

LOTE 02

RODOVIA BR-116/PR

TRECHO: Curitiba - Divisa SC/RS

MEMORIAL DESCRITIVO

**PROJETO EXECUTIVO PARA IMPLANTAÇÃO DE
PASSARELA EM PISTA DUPLA**

BR-116 Km 120+800/PR

Outubro / 2014

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1 – APRESENTAÇÃO

O presente relatório tem por objetivo detalhar a construção e implantação de 01 (uma) passarela em pista dupla, localizada no km 120+800 da rodovia BR 116, município de Curitiba/PR, item 5.1.14 do PER (Plano de Exploração da Rodovia), conforme projeto aprovado através do ofício 391/2013/GEINV/SUINF de 05/02/2013, processo 50500.107447/2012-98.

Dados gerais:

Trecho: BR116/PR - KM 120+800

Contrato: 740/12

Data de Início: 24/04/2013

Data de Final: 29/11/2013

Executora: Habitechne Engenharia e construção.

2 – LOCALIZAÇÃO



3 – MEMORIAL DESCRITIVO

A obra contemplou as seguintes fases durante sua execução:

- Serviços Preliminares;
- Fundação;
- Estrutura metálica;
- Obras complementares.

ALTERAÇÕES DE PROJETO

A execução da obra manteve-se alinhada ao projeto original, sem apresentar alterações significativas.

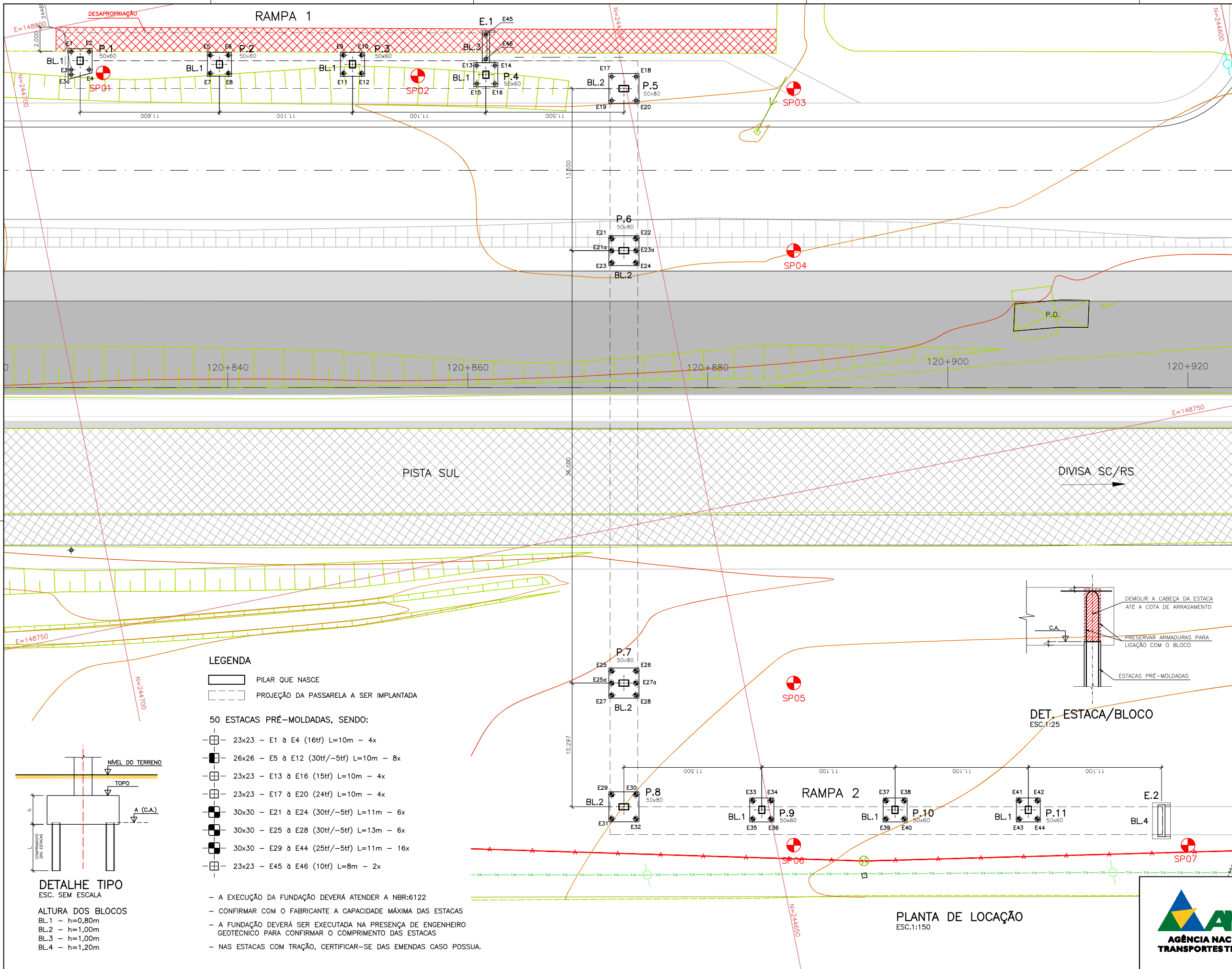


TABELA DE COORDENADAS				
PONTO	N	E	A	TOPO
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E1	N=244694.7500	E=148797.7725		
E2	N=244693.2787	E=148797.4802	908,486	909,236
E3	N=244695.0423	E=148796.3013		
E4	N=244693.5710	E=148796.0090		
E3a	N=244694.1411	E=148795.9232		
P.2	N=244682.8413	E=148794.3360		
E5	N=244683.4308	E=148795.2178		
E6	N=244681.9586	E=148794.9255	908,486	909,236
E7	N=244683.7231	E=148793.7466		
E8	N=244682.2519	E=148793.4543		
P.3	N=244671.9541	E=148792.1730		
E9	N=244672.5436	E=148793.0548		
E10	N=244671.0723	E=148792.7625	908,486	909,236
E11	N=244672.8359	E=148791.5835		
E12	N=244671.3646	E=148791.2912		
P.4	N=244661.2345	E=148789.1665		
E13	N=244661.8240	E=148790.0482		
E14	N=244660.3527	E=148789.7559	908,486	909,236
E15	N=244662.1163	E=148788.5770		
E16	N=244660.6450	E=148788.2847		
P.5	N=244650.1810	E=148785.7877		
E17	N=244650.9670	E=148786.9634		
E18	N=244649.0053	E=148786.5737	907,686	908,636
E19	N=244651.3567	E=148785.0017		
E20	N=244649.3950	E=148784.6120		
P.6	N=244652.8117	E=148772.5465		
E21	N=244653.5977	E=148773.7222		
E21a	N=244653.7926	E=148772.7414		
E22	N=244651.6360	E=148773.3325	907,732	908,682
E23	N=244653.9874	E=148771.7605		
E23a	N=244651.8309	E=148772.3516		
E24	N=244652.0258	E=148771.3708		
P.7	N=244659.8270	E=148737.2366		
E25	N=244660.6130	E=148738.4123		
E25a	N=244660.8078	E=148737.4315		
E26	N=244658.6513	E=148738.0226	908,932	909,882
E27	N=244661.0027	E=148736.4507		
E27a	N=244658.8462	E=148737.0418		
E28	N=244659.0410	E=148736.0609		
P.8	N=244661.8335	E=148727.1374		
E29	N=244662.6194	E=148728.3131		
E30	N=244660.6578	E=148727.9234	908,641	909,591
E31	N=244663.0092	E=148726.3515		
E32	N=244661.0475	E=148725.9617		
P.9	N=244650.6046	E=148724.6414		
E33	N=244651.1941	E=148725.5232		
E34	N=244649.7228	E=148725.2309	909,640	910,390
E35	N=244651.4864	E=148724.0520		
E36	N=244650.0151	E=148723.7597		
P.10	N=244639.7174	E=148722.4784		
E37	N=244640.3069	E=148723.3602		
E38	N=244638.8356	E=148723.0679	909,940	910,690
E39	N=244640.5992	E=148721.8889		
E40	N=244639.1279	E=148721.5966		
P.11	N=244628.8302	E=148720.3154		
E41	N=244629.4197	E=148721.1971		
E42	N=244627.9484	E=148720.9048	910,240	910,990
E43	N=244629.7120	E=148719.7259		
E44	N=244628.2407	E=148719.4336		
E.1	N=244660.7824	E=148791.4420		
E45	N=244660.5836	E=148792.4424	909,386	910,336
E46	N=244660.9812	E=148790.4415		
E.2	N=244618.1184	E=148717.2696	-	912,790

LEGENDA

- PILAR QUE NASCE
- PROJEÇÃO DA PASSARELA A SER IMPLANTADA

50 ESTACAS PRÉ-MOLDADAS, SENDO:

- 23x23 - E1 à E4 (16tf) L=10m - 4x
- 26x26 - E5 à E12 (30tf/-5tf) L=10m - 8x
- 23x23 - E13 à E16 (15tf) L=10m - 4x
- 23x23 - E17 à E20 (24tf) L=10m - 4x
- 30x30 - E21 à E24 (30tf/-5tf) L=11m - 6x
- 30x30 - E25 à E28 (30tf/-5tf) L=13m - 6x
- 30x30 - E29 à E44 (25tf/-5tf) L=11m - 16x
- 23x23 - E45 à E46 (10tf) L=8m - 2x

- A EXECUÇÃO DA FUNDAÇÃO DEVERÁ ATENDER A NBR:6122
- CONFIRMAR COM O FABRICANTE A CAPACIDADE MÁXIMA DAS ESTACAS
- A FUNDAÇÃO DEVERÁ SER EXECUTADA NA PRESENÇA DE ENGENHEIRO GEOTÉCNICO PARA CONFIRMAR O COMPRIMENTO DAS ESTACAS
- NAS ESTACAS COM TRAÇÃO, CERTIFICAR-SE DAS EMENDAS CASO POSSUA.

DETALHE TIPO ESC. SEM ESCALA

ALTURA DOS BLOCOS
BL.1 - h=0,80m
BL.2 - h=1,00m
BL.3 - h=1,00m
BL.4 - h=1,20m

PLANTA DE LOCAÇÃO ESC.1:150



FIRMA PROJETISTA		A	13/01/14	João Leonardo Sebastiani-CREA 5061291737			REVISÃO AS BUILT		Nº DESENHO ANTT: DE-02-116/PR-120-8-C04/501	REV. : A
 		2	06/05/13				REVISÃO GERAL		LOCAL: PASSARELA km 120+887	
		1	05/14/13				REVISÃO GERAL		RODOVIA: BR-116 RÉGIS BITTENCOURT	TRECHO: CURITIBA - DIVISA SC/RS
		0	10/10/12	CLAUDIO AUGUSTO PERPETUO - CREA 5061360692			EMIÇÃO INICIAL		TÍTULO: PASSARELA DE PEDESTRES LOCAÇÃO DAS ESTACAS E DETALHES	ESCALA: INDICADA FOLHA: 01/08
Nº INTERNO: PCP-DE-02-116/PR-120-8-C04/501	REV. 01	REV.	DATA	RESP. TEC./PROJETISTA	RESP. TEC./CONCES.	RESP. TEC./ANTT	ASSUNTO	DOC. REFERÊNCIA		

912.736
TORO DA TRAVESSA

TR.1

480

210

60

210

40

20

350

290

80

75

BL.1

VISTA FRONTAL

909.236
TORO DO BLOCO

TR.1

40

20

350

80

L.ASTRO CONCRETO

VISTA LATERAL

The drawing consists of two views of a staircase: a front view (VISTA FRONTAL) on the left and a side view (VISTA LATERAL) on the right.

VISTA FRONTAL (Front View):

- Overall width: 240
- Overall height: 370
- Top landing width: 180
- Bottom landing width: 240
- Stair flight width: 60
- Stair flight height: 160
- Bottom landing height: 210
- Bottom landing width: 80
- Bottom landing height: 75
- Labels: TR.2 (top landing), TR.3 (stair flight), BL.1 (bottom landing).

VISTA LATERAL (Side View):

- Overall width: 270
- Overall height: 430
- Top landing height: 160
- Stair flight height: 270
- Bottom landing height: 80
- Labels: 913.536 (top landing), 911.936 (stair flight), 909.236 (bottom landing).
- Annotations: TOPO DA TRAVESSA (top of cross), TOPO DO BLOCO (top of block), LASTRO DE CONCRETO MAGRO (thin concrete slab).

The drawing consists of two views of a staircase: a front view (VISTA FRONTAL) on the left and a side view (VISTA LATERAL) on the right.

VISTA FRONTAL (Front View):

- Overall width: 240
- Overall height: 450
- Top landing width: 180
- Bottom landing width: 60
- Stair flight width: 240
- Bottom landing height: 130
- Stair flight height: 320
- Bottom landing depth: 80
- Bottom landing height: 75
- Labels: BL.1, TR.2, TR.3

VISTA LATERAL (Side View):

- Overall width: 810
- Overall height: 810
- Top landing width: 40
- Bottom landing width: 40
- Stair flight width: 40
- Bottom landing height: 190
- Stair flight height: 320
- Bottom landing depth: 80
- Labels: 914.336, 911.136, 909.236, TR.2, TR.3, LASTRO DE CONCRETO MAGRO

The technical drawings show the 'LUSTRO DE CONCRETO MAGRO' (Thin Concrete Mirror) in two views:

- VISTA FRONTAL (Front View):** Shows a symmetrical structure with a total width of 240 and a total height of 590. The top section is labeled 'TR.4' and has a width of 90 on each side of a central 60-unit gap. The bottom section is labeled 'BL.1' and has a height of 75. The top section has a height of 40, and the bottom section has a height of 20.
- VISTA LATERAL (Side View):** Shows the profile of the structure with a total height of 590. The top section is labeled 'TR.4' and has a height of 40. The bottom section is labeled 'BL.1' and has a height of 75. The top section has a width of 30, and the bottom section has a width of 20. The top section is labeled 'TOPO DA TRAVESSA' and the bottom section is labeled 'TOPO DO BLOCO'.

VISTA FRONTAL

VISTA LATERAL

The technical drawings show the 'PILASTRO DE TRANSVERSA' (Crossing Pier) with the following details:

- VISTA FRONTAL (Front View):** Shows a T-shaped cross-section. The top horizontal part has a total width of 240, with a central section of 140 and side sections of 50. The vertical stem has a width of 80. The total height is 660. The base is labeled 'BL.2' and has a width of 100. The base is supported by two foundations, each 50 wide, with a total base width of 100. The base is labeled '9.5'.
- VISTA LATERAL (Side View):** Shows the pier's profile. The total height is 660. The top horizontal part has a width of 50. The vertical stem has a width of 80. The base is labeled '909.882' and has a width of 100. The base is supported by two foundations, each 50 wide, with a total base width of 100. The base is labeled 'LASTRO DE CONCRETO MAGRO'.
- Labels and Dimensions:**
 - 916.482**: TOPO DA TRANSVERSA (Top of Crossing)
 - 916.632**: APOIO DA TRANSVERSA (Support of Crossing)
 - 909.882**: TOPO DO PILASTRO (Top of Pier)
 - TR.6**: Transversal 6
 - BL.2**: Base 2
 - LASTRO DE CONCRETO MAGRO**: Thin concrete slab

The technical drawings show the front and side views of the 'LUSTRO DE CONCRETO MAGRO' (Thin Concrete Mirror). The front view (VISTA FRONTAL) shows a base of 240 units and a height of 260 units. The base is divided into a central section of 180 units and two side sections of 60 units each. The base is 80 units wide. The central section has a height of 200 units. The side sections have a height of 7.5 units. The base is labeled 'BL.1'. The side view (VISTA LATERAL) shows a base of 260 units and a height of 200 units. The base is divided into a central section of 180 units and two side sections of 60 units each. The base is 80 units wide. The central section has a height of 200 units. The side sections have a height of 7.5 units. The base is labeled 'BL.1'. The side view also shows a detail of the top section, labeled 'TR.2', with a height of 40 units and a width of 60 units. The top section is labeled '913.590' and 'BORDO DA TRANSVERSA'. The side view also shows a detail of the base, labeled '910.990' and 'BORDO DO BLOCO'. The base is labeled 'LASTRO DE CONCRETO MAGRO'.

VISTA FRONTAL

VISTA LATERAL

915.990
TOPO DA PAREDESA

909.590
TOPO DO BLOCO

BL.2

LASTRO DE CONCRETO MAGRO

The technical drawings show the front and side views of the 'LUSTRO DE CONCRETO MAGRO' (Thin Concrete Mirror). The front view (VISTA FRONTAL) shows a base of 80 units, a central column of 420 units, and a top section of 240 units. The side view (VISTA LATERAL) shows a base of 80 units, a central column of 420 units, and a top section of 50 units. The drawings include dimensions for the base, column, and top section, as well as labels for the components.

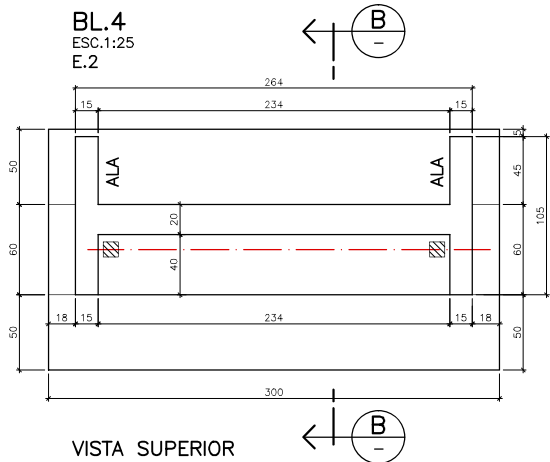
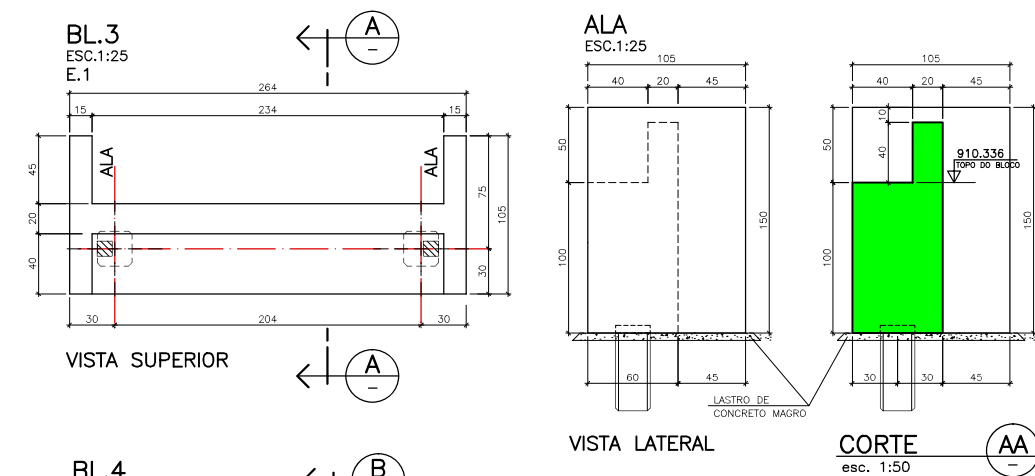
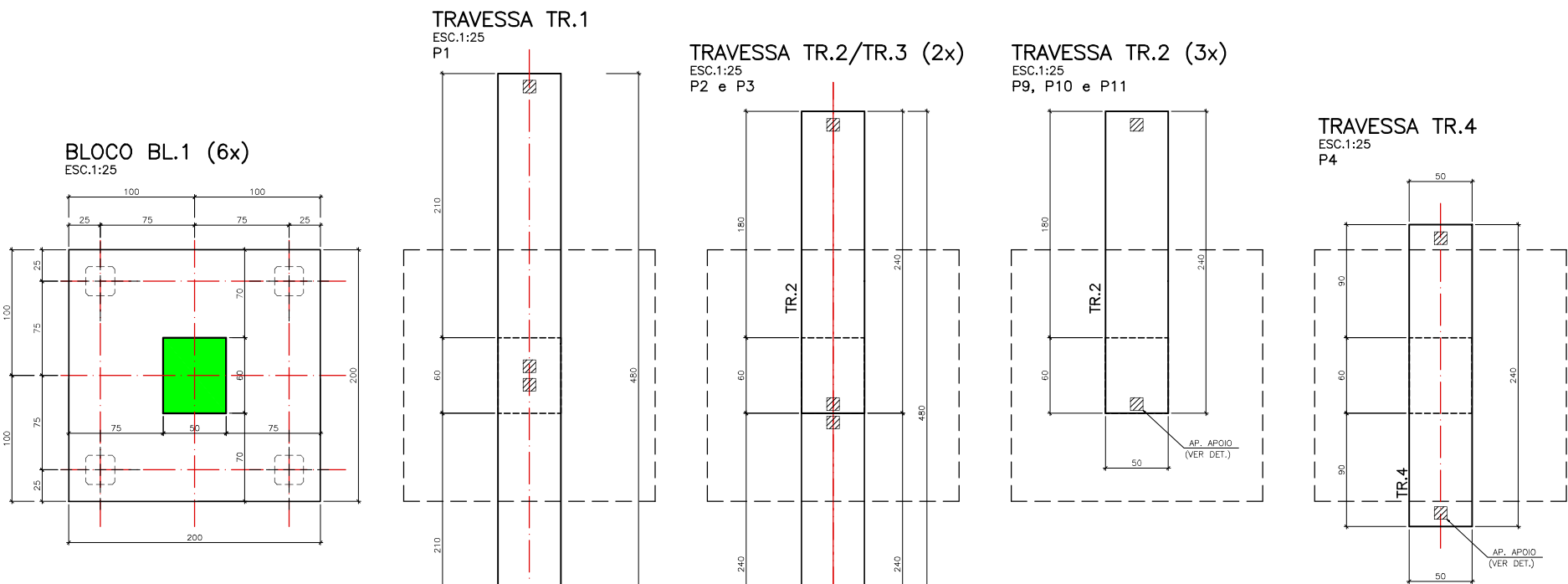
The technical drawings show the 'LUSTRO DE CONCRETO MACRO' from two perspectives:

- VISTA FRONTAL (Front View):** Shows a base with a width of 80 and a height of 75. The base is labeled 'BL.1'. The main body has a total height of 370 and a top width of 240. The main body is divided into two sections: a lower section with a height of 310 and a width of 180, and an upper section with a height of 40 and a width of 20. The upper section is labeled 'TR.2'. The base is supported by two vertical elements, each with a width of 30.
- VISTA LATERAL (Side View):** Shows the same base with a width of 80 and a height of 75. The main body has a total height of 370 and a top width of 50. The main body is divided into two sections: a lower section with a height of 310 and a width of 20, and an upper section with a height of 40 and a width of 20. The upper section is labeled 'TR.2'. The base is supported by two vertical elements, each with a width of 20. The base is labeled 'LUSTRO DE CONCRETO MACRO'.

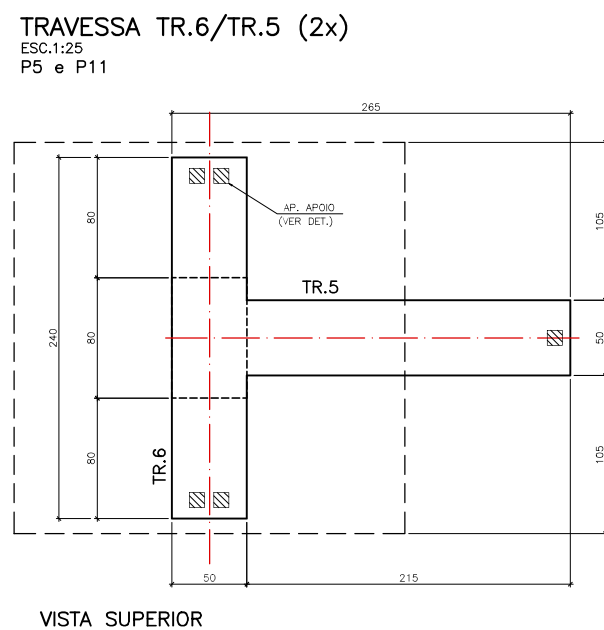
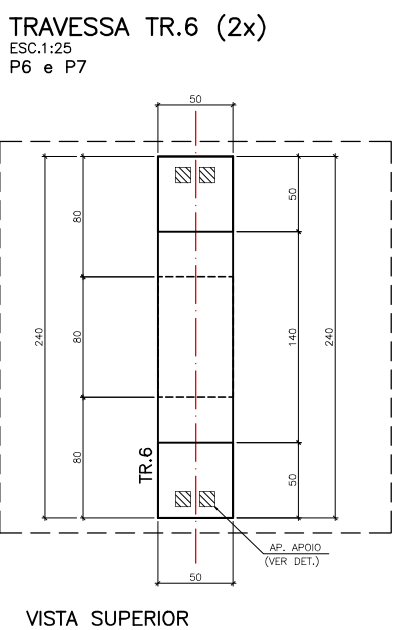
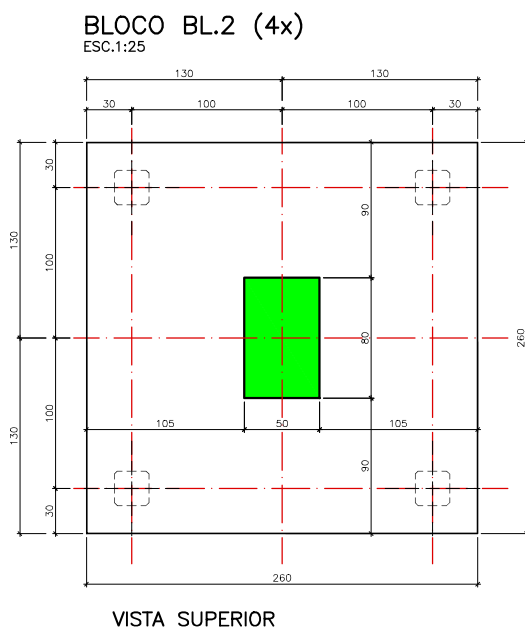
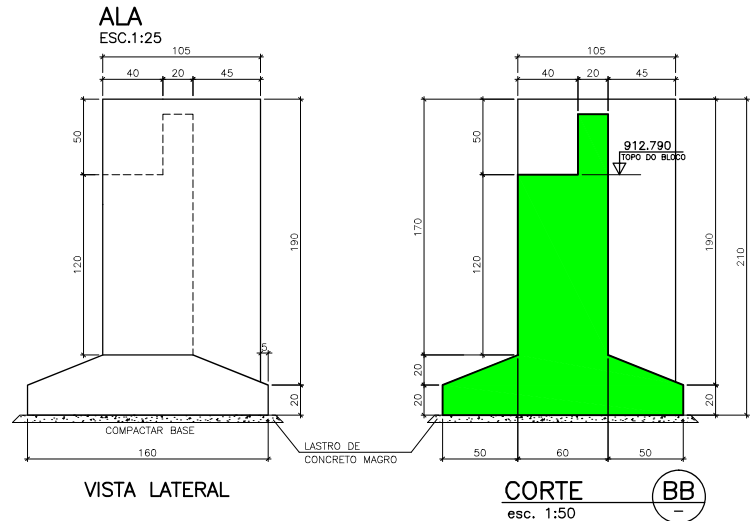
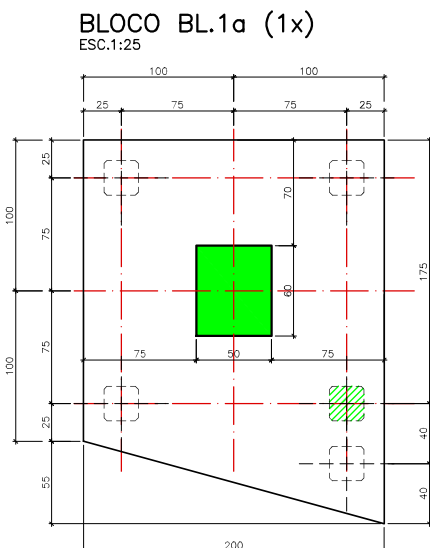
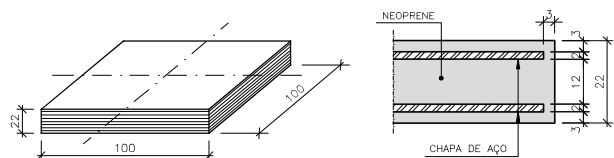
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FIRMA PROJETOISTA										Nº DESENHO ANTI: DE-02-116/PR-120-8-C04/502										REV. : A					
 HABITECHNE Engenharia e Construção www.habitechne.com.br  ProCap engenharia										LOCAL: PASSARELA km 120+887															
A 13/01/14 João Leonardo Sebastiani- CREA 5061291737										REVISÃO AS BUILT															
I 17/05/13										REVISÃO GERAL															
G 10/10/12 CLAUDIO AUGUSTO PERPETUO - CREA 5061360692										EMISSÃO INICIAL															
Nº INTERNO:		PCP-DE-02-116/PR-120-8-C04/502		REV. 01		REV.		DATA		RESP. TC./PROJETOISTA		RESP. TC./CONCES.		RESP. TC./ANTI		ASSUNTO		DOC. REFERÊNCIA		TÍTULO:		ESCALA:		FOLHA:	
																				PASSARELA DE PEDESTRES FORMAS DOPILARES P1 & P10		INDICADA		02/08	

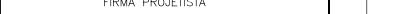


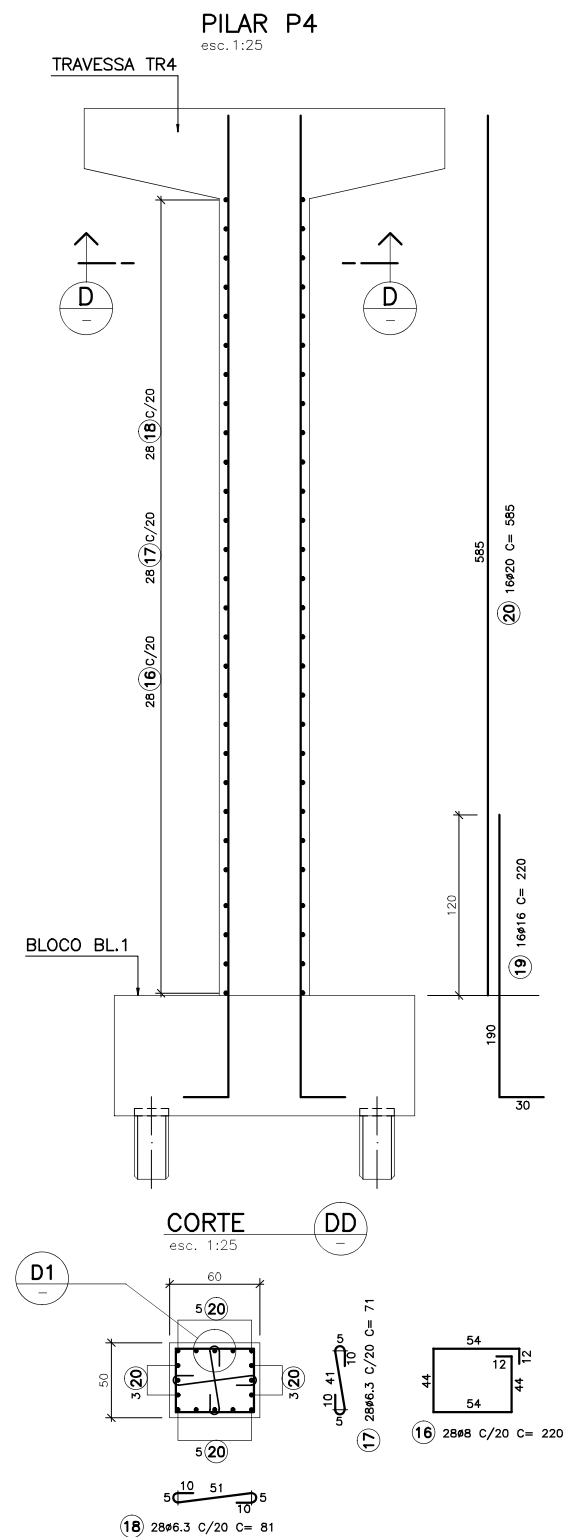
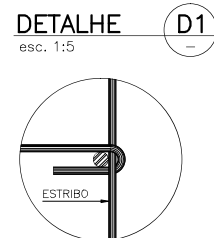
APARELHO DE APOIO (42x)
ESC.1:10
(MEDIDAS EM MILÍMETROS)



- NOTAS**
- MEDIDAS EM METRO
 - BLOCOS, PILARES E TRAVESSAS EM CONCRETO
 - LAJES PRÉ-MOLDADAS: BASE+CAPA (3+7) = 10cm - fck=25MPa
EXECUTAR DE ACORDO COM ESPECIFICAÇÕES DO FABRICANTE
 - RAMPAS E TRAVESSIA EM ESTRUTURA METÁLICA
 - DECLIVIDADE DAS RAMPAS CONFORME NBR:9050
 - SOBRRECARGA DE PROJETO = 500 kgf/m²
 - MATERIAIS
 - CONCRETO fck=25MPa PARA INFRA E MESOESTRUTURA. FATOR A/C <0,50
(CONSUMO DE CIMENTO MÍNIMO DE 320kg/m³)
 - CONCRETO fck=10MPa PARA LASTRO SOB AS ESTRUTURAS DE FUNDAÇÕES;
 - O CONCRETO A SER APLICADO NA OBRA DEVERÁ SER INERTE A REAÇÕES ÁLCALI-AGREGADO

- LEGENDA**
- APARELHO DE APOIO, VER DETALHE
 - ESTRUTURA EM CORTE

FIRMA PROJETISTA														Nº DESENHO ANTI: DE-02-116/PR-120-8-C04/503				REV. : A															
				A	13/01/14	JOÃO LEONARDO SEBASTIANI—CREA 5061291737										REVISÃO AS BUILT																	
				1	17/05/13											REVISÃO GERAL																	
				0	10/10/12	CLAUDIO AUGUSTO PERPETUO — CREA 5061360692										EMISSÃO INICIAL																	
Nº INTERNO: PCP—DE—02—116/PR—120—8—C04/503				REV. 01	REV.	DATA	RESP. TÊC./PROJETISTA	RESP. TÊC./CONCES.	RESP. TÊC./ANTT	ASSUNTO										DOC. REFERÊNCIA													
																				PASSARELA DE PEDESTRES FORMAS - BLOCOS E TRAVESSAS TR.1 à TR.6 e BL.1 à BL.4										ESCALA: INDICADA		FOLHA: 03/08	



RESUMO		CA	50A
#	COMP. (m)	PESO (kg)	
5			
6,3	132,24		33
8	191,40		77
10			
12,5			
16	219,20		351
20	228,80		572
25			
PESO TOTAL (kg)			1033

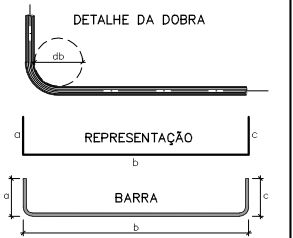


TABELA DE DOBRAMENTO			
BARRAS		GANCHOS	ESTRIBOS
AÇO	Ø (mm)	db (cm)	db (cm)
CA-60	5,0	3,0	1,5
	6,3	3,2	1,9
	8,0	4,0	2,4
CA-50	10,0	5,0	5,0
	12,5	6,3	6,3
	16,0	8,0	8,0
	20,0	10,0	10,0
	25,0	12,5	12,5

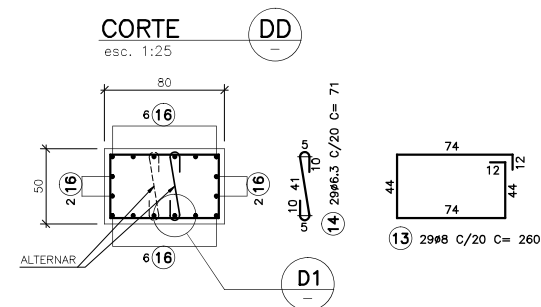
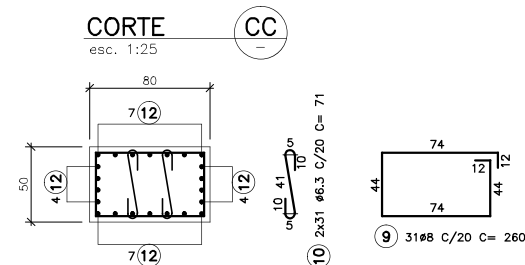
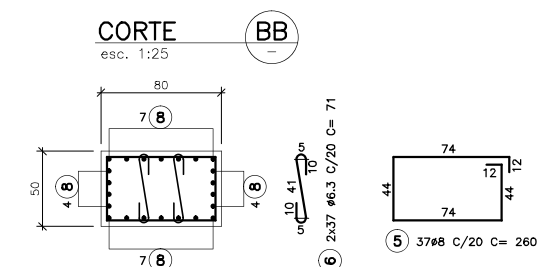
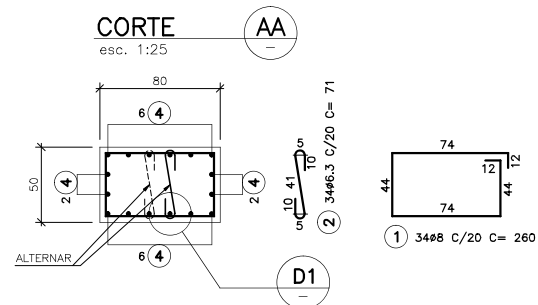
1 - MEDIDAS EM CENTÍMETRO BITOLAS EM METRO.
2 - COBRIMENTO: PILARES E TRAVESSAS = 3,0cm.
BLOCOS E ESTACAS = 4,0cm



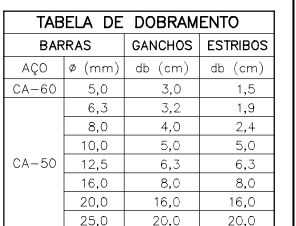
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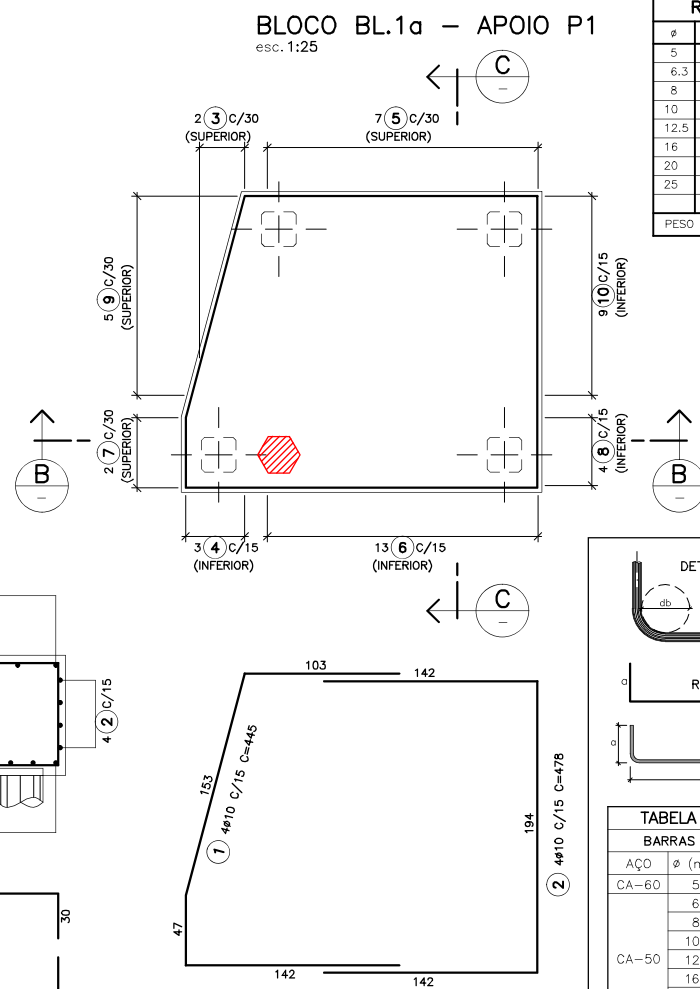
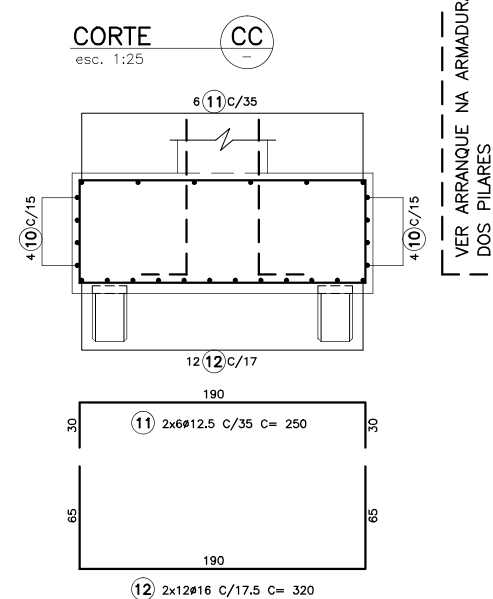
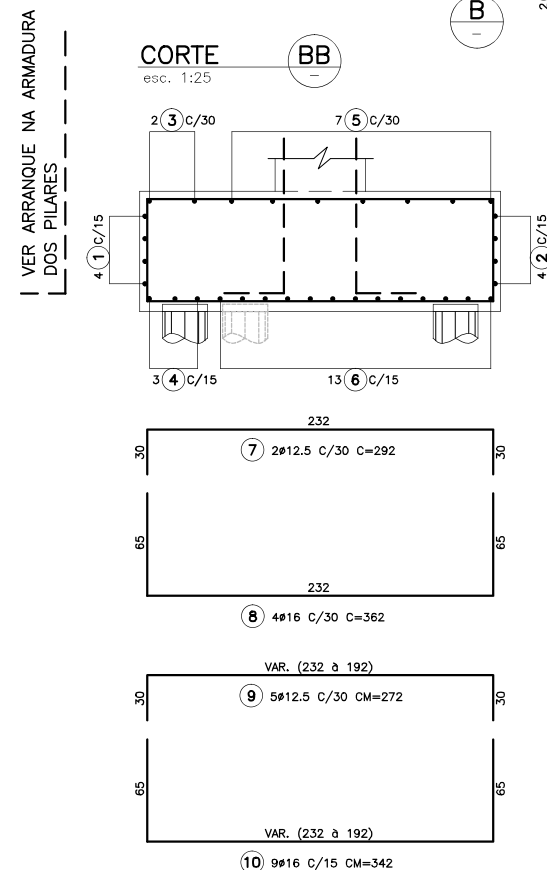
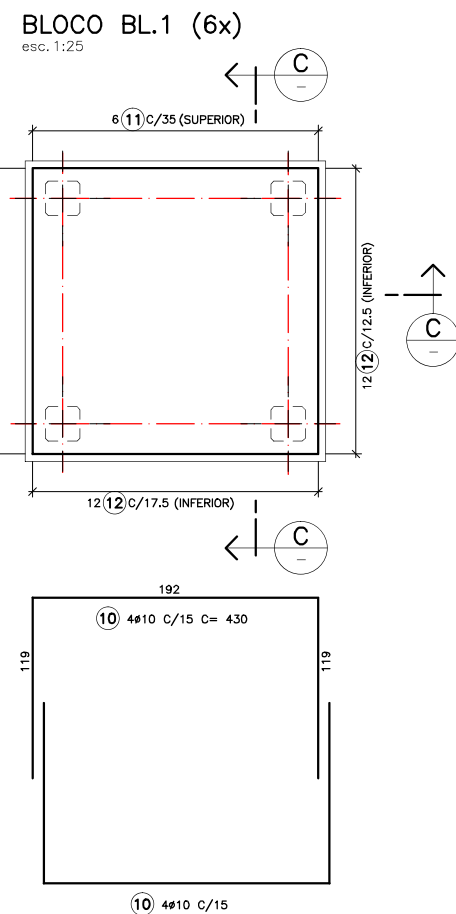
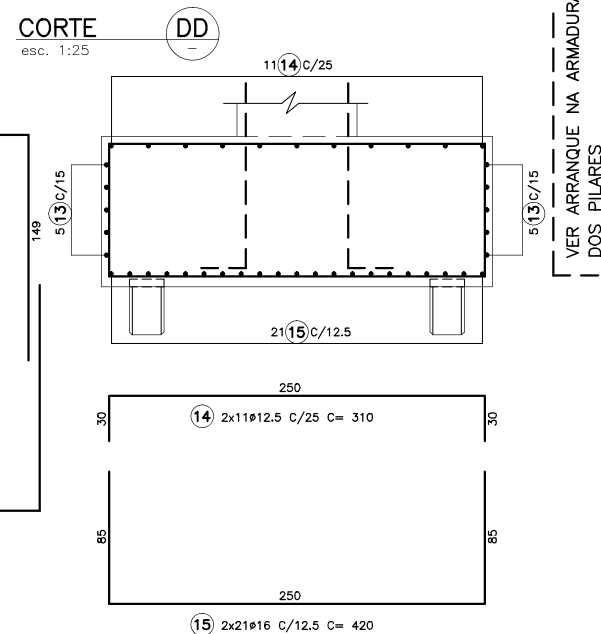
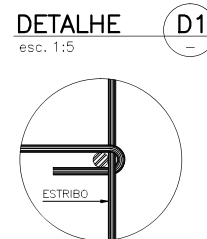
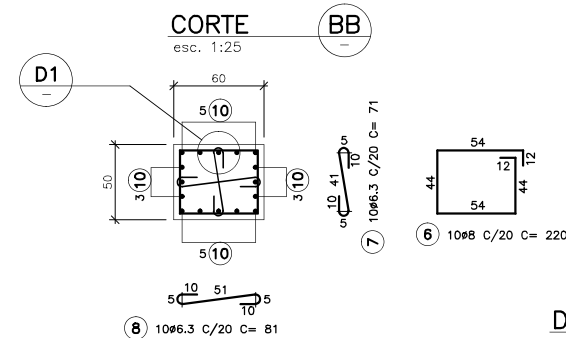
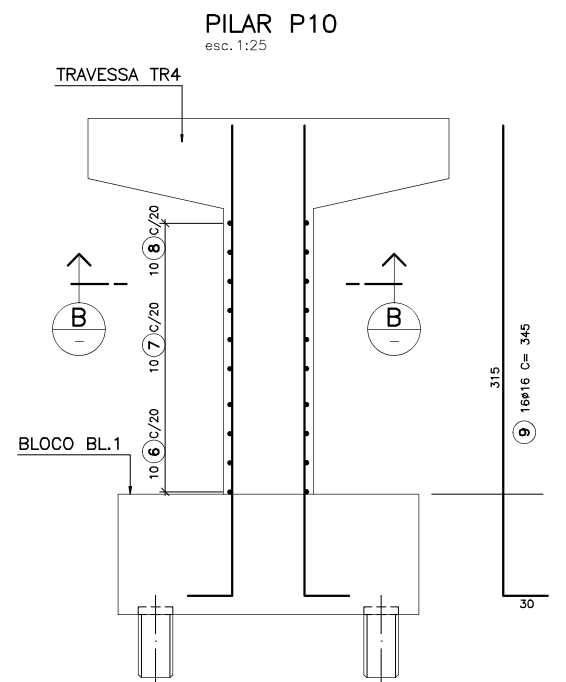
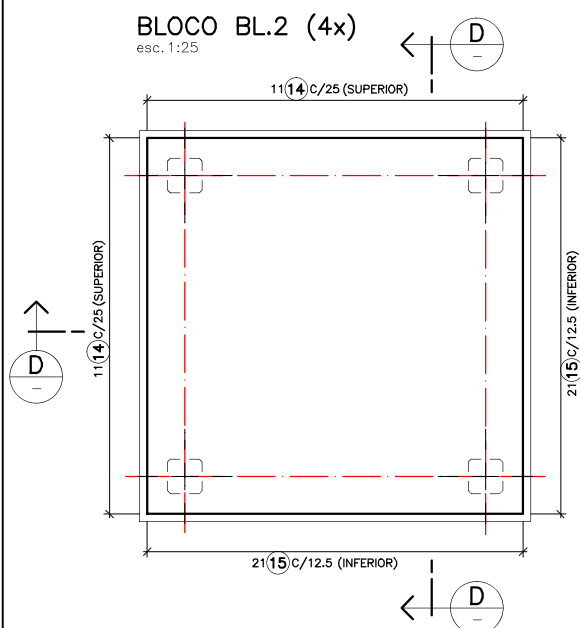
FIRMA PROJETOISTA												Nº DESENHO ANTI: DE-02-116/PR-120-8-C04/504		REV.: A	
 												LOCAL: PASSARELA km 120+887			
		A	13/01/14	JOÃO LEONARDO SEBASTIANI				REVISÃO AS BUILT				RODOVIA: BR-116 RÉGIS BITTENCOURT		TRECHO: CURITIBA - DIVISA SC/RS	
		O	10/10/12	CLAUDIO AUGUSTO PERPETUO - CREA 5061360692				EMISSÃO INICIAL				TÍTULO: PASSARELA DE PEDESTRES ARMAÇÃO - PILARES E BLOCO P1 a P4		ESCALA: INDICADA	
Nº INTERNO: PCP-DE-02-116/PR-120-8-C04/504		REV. 01	REV.	DATA	RESP. TEC./PROJETISTA	RESP. TEC./CONCES.	RESP. TEC./ANTT	ASSUNTO	DOC. REFERÊNCIA			FOLHA: 04/08			



RESUMO		CA	50A
#	COMP. (m)	PESO (kg)	
5			
6.3	141,29		35
8	340,60		136
10			
12.5			
16			
20	310,40		767
25	455,40		1753
PESO TOTAL (kg)			2691



1 - MEDIDAS EM CENTÍMETRO BITOLAS EM METRO.
2 - COBRIMENTO: PILARES E TRAVESSAS = 3,0cm.
BLOCOS E ESTACAS = 4,0cm

[illegible]

RESUMO		CA	50A
#	COMP. (m)	PESO (kg)	
5			
6,3	39,52		10
8	57,20		23
10	467,60		295
12,5	529,20		529
16	1514,40		2423
20			
25			
PESO TOTAL (kg)			3280

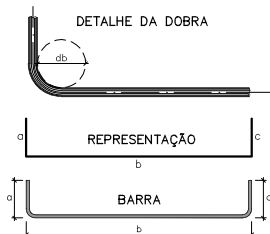
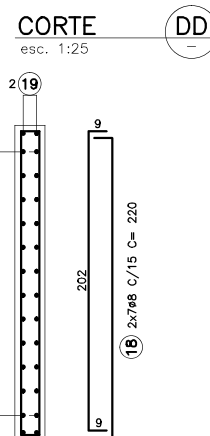
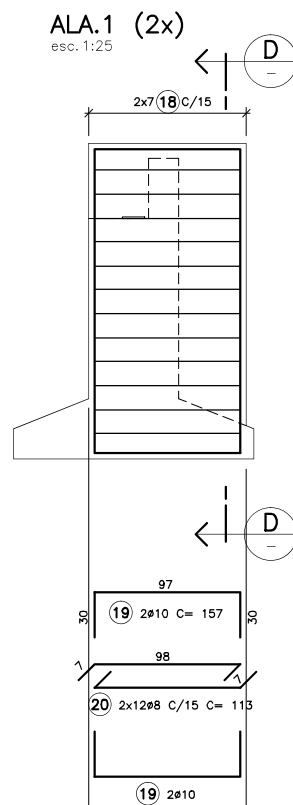
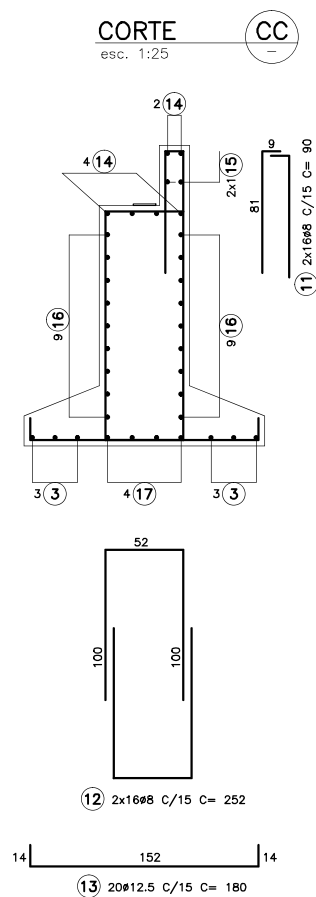
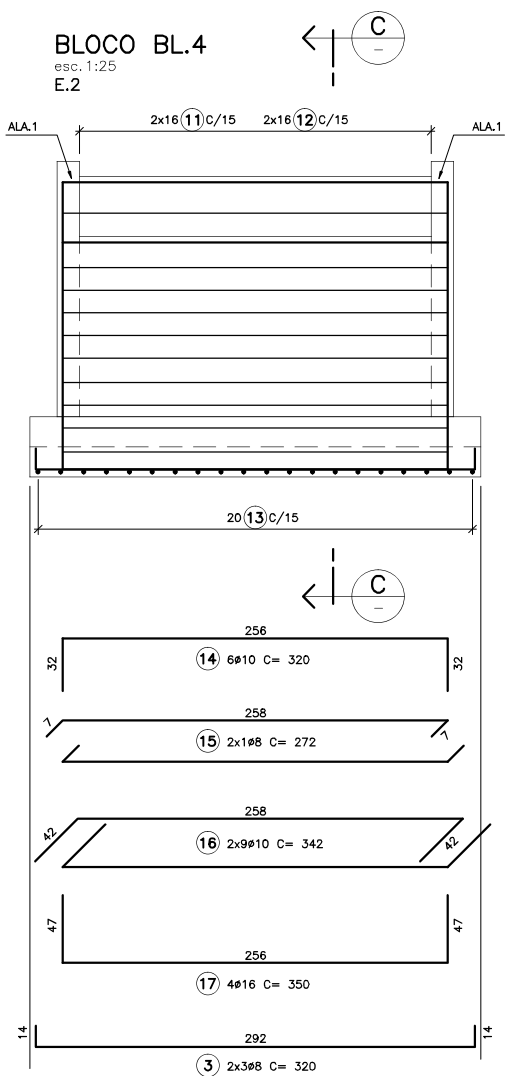
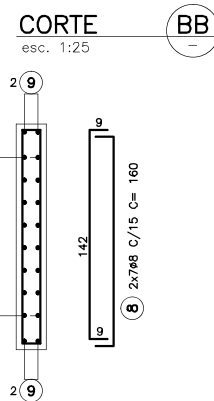
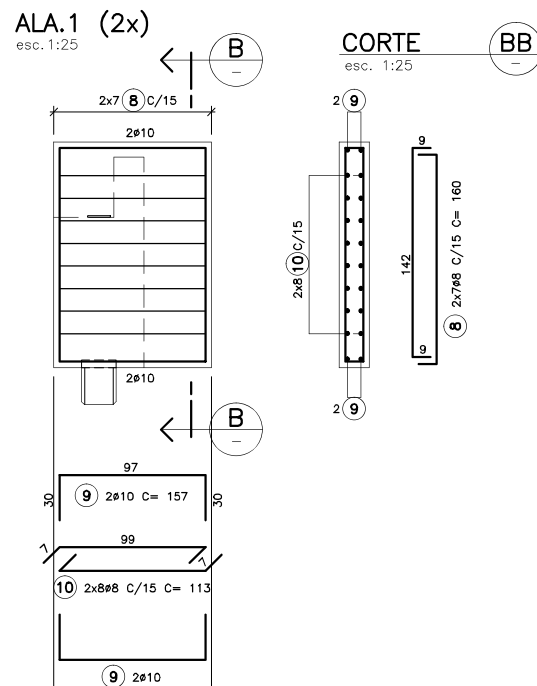
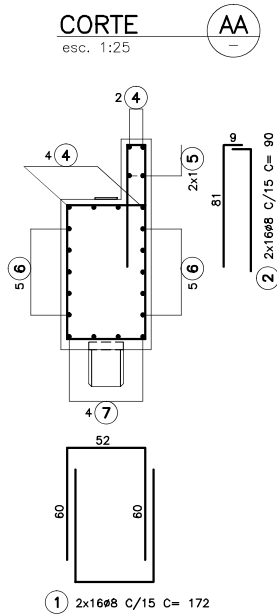
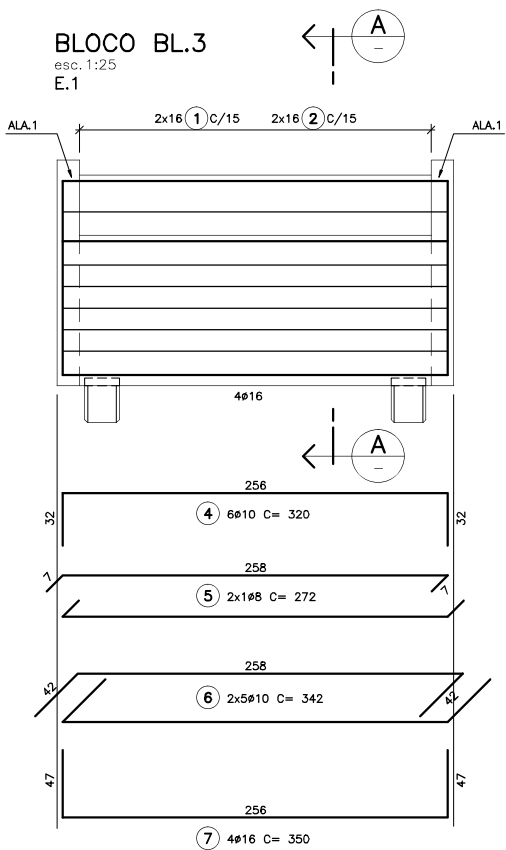


TABELA DE DOBRAMENTO			
BARRAS		GANCHOS	ESTRIBOS
AÇO	Ø (mm)	db (cm)	db (cm)
CA-60	5,0	3,0	1,5
	6,3	3,2	1,9
	8,0	4,0	2,4
CA-50	10,0	5,0	5,0
	12,5	6,3	6,3
	16,0	8,0	8,0
	20,0	16,0	16,0
	25,0	20,0	20,0

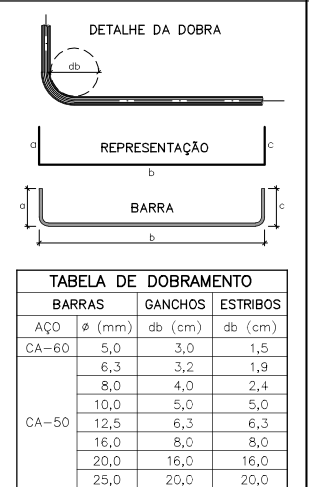
NOTAS:

- 1 - MEDIDAS EM CENTÍMETRO BITOLAS EM METRO.
2 - COBRIMENTO: PILARES E TRAVESSAS = 3,0cm.
BLOCOS E ESTACAS = 4,0cm



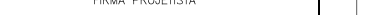
LISTA DE FERROS			
POS.	Ø	Q	COMP.UNIT. (cm)
1	8,0	32	172
2	8,0	32	90
3	8,0	6	320
4	10,0	6	320
5	8,0	2	272
6	10,0	10	342
7	16,0	4	350
8	8,0	28	160
9	10,0	8	157
10	8,0	32	113
11	8,0	32	90
12	8,0	32	252
13	12,5	20	180
14	10,0	6	320
15	8,0	2	272
16	10,0	18	342
17	16,0	4	350
18	8,0	28	220
19	10,0	8	157
20	8,0	48	113

RESUMO CA 50A		
#	COMP. (m)	PESO (kg)
5		
6.3		
8	420,16	168,1
10	159,28	98,8
12.5	36,00	34,6
16	28,00	44,2
20		
25		
PESO TOTAL (kg)		345,6

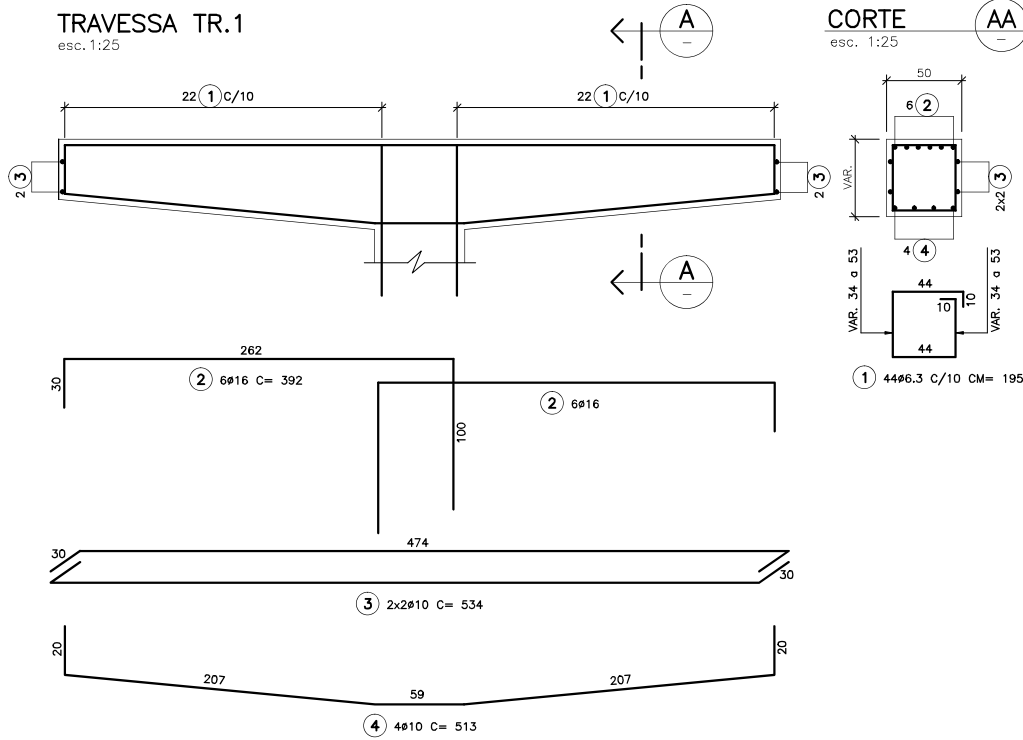


NOTAS:

- 1 - MEDIDAS EM CENTIMETRO BITOLAS EM METRO.
2 - COBRIMENTO: PILARES E TRAVESSAS = 3,0cm.
BLOCOS E ESTACAS = 4,0cm

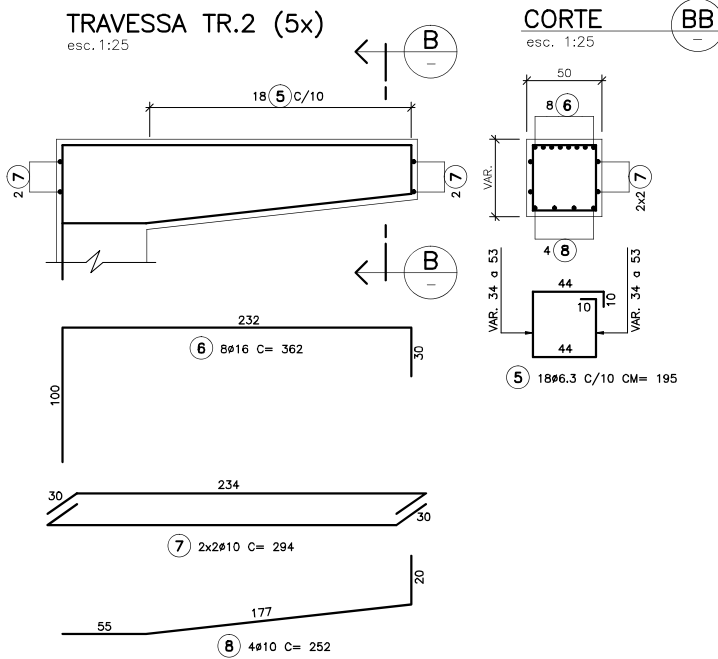
FIRMA PROJETISTA										Nº DESENHO ANTT: DE-02-116/PR-120-8-C04/507		REV. : A	
		A	13/01/14	JOÃO LEONARDO SEBASTIANI-CREA 5061291737			REVISÃO AS BUILT				LOCAL: PASSARELA km 120+887	CURITIBA - DIVISA SC/RS	
		1	17/05/13				REVISÃO GERAL			RODOVIA: BR-116 RÉGIS BITTENCOURT	TRECHO:		
		0	10/10/12	CLAUDIO AUGUSTO PERPETUO - CREA 5061360692			EMISSÃO INICIAL			TÍTULO: PASSARELA DE PEDESTRES ARMAÇÃO - BLOCOS BL.3 e BL.4	ESCALA: INDICADA		
Nº INTERNO:	PCP-DE-02-116/PR-120-8-C04/507	REV. 01	REV.	DATA	RESP. TÊC./PROJETISTA	RESP. TÊC./CONCES.	RESP. TÊC./ANTT	ASSUNTO		DOC. REFERÊNCIA			

TRAVESSA TR.1
esc. 1:25



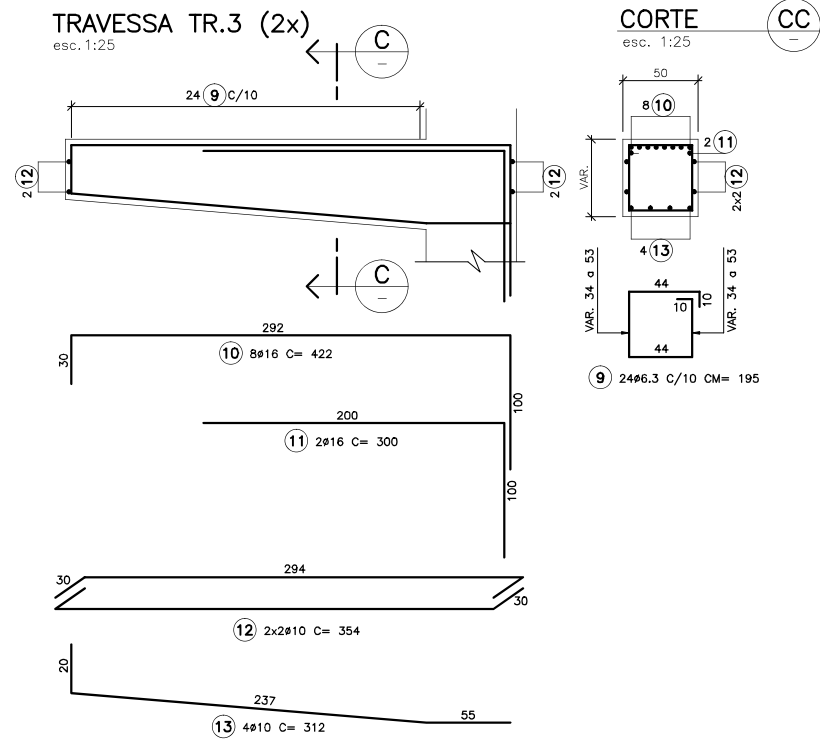
CORTE
esc. 1:25

TRAVESSA TR.2 (5x)
esc. 1:25



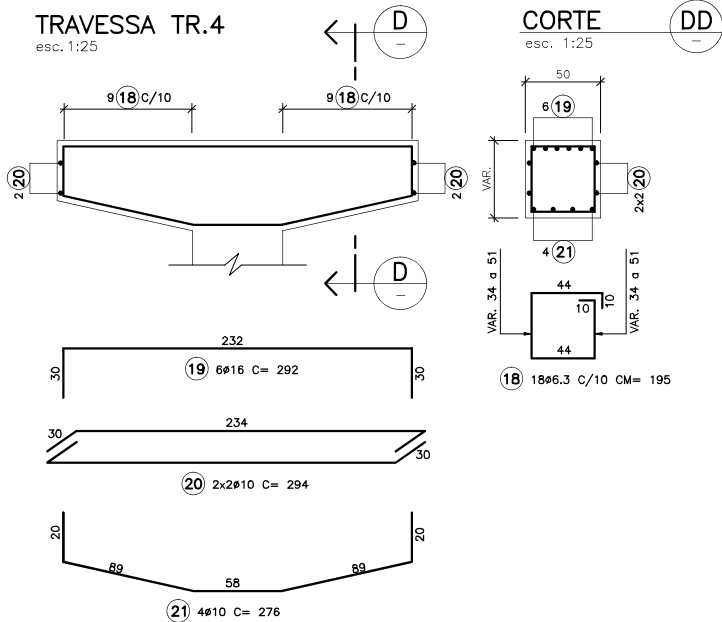
CORTE
esc. 1:25

TRAVESSA TR.3 (2x)
esc. 1:25



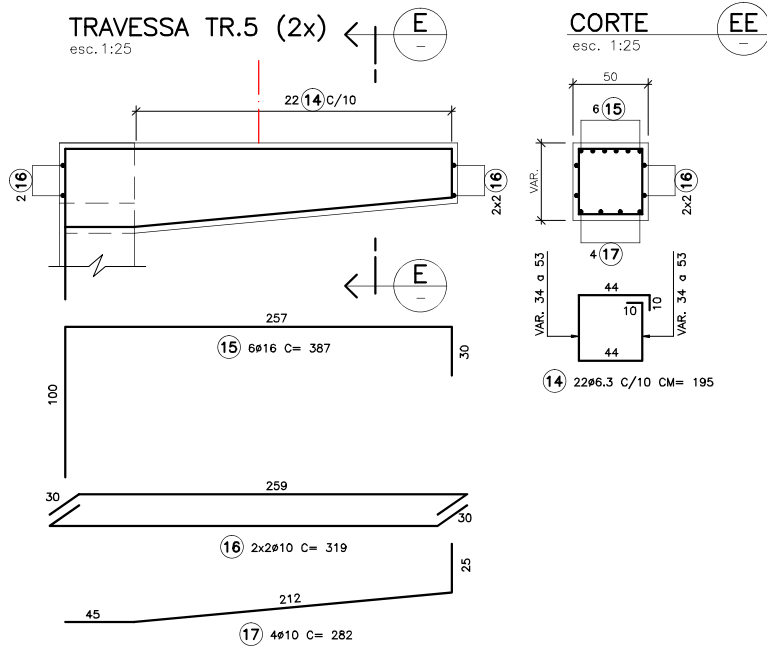
CORTE
esc. 1:25

TRAVESSA TR.4
esc. 1:25



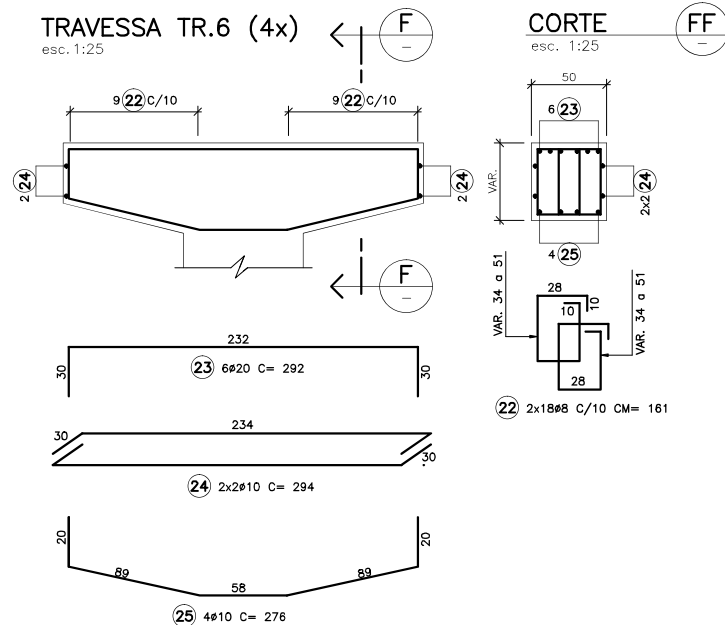
CORTE
esc. 1:25

TRAVESSA TR.5 (2x)
esc. 1:25



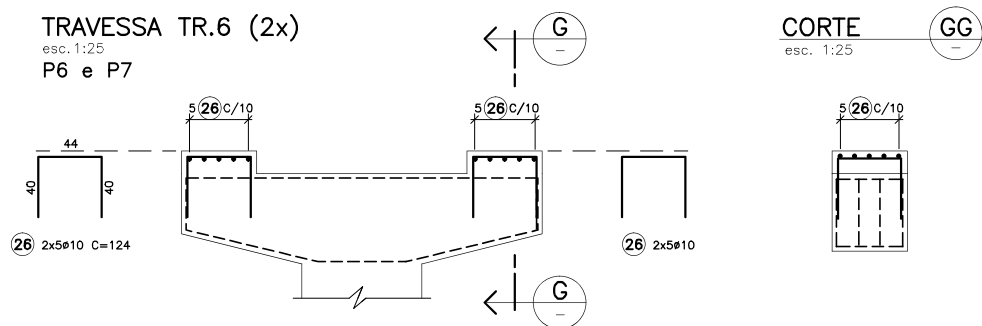
CORTE
esc. 1:25

TRAVESSA TR.6 (4x)
esc. 1:25



CORTE
esc. 1:25

TRAVESSA TR.6 (2x)
P6 e P7



CORTE
esc. 1:25

LISTA DE FERROS			
POS.	Ø	Q	COMP.UNIT. (cm)
1	6,3	44	CM 195
2	16	12	392
3	10	4	534
4	10	4	513
5	6,3	90	CM 195
6	16	40	362
7	10	20	294
8	10	20	252
9	6,3	48	CM 195
10	16	16	422
11	16	4	300
12	10	8	354
13	10	8	312
14	6,3	44	CM 195
15	16	12	387
16	10	8	319
17	10	8	282
18	6,3	18	CM 195
19	16	6	292
20	10	4	294
21	10	4	276
22	8	144	CM 161
23	20	24	292
24	10	16	294
25	10	16	276

RESUMO CA 50A		
Ø	COMP. (m)	PESO (kg)
5		
6.3	475,8	119,0
8	231,84	92,7
10	366,44	227,2
12.5		
16	335,32	529,8
20	70,08	173,1
25		
PESO TOTAL (kg)		1141,8

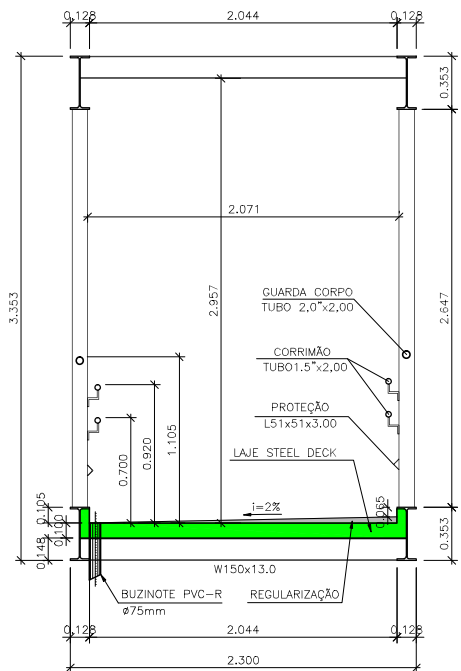
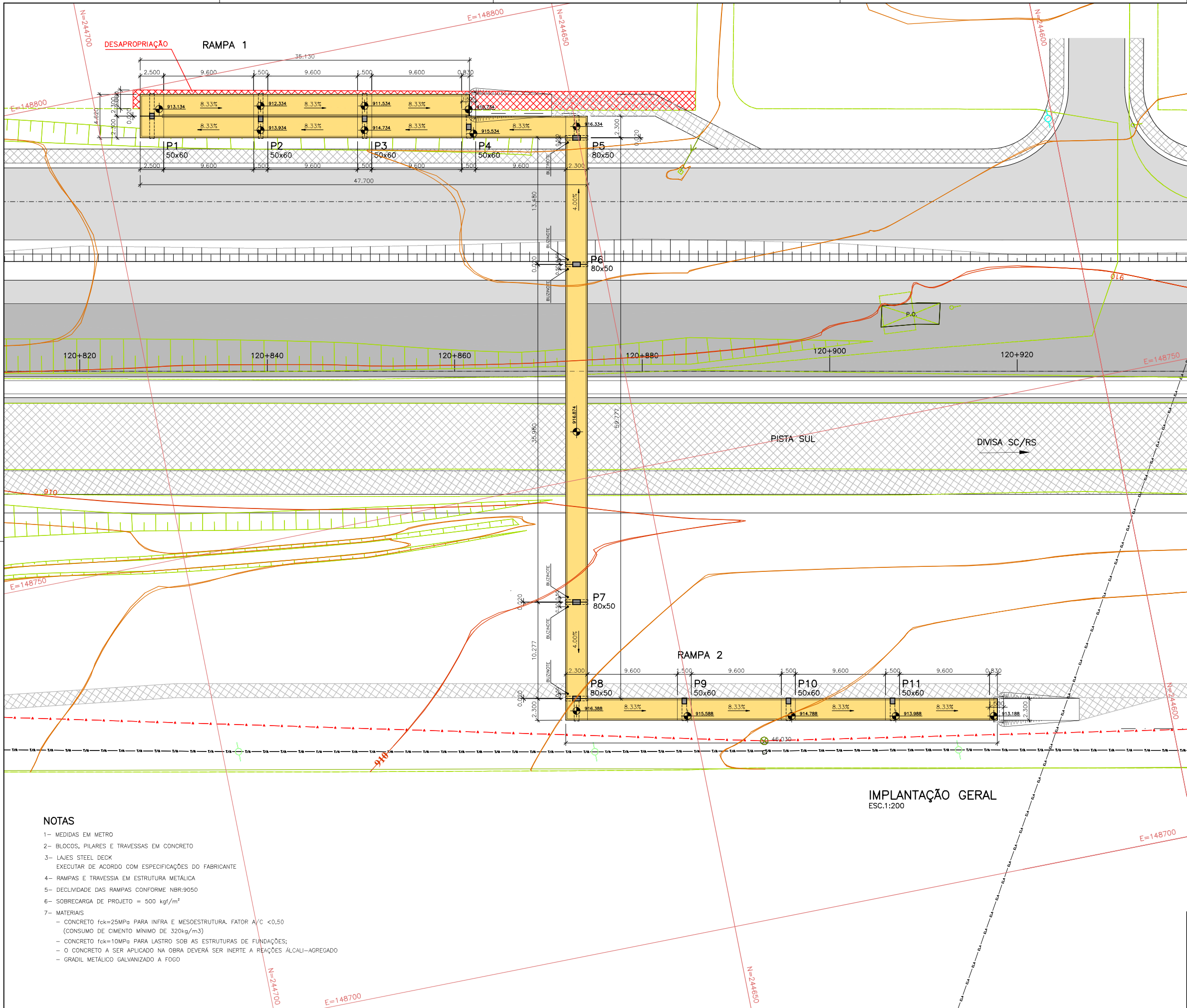
TABELA DE DOBRAMENTO			
BARRAS	GANCHOS	ESTRIBOS	
AÇO	Ø (mm)	db (cm)	db (cm)
CA-60	5,0	3,0	1,5
	6,3	3,2	1,9
	8,0	4,0	2,4
CA-50	10,0	5,0	5,0
	12,5	6,3	6,3
	16,0	8,0	8,0
	20,0	16,0	16,0
	25,0	20,0	20,0

NOTAS:

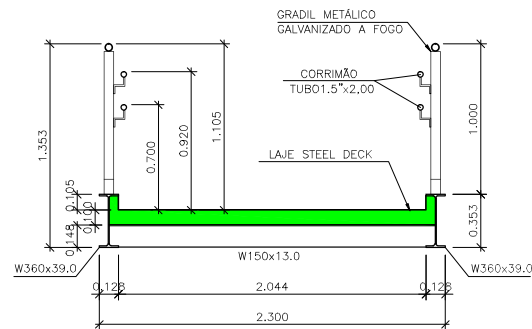
- 1 - MEDIDAS EM CENTIMETRO BITOLAS EM METRO.
- 2 - COBRIMENTO: PILARES E TRAVESSAS = 3,0cm.
BLOCOS E ESTACAS = 4,0cm

FIRMA PROJETISTA				Nº DESENHO ANTI: DE-02-116/PR-120-8-C04/508				REV. : A	
LOCAL: PASSARELA km 120+887				RODOVIA: BR-116 RÉGIS BITTENCOURT				TRECHO: CURITIBA - DIVISA SC/RS	
TÍTULO: PASSARELA DE PEDESTRES ARMAÇÃO - TRAVESSAS TR.1 à TR.6				ESCALA: INDICADA				FOLHA: 08/08	
Nº INTERNO: PCP-DE-02-116/PR-120-8-C04/508				REV. 01					
DATA: 13/01/14				RESP. TÊC./PROJETISTA: JOÃO LEONARDO SEBASTIANI - CREA 5061291737					
DATA: 17/05/13				RESP. TÊC./CONCES.:					
DATA: 10/10/12				RESP. TÊC./ANIT:					
DATA: 10/10/12				ASSUNTO:					
DATA: 10/10/12				DOG. REFERÊNCIA:					

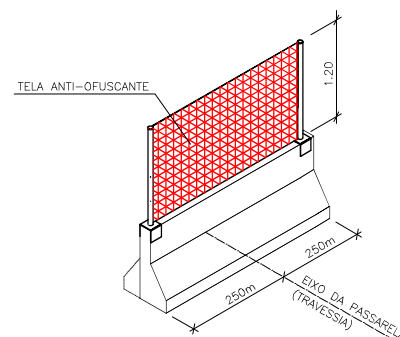




SEÇÃO DA TRAVESSIA
ESC.1:25



SEÇÃO DAS RAMPAS
ESC.1:25



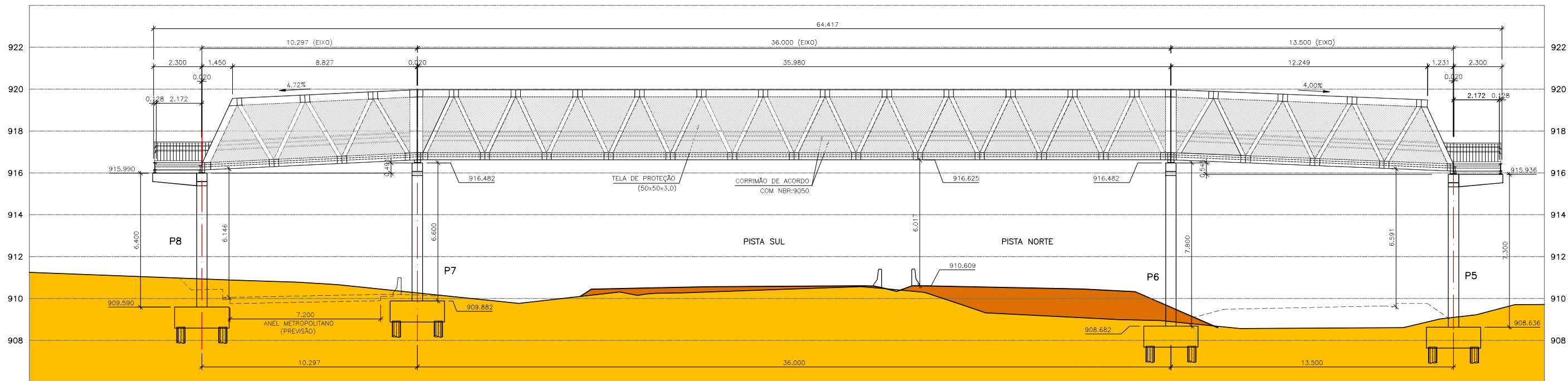
DET. TIPO - TELA ANTI-OFUSCANTE
SOBRE BARREIRA RÍGIDA
ESC. SEM ESCALA

NOTAS

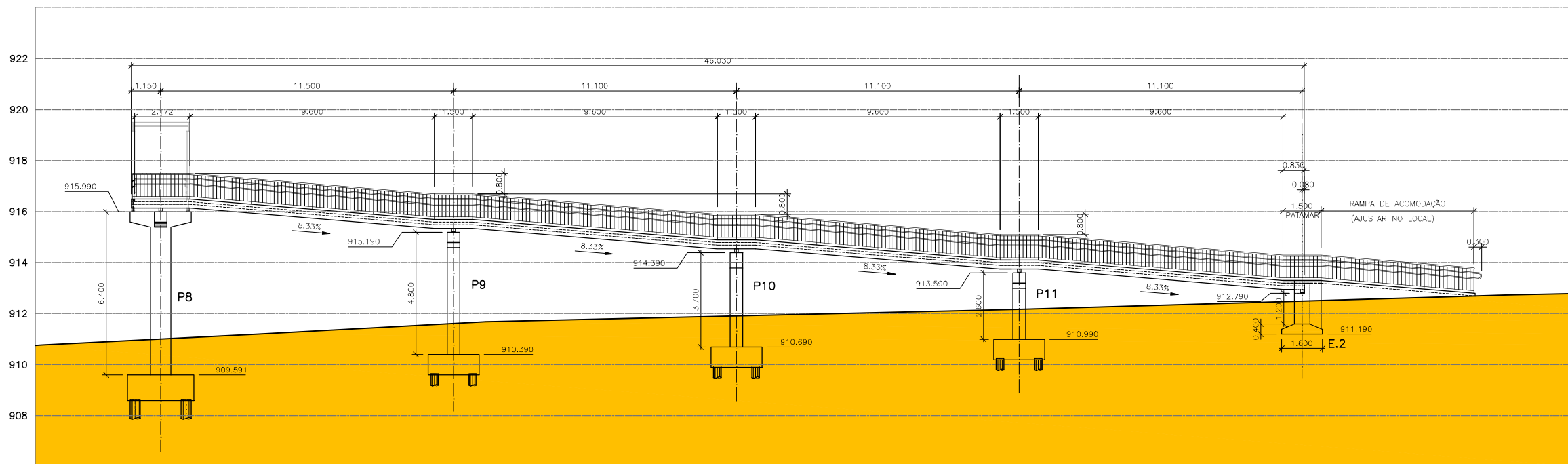
- 1- MEDIDAS EM METRO
- 2- BLOCOS, PILARES E TRAVESSAS EM CONCRETO
- 3- LAJES STEEL DECK
EXECUTAR DE ACORDO COM ESPECIFICAÇÕES DO FABRICANTE
- 4- RAMPAS E TRAVESSIA EM ESTRUTURA METÁLICA
- 5- DECLIVIDADE DAS RAMPAS CONFORME NBR9050
- 6- SOBRECARGA DE PROJETO = 500 kgf/m²
- 7- MATERIAIS
 - CONCRETO fck=25MPa PARA INFRA E MESOESTRUTURA. FATOR A/C <0,50
(CONSUMO DE CIMENTO MÍNIMO DE 320kg/m³)
 - CONCRETO fck=10MPa PARA LASTRO SOB AS ESTRUTURAS DE FUNDAÇÕES;
 - O CONCRETO A SER APLICADO NA OBRA DEVERÁ SER INERTE A REAÇÕES ÁLCALI-AGREGADO
 - GRADIL METÁLICO GALVANIZADO A FOGO

FIRMA PROJETISTA		A		13/01/14		JOÃO LEONARDO SEBASTIANI- CREA 5061291737		REVISÃO AS BUILT									
HABITECHNE		1		21/05/13				REVISÃO GERAL									
ProCap		0		10/10/12		CLAUDIO AUGUSTO PERPETUO - CREA 5061360692		EMIÇÃO INICIAL									
Nº INTERNO: PCP-DE-02-116/PR-120-8-M03/501		REV. 01		DATA		RESP. TEC./PROJETISTA		RESP. TEC./CONCES.		RESP. TEC./ANIT		ASSUNTO		DOC. REFERÊNCIA			

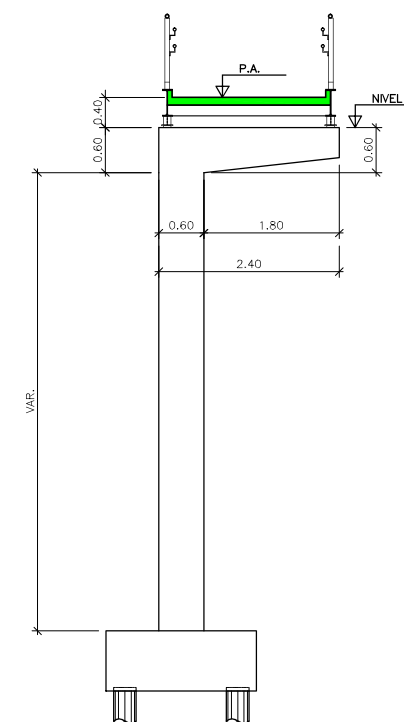
Nº DESENHO ANTI: DE-02-116/PR-120-8-M03/501		REV. : A	
LOCAL: PASSARELA km 120+887			
RODOVIA: BR-116 RÉGIS BITTENCOURT		TRECHO: CURITIBA - DIVISA SC/RS	
TÍTULO: PASSARELA DE PEDESTRES IMPLANTAÇÃO GERAL		ESCALA: INDICADA	
PLANTA, SEÇÃO DAS RAMPAS E TRAVESSIA		FOLHA: 01/12	



VISTA DA TRAVESSIA
ESTACA 120+873
ESC.1:100

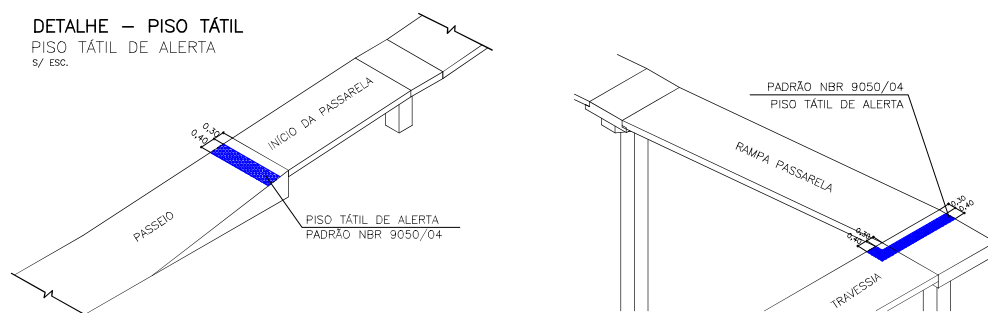


ELEVAÇÃO - RAMPA 2 (PISTA SUL)
ESC.1:100



PILAR TIPO PARA
APOIOS P9, P10 e P11
ESC.1:50

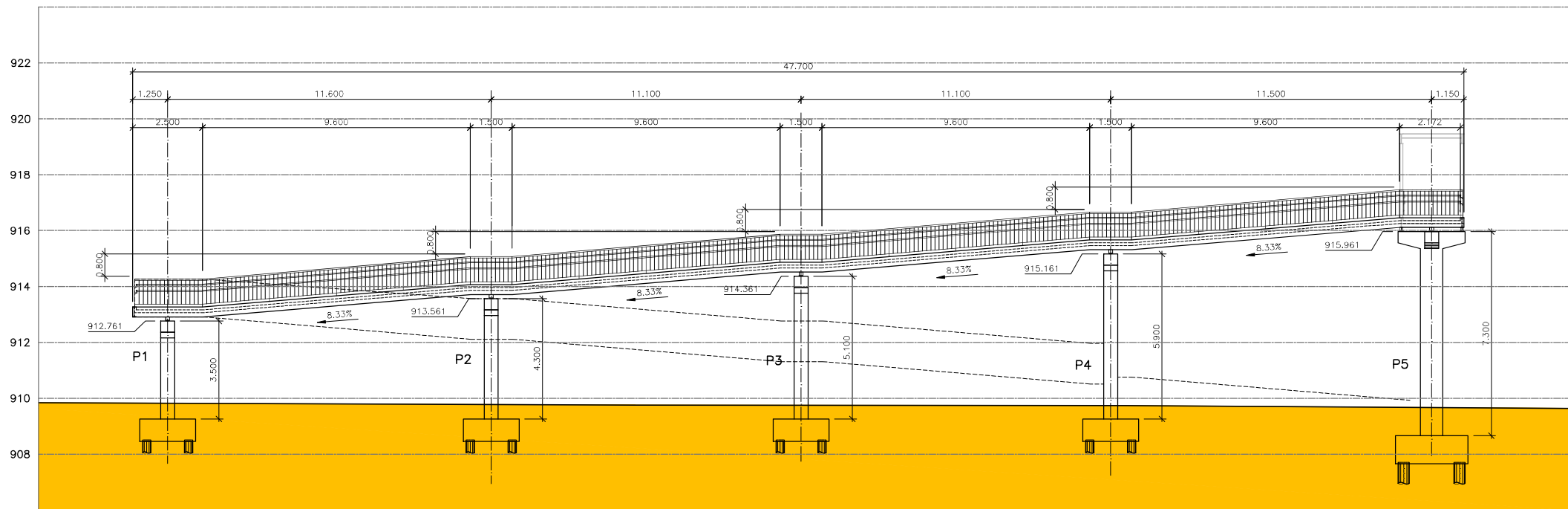
DETALHE - PISO TÁTIL
PISO TÁTIL DE ALERTA
S/ ESC.



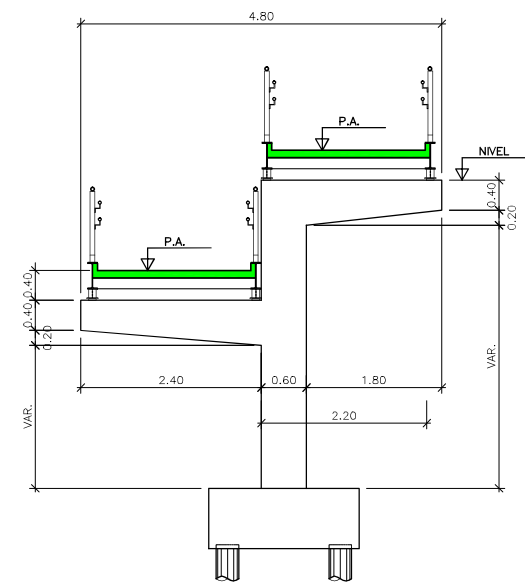
NOTAS

- 1- MEDIDAS EM METRO
- 2- BLOCOS, PILARES E TRAVESSAS EM CONCRETO
- 3- LAJES STEEL DECK
EXECUTAR DE ACORDO COM ESPECIFICAÇÕES DO FABRICANTE
- 4- RAMPAS E TRAVESSIA EM ESTRUTURA METÁLICA
- 5- DECLIVIDADE DAS RAMPAS CONFORME NBR-9050
- 6- SOBRECARGA DE PROJETO = 500 kgf/m²
- 7- MATERIAIS
 - CONCRETO $f_{ck}=25MPa$ PARA INFRA E MESOESTRUTURA. FATOR A/C <0,50 (CONSUMO DE CIMENTO MÍNIMO DE 320kg/m³)
 - CONCRETO $f_{ck}=10MPa$ PARA LASTRO SOB AS ESTRUTURAS DE FUNDAÇÕES;
 - O CONCRETO A SER APLICADO NA OBRA DEVERÁ SER INERTE A REAÇÕES ÁLCALI-AGREGADO
 - GRADIL METÁLICO GALVANIZADO A FOGO

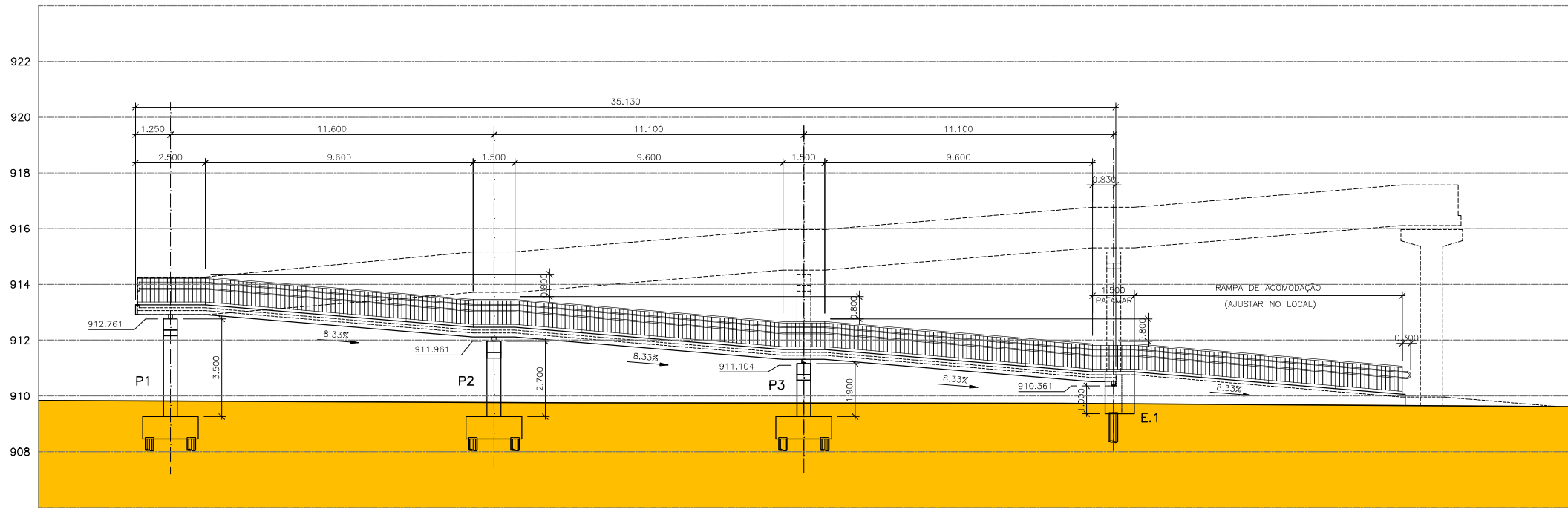
FIRMA PROJETISTA		Nº DESENHO ANTI: DE-02-116/PR-120-8-M03/502		REV. : A	
LOCAL: PASSARELA km 120+887		RODOVIA: BR-116 RÉGIS BITTENCOURT		TRECHO: CURITIBA - DIVISA SC/RS	
TÍTULO: PASSARELA DE PEDESTRES ELEVÇÃO TRAVESSIA e RAMPA 2		ESCALA: INDICADA		FOLHA: 02/12	
Nº INTERNO: PCP-DE-02-116/PR-120-8-M03/502		REV. 01		DOO. REFERÊNCIA	
A		13/01/14		JOÃO LEONARDO SEBASTIANI- CREA 6061291737	
1		06/05/13		REVISÃO GERAL	
0		10/10/12		CLAUDIO AUGUSTO PERPETUO - CREA 5061360692	
RESP. TEC./PROJETISTA		RESP. TEC./CONCES.		RESP. TEC./ANTI	
ASSUNTO		DOO. REFERÊNCIA			



ELEVAÇÃO – RAMPA 1 (2º LANCE)
ESC.1:100



PILAR TIPO PARA
APOIO DE 2 RAMPAS
ESC.1:50

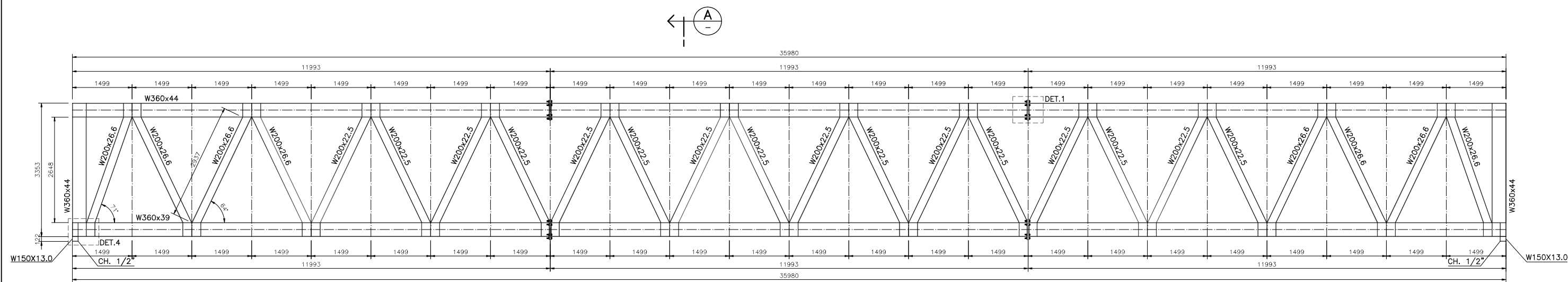


ELEVAÇÃO – RAMPA 1 (1º LANCE)
ESC.1:100

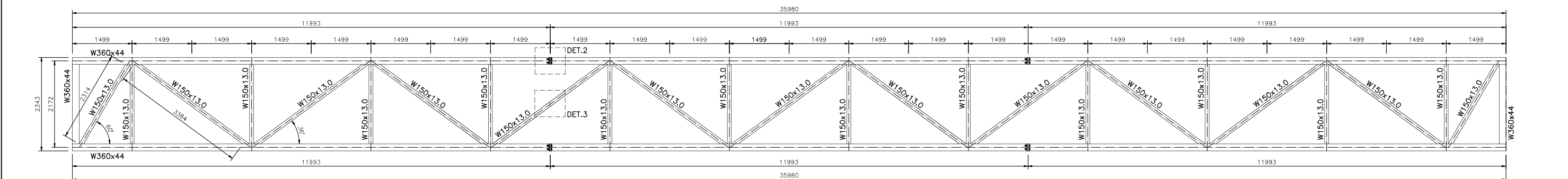
- NOTAS**
- 1- MEDIDAS EM METRO
 - 2- BLOCOS, PILARES E TRAVESSAS EM CONCRETO
 - 3- LAJES STEEL DECK
EXECUTAR DE ACORDO COM ESPECIFICAÇÕES DO FABRICANTE
 - 4- RAMPAS E TRAVESSIA EM ESTRUTURA METÁLICA
 - 5- DECLIVIDADE DAS RAMPAS CONFORME NBR:9050
 - 6- SOBRECARGA DE PROJETO = 500 kgf/m²
 - 7- MATERIAIS
 - CONCRETO fck=25MPa PARA INFRA E MESOESTRUTURA. FATOR A/C <0,50 (CONSUMO DE CIMENTO MÍNIMO DE 320kg/m³)
 - CONCRETO fck=10MPa PARA LASTRO SOB AS ESTRUTURAS DE FUNDAÇÕES;
 - O CONCRETO A SER APLICADO NA OBRA DEVERÁ SER INERTE A REAÇÕES ÁLCALI-AGREGADO
 - GRADIL METÁLICO GALVANIZADO A FOGO



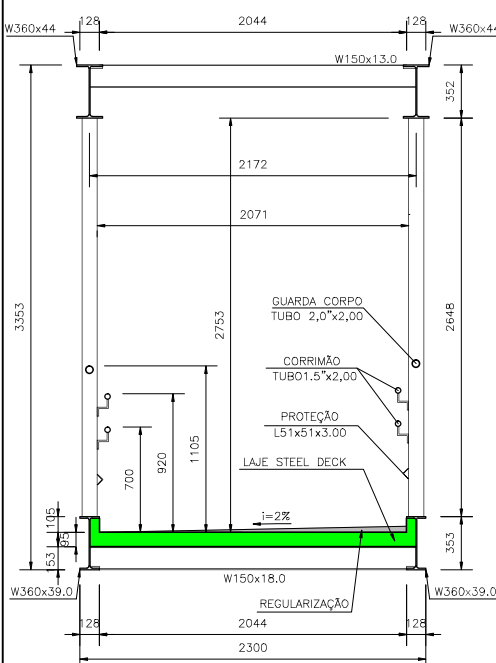
FIRMA PROJETISTA		Nº DESENHO ANTT: DE-02-116/PR-120-8-M03/503		REV. : A	
LOCAL: PASSARELA km 120+887		RODOVIA: BR-116 RÉGIS BITTENCOURT		TRECHO: CURITIBA – DIVISA SC/RS	
TÍTULO: PASSARELA DE PEDESTRES		ESCALA: INDICADA		FOLHA: 03/12	
RAMPA 1					
Nº INTERNO: PCP-DE-02-116/PR-120-8-M03/503		REV. 01		REV. DATA	
RES. TEC./PROJETISTA		RES. TEC./CONCES.		RES. TEC./ANTT	
ASSUNTO		DOC. REFERÊNCIA			



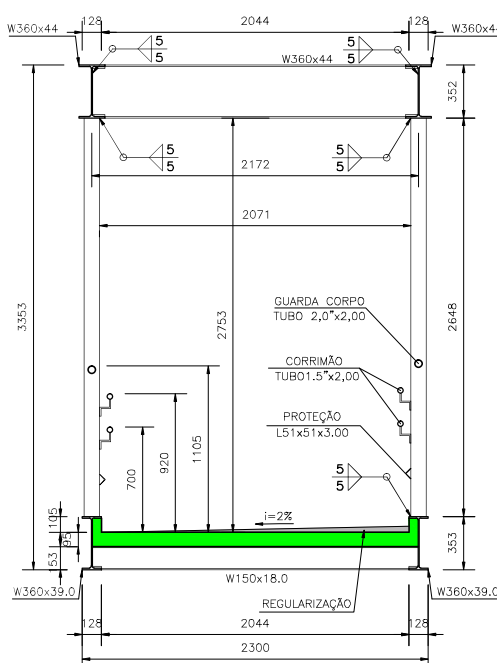
TRELIÇA – LADO DIREITO E ESQUERDO (2x)
ESC.1:50



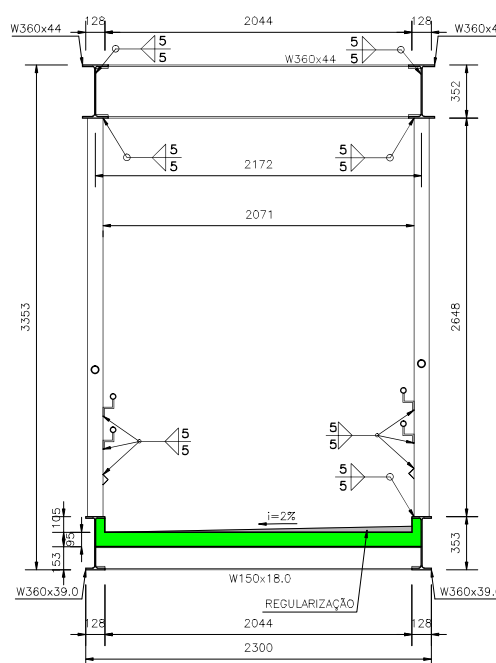
TRELIÇA – LADO SUPERIOR (1x)
ESC.1:50



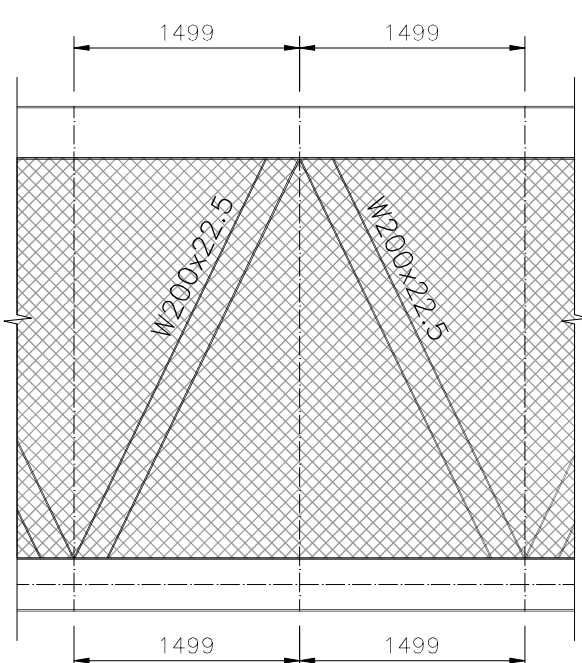
CORTE
esc. 1:25



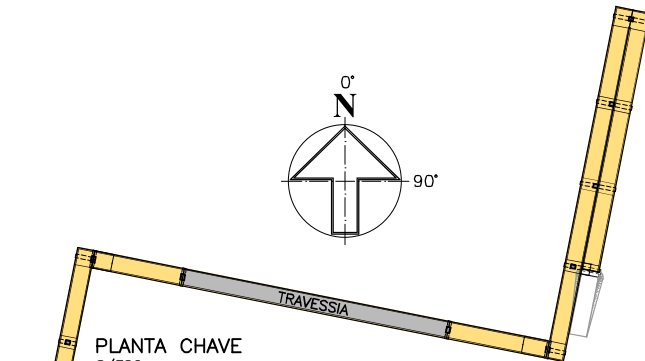
ELEVÇÃO
ESC.1:25



DETALHE – SOLDA
ESC.1:25



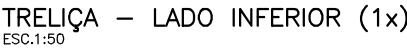
TELA – 50X50X4,20
ESC.1:25



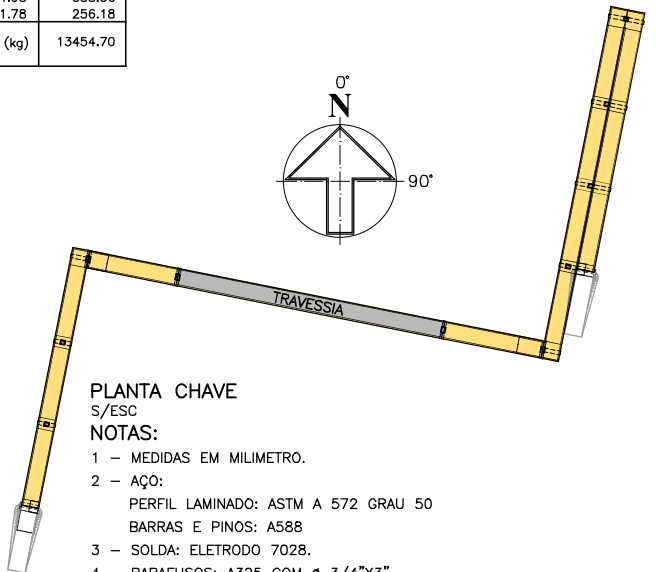
PLANTA CHAVE
S/ESC

- NOTAS:
- 1 – MEDIDAS EM MILÍMETRO.
 - 2 – AÇO:
PERFIL LAMINADO: ASTM A 572 GRAU 50
BARRAS E PINOS: A588
 - 3 – SOLDA: ELETRODO 7028.
 - 4 – PARAFUSOS: A325 COM Ø 7/8"X3".
 - 5 – FUROS COM 24mm.
 - 6 – LCHE: LIGAÇÃO FLEXÍVEL COM CHAPA DE EXTREMIDADE.
 - 7 – PASSARELA REVESTIDA COM TELA GALVANIZADA: 50x50x4,20mm.
 - 8 – LAJE STEEL DECK
 - 9 – PINTURA ESPECIFICAÇÃO:
JATEAMENTO PADRÃO S.A.2,5
PRIMER EPÓXI 40 MICRAS
ACABAMENTO EM ESMALTE ALQUIDICO 160 MICRAS
 - 10 – GRADIL METÁLICO GALVANIZADO A FOGO.

FIRMA PROJETISTA		Nº DESENHO ANTT: DE-02-116/PR-120-8-M03/504		REV. : A	
LOCAL: PASSARELA km 120+887		RODOVIA: BR-116 RÉGIS BITTENCOURT		TRECHO: CURITIBA – DIVISA SC/RS	
TÍTULO: PROJETO EXECUTIVO – METÁLICA TRAVESSIA PLANTA E ELEVÇÕES		ESCALA: INDICADA		FOLHA: 04/12	
FOLHA: 04/12		FOLHA: 04/12		FOLHA: 04/12	



RESUMO PARAFUSOS	
COMPONENTE	TOTAL N° PEÇAS
PARAFUSO A325N COM PORCA E ARRUELA 3/4"x3"	64

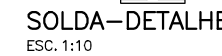
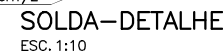
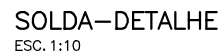
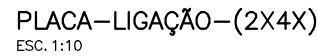
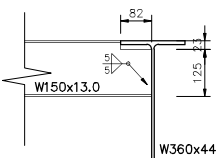
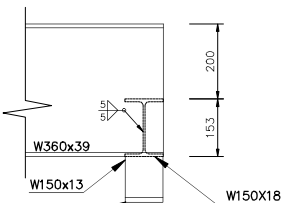
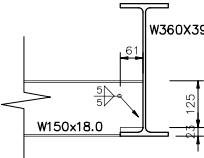
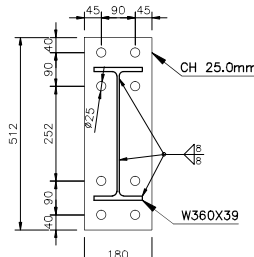


PLANTA CHAVE

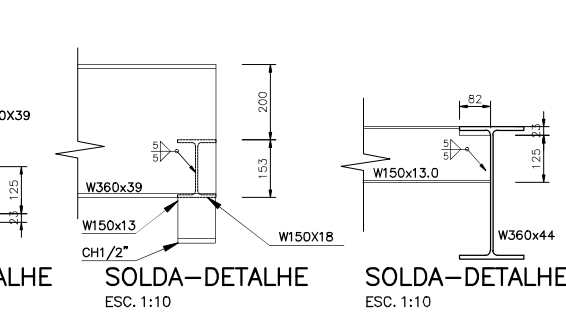
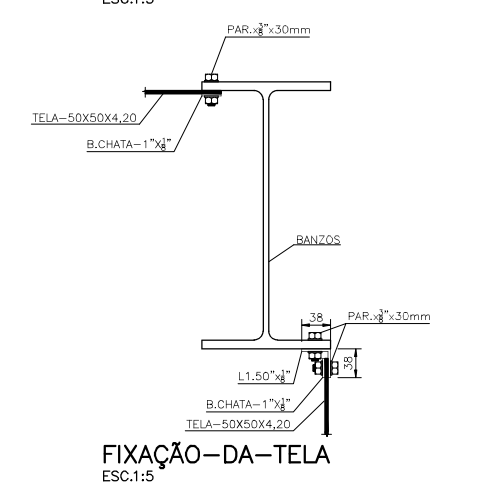
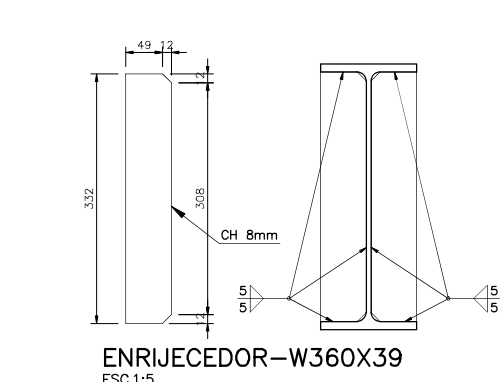
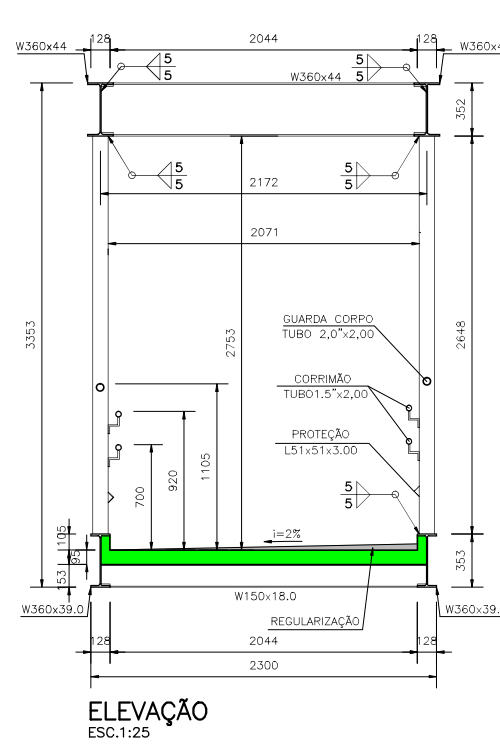
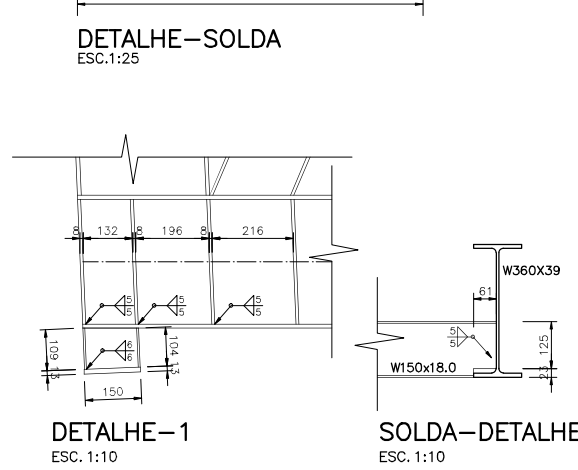
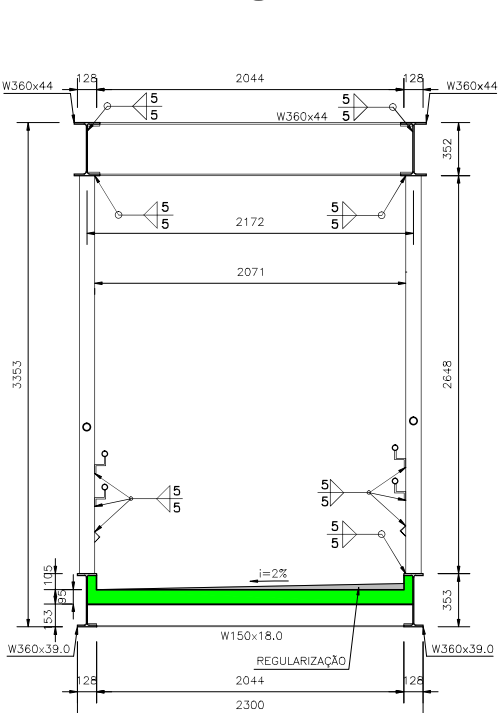
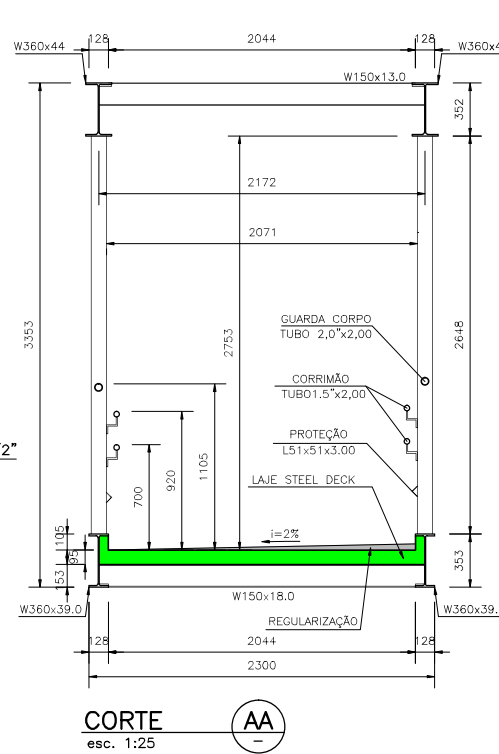
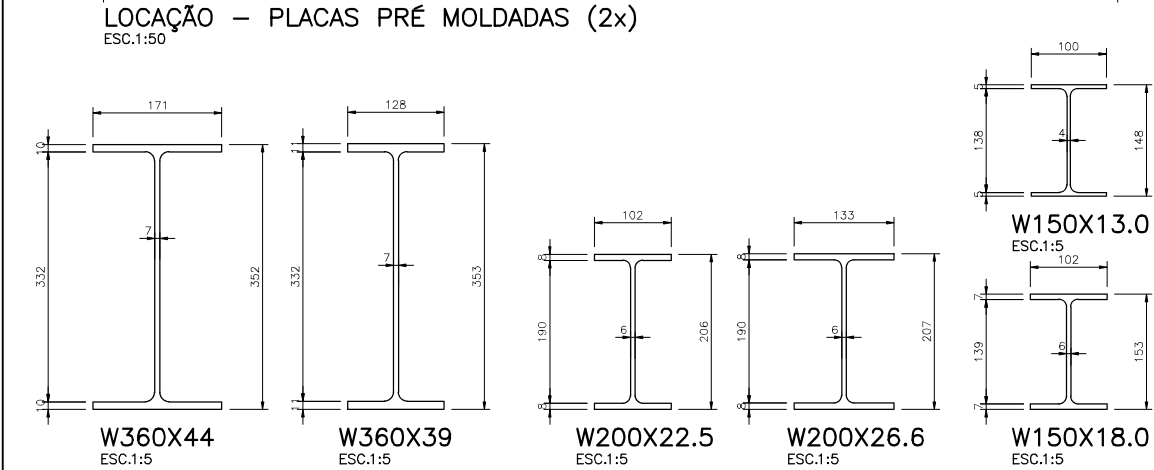
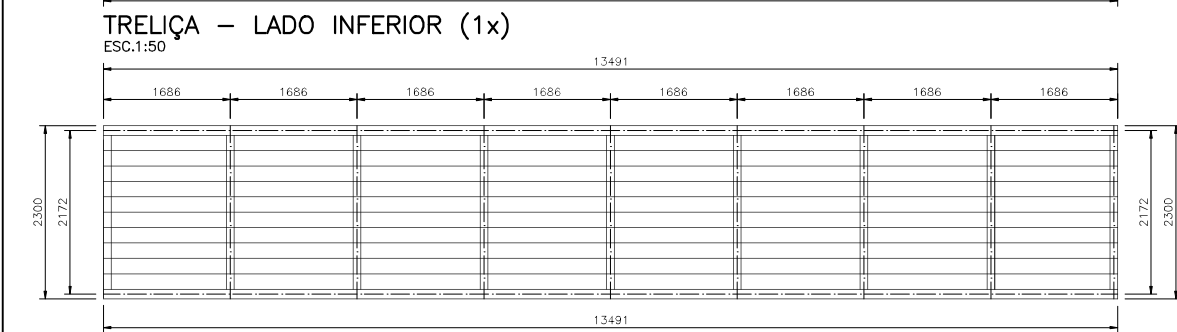
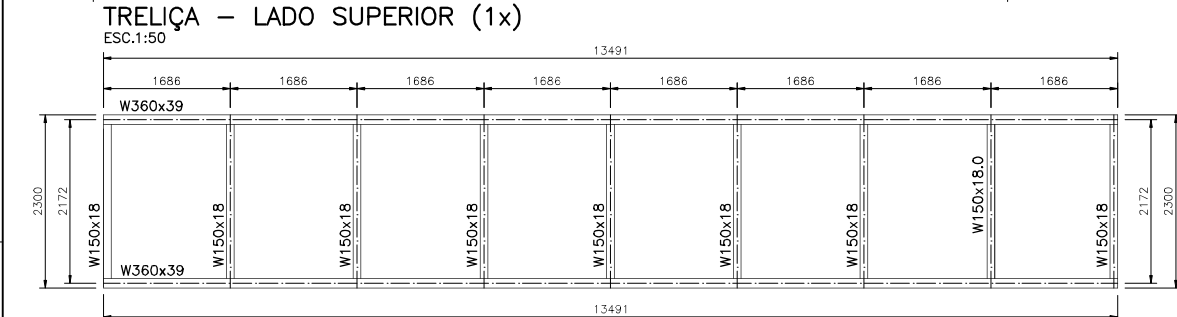
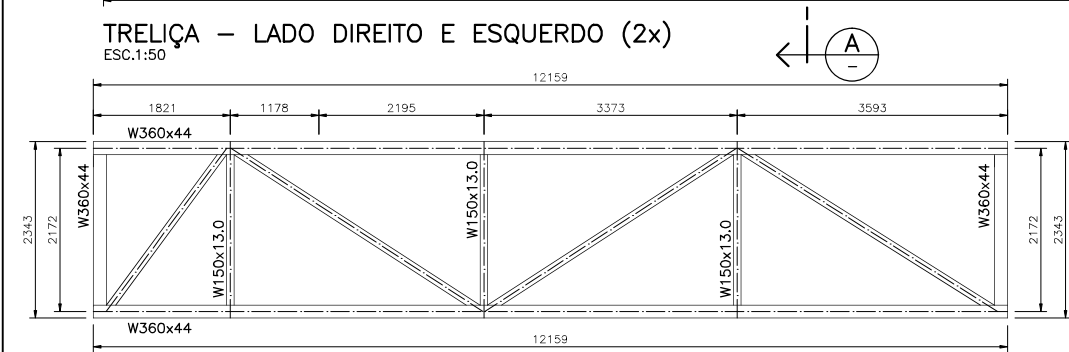
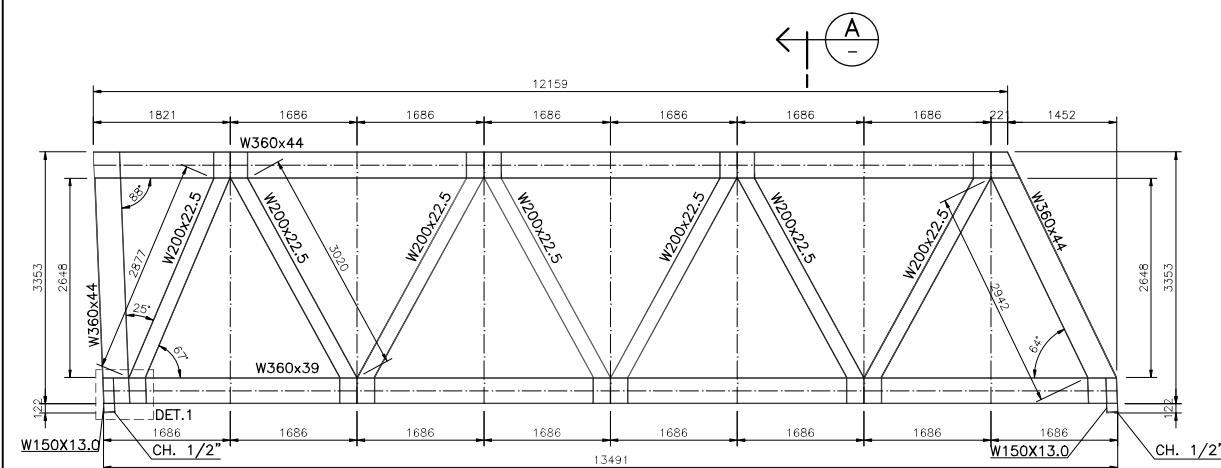
S/ESC

NOTAS:

- 1 - MEDIDAS EM MILIMETRO.
- 2 - AÇO:
PERFIL LAMINADO: ASTM A 572 GRAU 50
BARRAS E PINOS: A588
3 - SOLDA: ELETRODO 7028.
- 4 - PARAFUSOS: A325 COM Ø 3/4"x3".
- 5 - FUIROS COM 24mm.
- 6 - LCH: LIGAÇÃO FLEXIVEL COM CHAPA DE EXTREMIDADE.
- 7 - PASSARELA REVESTIDA COM TELA GALVANIZADA: 50x50x4,20mm.
- 8 - LAJE STEEL DECK
- 9 - PINTURA ESPECIFICAÇÃO:
JATEAMENTO PADRÃO S.A.2,5
PRIMER EPÓXI 40 MICRAS
ACABAMENTO EM ESMALTE ALQUIDICO 160 MICRAS
- 10 - GRADIL METÁLICO GALVANIZADO A FOGO.



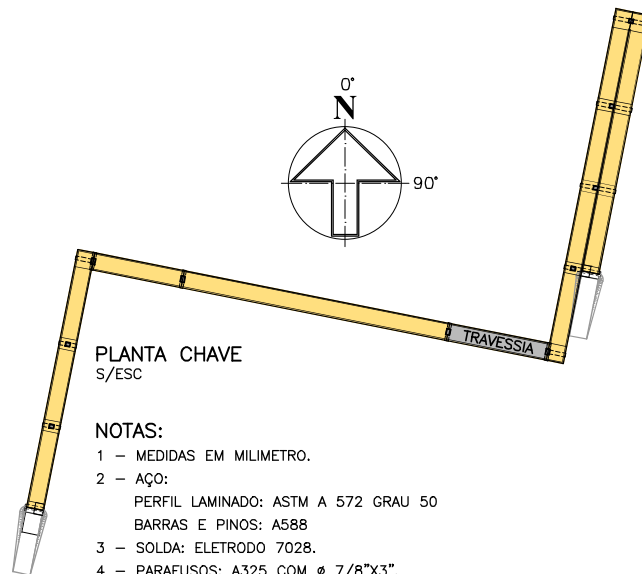
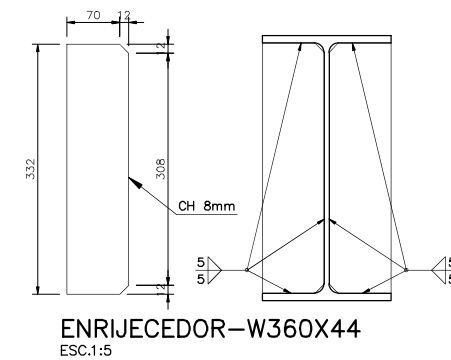
FIRMA PROJETISTA						Nº DESENHO ANTT:	DE-02-116/PR-120-B-M03/505			REV.: A
 HABITECHNE Engenharia e Construção www.habitechne.com.br  ProCap engenharia www.procap.eng.br						LOCAL:	PASSARELA km 120+887			
						RODOVIA:	BR-116 RÉGIS BITTENCOURT		TRECHO:	CURITIBA - DIVISA SC/RS
Nº INTERNO: PCP-DE-02-116/PR-120-B-M03/505 REV. 01						TÍTULO:	PROJETO EXECUTIVO - METÁLICA TRAVESSIA PLANTA E ELEVAÇÕES		ESCALA: INDICADA	FOLHA: 05/12
REV.	DATA	RESP. TEC./PROJETISTA	RESP. TEC./CONCES.	RESP. TEC./ANT	ASSUNTO	DOC. REFERÊNCIA				
A	13/05/2014	JOSÉ LEONARDO SEBASTIÃO - CREA 5061291737			REVISÃO AS BUILT					
O	10/10/12	PAULO CARREIRA - CREA/SP: 5061360986			EMIÇÃO INICIAL					



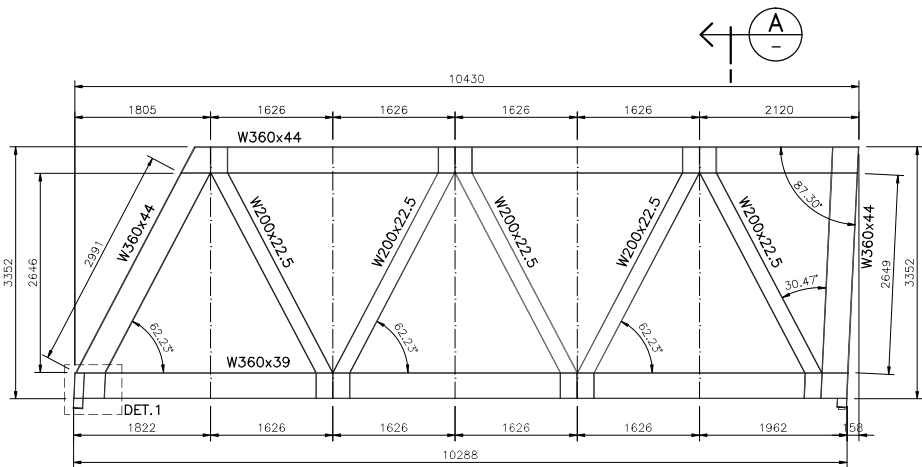
RELAÇÃO DO AÇO - 2 UNIDADE						
AÇO	P	COMPONENTE	ID	COMP. TOT. (m)	PESO (kg/m)	TOTAL PESO (kg)
ASTM A572	1	W150x13.0	W	22.00	13.00	286.00
	2	W150x18.0	W	20.70	18.00	372.60
	3	W200x22.5	W	48.18	22.50	1084.05
	4	W360x39.0	W	26.98	39.00	1052.22
	5	W360x44.0	W	41.09	44.00	1807.96
ASTM A36	6	L50x50x3.00	L	26.98	4.98	134.36
	7	TUBO1.5"x2.00	O	53.96	1.78	96.05
TOTAL (kg)						4833.24

RESUMO DE AÇO	
COMPONENTE	TOTAL PESO (kg)
W150x13.0	286.00
W150x18.0	372.60
W200x22.5	1084.05
W360x39.0	1052.22
W360x44.0	1807.96
L50x50x3.00	134.36
TUBO1.5"x2.00	96.05

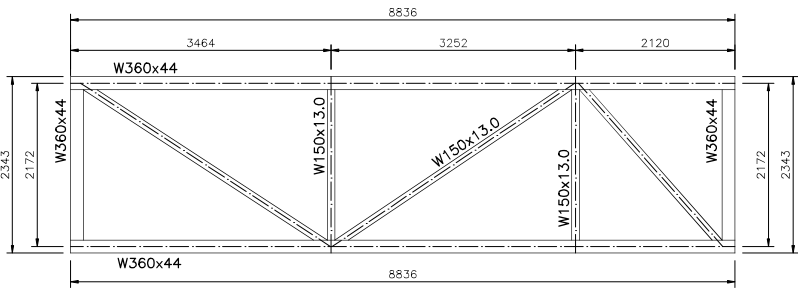
* DETALHES, LIGAÇÕES, CHAPAS E CONEXÕES: 3%



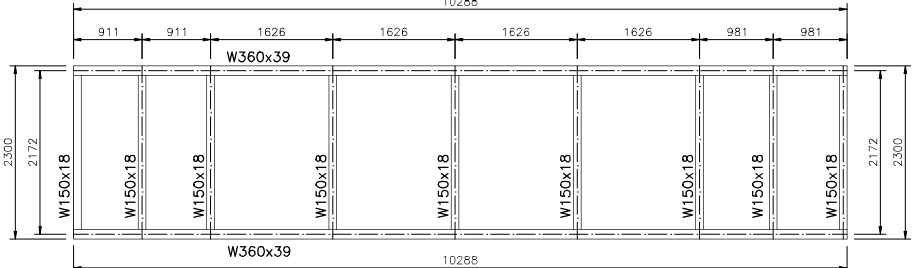
FIRMA PROJETISTA		Nº DESENHO ANTT: DE-02-116/PR-120-8-M03/506		REV. : A	
LOCAL: PASSARELA km 120+887		RODOVIA: BR-116 RÉGIS BITTENCOURT		TRECHO: CURITIBA - DIVISA SC/RS	
TÍTULO: PROJETO EXECUTIVO - METÁLICA TRAVESSIA LESTE PLANTA E ELEVACÕES		ESCALA: INDICADA		FOLHA: 06/12	
Nº INTERNO: PCP-DE-02-116/PR-120-8-M03/506		REV. 01		REV. 01	
DATA: 13/05/2014		RESP. TEC./PROJETISTA: JOÃO LEONARDO SEBASTIANI - CREA 5061291737		REVISÃO AS BUILT	
DATA: 10/10/12		RESP. TEC./PROJETISTA: PAULO CARREIRA - CREA/SP: 5061360986		EMISSÃO INICIAL	
RESP. TEC./CONCES.		RESP. TEC./ANTT		ASSUNTO	
DOC. REFERÊNCIA					



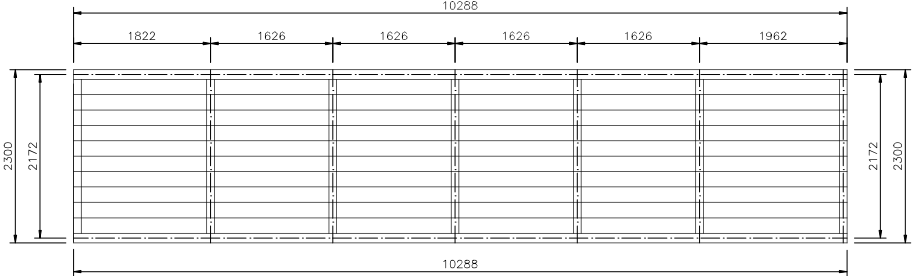
TRELIÇA - LADO DIREITO E ESQUERDO (2x)
ESC.1:50



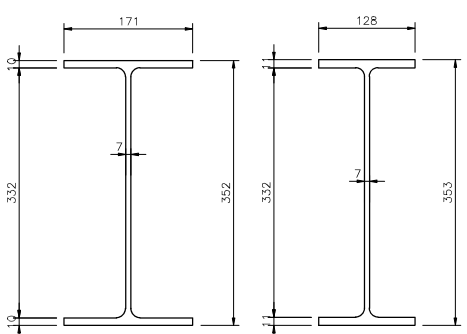
TRELIÇA - LADO SUPERIOR
ESC.1:50



TRELIÇA - LADO INFERIOR
ESC.1:50

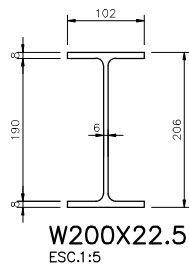


LOCAÇÃO - PLACAS PRÉ MOLDADAS
ESC.1:50



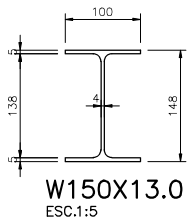
W360X44
ESC.1:5

W360X39
ESC.1:5

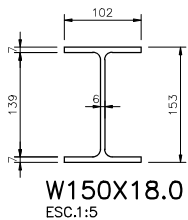


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ESC.1:5

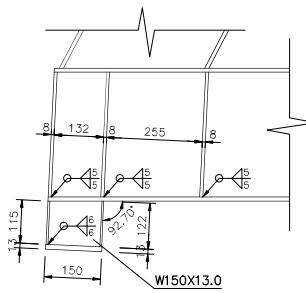
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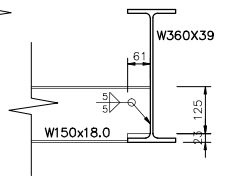
W150X13.0
ESC.1:5



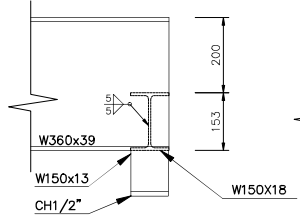
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ESC.1:5



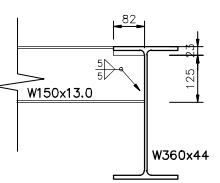
DETALHE - 1
ESC. 1:10



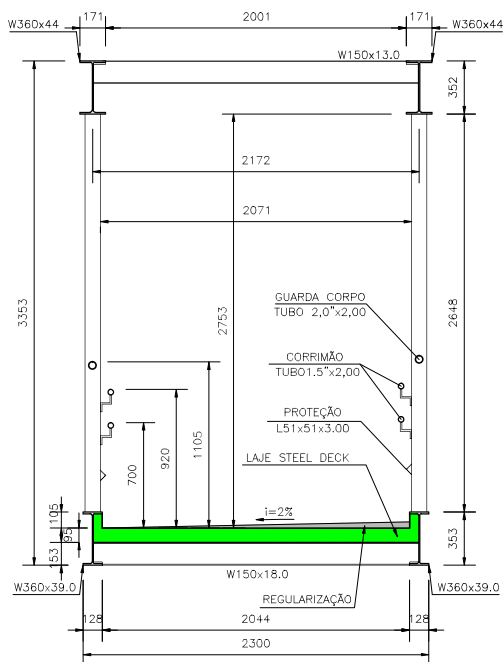
SOLDA - DETALHE
ESC. 1:10



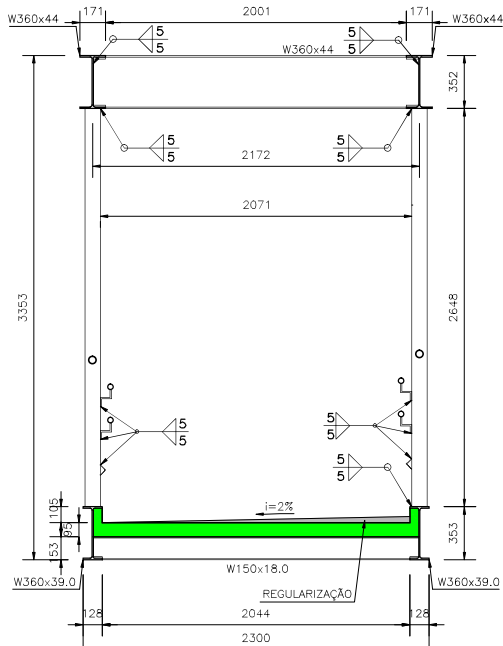
SOLDA - DETALHE
ESC. 1:10



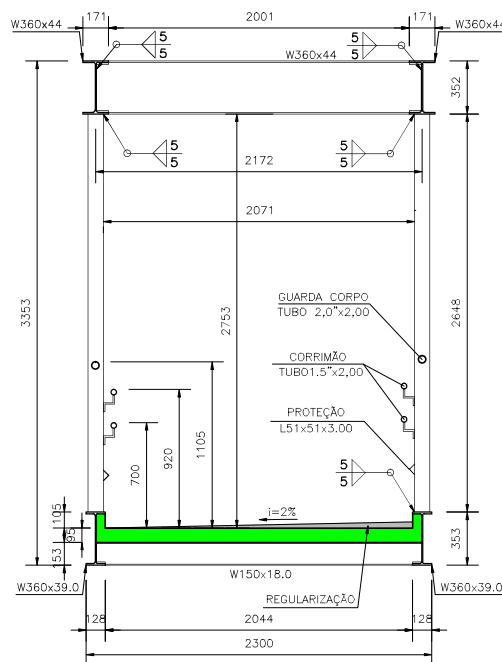
SOLDA - DETALHE
ESC. 1:10



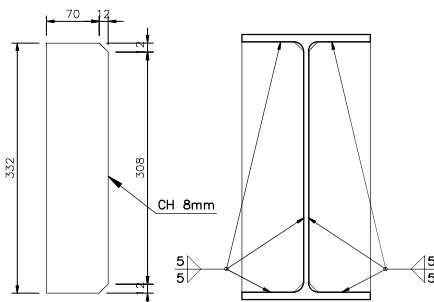
CORTE
esc. 1:25



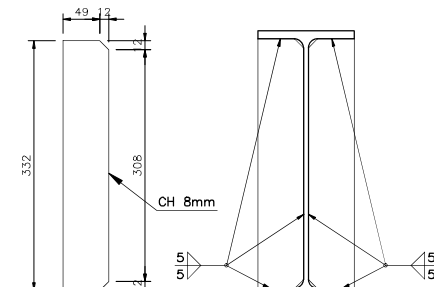
DETALHE - SOLDA
ESC.1:25



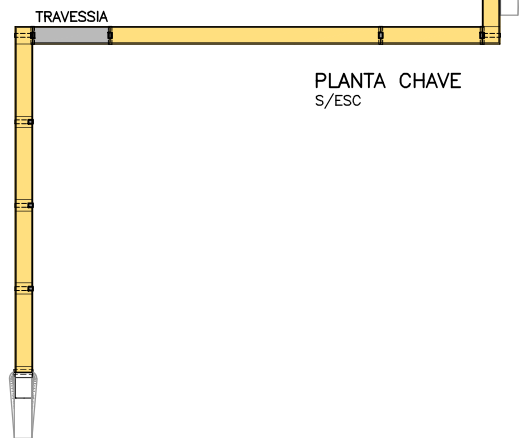
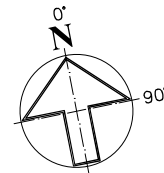
ELEVÇÃO
ESC.1:25



ENRIJECEDOR - W360X44
ESC.1:5



ENRIJECEDOR - W360X39
ESC.1:5



- NOTAS:
- 1 - MEDIDAS EM MILÍMETRO.
 - 2 - AÇO:
PERFIL LAMINADO: ASTM A 572 GRAU 50
BARRAS E PINOS: A588
 - 3 - SOLDA: ELETRODO 7028.
 - 4 - PARAFUSOS: A325 COM ϕ 7/8"x3".
 - 5 - FUIROS COM 24mm.
 - 6 - LCHE: LIGAÇÃO FLEXIVEL COM CHAPA DE EXTREMIDADE.
 - 7 - PASSARELA REVESTIDA COM TELA GALVANIZADA: 50x50x4,20mm.
 - 8 - LAJE STEEL DECK
 - 9 - PINTURA ESPECIFICAÇÃO:
JATEAMENTO PADRÃO S.A.2,5
PRIMER EPÓXI 40 MICRAS
ACABAMENTO EM ESMALTE ALQUIDICO 160 MICRAS
 - 10 - GRADIL METÁLICO GALVANIZADO A FOGO.

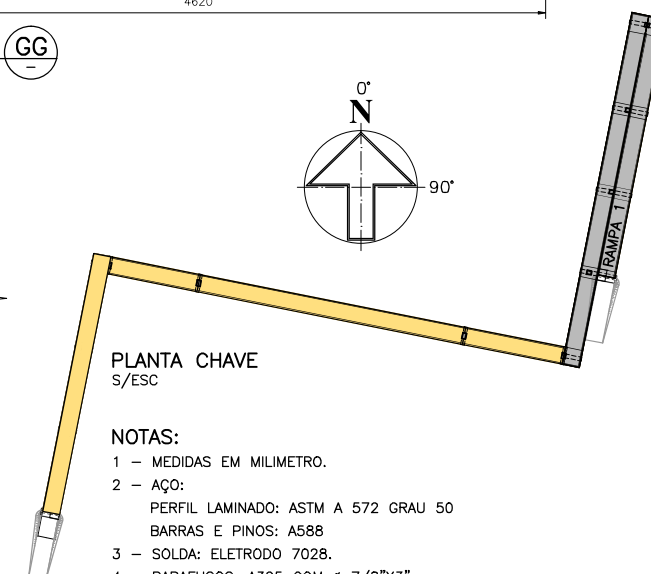
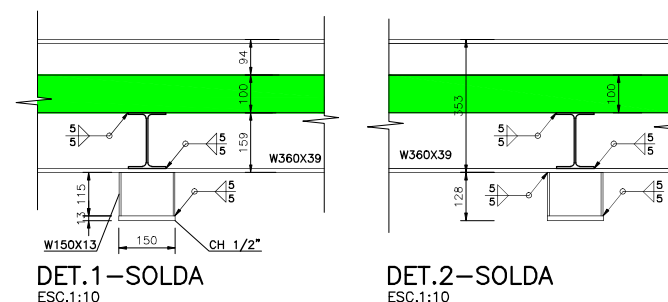
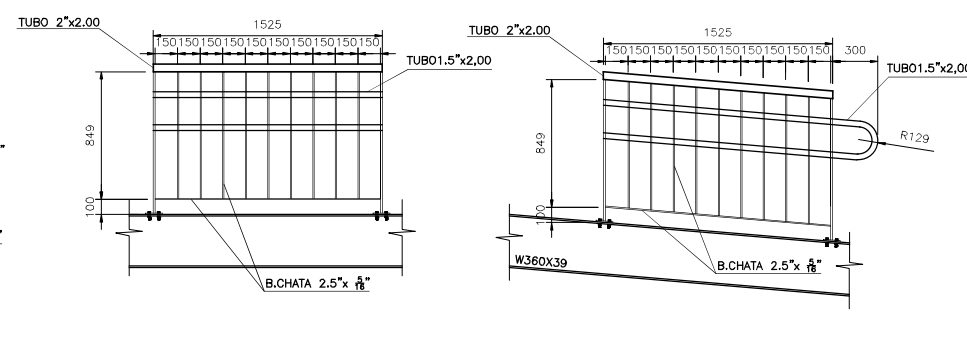
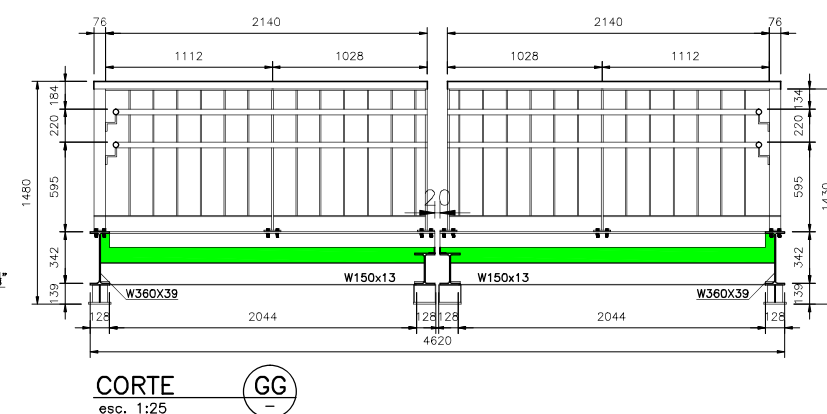
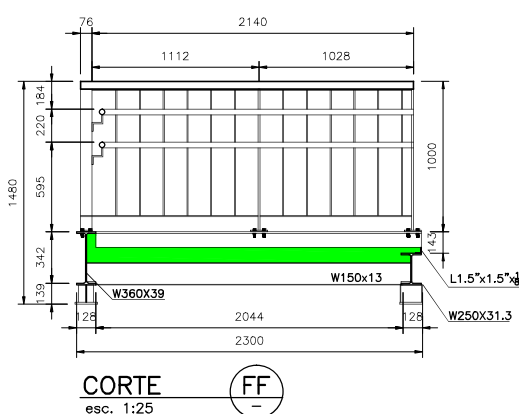
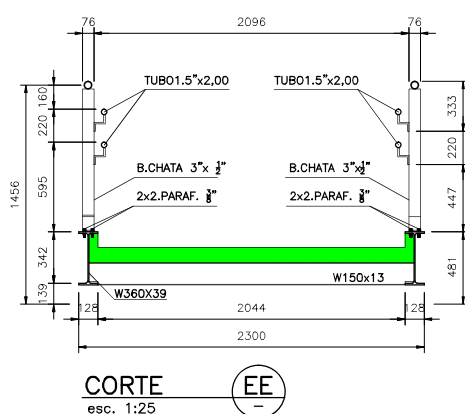


FIRMA PROJETISTA		Nº DESENHO ANTT: DE-02-116/PR-120-8-M03/507		REV. : A	
LOCAL: PASSARELA km 120+887		RODOVIA: BR-116 RÉGIS BITTENCOURT		TRECHO: CURITIBA - DIVISA SC/RS	
TÍTULO: PROJETO EXECUTIVO - METÁLICA		ESCALA: INDICADA		FOLHA: 07/12	
PLANTA E ELEVÇÕES					

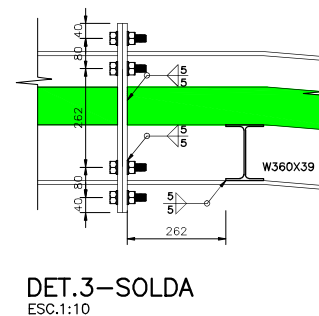
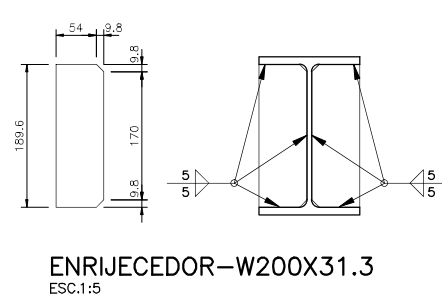
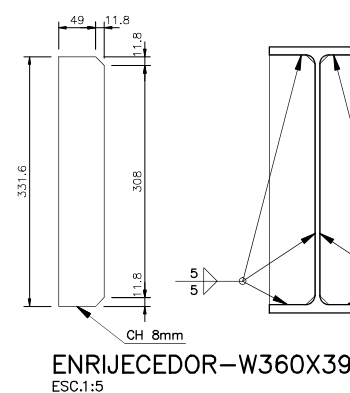
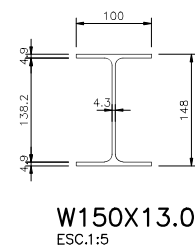
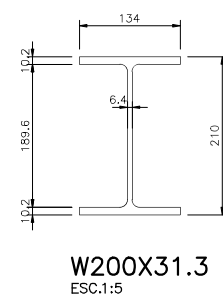
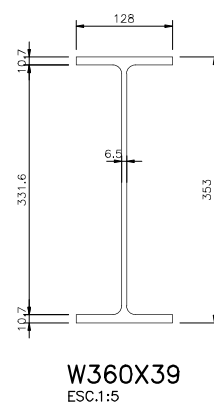


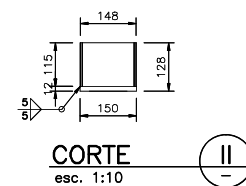
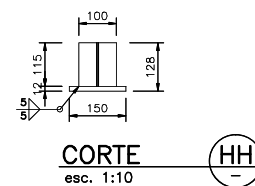
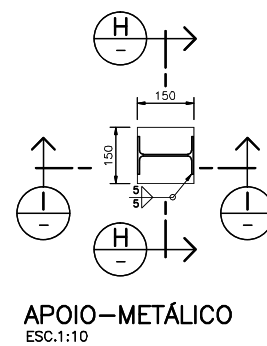
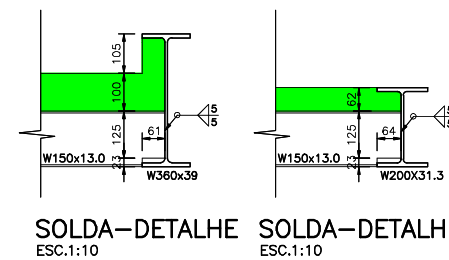
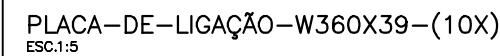
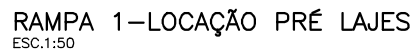
Nº INTERNO: PCP-DE-02-116/PR-120-8-M03/507

REV. 01	DATA	RESP. TEC./PROJETISTA	RESP. TEC./CONCES.	RESP. TEC./ANTT	ASSUNTO	DOC. REFERÊNCIA
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- NOTAS:**
- 1 - MEDIDAS EM MILIMETRO.
 - 2 - AÇO:
PERFIL LAMINADO: ASTM A 572 GRAU 50
BARRAS E PINOS: A588
 - 3 - SOLDA: ELETRODO 7028.
 - 4 - PARAFUSOS: A325 COM Ø 7/8"X3".
 - 5 - FUROS COM 24mm.
 - 6 - LCHE: LIGAÇÃO FLEXÍVEL COM CHAPA DE EXTREMIDADE.
 - 7 - PASSARELA REVESTIDA COM TELA GALVANIZADA: 50x50x4,20mm.
 - 8 - LAJE STEEL DECK
 - 9 - PINTURA ESPECIFICAÇÃO:
JATEAMENTO PADRÃO S.A.2,5
PRIMER EPOXI 40 MICRAS
ACABAMENTO EM ESMALTE ALQUÍDICO 160 MICRAS
 - 10 - GRADIL METÁLICO GALVANIZADO A FOGO.





NOTAS:

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- 2 - AÇO:
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PRIMER EPOXI 40 MICRAS
ACABAMENTO EM ESMALTE ALQUIDICO 160 MICRAS
- 10 - GRADIL METÁLICO GALVANIZADO A FOGO.

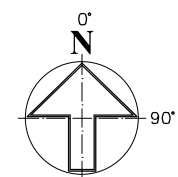
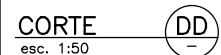
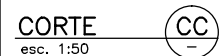
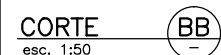
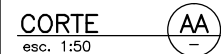
* DETALHES, LIGAÇÕES, CHAPAS E CONEXÕES: 3%

RESUMO DE AÇO	
COMPONENTE	TOTAL PESO (kg)
TUBO2"x2,00	413.85
B.CHATA 2.5"x 5/16"	3791.98

* DETALHES, LIGAÇÕES, CHAPAS E CONEXÕES: 3%

RESUMO PARAFUSOS	
COMPONENTE	TOTAL Nº PEÇAS
PARAFUSO A325N COM PORCA E ARRUELA 3/8"x3"	864

ESC.1:50



NOTAS:

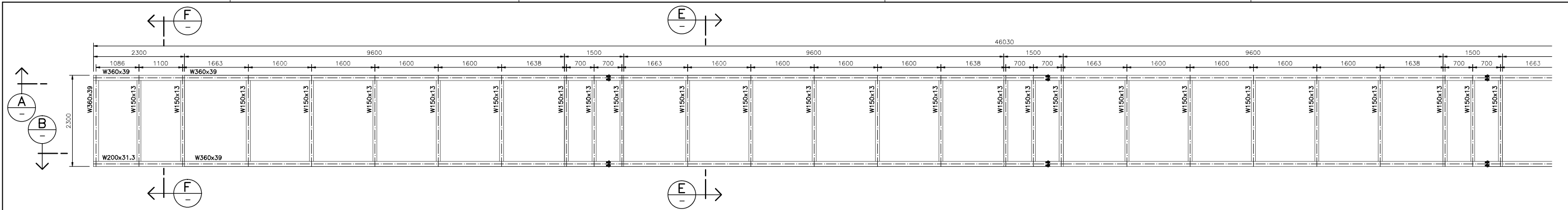
- 1 - MEDIDAS EM MILIMETRO.
- 2 - AÇO:
PERFIL LAMINADO: ASTM A 572 GRAU 50
BARRAS E PINOS: A588
- 3 - SOLDA: ELETRODO 7028.
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- 7 - PASSARELA REVESTIDA COM TELA GALVANIZADA: 50x50x4,20mm.
- 8 - LAJE STEEL DECK
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JATEAMENTO PADRÃO S.A.2,5
PRIMER EPÓXI 40 MICRAS
ACABAMENTO EM ESMALTE ALQUIDICO 160 MICRAS
- 10 - GRADIL METÁLICO GALVANIZADO A FOGO.



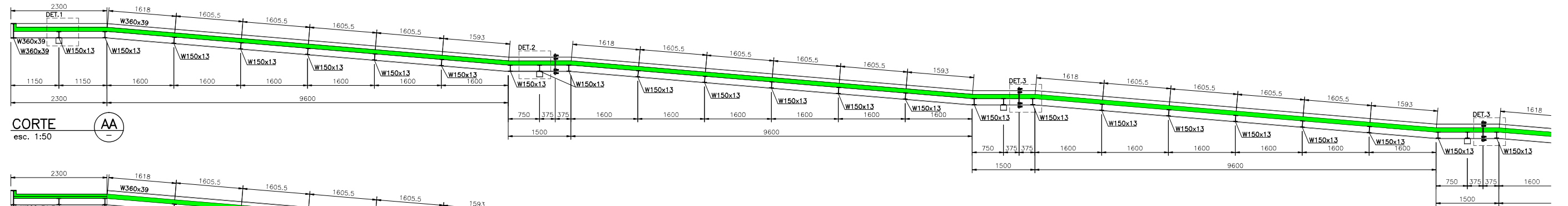
**Autopista
Planalto Sul**

arteris

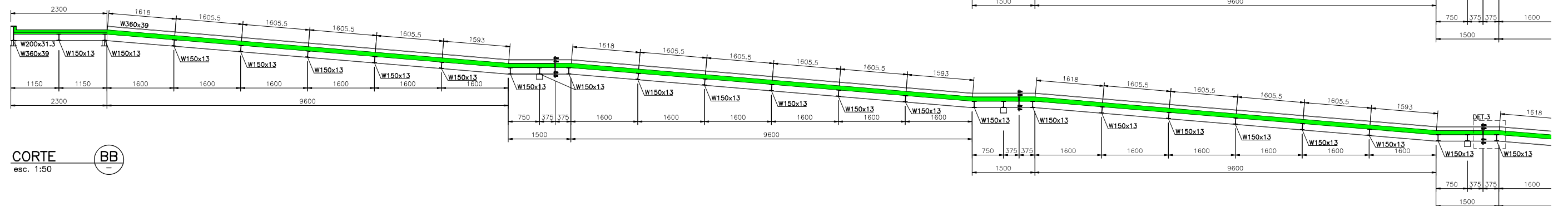
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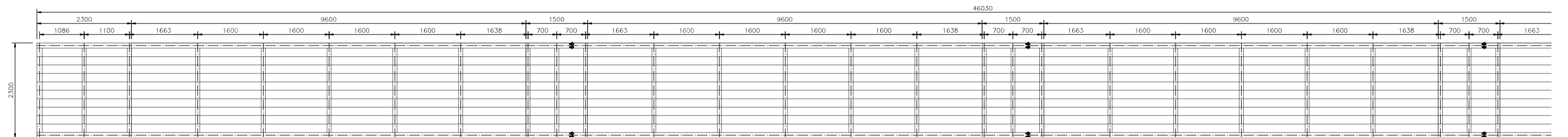
RAMPA 2-PLANTA INFERIOR
ESC.1:50



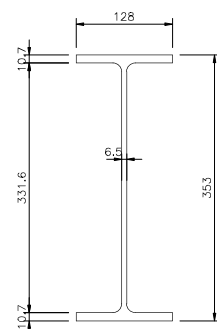
CORTE
esc. 1:50



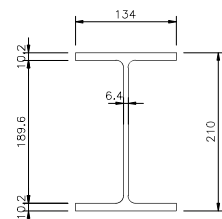
CORTE
esc. 1:50



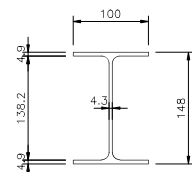
RAMPA 2-LOCAÇÃO PRÉ LAJES
ESC.1:50



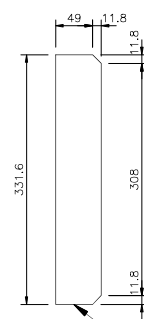
W360X39
ESC.1:5



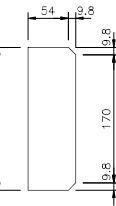
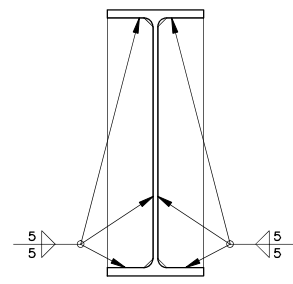
W200X31.3
ESC.1:5



W150X13.0
ESC.1:5



ENRIJECADOR-W360X39
ESC.1:5

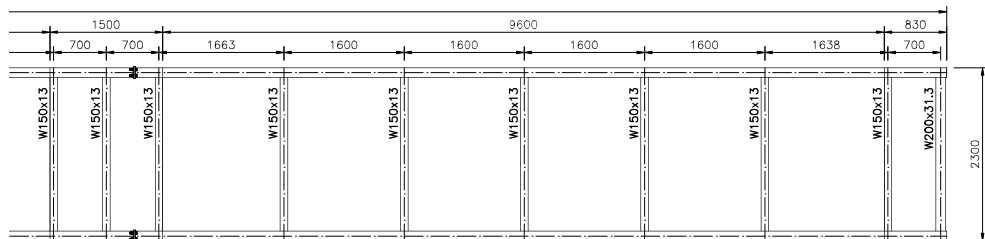


ENRIJECADOR-W200X31.3
ESC.1:5

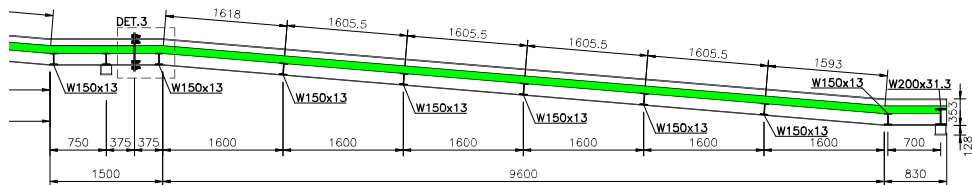
NOTAS:

- 1 - MEDIDAS EM MILÍMETRO.
- 2 - AÇO:
PERFIL LAMINADO: ASTM A 572 GRAU 50
BARRAS E PINOS: A588
- 3 - SOLDA: ELETRODO 7028.
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PRIMER EPÓXI 40 MICRAS
ACABAMENTO EM ESMALTE ALQUIDICO 160 MICRAS
- 10 - GRADIL METÁLICO GALVANIZADO A FOGO.

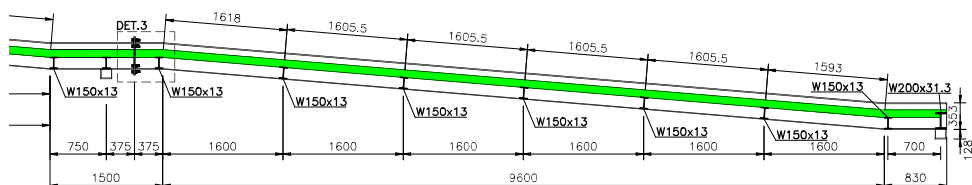
FIRMA PROJETISTA		Nº DESENHO ANTT: DE-02-116/PR-120-8-M03/511		REV. : A	
LOCAL: PASSARELA km 120+887		RODOVIA: BR-116 RÉGIS BITTENCOURT		TRECHO: CURITIBA - DIVISA SC/RS	
TÍTULO: PROJETO EXECUTIVO - METÁLICA		ESCALA: INDICADA		FOLHA: 11/12	
PLANTA E ELEVÇÕES					
Nº INTERNO: PCP-DE-02-116/PR-120-8-M03/511		REV. 01		DOO. REFERÊNCIA	
REV. DATA RESP. TÊC./PROJETISTA		RESP. TÊC./CONCES.		RESP. TÊC./ANTT	
ASSUNTO					
FIRMA PROJETO		REVISÃO AS BUILT			
REVISÃO GERAL					
EMISSÃO INICIAL					
13/01/14		21/05/13		10/10/12	
JOÃO LEONARDO SEBASTIANI - CREA 5061291737		PAULO CARREIRA - CREA/SP: 5061360986			
HABITECHNE Engenharia e Construção		ProCap			
www.habitechne.com.br		www.procap.eng.br			



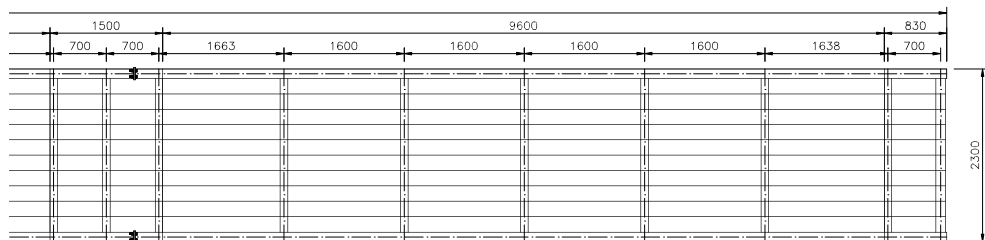
RAMPA 2-PLANTA INFERIOR
ESC.1:50



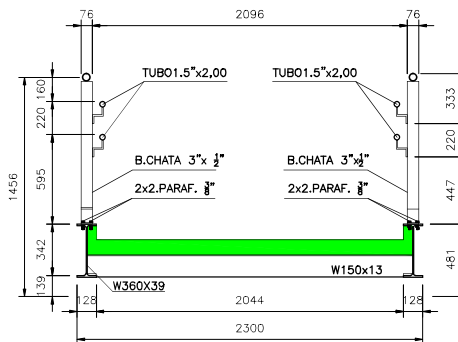
CORTE AA
esc. 1:50



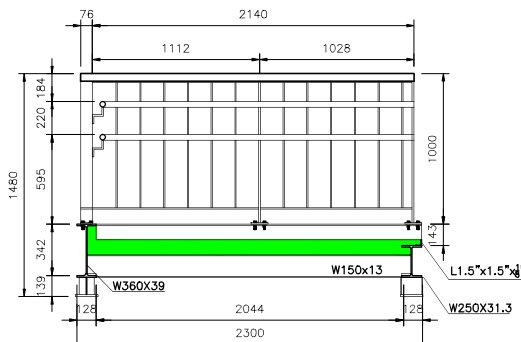
CORTE BB
esc. 1:50



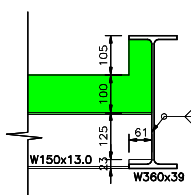
RAMPA 2-LOCAÇÃO PRÉ LAJES
ESC.1:50



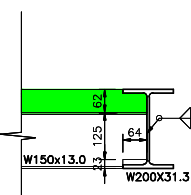
CORTE EE
esc. 1:25



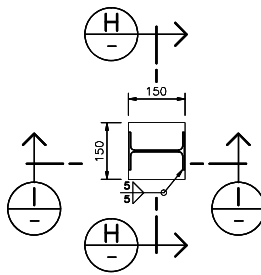
CORTE FF
esc. 1:25



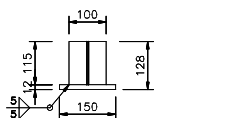
SOLDA-DETALHE
ESC.1:10



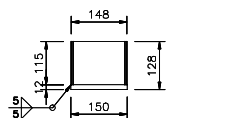
SOLDA-DETALHE
ESC.1:10



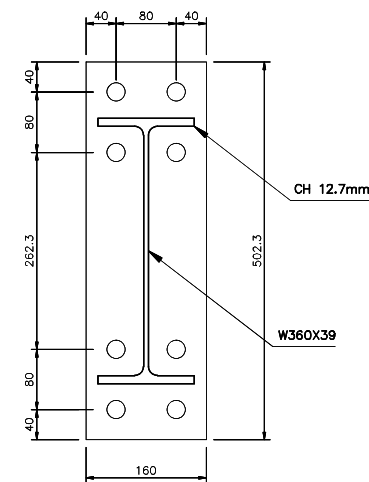
APOIO-METÁLICO
ESC.1:10



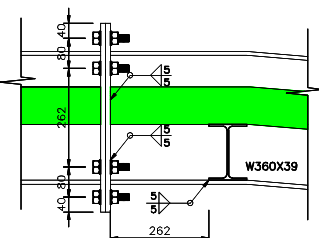
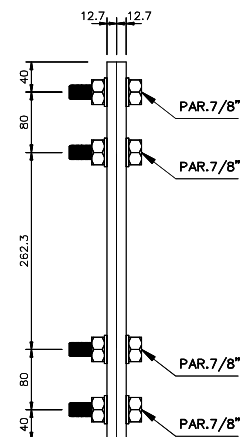
CORTE HH
esc. 1:10



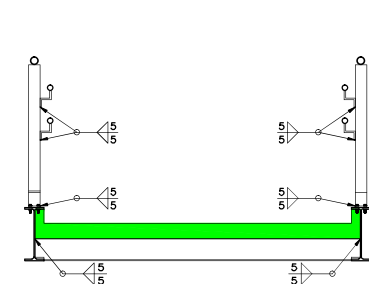
CORTE II
esc. 1:10



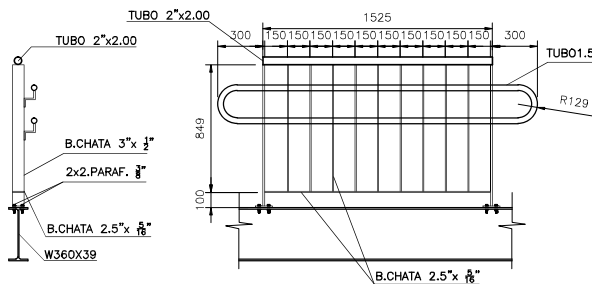
PLACA-DE-LIGAÇÃO-W360X39-(4X)
ESC.1:5



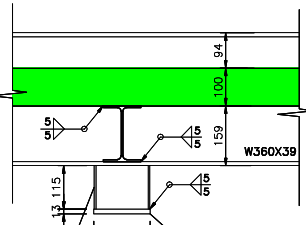
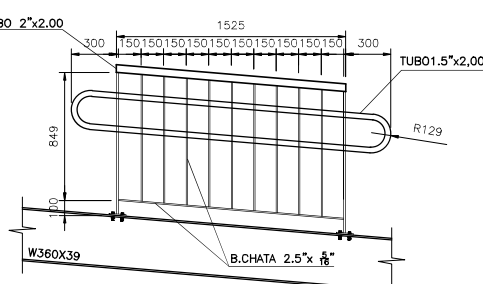
DET.3-SOLDA
ESC.1:10



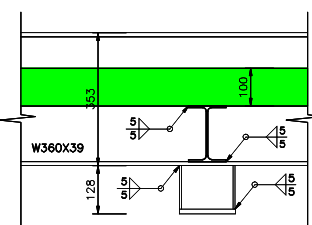
DETALHE-SOLDA
ESC.1:25



GRADIL
ESC.1:25



DET.1-SOLDA
ESC.1:10



DET.2-SOLDA
ESC.1:10

RELAÇÃO DE AÇO - RAMPA 2						
AÇO	P	COMPONENTE	ID	COMP. TOT. (m)	PESO (kg/m)	TOTAL PESO (kg)
ASTM A572	1	W150x13.0	W	73.60	13.00	956.80
	2	W200x31.3	W	4.60	31.30	143.98
	3	W360x39.0	W	92.33	39.00	3600.87
ASTM A36	4	TUBO1.5"x2,00	O	369.32	1.78	657.39
TOTAL (kg)						5359.04

* DETALHES, LIGAÇÕES, CHAPAS E CONEXÕES: 3%

RESUMO PARAFUSOS	
COMPONENTE	TOTAL N° PEÇAS
PARAFUSO A325N COM PORCA E ARRUELA 7/8"x3"	48

RELAÇÃO DE AÇO - GRADIL						
AÇO	P	COMPONENTE	ID	COMP. TOT. (m)	PESO (kg/m)	TOTAL PESO (kg)
ASTM A36	1	TUBO2"x2,00	O	92.33	2.51	231.75
	2	B.CHATA 2.5"x 5/16"	BC	584.00	3.17	1851.28
TOTAL (kg)						2083.03

* DETALHES, LIGAÇÕES, CHAPAS E CONEXÕES: 3%

RESUMO PARAFUSOS	
COMPONENTE	TOTAL N° PEÇAS
PARAFUSO A325N COM PORCA E ARRUELA 3/8"x3"	470

- NOTAS:
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FIRMA PROJETO		Nº DESENHO ANTI:		REV. :	
HABITECHNE Engenharia e Construção		DE-02-116/PR-120-8-M03/512		A	
ProCap		LOCAL:		PASSARELA km 120+887	
www.habitechne.com.br		RODOVIA:		BR-116 RÉGIS BITTENCOURT	
www.procap.eng.br		TRECHO:		CURITIBA - DIVISA SC/RS	
Nº INTERNO: PCP-DE-02-116/PR-120-8-M03/512		TÍTULO:		PROJETO EXECUTIVO - METÁLICA	
REV. 01		ESCALA:		INDICADA	
REV.		FOLHA:		12/12	
DATA		PLANTA E ELEVÇÕES			
RESP. TEC./PROJETO		DOO. REFERÊNCIA			
RESP. TEC./CONCES.					
RESP. TEC./ANIT					
ASSUNTO					