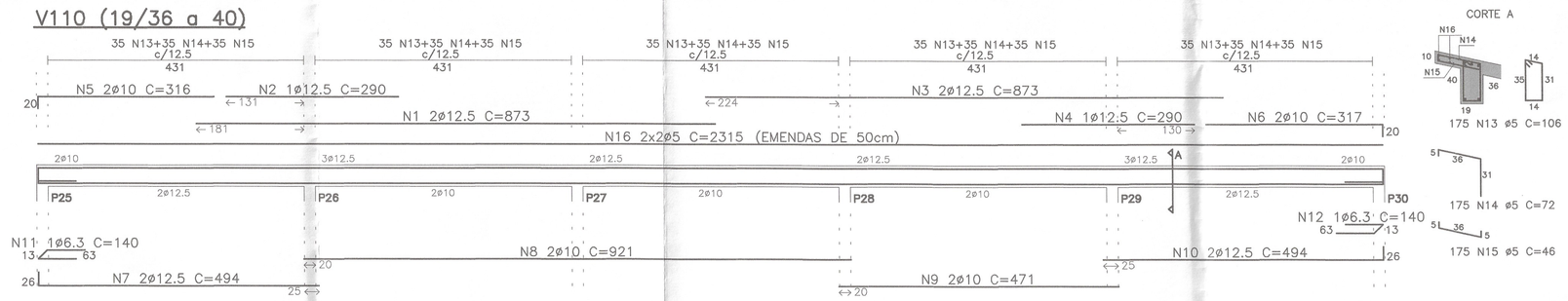
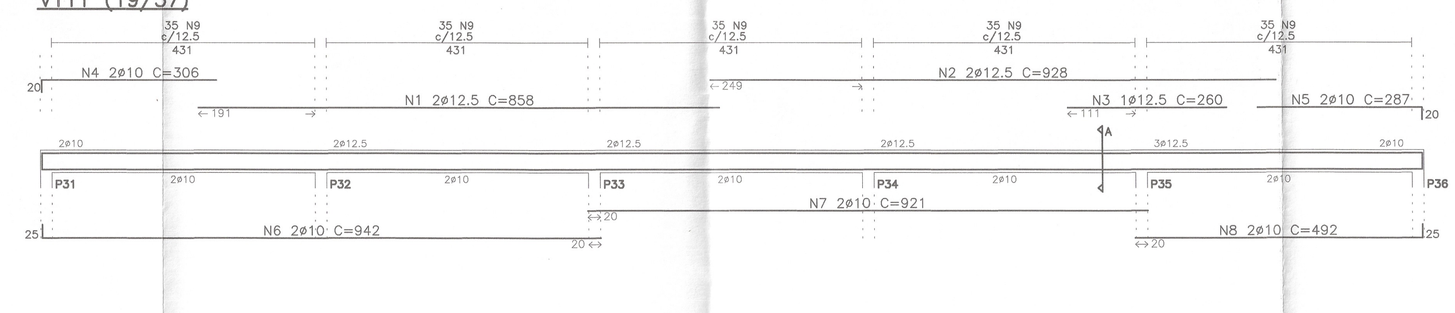
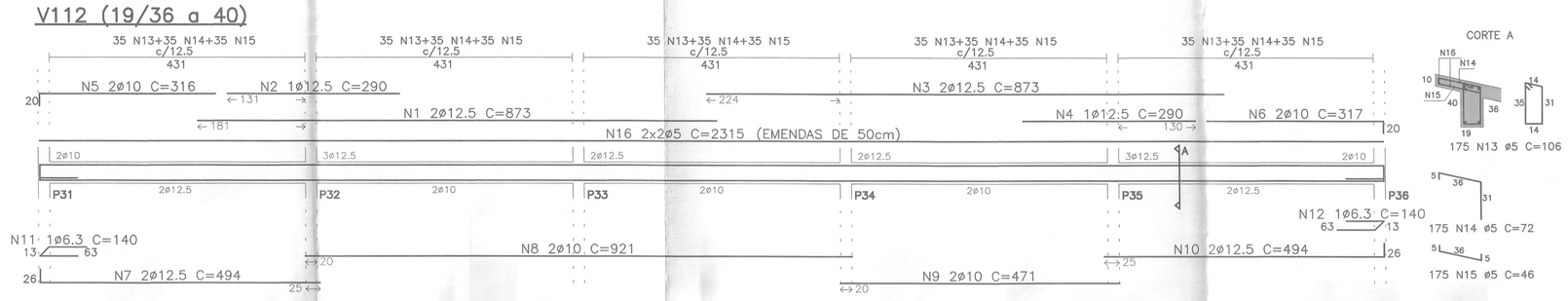
V110 (19/36 a 40)



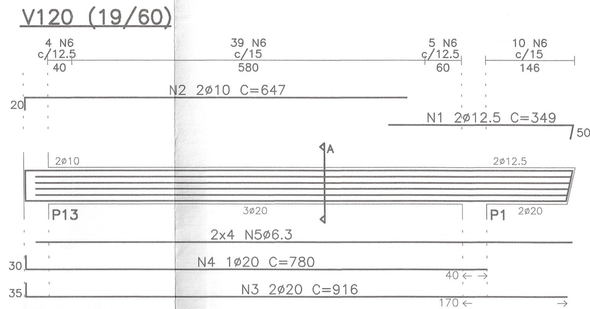
V111 (19/37)



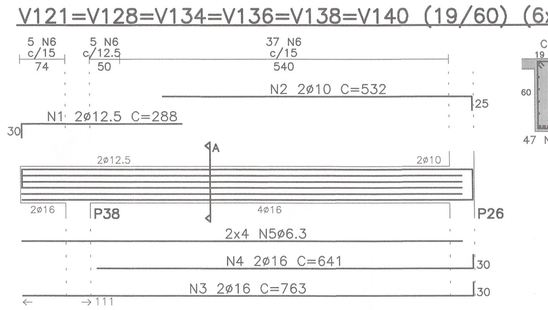
V112 (19/36 a 40)



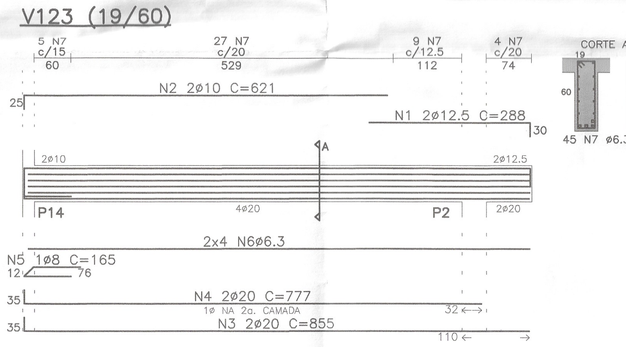
V120 (19/60)



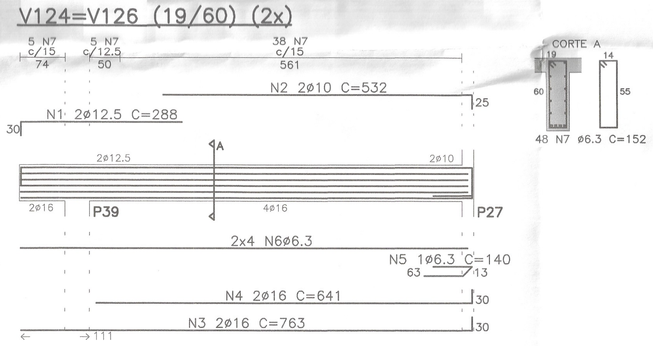
V121=V128=V134=V136=V138=V140 (19/60) (6x)



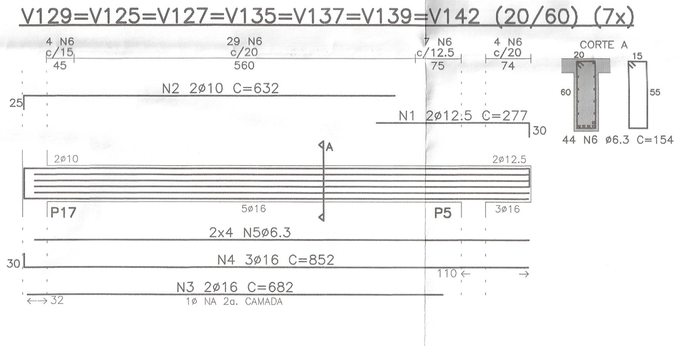
V123 (19/60)



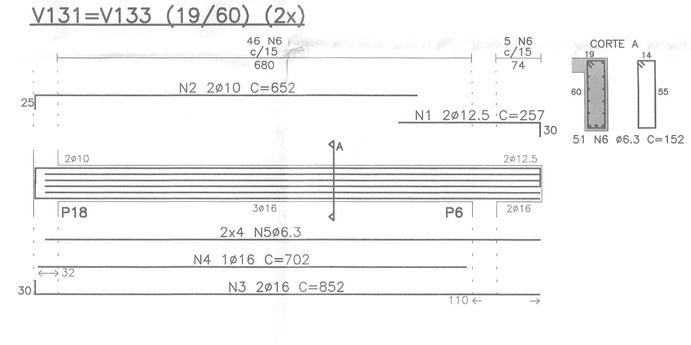
V124=V126 (19/60) (2x)



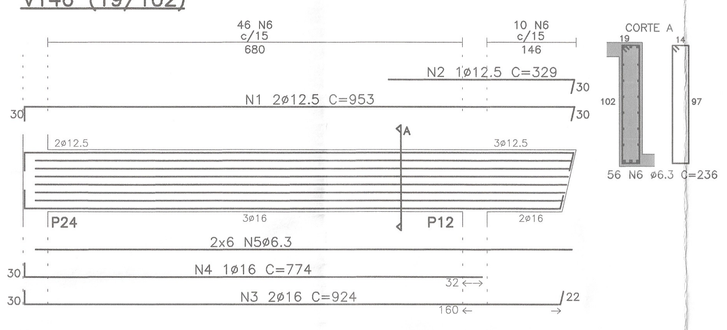
V129=V125=V127=V135=V137=V139=V142 (20/60) (7x)



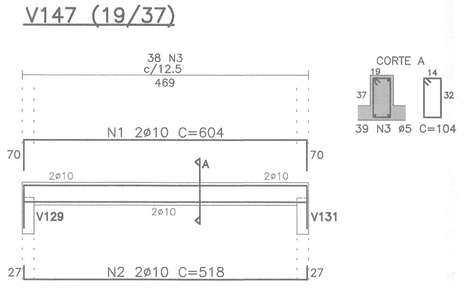
V131=V133 (19/60) (2x)

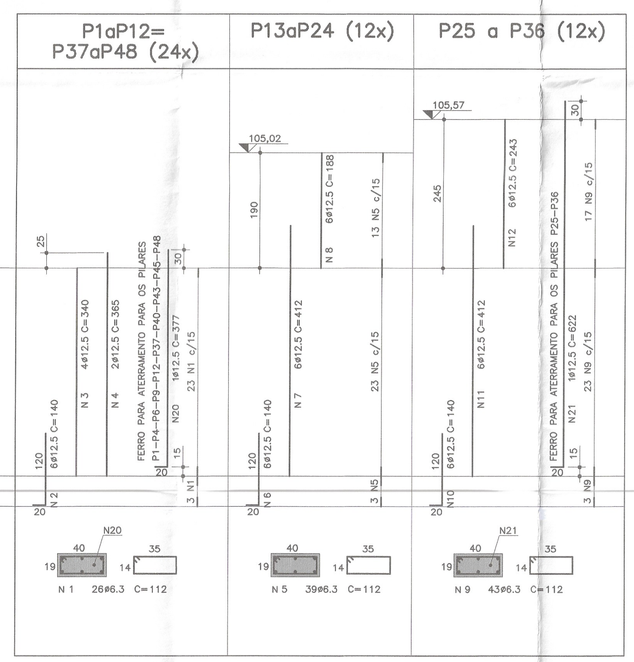


V146 (19/102)



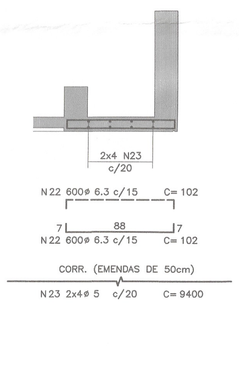
V147 (19/37)





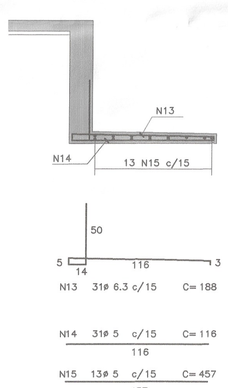
LM101 A LM120 H=12

ESC. 1:25



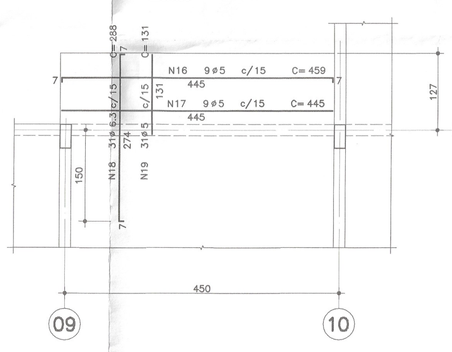
LM122 H=10 a 8

ESC. 1:25



LM121 H=12

ESC.1:50



LISTA DE FERROS

POS.	ø	QUANT.	COMPRIMENTO UNIT.	COMPRIMENTO TOTAL
1	6.3	624	112	69888
2	12.5	144	140	20160
3	12.5	96	340	32640
4	12.5	48	365	17520
5	6.3	468	112	52416
6	12.5	72	140	10080
7	12.5	72	412	29664
8	12.5	72	188	13536
9	6.3	516	112	57792
10	12.5	72	140	10080
11	12.5	72	412	29664
12	12.5	72	243	17496
13	6.3	31	188	5828
14	5	31	116	3596
15	5	13	457	5941
16	5	9	459	4131
17	5	9	445	4005
18	6.3	31	288	8928
19	5	31	131	4061
20	12.5	10	377	3770
21	12.5	2	622	1244
22	6.3	1200	102	122400
23	5	8	9400	75200

RESUMO DE ACO C.A. 50

ø	COMPRIMENTO (m)	PESO (kg)
6.3	3172.52	793
8		
10		
12.5	1858.54	1859
16		
20		
25		
TOTAL (kg)		2652

RESUMO DE ACO C.A. 60

ø	COMPRIMENTO (m)	PESO (kg)
5	969.34	149
6		
TOTAL (kg)		149

V110

N	ø	Q	UNI	TOTAL
1	12.5	2	873	1746
2	12.5	1	290	290
3	12.5	2	873	1746
4	12.5	1	290	290
5	10	2	316	632
6	10	2	317	634
7	12.5	2	494	988
8	10	2	921	1842
9	10	2	471	942
10	12.5	2	494	988
11	6.3	1	140	140
12	6.3	1	140	140
13	5	175	106	17850
14	5	175	72	2450
15	5	175	46	8050
16	5	4	2315	9260

V111

N	ø	Q	UNI	TOTAL
1	12.5	2	858	1716
2	12.5	2	928	1856
3	12.5	1	260	260
4	10	2	306	612
5	10	2	287	574
6	10	2	942	1884
7	10	2	921	1842
8	10	2	492	984
9	5	175	104	18200

V112

N	ø	Q	UNI	TOTAL
1	12.5	2	873	1746
2	12.5	1	290	290
3	12.5	2	873	1746
4	12.5	1	290	290
5	10	2	316	632
6	10	2	317	634
7	12.5	2	494	988
8	10	2	921	1842
9	10	2	471	942
10	12.5	2	494	988
11	6.3	1	140	140
12	6.3	1	140	140
13	5	175	106	17850
14	5	175	72	2450
15	5	175	46	8050
16	5	4	2315	9260

V120

N	ø	Q	UNI	TOTAL
1	12.5	2	349	698
2	10	2	647	1294
3	20	2	916	1832
4	20	1	780	780
5	6.3			7205
6	6.3	58	152	8816

V121=V128=V134=V136=V138=V140 (6x)

N	ø	Q	UNI	TOTAL
1	12.5	2	288	576
2	10	2	532	1064
3	16	2	763	1526
4	16	2	641	1282
5	6.3			5892
6	6.3	47	152	7144

V123

N	ø	Q	UNI	TOTAL
1	12.5	2	288	576
2	10	2	621	1242
3	20	2	855	1710
4	20	2	777	1554
5	8	1	165	165
6	6.3			6708
7	6.3	45	152	6840

V124=V126 (2x)

N	ø	Q	UNI	TOTAL
1	12.5	2	288	576
2	10	2	532	1064
3	16	2	763	1526
4	16	2	641	1282
5	6.3	1	140	140
6	6.3			5973
7	6.3	48	152	7296

V129=V125=V127=V135=V137=V139=V142 (7x)

N	ø	Q	UNI	TOTAL
1	12.5	2	277	554
2	10	2	632	1264
3	16	2	682	1364
4	16	3	852	2556
5	6.3			6618
6	6.3	44	154	6776

V131=V133 (2x)

N	ø	Q	UNI	TOTAL
1	12.5	2	257	514
2	10	2	652	1304
3	16	2	852	1704
4	16	1	702	702
5	6.3			6618
6	6.3	51	152	7752

V146

N	ø	Q	UNI	TOTAL
1	12.5	2	953	1906
2	12.5	1	329	329
3	16	2	924	1848
4	16	1	774	774
5	6.3			10808
6	6.3	56	236	13216

V147

N	ø	Q	UNI	TOTAL
1	10	2	604	1208
2	10	2	518	1036
3	5	39	104	4056

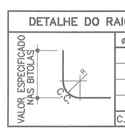
RESUMO DAS VIGAS DA COBERTURA (02/02)

ACO	ø	COMPR(cm)	PESO(kg)
60B	5	82422	132
50A	6.3	281685	705
50A	8	185	1
50A	10	40988	259
50A	12.5	28951	290
50A	16	57338	318
50A	20	5876	147
50A	25	–	–
PESO TOTAL (kg)			2452

NOTAS:

01–CONCRETO= fck ≥ 25 MPa
02–AÇO= CA–50 – fyk=500 MPa
CA–60 – fyk=600 MPa
03–MEDIDAS EM cm, NÍVEIS EM m.
04–NÃO TIRAR MEDIDAS EM ESCALA.
05–CONFIRMAR MEDIDAS NO LOCAL.
06– COBRIMENTO=2,5cm.

DETALHE DO RAIO DE CURVATURA (R)



ø (mm)	R (cm)	C.C. (cm)
12.5	10	16
16	13	21
20	16	25
25	20	31
C.C.=COMPRIMENTO DA CURVA		

FDE FUNDAÇÃO PARA O DESENVOLVIMENTO DA EDUCAÇÃO

RESPONSÁVEL PELA IMPLANTAÇÃO DO PROJETO:
apiacás arquitetos
ARQUITETOS: ANDERSON FREITAS, PEDRO AMARAL, ACACIA FURUYA
R GENERAL JARDIM 482 CJ.132 VILA BUARQUE CEP 01223–010 SÃO PAULO
adriano@apiacasarquitetos.com.br
RESPONSÁVEL TÉCNICO: PEDRO AMANDO DE BARROS – CAU N°A92385–0

No.	MODIFICAÇÕES	APROVAÇÃO	DATA
1		AUTOR DO PROJETO	
2		FDE	

OBSERVAÇÕES

DESENHO DE REFERÊNCIA

No.	APROVAÇÃO	DATA
	AUTOR DO PROJETO	
	FDE	

FUNDAÇÃO PARA O DESENVOLVIMENTO DA EDUCAÇÃO – F D E

ESCOLA – NOME/LOCAL: TERRENO CBH JOSÉ VIEIRA BRAZÃO – ORLÂNDIA – SP
CÓDIGO: 1 2 0 2 0 2 9
INTERVENÇÃO: OBRA NOVA DE CRECHE
No. LOTE: 01
ETAPA/ÁREA TÉCNICA: PROJETO EXECUTIVO DE ESTRUTURA
TIPO PROJETO: PAD CR–1
DATA: ABRIL/2014
ETAPA/ÁREA TÉCNICA: PE – EST
CATEGORIA: ARMAÇÃO DAS VIGAS DA COB. (02/02), LAJES E PILARES
ESCALA: INDICADA
FOLHA: 08/08
REVISÃO: 00

DESENHO GERADO PELO SISTEMA CAD – POR ENGECALC ENGENHARIA E PROJETOS ESTRUTURAIS S/C LTDA
1202029_01EPD0800_01

CR-1 - PADRÃO ESTACA 207