.52([ ]) (U)	1.059	1.00	1.00	-	-
		N343/N344	N343/N344	U100X60X3.75 (U)	1.413	1.00	1.00	-	-
		N343/N347	N343/N347	U100X60X3.75 (U)	1.413	1.00	1.00	-	-
		N345/N347	N345/N347	U100X60X3.75 (U)	1.013	1.00	1.00	-	-
		N345/N349	N345/N349	U100X60X3.75 (U)	1.298	1.00	1.00	-	-
		N361/N386	N361/N346	U100X60X3.75 (U)	0.100	1.00	1.00	-	-
		N386/N400	N361/N346	U100X60X3.75 (U)	0.495	1.00	1.00	-	-
		N400/N358	N361/N346	U100X60X3.75 (U)	0.820	1.00	1.00	-	-
		N358/N380	N361/N346	U100X60X3.75 (U)	1.417	1.00	1.00	-	-
		N380/N357	N361/N346	U100X60X3.75 (U)	1.130	1.00	1.00	-	-
		N357/N355	N361/N346	U100X60X3.75 (U)	1.130	1.00	1.00	-	-
		N355/N353	N361/N346	U100X60X3.75 (U)	1.130	1.00	1.00	-	-
		N353/N351	N361/N346	U100X60X3.75 (U)	1.130	1.00	1.00	-	-
		N351/N349	N361/N346	U100X60X3.75 (U)	1.130	1.00	1.00	-	-
		N349/N347	N361/N346	U100X60X3.75 (U)	1.130	1.00	1.00	-	-
		N347/N346	N361/N346	U100X60X3.75 (U)	1.264	1.00	1.00	-	-
		N348/N349	N348/N349	U100X60X3.75 (U)	0.971	1.00	1.00	-	-
		N348/N351	N348/N351	U100X60X3.75 (U)	1.276	1.00	1.00	-	-
		N350/N351	N350/N351	U100X60X3.75 (U)	0.930	1.00	1.00	-	-
		N350/N353	N350/N353	U100X60X3.75 (U)	1.255	1.00	1.00	-	-
		N352/N353	N352/N353	U100X60X3.75 (U)	0.889	1.00	1.00	-	-
		N352/N355	N352/N355	U100X60X3.75 (U)	1.235	1.00	1.00	-	-
		N354/N357	N354/N357	U100X60X3.75 (U)	1.216	1.00	1.00	-	-
		N356/N357	N356/N357	U100X60X3.75 (U)	0.806	1.00	1.00	-	-
		N354/N355	N354/N355	U100X60X3.75 (U)	0.848	1.00	1.00	-	-
		N359/N360	N359/N361	U100X60X3.75 (U)	1.364	1.00	1.00	-	-
		N360/N362	N359/N361	U100X60X3.75 (U)	0.790	1.00	1.00	-	-
		N362/N361	N359/N361	U100X60X3.75 (U)	0.573	1.00	1.00	-	-
		N359/N358	N359/N358	U100X60X3.75 (U)	1.417	1.00	1.00	-	-
		N360/N358	N360/N358	U100X60X3.75 (U)	0.382	1.00	1.00	-	-
		N341/N340	N341/N340	U100X60X3.75 (U)	0.971	1.00	1.00	-	-
		N363/N369	N363/N369	U100X60X3.75 (U)	0.971	1.00	1.00	-	-
		N363/N370	N363/N370	U100X60X3.75 (U)	1.276	1.00	1.00	-	-
		N364/N370	N364/N370	U100X60X3.75 (U)	0.930	1.00	1.00	-	-
		N364/N371	N364/N371	U100X60X3.75 (U)	1.255	1.00	1.00	-	-



Descrição									
Material		Barra (Ni/Nf)	Peça (Ni/Nf)	Perfil(Série)	Comprimento (m)	$\beta_{xy}$	$\beta_{xz}$	Lb <sup>Sup.</sup> (m)	Lb <sup>Inf.</sup> (m)
Tipo	Designação								
		N365/N371	N365/N371	U100X60X3.75 (U)	0.889	1.00	1.00	-	-
		N365/N372	N365/N372	U100X60X3.75 (U)	1.235	1.00	1.00	-	-
		N366/N374	N366/N374	U100X60X3.75 (U)	1.216	1.00	1.00	-	-
		N367/N374	N367/N374	U100X60X3.75 (U)	0.806	1.00	1.00	-	-
		N366/N372	N366/N372	U100X60X3.75 (U)	0.848	1.00	1.00	-	-
		N368/N376	N368/N375	U100X60X3.75 (U)	1.364	1.00	1.00	-	-
		N376/N377	N368/N375	U100X60X3.75 (U)	0.790	1.00	1.00	-	-
		N377/N375	N368/N375	U100X60X3.75 (U)	0.573	1.00	1.00	-	-
		N376/N373	N376/N373	U100X60X3.75 (U)	0.382	1.00	1.00	-	-
		N257/N378	N257/N378	U100X60X3.75 (U)	0.765	1.00	1.00	-	-
		N271/N378	N271/N378	U100X60X3.75 (U)	1.198	1.00	1.00	-	-
		N322/N379	N322/N379	U100X60X3.75 (U)	0.765	1.00	1.00	-	-
		N319/N379	N319/N379	U100X60X3.75 (U)	1.198	1.00	1.00	-	-
		N359/N380	N359/N380	U100X60X3.75 (U)	0.765	1.00	1.00	-	-
		N356/N380	N356/N380	U100X60X3.75 (U)	1.198	1.00	1.00	-	-
		N368/N381	N368/N381	U100X60X3.75 (U)	0.765	1.00	1.00	-	-
		N367/N381	N367/N381	U100X60X3.75 (U)	1.198	1.00	1.00	-	-
		N287/N393	N287/N393	U100X60X3.75 (U)	0.161	1.00	1.00	-	-
		N49/N394	N49/N394	U100X60X3.75 (U)	0.158	1.00	1.00	-	-
		N78/N395	N78/N395	U100X60X3.75 (U)	0.158	1.00	1.00	-	-
		N155/N396	N155/N396	U100X60X3.75 (U)	0.158	1.00	1.00	-	-
		N206/N397	N206/N397	U100X60X3.75 (U)	0.158	1.00	1.00	-	-
		N291/N398	N291/N398	U100X60X3.75 (U)	0.161	1.00	1.00	-	-
		N328/N399	N328/N399	U100X60X3.75 (U)	0.161	1.00	1.00	-	-
		N362/N400	N362/N400	U100X60X3.75 (U)	0.161	1.00	1.00	-	-
		N377/N401	N377/N401	U100X60X3.75 (U)	0.161	1.00	1.00	-	-
		N325/N402	N325/N402	U100X60X3.75 (U)	0.161	1.00	1.00	-	-
		N288/N403	N288/N403	U100X60X3.75 (U)	0.161	1.00	1.00	-	-
		N200/N404	N200/N404	U100X60X3.75 (U)	0.158	1.00	1.00	-	-
		N137/N405	N137/N405	U100X60X3.75 (U)	0.158	1.00	1.00	-	-
		N90/N406	N90/N406	U100X60X3.75 (U)	0.158	1.00	1.00	-	-
		N48/N407	N48/N407	U100X60X3.75 (U)	0.158	1.00	1.00	-	-
		N77/N409	N77/N63	U100X60X3.75 (U)	0.100	1.00	1.00	-	-
		N409/N406	N77/N63	U100X60X3.75 (U)	0.494	1.00	1.00	-	-
		N406/N76	N77/N63	U100X60X3.75 (U)	0.820	1.00	1.00	-	-
		N76/N75	N77/N63	U100X60X3.75 (U)	1.415	1.00	1.00	-	-
		N75/N74	N77/N63	U100X60X3.75 (U)	1.128	1.00	1.00	-	-
		N74/N73	N77/N63	U100X60X3.75 (U)	1.111	1.00	1.00	-	-
		N73/N72	N77/N63	U100X60X3.75 (U)	1.145	1.00	1.00	-	-
		N72/N71	N77/N63	U100X60X3.75 (U)	1.128	1.00	1.00	-	-
		N71/N70	N77/N63	U100X60X3.75 (U)	1.128	1.00	1.00	-	-
		N70/N69	N77/N63	U100X60X3.75 (U)	1.128	1.00	1.00	-	-
		N69/N68	N77/N63	U100X60X3.75 (U)	1.128	1.00	1.00	-	-
		N68/N67	N77/N63	U100X60X3.75 (U)	1.128	1.00	1.00	-	-
		N67/N66	N77/N63	U100X60X3.75 (U)	1.128	1.00	1.00	-	-
		N66/N63	N77/N63	U100X60X3.75 (U)	1.183	1.00	1.00	-	-
		N3/N408	N3/N4	U100X60X3.75 (U)	0.100	1.00	1.00	-	-





Descrição									
Material		Barra (Ni/Nf)	Peça (Ni/Nf)	Perfil(Série)	Comprimento (m)	$\beta_{xy}$	$\beta_{xz}$	Lb <sub>Sup.</sub> (m)	Lb <sub>Inf.</sub> (m)
Tipo	Designação								
		N408/N407	N3/N4	U100X60X3.75 (U)	0.494	1.00	1.00	-	-
		N407/N47	N3/N4	U100X60X3.75 (U)	0.820	1.00	1.00	-	-
		N47/N8	N3/N4	U100X60X3.75 (U)	1.415	1.00	1.00	-	-
		N8/N36	N3/N4	U100X60X3.75 (U)	1.128	1.00	1.00	-	-
		N36/N37	N3/N4	U100X60X3.75 (U)	1.111	1.00	1.00	-	-
		N37/N38	N3/N4	U100X60X3.75 (U)	1.145	1.00	1.00	-	-
		N38/N39	N3/N4	U100X60X3.75 (U)	1.128	1.00	1.00	-	-
		N39/N41	N3/N4	U100X60X3.75 (U)	1.128	1.00	1.00	-	-
		N41/N42	N3/N4	U100X60X3.75 (U)	1.128	1.00	1.00	-	-
		N42/N43	N3/N4	U100X60X3.75 (U)	1.128	1.00	1.00	-	-
		N43/N44	N3/N4	U100X60X3.75 (U)	1.128	1.00	1.00	-	-
		N44/N45	N3/N4	U100X60X3.75 (U)	1.128	1.00	1.00	-	-
		N45/N4	N3/N4	U100X60X3.75 (U)	1.183	1.00	1.00	-	-
		N103/N104	N103/N112	U100X60X3.75 (U)	1.128	1.00	1.00	-	-
		N104/N113	N103/N112	U100X60X3.75 (U)	1.128	1.00	1.00	-	-
		N113/N105	N103/N112	U100X60X3.75 (U)	1.128	1.00	1.00	-	-
		N105/N106	N103/N112	U100X60X3.75 (U)	1.128	1.00	1.00	-	-
		N106/N107	N103/N112	U100X60X3.75 (U)	1.128	1.00	1.00	-	-
		N107/N108	N103/N112	U100X60X3.75 (U)	1.128	1.00	1.00	-	-
		N108/N109	N103/N112	U100X60X3.75 (U)	1.128	1.00	1.00	-	-
		N109/N110	N103/N112	U100X60X3.75 (U)	1.128	1.00	1.00	-	-
		N110/N111	N103/N112	U100X60X3.75 (U)	1.128	1.00	1.00	-	-
		N111/N112	N103/N112	U100X60X3.75 (U)	1.183	1.00	1.00	-	-
		N509/N508	N509/N505	U100X60X3.75 (U)	1.026	1.00	1.00	-	-
		N508/N507	N509/N505	U100X60X3.75 (U)	0.975	1.00	1.00	-	-
		N507/N506	N509/N505	U100X60X3.75 (U)	0.975	1.00	1.00	-	-
		N506/N505	N509/N505	U100X60X3.75 (U)	0.975	1.00	1.00	-	-
		N505/N510	N505/N513	U100X60X3.75 (U)	0.975	1.00	1.00	-	-
		N510/N511	N505/N513	U100X60X3.75 (U)	0.975	1.00	1.00	-	-
		N511/N512	N505/N513	U100X60X3.75 (U)	0.975	1.00	1.00	-	-
		N512/N513	N505/N513	U100X60X3.75 (U)	1.026	1.00	1.00	-	-
		N513/N514	N513/N514	U100X60X3.75 (U)	0.280	1.00	1.00	-	-
		N505/N515	N505/N515	C75X40X15X2.00 (C)	1.663	1.00	1.00	-	-
		N514/N518	N514/N515	U100X60X3.75 (U)	1.087	1.00	1.00	-	-
		N518/N517	N514/N515	U100X60X3.75 (U)	1.033	1.00	1.00	-	-
		N517/N516	N514/N515	U100X60X3.75 (U)	1.033	1.00	1.00	-	-
		N516/N515	N514/N515	U100X60X3.75 (U)	1.033	1.00	1.00	-	-
		N519/N520	N519/N515	U100X60X3.75 (U)	1.087	1.00	1.00	-	-
		N520/N521	N519/N515	U100X60X3.75 (U)	1.033	1.00	1.00	-	-
		N521/N660	N519/N515	U100X60X3.75 (U)	1.033	1.00	1.00	-	-
		N660/N515	N519/N515	U100X60X3.75 (U)	1.033	1.00	1.00	-	-
		N508/N520	N508/N520	U100X60X3.75 (U)	0.639	1.00	1.00	-	-
		N507/N520	N507/N520	U100X60X3.75 (U)	1.166	1.00	1.00	-	-
		N507/N521	N507/N521	U100X60X3.75 (U)	0.980	1.00	1.00	-	-
		N506/N521	N506/N521	U100X60X3.75 (U)	1.383	1.00	1.00	-	-
		N505/N516	N505/N516	U100X60X3.75 (U)	1.642	1.00	1.00	-	-
		N510/N516	N510/N516	U100X60X3.75 (U)	1.322	1.00	1.00	-	-



Descrição									
Material		Barra (Ni/Nf)	Peça (Ni/Nf)	Perfil(Série)	Comprimento (m)	$\beta_{xy}$	$\beta_{xz}$	Lb <sup>Sup.</sup> (m)	Lb <sup>Inf.</sup> (m)
Tipo	Designação								
		N510/N517	N510/N517	U100X60X3.75 (U)	1.383	1.00	1.00	-	-
		N511/N517	N511/N517	U100X60X3.75 (U)	0.980	1.00	1.00	-	-
		N511/N518	N511/N518	U100X60X3.75 (U)	1.166	1.00	1.00	-	-
		N512/N518	N512/N518	U100X60X3.75 (U)	0.639	1.00	1.00	-	-
		N509/N519	N509/N519	U100X60X3.75 (U)	0.280	1.00	1.00	-	-
		N525/N526	N525/N524	U100X60X3.75 (U)	0.975	1.00	1.00	-	-
		N526/N522	N525/N524	U100X60X3.75 (U)	0.975	1.00	1.00	-	-
		N522/N523	N525/N524	U100X60X3.75 (U)	0.975	1.00	1.00	-	-
		N523/N524	N525/N524	U100X60X3.75 (U)	1.026	1.00	1.00	-	-
		N524/N527	N524/N527	U100X60X3.75 (U)	0.280	1.00	1.00	-	-
		N527/N529	N527/N530	U100X60X3.75 (U)	1.087	1.00	1.00	-	-
		N529/N528	N527/N530	U100X60X3.75 (U)	1.033	1.00	1.00	-	-
		N528/N531	N527/N530	U100X60X3.75 (U)	1.033	1.00	1.00	-	-
		N531/N530	N527/N530	U100X60X3.75 (U)	1.033	1.00	1.00	-	-
		N522/N529	N522/N529	U100X60X3.75 (U)	1.166	1.00	1.00	-	-
		N523/N529	N523/N529	U100X60X3.75 (U)	0.639	1.00	1.00	-	-
		N535/N534	N535/N525	U100X60X3.75 (U)	1.026	1.00	1.00	-	-
		N534/N533	N535/N525	U100X60X3.75 (U)	0.975	1.00	1.00	-	-
		N533/N532	N535/N525	U100X60X3.75 (U)	0.975	1.00	1.00	-	-
		N532/N525	N535/N525	U100X60X3.75 (U)	0.975	1.00	1.00	-	-
		N525/N530	N525/N530	C75X40X15X2.00 (C)	1.663	1.00	1.00	-	-
		N537/N538	N537/N530	U100X60X3.75 (U)	1.087	1.00	1.00	-	-
		N538/N536	N537/N530	U100X60X3.75 (U)	1.033	1.00	1.00	-	-
		N536/N661	N537/N530	U100X60X3.75 (U)	1.033	1.00	1.00	-	-
		N661/N530	N537/N530	U100X60X3.75 (U)	1.033	1.00	1.00	-	-
		N525/N531	N525/N531	U100X60X3.75 (U)	1.642	1.00	1.00	-	-
		N526/N531	N526/N531	U100X60X3.75 (U)	1.322	1.00	1.00	-	-
		N526/N528	N526/N528	U100X60X3.75 (U)	1.383	1.00	1.00	-	-
		N522/N528	N522/N528	U100X60X3.75 (U)	0.980	1.00	1.00	-	-
		N534/N538	N534/N538	U100X60X3.75 (U)	0.639	1.00	1.00	-	-
		N533/N538	N533/N538	U100X60X3.75 (U)	1.166	1.00	1.00	-	-
		N533/N536	N533/N536	U100X60X3.75 (U)	0.980	1.00	1.00	-	-
		N532/N536	N532/N536	U100X60X3.75 (U)	1.383	1.00	1.00	-	-
		N535/N537	N535/N537	U100X60X3.75 (U)	0.280	1.00	1.00	-	-
		N105/N530	N105/N530	C75X40X15X2.00 (C)	3.538	1.00	1.00	-	-
		N375/N388	N375/N369	U100X60X3.75 (U)	0.100	1.00	1.00	-	-
		N388/N401	N375/N369	U100X60X3.75 (U)	0.495	1.00	1.00	-	-
		N401/N373	N375/N369	U100X60X3.75 (U)	0.820	1.00	1.00	-	-
		N373/N381	N375/N369	U100X60X3.75 (U)	1.417	1.00	1.00	-	-
		N381/N374	N375/N369	U100X60X3.75 (U)	1.130	1.00	1.00	-	-
		N374/N372	N375/N369	U100X60X3.75 (U)	1.130	1.00	1.00	-	-
		N372/N371	N375/N369	U100X60X3.75 (U)	1.130	1.00	1.00	-	-
		N371/N370	N375/N369	U100X60X3.75 (U)	1.130	1.00	1.00	-	-
		N370/N369	N375/N369	U100X60X3.75 (U)	1.130	1.00	1.00	-	-
		N368/N367	N368/N363	U100X60X3.75 (U)	1.120	1.00	1.00	-	-
		N367/N366	N368/N363	U100X60X3.75 (U)	1.120	1.00	1.00	-	-
		N366/N365	N368/N363	U100X60X3.75 (U)	1.120	1.00	1.00	-	-



		Descrição							
Material		Barra (Ni/Nf)	Peça (Ni/Nf)	Perfil(Série)	Comprimento (m)	$\beta_{xy}$	$\beta_{xz}$	Lb <sub>Sup.</sub> (m)	Lb <sub>Inf.</sub> (m)
Tipo	Designação								
		N365/N364	N368/N363	U100X60X3.75 (U)	1.120	1.00	1.00	-	-
		N364/N363	N368/N363	U100X60X3.75 (U)	1.120	1.00	1.00	-	-
		N150/N155	N150/N157	U100X60X3.75 (U)	0.573	1.00	1.00	-	-
		N155/N156	N150/N157	U100X60X3.75 (U)	0.790	1.00	1.00	-	-
		N156/N157	N150/N157	U100X60X3.75 (U)	1.364	1.00	1.00	-	-
		N252/N558	N252/N578	2xC100X50X17X2.25([-]) (C)	1.850	1.00	1.00	-	-
		N558/N309	N252/N578	2xC100X50X17X2.25([-]) (C)	1.851	1.00	1.00	-	-
		N309/N557	N252/N578	2xC100X50X17X2.25([-]) (C)	1.775	1.00	1.00	-	-
		N557/N346	N252/N578	2xC100X50X17X2.25([-]) (C)	1.776	1.00	1.00	-	-
		N346/N578	N252/N578	2xC100X50X17X2.25([-]) (C)	0.800	1.00	1.00	-	-
		N270/N555	N270/N579	C100X50X17X2.25 (C)	1.850	1.00	1.00	-	-
		N555/N307	N270/N579	C100X50X17X2.25 (C)	1.851	1.00	1.00	-	-
		N307/N556	N270/N579	C100X50X17X2.25 (C)	1.775	1.00	1.00	-	-
		N556/N344	N270/N579	C100X50X17X2.25 (C)	1.776	1.00	1.00	-	-
		N344/N579	N270/N579	C100X50X17X2.25 (C)	0.800	1.00	1.00	-	-
		N268/N553	N268/N580	C100X50X17X2.25 (C)	1.850	1.00	1.00	-	-
		N553/N303	N268/N580	C100X50X17X2.25 (C)	1.851	1.00	1.00	-	-
		N303/N554	N268/N580	C100X50X17X2.25 (C)	1.775	1.00	1.00	-	-
		N554/N340	N268/N580	C100X50X17X2.25 (C)	1.776	1.00	1.00	-	-
		N340/N580	N268/N580	C100X50X17X2.25 (C)	0.800	1.00	1.00	-	-
		N266/N551	N266/N581	C100X50X17X2.25 (C)	1.850	1.00	1.00	-	-
		N551/N301	N266/N581	C100X50X17X2.25 (C)	1.851	1.00	1.00	-	-
		N301/N552	N266/N581	C100X50X17X2.25 (C)	1.775	1.00	1.00	-	-
		N552/N338	N266/N581	C100X50X17X2.25 (C)	1.776	1.00	1.00	-	-
		N338/N581	N266/N581	C100X50X17X2.25 (C)	0.800	1.00	1.00	-	-
		N264/N550	N264/N582	C100X50X17X2.25 (C)	1.850	1.00	1.00	-	-
		N550/N299	N264/N582	C100X50X17X2.25 (C)	1.851	1.00	1.00	-	-
		N299/N549	N264/N582	C100X50X17X2.25 (C)	1.775	1.00	1.00	-	-
		N549/N336	N264/N582	C100X50X17X2.25 (C)	1.776	1.00	1.00	-	-
		N336/N582	N264/N582	C100X50X17X2.25 (C)	0.800	1.00	1.00	-	-
		N262/N547	N262/N583	C100X50X17X2.25 (C)	1.850	1.00	1.00	-	-
		N547/N297	N262/N583	C100X50X17X2.25 (C)	1.851	1.00	1.00	-	-
		N297/N548	N262/N583	C100X50X17X2.25 (C)	1.775	1.00	1.00	-	-
		N548/N334	N262/N583	C100X50X17X2.25 (C)	1.776	1.00	1.00	-	-
		N334/N583	N262/N583	C100X50X17X2.25 (C)	0.800	1.00	1.00	-	-
		N260/N546	N260/N584	C100X50X17X2.25 (C)	1.850	1.00	1.00	-	-
		N546/N295	N260/N584	C100X50X17X2.25 (C)	1.851	1.00	1.00	-	-
		N295/N545	N260/N584	C100X50X17X2.25 (C)	1.775	1.00	1.00	-	-
		N545/N332	N260/N584	C100X50X17X2.25 (C)	1.776	1.00	1.00	-	-
		N332/N584	N260/N584	C100X50X17X2.25 (C)	0.800	1.00	1.00	-	-
		N258/N543	N258/N585	C100X50X17X2.25 (C)	1.850	1.00	1.00	-	-
		N543/N293	N258/N585	C100X50X17X2.25 (C)	1.851	1.00	1.00	-	-
		N293/N544	N258/N585	C100X50X17X2.25 (C)	1.775	1.00	1.00	-	-



Descrição									
Material		Barra (Ni/Nf)	Peça (Ni/Nf)	Perfil(Série)	Comprimento (m)	$\beta_{xy}$	$\beta_{xz}$	Lb <sup>Sup.</sup> (m)	Lb <sup>Inf.</sup> (m)
Tipo	Designação								
		N544/N330	N258/N585	C100X50X17X2.25 (C)	1.776	1.00	1.00	-	-
		N330/N585	N258/N585	C100X50X17X2.25 (C)	0.800	1.00	1.00	-	-
		N286/N542	N286/N586	C100X50X17X2.25 (C)	1.850	1.00	1.00	-	-
		N542/N289	N286/N586	C100X50X17X2.25 (C)	1.851	1.00	1.00	-	-
		N289/N541	N286/N586	C100X50X17X2.25 (C)	1.775	1.00	1.00	-	-
		N541/N326	N286/N586	C100X50X17X2.25 (C)	1.776	1.00	1.00	-	-
		N326/N586	N286/N586	C100X50X17X2.25 (C)	0.800	1.00	1.00	-	-
		N382/N540	N382/N587	C100X50X17X2.25 (C)	1.850	1.00	1.00	-	-
		N540/N384	N382/N587	C100X50X17X2.25 (C)	1.851	1.00	1.00	-	-
		N384/N539	N382/N587	C100X50X17X2.25 (C)	1.775	1.00	1.00	-	-
		N539/N383	N382/N587	C100X50X17X2.25 (C)	1.776	1.00	1.00	-	-
		N383/N587	N382/N587	C100X50X17X2.25 (C)	0.800	1.00	1.00	-	-
		N282/N559	N282/N588	C100X50X17X2.25 (C)	1.850	1.00	1.00	-	-
		N559/N310	N282/N588	C100X50X17X2.25 (C)	1.851	1.00	1.00	-	-
		N310/N573	N282/N588	C100X50X17X2.25 (C)	1.775	1.00	1.00	-	-
		N573/N347	N282/N588	C100X50X17X2.25 (C)	1.776	1.00	1.00	-	-
		N347/N588	N282/N588	C100X50X17X2.25 (C)	0.800	1.00	1.00	-	-
		N280/N560	N280/N589	C100X50X17X2.25 (C)	1.850	1.00	1.00	-	-
		N560/N312	N280/N589	C100X50X17X2.25 (C)	1.851	1.00	1.00	-	-
		N312/N572	N280/N589	C100X50X17X2.25 (C)	1.775	1.00	1.00	-	-
		N572/N369	N280/N589	C100X50X17X2.25 (C)	0.676	1.00	1.00	-	-
		N369/N349	N280/N589	C100X50X17X2.25 (C)	1.100	1.00	1.00	-	-
		N349/N589	N280/N589	C100X50X17X2.25 (C)	0.800	1.00	1.00	-	-
		N278/N561	N278/N590	C100X50X17X2.25 (C)	1.850	1.00	1.00	-	-
		N561/N314	N278/N590	C100X50X17X2.25 (C)	1.851	1.00	1.00	-	-
		N314/N571	N278/N590	C100X50X17X2.25 (C)	1.775	1.00	1.00	-	-
		N571/N370	N278/N590	C100X50X17X2.25 (C)	0.676	1.00	1.00	-	-
		N370/N351	N278/N590	C100X50X17X2.25 (C)	1.100	1.00	1.00	-	-
		N351/N590	N278/N590	C100X50X17X2.25 (C)	0.800	1.00	1.00	-	-
		N276/N562	N276/N591	C100X50X17X2.25 (C)	1.850	1.00	1.00	-	-
		N562/N316	N276/N591	C100X50X17X2.25 (C)	1.851	1.00	1.00	-	-
		N316/N570	N276/N591	C100X50X17X2.25 (C)	1.775	1.00	1.00	-	-
		N570/N371	N276/N591	C100X50X17X2.25 (C)	0.676	1.00	1.00	-	-
		N371/N353	N276/N591	C100X50X17X2.25 (C)	1.100	1.00	1.00	-	-
		N353/N591	N276/N591	C100X50X17X2.25 (C)	0.800	1.00	1.00	-	-
		N274/N563	N274/N592	C100X50X17X2.25 (C)	1.850	1.00	1.00	-	-
		N563/N318	N274/N592	C100X50X17X2.25 (C)	1.851	1.00	1.00	-	-
		N318/N569	N274/N592	C100X50X17X2.25 (C)	1.775	1.00	1.00	-	-
		N569/N372	N274/N592	C100X50X17X2.25 (C)	0.676	1.00	1.00	-	-
		N372/N355	N274/N592	C100X50X17X2.25 (C)	1.100	1.00	1.00	-	-
		N355/N592	N274/N592	C100X50X17X2.25 (C)	0.800	1.00	1.00	-	-
		N272/N564	N272/N593	C100X50X17X2.25 (C)	1.850	1.00	1.00	-	-
		N564/N320	N272/N593	C100X50X17X2.25 (C)	1.851	1.00	1.00	-	-
		N320/N568	N272/N593	C100X50X17X2.25 (C)	1.775	1.00	1.00	-	-
		N568/N374	N272/N593	C100X50X17X2.25 (C)	0.676	1.00	1.00	-	-
		N374/N357	N272/N593	C100X50X17X2.25 (C)	1.100	1.00	1.00	-	-
		N357/N593	N272/N593	C100X50X17X2.25 (C)	0.800	1.00	1.00	-	-





Descrição									
Material		Barra (Ni/Nf)	Peça (Ni/Nf)	Perfil(Série)	Comprimento (m)	$\beta_{xy}$	$\beta_{xz}$	Lb <sub>Sup.</sub> (m)	Lb <sub>Inf.</sub> (m)
Tipo	Designação								
		N378/N565	N378/N594	C100X50X17X2.25 (C)	1.850	1.00	1.00	-	-
		N565/N379	N378/N594	C100X50X17X2.25 (C)	1.851	1.00	1.00	-	-
		N379/N381	N378/N594	C100X50X17X2.25 (C)	2.451	1.00	1.00	-	-
		N381/N380	N378/N594	C100X50X17X2.25 (C)	1.100	1.00	1.00	-	-
		N380/N594	N378/N594	C100X50X17X2.25 (C)	0.800	1.00	1.00	-	-
		N284/N566	N284/N595	C100X50X17X2.25 (C)	1.850	1.00	1.00	-	-
		N566/N321	N284/N595	C100X50X17X2.25 (C)	1.851	1.00	1.00	-	-
		N321/N373	N284/N595	C100X50X17X2.25 (C)	2.451	1.00	1.00	-	-
		N373/N358	N284/N595	C100X50X17X2.25 (C)	1.100	1.00	1.00	-	-
		N358/N595	N284/N595	C100X50X17X2.25 (C)	0.800	1.00	1.00	-	-
		N385/N567	N385/N596	C100X50X17X2.25 (C)	1.850	1.00	1.00	-	-
		N567/N387	N385/N596	C100X50X17X2.25 (C)	1.851	1.00	1.00	-	-
		N387/N388	N385/N596	C100X50X17X2.25 (C)	2.451	1.00	1.00	-	-
		N388/N386	N385/N596	C100X50X17X2.25 (C)	1.100	1.00	1.00	-	-
		N386/N596	N385/N596	C100X50X17X2.25 (C)	0.800	1.00	1.00	-	-
		N597/N4	N597/N610	2xC100X50X17X2.25([-]) (C)	0.800	1.00	1.00	-	-
		N4/N456	N597/N610	2xC100X50X17X2.25([-]) (C)	2.331	1.00	1.00	-	-
		N456/N63	N597/N610	2xC100X50X17X2.25([-]) (C)	2.331	1.00	1.00	-	-
		N63/N444	N597/N610	2xC100X50X17X2.25([-]) (C)	2.330	1.00	1.00	-	-
		N444/N112	N597/N610	2xC100X50X17X2.25([-]) (C)	2.331	1.00	1.00	-	-
		N112/N434	N597/N610	2xC100X50X17X2.25([-]) (C)	2.331	1.00	1.00	-	-
		N434/N174	N597/N610	2xC100X50X17X2.25([-]) (C)	2.331	1.00	1.00	-	-
		N174/N414	N597/N610	2xC100X50X17X2.25([-]) (C)	2.330	1.00	1.00	-	-
		N414/N225	N597/N610	2xC100X50X17X2.25([-]) (C)	2.331	1.00	1.00	-	-
		N225/N610	N597/N610	2xC100X50X17X2.25([-]) (C)	0.800	1.00	1.00	-	-
		N598/N17	N598/N611	C100X50X17X2.25 (C)	0.800	1.00	1.00	-	-
		N17/N455	N598/N611	C100X50X17X2.25 (C)	2.331	1.00	1.00	-	-
		N455/N62	N598/N611	C100X50X17X2.25 (C)	2.331	1.00	1.00	-	-
		N62/N443	N598/N611	C100X50X17X2.25 (C)	2.330	1.00	1.00	-	-
		N443/N111	N598/N611	C100X50X17X2.25 (C)	2.331	1.00	1.00	-	-
		N111/N433	N598/N611	C100X50X17X2.25 (C)	2.331	1.00	1.00	-	-
		N433/N170	N598/N611	C100X50X17X2.25 (C)	2.331	1.00	1.00	-	-
		N170/N424	N598/N611	C100X50X17X2.25 (C)	2.330	1.00	1.00	-	-
		N424/N221	N598/N611	C100X50X17X2.25 (C)	2.331	1.00	1.00	-	-
		N221/N611	N598/N611	C100X50X17X2.25 (C)	0.800	1.00	1.00	-	-
		N599/N18	N599/N612	C100X50X17X2.25 (C)	0.800	1.00	1.00	-	-
		N18/N454	N599/N612	C100X50X17X2.25 (C)	2.331	1.00	1.00	-	-
		N454/N61	N599/N612	C100X50X17X2.25 (C)	2.331	1.00	1.00	-	-
		N61/N442	N599/N612	C100X50X17X2.25 (C)	2.330	1.00	1.00	-	-



Descrição									
Material		Barra (Ni/Nf)	Peça (Ni/Nf)	Perfil(Série)	Comprimento (m)	$\beta_{xy}$	$\beta_{xz}$	Lb <sup>Sup.</sup> (m)	Lb <sup>Inf.</sup> (m)
Tipo	Designação								
		N442/N110	N599/N612	C100X50X17X2.25 (C)	2.331	1.00	1.00	-	-
		N110/N432	N599/N612	C100X50X17X2.25 (C)	2.331	1.00	1.00	-	-
		N432/N169	N599/N612	C100X50X17X2.25 (C)	2.331	1.00	1.00	-	-
		N169/N423	N599/N612	C100X50X17X2.25 (C)	2.330	1.00	1.00	-	-
		N423/N220	N599/N612	C100X50X17X2.25 (C)	2.331	1.00	1.00	-	-
		N220/N612	N599/N612	C100X50X17X2.25 (C)	0.800	1.00	1.00	-	-
		N600/N19	N600/N613	C100X50X17X2.25 (C)	0.800	1.00	1.00	-	-
		N19/N453	N600/N613	C100X50X17X2.25 (C)	2.331	1.00	1.00	-	-
		N453/N60	N600/N613	C100X50X17X2.25 (C)	2.331	1.00	1.00	-	-
		N60/N441	N600/N613	C100X50X17X2.25 (C)	2.330	1.00	1.00	-	-
		N441/N109	N600/N613	C100X50X17X2.25 (C)	2.331	1.00	1.00	-	-
		N109/N431	N600/N613	C100X50X17X2.25 (C)	2.331	1.00	1.00	-	-
		N431/N168	N600/N613	C100X50X17X2.25 (C)	2.331	1.00	1.00	-	-
		N168/N422	N600/N613	C100X50X17X2.25 (C)	2.330	1.00	1.00	-	-
		N422/N219	N600/N613	C100X50X17X2.25 (C)	2.331	1.00	1.00	-	-
		N219/N613	N600/N613	C100X50X17X2.25 (C)	0.800	1.00	1.00	-	-
		N601/N20	N601/N614	C100X50X17X2.25 (C)	0.800	1.00	1.00	-	-
		N20/N452	N601/N614	C100X50X17X2.25 (C)	2.331	1.00	1.00	-	-
		N452/N59	N601/N614	C100X50X17X2.25 (C)	2.331	1.00	1.00	-	-
		N59/N440	N601/N614	C100X50X17X2.25 (C)	2.330	1.00	1.00	-	-
		N440/N108	N601/N614	C100X50X17X2.25 (C)	2.331	1.00	1.00	-	-
		N108/N430	N601/N614	C100X50X17X2.25 (C)	2.331	1.00	1.00	-	-
		N430/N167	N601/N614	C100X50X17X2.25 (C)	2.331	1.00	1.00	-	-
		N167/N421	N601/N614	C100X50X17X2.25 (C)	2.330	1.00	1.00	-	-
		N421/N218	N601/N614	C100X50X17X2.25 (C)	2.331	1.00	1.00	-	-
		N218/N614	N601/N614	C100X50X17X2.25 (C)	0.800	1.00	1.00	-	-
		N602/N21	N602/N615	C100X50X17X2.25 (C)	0.800	1.00	1.00	-	-
		N21/N451	N602/N615	C100X50X17X2.25 (C)	2.331	1.00	1.00	-	-
		N451/N58	N602/N615	C100X50X17X2.25 (C)	2.331	1.00	1.00	-	-
		N58/N439	N602/N615	C100X50X17X2.25 (C)	2.330	1.00	1.00	-	-
		N439/N107	N602/N615	C100X50X17X2.25 (C)	2.331	1.00	1.00	-	-
		N107/N429	N602/N615	C100X50X17X2.25 (C)	2.331	1.00	1.00	-	-
		N429/N162	N602/N615	C100X50X17X2.25 (C)	2.331	1.00	1.00	-	-
		N162/N420	N602/N615	C100X50X17X2.25 (C)	2.330	1.00	1.00	-	-
		N420/N213	N602/N615	C100X50X17X2.25 (C)	2.331	1.00	1.00	-	-
		N213/N615	N602/N615	C100X50X17X2.25 (C)	0.800	1.00	1.00	-	-
		N605/N51	N605/N618	C100X50X17X2.25 (C)	0.800	1.00	1.00	-	-
		N51/N504	N605/N618	C100X50X17X2.25 (C)	2.331	1.00	1.00	-	-
		N504/N64	N605/N618	C100X50X17X2.25 (C)	2.331	1.00	1.00	-	-
		N64/N502	N605/N618	C100X50X17X2.25 (C)	2.330	1.00	1.00	-	-
		N502/N113	N605/N618	C100X50X17X2.25 (C)	2.331	1.00	1.00	-	-
		N113/N501	N605/N618	C100X50X17X2.25 (C)	2.331	1.00	1.00	-	-
		N501/N154	N605/N618	C100X50X17X2.25 (C)	2.331	1.00	1.00	-	-
		N154/N503	N605/N618	C100X50X17X2.25 (C)	2.330	1.00	1.00	-	-
		N503/N205	N605/N618	C100X50X17X2.25 (C)	2.331	1.00	1.00	-	-
		N205/N618	N605/N618	C100X50X17X2.25 (C)	0.800	1.00	1.00	-	-
		N604/N23	N604/N617	C100X50X17X2.25 (C)	0.800	1.00	1.00	-	-



Descrição									
Material		Barra (Ni/Nf)	Peça (Ni/Nf)	Perfil(Série)	Comprimento (m)	$\beta_{xy}$	$\beta_{xz}$	Lb <sub>Sup.</sub> (m)	Lb <sub>Inf.</sub> (m)
Tipo	Designação								
		N23/N449	N604/N617	C100X50X17X2.25 (C)	2.331	1.00	1.00	-	-
		N449/N56	N604/N617	C100X50X17X2.25 (C)	2.331	1.00	1.00	-	-
		N56/N437	N604/N617	C100X50X17X2.25 (C)	2.330	1.00	1.00	-	-
		N437/N105	N604/N617	C100X50X17X2.25 (C)	2.331	1.00	1.00	-	-
		N105/N427	N604/N617	C100X50X17X2.25 (C)	2.331	1.00	1.00	-	-
		N427/N160	N604/N617	C100X50X17X2.25 (C)	2.331	1.00	1.00	-	-
		N160/N418	N604/N617	C100X50X17X2.25 (C)	2.330	1.00	1.00	-	-
		N418/N211	N604/N617	C100X50X17X2.25 (C)	2.331	1.00	1.00	-	-
		N211/N617	N604/N617	C100X50X17X2.25 (C)	0.800	1.00	1.00	-	-
		N603/N22	N603/N616	C100X50X17X2.25 (C)	0.800	1.00	1.00	-	-
		N22/N450	N603/N616	C100X50X17X2.25 (C)	2.331	1.00	1.00	-	-
		N450/N57	N603/N616	C100X50X17X2.25 (C)	2.331	1.00	1.00	-	-
		N57/N438	N603/N616	C100X50X17X2.25 (C)	2.330	1.00	1.00	-	-
		N438/N106	N603/N616	C100X50X17X2.25 (C)	2.331	1.00	1.00	-	-
		N106/N428	N603/N616	C100X50X17X2.25 (C)	2.331	1.00	1.00	-	-
		N428/N161	N603/N616	C100X50X17X2.25 (C)	2.331	1.00	1.00	-	-
		N161/N419	N603/N616	C100X50X17X2.25 (C)	2.330	1.00	1.00	-	-
		N419/N212	N603/N616	C100X50X17X2.25 (C)	2.331	1.00	1.00	-	-
		N212/N616	N603/N616	C100X50X17X2.25 (C)	0.800	1.00	1.00	-	-
		N606/N24	N606/N619	C100X50X17X2.25 (C)	0.800	1.00	1.00	-	-
		N24/N448	N606/N619	C100X50X17X2.25 (C)	2.331	1.00	1.00	-	-
		N448/N55	N606/N619	C100X50X17X2.25 (C)	2.331	1.00	1.00	-	-
		N55/N436	N606/N619	C100X50X17X2.25 (C)	2.330	1.00	1.00	-	-
		N436/N104	N606/N619	C100X50X17X2.25 (C)	2.331	1.00	1.00	-	-
		N104/N426	N606/N619	C100X50X17X2.25 (C)	2.331	1.00	1.00	-	-
		N426/N153	N606/N619	C100X50X17X2.25 (C)	2.331	1.00	1.00	-	-
		N153/N417	N606/N619	C100X50X17X2.25 (C)	2.330	1.00	1.00	-	-
		N417/N204	N606/N619	C100X50X17X2.25 (C)	2.331	1.00	1.00	-	-
		N204/N619	N606/N619	C100X50X17X2.25 (C)	0.800	1.00	1.00	-	-
		N607/N7	N607/N620	C100X50X17X2.25 (C)	0.800	1.00	1.00	-	-
		N7/N447	N607/N620	C100X50X17X2.25 (C)	2.331	1.00	1.00	-	-
		N447/N54	N607/N620	C100X50X17X2.25 (C)	2.331	1.00	1.00	-	-
		N54/N435	N607/N620	C100X50X17X2.25 (C)	2.330	1.00	1.00	-	-
		N435/N103	N607/N620	C100X50X17X2.25 (C)	2.331	1.00	1.00	-	-
		N103/N425	N607/N620	C100X50X17X2.25 (C)	2.331	1.00	1.00	-	-
		N425/N152	N607/N620	C100X50X17X2.25 (C)	2.331	1.00	1.00	-	-
		N152/N416	N607/N620	C100X50X17X2.25 (C)	2.330	1.00	1.00	-	-
		N416/N203	N607/N620	C100X50X17X2.25 (C)	2.331	1.00	1.00	-	-
		N203/N620	N607/N620	C100X50X17X2.25 (C)	0.800	1.00	1.00	-	-
		N608/N26	N608/N624	C100X50X17X2.25 (C)	0.800	1.00	1.00	-	-
		N26/N446	N608/N624	C100X50X17X2.25 (C)	2.331	1.00	1.00	-	-
		N446/N53	N608/N624	C100X50X17X2.25 (C)	2.331	1.00	1.00	-	-
		N53/N624	N608/N624	C100X50X17X2.25 (C)	0.800	1.00	1.00	-	-
		N609/N389	N609/N625	C100X50X17X2.25 (C)	0.800	1.00	1.00	-	-
		N389/N445	N609/N625	C100X50X17X2.25 (C)	2.331	1.00	1.00	-	-
		N445/N390	N609/N625	C100X50X17X2.25 (C)	2.331	1.00	1.00	-	-
		N390/N625	N609/N625	C100X50X17X2.25 (C)	0.800	1.00	1.00	-	-



Descrição									
Material		Barra (Ni/Nf)	Peça (Ni/Nf)	Perfil(Série)	Comprimento (m)	$\beta_{xy}$	$\beta_{xz}$	Lb <sup>Sup.</sup> (m)	Lb <sup>Inf.</sup> (m)
Tipo	Designação								
		N623/N151	N623/N621	C100X50X17X2.25 (C)	0.800	1.00	1.00	-	-
		N151/N415	N623/N621	C100X50X17X2.25 (C)	2.330	1.00	1.00	-	-
		N415/N202	N623/N621	C100X50X17X2.25 (C)	2.331	1.00	1.00	-	-
		N202/N621	N623/N621	C100X50X17X2.25 (C)	0.800	1.00	1.00	-	-
		N626/N391	N626/N622	C100X50X17X2.25 (C)	0.800	1.00	1.00	-	-
		N391/N413	N626/N622	C100X50X17X2.25 (C)	2.330	1.00	1.00	-	-
		N413/N392	N626/N622	C100X50X17X2.25 (C)	2.331	1.00	1.00	-	-
		N392/N622	N626/N622	C100X50X17X2.25 (C)	0.800	1.00	1.00	-	-
		N639/N45	N639/N627	C100X50X17X2.25 (C)	0.800	1.00	1.00	-	-
		N45/N467	N639/N627	C100X50X17X2.25 (C)	2.331	1.00	1.00	-	-
		N467/N66	N639/N627	C100X50X17X2.25 (C)	2.331	1.00	1.00	-	-
		N66/N478	N639/N627	C100X50X17X2.25 (C)	2.330	1.00	1.00	-	-
		N478/N115	N639/N627	C100X50X17X2.25 (C)	2.331	1.00	1.00	-	-
		N115/N489	N639/N627	C100X50X17X2.25 (C)	2.331	1.00	1.00	-	-
		N489/N176	N639/N627	C100X50X17X2.25 (C)	2.331	1.00	1.00	-	-
		N176/N500	N639/N627	C100X50X17X2.25 (C)	2.330	1.00	1.00	-	-
		N500/N227	N639/N627	C100X50X17X2.25 (C)	2.331	1.00	1.00	-	-
		N227/N627	N639/N627	C100X50X17X2.25 (C)	0.800	1.00	1.00	-	-
		N640/N44	N640/N628	C100X50X17X2.25 (C)	0.800	1.00	1.00	-	-
		N44/N466	N640/N628	C100X50X17X2.25 (C)	2.331	1.00	1.00	-	-
		N466/N67	N640/N628	C100X50X17X2.25 (C)	2.331	1.00	1.00	-	-
		N67/N477	N640/N628	C100X50X17X2.25 (C)	2.330	1.00	1.00	-	-
		N477/N116	N640/N628	C100X50X17X2.25 (C)	2.331	1.00	1.00	-	-
		N116/N488	N640/N628	C100X50X17X2.25 (C)	2.331	1.00	1.00	-	-
		N488/N177	N640/N628	C100X50X17X2.25 (C)	2.331	1.00	1.00	-	-
		N177/N499	N640/N628	C100X50X17X2.25 (C)	2.330	1.00	1.00	-	-
		N499/N228	N640/N628	C100X50X17X2.25 (C)	2.331	1.00	1.00	-	-
		N228/N628	N640/N628	C100X50X17X2.25 (C)	0.800	1.00	1.00	-	-
		N642/N42	N642/N630	C100X50X17X2.25 (C)	0.800	1.00	1.00	-	-
		N42/N464	N642/N630	C100X50X17X2.25 (C)	2.331	1.00	1.00	-	-
		N464/N69	N642/N630	C100X50X17X2.25 (C)	2.331	1.00	1.00	-	-
		N69/N475	N642/N630	C100X50X17X2.25 (C)	2.330	1.00	1.00	-	-
		N475/N118	N642/N630	C100X50X17X2.25 (C)	2.331	1.00	1.00	-	-
		N118/N486	N642/N630	C100X50X17X2.25 (C)	2.331	1.00	1.00	-	-
		N486/N182	N642/N630	C100X50X17X2.25 (C)	2.331	1.00	1.00	-	-
		N182/N497	N642/N630	C100X50X17X2.25 (C)	2.330	1.00	1.00	-	-
		N497/N233	N642/N630	C100X50X17X2.25 (C)	2.331	1.00	1.00	-	-
		N233/N630	N642/N630	C100X50X17X2.25 (C)	0.800	1.00	1.00	-	-
		N644/N39	N644/N632	C100X50X17X2.25 (C)	0.800	1.00	1.00	-	-
		N39/N462	N644/N632	C100X50X17X2.25 (C)	2.331	1.00	1.00	-	-
		N462/N71	N644/N632	C100X50X17X2.25 (C)	2.331	1.00	1.00	-	-
		N71/N473	N644/N632	C100X50X17X2.25 (C)	2.330	1.00	1.00	-	-
		N473/N120	N644/N632	C100X50X17X2.25 (C)	2.331	1.00	1.00	-	-
		N120/N484	N644/N632	C100X50X17X2.25 (C)	2.331	1.00	1.00	-	-
		N484/N184	N644/N632	C100X50X17X2.25 (C)	2.331	1.00	1.00	-	-
		N184/N495	N644/N632	C100X50X17X2.25 (C)	2.330	1.00	1.00	-	-
		N495/N235	N644/N632	C100X50X17X2.25 (C)	2.331	1.00	1.00	-	-



		Descrição							
Material		Barra (Ni/Nf)	Peça (Ni/Nf)	Perfil(Série)	Comprimento (m)	$\beta_{xy}$	$\beta_{xz}$	Lb <sub>Sup.</sub> (m)	Lb <sub>Inf.</sub> (m)
Tipo	Designação								
		N235/N632	N644/N632	C100X50X17X2.25 (C)	0.800	1.00	1.00	-	-
		N643/N41	N643/N631	C100X50X17X2.25 (C)	0.800	1.00	1.00	-	-
		N41/N463	N643/N631	C100X50X17X2.25 (C)	2.331	1.00	1.00	-	-
		N463/N70	N643/N631	C100X50X17X2.25 (C)	2.331	1.00	1.00	-	-
		N70/N474	N643/N631	C100X50X17X2.25 (C)	2.330	1.00	1.00	-	-
		N474/N119	N643/N631	C100X50X17X2.25 (C)	2.331	1.00	1.00	-	-
		N119/N485	N643/N631	C100X50X17X2.25 (C)	2.331	1.00	1.00	-	-
		N485/N183	N643/N631	C100X50X17X2.25 (C)	2.331	1.00	1.00	-	-
		N183/N496	N643/N631	C100X50X17X2.25 (C)	2.330	1.00	1.00	-	-
		N496/N234	N643/N631	C100X50X17X2.25 (C)	2.331	1.00	1.00	-	-
		N234/N631	N643/N631	C100X50X17X2.25 (C)	0.800	1.00	1.00	-	-
		N641/N43	N641/N629	C100X50X17X2.25 (C)	0.800	1.00	1.00	-	-
		N43/N465	N641/N629	C100X50X17X2.25 (C)	2.331	1.00	1.00	-	-
		N465/N68	N641/N629	C100X50X17X2.25 (C)	2.331	1.00	1.00	-	-
		N68/N476	N641/N629	C100X50X17X2.25 (C)	2.330	1.00	1.00	-	-
		N476/N117	N641/N629	C100X50X17X2.25 (C)	2.331	1.00	1.00	-	-
		N117/N487	N641/N629	C100X50X17X2.25 (C)	2.331	1.00	1.00	-	-
		N487/N178	N641/N629	C100X50X17X2.25 (C)	2.331	1.00	1.00	-	-
		N178/N498	N641/N629	C100X50X17X2.25 (C)	2.330	1.00	1.00	-	-
		N498/N229	N641/N629	C100X50X17X2.25 (C)	2.331	1.00	1.00	-	-
		N229/N629	N641/N629	C100X50X17X2.25 (C)	0.800	1.00	1.00	-	-
		N646/N37	N646/N634	C100X50X17X2.25 (C)	0.800	1.00	1.00	-	-
		N37/N460	N646/N634	C100X50X17X2.25 (C)	2.331	1.00	1.00	-	-
		N460/N73	N646/N634	C100X50X17X2.25 (C)	2.331	1.00	1.00	-	-
		N73/N471	N646/N634	C100X50X17X2.25 (C)	2.330	1.00	1.00	-	-
		N471/N122	N646/N634	C100X50X17X2.25 (C)	2.331	1.00	1.00	-	-
		N122/N482	N646/N634	C100X50X17X2.25 (C)	2.331	1.00	1.00	-	-
		N482/N191	N646/N634	C100X50X17X2.25 (C)	2.331	1.00	1.00	-	-
		N191/N493	N646/N634	C100X50X17X2.25 (C)	2.330	1.00	1.00	-	-
		N493/N242	N646/N634	C100X50X17X2.25 (C)	2.331	1.00	1.00	-	-
		N242/N634	N646/N634	C100X50X17X2.25 (C)	0.800	1.00	1.00	-	-
		N648/N8	N648/N636	C100X50X17X2.25 (C)	0.800	1.00	1.00	-	-
		N8/N458	N648/N636	C100X50X17X2.25 (C)	2.331	1.00	1.00	-	-
		N458/N75	N648/N636	C100X50X17X2.25 (C)	2.331	1.00	1.00	-	-
		N75/N469	N648/N636	C100X50X17X2.25 (C)	2.330	1.00	1.00	-	-
		N469/N124	N648/N636	C100X50X17X2.25 (C)	2.331	1.00	1.00	-	-
		N124/N480	N648/N636	C100X50X17X2.25 (C)	2.331	1.00	1.00	-	-
		N480/N193	N648/N636	C100X50X17X2.25 (C)	2.331	1.00	1.00	-	-
		N193/N491	N648/N636	C100X50X17X2.25 (C)	2.330	1.00	1.00	-	-
		N491/N244	N648/N636	C100X50X17X2.25 (C)	2.331	1.00	1.00	-	-
		N244/N636	N648/N636	C100X50X17X2.25 (C)	0.800	1.00	1.00	-	-
		N649/N47	N649/N637	C100X50X17X2.25 (C)	0.800	1.00	1.00	-	-
		N47/N457	N649/N637	C100X50X17X2.25 (C)	2.331	1.00	1.00	-	-
		N457/N76	N649/N637	C100X50X17X2.25 (C)	2.331	1.00	1.00	-	-
		N76/N468	N649/N637	C100X50X17X2.25 (C)	2.330	1.00	1.00	-	-
		N468/N125	N649/N637	C100X50X17X2.25 (C)	2.331	1.00	1.00	-	-
		N125/N479	N649/N637	C100X50X17X2.25 (C)	2.331	1.00	1.00	-	-





Descrição									
Material		Barra (Ni/Nf)	Peça (Ni/Nf)	Perfil(Série)	Comprimento (m)	$\beta_{xy}$	$\beta_{xz}$	Lb <sup>Sup.</sup> (m)	Lb <sup>Inf.</sup> (m)
Tipo	Designação								
		N479/N194	N649/N637	C100X50X17X2.25 (C)	2.331	1.00	1.00	-	-
		N194/N490	N649/N637	C100X50X17X2.25 (C)	2.330	1.00	1.00	-	-
		N490/N245	N649/N637	C100X50X17X2.25 (C)	2.331	1.00	1.00	-	-
		N245/N637	N649/N637	C100X50X17X2.25 (C)	0.800	1.00	1.00	-	-
		N650/N408	N650/N638	C100X50X17X2.25 (C)	0.800	1.00	1.00	-	-
		N408/N574	N650/N638	C100X50X17X2.25 (C)	2.331	1.00	1.00	-	-
		N574/N409	N650/N638	C100X50X17X2.25 (C)	2.331	1.00	1.00	-	-
		N409/N575	N650/N638	C100X50X17X2.25 (C)	2.330	1.00	1.00	-	-
		N575/N410	N650/N638	C100X50X17X2.25 (C)	2.331	1.00	1.00	-	-
		N410/N576	N650/N638	C100X50X17X2.25 (C)	2.331	1.00	1.00	-	-
		N576/N411	N650/N638	C100X50X17X2.25 (C)	2.331	1.00	1.00	-	-
		N411/N577	N650/N638	C100X50X17X2.25 (C)	2.330	1.00	1.00	-	-
		N577/N412	N650/N638	C100X50X17X2.25 (C)	2.331	1.00	1.00	-	-
		N412/N638	N650/N638	C100X50X17X2.25 (C)	0.800	1.00	1.00	-	-
		N647/N36	N647/N635	C100X50X17X2.25 (C)	0.800	1.00	1.00	-	-
		N36/N459	N647/N635	C100X50X17X2.25 (C)	2.331	1.00	1.00	-	-
		N459/N74	N647/N635	C100X50X17X2.25 (C)	2.331	1.00	1.00	-	-
		N74/N470	N647/N635	C100X50X17X2.25 (C)	2.330	1.00	1.00	-	-
		N470/N123	N647/N635	C100X50X17X2.25 (C)	2.331	1.00	1.00	-	-
		N123/N481	N647/N635	C100X50X17X2.25 (C)	2.331	1.00	1.00	-	-
		N481/N192	N647/N635	C100X50X17X2.25 (C)	2.331	1.00	1.00	-	-
		N192/N492	N647/N635	C100X50X17X2.25 (C)	2.330	1.00	1.00	-	-
		N492/N243	N647/N635	C100X50X17X2.25 (C)	2.331	1.00	1.00	-	-
		N243/N635	N647/N635	C100X50X17X2.25 (C)	0.800	1.00	1.00	-	-
		N645/N38	N645/N633	C100X50X17X2.25 (C)	0.800	1.00	1.00	-	-
		N38/N461	N645/N633	C100X50X17X2.25 (C)	2.331	1.00	1.00	-	-
		N461/N72	N645/N633	C100X50X17X2.25 (C)	2.331	1.00	1.00	-	-
		N72/N472	N645/N633	C100X50X17X2.25 (C)	2.330	1.00	1.00	-	-
		N472/N121	N645/N633	C100X50X17X2.25 (C)	2.331	1.00	1.00	-	-
		N121/N483	N645/N633	C100X50X17X2.25 (C)	2.331	1.00	1.00	-	-
		N483/N185	N645/N633	C100X50X17X2.25 (C)	2.331	1.00	1.00	-	-
		N185/N494	N645/N633	C100X50X17X2.25 (C)	2.330	1.00	1.00	-	-
		N494/N236	N645/N633	C100X50X17X2.25 (C)	2.331	1.00	1.00	-	-
		N236/N633	N645/N633	C100X50X17X2.25 (C)	0.800	1.00	1.00	-	-
		N251/N651	N251/N651	U100X60X3.75 (U)	0.158	1.00	1.00	-	-
		N652/N515	N652/N530	2xC100X50X17X2.25([-]) (C)	0.800	1.00	1.00	-	-
		N515/N530	N652/N530	2xC100X50X17X2.25([-]) (C)	2.375	1.00	1.00	-	-
		N653/N516	N653/N531	C100X50X17X2.25 (C)	0.800	1.00	1.00	-	-
		N516/N531	N653/N531	C100X50X17X2.25 (C)	2.375	1.00	1.00	-	-
		N654/N517	N654/N528	C100X50X17X2.25 (C)	0.800	1.00	1.00	-	-
		N517/N528	N654/N528	C100X50X17X2.25 (C)	2.375	1.00	1.00	-	-
		N655/N518	N655/N529	C100X50X17X2.25 (C)	0.800	1.00	1.00	-	-
		N518/N529	N655/N529	C100X50X17X2.25 (C)	2.375	1.00	1.00	-	-
		N656/N514	N656/N527	C100X50X17X2.25 (C)	0.800	1.00	1.00	-	-
		N514/N527	N656/N527	C100X50X17X2.25 (C)	2.375	1.00	1.00	-	-
		N506/N660	N506/N660	U100X60X3.75 (U)	1.322	1.00	1.00	-	-



Descrição									
Material		Barra (Ni/Nf)	Peça (Ni/Nf)	Perfil(Série)	Comprimento (m)	$\beta_{xy}$	$\beta_{xz}$	Lb <sub>Sup.</sub> (m)	Lb <sub>Inf.</sub> (m)
Tipo	Designação								
		N505/N660	N505/N660	U100X60X3.75 (U)	1.642	1.00	1.00	-	-
		N532/N530	N532/N530	U100X60X3.75 (U)	1.928	1.00	1.00	-	-
		N532/N661	N532/N661	U100X60X3.75 (U)	1.322	1.00	1.00	-	-
		N662/N660	N662/N661	C100X50X17X2.25 (C)	0.800	1.00	1.00	-	-
		N660/N661	N662/N661	C100X50X17X2.25 (C)	2.375	1.00	1.00	-	-
		N657/N521	N657/N536	C100X50X17X2.25 (C)	0.800	1.00	1.00	-	-
		N521/N536	N657/N536	C100X50X17X2.25 (C)	2.375	1.00	1.00	-	-
		N658/N520	N658/N538	C100X50X17X2.25 (C)	0.800	1.00	1.00	-	-
		N520/N538	N658/N538	C100X50X17X2.25 (C)	2.375	1.00	1.00	-	-
		N659/N519	N659/N537	C100X50X17X2.25 (C)	0.800	1.00	1.00	-	-
		N519/N537	N659/N537	C100X50X17X2.25 (C)	2.375	1.00	1.00	-	-

Notação:  
Ni: Nó inicial  
Nf: Nó final  
 $\beta_{xy}$ : Coeficiente de flambagem no plano 'XY'  
 $\beta_{xz}$ : Coeficiente de flambagem no plano 'XZ'  
Lb<sub>Sup.</sub>: Espaçamento entre travamentos do banzo superior  
Lb<sub>Inf.</sub>: Espaçamento entre travamentos do banzo inferior

### 2.1.2.3.- Características mecânicas

Tipos de peça	
Ref.	Peças
1	N383/N295, N295/N338, N338/N309, N266/N309, N295/N266, N382/N295, N384/N260, N260/N301, N301/N252, N301/N346, N332/N301, N384/N332, N153/N212, N212/N168, N168/N225, N219/N174, N161/N219, N204/N161, N385/N320, N320/N278, N278/N309, N351/N309, N320/N351, N386/N320, N387/N357, N357/N314, N314/N346, N314/N252, N272/N314, N387/N272, N74/N39, N39/N68, N68/N4, N43/N63, N71/N43, N36/N71, N123/N71, N71/N117, N117/N63, N68/N112, N120/N68, N74/N120, N192/N120, N120/N178, N178/N112, N117/N174, N184/N117, N123/N184, N243/N184, N184/N229, N229/N174, N178/N225, N235/N178, N192/N235, N19/N63, N57/N19, N24/N57, N55/N22, N22/N60, N60/N4, N408/N74, N409/N36, N409/N123, N411/N123, N411/N243, N410/N74, N412/N192, N410/N192, N152/N105, N105/N167, N167/N111, N111/N174, N170/N112, N108/N170, N160/N108, N103/N160, N103/N56, N56/N108, N108/N62, N62/N112, N111/N63, N59/N111, N105/N59, N54/N105, N392/N153, N391/N204, N390/N24 e N389/N55
2	N413/N414, N445/N456, N435/N444, N425/N434, N568/N557, N567/N558, N539/N557, N540/N558, N574/N456, N575/N444, N576/N434 e N577/N414

Tipos de peça	
Ref.	Peças
3	N1/N4, N1/N5, N5/N2, N6/N3, N6/N2, N5/N7, N6/N8, N16/N17, N15/N18, N14/N19, N13/N20, N12/N22, N11/N23, N9/N24, N9/N7, N10/N24, N12/N23, N13/N21, N14/N20, N15/N19, N16/N18, N5/N26, N25/N26, N2/N17, N35/N36, N34/N36, N34/N37, N33/N37, N33/N38, N32/N38, N32/N39, N40/N39, N40/N41, N30/N41, N30/N42, N29/N42, N29/N43, N28/N43, N28/N44, N27/N44, N27/N45, N2/N45, N6/N47, N35/N8, N46/N47, N50/N21, N50/N22, N10/N51, N11/N51, N52/N63, N52/N80, N80/N65, N92/N77, N92/N65, N80/N54, N92/N75, N88/N62, N87/N61, N86/N60, N85/N59, N84/N57, N83/N56, N81/N55, N81/N54, N82/N55, N84/N56, N85/N58, N86/N59, N87/N60, N88/N61, N80/N53, N79/N53, N65/N62, N93/N74, N94/N74, N94/N73, N95/N73, N95/N72, N96/N72, N96/N71, N102/N71, N102/N70, N98/N70, N98/N69, N99/N69, N99/N68, N100/N68, N100/N67, N101/N67, N101/N66, N65/N66, N92/N76, N93/N75, N91/N76, N89/N58, N89/N57, N82/N64, N83/N64, N126/N112, N127/N114, N139/N126, N139/N114, N127/N103, N139/N124, N135/N111, N134/N110, N133/N109, N132/N108, N131/N106, N130/N105, N128/N104, N128/N103, N129/N104, N131/N105, N132/N107, N133/N108, N134/N109, N135/N110, N114/N111, N140/N123, N141/N123, N141/N122, N142/N122, N142/N121, N143/N121, N143/N120, N149/N120, N149/N119, N145/N119, N145/N118, N146/N118, N146/N117, N147/N117, N147/N116, N148/N116, N148/N115, N114/N115, N139/N125, N140/N124, N138/N125, N136/N107, N136/N106, N129/N113, N130/N113, N150/N174, N157/N175, N157/N152, N158/N153, N158/N152, N159/N153, N157/N151, N156/N151, N164/N161, N163/N160, N164/N160, N165/N162, N165/N161, N159/N154, N163/N154, N172/N169, N171/N168, N166/N167, N166/N162, N171/N167, N172/N168, N173/N169, N199/N174, N196/N175, N173/N170, N175/N170, N180/N178, N180/N177, N181/N177, N181/N176, N175/N176, N187/N185, N187/N184, N190/N184, N190/N183, N189/N183, N189/N182, N179/N182, N179/N178, N196/N199, N196/N193, N197/N192, N198/N192, N198/N191, N186/N191, N186/N185, N196/N194, N197/N193, N195/N194, N201/N225, N201/N208, N208/N226, N208/N203, N209/N204, N209/N203, N210/N204, N208/N202, N207/N202, N215/N212, N214/N211, N215/N211, N216/N213, N216/N212, N210/N205, N214/N205, N223/N220, N222/N219, N217/N218, N217/N213, N222/N218, N223/N219, N224/N220, N250/N225, N247/N226, N224/N221, N226/N221, N231/N229, N231/N228, N232/N228, N232/N227, N226/N227, N238/N236, N238/N235, N241/N235, N241/N234, N240/N234, N240/N233, N230/N233, N230/N229, N247/N250, N247/N244, N248/N243, N249/N243, N249/N242, N237/N242, N237/N236, N247/N245, N248/N244, N246/N245, N253/N252, N254/N252, N254/N255, N255/N256, N257/N253, N257/N256, N255/N258, N285/N286, N255/N286, N259/N258, N259/N260, N261/N260, N261/N262, N263/N262, N263/N264, N265/N264, N265/N266, N267/N266, N267/N268, N269/N268, N269/N270, N256/N270, N256/N282, N281/N282, N281/N280, N279/N280, N279/N278, N277/N278, N277/N276, N275/N276, N275/N274, N273/N274, N273/N272, N271/N272, N257/N284, N283/N284, N290/N309, N290/N294, N292/N289, N294/N289, N294/N306, N294/N293, N296/N293, N296/N295, N298/N295, N298/N297, N300/N297, N300/N299, N302/N299, N302/N301, N304/N301, N305/N303, N305/N307, N322/N306, N306/N307, N306/N310, N308/N310, N308/N312, N324/N309, N311/N312, N311/N314, N313/N314, N313/N316, N315/N316, N315/N318, N317/N320, N319/N320, N317/N318, N322/N324, N322/N321, N323/N321, N304/N303, N327/N346, N327/N331, N329/N326, N331/N326, N331/N343, N331/N330, N333/N330, N333/N332, N335/N332, N335/N334, N337/N334, N337/N336, N339/N336, N339/N338, N341/N338, N342/N340, N342/N344, N359/N343, N343/N344, N343/N347, N345/N347, N345/N349, N361/N346, N348/N349, N348/N351, N350/N351, N350/N353, N352/N353, N352/N355, N354/N357, N356/N357, N354/N355, N359/N361, N359/N358, N360/N358, N341/N340, N363/N369, N363/N370, N364/N370, N364/N371, N365/N371, N365/N372, N366/N374, N367/N374, N366/N372, N368/N375, N376/N373, N257/N378, N271/N378, N322/N379, N319/N379, N359/N380, N356/N380, N368/N381, N367/N381, N287/N393, N49/N394, N78/N395, N155/N396, N206/N397, N291/N398, N328/N399, N362/N400, N377/N401, N325/N402, N288/N403, N200/N404, N137/N405, N90/N406, N48/N407, N77/N63, N3/N4, N103/N112, N509/N505, N505/N513, N513/N514, N514/N515, N519/N515, N508/N520, N507/N520, N507/N521, N506/N521, N505/N516, N510/N516, N510/N517, N511/N517, N511/N518, N512/N518, N509/N519, N525/N524, N524/N527, N527/N530, N522/N529, N523/N529, N535/N525, N537/N530, N525/N531, N526/N531, N526/N528, N522/N528, N534/N538, N533/N538, N533/N536, N532/N536, N535/N537, N375/N369, N368/N363, N150/N157, N251/N651, N506/N660, N505/N660, N532/N530 e N532/N661
4	N2/N4, N65/N63, N114/N112, N175/N174, N226/N225, N256/N252, N306/N309 e N343/N346
5	N505/N515, N525/N530 e N105/N530
6	N252/N578, N597/N610 e N652/N530

Tipos de peça	
Ref.	Peças
7	N270/N579, N268/N580, N266/N581, N264/N582, N262/N583, N260/N584, N258/N585, N286/N586, N382/N587, N282/N588, N280/N589, N278/N590, N276/N591, N274/N592, N272/N593, N378/N594, N284/N595, N385/N596, N598/N611, N599/N612, N600/N613, N601/N614, N602/N615, N605/N618, N604/N617, N603/N616, N606/N619, N607/N620, N608/N624, N609/N625, N623/N621, N626/N622, N639/N627, N640/N628, N642/N630, N644/N632, N643/N631, N641/N629, N646/N634, N648/N636, N649/N637, N650/N638, N647/N635, N645/N633, N653/N531, N654/N528, N655/N529, N656/N527, N662/N661, N657/N536, N658/N538 e N659/N537

Características mecânicas									
Material		Ref.	Descrição	A (cm²)	Avy (cm²)	Avz (cm²)	Iyy (cm4)	Izz (cm4)	It (cm4)
Tipo	Designação								
Aço laminado	A-572 345MPa	1	1/4", (Barra redonda)	0.32	0.29	0.29	0.01	0.01	0.02
		2	L 3/4 x 1/8", (Cantoneira)	1.11	0.50	0.50	0.36	0.36	0.04
Aço dobrado	A-36	3	U100X60X3.75, (U)	7.78	3.63	3.01	124.36	28.41	0.36
		4	U50X25X1.52, Caixa dupla soldada, (U) Cordão contínuo	2.89	1.23	1.23	11.18	11.18	17.63
		5	C75X40X15X2.00, (C)	3.43	1.27	1.68	30.25	7.87	0.05
		6	C100X50X17X2.25, Caixa dupla união genérica, (C) Distância entre os perfis: 100.0 / 100.0 mm Perfis independentes	9.86	3.58	4.86	155.39	700.67	0.17
		7	C100X50X17X2.25, (C)	4.93	1.79	2.43	77.70	17.34	0.08
<b>Notação:</b> Ref.: Referência A: Área da seção transversal Avy: Área de esforço cortante da seção segundo o eixo local 'Y' Avz: Área de esforço cortante da seção segundo o eixo local 'Z' Iyy: Inércia da seção em torno do eixo local 'Y' Izz: Inércia da seção em torno do eixo local 'Z' It: Inércia à torção As características mecânicas das peças correspondem à seção no ponto médio das mesmas.									

#### 2.1.2.4.- Tabela de ferro

Tabela de ferro						
Material		Peça (Ni/Nf)	Perfil(Série)	Comprimento (m)	Volume (m³)	Peso (kg)
Tipo	Designação					
Aço laminado	A-572 345MPa	N383/N295	1/4" (Barra redonda)	5.247	0.000	1.30
		N295/N338	1/4" (Barra redonda)	4.910	0.000	1.22
		N338/N309	1/4" (Barra redonda)	5.004	0.000	1.24
		N266/N309	1/4" (Barra redonda)	5.111	0.000	1.27
		N295/N266	1/4" (Barra redonda)	5.020	0.000	1.25
		N382/N295	1/4" (Barra redonda)	5.350	0.000	1.33
		N384/N260	1/4" (Barra redonda)	5.350	0.000	1.33
		N260/N301	1/4" (Barra redonda)	5.020	0.000	1.25
		N301/N252	1/4" (Barra redonda)	5.111	0.000	1.27
		N301/N346	1/4" (Barra redonda)	5.004	0.000	1.24
		N332/N301	1/4" (Barra redonda)	4.910	0.000	1.22
		N384/N332	1/4" (Barra redonda)	5.247	0.000	1.30
		N153/N212	1/4" (Barra redonda)	5.759	0.000	1.43
		N212/N168	1/4" (Barra redonda)	5.759	0.000	1.43
		N168/N225	1/4" (Barra redonda)	5.792	0.000	1.44
		N219/N174	1/4" (Barra redonda)	5.792	0.000	1.44
		N161/N219	1/4" (Barra redonda)	5.759	0.000	1.43

Tabela de ferro						
Material		Peça (Ni/Nf)	Perfil(Série)	Comprimento (m)	Volume (m³)	Peso (kg)
Tipo	Designação					
		N204/N161	1/4" (Barra redonda)	5.759	0.000	1.43
		N385/N320	1/4" (Barra redonda)	5.350	0.000	1.33
		N320/N278	1/4" (Barra redonda)	5.020	0.000	1.25
		N278/N309	1/4" (Barra redonda)	5.111	0.000	1.27
		N351/N309	1/4" (Barra redonda)	5.004	0.000	1.24
		N320/N351	1/4" (Barra redonda)	4.910	0.000	1.22
		N386/N320	1/4" (Barra redonda)	5.247	0.000	1.30
		N387/N357	1/4" (Barra redonda)	5.247	0.000	1.30
		N357/N314	1/4" (Barra redonda)	4.910	0.000	1.22
		N314/N346	1/4" (Barra redonda)	5.004	0.000	1.24
		N314/N252	1/4" (Barra redonda)	5.111	0.000	1.27
		N272/N314	1/4" (Barra redonda)	5.020	0.000	1.25
		N387/N272	1/4" (Barra redonda)	5.350	0.000	1.33
		N74/N39	1/4" (Barra redonda)	5.760	0.000	1.43
		N39/N68	1/4" (Barra redonda)	5.760	0.000	1.43
		N68/N4	1/4" (Barra redonda)	5.793	0.000	1.44
		N43/N63	1/4" (Barra redonda)	5.793	0.000	1.44
		N71/N43	1/4" (Barra redonda)	5.760	0.000	1.43
		N36/N71	1/4" (Barra redonda)	5.760	0.000	1.43
		N123/N71	1/4" (Barra redonda)	5.759	0.000	1.43
		N71/N117	1/4" (Barra redonda)	5.759	0.000	1.43
		N117/N63	1/4" (Barra redonda)	5.792	0.000	1.44
		N68/N112	1/4" (Barra redonda)	5.792	0.000	1.44
		N120/N68	1/4" (Barra redonda)	5.759	0.000	1.43
		N74/N120	1/4" (Barra redonda)	5.759	0.000	1.43
		N192/N120	1/4" (Barra redonda)	5.760	0.000	1.43
		N120/N178	1/4" (Barra redonda)	5.760	0.000	1.43
		N178/N112	1/4" (Barra redonda)	5.793	0.000	1.44
		N117/N174	1/4" (Barra redonda)	5.793	0.000	1.44
		N184/N117	1/4" (Barra redonda)	5.760	0.000	1.43
		N123/N184	1/4" (Barra redonda)	5.760	0.000	1.43
		N243/N184	1/4" (Barra redonda)	5.759	0.000	1.43
		N184/N229	1/4" (Barra redonda)	5.759	0.000	1.43
		N229/N174	1/4" (Barra redonda)	5.792	0.000	1.44
		N178/N225	1/4" (Barra redonda)	5.792	0.000	1.44
		N235/N178	1/4" (Barra redonda)	5.759	0.000	1.43
		N192/N235	1/4" (Barra redonda)	5.759	0.000	1.43
		N19/N63	1/4" (Barra redonda)	5.793	0.000	1.44
		N57/N19	1/4" (Barra redonda)	5.760	0.000	1.43
		N24/N57	1/4" (Barra redonda)	5.760	0.000	1.43
		N55/N22	1/4" (Barra redonda)	5.760	0.000	1.43
		N22/N60	1/4" (Barra redonda)	5.760	0.000	1.43
		N60/N4	1/4" (Barra redonda)	5.793	0.000	1.44
		N408/N74	1/4" (Barra redonda)	6.051	0.000	1.50
		N409/N36	1/4" (Barra redonda)	6.051	0.000	1.50





Tabela de ferro						
Material		Peça (Ni/Nf)	Perfil(Série)	Comprimento (m)	Volume (m³)	Peso (kg)
Tipo	Designação					
		N409/N123	1/4" (Barra redonda)	6.050	0.000	1.50
		N411/N123	1/4" (Barra redonda)	6.051	0.000	1.50
		N411/N243	1/4" (Barra redonda)	6.050	0.000	1.50
		N410/N74	1/4" (Barra redonda)	6.050	0.000	1.50
		N412/N192	1/4" (Barra redonda)	6.050	0.000	1.50
		N410/N192	1/4" (Barra redonda)	6.051	0.000	1.50
		N413/N414	L 3/4 x 1/8" (Cantoneira)	14.060	0.002	12.25
		N445/N456	L 3/4 x 1/8" (Cantoneira)	14.060	0.002	12.25
		N435/N444	L 3/4 x 1/8" (Cantoneira)	11.332	0.001	9.87
		N425/N434	L 3/4 x 1/8" (Cantoneira)	11.332	0.001	9.87
		N152/N105	1/4" (Barra redonda)	5.760	0.000	1.43
		N105/N167	1/4" (Barra redonda)	5.760	0.000	1.43
		N167/N111	1/4" (Barra redonda)	5.760	0.000	1.43
		N111/N174	1/4" (Barra redonda)	4.810	0.000	1.20
		N170/N112	1/4" (Barra redonda)	4.810	0.000	1.20
		N108/N170	1/4" (Barra redonda)	5.760	0.000	1.43
		N160/N108	1/4" (Barra redonda)	5.760	0.000	1.43
		N103/N160	1/4" (Barra redonda)	5.760	0.000	1.43
		N103/N56	1/4" (Barra redonda)	5.759	0.000	1.43
		N56/N108	1/4" (Barra redonda)	5.759	0.000	1.43
		N108/N62	1/4" (Barra redonda)	5.759	0.000	1.43
		N62/N112	1/4" (Barra redonda)	4.809	0.000	1.20
		N111/N63	1/4" (Barra redonda)	4.809	0.000	1.20
		N59/N111	1/4" (Barra redonda)	5.759	0.000	1.43
		N105/N59	1/4" (Barra redonda)	5.759	0.000	1.43
		N54/N105	1/4" (Barra redonda)	5.759	0.000	1.43
		N392/N153	1/4" (Barra redonda)	6.049	0.000	1.50
		N391/N204	1/4" (Barra redonda)	6.049	0.000	1.50
		N390/N24	1/4" (Barra redonda)	6.050	0.000	1.50
		N389/N55	1/4" (Barra redonda)	6.050	0.000	1.50
		N568/N557	L 3/4 x 1/8" (Cantoneira)	6.917	0.001	6.03
		N567/N558	L 3/4 x 1/8" (Cantoneira)	10.779	0.001	9.39
		N539/N557	L 3/4 x 1/8" (Cantoneira)	10.779	0.001	9.39
		N540/N558	L 3/4 x 1/8" (Cantoneira)	10.779	0.001	9.39
		N574/N456	L 3/4 x 1/8" (Cantoneira)	14.061	0.002	12.25
		N575/N444	L 3/4 x 1/8" (Cantoneira)	14.061	0.002	12.25
		N576/N434	L 3/4 x 1/8" (Cantoneira)	14.061	0.002	12.25
		N577/N414	L 3/4 x 1/8" (Cantoneira)	14.061	0.002	12.25
Aço dobrado	A-36	N1/N4	U100X60X3.75 (U)	14.161	0.011	86.53
		N2/N4	2xU50X25X1.52([I]) (U)	1.059	0.000	2.40
		N1/N5	U100X60X3.75 (U)	2.727	0.002	16.66
		N5/N2	U100X60X3.75 (U)	11.255	0.009	68.77
		N6/N3	U100X60X3.75 (U)	2.727	0.002	16.66
		N6/N2	U100X60X3.75 (U)	11.255	0.009	68.77
		N5/N7	U100X60X3.75 (U)	0.753	0.001	4.60

Tabela de ferro						
Material		Peça (Ni/Nf)	Perfil(Série)	Comprimento (m)	Volume (m³)	Peso (kg)
Tipo	Designação					
		N6/N8	U100X60X3.75 (U)	0.753	0.001	4.60
		N16/N17	U100X60X3.75 (U)	1.027	0.001	6.28
		N15/N18	U100X60X3.75 (U)	0.997	0.001	6.09
		N14/N19	U100X60X3.75 (U)	0.966	0.001	5.90
		N13/N20	U100X60X3.75 (U)	0.936	0.001	5.72
		N12/N22	U100X60X3.75 (U)	0.875	0.001	5.35
		N11/N23	U100X60X3.75 (U)	0.845	0.001	5.16
		N9/N24	U100X60X3.75 (U)	0.784	0.001	4.79
		N9/N7	U100X60X3.75 (U)	1.190	0.001	7.27
		N10/N24	U100X60X3.75 (U)	1.202	0.001	7.35
		N12/N23	U100X60X3.75 (U)	1.230	0.001	7.51
		N13/N21	U100X60X3.75 (U)	1.259	0.001	7.69
		N14/N20	U100X60X3.75 (U)	1.275	0.001	7.79
		N15/N19	U100X60X3.75 (U)	1.291	0.001	7.89
		N16/N18	U100X60X3.75 (U)	1.308	0.001	7.99
		N5/N26	U100X60X3.75 (U)	1.415	0.001	8.65
		N25/N26	U100X60X3.75 (U)	0.377	0.000	2.30
		N2/N17	U100X60X3.75 (U)	1.361	0.001	8.32
		N35/N36	U100X60X3.75 (U)	0.784	0.001	4.79
		N34/N36	U100X60X3.75 (U)	1.202	0.001	7.35
		N34/N37	U100X60X3.75 (U)	0.810	0.001	4.95
		N33/N37	U100X60X3.75 (U)	1.228	0.001	7.51
		N33/N38	U100X60X3.75 (U)	0.845	0.001	5.16
		N32/N38	U100X60X3.75 (U)	1.230	0.001	7.51
		N32/N39	U100X60X3.75 (U)	0.875	0.001	5.35
		N40/N39	U100X60X3.75 (U)	1.242	0.001	7.59
		N40/N41	U100X60X3.75 (U)	0.901	0.001	5.50
		N30/N41	U100X60X3.75 (U)	1.259	0.001	7.69
		N30/N42	U100X60X3.75 (U)	0.936	0.001	5.72
		N29/N42	U100X60X3.75 (U)	1.275	0.001	7.79
		N29/N43	U100X60X3.75 (U)	0.966	0.001	5.90
		N28/N43	U100X60X3.75 (U)	1.291	0.001	7.89
		N28/N44	U100X60X3.75 (U)	0.997	0.001	6.09
		N27/N44	U100X60X3.75 (U)	1.308	0.001	7.99
		N27/N45	U100X60X3.75 (U)	1.027	0.001	6.28
		N2/N45	U100X60X3.75 (U)	1.361	0.001	8.32
		N6/N47	U100X60X3.75 (U)	1.415	0.001	8.65
		N35/N8	U100X60X3.75 (U)	1.190	0.001	7.27
		N46/N47	U100X60X3.75 (U)	0.377	0.000	2.30
		N50/N21	U100X60X3.75 (U)	0.905	0.001	5.53
		N50/N22	U100X60X3.75 (U)	1.244	0.001	7.60
		N10/N51	U100X60X3.75 (U)	0.814	0.001	4.97
		N11/N51	U100X60X3.75 (U)	1.216	0.001	7.43
		N52/N63	U100X60X3.75 (U)	14.161	0.011	86.53
		N65/N63	2xU50X25X1.52([]) (U)	1.059	0.000	2.40



Tabela de ferro						
Material		Peça (Ni/Nf)	Perfil(Série)	Comprimento (m)	Volume (m³)	Peso (kg)
Tipo	Designação					
		N52/N80	U100X60X3.75 (U)	2.727	0.002	16.66
		N80/N65	U100X60X3.75 (U)	11.255	0.009	68.77
		N92/N77	U100X60X3.75 (U)	2.727	0.002	16.66
		N92/N65	U100X60X3.75 (U)	11.255	0.009	68.77
		N80/N54	U100X60X3.75 (U)	0.753	0.001	4.60
		N92/N75	U100X60X3.75 (U)	0.753	0.001	4.60
		N88/N62	U100X60X3.75 (U)	1.027	0.001	6.28
		N87/N61	U100X60X3.75 (U)	0.997	0.001	6.09
		N86/N60	U100X60X3.75 (U)	0.966	0.001	5.90
		N85/N59	U100X60X3.75 (U)	0.936	0.001	5.72
		N84/N57	U100X60X3.75 (U)	0.875	0.001	5.35
		N83/N56	U100X60X3.75 (U)	0.845	0.001	5.16
		N81/N55	U100X60X3.75 (U)	0.784	0.001	4.79
		N81/N54	U100X60X3.75 (U)	1.190	0.001	7.27
		N82/N55	U100X60X3.75 (U)	1.202	0.001	7.35
		N84/N56	U100X60X3.75 (U)	1.230	0.001	7.51
		N85/N58	U100X60X3.75 (U)	1.259	0.001	7.69
		N86/N59	U100X60X3.75 (U)	1.275	0.001	7.79
		N87/N60	U100X60X3.75 (U)	1.291	0.001	7.89
		N88/N61	U100X60X3.75 (U)	1.308	0.001	7.99
		N80/N53	U100X60X3.75 (U)	1.415	0.001	8.65
		N79/N53	U100X60X3.75 (U)	0.377	0.000	2.30
		N65/N62	U100X60X3.75 (U)	1.361	0.001	8.32
		N93/N74	U100X60X3.75 (U)	0.784	0.001	4.79
		N94/N74	U100X60X3.75 (U)	1.202	0.001	7.35
		N94/N73	U100X60X3.75 (U)	0.810	0.001	4.95
		N95/N73	U100X60X3.75 (U)	1.228	0.001	7.51
		N95/N72	U100X60X3.75 (U)	0.845	0.001	5.16
		N96/N72	U100X60X3.75 (U)	1.230	0.001	7.51
		N96/N71	U100X60X3.75 (U)	0.875	0.001	5.35
		N102/N71	U100X60X3.75 (U)	1.242	0.001	7.59
		N102/N70	U100X60X3.75 (U)	0.901	0.001	5.50
		N98/N70	U100X60X3.75 (U)	1.259	0.001	7.69
		N98/N69	U100X60X3.75 (U)	0.936	0.001	5.72
		N99/N69	U100X60X3.75 (U)	1.275	0.001	7.79
		N99/N68	U100X60X3.75 (U)	0.966	0.001	5.90
		N100/N68	U100X60X3.75 (U)	1.291	0.001	7.89
		N100/N67	U100X60X3.75 (U)	0.997	0.001	6.09
		N101/N67	U100X60X3.75 (U)	1.308	0.001	7.99
		N101/N66	U100X60X3.75 (U)	1.027	0.001	6.28
		N65/N66	U100X60X3.75 (U)	1.361	0.001	8.32
		N92/N76	U100X60X3.75 (U)	1.415	0.001	8.65
		N93/N75	U100X60X3.75 (U)	1.190	0.001	7.27
		N91/N76	U100X60X3.75 (U)	0.377	0.000	2.30
		N89/N58	U100X60X3.75 (U)	0.905	0.001	5.53

Tabela de ferro						
Material		Peça (Ni/Nf)	Perfil(Série)	Comprimento (m)	Volume (m³)	Peso (kg)
Tipo	Designação					
		N89/N57	U100X60X3.75 (U)	1.244	0.001	7.60
		N82/N64	U100X60X3.75 (U)	0.814	0.001	4.97
		N83/N64	U100X60X3.75 (U)	1.216	0.001	7.43
		N114/N112	2xU50X25X1.52([I]) (U)	1.059	0.000	2.40
		N126/N112	U100X60X3.75 (U)	14.161	0.011	86.53
		N127/N114	U100X60X3.75 (U)	11.255	0.009	68.77
		N139/N126	U100X60X3.75 (U)	2.727	0.002	16.66
		N139/N114	U100X60X3.75 (U)	11.255	0.009	68.77
		N127/N103	U100X60X3.75 (U)	0.753	0.001	4.60
		N139/N124	U100X60X3.75 (U)	0.753	0.001	4.60
		N135/N111	U100X60X3.75 (U)	1.027	0.001	6.28
		N134/N110	U100X60X3.75 (U)	0.997	0.001	6.09
		N133/N109	U100X60X3.75 (U)	0.966	0.001	5.90
		N132/N108	U100X60X3.75 (U)	0.936	0.001	5.72
		N131/N106	U100X60X3.75 (U)	0.875	0.001	5.35
		N130/N105	U100X60X3.75 (U)	0.845	0.001	5.16
		N128/N104	U100X60X3.75 (U)	0.784	0.001	4.79
		N128/N103	U100X60X3.75 (U)	1.190	0.001	7.27
		N129/N104	U100X60X3.75 (U)	1.202	0.001	7.35
		N131/N105	U100X60X3.75 (U)	1.230	0.001	7.51
		N132/N107	U100X60X3.75 (U)	1.259	0.001	7.69
		N133/N108	U100X60X3.75 (U)	1.275	0.001	7.79
		N134/N109	U100X60X3.75 (U)	1.291	0.001	7.89
		N135/N110	U100X60X3.75 (U)	1.308	0.001	7.99
		N114/N111	U100X60X3.75 (U)	1.361	0.001	8.32
		N140/N123	U100X60X3.75 (U)	0.784	0.001	4.79
		N141/N123	U100X60X3.75 (U)	1.202	0.001	7.35
		N141/N122	U100X60X3.75 (U)	0.810	0.001	4.95
		N142/N122	U100X60X3.75 (U)	1.228	0.001	7.51
		N142/N121	U100X60X3.75 (U)	0.845	0.001	5.16
		N143/N121	U100X60X3.75 (U)	1.230	0.001	7.51
		N143/N120	U100X60X3.75 (U)	0.875	0.001	5.35
		N149/N120	U100X60X3.75 (U)	1.242	0.001	7.59
		N149/N119	U100X60X3.75 (U)	0.901	0.001	5.50
		N145/N119	U100X60X3.75 (U)	1.259	0.001	7.69
		N145/N118	U100X60X3.75 (U)	0.936	0.001	5.72
		N146/N118	U100X60X3.75 (U)	1.275	0.001	7.79
		N146/N117	U100X60X3.75 (U)	0.966	0.001	5.90
		N147/N117	U100X60X3.75 (U)	1.291	0.001	7.89
		N147/N116	U100X60X3.75 (U)	0.997	0.001	6.09
		N148/N116	U100X60X3.75 (U)	1.308	0.001	7.99
		N148/N115	U100X60X3.75 (U)	1.027	0.001	6.28
		N114/N115	U100X60X3.75 (U)	1.361	0.001	8.32
		N139/N125	U100X60X3.75 (U)	1.415	0.001	8.65
		N140/N124	U100X60X3.75 (U)	1.190	0.001	7.27



Tabela de ferro						
Material		Peça (Ni/Nf)	Perfil(Série)	Comprimento (m)	Volume (m³)	Peso (kg)
Tipo	Designação					
		N138/N125	U100X60X3.75 (U)	0.377	0.000	2.30
		N136/N107	U100X60X3.75 (U)	0.905	0.001	5.53
		N136/N106	U100X60X3.75 (U)	1.244	0.001	7.60
		N129/N113	U100X60X3.75 (U)	0.814	0.001	4.97
		N130/N113	U100X60X3.75 (U)	1.216	0.001	7.43
		N150/N174	U100X60X3.75 (U)	14.161	0.011	86.53
		N157/N175	U100X60X3.75 (U)	11.255	0.009	68.77
		N157/N152	U100X60X3.75 (U)	0.753	0.001	4.60
		N158/N153	U100X60X3.75 (U)	0.784	0.001	4.79
		N158/N152	U100X60X3.75 (U)	1.190	0.001	7.27
		N159/N153	U100X60X3.75 (U)	1.202	0.001	7.35
		N157/N151	U100X60X3.75 (U)	1.415	0.001	8.65
		N156/N151	U100X60X3.75 (U)	0.377	0.000	2.30
		N164/N161	U100X60X3.75 (U)	0.875	0.001	5.35
		N163/N160	U100X60X3.75 (U)	0.845	0.001	5.16
		N164/N160	U100X60X3.75 (U)	1.230	0.001	7.51
		N165/N162	U100X60X3.75 (U)	0.905	0.001	5.53
		N165/N161	U100X60X3.75 (U)	1.244	0.001	7.60
		N159/N154	U100X60X3.75 (U)	0.814	0.001	4.97
		N163/N154	U100X60X3.75 (U)	1.216	0.001	7.43
		N172/N169	U100X60X3.75 (U)	0.997	0.001	6.09
		N171/N168	U100X60X3.75 (U)	0.966	0.001	5.90
		N166/N167	U100X60X3.75 (U)	0.936	0.001	5.72
		N166/N162	U100X60X3.75 (U)	1.259	0.001	7.69
		N171/N167	U100X60X3.75 (U)	1.275	0.001	7.79
		N172/N168	U100X60X3.75 (U)	1.291	0.001	7.89
		N173/N169	U100X60X3.75 (U)	1.308	0.001	7.99
		N175/N174	2xU50X25X1.52([]) (U)	1.059	0.000	2.40
		N199/N174	U100X60X3.75 (U)	14.161	0.011	86.53
		N196/N175	U100X60X3.75 (U)	11.255	0.009	68.77
		N173/N170	U100X60X3.75 (U)	1.027	0.001	6.28
		N175/N170	U100X60X3.75 (U)	1.361	0.001	8.32
		N180/N178	U100X60X3.75 (U)	1.291	0.001	7.89
		N180/N177	U100X60X3.75 (U)	0.997	0.001	6.09
		N181/N177	U100X60X3.75 (U)	1.308	0.001	7.99
		N181/N176	U100X60X3.75 (U)	1.027	0.001	6.28
		N175/N176	U100X60X3.75 (U)	1.361	0.001	8.32
		N187/N185	U100X60X3.75 (U)	1.230	0.001	7.51
		N187/N184	U100X60X3.75 (U)	0.875	0.001	5.35
		N190/N184	U100X60X3.75 (U)	1.242	0.001	7.59
		N190/N183	U100X60X3.75 (U)	0.901	0.001	5.50
		N189/N183	U100X60X3.75 (U)	1.259	0.001	7.69
		N189/N182	U100X60X3.75 (U)	0.936	0.001	5.72
		N179/N182	U100X60X3.75 (U)	1.275	0.001	7.79
		N179/N178	U100X60X3.75 (U)	0.966	0.001	5.90



Tabela de ferro						
Material		Peça (Ni/Nf)	Perfil(Série)	Comprimento (m)	Volume (m³)	Peso (kg)
Tipo	Designação					
		N196/N199	U100X60X3.75 (U)	2.727	0.002	16.66
		N196/N193	U100X60X3.75 (U)	0.753	0.001	4.60
		N197/N192	U100X60X3.75 (U)	0.784	0.001	4.79
		N198/N192	U100X60X3.75 (U)	1.202	0.001	7.35
		N198/N191	U100X60X3.75 (U)	0.810	0.001	4.95
		N186/N191	U100X60X3.75 (U)	1.228	0.001	7.51
		N186/N185	U100X60X3.75 (U)	0.845	0.001	5.16
		N196/N194	U100X60X3.75 (U)	1.415	0.001	8.65
		N197/N193	U100X60X3.75 (U)	1.190	0.001	7.27
		N195/N194	U100X60X3.75 (U)	0.377	0.000	2.30
		N201/N225	U100X60X3.75 (U)	14.161	0.011	86.53
		N201/N208	U100X60X3.75 (U)	2.727	0.002	16.66
		N208/N226	U100X60X3.75 (U)	11.255	0.009	68.77
		N208/N203	U100X60X3.75 (U)	0.753	0.001	4.60
		N209/N204	U100X60X3.75 (U)	0.784	0.001	4.79
		N209/N203	U100X60X3.75 (U)	1.190	0.001	7.27
		N210/N204	U100X60X3.75 (U)	1.202	0.001	7.35
		N208/N202	U100X60X3.75 (U)	1.415	0.001	8.65
		N207/N202	U100X60X3.75 (U)	0.377	0.000	2.30
		N215/N212	U100X60X3.75 (U)	0.875	0.001	5.35
		N214/N211	U100X60X3.75 (U)	0.845	0.001	5.16
		N215/N211	U100X60X3.75 (U)	1.230	0.001	7.51
		N216/N213	U100X60X3.75 (U)	0.905	0.001	5.53
		N216/N212	U100X60X3.75 (U)	1.244	0.001	7.60
		N210/N205	U100X60X3.75 (U)	0.814	0.001	4.97
		N214/N205	U100X60X3.75 (U)	1.216	0.001	7.43
		N223/N220	U100X60X3.75 (U)	0.997	0.001	6.09
		N222/N219	U100X60X3.75 (U)	0.966	0.001	5.90
		N217/N218	U100X60X3.75 (U)	0.936	0.001	5.72
		N217/N213	U100X60X3.75 (U)	1.259	0.001	7.69
		N222/N218	U100X60X3.75 (U)	1.275	0.001	7.79
		N223/N219	U100X60X3.75 (U)	1.291	0.001	7.89
		N224/N220	U100X60X3.75 (U)	1.308	0.001	7.99
		N226/N225	2xU50X25X1.52([]) (U)	1.059	0.000	2.40
		N250/N225	U100X60X3.75 (U)	14.161	0.011	86.53
		N247/N226	U100X60X3.75 (U)	11.255	0.009	68.77
		N224/N221	U100X60X3.75 (U)	1.027	0.001	6.28
		N226/N221	U100X60X3.75 (U)	1.361	0.001	8.32
		N231/N229	U100X60X3.75 (U)	1.291	0.001	7.89
		N231/N228	U100X60X3.75 (U)	0.997	0.001	6.09
		N232/N228	U100X60X3.75 (U)	1.308	0.001	7.99
		N232/N227	U100X60X3.75 (U)	1.027	0.001	6.28
		N226/N227	U100X60X3.75 (U)	1.361	0.001	8.32
		N238/N236	U100X60X3.75 (U)	1.230	0.001	7.51
		N238/N235	U100X60X3.75 (U)	0.875	0.001	5.35



Tabela de ferro						
Material		Peça (Ni/Nf)	Perfil(Série)	Comprimento (m)	Volume (m³)	Peso (kg)
Tipo	Designação					
		N241/N235	U100X60X3.75 (U)	1.242	0.001	7.59
		N241/N234	U100X60X3.75 (U)	0.901	0.001	5.50
		N240/N234	U100X60X3.75 (U)	1.259	0.001	7.69
		N240/N233	U100X60X3.75 (U)	0.936	0.001	5.72
		N230/N233	U100X60X3.75 (U)	1.275	0.001	7.79
		N230/N229	U100X60X3.75 (U)	0.966	0.001	5.90
		N247/N250	U100X60X3.75 (U)	2.727	0.002	16.66
		N247/N244	U100X60X3.75 (U)	0.753	0.001	4.60
		N248/N243	U100X60X3.75 (U)	0.784	0.001	4.79
		N249/N243	U100X60X3.75 (U)	1.202	0.001	7.35
		N249/N242	U100X60X3.75 (U)	0.810	0.001	4.95
		N237/N242	U100X60X3.75 (U)	1.228	0.001	7.51
		N237/N236	U100X60X3.75 (U)	0.845	0.001	5.16
		N247/N245	U100X60X3.75 (U)	1.415	0.001	8.65
		N248/N244	U100X60X3.75 (U)	1.190	0.001	7.27
		N246/N245	U100X60X3.75 (U)	0.377	0.000	2.30
		N253/N252	U100X60X3.75 (U)	10.879	0.008	66.47
		N254/N252	U100X60X3.75 (U)	10.879	0.008	66.47
		N254/N255	U100X60X3.75 (U)	2.727	0.002	16.66
		N255/N256	U100X60X3.75 (U)	7.973	0.006	48.71
		N257/N253	U100X60X3.75 (U)	2.727	0.002	16.66
		N257/N256	U100X60X3.75 (U)	7.973	0.006	48.71
		N256/N252	2xU50X25X1.52([I]) (U)	1.059	0.000	2.40
		N255/N258	U100X60X3.75 (U)	0.765	0.001	4.67
		N285/N286	U100X60X3.75 (U)	0.382	0.000	2.34
		N255/N286	U100X60X3.75 (U)	1.417	0.001	8.66
		N259/N258	U100X60X3.75 (U)	1.198	0.001	7.32
		N259/N260	U100X60X3.75 (U)	0.806	0.001	4.93
		N261/N260	U100X60X3.75 (U)	1.216	0.001	7.43
		N261/N262	U100X60X3.75 (U)	0.848	0.001	5.18
		N263/N262	U100X60X3.75 (U)	1.235	0.001	7.55
		N263/N264	U100X60X3.75 (U)	0.889	0.001	5.43
		N265/N264	U100X60X3.75 (U)	1.255	0.001	7.67
		N265/N266	U100X60X3.75 (U)	0.930	0.001	5.68
		N267/N266	U100X60X3.75 (U)	1.276	0.001	7.80
		N267/N268	U100X60X3.75 (U)	0.971	0.001	5.94
		N269/N268	U100X60X3.75 (U)	1.298	0.001	7.93
		N269/N270	U100X60X3.75 (U)	1.013	0.001	6.19
		N256/N270	U100X60X3.75 (U)	1.413	0.001	8.63
		N256/N282	U100X60X3.75 (U)	1.413	0.001	8.63
		N281/N282	U100X60X3.75 (U)	1.013	0.001	6.19
		N281/N280	U100X60X3.75 (U)	1.298	0.001	7.93
		N279/N280	U100X60X3.75 (U)	0.971	0.001	5.94
		N279/N278	U100X60X3.75 (U)	1.276	0.001	7.80
		N277/N278	U100X60X3.75 (U)	0.930	0.001	5.68

Tabela de ferro						
Material		Peça (Ni/Nf)	Perfil(Série)	Comprimento (m)	Volume (m³)	Peso (kg)
Tipo	Designação					
		N277/N276	U100X60X3.75 (U)	1.255	0.001	7.67
		N275/N276	U100X60X3.75 (U)	0.889	0.001	5.43
		N275/N274	U100X60X3.75 (U)	1.235	0.001	7.55
		N273/N274	U100X60X3.75 (U)	0.848	0.001	5.18
		N273/N272	U100X60X3.75 (U)	1.216	0.001	7.43
		N271/N272	U100X60X3.75 (U)	0.806	0.001	4.93
		N257/N284	U100X60X3.75 (U)	1.417	0.001	8.66
		N283/N284	U100X60X3.75 (U)	0.382	0.000	2.34
		N290/N309	U100X60X3.75 (U)	10.879	0.008	66.47
		N290/N294	U100X60X3.75 (U)	2.727	0.002	16.66
		N292/N289	U100X60X3.75 (U)	0.382	0.000	2.34
		N294/N289	U100X60X3.75 (U)	1.417	0.001	8.66
		N294/N306	U100X60X3.75 (U)	7.973	0.006	48.71
		N294/N293	U100X60X3.75 (U)	0.765	0.001	4.67
		N296/N293	U100X60X3.75 (U)	1.198	0.001	7.32
		N296/N295	U100X60X3.75 (U)	0.806	0.001	4.93
		N298/N295	U100X60X3.75 (U)	1.216	0.001	7.43
		N298/N297	U100X60X3.75 (U)	0.848	0.001	5.18
		N300/N297	U100X60X3.75 (U)	1.235	0.001	7.55
		N300/N299	U100X60X3.75 (U)	0.889	0.001	5.43
		N302/N299	U100X60X3.75 (U)	1.255	0.001	7.67
		N302/N301	U100X60X3.75 (U)	0.930	0.001	5.68
		N304/N301	U100X60X3.75 (U)	1.276	0.001	7.80
		N305/N303	U100X60X3.75 (U)	1.298	0.001	7.93
		N305/N307	U100X60X3.75 (U)	1.013	0.001	6.19
		N322/N306	U100X60X3.75 (U)	7.973	0.006	48.71
		N306/N309	2xU50X25X1.52([]) (U)	1.059	0.000	2.40
		N306/N307	U100X60X3.75 (U)	1.413	0.001	8.63
		N306/N310	U100X60X3.75 (U)	1.413	0.001	8.63
		N308/N310	U100X60X3.75 (U)	1.013	0.001	6.19
		N308/N312	U100X60X3.75 (U)	1.298	0.001	7.93
		N324/N309	U100X60X3.75 (U)	10.879	0.008	66.47
		N311/N312	U100X60X3.75 (U)	0.971	0.001	5.94
		N311/N314	U100X60X3.75 (U)	1.276	0.001	7.80
		N313/N314	U100X60X3.75 (U)	0.930	0.001	5.68
		N313/N316	U100X60X3.75 (U)	1.255	0.001	7.67
		N315/N316	U100X60X3.75 (U)	0.889	0.001	5.43
		N315/N318	U100X60X3.75 (U)	1.235	0.001	7.55
		N317/N320	U100X60X3.75 (U)	1.216	0.001	7.43
		N319/N320	U100X60X3.75 (U)	0.806	0.001	4.93
		N317/N318	U100X60X3.75 (U)	0.848	0.001	5.18
		N322/N324	U100X60X3.75 (U)	2.727	0.002	16.66
		N322/N321	U100X60X3.75 (U)	1.417	0.001	8.66
		N323/N321	U100X60X3.75 (U)	0.382	0.000	2.34
		N304/N303	U100X60X3.75 (U)	0.971	0.001	5.94



Tabela de ferro						
Material		Peça (Ni/Nf)	Perfil(Série)	Comprimento (m)	Volume (m³)	Peso (kg)
Tipo	Designação					
		N327/N346	U100X60X3.75 (U)	10.879	0.008	66.47
		N327/N331	U100X60X3.75 (U)	2.727	0.002	16.66
		N329/N326	U100X60X3.75 (U)	0.382	0.000	2.34
		N331/N326	U100X60X3.75 (U)	1.417	0.001	8.66
		N331/N343	U100X60X3.75 (U)	7.973	0.006	48.71
		N331/N330	U100X60X3.75 (U)	0.765	0.001	4.67
		N333/N330	U100X60X3.75 (U)	1.198	0.001	7.32
		N333/N332	U100X60X3.75 (U)	0.806	0.001	4.93
		N335/N332	U100X60X3.75 (U)	1.216	0.001	7.43
		N335/N334	U100X60X3.75 (U)	0.848	0.001	5.18
		N337/N334	U100X60X3.75 (U)	1.235	0.001	7.55
		N337/N336	U100X60X3.75 (U)	0.889	0.001	5.43
		N339/N336	U100X60X3.75 (U)	1.255	0.001	7.67
		N339/N338	U100X60X3.75 (U)	0.930	0.001	5.68
		N341/N338	U100X60X3.75 (U)	1.276	0.001	7.80
		N342/N340	U100X60X3.75 (U)	1.298	0.001	7.93
		N342/N344	U100X60X3.75 (U)	1.013	0.001	6.19
		N359/N343	U100X60X3.75 (U)	7.973	0.006	48.71
		N343/N346	2xU50X25X1.52([I]) (U)	1.059	0.000	2.40
		N343/N344	U100X60X3.75 (U)	1.413	0.001	8.63
		N343/N347	U100X60X3.75 (U)	1.413	0.001	8.63
		N345/N347	U100X60X3.75 (U)	1.013	0.001	6.19
		N345/N349	U100X60X3.75 (U)	1.298	0.001	7.93
		N361/N346	U100X60X3.75 (U)	10.879	0.008	66.47
		N348/N349	U100X60X3.75 (U)	0.971	0.001	5.94
		N348/N351	U100X60X3.75 (U)	1.276	0.001	7.80
		N350/N351	U100X60X3.75 (U)	0.930	0.001	5.68
		N350/N353	U100X60X3.75 (U)	1.255	0.001	7.67
		N352/N353	U100X60X3.75 (U)	0.889	0.001	5.43
		N352/N355	U100X60X3.75 (U)	1.235	0.001	7.55
		N354/N357	U100X60X3.75 (U)	1.216	0.001	7.43
		N356/N357	U100X60X3.75 (U)	0.806	0.001	4.93
		N354/N355	U100X60X3.75 (U)	0.848	0.001	5.18
		N359/N361	U100X60X3.75 (U)	2.727	0.002	16.66
		N359/N358	U100X60X3.75 (U)	1.417	0.001	8.66
		N360/N358	U100X60X3.75 (U)	0.382	0.000	2.34
		N341/N340	U100X60X3.75 (U)	0.971	0.001	5.94
		N363/N369	U100X60X3.75 (U)	0.971	0.001	5.94
		N363/N370	U100X60X3.75 (U)	1.276	0.001	7.80
		N364/N370	U100X60X3.75 (U)	0.930	0.001	5.68
		N364/N371	U100X60X3.75 (U)	1.255	0.001	7.67
		N365/N371	U100X60X3.75 (U)	0.889	0.001	5.43
		N365/N372	U100X60X3.75 (U)	1.235	0.001	7.55
		N366/N374	U100X60X3.75 (U)	1.216	0.001	7.43
		N367/N374	U100X60X3.75 (U)	0.806	0.001	4.93

Tabela de ferro						
Material		Peça (Ni/Nf)	Perfil(Série)	Comprimento (m)	Volume (m³)	Peso (kg)
Tipo	Designação					
		N366/N372	U100X60X3.75 (U)	0.848	0.001	5.18
		N368/N375	U100X60X3.75 (U)	2.727	0.002	16.66
		N376/N373	U100X60X3.75 (U)	0.382	0.000	2.34
		N257/N378	U100X60X3.75 (U)	0.765	0.001	4.67
		N271/N378	U100X60X3.75 (U)	1.198	0.001	7.32
		N322/N379	U100X60X3.75 (U)	0.765	0.001	4.67
		N319/N379	U100X60X3.75 (U)	1.198	0.001	7.32
		N359/N380	U100X60X3.75 (U)	0.765	0.001	4.67
		N356/N380	U100X60X3.75 (U)	1.198	0.001	7.32
		N368/N381	U100X60X3.75 (U)	0.765	0.001	4.67
		N367/N381	U100X60X3.75 (U)	1.198	0.001	7.32
		N287/N393	U100X60X3.75 (U)	0.161	0.000	0.98
		N49/N394	U100X60X3.75 (U)	0.158	0.000	0.97
		N78/N395	U100X60X3.75 (U)	0.158	0.000	0.97
		N155/N396	U100X60X3.75 (U)	0.158	0.000	0.97
		N206/N397	U100X60X3.75 (U)	0.158	0.000	0.97
		N291/N398	U100X60X3.75 (U)	0.161	0.000	0.98
		N328/N399	U100X60X3.75 (U)	0.161	0.000	0.98
		N362/N400	U100X60X3.75 (U)	0.161	0.000	0.98
		N377/N401	U100X60X3.75 (U)	0.161	0.000	0.98
		N325/N402	U100X60X3.75 (U)	0.161	0.000	0.98
		N288/N403	U100X60X3.75 (U)	0.161	0.000	0.98
		N200/N404	U100X60X3.75 (U)	0.158	0.000	0.97
		N137/N405	U100X60X3.75 (U)	0.158	0.000	0.97
		N90/N406	U100X60X3.75 (U)	0.158	0.000	0.97
		N48/N407	U100X60X3.75 (U)	0.158	0.000	0.97
		N77/N63	U100X60X3.75 (U)	14.161	0.011	86.53
		N3/N4	U100X60X3.75 (U)	14.161	0.011	86.53
		N103/N112	U100X60X3.75 (U)	11.332	0.009	69.24
		N509/N505	U100X60X3.75 (U)	3.951	0.003	24.14
		N505/N513	U100X60X3.75 (U)	3.951	0.003	24.14
		N513/N514	U100X60X3.75 (U)	0.280	0.000	1.71
		N505/N515	C75X40X15X2.00 (C)	1.663	0.001	4.48
		N514/N515	U100X60X3.75 (U)	4.186	0.003	25.58
		N519/N515	U100X60X3.75 (U)	4.186	0.003	25.58
		N508/N520	U100X60X3.75 (U)	0.639	0.000	3.91
		N507/N520	U100X60X3.75 (U)	1.166	0.001	7.12
		N507/N521	U100X60X3.75 (U)	0.980	0.001	5.99
		N506/N521	U100X60X3.75 (U)	1.383	0.001	8.45
		N505/N516	U100X60X3.75 (U)	1.642	0.001	10.04
		N510/N516	U100X60X3.75 (U)	1.322	0.001	8.08
		N510/N517	U100X60X3.75 (U)	1.383	0.001	8.45
		N511/N517	U100X60X3.75 (U)	0.980	0.001	5.99
		N511/N518	U100X60X3.75 (U)	1.166	0.001	7.12
		N512/N518	U100X60X3.75 (U)	0.639	0.000	3.91





Tabela de ferro						
Material		Peça (Ni/Nf)	Perfil(Série)	Comprimento (m)	Volume (m³)	Peso (kg)
Tipo	Designação					
		N509/N519	U100X60X3.75 (U)	0.280	0.000	1.71
		N525/N524	U100X60X3.75 (U)	3.951	0.003	24.14
		N524/N527	U100X60X3.75 (U)	0.280	0.000	1.71
		N527/N530	U100X60X3.75 (U)	4.186	0.003	25.58
		N522/N529	U100X60X3.75 (U)	1.166	0.001	7.12
		N523/N529	U100X60X3.75 (U)	0.639	0.000	3.91
		N535/N525	U100X60X3.75 (U)	3.951	0.003	24.14
		N525/N530	C75X40X15X2.00 (C)	1.663	0.001	4.48
		N537/N530	U100X60X3.75 (U)	4.186	0.003	25.58
		N525/N531	U100X60X3.75 (U)	1.642	0.001	10.04
		N526/N531	U100X60X3.75 (U)	1.322	0.001	8.08
		N526/N528	U100X60X3.75 (U)	1.383	0.001	8.45
		N522/N528	U100X60X3.75 (U)	0.980	0.001	5.99
		N534/N538	U100X60X3.75 (U)	0.639	0.000	3.91
		N533/N538	U100X60X3.75 (U)	1.166	0.001	7.12
		N533/N536	U100X60X3.75 (U)	0.980	0.001	5.99
		N532/N536	U100X60X3.75 (U)	1.383	0.001	8.45
		N535/N537	U100X60X3.75 (U)	0.280	0.000	1.71
		N105/N530	C75X40X15X2.00 (C)	3.538	0.001	9.54
		N375/N369	U100X60X3.75 (U)	8.484	0.007	51.84
		N368/N363	U100X60X3.75 (U)	5.600	0.004	34.22
		N150/N157	U100X60X3.75 (U)	2.727	0.002	16.66
		N252/N578	2xC100X50X17X2.25([-]) (C)	8.052	0.008	62.31
		N270/N579	C100X50X17X2.25 (C)	8.052	0.004	31.16
		N268/N580	C100X50X17X2.25 (C)	8.052	0.004	31.16
		N266/N581	C100X50X17X2.25 (C)	8.052	0.004	31.16
		N264/N582	C100X50X17X2.25 (C)	8.052	0.004	31.16
		N262/N583	C100X50X17X2.25 (C)	8.052	0.004	31.16
		N260/N584	C100X50X17X2.25 (C)	8.052	0.004	31.16
		N258/N585	C100X50X17X2.25 (C)	8.052	0.004	31.16
		N286/N586	C100X50X17X2.25 (C)	8.052	0.004	31.16
		N382/N587	C100X50X17X2.25 (C)	8.052	0.004	31.16
		N282/N588	C100X50X17X2.25 (C)	8.052	0.004	31.16
		N280/N589	C100X50X17X2.25 (C)	8.052	0.004	31.16
		N278/N590	C100X50X17X2.25 (C)	8.052	0.004	31.16
		N276/N591	C100X50X17X2.25 (C)	8.052	0.004	31.16
		N274/N592	C100X50X17X2.25 (C)	8.052	0.004	31.16
		N272/N593	C100X50X17X2.25 (C)	8.052	0.004	31.16
		N378/N594	C100X50X17X2.25 (C)	8.052	0.004	31.16
		N284/N595	C100X50X17X2.25 (C)	8.052	0.004	31.16
		N385/N596	C100X50X17X2.25 (C)	8.052	0.004	31.16
		N597/N610	2xC100X50X17X2.25([-]) (C)	20.246	0.020	156.68
		N598/N611	C100X50X17X2.25 (C)	20.246	0.010	78.34
		N599/N612	C100X50X17X2.25 (C)	20.246	0.010	78.34
		N600/N613	C100X50X17X2.25 (C)	20.246	0.010	78.34

Tabela de ferro						
Material		Peça (Ni/Nf)	Perfil(Série)	Comprimento (m)	Volume (m³)	Peso (kg)
Tipo	Designação					
		N601/N614	C100X50X17X2.25 (C)	20.246	0.010	78.34
		N602/N615	C100X50X17X2.25 (C)	20.246	0.010	78.34
		N605/N618	C100X50X17X2.25 (C)	20.246	0.010	78.34
		N604/N617	C100X50X17X2.25 (C)	20.246	0.010	78.34
		N603/N616	C100X50X17X2.25 (C)	20.246	0.010	78.34
		N606/N619	C100X50X17X2.25 (C)	20.246	0.010	78.34
		N607/N620	C100X50X17X2.25 (C)	20.246	0.010	78.34
		N608/N624	C100X50X17X2.25 (C)	6.262	0.003	24.23
		N609/N625	C100X50X17X2.25 (C)	6.262	0.003	24.23
		N623/N621	C100X50X17X2.25 (C)	6.261	0.003	24.23
		N626/N622	C100X50X17X2.25 (C)	6.261	0.003	24.23
		N639/N627	C100X50X17X2.25 (C)	20.246	0.010	78.34
		N640/N628	C100X50X17X2.25 (C)	20.246	0.010	78.34
		N642/N630	C100X50X17X2.25 (C)	20.246	0.010	78.34
		N644/N632	C100X50X17X2.25 (C)	20.246	0.010	78.34
		N643/N631	C100X50X17X2.25 (C)	20.246	0.010	78.34
		N641/N629	C100X50X17X2.25 (C)	20.246	0.010	78.34
		N646/N634	C100X50X17X2.25 (C)	20.246	0.010	78.34
		N648/N636	C100X50X17X2.25 (C)	20.246	0.010	78.34
		N649/N637	C100X50X17X2.25 (C)	20.246	0.010	78.34
		N650/N638	C100X50X17X2.25 (C)	20.246	0.010	78.34
		N647/N635	C100X50X17X2.25 (C)	20.246	0.010	78.34
		N645/N633	C100X50X17X2.25 (C)	20.246	0.010	78.34
		N251/N651	U100X60X3.75 (U)	0.158	0.000	0.97
		N652/N530	2xC100X50X17X2.25([-]) (C)	3.175	0.003	24.57
		N653/N531	C100X50X17X2.25 (C)	3.175	0.002	12.29
		N654/N528	C100X50X17X2.25 (C)	3.175	0.002	12.29
		N655/N529	C100X50X17X2.25 (C)	3.175	0.002	12.29
		N656/N527	C100X50X17X2.25 (C)	3.175	0.002	12.29
		N506/N660	U100X60X3.75 (U)	1.322	0.001	8.08
		N505/N660	U100X60X3.75 (U)	1.642	0.001	10.04
		N532/N530	U100X60X3.75 (U)	1.928	0.002	11.78
		N532/N661	U100X60X3.75 (U)	1.322	0.001	8.08
		N662/N661	C100X50X17X2.25 (C)	3.175	0.002	12.29
		N657/N536	C100X50X17X2.25 (C)	3.175	0.002	12.29
		N658/N538	C100X50X17X2.25 (C)	3.175	0.002	12.29
		N659/N537	C100X50X17X2.25 (C)	3.175	0.002	12.29
Notação: Ni: Nó inicial Nf: Nó final						

### 2.1.2.5.- Tabela resumo

Tabela resumo											
Material		Série	Perfil	Comprimento			Volume			Peso	
Tipo	Designação			Perfil (m)	Série (m)	Material (m)	Perfil (m³)	Série (m³)	Material (m³)	Perfil (kg)	Série (kg)
	A-572 345MPa	Barra redonda	1/4"	491.261			0.016			122.13	

Tabela resumo												
Material		Série	Perfil	Comprimento			Volume			Peso		
Tipo	Designação			Perfil (m)	Série (m)	Material (m)	Perfil (m³)	Série (m³)	Material (m³)	Perfil (kg)	Série (kg)	Material (kg)
Aço laminado		Cantoneira	L 3/4 x 1/8"	146.283	491.261	637.544	0.016	0.016	0.032	127.46	122.13	
					146.283			0.016			127.46	
											249.59	
Aço dobrado	A-36	U	U100X60X3.75	831.343	839.815	1518.946	0.647	0.650	0.999	5079.50	5098.70	
			U50X25X1.52, Caixa dupla soldada	8.472			0.002			19.20		
			C75X40X15X2.00	6.864			0.002			18.51		
		C	C100X50X17X2.25, Caixa dupla união genérica	31.473	0.031		243.56					
			C100X50X17X2.25	640.794	0.316		2479.44					
				679.131	0.349		2741.50					
							7840.20					

#### 2.1.2.6.- Quantitativos de superfícies

Perfis de aço: Quantitativos das superfícies a pintar					
Tipo	Série	Perfil	Superfície unitária (m²/m)	Comprimento (m)	Superfície (m²)
Aço dobrado	U	U100X60X3.75	0.423	831.343	351.333
		U50X25X1.52, Caixa dupla soldada	0.195	8.472	1.649
	C	C75X40X15X2.00	0.347	6.864	2.385
		C100X50X17X2.25, Caixa dupla união genérica	0.885	31.473	27.862
		C100X50X17X2.25	0.443	640.794	283.641
		Subtotal			
	Aço laminado	Barra redonda	1/4"	0.020	491.261
Cantoneira		L 3/4 x 1/8"	0.076	146.283	11.147
Subtotal				20.947	
Total					687.817



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