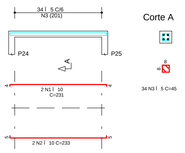
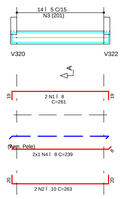
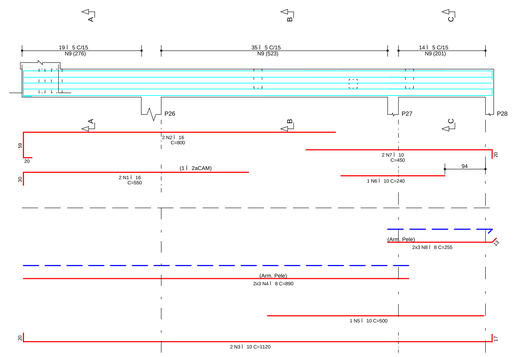
V301 14/14



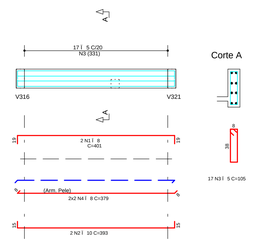
V302 14/30



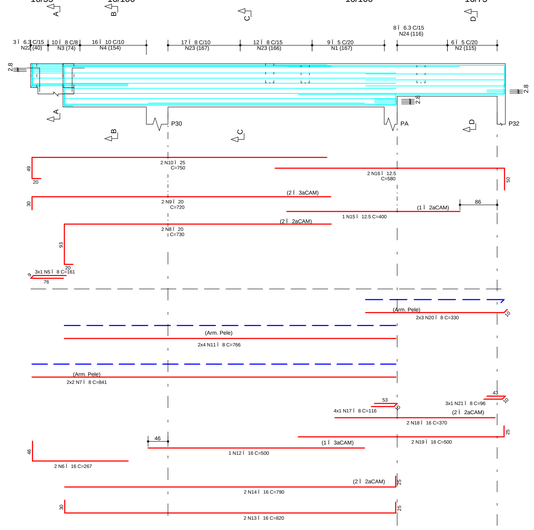
V303 19/65



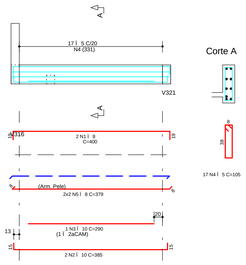
V304 14/44



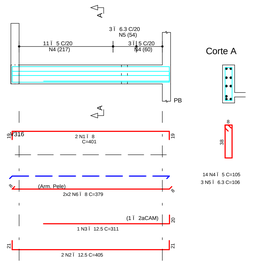
V305 16/55 16/100 16/100 16/75



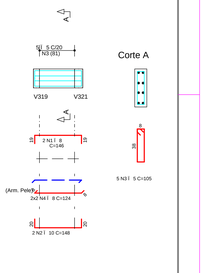
V306 14/44



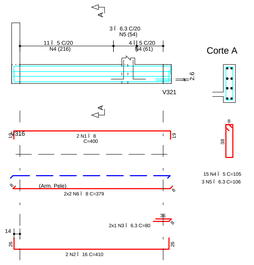
V307 14/44



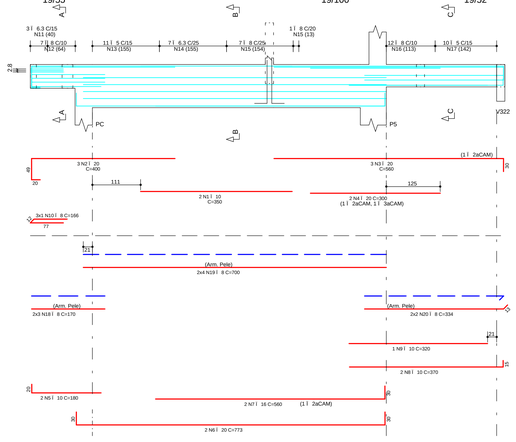
V308 14/44



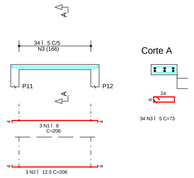
V309 14/44



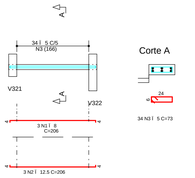
V310 19/55 19/100 19/52



V311 30/12



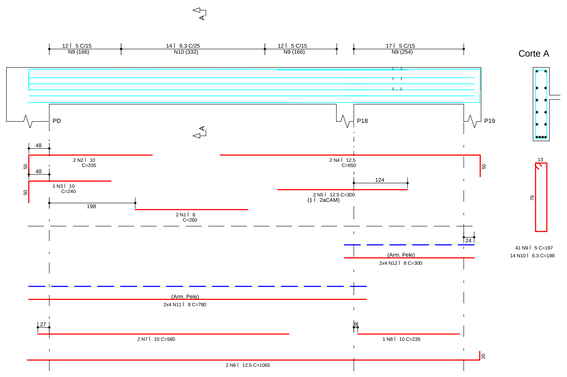
V312 30/12



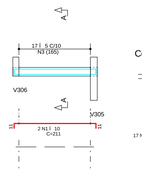
	A¢O	POS	BIT (mm)	QUANT	COMPRIMENTO UNIT (cm)	COMPRIMENTO TOTAL (cm)
V301						
	50A	1	10	2	231	462
	50A	2	10	2	233	466
	60B	3	5	34	45	1530
V302						
	50A	1	8	2	261	522
	50A	2	10	2	263	526
	60B	3	5	14	77	1078
	50A	4	8	2	239	478
V303						
	50A	1	16	2	550	1100
	50A	2	16	2	800	1600
	50A	3	10	2	1120	2240
	50A	4	8	6	890	5340
	50A	5	10	1	500	500
	50A	6	10	1	240	240
	50A	7	10	2	450	900
	50A	8	8	6	255	1530
	60B	9	5	68	157	10676
V304						
	50A	1	8	2	401	802
	50A	2	10	2	393	786
	60B	3	5	17	105	1785
	50A	4	8	4	379	1516
V305						
	60B	1	5	9	221	1989
	60B	2	5	6	171	1026
	50A	3	8	10	133	1330
	50A	4	10	16	225	3600
	50A	5	8	3	161	483
	50A	6	16	2	267	534
	50A	7	8	4	841	3364
	50A	8	20	2	730	1460
	50A	9	20	2	720	1440
	50A	10	25	2	750	1500
	50A	11	8	8	766	6128
	50A	12	16	1	500	500
	50A	13	16	2	820	1640
	50A	14	16	2	790	1580
	50A	15	12.5	1	400	400
	50A	16	12.5	2	580	1160
	50A	17	8	4	116	464
	50A	18	16	2	370	740
	50A	19	16	2	500	1000
	50A	20	8	6	330	1980
	50A	21	8	3	96	288
	50A	22	6.3	3	132	396
	50A	23	9	29	223	6467
	50A	24	6.3	8	172	1376
V306						
	50A	1	8	2	400	800
	50A	2	10	2	385	770
	50A	3	10	1	290	290
	60B	4	5	17	105	1785
	50A	5	8	4	379	1516
V307						
	50A	1	8	2	401	802
	50A	2	12.5	2	405	810
	50A	3	12.5	1	311	311
	50A	4	5	14	105	1470
	50A	5	6.3	3	106	318
	50A	6	8	4	379	1516
V308						
	50A	1	8	2	146	292
	50A	2	10	2	148	296
	60B	3	5	5	105	525
	50A	4	8	4	124	496

	A¢O	POS	BIT (mm)	QUANT	COMPRIMENTO UNIT (cm)	COMPRIMENTO TOTAL (cm)
V309						
	50A	1	8	2	400	800
	50A	2	16	2	410	820
	60B	3	6.3	2	80	160
	60B	4	5	15	105	1575
	50A	5	6.3	3	106	318
	50A	6	8	4	379	1516
V310						
	50A	1	10	2	350	700
	50A	2	20	3	400	1200
	50A	3	20	3	560	1680
	50A	4	20	2	300	600
	50A	5	10	2	180	360
	50A	6	20	2	773	1546
	50A	7	16	2	560	1120
	50A	8	10	2	370	740
	50A	9	10	1	320	320
	50A	10	8	3	166	498
	50A	11	6.3	3	138	414
	50A	12	8	7	139	973
	60B	13	5	11	227	2497
	50A	14	6.3	7	228	1596
	50A	15	8	8	229	1832
	50A	16	8	12	133	1596
	60B	17	5	10	131	1310
	50A	18	8	6	170	1020
	50A	19	8	8	700	5600
	50A	20	8	4	334	1336
V311						
	50A	1	8	3	206	618
	50A	2	12.5	3	206	618
	60B	3	5	34	73	2482
V312						
	50A	1	8	3	206	618
	50A	2	12.5	3	206	618
	60B	3	5	34	73	2482
V313						
	50A	1	8	2	260	520
	50A	2	10	2	335	670
	50A	3	10	1	240	240
	50A	4	12.5	2	650	1300
	50A	5	12.5	2	300	600
	50A	6	12.5	2	1065	2130
	50A	7	10	2	580	1160
	50A	8	10	1	235	235
	60B	9	5	41	197	8077
	50A	10	6.3	14	198	2772
	50A	11	9	8	780	6240
	50A	12	8	8	300	2400
V317						
	50A	1	10	2	211	422
	50A	2	10	2	209	418
	60B	3	5	67	67	1139
V318						
	50A	1	10	2	222	444
	50A	2	10	2	218	436
	60B	3	5	18	67	1206
V319						
	50A	1	8	2	445	890
	50A	2	12.5	2	445	890
	50A	3	12.5	1	315	315
	50A	4	8	4	80	320
	60B	5	5	20	105	2100
	50A	6	8	4	424	1696
V320						
	50A	1	8	2	335	670
	50A	2	12.5	2	179	358
	50A	3	10	2	314	628
	60B	4	5	12	97	1164
	50A	5	8	4	281	1124

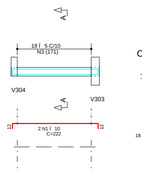
V313 19/85



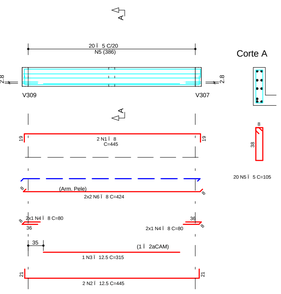
V317 19/20



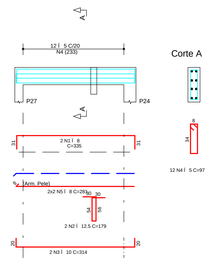
V318 19/20



V319 14/44



V320 14/40



RESUMO A¢O CA 50-60			
A¢O	BIT (mm)	COMPR (m)	PESO (kg)
60B	5	459	71
50A	6.3	74	18
50A	8	654	262
50A	10	178	110
50A	12.5	95	92
50A	16	106	168
50A	20	79	196
50A	25	15	58
Peso Total	60B =		71 kg
Peso Total	50A =		903 kg

DETALHES DE FORMAS

MEDIDAS EM CENTIMETROS E NIVEIS EM METROS

- PILAR QUE NASCE NESTE PAVIMENTO
- PILAR QUE MORRE NESTE PAVIMENTO
- PILAR QUE PASSA PELO PAVIMENTO
- PILAR QUE MUDA DE SE¢¤O NESTE PAVIMENTO
- CF: CONTRAFLECHA (cm)

CONVEN¢¤O ES CARGAS CONSIDERADAS NESTE PAVIMENTO

ALVENARIA DE TIJOLOS FURADOS	13,00 kN/m³
ALVENARIA DE TIJOLOS MACIÇOS	17,00 kN/m³
BLOCOS VAZADOS DE CONCRETO	14,00 kN/m³
REBOCOS DE TETOS (ONDE EXISTIR NO PROJ.ARQ.)	0,25 kN/m²
PISOS COMUNS	A DEFINIR
FORRO (ONDE EXISTIR NO PROJ.ARQ.)	0,20 kN/m²
DRY-WALL	0,42 kN/m²
CREA: DE JARDIM (ONDE EXISTIR NO PROJ.ARQ.)	A DEFINIR
ENCHIMENTO DE PISO	A DEFINIR

COBRIMENTOS

ARMADURAS PASSIVAS (CA50 E CA60):

LAJES:			
ARMADURA NEGATIVA	2,0 cm	BLOCOS/SAPATAS:	4,0 cm
ARMADURA POSITIVA	3,0 cm	CORTINAS/MUROS:	3,0 cm
ESCADAS:	3,0 cm		
VIGAS:	3,0 cm	RESERVATE RIOS:	
PILARES:	3,0 cm	LAJE DA TAMPA	4,0 cm
PILARES EM CONTATO C/ SOLO:	4,5 cm	PAREDES E LAJE DO FUNDO	3,0 cm

(*)QUANDO SUJEITOS A PROTENSE¢O:

LAJES:
ARMADURA NEGATIVA 3,5 cm
ARMADURA POSITIVA 3,5 cm
VIGAS 3,5 cm

ATENDE¢O:
DEVE SER ADOTADO CONTROLE RIGOROSO DE QUALIDADE E RIGIDOS LIMITES DE TOLERANCIA DA VARIABILIDADE DAS MEDIDAS DURANTE A EXECU¢¤O.

ARMADURAS ATIVAS (CP-190 RB):
LAJES:
ARMADURA NEGATIVA 4,0 cm
ARMADURA POSITIVA 5,0 cm
VIGAS: 5,0 cm

CONCRETO: fck = 30 MPa

REV	DATA	ASSUNTO
3		
2		
1		
0	03/08/2020	EMISSE¢O INICIAL

NOME DO PROPRIETÁRIO:
RAFAEL GARDOQUI EIRELI

EMPREENDIMENTO/OBRA:
RESIDaNCIA UNIFAMILIAR

ENDEREÇO DO EMPREENDIMENTO: COND. RES. GOLDEN GARDEN , LT 07 , QD 05 , CASCAVEL — ESTADO: PR

ASSUNTO: PROJETO ESTRUTURAL — FASE: PROJETO EXECUTIVO

TÍTULO: VIGAS COBERTURA

V301 / V302 / V303 / V304 / V305 / V306 V307 / V308 / V309 / V310 / V311 / V312 V313 / V317 / V318 / V319 / V320

REVISÃO: R00

ESCALA DO DESENHO: 1:50

DESENHO: MICHEL — ARQUIVO: 1767-EST-PE-1-016-COB-VIGA-R00

CONTRATADA

PROJETOS ESTRUTURAIS
www.nierengenharia.com.br

ENGENHEIROS RESPONSÁVEIS:
GILSON ROBERTO NIERO
CREA 71.000/D-PR
CAMILA KERST NIERO
CREA 73.699/D-PR
CAIO CESAR KERST NIERO
CREA 105.826/D-PR

RUA AMADOR BUENO 202, LJ.ANDAR - VILA IPIRANGA CEP 86010-620
FONE/FAX: 0xx43 3322-4533 - E-MAIL: nier@sercomtel.com.br LONDRINA-PR

FOLHA: 016

OBRA Nº: 1767

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