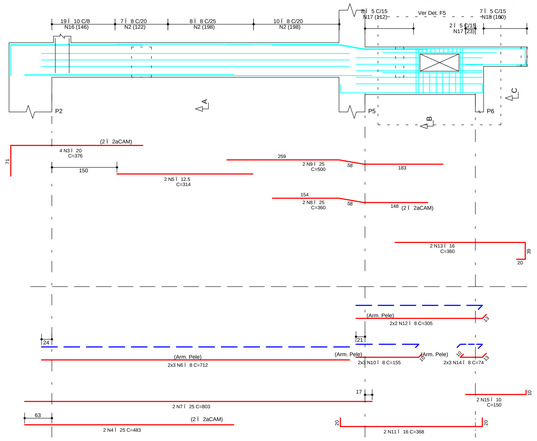
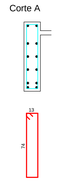
V214

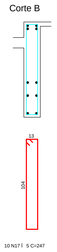
19/80 | 19/110 | 19/45



Corte A



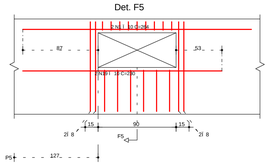
Corte B



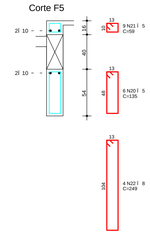
Corte C



Det. F5

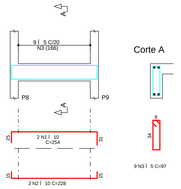


Corte F5



V215

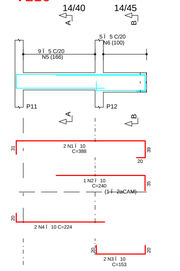
14/40



Corte A

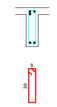
V216

14/40 | 14/45



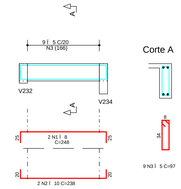
Corte A

Corte B



V217

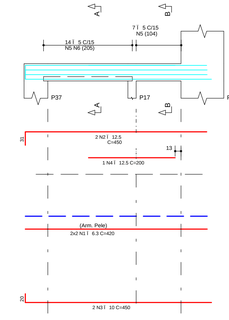
14/40



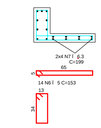
Corte A

V218

19/40



Corte A

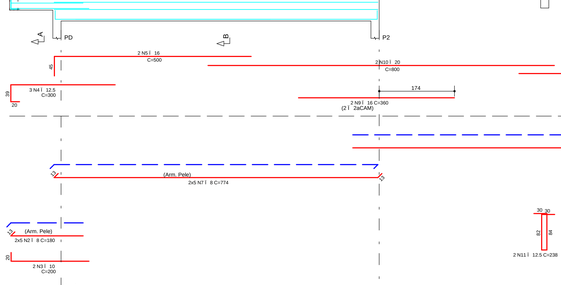


Corte B



V219

19/45



Corte A

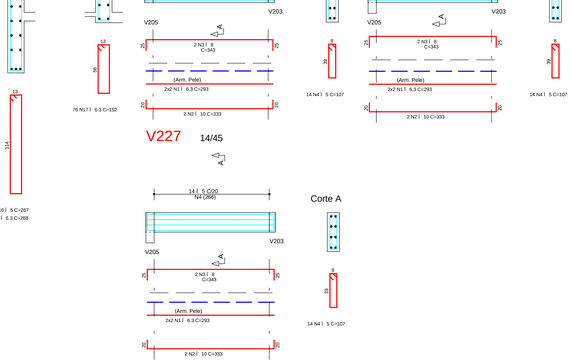


Corte B



V220

19/45



Corte A



V221

14/25

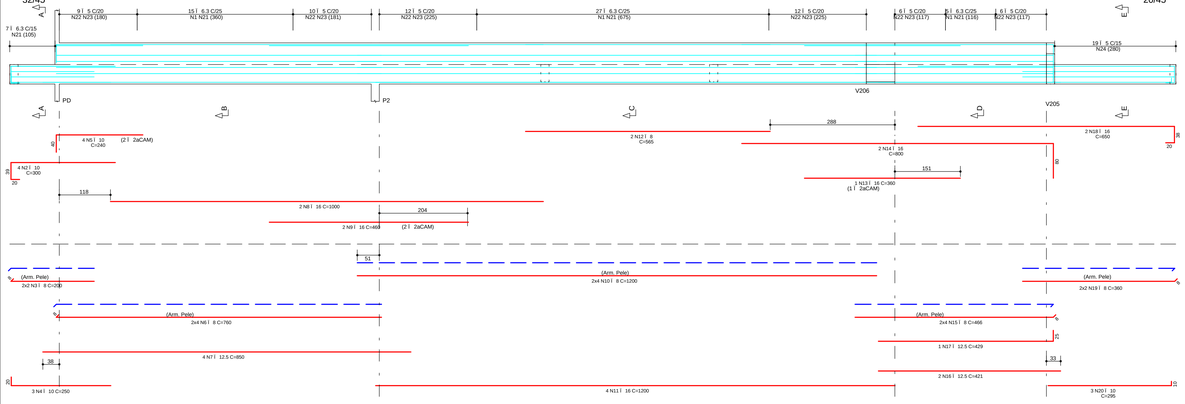


Corte A

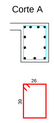
V222

32/45

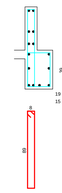
14/95+32/45 | 14/95+32/45 | 14/95+32/45 | 20/45



Corte A



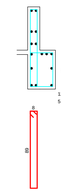
Corte B



Corte C



Corte D



Corte E

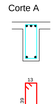


V223

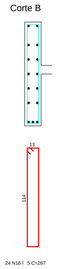
19/45

19/120 | 19/62

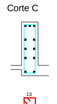
Corte A



Corte B



Corte C



V224

14/45

Corte A



V226

14/45

Corte A



V227

14/45

Corte A

	A¢ O	POS	BIT (mm)	QUANT	COMPRIMENTO UNIT (cm)	COMPRIMENTO TOTAL (cm)
V214						
	50A	1	10	2	264	528
	50A	2	8	25	189	4725
	50A	3	20	4	376	1504
	50A	4	25	2	483	966
	50A	5	12.5	2	314	628
	50A	6	8	6	712	4272
	50A	7	25	2	803	1606
	50A	8	25	2	360	720
	50A	9	25	2	500	1000
	50A	10	8	6	155	930
	50A	11	16	2	368	736
	50A	12	8	4	305	1220
	50A	13	16	2	360	720
	50A	14	8	6	74	444
	50A	15	10	2	150	300
	50A	16	10	19	191	3629
	60B	17	5	10	247	2470
	60B	18	5	7	117	819
	50A	19	10	2	230	460
	50A	20	5	6	135	810
	60B	21	5	9	59	531
	50A	22	8	4	249	996
V215						
	50A	1	10	2	254	508
	50A	2	10	2	228	456
	60B	3	5	9	97	873
V216						
	50A	1	10	2	388	776
	50A	2	10	1	240	240
	50A	3	10	2	153	306
	50A	4	10	2	224	448
	60B	5	5	9	97	873
	60B	6	5	5	107	535
V217						
	50A	1	8	2	248	496
	50A	2	10	2	238	476
	60B	3	5	9	97	873
V218						
	50A	1	6.3	4	420	1680
	50A	2	12.5	2	450	900
	50A	3	10	2	450	900
	50A	4	12.5	1	200	200
	60B	5	5	21	107	2247
	60B	6	5	14	153	2142
	50A	7	6.3	8	199	1592
V219						
	50A	1	6.3	4	118	472
	50A	2	16	1	230	230
	50A	3	16	2	450	900
	50A	4	12.5	1	400	400
	50A	5	8	2	330	660
	50A	6	12.5	2	1200	2400
	50A	7	16	2	200	400
	50A	8	16	2	700	1400
	60B	9	5	66	117	7722

RESUMO A¢ O CA 50-60			
A¢ O	BIT (mm)	COMPR (m)	PESO (kg)
60B	5	669	103
50A	6.3	454	111
50A	8	569	225
50A	10	243	150
50A	12.5	150	144
50A	16	195	307
50A	20	31	77
50A	25	43	165
Peso Total	60B =		103 kg
Peso Total	50A =		1180 kg

	A¢ O	POS	BIT (mm)	QUANT	COMPRIMENTO UNIT (cm)	COMPRIMENTO TOTAL (cm)
V220						
	50A	1	10	2	150	300
	50A	2	10	2	303	606
	50A	3	10	2	460	920
	50A	4	6.3	4	930	3720
	50A	5	12.5	2	960	1920
	50A	6	10	2	461	922
	50A	7	10	2	220	440
	50A	8	10	2	575	1150
	50A	9	6.3	4	330	1320
	50A	10	10	2	328	656
	60B	11	5	77	117	9009
V221						
	50A	1	10	2	796	1592
	50A	2	8	2	796	1592
	60B	3	5	70	67	4690
V222						
	50A	1	6.3	47	208	9776
	50A	2	10	4	300	1200
	50A	3	8	4	200	800
	50A	4	10	3	250	750
	50A	5	10	4	240	960
	50A	6	8	8	760	6080
	50A	7	12.5	4	850	3400
	50A	8	16	2	1000	2000
	50A	9	16	2	460	920
	50A	10	8	8	1200	9600
	50A	11	16	4	1200	4800
	50A	12	8	2	565	1130
	50A	13	16	1	360	360
	50A	14	16	2	800	1600
	50A	15	8	8	466	3728
	50A	16	12.5	2	421	842
	50A	17	12.5	1	429	429
	50A	18	16	2	650	1300
	50A	19	8	4	360	1440
	50A	20	10	3	295	885
	50A	21	6.3	54	144	7776
	60B	22	5	55	207	11385
	60B	23	5	55	143	7865
	60B	24	5	19	119	2261
V223						
	50A	1	6.3	15	268	4020
	50A	2	8	10	180	1800
	50A	3	10	2	200	400
	50A	4	12.5	3	300	900
	50A	5	16	2	500	1000
	50A	6	12.5	1	450	450
	50A	7	10	10	774	7740
	50A	8	12.5	2	784	1568
	50A	9	12.5	2	360	720
	50A	10	20	2	800	1600
	50A	11	12.5	4	238	952
	50A	12	16	2	1200	2400
	50A	13	8	6	1200	7200
	50A	14	10	3	836	2508
	60B	15	5	8	117	936
	60B	16	5	24	267	6408
	50A	17	6.3	76	152	11552
V224						
	50A	1	6.3	4	293	1172
	50A	2	10	2	333	666
	50A	3	8	2	343	686
	60B	4	5	14	107	1498
V226						
	50A	1	6.3	4	293	1172
	50A	2	10	2	333	666
	50A	3	8	2	343	686
	60B	4	5	14	107	1498
V227						
	50A	1	6.3	4	293	1172
	50A	2	10	2	333	666
	50A	3	8	2	343	686
	60B	4	5	14	107	1498

DETALHES DE FORMAS

MEDIDAS EM CENTIMETROS E NÍVEIS EM METROS

- PILAR QUE NASCE NESTE PAVIMENTO
- PILAR QUE MORRE NESTE PAVIMENTO
- PILAR QUE PASSA PELO PAVIMENTO
- PILAR QUE MUDA DE SEÇ¢O NESTE PAVIMENTO

CF: CONTRAFLECHA (cm)

CONVÊNIE I ES:
CARGAS CONSIDERADAS NESTE PAVIMENTO

ALVENARIA DE TIJOLOS FURADOS	13,00 kN/m³
ALVENARIA DE TIJOLOS MACIÇ OS	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	0,43 kN/m²
CREA DE JARDIM (ONDE EXISTIR NO PROJ.ARQ.)	A DEFINIR
ENCHIMENTO DE PISO	A DEFINIR

COBRIMENTOS

ARMADURAS PASSIVAS (CA50 E CA60):

LAJES:		BLOCOS/SAPATAS:	4,0 cm
ARMADURA NEGATIVA	2,0 cm	CORTINAS/MUROS:	3,0 cm
ARMADURA POSITIVA	3,0 cm		
ESCADAS:	3,0 cm		
VIGAS:	3,0 cm	RESERVATÓRIOS:	
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

ATENIE¢O:
DEVE SER ADOTADO CONTROLE RIGOROSO DE QUALIDADE E RIDUOS LIMITES DE TOLERANCIA DA VARIABILIDADE DAS MEDIDAS DURANTE A EXECUI¢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

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

ASSUNTO: PROJETO ESTRUTURAL
FASE: PROJETO EXECUTIVO

TÍTULO: VIGAS 1ÁPAVIMENTO
V214 / V215 / V216 / V217 / V218 / V219 V220 / V221 / V222 / V223 / V224 / V226 V227
REVISÃO: R00
ESCALA DO DESENHO: 1:50

DESENHO: MICHEL
ARQUIVO: 1767-EST-PE-1-013-01P-VIGA-R00

CONTRATADA

PROJETOS ESTRUTURAIS
www.nierengenharia.com.br

ENGENHEIROS RESPONSÁVEIS:
GILSON ROBERTO NIERO
CREA 7.222/D-PR
CAMILA KERST NIERO
CREA 73.695/D-PR
CAIO CESAR KERST NIERO
CREA 109.826/D-PR

RUA AMADOR BUENO 202, 1ÁANDAR - VILA IPIRANGA CEP 86010-620
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FOLHA: 013
OBRA NÁ: 1767

NIER PROJETOS ESTRUTURAIS LTDA. R:\1767-EST-PE-1-013-01P-VIGA-R00.RVT 13/09/2020 09:12:37