

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

**MEMÓRIA DE CÁLCULO DE ESTRUTURA DE
CONCRETO ARMADO
PRÉDIO PRINCIPAL
CENTRO DE ENSINO FUNDAMENTAL 01 DA
CANDANGOLÂNDIA**

R00	15/09/2023	Versão inicial	DALMO CINNANTI
REVISÃO	DATA	DESCRIÇÃO	RESPONSÁVEL
<i>Nome do projeto</i>		<i>MEMÓRIA DE CÁLCULO DE FUNDAÇÕES- PRÉDIO PRINCIPAL</i>	
<i>Número do projeto</i>		<i>314-SEEDF-CEF 01 DA CANDANGOLANDIA-MEM-EST-PRÉDIO-R00</i>	
<i>Local</i>		<i>EQR 2/4, AE 7 - Candangolândia - DF</i>	

Memorial de cálculo

Resumo de resultados.....	3
Pavimento NV-000	5
Resultados dos Pilares.....	5
Resultados da Vigas.....	20
Pavimento TÉRREO NV-320.....	97
Resultados dos Pilares.....	97
Resultados da Vigas.....	109
Resultados da Laje.....	173
Resultados da Escada	182
Pavimento SUPERIOR NV-640	184
Resultados dos Pilares.....	184
Resultados da Vigas.....	193
Resultados da Laje.....	292
Pavimento PLATIBANDA NV-770.....	308
Resultados dos Pilares.....	308
Resultados da Vigas.....	319
Relatório de Resultados das Sapatas	334

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Resumo de resultados

Cargas verticais:

Peso próprio = 2461.01 tf

Adicional = 1008.69 tf

Acidental = 746.81 tf

Total = 4216.52 tf

Área aproximada = 3743.88 m²

Relação = 1126.24 kgf/m²

Deslocamento horizontal:

X+ = 0.03 cm (limite 0.52)

X- = 0.03 cm (limite 0.52)

Y+ = 0.02 cm (limite 0.52)

Y- = 0.02 cm (limite 0.52)

Verificação de estabilidade (Gama-Z):

X+ = 1.07 (limite 1.10)

X- = 1.16 (limite 1.10)

Y+ = 1.09 (limite 1.10)

Y- = 1.06 (limite 1.10)

Análise de 2ª ordem:

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Processo P-Delta

Deslocamentos no topo da edificação:

Acidental: 0.02 »» 0.03 (+3.88%)

Vento X+: 0.17 »» 0.18 (+5.95%)

Vento X-: 0.17 »» 0.18 (+5.95%)

Vento Y+: 0.13 »» 0.13 (+2.58%)

Vento Y-: 0.13 »» 0.13 (+2.58%)

Desaprumo X+: 0.11 »» 0.12 (+7.55%)

Desaprumo X-: 0.11 »» 0.12 (+7.55%)

Desaprumo Y+: 0.05 »» 0.05 (+3.79%)

Desaprumo Y-: 0.05 »» 0.05 (+3.79%)

Pavimento NV-000

Resultados dos Pilares

NV-000	fck = 400.00 kgf/cm ²	E = 318758 kgf/cm ²	Peso Espec = 2500.00 kgf/m ³
Lance 1		cofr = 3.00 cm	

Dados				Resultados						
Pilar	Seção (cm)	Nível Altura (cm)	lib vinc lih vinc (cm)	Nd máx Nd mín (tf)	MBd topo MBd base (kgf.m)	MHd topo MHd base (kgf.m)	As b Armaduras As h % armad total		Estribo Topo Base cota	Esb b Esb h
P1 1:20	20.00 X 40.00	0.00 150.00	150.00 RR 150.00 RR	31.02 19.26	83 157	482 597	1.57 2.36 0.6	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 60	25.95 12.97
P2 1:20	15.00 X 40.00	0.00 150.00	150.00 RR 150.00 RR	5.49 3.77	517 345	317 338	1.57 1.57 0.5	2 ø 10.0 2 ø 10.0 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 60	34.60 12.97
P3 1:20	20.00 X 40.00	0.00 150.00	150.00 RR 150.00 RR	44.60 26.41	102 147	330 537	1.57 2.36 0.6	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 60	25.95 12.97
P4 1:20	15.00 X 40.00	0.00 150.00	150.00 RR 150.00 RR	5.86 3.87	545 375	476 412	1.57 1.57 0.5	2 ø 10.0 2 ø 10.0 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 60	34.60 12.97
P5 1:20	20.00 X 40.00	0.00 150.00	150.00 RR 150.00 RR	43.89 26.34	153 205	238 466	1.57 2.36 0.6	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 60	25.95 12.97
P6 1:20	15.00 X 40.00	0.00 150.00	150.00 RR 150.00 RR	4.89 3.27	821 455	349 323	1.57 1.57 0.5	2 ø 10.0 2 ø 10.0 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 60	34.60 12.97
P7 1:20	20.00 X 40.00	0.00 150.00	150.00 RR	66.24 39.23	357 422	327 695	1.57 2.36 0.6	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12	25.95 12.97

			150.00 RR						ø 5.0 c/12 60	
P8 1:20	20.00 X 40.00	0.00 150.00	150.00 RR 150.00 RR	57.05 34.73	258 324	477 720	1.57 2.36 0.6	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 60	25.95 12.97
P9 1:20	15.00 X 50.00	0.00 150.00	150.00 RR 150.00 RR	21.49 12.99	362 437	1059 1816	1.57 2.36 0.6	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 60	34.60 10.38
P10 1:20	15.00 X 50.00	0.00 150.00	150.00 RR 480.00 RR	31.43 18.65	332 419	1362 4205	1.57 2.36 0.6	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 100	34.60 33.22
P11 1:20	20.00 X 40.00	0.00 150.00	150.00 RR 150.00 RR	71.61 42.28	217 234	3082 3453	1.57 2.36 0.6	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 100	25.95 12.97
P12 1:20	20.00 X 40.00	0.00 150.00	150.00 RR 480.00 RR	72.26 42.74	228 246	2818 3191	1.57 2.36 0.6	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 100	25.95 41.52
P13 1:20	20.00 X 40.00	0.00 150.00	150.00 RR 150.00 RR	32.05 19.88	229 265	164 284	1.57 2.36 0.6	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 100	25.95 12.97
P14 1:20	15.00 X 40.00	0.00 150.00	150.00 RR 150.00 RR	20.95 12.25	237 116	351 764	1.57 1.57 0.5	2 ø 10.0 2 ø 10.0 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 60	34.60 12.97
P15 1:20	15.00 X 40.00	0.00 150.00	150.00 RR 150.00 RR	7.66 5.16	319 139	615 492	1.57 1.57 0.5	2 ø 10.0 2 ø 10.0 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 60	34.60 12.97
P16 1:20	15.00 X 40.00	0.00 150.00	150.00 RR 150.00 RR	60.50 33.75	167 181	250 427	1.57 1.57 0.5	2 ø 10.0 2 ø 10.0 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 60	34.60 12.97
P17 1:20	15.00 X 40.00	0.00 150.00	150.00 RR	8.05 5.42	320 140	520 236	1.57 1.57 0.5	2 ø 10.0 2 ø 10.0 4 ø 10.0	ø 5.0 c/12	34.60 12.97

			150.00 RR						ø 5.0 c/12 60	
P18 1:20	15.00 X 40.00	0.00 150.00	150.00 RR 150.00 RR	59.68 33.91	216 246	151 230	1.57 2 ø 10.0 1.57 2 ø 10.0 0.5 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 60	34.60 12.97	
P19 1:20	15.00 X 40.00	0.00 150.00	150.00 RR 150.00 RR	6.34 4.20	157 158	626 675	1.57 2 ø 10.0 1.57 2 ø 10.0 0.5 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 60	34.60 12.97	
P20 1:20	15.00 X 40.00	0.00 150.00	150.00 RR 150.00 RR	65.28 37.19	203 227	237 315	1.57 2 ø 10.0 1.57 2 ø 10.0 0.5 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 60	34.60 12.97	
P21 1:20	15.00 X 40.00	0.00 150.00	150.00 RR 150.00 RR	22.55 12.97	47 157	1230 1858	1.57 2 ø 10.0 1.57 2 ø 10.0 0.5 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 50	34.60 12.97	
P22 1:20	15.00 X 40.00	0.00 150.00	150.00 RR 150.00 RR	6.82 4.71	300 47	1149 363	1.57 2 ø 10.0 1.57 2 ø 10.0 0.5 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 60	34.60 12.97	
P23 1:20	20.00 X 40.00	0.00 150.00	150.00 RR 150.00 RR	42.20 26.15	201 283	90 224	1.57 2 ø 10.0 2.36 3 ø 10.0 0.6 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 60	25.95 12.97	
P24 1:20	15.00 X 40.00	0.00 150.00	150.00 RR 150.00 RR	4.22 2.67	314 96	577 394	1.57 2 ø 10.0 1.57 2 ø 10.0 0.5 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 60	34.60 12.97	
P25 1:20	20.00 X 40.00	0.00 150.00	150.00 RR 480.00 RR	65.07 38.68	162 236	451 800	1.57 2 ø 10.0 2.36 3 ø 10.0 0.6 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 60	25.95 41.52	
P26 1:20	15.00 X 40.00	0.00 150.00	150.00 RR 150.00 RR	5.80 3.88	329 102	205 198	1.57 2 ø 10.0 1.57 2 ø 10.0 0.5 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 60	34.60 12.97	
P27 1:20	20.00 X 40.00	0.00 150.00	150.00 RR	62.33 37.15	177 242	175 442	1.57 2 ø 10.0 2.36 3 ø 10.0 0.6 6 ø 10.0	ø 5.0 c/12	25.95 12.97	

			150.00 RR						ø 5.0 c/12 60	
P28 1:20	15.00 X 40.00	0.00 150.00	150.00 RR 150.00 RR	3.71 2.28	162 131	427 249	1.57 1.57 0.5	2 ø 10.0 2 ø 10.0 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 60	34.60 12.97
P29 1:20	20.00 X 40.00	0.00 150.00	150.00 RR 150.00 RR	93.61 53.84	230 357	362 867	1.57 2.36 0.6	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 60	25.95 12.97
P30 1:20	15.00 X 40.00	0.00 150.00	150.00 RR 150.00 RR	1.53 0.23	156 203	451 946	1.57 1.57 0.5	2 ø 10.0 2 ø 10.0 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 60	34.60 12.97
P31 1:20	20.00 X 40.00	0.00 150.00	150.00 RR 150.00 RR	61.75 36.50	306 335	136 407	1.57 2.36 0.6	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 60	25.95 12.97
P32 1:20	20.00 X 30.00	0.00 150.00	150.00 RR 150.00 RR	32.28 19.41	373 492	1045 824	1.57 1.57 0.5	2 ø 10.0 2 ø 10.0 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 60	25.95 17.30
P33 1:20	20.00 X 30.00	0.00 150.00	480.00 RR 150.00 RR	45.30 26.46	135 238	640 1190	1.57 1.57 0.5	2 ø 10.0 2 ø 10.0 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 60	83.04 17.30
P34 1:20	20.00 X 40.00	0.00 150.00	150.00 RR 480.00 RR	96.16 56.21	268 281	1800 2317	1.57 2.36 0.6	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 100	25.95 41.52
P35 1:20	20.00 X 40.00	0.00 150.00	150.00 RR 480.00 RR	98.08 57.78	262 289	1267 1786	1.57 2.36 0.6	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 100	25.95 41.52
P36 1:20	20.00 X 40.00	0.00 150.00	150.00 RR 150.00 RR	44.01 27.28	240 295	215 367	1.57 2.36 0.6	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 100	25.95 12.97
P37 1:20	20.00 X 40.00	0.00 150.00	150.00 RR	51.02 30.91	462 554	394 529	1.57 2.36 0.6	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12	25.95 12.97

			150.00 RR						ø 5.0 c/12 60	
P38 1:20	20.00 X 40.00	0.00 150.00	150.00 RR 150.00 RR	84.61 50.14	432 469	627 901	1.57 2.36 0.6	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 60	25.95 12.97
P39 1:20	20.00 X 40.00	0.00 150.00	150.00 RR 150.00 RR	33.52 20.01	961 467	960 1839	1.57 2.36 0.6	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 60	25.95 12.97
P40 1:20	20.00 X 40.00	0.00 150.00	150.00 RR 480.00 RR	51.42 29.67	270 284	215 492	1.57 2.36 0.6	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 60	25.95 41.52
P41 1:20	20.00 X 40.00	0.00 150.00	150.00 RR 480.00 RR	72.85 46.47	196 270	308 701	1.57 2.36 0.6	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 60	25.95 41.52
P42 1:20	20.00 X 40.00	0.00 150.00	150.00 RR 480.00 RR	90.77 55.59	271 338	746 1231	1.57 2.36 0.6	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 60	25.95 41.52
P43 1:20	15.00 X 50.00	0.00 150.00	150.00 RR 150.00 RR	25.84 15.88	739 401	491 540	1.57 2.36 0.6	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 60	34.60 10.38
P44 1:20	15.00 X 50.00	0.00 150.00	150.00 RR 480.00 RR	40.30 23.96	450 697	1606 5406	1.57 2.36 0.6	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 60	34.60 33.22
P45 1:20	20.00 X 40.00	0.00 150.00	150.00 RR 150.00 RR	114.74 66.58	300 408	1505 2004	1.57 2.36 0.6	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 60	25.95 12.97
P46 1:20	20.00 X 40.00	0.00 150.00	150.00 RR 480.00 RR	112.39 65.03	284 377	2300 2875	1.57 2.36 0.6	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 60	25.95 41.52
P47 1:20	20.00 X 40.00	0.00 150.00	150.00 RR	48.75 29.54	348 477	601 734	1.57 2.36 0.6	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12	25.95 12.97

			150.00 RR						ø 5.0 c/12 60	
P48 1:20	15.00 X 40.00	0.00 150.00	150.00 RR 150.00 RR	3.36 2.22	309 192	1088 874	1.57 1.57 0.5	2 ø 10.0 2 ø 10.0 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 60	34.60 12.97
P49 1:20	15.00 X 40.00	0.00 150.00	150.00 RR 150.00 RR	5.37 3.24	169 72	727 806	1.57 1.57 0.5	2 ø 10.0 2 ø 10.0 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 60	34.60 12.97
P50 1:20	15.00 X 40.00	0.00 150.00	300.00 EL 150.00 RR	3.45 2.15	26 65	582 768	1.57 1.57 0.5	2 ø 10.0 2 ø 10.0 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 60	69.20 12.97
P51 1:20	20.00 X 50.00	0.00 150.00	480.00 RR 480.00 RR	32.07 19.34	135 1071	649 2960	1.57 2.36 0.5	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12	83.04 33.22
P52 1:20	20.00 X 50.00	0.00 150.00	480.00 RR 480.00 RR	33.40 20.23	126 1413	1112 5592	1.57 2.36 0.5	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12	83.04 33.22
P53 1:20	15.00 X 40.00	0.00 150.00	300.00 EL 150.00 RR	3.32 1.60	18 197	1843 2303	1.57 1.57 0.5	2 ø 10.0 2 ø 10.0 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 60	69.20 12.97
P54 1:20	15.00 X 40.00	0.00 150.00	300.00 EL 150.00 RR	3.41 2.13	19 122	1133 1452	1.57 1.57 0.5	2 ø 10.0 2 ø 10.0 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 60	69.20 12.97
P55 1:20	20.00 X 50.00	0.00 150.00	24.00 EL 24.00 EL	11.36 7.83	310 495	223 361	1.57 2.36 0.5	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12	4.15 1.66
P56 1:20	20.00 X 50.00	0.00 150.00	24.00 EL 24.00 EL	11.36 7.83	310 495	223 361	1.57 2.36 0.5	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12	4.15 1.66
P57 1:20	15.00 X 50.00	0.00 150.00	150.00 RR 150.00 RR	63.35 34.74	630 522	270 1100	1.57 2.36 0.6	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 60	34.60 10.38

P58 1:20	20.00 X 40.00	0.00 150.00	150.00 RR 150.00 RR	65.39 39.78	593 420	1148 1255	1.57 2.36 0.6	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 60	25.95 12.97
P59 1:20	20.00 X 40.00	0.00 150.00	150.00 RR 150.00 RR	11.75 6.43	1269 569	1095 955	1.57 2.36 0.6	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 49	25.95 12.97
P60 1:20	15.00 X 50.00	0.00 150.00	150.00 RR 150.00 RR	13.34 7.30	1008 593	1551 1112	1.57 2.36 0.6	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 50	34.60 10.38
P61 1:20	20.00 X 40.00	0.00 150.00	150.00 RR 150.00 RR	45.60 28.51	424 481	719 862	1.57 2.36 0.6	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 60	25.95 12.97
P62 1:20	20.00 X 40.00	0.00 150.00	150.00 RR 150.00 RR	27.48 16.91	171 182	350 471	1.57 2.36 0.6	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 60	25.95 12.97
P63 1:20	15.00 X 40.00	0.00 150.00	150.00 RR 150.00 RR	24.21 14.82	83 88	78 192	1.57 1.57 0.5	2 ø 10.0 2 ø 10.0 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 60	34.60 12.97
P64 1:20	60.00 X 60.00	0.00 150.00	112.00 RR 224.00 EL	77.66 48.34	4716 7920	1624 3484	6.03 6.03 0.4	3 ø 16.0 3 ø 16.0 8 ø 16.0	ø 5.0 c/19 ø 5.0 c/19 50	6.46 12.92
P65 1:20	20.00 X 30.00	0.00 150.00	150.00 RR 150.00 RR	30.93 18.30	132 578	1097 1359	1.57 1.57 0.5	2 ø 10.0 2 ø 10.0 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 60	25.95 17.30
P66 1:20	20.00 X 40.00	0.00 150.00	150.00 RR 150.00 RR	69.48 41.38	323 445	329 650	1.57 2.36 0.6	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 60	25.95 12.97
P67 1:20	20.00 X 40.00	0.00 150.00	12.00 RR 12.00 RR	69.94 41.84	1235 1671	481 791	1.57 2.36 0.6	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 60	2.08 1.04

P68 1:20	20.00 X 40.00	0.00 150.00	150.00 RR 150.00 RR	45.90 28.42	349 430	498 682	1.57 2.36 0.6	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 60	25.95 12.97
P69 1:20	20.00 X 50.00	0.00 150.00	480.00 RR 480.00 RR	29.03 18.07	185 1145	567 1301	1.57 2.36 0.5	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12	83.04 33.22
P70 1:20	20.00 X 50.00	0.00 150.00	24.00 EL 24.00 EL	11.36 7.83	260 424	354 562	1.57 2.36 0.5	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12	4.15 1.66
P71 1:20	20.00 X 50.00	0.00 150.00	24.00 EL 24.00 EL	11.36 7.83	260 424	354 562	1.57 2.36 0.5	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12	4.15 1.66
P72 1:20	20.00 X 50.00	0.00 150.00	480.00 RR 480.00 RR	38.52 22.92	171 1906	501 1020	1.57 2.36 0.5	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12	83.04 33.22
P73 1:20	20.00 X 40.00	0.00 150.00	150.00 RR 150.00 RR	45.26 28.25	431 488	732 875	1.57 2.36 0.6	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 60	25.95 12.97
P74 1:20	20.00 X 40.00	0.00 150.00	150.00 RR 150.00 RR	28.81 17.56	172 185	357 484	1.57 2.36 0.6	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 60	25.95 12.97
P75 1:20	15.00 X 40.00	0.00 150.00	150.00 RR 150.00 RR	26.34 16.17	90 93	60 186	1.57 1.57 0.5	2 ø 10.0 2 ø 10.0 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 60	34.60 12.97
P76 1:20	60.00 X 60.00	0.00 150.00	445.00 RR 230.00 EL	63.67 40.09	4691 7697	2350 3479	6.03 6.03 0.4	3 ø 16.0 3 ø 16.0 8 ø 16.0	ø 5.0 c/19 ø 5.0 c/19 50	25.66 13.26
P77 1:20	15.00 X 60.00	0.00 150.00	480.00 RR 480.00 RR	13.84 7.10	124 773	1284 2747	1.57 3.14 0.7	2 ø 10.0 4 ø 10.0 8 ø 10.0	ø 5.0 c/12	110.72 27.68
P78 1:20	20.00 X 40.00	0.00 150.00	150.00 RR 150.00 RR	57.48 35.67	202 254	1436 1732	1.57 2.36 0.6	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 60	25.95 12.97

P79 1:20	20.00 X 40.00	0.00 150.00	150.00 RR 150.00 RR	57.87 35.96	210 265	297 583	1.57 2.36 0.6	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 60	25.95 12.97
P80 1:20	20.00 X 40.00	0.00 150.00	150.00 RR 150.00 RR	45.14 28.12	498 563	550 703	1.57 2.36 0.6	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 60	25.95 12.97
P81 1:20	15.00 X 50.00	0.00 150.00	150.00 RR 150.00 RR	59.76 32.85	602 506	336 1063	1.57 2.36 0.6	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 60	34.60 10.38
P82 1:20	20.00 X 40.00	0.00 150.00	150.00 RR 150.00 RR	68.23 41.87	323 399	725 1072	1.57 2.36 0.6	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 60	25.95 12.97
P83 1:20	15.00 X 50.00	0.00 150.00	480.00 RR 150.00 RR	25.88 13.75	139 466	1731 1506	2.45 4.91 1.3	2 ø 12.5 4 ø 12.5 8 ø 12.5	ø 5.0 c/15 ø 5.0 c/15 50	110.72 10.38
P84 1:20	15.00 X 50.00	0.00 150.00	150.00 RR 150.00 RR	25.63 13.52	115 224	717 1336	1.57 2.36 0.6	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 60	34.60 10.38
P85 1:20	20.00 X 50.00	0.00 150.00	24.00 EL 24.00 EL	11.36 7.83	310 495	223 361	1.57 2.36 0.5	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 60	4.15 1.66
P86 1:20	20.00 X 50.00	0.00 150.00	24.00 EL 24.00 EL	11.36 7.83	310 495	223 361	1.57 2.36 0.5	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 60	4.15 1.66
P87 1:20	15.00 X 40.00	0.00 150.00	150.00 RR 150.00 RR	11.19 6.17	333 298	1032 1029	1.57 1.57 0.5	2 ø 10.0 2 ø 10.0 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 49	34.60 12.97
P88 1:20	15.00 X 40.00	0.00 150.00	150.00 RR 150.00 RR	7.68 5.24	2175 1096	561 698	1.57 7.07 2.4	2 ø 10.0 9 ø 10.0 18 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 60	34.60 12.97
P89 1:20	15.00 X 40.00	0.00 150.00	150.00 RR 150.00 RR	7.69 5.24	2179 1107	1027 1036	2.45 8.59 2.9	2 ø 12.5 7 ø 12.5 14 ø 12.5	ø 5.0 c/15 ø 5.0 c/15 60	34.60 12.97

									60	
P90 1:20	15.00 X 40.00	0.00 150.00	150.00 RR 150.00 RR	45.21 24.18	58 283	1091 1787	1.57 1.57 0.5	2 ø 10.0 2 ø 10.0 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12	34.60 12.97
P91 1:20	15.00 X 40.00	0.00 150.00	150.00 RR 150.00 RR	46.70 25.15	51 255	495 1113	1.57 1.57 0.5	2 ø 10.0 2 ø 10.0 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12	34.60 12.97
P92 1:20	15.00 X 40.00	0.00 150.00	300.00 EL 150.00 RR	5.26 3.61	17 226	46 61	1.57 1.57 0.5	2 ø 10.0 2 ø 10.0 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12	69.20 12.97
P93 1:20	15.00 X 40.00	0.00 150.00	300.00 EL 150.00 RR	3.44 2.16	45 240	703 856	1.57 1.57 0.5	2 ø 10.0 2 ø 10.0 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12	69.20 12.97
P94 1:20	20.00 X 50.00	0.00 150.00	480.00 RR 480.00 RR	32.41 19.50	104 1047	758 2586	1.57 2.36 0.5	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12	83.04 33.22
P95 1:20	20.00 X 50.00	0.00 150.00	480.00 RR 480.00 RR	33.17 19.93	90 1323	940 4834	1.57 2.36 0.5	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12	83.04 33.22
P96 1:20	15.00 X 40.00	0.00 150.00	150.00 RR 150.00 RR	7.47 5.14	329 219	888 713	1.57 1.57 0.5	2 ø 10.0 2 ø 10.0 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12	34.60 12.97
P97 1:20	20.00 X 40.00	0.00 150.00	150.00 RR 150.00 RR	53.00 32.43	1858 1030	831 718	1.57 2.36 0.6	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12	25.95 12.97
P98 1:20	20.00 X 40.00	0.00 150.00	150.00 RR 150.00 RR	84.22 49.59	585 615	339 687	1.57 2.36 0.6	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12	25.95 12.97
P99 1:20	20.00 X 40.00	0.00 150.00	150.00 RR 150.00 RR	39.71 24.27	522 625	556 1494	1.57 2.36 0.6	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12	25.95 12.97
									60	

P100 1:20	20.00 X 40.00	0.00 150.00	150.00 RR 480.00 RR	45.23 25.07	177 200	290 526	1.57 2.36 0.6	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 60	25.95 41.52
P101 1:20	20.00 X 40.00	0.00 150.00	480.00 RR 480.00 RR	58.78 37.78	288 622	496 809	1.57 2.36 0.6	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12	83.04 41.52
P102 1:20	20.00 X 40.00	0.00 150.00	480.00 RR 480.00 RR	73.39 45.20	373 799	974 1360	1.57 3.14 0.8	2 ø 10.0 4 ø 10.0 8 ø 10.0	ø 5.0 c/12	83.04 41.52
P103 1:20	15.00 X 50.00	0.00 150.00	525.00 RR 150.00 RR	15.75 9.76	54 424	272 716	1.57 3.14 0.8	2 ø 10.0 4 ø 10.0 8 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 50	121.10 10.38
P104 1:20	15.00 X 50.00	0.00 150.00	150.00 RR 480.00 RR	30.33 18.06	1102 882	884 2799	1.57 2.36 0.6	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 60	34.60 33.22
P105 1:20	20.00 X 40.00	0.00 150.00	150.00 RR 150.00 RR	73.90 45.31	235 277	162 492	1.57 2.36 0.6	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 60	25.95 12.97
P106 1:20	20.00 X 40.00	0.00 150.00	150.00 RR 150.00 RR	72.78 45.36	239 301	390 728	1.57 2.36 0.6	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 60	25.95 12.97
P107 1:20	20.00 X 40.00	0.00 150.00	150.00 RR 150.00 RR	50.03 30.41	457 545	502 634	1.57 2.36 0.6	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 60	25.95 12.97
P108 1:20	20.00 X 40.00	0.00 150.00	150.00 RR 150.00 RR	42.29 26.38	889 339	645 961	1.57 2.36 0.6	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 60	25.95 12.97
P109 1:20	20.00 X 40.00	0.00 150.00	150.00 RR 150.00 RR	80.55 49.71	226 297	137 459	1.57 2.36 0.6	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 60	25.95 12.97
P110 1:20	20.00 X 40.00	0.00 150.00	150.00 RR	77.10 46.97	425 487	181 493	1.57 2.36 0.6	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12	25.95 12.97

			150.00 RR						ø 5.0 c/12 60	
P111 1:20	20.00 X 40.00	0.00 150.00	150.00 RR 480.00 RR	104.80 59.75	367 451	1908 2460	1.57 2.36 0.6	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 60	25.95 41.52
P112 1:20	20.00 X 40.00	0.00 150.00	150.00 RR 480.00 RR	106.01 60.00	379 454	1845 2405	1.57 2.36 0.6	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 60	25.95 41.52
P113 1:20	20.00 X 30.00	0.00 150.00	480.00 RR 150.00 RR	47.67 27.65	50 441	914 1414	1.57 1.57 0.5	2 ø 10.0 2 ø 10.0 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 60	83.04 17.30
P114 1:20	20.00 X 30.00	0.00 150.00	480.00 RR 150.00 RR	44.12 25.45	67 359	591 1538	1.57 1.57 0.5	2 ø 10.0 2 ø 10.0 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 60	83.04 17.30
P115 1:20	20.00 X 40.00	0.00 150.00	150.00 RR 480.00 RR	106.64 60.80	389 469	900 1434	1.57 2.36 0.6	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 60	25.95 41.52
P116 1:20	20.00 X 40.00	0.00 150.00	150.00 RR 480.00 RR	116.79 68.25	401 493	672 1282	1.57 2.36 0.6	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 60	25.95 41.52
P117 1:20	20.00 X 40.00	0.00 150.00	150.00 RR 150.00 RR	42.05 26.06	565 678	134 272	1.57 2.36 0.6	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 60	25.95 12.97
P118 1:20	15.00 X 40.00	0.00 150.00	150.00 RR 150.00 RR	22.28 13.26	1213 637	314 644	1.57 1.57 0.5	2 ø 10.0 2 ø 10.0 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 60	34.60 12.97
P119 1:20	15.00 X 40.00	0.00 150.00	150.00 RR 150.00 RR	49.87 27.97	129 104	746 1076	1.57 1.57 0.5	2 ø 10.0 2 ø 10.0 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 60	34.60 12.97
P120 1:20	15.00 X 40.00	0.00 150.00	150.00 RR	41.07 22.04	1329 705	614 889	1.57 1.57 0.5	2 ø 10.0 2 ø 10.0 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 60	34.60 12.97

			150.00 RR						ø 5.0 c/12 60	
P121 1:20	15.00 X 40.00	0.00 150.00	300.00 EL 150.00 RR	4.09 2.77	47 413	1265 1950	1.57 1.57 0.5	2 ø 10.0 2 ø 10.0 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 60	69.20 12.97
P122 1:20	15.00 X 40.00	0.00 150.00	150.00 RR 150.00 RR	6.29 4.12	182 124	398 242	1.57 1.57 0.5	2 ø 10.0 2 ø 10.0 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 60	34.60 12.97
P123 1:20	15.00 X 40.00	0.00 150.00	150.00 RR 150.00 RR	20.04 11.56	92 88	468 985	1.57 1.57 0.5	2 ø 10.0 2 ø 10.0 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 60	34.60 12.97
P124 1:20	15.00 X 40.00	0.00 150.00	150.00 RR 150.00 RR	7.03 4.78	150 69	1508 933	1.57 1.57 0.5	2 ø 10.0 2 ø 10.0 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 60	34.60 12.97
P125 1:20	15.00 X 40.00	0.00 150.00	150.00 RR 150.00 RR	4.42 2.99	555 557	762 600	1.57 1.57 0.5	2 ø 10.0 2 ø 10.0 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 60	34.60 12.97
P126 1:20	20.00 X 40.00	0.00 150.00	150.00 RR 150.00 RR	32.29 20.02	299 381	501 614	1.57 2.36 0.6	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 60	25.95 12.97
P127 1:20	20.00 X 40.00	0.00 150.00	150.00 RR 150.00 RR	57.54 34.74	153 205	395 639	1.57 2.36 0.6	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 60	25.95 12.97
P128 1:20	20.00 X 40.00	0.00 150.00	150.00 RR 150.00 RR	52.94 32.06	125 180	383 608	1.57 2.36 0.6	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 60	25.95 12.97
P129 1:20	20.00 X 40.00	0.00 150.00	150.00 RR 480.00 RR	65.26 38.38	166 227	3324 3668	1.57 2.36 0.6	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 60	25.95 41.52
P130 1:20	20.00 X 40.00	0.00 150.00	150.00 RR	70.80 41.47	198 267	3640 4018	1.57 2.36 0.6	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12	25.95 41.52

			480.00 RR						ø 5.0 c/12 60	
P131 1:20	15.00 X 50.00	0.00 150.00	150.00 RR 150.00 RR	31.00 18.31	493 420	290 2491	1.57 2.36 0.6	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 60	34.60 10.38
P132 1:20	15.00 X 50.00	0.00 150.00	150.00 RR 480.00 RR	30.76 18.06	693 570	877 3575	1.57 2.36 0.6	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 60	34.60 33.22
P133 1:20	20.00 X 40.00	0.00 150.00	150.00 RR 480.00 RR	69.15 40.36	276 350	1573 1890	1.57 2.36 0.6	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 60	25.95 41.52
P134 1:20	20.00 X 40.00	0.00 150.00	150.00 RR 480.00 RR	70.26 41.16	323 389	331 723	1.57 2.36 0.6	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 60	25.95 41.52
P135 1:20	20.00 X 40.00	0.00 150.00	150.00 RR 150.00 RR	32.55 20.11	406 510	211 344	1.57 2.36 0.6	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 60	25.95 12.97
PB1 1:20	15.00 X 40.00	0.00 150.00	150.00 RR 150.00 RR	0.84 0.13	89 92	381 410	1.57 1.57 0.5	2 ø 10.0 2 ø 10.0 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 100	34.60 12.97
PB2 1:20	15.00 X 40.00	0.00 150.00	150.00 RR 150.00 RR	1.28 0.30	113 390	210 239	1.57 1.57 0.5	2 ø 10.0 2 ø 10.0 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 100	34.60 12.97
PB3 1:20	15.00 X 40.00	0.00 150.00	300.00 EL 150.00 RR	4.10 2.60	31 238	497 556	1.57 1.57 0.5	2 ø 10.0 2 ø 10.0 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 100	69.20 12.97
PB4 1:20	15.00 X 40.00	0.00 150.00	300.00 EL 150.00 RR	2.84 1.84	30 152	259 173	1.57 1.57 0.5	2 ø 10.0 2 ø 10.0 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 100	69.20 12.97
PE-1 1:20	15.00 X 40.00	0.00 150.00	150.00 RR	19.49 11.17	47 217	843 1565	1.57 2.36 0.8	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12	34.60 12.97

			150.00 RR						ø 5.0 c/12 60	
PES1 1:20	15.00 X 40.00	0.00 150.00	409.20 RR 150.00 RR	12.71 6.69	133 188	317 536	1.57 1.57 0.5	2 ø 10.0 2 ø 10.0 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 50	94.39 12.97
PES2 1:20	15.00 X 40.00	0.00 150.00	409.20 RR 150.00 RR	14.17 7.70	152 108	735 613	1.57 1.57 0.5	2 ø 10.0 2 ø 10.0 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 50	94.39 12.97

Resultados da Vigas

Resultados da Viga VB1

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P1	20.00		3 ø 16.0 4.72	3 ø 16.0 4.72					0.00
1	360.00	15.00 x 60.00	3 ø 16.0 4.72	3 ø 16.0 4.72		ø 5.0 c/ 19		2x3 ø 6.3	0.00
P2	40.00		3 ø 16.0 4.72	3 ø 16.0 4.72					0.00
2	450.00	15.00 x 60.00	3 ø 16.0 4.72	3 ø 16.0 4.72		ø 5.0 c/ 19		2x3 ø 6.3	0.00
P4	40.00		3 ø 16.0 4.72	3 ø 16.0 4.72					0.00
3	380.00	15.00 x 60.00	3 ø 16.0 4.72	3 ø 16.0 4.72		ø 5.0 c/ 19		2x3 ø 6.3	0.00
P5	20.00		3 ø 16.0 4.72	3 ø 16.0 4.72					0.00
4	240.00	15.00 x 60.00	3 ø 16.0 4.72	3 ø 16.0 4.72		ø 5.0 c/ 19		2x3 ø 6.3	0.00
P6	40.00		3 ø 16.0 4.72	3 ø 16.0 4.72					0.00
5	345.00	15.00 x 60.00	3 ø 16.0 4.72	3 ø 16.0 4.72		ø 5.0 c/ 19		2x3 ø 6.3	0.00
P7	20.00		3 ø 16.0 4.72	3 ø 16.0 4.72					0.01
6	625.00	15.00 x 60.00	3 ø 16.0 4.72	3 ø 16.0 4.72		ø 5.0 c/ 19		2x3 ø 6.3	0.01
P8	20.00		3 ø 16.0 4.72	3 ø 16.0 4.72					0.03
7	627.50	15.00 x 60.00	3 ø 16.0 4.72	3 ø 16.0 4.72		ø 5.0 c/ 19		2x3 ø 6.3	0.01
P9	15.00		3 ø 16.0 4.72	3 ø 16.0 4.72					0.00

Resultados da Viga VB2

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P10	15.00		3 ø 20.0 7.87	3 ø 20.0 7.87					0.00
1	610.50	15.00 x 100.00	3 ø 20.0 7.87	3 ø 20.0 7.87		ø 6.3 c/ 30		2x5 ø 6.3	0.00
P11	20.00		3 ø 20.0 7.87	3 ø 20.0 7.87					0.00
2	625.00	15.00 x 100.00	2 ø 12.5 2.25			ø 5.0 c/ 19		2x5 ø 6.3	0.00
P12	20.00		3 ø 20.0 7.87	3 ø 20.0 7.87					0.00
3	615.00	15.00 x 100.00	3 ø 20.0 7.87	3 ø 20.0 7.87		ø 6.3 c/ 30		2x5 ø 6.3	0.00
P13	20.00		3 ø 20.0 7.87	3 ø 20.0 7.87					0.00

Resultados da Viga VB3

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
PB1	15.00			2 ø 12.5 1.91					0.00
1	101.00	15.00 x 85.00	2 ø 12.5 1.91			ø 5.0 c/ 19		2x5 ø 6.3	0.00
PB2	40.00			2 ø 12.5 1.91					0.00

Resultados da Viga VB4

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
VB58	15.00			2 ø 10.0 1.37					0.00
1	165.00	15.00 x 60.00	2 ø 10.0 1.37			ø 5.0 c/ 19		2x3 ø 6.3	0.00
VB59	15.00			2 ø 10.0 1.37					0.00

Resultados da Viga VB5

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P14	15.00			2 ø 10.0 1.37					0.00
1	362.50	15.00 x 60.00	2 ø 10.0 1.37			ø 5.0 c/ 19		2x3 ø 6.3	0.01
P15	40.00		3 ø 16.0 4.72	3 ø 16.0 4.72					0.01
2	450.00	15.00 x 60.00	3 ø 16.0 4.72	3 ø 16.0 4.72		ø 5.0 c/ 19		2x3 ø 6.3	0.00
P17	40.00		3 ø 16.0 4.72	3 ø 16.0 4.72					0.01
3	382.50	15.00 x 60.00	2 ø 10.0 1.37			ø 5.0 c/ 19		2x3 ø 6.3	0.02
P18	15.00			2 ø 10.0 1.37					0.00

Resultados da Viga VB6

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P19	15.00			2 ø 10.0 1.37					0.00
1	165.00	15.00 x 60.00	2 ø 10.0 1.37			ø 5.0 c/ 19		2x3 ø 6.3	0.00
P20	15.00			2 ø 10.0 1.37					0.00

Resultados da Viga VB7

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P22	15.00			2 ø 10.0 1.37					0.00
1	360.00	15.00 x 60.00	2 ø 10.0 1.37			ø 5.0 c/ 19		2x3 ø 6.3	0.02
VB57	15.00			2 ø 10.0 1.37					0.00

Resultados da Viga VB8

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P23	20.00		3 ø 16.0 4.72	3 ø 16.0 4.72					0.00
1	249.00	15.00 x 60.00	3 ø 16.0 4.72	3 ø 16.0 4.72		ø 5.0 c/ 19		2x3 ø 6.3	0.00
P24	40.00		3 ø 16.0 4.72	3 ø 16.0 4.72					0.00
2	336.00	15.00 x 60.00	3 ø 16.0 4.72	3 ø 16.0 4.72		ø 5.0 c/ 19		2x3 ø 6.3	0.00
P25	20.00		3 ø 16.0 4.72	3 ø 16.0 4.72					0.00
3	316.00	15.00 x 60.00	3 ø 16.0 4.72	3 ø 16.0 4.72		ø 5.0 c/ 19		2x3 ø 6.3	0.00
P26	40.00		3 ø 16.0 4.72	3 ø 16.0 4.72					0.00
4	269.00	15.00 x 60.00	2 ø 10.0 1.37			ø 5.0 c/ 19		2x3 ø 6.3	0.01
P27	20.00		3 ø 16.0 4.72	3 ø 16.0 4.72					0.00
5	240.00	15.00 x 60.00	3 ø 16.0 4.72	3 ø 16.0 4.72		ø 5.0 c/ 19		2x3 ø 6.3	0.00
P28	40.00		3 ø 16.0 4.72	3 ø 16.0 4.72					0.00
6	345.00	15.00 x 60.00	3 ø 16.0 4.72	3 ø 16.0 4.72		ø 5.0 c/ 19		2x3 ø 6.3	0.00
P29	20.00		3 ø 16.0 4.72	3 ø 16.0 4.72					0.00

Resultados da Viga VB9

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P30	40.00		3 ø 16.0 4.72	3 ø 16.0 4.72					0.00
1	137.50	15.00 x 60.00	3 ø 16.0 4.72	3 ø 16.0 4.72		ø 5.0 c/ 19		2x3 ø 6.3	0.00
P31	20.00		3 ø 16.0 4.72	3 ø 16.0 4.72					0.01
2	612.50	15.00 x 60.00	3 ø 16.0 4.72	3 ø 16.0 4.72		ø 5.0 c/ 19		2x3 ø 6.3	0.01
P32	30.00		3 ø 16.0 4.72	3 ø 16.0 4.72					0.02

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

Resultados da Viga VB10

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P33	30.00		3 ø 16.0 4.72	3 ø 16.0 4.72					0.01
1	193.00	15.00 x 60.00	3 ø 16.0 4.72	3 ø 16.0 4.72		ø 5.0 c/ 19		2x3 ø 6.3	0.01
VB62	15.00		3 ø 16.0 4.72	3 ø 16.0 4.72					0.00
2	387.50	15.00 x 100.00	3 ø 20.0 7.87	3 ø 20.0 7.87		ø 6.3 c/ 30		2x5 ø 6.3	0.00
P34	20.00		3 ø 20.0 7.87	3 ø 20.0 7.87					0.01
3	625.00	15.00 x 100.00	3 ø 20.0 7.87	3 ø 20.0 7.87		ø 6.3 c/ 30		2x5 ø 6.3	0.00
P35	20.00		3 ø 20.0 7.87	3 ø 20.0 7.87					0.00

Resultados da Viga VB11

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P35	20.00		3 ø 20.0 6.69	3 ø 20.0 6.69					0.01
1	615.00	15.00 x 85.00	3 ø 20.0 6.69	3 ø 20.0 6.69		ø 6.3 c/ 30		2x5 ø 6.3	0.00
P36	20.00		3 ø 20.0 6.69	3 ø 20.0 6.69					0.00

Resultados da Viga VB12

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P37	20.00		3 ø 16.0 4.72	3 ø 16.0 4.72					0.01
1	625.00	15.00 x 60.00	3 ø 16.0 4.72	3 ø 16.0 4.72		ø 5.0 c/ 19		2x3 ø 6.3	0.01
P38	20.00		3 ø 16.0 4.72	3 ø 16.0 4.72					0.02
2	362.50	15.00 x 60.00	3 ø 16.0 4.72	3 ø 16.0 4.72		ø 5.0 c/ 19		2x3 ø 6.3	0.00
P39	40.00		3 ø 16.0 4.72	3 ø 16.0 4.72					0.00
3	222.50	15.00 x 60.00	2 ø 10.0 1.37			ø 5.0 c/ 19		2x3 ø 6.3	0.00
P40	20.00			2 ø 10.0 1.37					0.07
4	625.00	15.00 x 60.00	2 ø 10.0 1.37			ø 5.0 c/ 19		2x3 ø 6.3	0.03
P41	20.00			2 ø 10.0 1.37					0.11
5	625.00	15.00 x 60.00	2 ø 10.0 1.37			ø 5.0 c/ 19		2x3 ø 6.3	0.02
P42	20.00			2 ø 10.0 1.52					0.14
6	627.50	15.00 x 60.00	2 ø 10.0 1.37			ø 5.0 c/ 19		2x3 ø 6.3	0.05
P43	15.00			2 ø 10.0 1.37					0.03

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

Resultados da Viga VB13

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P44	15.00		3 ø 16.0 4.72	3 ø 16.0 4.72					0.00
1	610.50	15.00 x 60.00	3 ø 16.0 4.72	3 ø 16.0 4.72		ø 5.0 c/ 19		2x3 ø 6.3	0.01
P45	20.00		3 ø 16.0 4.72	3 ø 16.0 4.72					0.02
2	625.00	15.00 x 60.00	3 ø 16.0 4.72	3 ø 16.0 4.72		ø 5.0 c/ 19		2x3 ø 6.3	0.00
P46	20.00		3 ø 16.0 4.72	3 ø 16.0 4.72					0.02
3	615.00	15.00 x 60.00	3 ø 16.0 4.72	3 ø 16.0 4.72		ø 5.0 c/ 19		2x3 ø 6.3	0.01
P47	20.00		3 ø 16.0 4.72	3 ø 16.0 4.72					0.01

Resultados da Viga VB14

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P48	15.00			2 ø 10.0 1.37					0.00
1	275.00	15.00 x 60.00	2 ø 10.0 1.37			ø 5.0 c/ 19		2x3 ø 6.3	0.02
P49	15.00			2 ø 10.0 1.37					0.00

Resultados da Viga VB15

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P57	15.00			2 ø 10.0 1.37					0.01
1	385.00	15.00 x 60.00	2 ø 10.0 1.37			ø 5.0 c/ 19		2x3 ø 6.3	0.01
P58	20.00			2 ø 10.0 1.37					0.01

Resultados da Viga VB16

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P59	20.00			2 ø 12.5 1.83					0.01
1	315.00	20.00 x 60.00	2 ø 12.5 1.83			ø 5.0 c/ 14		2x4 ø 6.3	0.06
P60	15.00			2 ø 12.5 1.83					0.01

Resultados da Viga VB17

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As eq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P61	20.00		3 ø 16.0 4.72	3 ø 16.0 4.72					0.01
1	615.00	15.00 x 60.00	3 ø 16.0 4.72	3 ø 16.0 4.72		ø 5.0 c/ 19		2x3 ø 6.3	0.01
P62	40.00		3 ø 16.0 4.72	3 ø 16.0 4.72					0.02
2	260.05	15.00 x 60.00	2 ø 10.0 1.37			ø 5.0 c/ 19		2x3 ø 6.3	0.00
P63	40.00			2 ø 10.0 1.37					0.00

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

Resultados da Viga VB18

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P65	30.00		3 ø 16.0 4.72	3 ø 16.0 4.72					0.01
1	585.50	15.00 x 60.00	3 ø 16.0 4.72	3 ø 16.0 4.72		ø 5.0 c/ 19		2x3 ø 6.3	0.00
P66	40.00		3 ø 16.0 4.72	3 ø 16.0 4.72					0.01
2	605.00	15.00 x 60.00	3 ø 16.0 4.72	3 ø 16.0 4.72		ø 5.0 c/ 19		2x3 ø 6.3	0.00
P67	40.00		3 ø 16.0 4.72	3 ø 16.0 4.72					0.02
3	605.00	15.00 x 60.00	3 ø 16.0 4.72	3 ø 16.0 4.72		ø 5.0 c/ 19		2x3 ø 6.3	0.01
P68	20.00		3 ø 16.0 4.72	3 ø 16.0 4.72					0.01

Resultados da Viga VB19

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P73	20.00		3 ø 16.0 4.72	3 ø 16.0 4.72					0.00
1	615.00	15.00 x 60.00	3 ø 16.0 4.72	3 ø 16.0 4.72		ø 5.0 c/ 19		2x3 ø 6.3	0.01
P74	40.00		3 ø 16.0 4.72	3 ø 16.0 4.72					0.02
2	260.05	15.00 x 60.00	2 ø 10.0 1.37			ø 5.0 c/ 19		2x3 ø 6.3	0.00
P75	40.00			2 ø 10.0 1.37					0.00

Resultados da Viga VB20

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
	15.00								0.00
1	322.50	15.00 x 60.00	2 ø 10.0 1.37			ø 5.0 c/ 19		2x3 ø 6.3	0.00
P78	40.00			2 ø 12.5 2.53					0.21
2	605.00	15.00 x 60.00	2 ø 10.0 1.37			ø 5.0 c/ 19		2x3 ø 6.3	0.01
P79	40.00		3 ø 16.0 4.72	3 ø 16.0 4.72					0.03
3	605.00	15.00 x 60.00	3 ø 16.0 4.72	3 ø 16.0 4.72		ø 5.0 c/ 19		2x3 ø 6.3	0.01
P80	20.00		3 ø 16.0 4.72	3 ø 16.0 4.72					0.01

Resultados da Viga VB21

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P81	15.00			2 ø 10.0 1.37					0.01
1	385.00	15.00 x 60.00	2 ø 10.0 1.37			ø 5.0 c/ 19		2x3 ø 6.3	0.02
P82	20.00			2 ø 10.0 1.37					0.00

Resultados da Viga VB22

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P87	15.00			2 ø 12.5 1.83					0.00
1	317.50	20.00 x 60.00	2 ø 12.5 1.83			ø 5.0 c/ 14		2x4 ø 6.3	0.08
VB60	15.00			2 ø 12.5 1.83					0.00

Resultados da Viga VB23

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P88	15.00			2 ø 10.0 1.37					0.06
1	630.00	15.00 x 60.00	2 ø 12.5 2.54			ø 5.0 c/ 19		2x3 ø 6.3	0.21
P89	15.00			2 ø 10.0 1.37					0.06

Resultados da Viga VB24

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
VB60	15.00			2 ø 10.0 1.37					0.00
1	280.00	15.00 x 60.00	2 ø 10.0 1.37			ø 5.0 c/ 19		2x3 ø 6.3	0.01
P96	15.00			2 ø 10.0 1.37					0.00

Resultados da Viga VB25

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P97	20.00			2 ø 12.5 1.81					0.10
1	625.00	15.00 x 60.00	2 ø 12.5 1.74			ø 5.0 c/ 19		2x3 ø 6.3	0.10
P98	20.00			2 ø 12.5 2.07					0.14
2	362.50	15.00 x 60.00	2 ø 10.0 1.37			ø 5.0 c/ 19		2x3 ø 6.3	0.00
P99	40.00			2 ø 10.0 1.37					0.01
3	222.50	15.00 x 60.00	2 ø 10.0 1.37			ø 5.0 c/ 19		2x3 ø 6.3	0.01
P100	20.00			2 ø 10.0 1.37					0.00

Resultados da Viga VB26

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P104	15.00		3 ø 16.0 4.72	3 ø 16.0 4.72					0.00
1	610.50	15.00 x 60.00	3 ø 16.0 4.72	3 ø 16.0 4.72		ø 5.0 c/ 19		2x3 ø 6.3	0.01
P105	20.00		3 ø 16.0 4.72	3 ø 16.0 4.72					0.02
2	615.00	15.00 x 60.00	3 ø 16.0 4.72	3 ø 16.0 4.72		ø 5.0 c/ 19		2x3 ø 6.3	0.00
P106	40.00		3 ø 16.0 4.72	3 ø 16.0 4.72					0.03
3	605.00	15.00 x 60.00	3 ø 16.0 4.72	3 ø 16.0 4.72		ø 5.0 c/ 19		2x3 ø 6.3	0.01
P107	20.00		3 ø 16.0 4.72	3 ø 16.0 4.72					0.01

Resultados da Viga VB27

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P108	20.00		3 ø 16.0 4.72	3 ø 16.0 4.72					0.01
1	625.00	15.00 x 60.00	3 ø 16.0 4.72	3 ø 16.0 4.72		ø 5.0 c/ 19		2x3 ø 6.3	0.01
P109	20.00		3 ø 16.0 4.72	3 ø 16.0 4.72					0.04
2	625.00	15.00 x 60.00	3 ø 16.0 4.72	3 ø 16.0 4.72		ø 5.0 c/ 19		2x3 ø 6.3	0.01
P110	20.00		3 ø 16.0 4.72	3 ø 16.0 4.72					0.02
3	625.00	15.00 x 60.00	3 ø 16.0 4.72	3 ø 16.0 4.72		ø 5.0 c/ 19		2x3 ø 6.3	0.00
P111	20.00		3 ø 16.0 4.72	3 ø 16.0 4.72					0.01
4	625.00	15.00 x 60.00	3 ø 16.0 4.72	3 ø 16.0 4.72		ø 5.0 c/ 19		2x3 ø 6.3	0.01
P112	20.00		3 ø 16.0 4.72	3 ø 16.0 4.72					0.02
5	612.50	15.00 x 60.00	3 ø 16.0 4.72	3 ø 16.0 4.72		ø 5.0 c/ 19		2x3 ø 6.3	0.00
P113	30.00		3 ø 16.0 4.72	3 ø 16.0 4.72					0.02

Resultados da Viga VB28

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P114	30.00		3 ø 16.0 4.72	3 ø 16.0 4.72					0.01
1	595.50	15.00 x 60.00	3 ø 16.0 4.72	3 ø 16.0 4.72		ø 5.0 c/ 19		2x3 ø 6.3	0.00
P115	20.00		3 ø 16.0 4.72	3 ø 16.0 4.72					0.02
2	625.00	15.00 x 60.00	3 ø 16.0 4.72	3 ø 16.0 4.72		ø 5.0 c/ 19		2x3 ø 6.3	0.01
P116	20.00		3 ø 16.0 4.72	3 ø 16.0 4.72					0.06
3	615.00	15.00 x 60.00	3 ø 16.0 4.72	3 ø 16.0 4.72		ø 5.0 c/ 19		2x3 ø 6.3	0.02
P117	20.00		3 ø 16.0 4.72	3 ø 16.0 4.72					0.02

Resultados da Viga VB29

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P118	15.00			2 ø 10.0 1.37					0.04
1	630.00	15.00 x 60.00	2 ø 12.5 1.69			ø 5.0 c/ 19		2x3 ø 6.3	0.09
P119	15.00			2 ø 16.0 2.98					0.14
2	630.00	15.00 x 60.00	2 ø 12.5 1.83			ø 5.0 c/ 19		2x3 ø 6.3	0.11
P120	15.00			2 ø 10.0 1.37					0.04

Resultados da Viga VB30

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P122	15.00			2 ø 10.0 1.37					0.00
1	230.00	15.00 x 60.00	2 ø 10.0 1.37			ø 5.0 c/ 19		2x3 ø 6.3	0.00
P123	15.00			2 ø 10.0 1.37					0.00

Resultados da Viga VB31

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P124	15.00			2 ø 10.0 1.37					0.00
1	322.50	15.00 x 60.00	2 ø 10.0 1.37			ø 5.0 c/ 19		2x3 ø 6.3	0.01
P125	40.00			2 ø 10.0 1.37					0.01

Resultados da Viga VB32

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P126	20.00		3 ø 16.0 4.72	3 ø 16.0 4.72					0.00
1	625.00	15.00 x 60.00	3 ø 16.0 4.72	3 ø 16.0 4.72		ø 5.0 c/ 19		2x3 ø 6.3	0.00
P127	20.00		3 ø 16.0 4.72	3 ø 16.0 4.72					0.01
2	625.00	15.00 x 60.00	3 ø 16.0 4.72	3 ø 16.0 4.72		ø 5.0 c/ 19		2x3 ø 6.3	0.00
P128	20.00		3 ø 16.0 4.72	3 ø 16.0 4.72					0.01
3	625.00	15.00 x 60.00	3 ø 16.0 4.72	3 ø 16.0 4.72		ø 5.0 c/ 19		2x3 ø 6.3	0.00
P129	20.00		3 ø 16.0 4.72	3 ø 16.0 4.72					0.01
4	625.00	15.00 x 60.00	3 ø 16.0 4.72	3 ø 16.0 4.72		ø 5.0 c/ 19		2x3 ø 6.3	0.00
P130	20.00		3 ø 16.0 4.72	3 ø 16.0 4.72					0.01
5	627.50	15.00 x 60.00	3 ø 16.0 4.72	3 ø 16.0 4.72		ø 5.0 c/ 19		2x3 ø 6.3	0.00
P131	15.00		3 ø 16.0 4.72	3 ø 16.0 4.72					0.00

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

Resultados da Viga VB33

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P132	15.00		3 ø 16.0 4.72	3 ø 16.0 4.72					0.00
1	610.50	15.00 x 60.00	3 ø 16.0 4.72	3 ø 16.0 4.72		ø 5.0 c/ 19		2x3 ø 6.3	0.00
P133	20.00		3 ø 16.0 4.72	3 ø 16.0 4.72					0.01
2	625.00	15.00 x 60.00	3 ø 16.0 4.72	3 ø 16.0 4.72		ø 5.0 c/ 19		2x3 ø 6.3	0.00
P134	20.00		3 ø 16.0 4.72	3 ø 16.0 4.72					0.01
3	615.00	15.00 x 60.00	3 ø 16.0 4.72	3 ø 16.0 4.72		ø 5.0 c/ 19		2x3 ø 6.3	0.01
P135	20.00		3 ø 16.0 4.72	3 ø 16.0 4.72					0.01

Resultados da Viga VB34

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P126	40.00		3 ø 16.0 4.72	3 ø 16.0 4.72					0.00
1	407.50	15.00 x 60.00	3 ø 16.0 4.72	3 ø 16.0 4.72		ø 5.0 c/ 19		2x3 ø 6.3	0.00
P118	40.00		3 ø 16.0 4.72	3 ø 16.0 4.72					0.00
2	335.00	15.00 x 60.00	2 ø 10.0 1.37			ø 5.0 c/ 19		2x3 ø 6.3	0.00
P108	40.00			2 ø 10.0 1.37					0.02
3	215.00	15.00 x 60.00	2 ø 10.0 1.37			ø 5.0 c/ 19		2x3 ø 6.3	0.01
P97	40.00		3 ø 16.0 4.72	3 ø 16.0 4.72					0.00
4	335.01	15.00 x 60.00	3 ø 16.0 4.72	3 ø 16.0 4.72		ø 5.0 c/ 19		2x3 ø 6.3	0.00
P88	40.00		3 ø 16.0 4.72	3 ø 16.0 4.72					0.00
5	399.99	15.00 x 60.00	3 ø 16.0 4.72	3 ø 16.0 4.72		ø 5.0 c/ 19		2x3 ø 6.3	0.00
P73	40.00		3 ø 16.0 4.72	3 ø 16.0 4.72					0.01
6	375.00	15.00 x 60.00	2 ø 10.0 1.37			ø 5.0 c/ 19		2x3 ø 6.3	0.01
P61	40.00		3 ø 16.0 4.72	3 ø 16.0 4.72					0.01
7	387.50	15.00 x 60.00	3 ø 16.0 4.72	3 ø 16.0 4.72		ø 5.0 c/ 19		2x3 ø 6.3	0.00
P50	40.00		3 ø 16.0 4.72	3 ø 16.0 4.72					0.00
8	347.50	15.00 x 60.00	3 ø 16.0 4.72	3 ø 16.0 4.72		ø 5.0 c/ 19		2x3 ø 6.3	0.00
P37	40.00		3 ø 16.0 4.72	3 ø 16.0 4.72					0.00
9	215.00	15.00	2 ø 10.0			ø 5.0 c/ 19		2x3 ø 6.3	0.01

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

		x 60.00	1.37						
P23	40.00			2 ø 10.0 1.37					0.02
10	360.00	15.00 x 60.00	2 ø 10.0 1.37			ø 5.0 c/ 19		2x3 ø 6.3	0.00
P14	40.00			2 ø 10.0 1.37					0.03
11	382.50	15.00 x 60.00	2 ø 10.0 1.37			ø 5.0 c/ 19		2x3 ø 6.3	0.01
P1	40.00			2 ø 10.0 1.37					0.01

Resultados da Viga VB35

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
VB29	15.00			2 ø 10.0 1.37					0.00
1	360.00	15.00 x 60.00	2 ø 10.0 1.37			ø 5.0 c/ 19		2x3 ø 6.3	0.02
VB27	15.00			2 ø 10.0 1.37					0.00

Resultados da Viga VB36

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
VB25	15.00			2 ø 10.0 1.37					0.00
1	360.01	15.00 x 60.00	2 ø 10.0 1.37			ø 5.0 c/ 19		2x3 ø 6.3	0.02
VB23	15.00								0.00

Resultados da Viga VB37

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P24	15.00			2 ø 10.0 1.37					0.00
1	385.00	15.00 x 60.00	2 ø 10.0 1.37			ø 5.0 c/ 19		2x3 ø 6.3	0.02
VB5	15.00			2 ø 10.0 1.37					0.00

Resultados da Viga VB38

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
VB29	15.00			2 ø 10.0 1.37					0.00
1	360.00	15.00 x 60.00	2 ø 10.0 1.37			ø 5.0 c/ 19		2x3 ø 6.3	0.02
VB27	15.00			2 ø 10.0 1.37					0.00

Resultados da Viga VB39

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
VB25	15.00			2 ø 10.0 1.37					0.00
1	360.01	15.00 x 60.00	2 ø 10.0 1.37			ø 5.0 c/ 19		2x3 ø 6.3	0.02
VB23	15.00								0.00

Resultados da Viga VB40

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P48	40.00			2 ø 10.0 0.95					0.04
1	195.00	15.00 x 40.00	2 ø 10.0 0.95			ø 5.0 c/ 19			0.00
VB12	15.00								0.00

Resultados da Viga VB41

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P15	15.00			2 ø 10.0 1.37					0.00
1	400.00	15.00 x 60.00	2 ø 10.0 1.37			ø 5.0 c/ 19		2x3 ø 6.3	0.02
P2	15.00			2 ø 10.0 1.37					0.00

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

Resultados da Viga VB42

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
VB14	15.00			2 ø 10.0 0.95					0.00
1	220.00	15.00 x 40.00	2 ø 10.0 0.95			ø 5.0 c/ 19			0.01
VB12	15.00			2 ø 10.0 0.95					0.00

Resultados da Viga VB43

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P127	40.00		3 ø 16.0 4.72	3 ø 16.0 4.72					0.00
1	407.50	15.00 x 60.00	3 ø 16.0 4.72	3 ø 16.0 4.72		ø 5.0 c/ 19		2x3 ø 6.3	0.00
P119	40.00		3 ø 16.0 4.72	3 ø 16.0 4.72					0.01
2	335.00	15.00 x 60.00	3 ø 16.0 4.72	3 ø 16.0 4.72		ø 5.0 c/ 19		2x3 ø 6.3	0.00
P109	40.00		3 ø 16.0 4.72	3 ø 16.0 4.72					0.00

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

Resultados da Viga VB44

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P98	40.00		3 ø 16.0 4.72	3 ø 16.0 4.72					0.00
1	335.01	15.00 x 60.00	3 ø 16.0 4.72	3 ø 16.0 4.72		ø 5.0 c/ 19		2x3 ø 6.3	0.00
P89	40.00		3 ø 16.0 4.72	3 ø 16.0 4.72					0.01
2	217.49	15.00 x 60.00	3 ø 16.0 4.72	3 ø 16.0 4.72		ø 5.0 c/ 19		2x3 ø 6.3	0.00
P81	50.00		3 ø 16.0 4.72	3 ø 16.0 4.72					0.00
3	142.50	15.00 x 60.00	2 ø 10.0 1.37			ø 5.0 c/ 19		2x3 ø 6.3	0.03
P74	20.00			2 ø 10.0 1.37					0.00

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

Resultados da Viga VB45

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P62	20.00			2 ø 10.0 1.37					0.00
1	142.50	15.00 x 60.00	2 ø 10.0 1.37			ø 5.0 c/ 19		2x3 ø 6.3	0.02
P57	50.00		3 ø 16.0 4.72	3 ø 16.0 4.72					0.00
2	357.50	15.00 x 60.00	3 ø 16.0 4.72	3 ø 16.0 4.72		ø 5.0 c/ 19		2x3 ø 6.3	0.00
P49	40.00		3 ø 16.0 4.72	3 ø 16.0 4.72					0.01
3	195.00	15.00 x 60.00	3 ø 16.0 4.72	3 ø 16.0 4.72		ø 5.0 c/ 19		2x3 ø 6.3	0.00
P38	40.00		3 ø 16.0 4.72	3 ø 16.0 4.72					0.00

Resultados da Viga VB46

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P16	40.00		3 ø 16.0 4.72	3 ø 16.0 4.72					0.00
1	370.00	15.00 x 60.00	3 ø 16.0 4.72	3 ø 16.0 4.72		ø 5.0 c/ 19		2x3 ø 6.3	0.00
P3	40.00		3 ø 16.0 4.72	3 ø 16.0 4.72					0.00

Resultados da Viga VB47

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
VB29	15.00			2 ø 10.0 1.37					0.00
1	360.00	15.00 x 60.00	2 ø 10.0 1.37			ø 5.0 c/ 19		2x3 ø 6.3	0.02
VB27	15.00			2 ø 10.0 1.37					0.00

Resultados da Viga VB48

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P17	15.00			2 ø 10.0 1.37					0.00
1	400.00	15.00 x 60.00	2 ø 10.0 1.37			ø 5.0 c/ 19		2x3 ø 6.3	0.02
P4	15.00			2 ø 10.0 1.37					0.00

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

Resultados da Viga VB49

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
	15.00			2 ø 10.0 1.37					0.00
1	150.00	15.00 x 60.00	2 ø 10.0 1.37			ø 5.0 c/ 19		2x3 ø 6.3	0.00
P75	15.00			2 ø 10.0 1.37					0.03
2	400.00	15.00 x 60.00	2 ø 10.0 1.37			ø 5.0 c/ 19		2x3 ø 6.3	0.00
P63	15.00			2 ø 10.0 1.37					0.03
3	150.00	15.00 x 60.00	2 ø 10.0 1.37			ø 5.0 c/ 19		2x3 ø 6.3	0.00
	15.00								0.00

Resultados da Viga VB50

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
VB29	15.00			2 ø 10.0 1.37					0.00
1	360.00	15.00 x 60.00	2 ø 10.0 1.37			ø 5.0 c/ 19		2x3 ø 6.3	0.02
VB27	15.00			2 ø 10.0 1.37					0.00

Resultados da Viga VB51

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P26	15.00			2 ø 10.0 1.37					0.00
1	385.00	15.00 x 60.00	2 ø 10.0 1.37			ø 5.0 c/ 19		2x3 ø 6.3	0.02
VB5	15.00			2 ø 10.0 1.37					0.00

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

Resultados da Viga VB52

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P99	20.00		2 ø 16.0 3.15	2 ø 16.0 3.15					0.04
1	607.50	15.00 x 40.00	2 ø 16.0 3.15	2 ø 16.0 3.15		ø 5.0 c/ 19			0.02
P82	40.00		2 ø 16.0 3.15	2 ø 16.0 3.15					0.06

Resultados da Viga VB53

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P58	40.00		2 ø 16.0 3.15	2 ø 16.0 3.15					0.05
1	607.50	15.00 x 40.00	2 ø 16.0 3.15	2 ø 16.0 3.15		ø 5.0 c/ 19			0.01
P39	20.00		2 ø 16.0 3.15	2 ø 16.0 3.15					0.04

Resultados da Viga VB54

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P128	40.00		3 ø 16.0 4.72	3 ø 16.0 4.72					0.00
1	407.50	15.00 x 60.00	3 ø 16.0 4.72	3 ø 16.0 4.72		ø 5.0 c/ 19		2x3 ø 6.3	0.00
P120	40.00		3 ø 16.0 4.72	3 ø 16.0 4.72					0.01
2	335.00	15.00 x 60.00	3 ø 16.0 4.72	3 ø 16.0 4.72		ø 5.0 c/ 19		2x3 ø 6.3	0.00
P110	40.00		3 ø 16.0 4.72	3 ø 16.0 4.72					0.00

Resultados da Viga VB55

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P27	40.00		3 ø 16.0 4.72	3 ø 16.0 4.72					0.00
1	360.00	15.00 x 60.00	3 ø 16.0 4.72	3 ø 16.0 4.72		ø 5.0 c/ 19		2x3 ø 6.3	0.00
P18	40.00		3 ø 16.0 4.72	3 ø 16.0 4.72					0.00
2	382.50	15.00 x 60.00	3 ø 16.0 4.72	3 ø 16.0 4.72		ø 5.0 c/ 19		2x3 ø 6.3	0.00
P5	40.00		3 ø 16.0 4.72	3 ø 16.0 4.72					0.00

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

Resultados da Viga VB56

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados							
Pilar	Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
		15.00								0.00
1		167.50	15.00 x 60.00	2 ø 10.0 1.37			ø 5.0 c/ 19		2x3 ø 6.3	0.00
P22		40.00			2 ø 10.0 1.37					0.11
2		592.50	15.00 x 60.00	2 ø 10.0 1.37			ø 5.0 c/ 19		2x3 ø 6.3	0.05
P6		15.00			2 ø 10.0 1.37					0.01

Resultados da Viga VB57

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P29	40.00		3 ø 16.0 4.72	3 ø 16.0 4.72					0.02
1	782.50	15.00 x 60.00	3 ø 16.0 4.72	3 ø 16.0 4.72		ø 5.0 c/ 19		2x3 ø 6.3	0.01
P7	40.00		3 ø 16.0 4.72	3 ø 16.0 4.72					0.02

Resultados da Viga VB58

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P30	15.00			2 ø 10.0 1.37					0.00
1	337.50	15.00 x 60.00	2 ø 10.0 1.37			ø 5.0 c/ 19		2x3 ø 6.3	0.00
P19	40.00			2 ø 10.0 1.37					0.09
2	422.50	15.00 x 60.00	2 ø 10.0 1.37			ø 5.0 c/ 19		2x3 ø 6.3	0.03
VB1	15.00			2 ø 10.0 1.37					0.00

Resultados da Viga VB59

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P31	40.00		3 ø 16.0 4.72	3 ø 16.0 4.72					0.00
1	325.00	15.00 x 60.00	3 ø 16.0 4.72	3 ø 16.0 4.72		ø 5.0 c/ 19		2x3 ø 6.3	0.00
P20	40.00		3 ø 16.0 4.72	3 ø 16.0 4.72					0.01
2	417.50	15.00 x 60.00	3 ø 16.0 4.72	3 ø 16.0 4.72		ø 5.0 c/ 19		2x3 ø 6.3	0.00
P8	40.00		3 ø 16.0 4.72	3 ø 16.0 4.72					0.01

Resultados da Viga VB60

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P103	50.00		2 ø 16.0 3.93	2 ø 16.0 3.93					0.00
1	176.50	15.00 x 50.00	2 ø 16.0 3.93	2 ø 16.0 3.93		ø 5.0 c/ 19			0.00
PES2	40.00		2 ø 20.0 5.43	2 ø 20.0 5.43					0.00
2	364.00	15.00 x 50.00	2 ø 12.5 2.43	2 ø 10.0 1.27		ø 6.3 c/ 23	ø 6.3 c/ 6 110.00	2x3 ø 6.3	0.00
P83	50.00		2 ø 20.0 5.43	2 ø 20.0 5.43					0.01
3	144.50	15.00 x 50.00	2 ø 16.0 3.93	2 ø 16.0 3.93		ø 5.0 c/ 19			0.00
P76	60.00		2 ø 16.0 3.93	2 ø 16.0 3.93					0.00
4	340.00	15.00 x 50.00	2 ø 16.0 3.93	2 ø 16.0 3.93		ø 5.0 c/ 19			0.00
P64	60.00		2 ø 16.0 3.93	2 ø 16.0 3.93					0.00
5	144.50	15.00 x 50.00	2 ø 16.0 3.93	2 ø 16.0 3.93		ø 5.0 c/ 19			0.00
P60	50.00		2 ø 16.0 3.93	2 ø 16.0 3.93					0.01
6	344.00	15.00 x 50.00	2 ø 16.0 3.93	2 ø 16.0 3.93		ø 5.0 c/ 19			0.00
PES1	40.00		2 ø 16.0 3.93	2 ø 16.0 3.93					0.00
7	176.50	15.00 x 50.00	2 ø 16.0 3.93	2 ø 16.0 3.93		ø 5.0 c/ 19			0.00
P43	50.00		2 ø 16.0 3.93	2 ø 16.0 3.93					0.00

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

Resultados da Viga VB61

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P32	20.00		2 ø 16.0 3.93	2 ø 16.0 3.93					0.00
1	375.00	15.00 x 50.00	2 ø 16.0 3.93	2 ø 16.0 3.93		ø 5.0 c/ 19			0.00
P21	40.00		2 ø 16.0 3.93	2 ø 16.0 3.93					0.01
2	365.00	15.00 x 50.00	2 ø 16.0 3.93	2 ø 16.0 3.93		ø 5.0 c/ 19			0.00
P9	50.00		2 ø 16.0 3.93	2 ø 16.0 3.93					0.00

Resultados da Viga VB62

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
VB10	15.00								0.00
1	380.00	15.00 x 100.00	2 ø 12.5 2.25			ø 5.0 c/ 19		2x5 ø 6.3	0.00
PB3	40.00		3 ø 20.0 7.87	3 ø 20.0 7.87					0.00
2	380.00	15.00 x 100.00	3 ø 20.0 7.87	3 ø 20.0 7.87		ø 6.3 c/ 30		2x5 ø 6.3	0.00
VB2	15.00		3 ø 20.0 7.87	3 ø 20.0 7.87					0.00

Resultados da Viga VB63

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
VB26	15.00								0.00
1	322.50	15.00 x 60.00	2 ø 10.0 1.37			ø 5.0 c/ 19		2x3 ø 6.3	0.00
P96	40.00			2 ø 12.5 2.28					0.17
2	437.50	15.00 x 60.00	2 ø 10.0 1.37			ø 5.0 c/ 19		2x3 ø 6.3	0.00
VB20	15.00								0.00

Resultados da Viga VB64

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
VB33	15.00		3 ø 16.0 4.72	3 ø 16.0 4.72					0.00
1	380.00	15.00 x 60.00	3 ø 16.0 4.72	3 ø 16.0 4.72		ø 5.0 c/ 19		2x3 ø 6.3	0.00
P121	40.00		3 ø 16.0 4.72	3 ø 16.0 4.72					0.01
2	380.00	15.00 x 60.00	3 ø 16.0 4.72	3 ø 16.0 4.72		ø 5.0 c/ 19		2x3 ø 6.3	0.00
VB28	15.00		3 ø 16.0 4.72	3 ø 16.0 4.72					0.00

Resultados da Viga VB65

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P105	40.00		3 ø 16.0 4.72	3 ø 16.0 4.72					0.00
1	367.50	15.00 x 60.00	3 ø 16.0 4.72	3 ø 16.0 4.72		ø 5.0 c/ 19		2x3 ø 6.3	0.00
P90	40.00		3 ø 16.0 4.72	3 ø 16.0 4.72					0.01
2	377.50	15.00 x 60.00	3 ø 16.0 4.72	3 ø 16.0 4.72		ø 5.0 c/ 19		2x3 ø 6.3	0.00
P78	20.00		3 ø 16.0 4.72	3 ø 16.0 4.72					0.00

Resultados da Viga VB66

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P66	20.00		3 ø 16.0 4.72	3 ø 16.0 4.72					0.01
1	377.50	15.00 x 60.00	3 ø 16.0 4.72	3 ø 16.0 4.72		ø 5.0 c/ 19		2x3 ø 6.3	0.00
P53	40.00		3 ø 16.0 4.72	3 ø 16.0 4.72					0.01
2	367.50	15.00 x 60.00	3 ø 16.0 4.72	3 ø 16.0 4.72		ø 5.0 c/ 19		2x3 ø 6.3	0.00
P45	40.00		3 ø 16.0 4.72	3 ø 16.0 4.72					0.03

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

Resultados da Viga VB67

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
	15.00		3 ø 16.0 4.72	3 ø 16.0 4.72					0.00
1	157.50	15.00 x 60.00	3 ø 16.0 4.72	3 ø 16.0 4.72		ø 5.0 c/ 19		2x3 ø 6.3	0.00
P124	40.00		3 ø 16.0 4.72	3 ø 16.0 4.72					0.03
2	602.50	15.00 x 60.00	3 ø 16.0 4.72	3 ø 16.0 4.72		ø 5.0 c/ 19		2x3 ø 6.3	0.01
VB28	15.00		3 ø 16.0 4.72	3 ø 16.0 4.72					0.00

Resultados da Viga VB68

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P106	20.00		3 ø 16.0 4.72	3 ø 16.0 4.72					0.00
1	377.50	15.00 x 60.00	3 ø 16.0 4.72	3 ø 16.0 4.72		ø 5.0 c/ 19		2x3 ø 6.3	0.00
P91	40.00		3 ø 16.0 4.72	3 ø 16.0 4.72					0.01
2	377.50	15.00 x 60.00	3 ø 16.0 4.72	3 ø 16.0 4.72		ø 5.0 c/ 19		2x3 ø 6.3	0.00
P79	20.00		3 ø 16.0 4.72	3 ø 16.0 4.72					0.00

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

Resultados da Viga VB69

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
VB11	15.00								0.00
1	298.91	15.00 x 85.00	3 ø 20.0 6.69	3 ø 20.0 6.69		ø 6.3 c/ 30		2x5 ø 6.3	0.00
PB4	40.00		3 ø 20.0 6.69	3 ø 20.0 6.69					0.00
2	306.41	15.00 x 85.00	3 ø 20.0 6.69	3 ø 20.0 6.69		ø 6.3 c/ 30		2x5 ø 6.3	0.00
PB1	40.00		3 ø 20.0 6.69	3 ø 20.0 6.69					0.00

Resultados da Viga VB70

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P125	15.00			2 ø 10.0 1.37					0.00
1	615.00	15.00 x 60.00	2 ø 10.0 1.44			ø 5.0 c/ 19		2x3 ø 6.3	0.13
VB28	15.00			2 ø 10.0 1.37					0.00

Resultados da Viga VB71

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
VB26	15.00								0.00
1	380.00	15.00 x 60.00	2 ø 10.0 1.37			ø 5.0 c/ 19		2x3 ø 6.3	0.00
P92	40.00			2 ø 10.0 1.37					0.12
2	380.00	15.00 x 60.00	2 ø 10.0 1.37			ø 5.0 c/ 19		2x3 ø 6.3	0.00
VB20	15.00								0.00

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

Resultados da Viga VB72

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
PB2	15.00		3 ø 20.0 6.69	3 ø 20.0 6.69					0.00
1	114.68	15.00 x 85.00	3 ø 20.0 6.69	3 ø 20.0 6.69		ø 6.3 c/ 30		2x5 ø 6.3	0.00
VB2	15.00								0.00

Resultados da Viga VB73

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
VB33	15.00								0.00
1	380.00	15.00 x 60.00	3 ø 16.0 4.72	3 ø 16.0 4.72		ø 5.0 c/ 19		2x3 ø 6.3	0.00
P122	40.00		3 ø 16.0 4.72	3 ø 16.0 4.72					0.02
2	380.00	15.00 x 60.00	2 ø 10.0 1.37			ø 5.0 c/ 19		2x3 ø 6.3	0.00
VB28	15.00								0.00

Resultados da Viga VB74

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P135	40.00		3 ø 16.0 4.72	3 ø 16.0 4.72					0.00
1	375.00	15.00 x 60.00	3 ø 16.0 4.72	3 ø 16.0 4.72		ø 5.0 c/ 19		2x3 ø 6.3	0.00
P123	40.00		3 ø 16.0 4.72	3 ø 16.0 4.72					0.00
2	367.50	15.00 x 60.00	3 ø 16.0 4.72	3 ø 16.0 4.72		ø 5.0 c/ 19		2x3 ø 6.3	0.00
P117	40.00		3 ø 16.0 4.72	3 ø 16.0 4.72					0.01
3	215.00	15.00 x 60.00	3 ø 16.0 4.72	3 ø 16.0 4.72		ø 5.0 c/ 19		2x3 ø 6.3	0.00
P107	40.00		3 ø 16.0 4.72	3 ø 16.0 4.72					0.01
4	367.50	15.00 x 60.00	3 ø 16.0 4.72	3 ø 16.0 4.72		ø 5.0 c/ 19		2x3 ø 6.3	0.00
P93	40.00		3 ø 16.0 4.72	3 ø 16.0 4.72					0.01
5	367.50	15.00 x 60.00	3 ø 16.0 4.72	3 ø 16.0 4.72		ø 5.0 c/ 19		2x3 ø 6.3	0.00
P80	40.00		3 ø 16.0 4.72	3 ø 16.0 4.72					0.01
6	375.00	15.00 x 60.00	3 ø 16.0 4.72	3 ø 16.0 4.72		ø 5.0 c/ 19		2x3 ø 6.3	0.00
P68	40.00		3 ø 16.0 4.72	3 ø 16.0 4.72					0.01
7	367.50	15.00 x 60.00	3 ø 16.0 4.72	3 ø 16.0 4.72		ø 5.0 c/ 19		2x3 ø 6.3	0.00
P54	40.00		3 ø 16.0 4.72	3 ø 16.0 4.72					0.01
8	367.50	15.00 x 60.00	3 ø 16.0 4.72	3 ø 16.0 4.72		ø 5.0 c/ 19		2x3 ø 6.3	0.00
P47	40.00		3 ø 16.0 4.72	3 ø 16.0 4.72					0.01
9	215.00	15.00	3 ø 16.0	3 ø 16.0		ø 5.0 c/ 19		2x3 ø 6.3	0.01

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

		x 60.00	4.72	4.72					
P36	40.00		3 ø 16.0 4.72	3 ø 16.0 4.72					0.01
10	371.25	15.00 x 60.00	2 ø 10.0 1.37			ø 5.0 c/ 19		2x3 ø 6.3	0.01
PE-1	40.00		3 ø 16.0 4.72	3 ø 16.0 4.72					0.01
11	371.25	15.00 x 60.00	3 ø 16.0 4.72	3 ø 16.0 4.72		ø 5.0 c/ 19		2x3 ø 6.3	0.00
P13	40.00		3 ø 16.0 4.72	3 ø 16.0 4.72					0.00

Resultados da Viga VC1

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
									0.00
1	688.59	15.00 x 85.00	2 ø 12.5 2.08	2 ø 12.5 1.90		ø 5.0 c/ 19		2x5 ø 6.3	0.00
									0.00

Pavimento TÉRREO NV-320

Resultados dos Pilares

TÉRREO NV-320	fck = 400.00 kgf/cm ²	E = 318758 kgf/cm ²	Peso Espec = 2500.00 kgf/m ³
Lance 2		cobr = 3.00 cm	

Dados				Resultados						
Pilar	Seção (cm)	Nível Altura (cm)	lib vinc lih vinc (cm)	Nd máx Nd mín (tf)	MBd topo MBd base (kgf.m)	MHd topo MHd base (kgf.m)	As b Armaduras As h % armad total		Estribo Topo Base cota	Esb b Esb h
P1 1:20	20.00 X 40.00	330.00 330.00	330.00 RR 330.00 RR	27.41 16.50	1607 1093	670 1106	1.57 2.36 0.6	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 60	57.09 28.54
P3 1:20	20.00 X 40.00	330.00 330.00	330.00 RR 330.00 RR	41.76 24.11	842 576	2064 1284	1.57 2.36 0.6	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 70	57.09 28.54
P5 1:20	20.00 X 40.00	330.00 330.00	330.00 RR 330.00 RR	39.22 22.69	623 559	2343 1442	1.57 2.36 0.6	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 70	57.09 28.54
P7 1:20	20.00 X 40.00	330.00 330.00	330.00 RR 330.00 RR	59.50 34.00	526 859	7845 3421	1.57 2.36 0.6	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 70	57.09 28.54
P8 1:20	20.00 X 40.00	330.00 330.00	330.00 RR 330.00 RR	47.11 27.27	779 517	3136 2018	1.57 2.36 0.6	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 70	57.09 28.54
P9 1:20	15.00 X 50.00	330.00 330.00	330.00 RR 330.00 RR	18.40 10.49	1321 1006	1198 1543	1.57 2.36 0.6	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 70	76.12 22.84
P10 1:20	15.00 X 50.00	330.00 330.00	330.00 RR	28.19 16.14	1457 1023	6117 1479	1.57 4.71 1.3	2 ø 10.0 6 ø 10.0 12 ø 10.0	ø 5.0 c/12	76.12 33.22

			480.00 RR						ø 5.0 c/12 70	
P11 1:20	20.00 X 40.00	330.00 330.00	330.00 RR 330.00 RR	65.34 37.23	916 867	3955 2714	1.57 2.36 0.6	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 70	57.09 28.54
P12 1:20	20.00 X 40.00	330.00 330.00	330.00 RR 480.00 RR	65.39 37.26	892 908	4280 2435	1.57 2.36 0.6	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 70	57.09 41.52
P13 1:20	20.00 X 40.00	330.00 330.00	330.00 RR 330.00 RR	26.62 15.92	2165 1598	1834 2290	1.57 2.36 0.6	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 60	57.09 28.54
P14 1:20	15.00 X 40.00	330.00 330.00	330.00 RR 330.00 RR	15.50 7.90	105 274	1031 857	1.57 2.36 0.8	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 60	76.12 28.54
P16 1:20	15.00 X 40.00	330.00 330.00	330.00 RR 330.00 RR	59.29 32.43	198 177	1097 1184	1.57 5.50 1.8	2 ø 10.0 7 ø 10.0 14 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 70	76.12 28.54
P18 1:20	15.00 X 40.00	330.00 330.00	330.00 RR 330.00 RR	54.47 29.76	167 222	743 625	2.45 3.68 1.2	2 ø 12.5 3 ø 12.5 6 ø 12.5	ø 5.0 c/15 ø 5.0 c/15 70	76.12 28.54
P20 1:20	15.00 X 40.00	330.00 330.00	330.00 RR 330.00 RR	60.44 33.36	139 218	1572 1207	2.45 6.14 2.0	2 ø 12.5 5 ø 12.5 10 ø 12.5	ø 5.0 c/15 ø 5.0 c/15 70	76.12 28.54
P21 1:20	15.00 X 40.00	330.00 330.00	330.00 RR 330.00 RR	21.06 11.59	273 52	660 641	1.57 2.36 0.8	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 70	76.12 28.54
P23 1:20	20.00 X 40.00	330.00 330.00	330.00 RR 330.00 RR	37.28 22.62	3024 1611	884 938	1.57 2.36 0.6	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 60	57.09 28.54
P25 1:20	20.00 X 40.00	330.00 330.00	330.00 RR	62.64 36.42	1414 832	1024 440	1.57 2.36 0.6	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12	57.09 41.52

			480.00 RR						ø 5.0 c/12 70	
P27 1:20	20.00 X 40.00	330.00 330.00	330.00 RR 330.00 RR	59.33 34.26	1212 883	1773 1276	1.57 2.36 0.6	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 70	57.09 28.54
P29 1:20	20.00 X 40.00	330.00 330.00	330.00 RR 330.00 RR	89.70 50.41	832 549	7208 3819	1.57 2.36 0.6	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 70	57.09 28.54
P31 1:20	20.00 X 40.00	330.00 330.00	330.00 RR 330.00 RR	56.08 31.82	1487 1320	1507 1163	1.57 2.36 0.6	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 70	57.09 28.54
P32 1:20	20.00 X 30.00	330.00 330.00	330.00 RR 330.00 RR	28.99 16.63	257 221	5144 2657	2.45 2.45 0.8	2 ø 12.5 2 ø 12.5 4 ø 12.5	ø 5.0 c/13 ø 5.0 c/13 70	57.09 38.06
P33 1:20	20.00 X 30.00	330.00 330.00	330.00 RR 330.00 RR	42.12 24.19	410 229	5445 2776	2.45 2.45 0.8	2 ø 12.5 2 ø 12.5 4 ø 12.5	ø 5.0 c/13 ø 5.0 c/13 70	57.09 38.06
P34 1:20	20.00 X 40.00	330.00 330.00	330.00 RR 480.00 RR	89.10 50.55	1677 1307	2085 1852	1.57 2.36 0.6	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 70	57.09 41.52
P35 1:20	20.00 X 40.00	330.00 330.00	330.00 RR 480.00 RR	90.97 52.07	1271 891	4626 1337	1.57 2.36 0.6	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 70	57.09 41.52
P36 1:20	20.00 X 40.00	330.00 330.00	330.00 RR 330.00 RR	37.00 22.23	3461 2295	2212 2399	1.57 3.14 0.8	2 ø 10.0 4 ø 10.0 8 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 60	57.09 28.54
P37 1:20	20.00 X 40.00	330.00 330.00	330.00 RR 330.00 RR	45.61 26.78	3219 2217	5754 2985	1.57 4.71 1.2	2 ø 10.0 6 ø 10.0 12 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 60	57.09 28.54
P38 1:20	20.00 X 40.00	330.00 330.00	330.00 RR	77.89 44.88	1606 1270	3108 1479	1.57 2.36 0.6	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12	57.09 28.54

			330.00 RR						ø 5.0 c/12 70	
P39 1:20	20.00 X 40.00	330.00 330.00	330.00 RR 330.00 RR	29.02 16.74	2144 1493	1677 1405	1.57 2.36 0.6	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 60	57.09 28.54
P40 1:20	20.00 X 40.00	330.00 330.00	330.00 RR 480.00 RR	46.62 26.15	1190 1082	410 233	1.57 2.36 0.6	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 70	57.09 41.52
P41 1:20	20.00 X 40.00	330.00 330.00	330.00 RR 480.00 RR	67.00 41.82	529 433	623 307	1.57 2.36 0.6	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 70	57.09 41.52
P42 1:20	20.00 X 40.00	330.00 330.00	330.00 RR 480.00 RR	84.72 50.76	777 710	1232 756	1.57 2.36 0.6	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 70	57.09 41.52
P43 1:20	15.00 X 50.00	330.00 330.00	330.00 RR 259.20 RR	22.43 13.01	1297 962	1736 1311	1.57 2.36 0.6	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 70	76.12 17.94
P44 1:20	15.00 X 50.00	330.00 330.00	330.00 RR 480.00 RR	37.55 21.76	1807 1354	7052 1498	2.45 7.36 2.0	2 ø 12.5 6 ø 12.5 12 ø 12.5	ø 5.0 c/15 ø 5.0 c/15 70	76.12 33.22
P45 1:20	20.00 X 40.00	330.00 330.00	330.00 RR 330.00 RR	106.43 60.06	1245 904	11443 5357	4.02 6.03 1.5	2 ø 16.0 3 ø 16.0 6 ø 16.0	ø 5.0 c/13 ø 5.0 c/13 70	57.09 28.54
P46 1:20	20.00 X 40.00	330.00 330.00	330.00 RR 480.00 RR	106.50 60.30	1472 1109	3258 2343	1.57 2.36 0.6	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 70	57.09 41.52
P47 1:20	20.00 X 40.00	330.00 330.00	330.00 RR 330.00 RR	44.17 25.87	3020 2024	8137 4712	4.02 6.03 1.5	2 ø 16.0 3 ø 16.0 6 ø 16.0	ø 5.0 c/13 ø 5.0 c/13 60	57.09 28.54
P51 1:20	20.00 X 50.00	330.00 330.00	480.00 RR	18.99 9.51	1879 135	4561 649	1.57 3.14 0.6	2 ø 10.0 4 ø 10.0 8 ø 10.0	ø 5.0 c/12	83.04 33.22

			480.00 RR						ø 5.0 c/12 70	
P52 1:20	20.00 X 50.00	330.00 330.00	480.00 RR 480.00 RR	20.31 10.41	2641 126	9023 1112	2.45 4.91 1.0	2 ø 12.5 4 ø 12.5 8 ø 12.5	ø 5.0 c/13 ø 5.0 c/13 70	83.04 33.22
P55 1:20	20.00 X 50.00	330.00 330.00	660.00 EL 660.00 EL	1.07 0.00	0 310	0 223	1.57 2.36 0.5	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12	114.18 45.67
P56 1:20	20.00 X 50.00	330.00 330.00	660.00 EL 660.00 EL	1.07 0.00	0 310	0 223	1.57 2.36 0.5	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12	114.18 45.67
P57 1:20	15.00 X 50.00	330.00 330.00	330.00 RR 330.00 RR	59.49 31.83	367 407	5488 2827	1.57 5.50 1.5	2 ø 10.0 7 ø 10.0 14 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 70	76.12 22.84
P58 1:20	20.00 X 40.00	330.00 330.00	330.00 RR 330.00 RR	61.02 36.45	622 338	4264 2032	1.57 2.36 0.6	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 40	57.09 28.54
P61 1:20	20.00 X 40.00	330.00 330.00	330.00 RR 330.00 RR	39.03 23.47	1722 1334	6941 2851	1.57 2.36 0.6	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 60	57.09 28.54
P62 1:20	20.00 X 40.00	330.00 330.00	330.00 RR 330.00 RR	20.41 12.19	459 483	2948 2040	1.57 2.36 0.6	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 70	57.09 28.54
P63 1:20	15.00 X 40.00	330.00 330.00	330.00 RR 330.00 RR	19.74 11.55	197 191	1275 834	1.57 2.36 0.8	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 60	76.12 28.54
P64 1:20	60.00 X 60.00	330.00 330.00	325.00 RR 650.00 EL	76.15 45.10	8056 4768	5236 3157	6.03 6.03 0.4	3 ø 16.0 3 ø 16.0 8 ø 16.0	ø 5.0 c/19 ø 5.0 c/19 60	18.74 37.48
P65 1:20	20.00 X 30.00	330.00 330.00	330.00 RR 330.00 RR	28.47 16.53	1304 134	2591 1718	1.57 1.57 0.5	2 ø 10.0 2 ø 10.0 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12	57.09 38.06

									70	
P66 1:20	20.00 X 40.00	330.00 330.00	330.00 RR 330.00 RR	63.80 37.03	5369 2271	1102 1673	1.57 4.71 1.2	2 ø 10.0 6 ø 10.0 12 ø 10.0	ø 5.0 c/12 ø 5.0 c/12	57.09 28.54
P67 1:20	20.00 X 40.00	330.00 330.00	330.00 RR 330.00 RR	65.34 38.03	2115 1317	1917 2260	1.57 2.36 0.6	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12	57.09 28.54
P68 1:20	20.00 X 40.00	330.00 330.00	330.00 RR 330.00 RR	39.41 23.55	3212 2094	6234 2038	1.57 4.71 1.2	2 ø 10.0 6 ø 10.0 12 ø 10.0	ø 5.0 c/12 ø 5.0 c/12	57.09 28.54
P69 1:20	20.00 X 50.00	330.00 330.00	480.00 RR 480.00 RR	15.94 8.25	1882 185	929 567	1.57 2.36 0.5	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12	83.04 33.22
P70 1:20	20.00 X 50.00	330.00 330.00	660.00 EL 660.00 EL	1.07 0.00	0 260	0 354	1.57 2.36 0.5	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12	114.18 45.67
P71 1:20	20.00 X 50.00	330.00 330.00	660.00 EL 660.00 EL	1.07 0.00	0 260	0 354	1.57 2.36 0.5	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12	114.18 45.67
P72 1:20	20.00 X 50.00	330.00 330.00	480.00 RR 480.00 RR	25.43 13.10	3583 171	792 501	1.57 4.71 0.9	2 ø 10.0 6 ø 10.0 12 ø 10.0	ø 5.0 c/12 ø 5.0 c/12	83.04 33.22
P73 1:20	20.00 X 40.00	330.00 330.00	330.00 RR 330.00 RR	38.64 23.17	1719 1337	6844 3008	1.57 2.36 0.6	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12	57.09 28.54
P74 1:20	20.00 X 40.00	330.00 330.00	330.00 RR 330.00 RR	21.46 12.64	578 602	2901 1998	1.57 2.36 0.6	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12	57.09 28.54
P75 1:20	15.00 X 40.00	330.00 330.00	330.00 RR 330.00 RR	21.87 12.91	189 179	1201 789	1.57 2.36 0.8	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12	76.12 28.54
P76 1:20	60.00 X	330.00 330.00	325.00 RR	60.96 36.93	7009 4876	4088 3606	6.03 6.03	3 ø 16.0 3 ø 16.0	ø 5.0 c/19	18.74 37.48

	60.00		650.00 EL				0.4	8 ø 16.0	ø 5.0 c/19	
P77 1:20	15.00 X 60.00	330.00 330.00	480.00 RR 480.00 RR	13.40 6.36	1308 124	1907 1284	1.57 4.71 1.0	2 ø 10.0 6 ø 10.0 12 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 70	110.72 27.68
P78 1:20	20.00 X 40.00	330.00 330.00	330.00 RR 330.00 RR	50.52 30.46	1009 682	648 1473	1.57 2.36 0.6	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 70	57.09 28.54
P79 1:20	20.00 X 40.00	330.00 330.00	330.00 RR 330.00 RR	50.81 30.61	950 641	2457 2959	1.57 2.36 0.6	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 70	57.09 28.54
P80 1:20	20.00 X 40.00	330.00 330.00	330.00 RR 330.00 RR	38.43 23.01	2591 1622	6136 2215	1.57 3.93 1.0	2 ø 10.0 5 ø 10.0 10 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 60	57.09 28.54
P81 1:20	15.00 X 50.00	330.00 330.00	330.00 RR 330.00 RR	57.06 30.61	426 438	5350 2943	1.57 4.71 1.3	2 ø 10.0 6 ø 10.0 12 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 70	76.12 22.84
P82 1:20	20.00 X 40.00	330.00 330.00	330.00 RR 330.00 RR	63.90 38.56	577 323	3906 2318	1.57 2.36 0.6	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 40	57.09 28.54
P83 1:20	15.00 X 50.00	330.00 330.00	480.00 RR 330.00 RR	12.84 6.13	1788 580	2421 2348	1.57 6.28 1.7	2 ø 10.0 8 ø 10.0 16 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 60	110.72 22.84
P84 1:20	15.00 X 50.00	330.00 330.00	330.00 RR 330.00 RR	25.27 12.90	131 115	1880 717	1.57 2.36 0.6	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 70	76.12 22.84
P85 1:20	20.00 X 50.00	330.00 330.00	660.00 EL 660.00 EL	1.07 0.00	0 310	0 223	1.57 2.36 0.5	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12	114.18 45.67
P86 1:20	20.00 X 50.00	330.00 330.00	660.00 EL 660.00 EL	1.07 0.00	0 310	0 223	1.57 2.36 0.5	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12	114.18 45.67

P90 1:20	15.00 X 40.00	330.00 330.00	330.00 RR 330.00 RR	41.27 21.04	89 54	1591 1158	1.57 2.36 0.8	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 70	76.12 28.54
P91 1:20	15.00 X 40.00	330.00 330.00	330.00 RR 330.00 RR	42.65 21.80	57 64	1446 1185	1.57 3.14 1.0	2 ø 10.0 4 ø 10.0 8 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 70	76.12 28.54
P94 1:20	20.00 X 50.00	330.00 330.00	480.00 RR 480.00 RR	19.33 9.68	1931 104	3967 758	1.57 3.14 0.6	2 ø 10.0 4 ø 10.0 8 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 70	83.04 33.22
P95 1:20	20.00 X 50.00	330.00 330.00	480.00 RR 480.00 RR	20.09 10.10	2561 90	7865 940	1.57 4.71 0.9	2 ø 10.0 6 ø 10.0 12 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 70	83.04 33.22
P97 1:20	20.00 X 40.00	330.00 330.00	330.00 RR 330.00 RR	46.19 27.32	3263 2493	5950 2904	1.57 4.71 1.2	2 ø 10.0 6 ø 10.0 12 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 60	57.09 28.54
P98 1:20	20.00 X 40.00	330.00 330.00	330.00 RR 330.00 RR	75.73 42.97	1590 1441	3587 1751	1.57 2.36 0.6	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 70	57.09 28.54
P99 1:20	20.00 X 40.00	330.00 330.00	330.00 RR 330.00 RR	34.65 20.67	2396 1837	1363 1779	1.57 2.36 0.6	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 60	57.09 28.54
P100 1:20	20.00 X 40.00	330.00 330.00	330.00 RR 480.00 RR	43.67 24.12	1071 765	393 319	1.57 2.36 0.6	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 70	57.09 41.52
P101 1:20	20.00 X 40.00	330.00 330.00	480.00 RR 480.00 RR	58.39 37.12	601 288	761 496	1.57 2.36 0.6	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 70	83.04 41.52
P102 1:20	20.00 X 40.00	330.00 330.00	480.00 RR 480.00 RR	73.00 44.54	780 373	1292 974	1.57 2.36 0.6	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 70	83.04 41.52

P103 1:20	15.00 X 50.00	375.00 375.00	525.00 RR 294.55 RR	15.06 9.12	788 64	1639 812	1.57 4.71 1.3	2 ø 10.0 6 ø 10.0 12 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 115	121.10 20.38
P104 1:20	15.00 X 50.00	330.00 330.00	330.00 RR 480.00 RR	27.47 15.83	1399 1014	3505 761	1.57 3.14 0.8	2 ø 10.0 4 ø 10.0 8 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 70	76.12 33.22
P105 1:20	20.00 X 40.00	330.00 330.00	330.00 RR 330.00 RR	66.30 39.04	1165 975	2817 2146	1.57 2.36 0.6	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 70	57.09 28.54
P106 1:20	20.00 X 40.00	330.00 330.00	330.00 RR 330.00 RR	64.82 39.01	1225 967	3740 2574	1.57 2.36 0.6	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 70	57.09 28.54
P107 1:20	20.00 X 40.00	330.00 330.00	330.00 RR 330.00 RR	44.93 26.40	2923 2159	6984 3819	4.02 4.02 1.0	2 ø 16.0 2 ø 16.0 4 ø 16.0	ø 5.0 c/13 ø 5.0 c/13 60	57.09 28.54
P108 1:20	20.00 X 40.00	330.00 330.00	330.00 RR 330.00 RR	35.66 21.40	3499 2424	755 999	1.57 2.36 0.6	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 60	57.09 28.54
P109 1:20	20.00 X 40.00	330.00 330.00	330.00 RR 330.00 RR	71.41 42.31	1258 659	2196 1560	1.57 2.36 0.6	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 70	57.09 28.54
P110 1:20	20.00 X 40.00	330.00 330.00	330.00 RR 330.00 RR	69.90 41.05	932 479	1260 1213	1.57 2.36 0.6	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 70	57.09 28.54
P111 1:20	20.00 X 40.00	330.00 330.00	330.00 RR 480.00 RR	99.74 55.66	398 679	2438 1921	1.57 2.36 0.6	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 70	57.09 41.52
P112 1:20	20.00 X 40.00	330.00 330.00	330.00 RR 480.00 RR	100.36 55.42	1493 945	2282 1865	1.57 2.36 0.6	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 70	57.09 41.52

P113 1:20	20.00 X 30.00	330.00 330.00	480.00 RR 330.00 RR	44.67 25.27	715 64	6965 3107	4.02 4.02 1.3	2 ø 16.0 2 ø 16.0 4 ø 16.0	ø 5.0 c/13 ø 5.0 c/13 70	83.04 38.06
P114 1:20	20.00 X 30.00	330.00 330.00	480.00 RR 330.00 RR	41.76 23.67	654 72	5970 2788	4.02 4.02 1.3	2 ø 16.0 2 ø 16.0 4 ø 16.0	ø 5.0 c/13 ø 5.0 c/13 70	83.04 38.06
P115 1:20	20.00 X 40.00	330.00 330.00	330.00 RR 480.00 RR	100.69 55.96	1581 1139	5093 997	1.57 2.36 0.6	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 70	57.09 41.52
P116 1:20	20.00 X 40.00	330.00 330.00	330.00 RR 480.00 RR	106.87 60.56	1239 977	5096 603	1.57 2.36 0.6	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 70	57.09 41.52
P117 1:20	20.00 X 40.00	330.00 330.00	330.00 RR 330.00 RR	34.50 20.60	3806 2937	1285 1592	1.57 3.93 1.0	2 ø 10.0 5 ø 10.0 10 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 60	57.09 28.54
P118 1:20	15.00 X 40.00	330.00 330.00	330.00 RR 330.00 RR	15.02 7.65	136 599	1632 1332	1.57 2.36 0.8	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 60	76.12 28.54
P119 1:20	15.00 X 40.00	330.00 330.00	330.00 RR 330.00 RR	36.16 17.44	111 144	1261 942	1.57 2.36 0.8	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 70	76.12 28.54
P120 1:20	15.00 X 40.00	330.00 330.00	330.00 RR 330.00 RR	33.61 16.24	70 546	1412 1036	1.57 2.36 0.8	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 70	76.12 28.54
P123 1:20	15.00 X 40.00	330.00 330.00	330.00 RR 330.00 RR	15.09 7.73	126 314	1192 1117	1.57 2.36 0.8	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 60	76.12 28.54
P126 1:20	20.00 X 40.00	330.00 330.00	330.00 RR 330.00 RR	28.19 16.86	1957 1366	1262 1355	1.57 2.36 0.6	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 60	57.09 28.54

P127 1:20	20.00 X 40.00	330.00 330.00	330.00 RR 330.00 RR	50.90 29.68	954 718	2049 1603	1.57 2.36 0.6	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 70	57.09 28.54
P128 1:20	20.00 X 40.00	330.00 330.00	330.00 RR 330.00 RR	46.53 27.20	366 381	2064 1524	1.57 2.36 0.6	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 70	57.09 28.54
P129 1:20	20.00 X 40.00	330.00 330.00	330.00 RR 480.00 RR	60.72 34.67	554 482	3264 3031	1.57 2.36 0.6	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 70	57.09 41.52
P130 1:20	20.00 X 40.00	330.00 330.00	330.00 RR 480.00 RR	65.97 37.50	715 568	3492 3337	1.57 2.36 0.6	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 70	57.09 41.52
P131 1:20	15.00 X 50.00	330.00 330.00	330.00 RR 330.00 RR	28.70 16.36	1628 1119	4754 305	2.45 4.91 1.3	2 ø 12.5 4 ø 12.5 8 ø 12.5	ø 5.0 c/15 ø 5.0 c/15 70	76.12 22.84
P132 1:20	15.00 X 50.00	330.00 330.00	330.00 RR 480.00 RR	28.44 16.19	1488 1063	5559 936	1.57 4.71 1.3	2 ø 10.0 6 ø 10.0 12 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 70	76.12 33.22
P133 1:20	20.00 X 40.00	330.00 330.00	330.00 RR 480.00 RR	63.46 35.81	1224 1162	10528 2112	4.02 4.02 1.0	2 ø 16.0 2 ø 16.0 4 ø 16.0	ø 5.0 c/13 ø 5.0 c/13 70	57.09 41.52
P134 1:20	20.00 X 40.00	330.00 330.00	330.00 RR 480.00 RR	65.74 37.45	1015 964	9133 631	1.57 2.36 0.6	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 70	57.09 41.52
P135 1:20	20.00 X 40.00	330.00 330.00	330.00 RR 330.00 RR	27.63 16.47	2511 1999	1715 1883	1.57 2.36 0.6	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 60	57.09 28.54
PE-1 1:20	15.00 X 40.00	330.00 330.00	330.00 RR 330.00 RR	15.68 7.98	106 77	1505 1493	1.57 2.36 0.8	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 60	76.12 28.54

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

PES1 1:20	15.00 X 40.00	259.20 259.20	409.20 RR 259.20 RR	11.44 5.88	32 180	468 805	1.57 2.36 0.8	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 40	94.39 22.42
PES2 1:20	15.00 X 40.00	259.20 259.20	409.20 RR 259.20 RR	11.58 5.93	47 171	667 609	1.57 2.36 0.8	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 40	94.39 22.42

Resultados da Vigas

Resultados da Viga V101

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P1	20.00			2 ø 12.5 1.85					0.09
1	625.00	15.00 x 60.00	2 ø 16.0 2.59			ø 5.0 c/ 19		2x3 ø 6.3	0.09
P3	20.00			2 ø 16.0 3.55					0.16
2	625.00	15.00 x 60.00	2 ø 10.0 1.37			ø 5.0 c/ 19		2x3 ø 6.3	0.08
P5	20.00			2 ø 16.0 3.13					0.13
3	625.00	15.00 x 60.00	2 ø 12.5 1.69			ø 5.0 c/ 19		2x3 ø 6.3	0.08
P7	20.00			2 ø 16.0 3.14					0.13
4	625.00	15.00 x 60.00	2 ø 10.0 1.38			ø 5.0 c/ 19		2x3 ø 6.3	0.10
P8	20.00			2 ø 16.0 4.10					0.21
5	627.50	15.00 x 60.00	2 ø 16.0 2.74			ø 5.0 c/ 19		2x3 ø 6.3	0.10
P9	15.00			2 ø 10.0 1.37					0.05

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

Resultados da Viga V102

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P10	15.00			2 ø 10.0 1.37					0.09
1	610.50	15.00 x 60.00	2 ø 16.0 2.98			ø 5.0 c/ 19		2x3 ø 6.3	0.11
P11	20.00			2 ø 12.5 2.45					0.16
2	625.00	15.00 x 60.00	2 ø 12.5 1.87			ø 5.0 c/ 19		2x3 ø 6.3	0.09
P12	20.00			2 ø 16.0 2.60					0.09
3	615.00	15.00 x 60.00	2 ø 16.0 2.95			ø 5.0 c/ 19		2x3 ø 6.3	0.11
P13	20.00			2 ø 12.5 1.82					0.09

Resultados da Viga V103

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P23	20.00			3 ø 12.5 3.66					0.09
1	625.00	40.00 x 60.00	3 ø 20.0 7.27			ø 6.3 c/ 17		2x5 ø 8.0	0.16
P25	20.00			4 ø 20.0 12.23					0.26
2	625.00	40.00 x 60.00	2 ø 16.0 3.67			ø 5.0 c/ 7		2x5 ø 8.0	0.06
P27	20.00			3 ø 20.0 8.36					0.21
3	625.00	40.00 x 60.00	3 ø 16.0 5.65			ø 5.0 c/ 11	ø 5.0 c/ 5 109.00	2x5 ø 8.0	0.19
P29	20.00			5 ø 20.0 15.14					0.24
4	625.00	40.00 x 60.00	3 ø 12.5 3.66		ø 5.0 c/ 6 109.00	ø 5.0 c/ 11		2x5 ø 8.0	0.15
P31	20.00			4 ø 20.0 11.28					0.21
5	612.50	40.00 x 60.00	3 ø 20.0 8.63			ø 6.3 c/ 17		2x5 ø 8.0	0.23
P32	30.00			3 ø 12.5 3.66					0.06

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

Resultados da Viga V104

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P33	30.00		3 ø 10.0 1.28	3 ø 16.0 4.95					0.04
1	595.50	40.00 x 60.00	3 ø 20.0 8.77	3 ø 10.0 1.28		ø 6.3 c/ 8		2x5 ø 8.0	0.23
P34	20.00		3 ø 10.0 1.28	5 ø 20.0 14.18					0.18
2	625.00	40.00 x 60.00	3 ø 16.0 4.43	3 ø 10.0 1.28		ø 5.0 c/ 5		2x5 ø 8.0	0.06
P35	20.00		3 ø 10.0 1.28	6 ø 20.0 18.98					0.19
3	615.00	40.00 x 60.00	3 ø 20.0 8.36	3 ø 10.0 1.28	ø 6.3 c/ 6 109.00	ø 6.3 c/ 8		2x5 ø 8.0	0.17
P36	20.00		3 ø 10.0 1.28	3 ø 16.0 4.95					0.05

Resultados da Viga V105

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P37	20.00		3 ø 10.0 1.28	3 ø 16.0 4.95					0.07
1	625.00	40.00 x 60.00	3 ø 20.0 7.31	3 ø 10.0 1.28		ø 6.3 c/ 8		2x5 ø 8.0	0.15
P38	20.00		3 ø 10.0 1.28	4 ø 20.0 10.52					0.14
2	362.50	40.00 x 60.00	2 ø 16.0 3.67			ø 5.0 c/ 7		2x5 ø 8.0	0.02
P39	40.00			2 ø 16.0 3.67					0.02
3	222.50	40.00 x 60.00	2 ø 16.0 3.67			ø 5.0 c/ 7		2x5 ø 8.0	0.00
P40	20.00			2 ø 20.0 5.31					0.18
4	625.00	40.00 x 60.00	2 ø 16.0 3.67			ø 5.0 c/ 7		2x5 ø 8.0	0.14
P41	20.00			2 ø 20.0 5.15					0.17
5	625.00	40.00 x 60.00	2 ø 16.0 3.67			ø 5.0 c/ 7		2x5 ø 8.0	0.05
P42	20.00			2 ø 20.0 4.85					0.15

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

Resultados da Viga V106

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P42	20.00			3 ø 20.0 7.86					0.18
1	627.50	45.00 x 45.00	2 ø 20.0 5.27			ø 6.3 c/ 10			0.18
P43	15.00			2 ø 16.0 3.18					0.02

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

Resultados da Viga V107

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P44	15.00			2 ø 16.0 3.67					0.03
1	610.50	40.00 x 60.00	3 ø 20.0 7.20			ø 6.3 c/ 11		2x5 ø 8.0	0.15
P45	20.00			3 ø 20.0 9.04					0.24
2	625.00	40.00 x 60.00	2 ø 16.0 3.67			ø 5.0 c/ 7		2x5 ø 8.0	0.08
P46	20.00		2 ø 10.0 1.28	4 ø 20.0 10.43					0.14
3	615.00	40.00 x 60.00	3 ø 20.0 6.94	2 ø 10.0 1.28		ø 6.3 c/ 8		2x5 ø 8.0	0.14
P47	20.00		2 ø 10.0 1.28	2 ø 20.0 4.96					0.05

Resultados da Viga V108

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
	15.00			2 ø 12.5 1.90					0.01
1	385.00	30.00 x 40.00	2 ø 12.5 1.90			ø 5.0 c/ 9			0.03
P58	20.00			2 ø 20.0 5.07					0.17
2	303.77	30.00 x 40.00	2 ø 12.5 1.90			ø 5.0 c/ 9			0.08
V155	16.31								0.00

Resultados da Viga V109

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
V156	16.42								0.00
1	523.74	40.00 x 50.00	2 ø 20.0 6.17			ø 6.3 c/ 11			0.25
V146	15.00			2 ø 16.0 3.11					0.00

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

Resultados da Viga V110

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P61	20.00			2 ø 16.0 2.75					0.05
1	615.00	30.00 x 60.00	2 ø 16.0 3.40			ø 5.0 c/ 9		2x4 ø 8.0	0.15
P62	40.00			2 ø 16.0 4.13					0.22
2	260.05	30.00 x 60.00	2 ø 16.0 2.75			ø 5.0 c/ 9		2x4 ø 8.0	0.00
P63	40.00			2 ø 16.0 2.75					0.09
3	324.19	30.00 x 60.00	2 ø 16.0 2.75			ø 5.0 c/ 9		2x4 ø 8.0	0.00
V155	15.16			2 ø 16.0 2.75					0.00

Resultados da Viga V111

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
V156	15.15								0.00
1	388.26	40.00 x 50.00	2 ø 16.0 3.11			ø 5.0 c/ 7			0.05
P64	60.00			3 ø 20.0 9.12					0.24

Resultados da Viga V112

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P65	30.00			2 ø 16.0 3.75					0.18
1	585.50	30.00 x 40.00	2 ø 16.0 3.91			ø 5.0 c/ 9			0.19
P66	40.00			2 ø 16.0 4.07					0.21
2	605.00	30.00 x 40.00	2 ø 16.0 2.96			ø 5.0 c/ 9			0.12
P67	40.00			3 ø 16.0 4.44					0.11
3	605.00	30.00 x 40.00	3 ø 16.0 4.31			ø 5.0 c/ 9			0.11
P68	20.00			3 ø 16.0 4.56					0.12

Resultados da Viga V113

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P73	20.00			2 ø 16.0 2.75					0.05
1	615.00	30.00 x 60.00	2 ø 16.0 3.38			ø 5.0 c/ 9		2x4 ø 8.0	0.15
P74	40.00			2 ø 16.0 4.14					0.22
2	260.05	30.00 x 60.00	2 ø 16.0 2.75			ø 5.0 c/ 9		2x4 ø 8.0	0.00
P75	40.00			2 ø 16.0 2.75					0.09
3	324.19	30.00 x 60.00	2 ø 16.0 2.75			ø 5.0 c/ 9		2x4 ø 8.0	0.00
V155	15.16			2 ø 16.0 2.75					0.00

Resultados da Viga V114

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
V156	15.13			2 ø 16.0 3.11					0.00
1	384.22	40.00 x 50.00	2 ø 16.0 3.11			ø 5.0 c/ 7			0.04
P76	60.00			3 ø 20.0 7.37					0.16

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

Resultados da Viga V115

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P77	15.00			2 ø 12.5 2.42					0.16
1	600.50	30.00 x 40.00	2 ø 16.0 4.22			ø 5.0 c/ 9			0.23
P78	40.00			2 ø 16.0 3.93					0.20
2	605.00	30.00 x 40.00	2 ø 12.5 2.55			ø 5.0 c/ 9			0.18
P79	40.00			2 ø 16.0 4.12					0.22
3	605.00	30.00 x 40.00	2 ø 16.0 3.97			ø 5.0 c/ 9			0.20
P80	20.00			2 ø 16.0 3.87					0.20

Resultados da Viga V116

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
	15.00			2 ø 12.5 1.90					0.02
1	385.00	30.00 x 40.00	2 ø 12.5 1.90			ø 5.0 c/ 9			0.04
P82	20.00			2 ø 20.0 5.07					0.17
2	303.77	30.00 x 40.00	2 ø 12.5 1.90			ø 5.0 c/ 9			0.08
V155	16.31								0.00

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

Resultados da Viga V117

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
V156	16.24								0.00
1	511.53	40.00 x 50.00	2 ø 20.0 5.81			ø 6.3 c/ 11			0.22
P83	15.00			2 ø 16.0 3.11					0.05

Resultados da Viga V118

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P97	20.00		2 ø 10.0 1.28	2 ø 20.0 4.96					0.07
1	625.00	40.00 x 60.00	3 ø 20.0 6.87	2 ø 10.0 1.28		ø 6.3 c/ 8		2x5 ø 8.0	0.13
P98	20.00		2 ø 10.0 1.28	3 ø 20.0 9.01					0.17
2	362.50	40.00 x 60.00	2 ø 16.0 3.67			ø 5.0 c/ 7		2x5 ø 8.0	0.02
P99	40.00			2 ø 16.0 3.67					0.03
3	222.50	40.00 x 60.00	2 ø 16.0 3.67			ø 5.0 c/ 7		2x5 ø 8.0	0.00
P100	20.00			2 ø 20.0 5.39					0.19
4	625.00	40.00 x 60.00	2 ø 16.0 3.67			ø 5.0 c/ 7		2x5 ø 8.0	0.15
P101	20.00			2 ø 20.0 5.15					0.17
5	625.00	40.00 x 60.00	2 ø 16.0 3.67			ø 5.0 c/ 7		2x5 ø 8.0	0.04
P102	20.00			2 ø 20.0 4.83					0.15

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

Resultados da Viga V119

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P102	20.00			3 ø 20.0 7.50					0.17
1	627.50	45.00 x 45.00	2 ø 20.0 5.07			ø 6.3 c/ 10			0.17
P103	15.00			2 ø 16.0 3.18					0.01

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

Resultados da Viga V120

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P104	15.00			2 ø 16.0 3.67					0.02
1	610.50	40.00 x 60.00	2 ø 20.0 5.44			ø 6.3 c/ 11		2x5 ø 8.0	0.19
P105	20.00			3 ø 20.0 6.68					0.13
2	615.00	40.00 x 60.00	2 ø 16.0 3.67			ø 5.0 c/ 7		2x5 ø 8.0	0.05
P106	40.00		2 ø 10.0 1.28	4 ø 20.0 9.96					0.12
3	605.00	40.00 x 60.00	2 ø 20.0 6.27	2 ø 10.0 1.28		ø 6.3 c/ 8		2x5 ø 8.0	0.25
P107	20.00		2 ø 10.0 1.28	2 ø 20.0 4.96					0.04

Resultados da Viga V121

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P108	20.00			3 ø 12.5 3.66					0.13
1	625.00	40.00 x 60.00	3 ø 20.0 7.58			ø 6.3 c/ 17		2x5 ø 8.0	0.17
P109	20.00			5 ø 20.0 14.83					0.23
2	625.00	40.00 x 60.00	3 ø 12.5 3.66			ø 5.0 c/ 11		2x5 ø 8.0	0.07
P110	20.00		3 ø 10.0 1.28	3 ø 20.0 9.05					0.18
3	625.00	40.00 x 60.00	3 ø 16.0 5.25	3 ø 10.0 1.28		ø 5.0 c/ 5		2x5 ø 8.0	0.16
P111	20.00		3 ø 10.0 1.28	5 ø 20.0 14.36					0.19
4	625.00	40.00 x 60.00	3 ø 12.5 3.76	3 ø 10.0 1.28		ø 5.0 c/ 5		2x5 ø 8.0	0.16
P112	20.00		3 ø 10.0 1.28	5 ø 20.0 14.14					0.18
5	612.50	40.00 x 60.00	4 ø 20.0 10.50			ø 6.3 c/ 17		2x5 ø 8.0	0.19
P113	30.00			3 ø 12.5 3.66					0.14

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

Resultados da Viga V122

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P114	30.00			3 ø 12.5 3.66					0.10
1	595.50	40.00 x 60.00	3 ø 20.0 8.68			ø 6.3 c/ 17		2x5 ø 8.0	0.23
P115	20.00		3 ø 10.0 1.28	4 ø 20.0 12.33					0.20
2	625.00	40.00 x 60.00	3 ø 12.5 3.79	3 ø 10.0 1.28		ø 5.0 c/ 5		2x5 ø 8.0	0.15
P116	20.00		3 ø 10.0 1.28	5 ø 20.0 16.17					0.23
3	615.00	40.00 x 60.00	3 ø 20.0 7.56	3 ø 10.0 1.28		ø 6.3 c/ 8		2x5 ø 8.0	0.16
P117	20.00		3 ø 10.0 1.28	3 ø 16.0 4.95					0.05

Resultados da Viga V123

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P126	20.00			2 ø 12.5 2.26					0.14
1	625.00	15.00 x 60.00	2 ø 12.5 2.46			ø 5.0 c/ 19		2x3 ø 6.3	0.16
P127	20.00			2 ø 16.0 3.33					0.14
2	625.00	15.00 x 60.00	2 ø 10.0 1.37			ø 5.0 c/ 19		2x3 ø 6.3	0.08
P128	20.00			2 ø 16.0 2.88					0.11
3	625.00	15.00 x 60.00	2 ø 10.0 1.59			ø 5.0 c/ 19		2x3 ø 6.3	0.13
P129	20.00			2 ø 16.0 2.63					0.09
4	625.00	15.00 x 60.00	2 ø 10.0 1.41			ø 5.0 c/ 19		2x3 ø 6.3	0.10
P130	20.00			2 ø 16.0 3.84					0.19
5	627.50	15.00 x 60.00	2 ø 16.0 2.88			ø 5.0 c/ 19		2x3 ø 6.3	0.10
P131	15.00			2 ø 10.0 1.37					0.09

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

Resultados da Viga V124

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P132	15.00			2 ø 10.0 1.37					0.09
1	610.50	15.00 x 60.00	2 ø 16.0 2.65			ø 5.0 c/ 19		2x3 ø 6.3	0.09
P133	20.00			2 ø 16.0 3.48					0.15
2	625.00	15.00 x 60.00	2 ø 10.0 1.37			ø 5.0 c/ 19		2x3 ø 6.3	0.09
P134	20.00			2 ø 16.0 3.27					0.14
3	615.00	15.00 x 60.00	2 ø 12.5 2.53			ø 5.0 c/ 19		2x3 ø 6.3	0.16
P135	20.00			2 ø 12.5 2.20					0.13

Resultados da Viga V125

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P126	40.00			2 ø 12.5 1.85					0.09
1	407.50	15.00 x 60.00	2 ø 10.0 1.37			ø 5.0 c/ 19		2x3 ø 6.3	0.08
P118	40.00			2 ø 12.5 2.30					0.13
2	335.00	15.00 x 60.00	2 ø 10.0 1.37			ø 5.0 c/ 19		2x3 ø 6.3	0.01
P108	40.00			2 ø 10.0 1.37					0.06

Resultados da Viga V125B

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P97	40.00			2 ø 20.0 6.46					0.23
1	775.00	15.00 x 60.00	2 ø 16.0 4.21			ø 5.0 c/ 19		2x3 ø 6.3	0.22
P73	40.00			3 ø 20.0 6.88					0.08

Resultados da Viga V125C

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P61	40.00			2 ø 20.0 6.50					0.23
1	775.00	15.00 x 60.00	3 ø 16.0 4.34			ø 5.0 c/ 19		2x3 ø 6.3	0.08
P37	40.00			3 ø 20.0 6.94					0.08

Resultados da Viga V125D

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P23	40.00			2 ø 10.0 1.37					0.06
1	360.00	15.00 x 60.00	2 ø 10.0 1.37			ø 5.0 c/ 19		2x3 ø 6.3	0.03
P14	40.00			2 ø 12.5 2.25					0.13
2	382.50	15.00 x 60.00	2 ø 10.0 1.37			ø 5.0 c/ 19		2x3 ø 6.3	0.06
P1	40.00			2 ø 10.0 1.37					0.07

Resultados da Viga V126

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
	40.00								0.00
1	215.00	15.00 x 50.00	2 ø 10.0 1.16			ø 5.0 c/ 19			0.00
V118	40.00			2 ø 10.0 1.16					0.07

Resultados da Viga V127

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
V105	40.00			2 ø 10.0 1.37					0.04
1	215.00	15.00 x 60.00	2 ø 10.0 1.37			ø 5.0 c/ 19		2x3 ø 6.3	0.00
V103	40.00			2 ø 10.0 1.37					0.00

Resultados da Viga V128

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P127	40.00			2 ø 16.0 2.96					0.11
1	407.50	20.00 x 70.00	2 ø 12.5 2.43			ø 5.0 c/ 14		2x3 ø 8.0	0.14
P119	40.00			3 ø 16.0 4.65					0.12
2	590.00	20.00 x 70.00	2 ø 12.5 2.11			ø 5.0 c/ 14		2x3 ø 8.0	0.06
P98	40.00			2 ø 20.0 6.47					0.26
3	592.50	20.00 x 70.00	3 ø 16.0 4.65			ø 5.0 c/ 14	ø 5.0 c/ 10 109.00	2x3 ø 8.0	0.12
P81	50.00			3 ø 20.0 8.07					0.15
4	142.50	20.00 x 70.00	2 ø 12.5 2.11			ø 5.0 c/ 14		2x3 ø 8.0	0.00
	20.00			2 ø 12.5 2.11					0.00

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

Resultados da Viga V129

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
	20.00								0.00
1	142.50	20.00 x 70.00	2 ø 12.5 2.11			ø 5.0 c/ 14		2x3 ø 8.0	0.00
P57	50.00			3 ø 20.0 8.39					0.16
2	1260.00	20.00 x 70.00	2 ø 20.0 5.03		ø 6.3 c/ 15 109.00	ø 6.3 c/ 23		2x3 ø 8.0	0.16
P16	40.00			2 ø 12.5 2.44					0.15
3	370.00	20.00 x 70.00	2 ø 16.0 3.05			ø 5.0 c/ 14		2x3 ø 8.0	0.11
P3	40.00			2 ø 12.5 2.11					0.07

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

Resultados da Viga V130

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
	30.00			2 ø 12.5 1.83					0.00
1	155.00	20.00 x 60.00	2 ø 12.5 1.83			ø 5.0 c/ 14		2x4 ø 6.3	0.00
P75	15.00			2 ø 12.5 1.83					0.05
2	400.00	20.00 x 60.00	2 ø 12.5 1.83			ø 5.0 c/ 14		2x4 ø 6.3	0.01
P63	15.00			2 ø 12.5 1.83					0.05
3	155.00	20.00 x 60.00	2 ø 12.5 1.83			ø 5.0 c/ 14		2x4 ø 6.3	0.00
	30.00			2 ø 12.5 1.83					0.00

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

Resultados da Viga V131

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P99	20.00			2 ø 16.0 4.03					0.20
1	607.50	20.00 x 40.00	2 ø 16.0 3.08			ø 5.0 c/ 14	ø 5.0 c/ 11 110.00		0.11
P82	40.00			2 ø 20.0 6.44					0.24

Resultados da Viga V132

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P58	40.00			2 ø 20.0 6.16					0.22
1	607.50	20.00 x 40.00	2 ø 16.0 3.07		ø 5.0 c/ 12 110.00	ø 5.0 c/ 14			0.11
P39	20.00			2 ø 16.0 4.05					0.19

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

Resultados da Viga V133

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P128	40.00			2 ø 16.0 2.66					0.09
1	407.50	20.00 x 70.00	2 ø 12.5 2.38			ø 5.0 c/ 14		2x3 ø 8.0	0.13
P120	40.00			3 ø 16.0 4.34					0.10
2	335.00	20.00 x 70.00	2 ø 12.5 2.11			ø 5.0 c/ 14		2x3 ø 8.0	0.03
P110	40.00			2 ø 12.5 2.11					0.05
3	215.00	20.00 x 70.00	2 ø 12.5 2.11			ø 5.0 c/ 14		2x3 ø 8.0	0.02
P100	40.00			2 ø 12.5 2.11					0.02

Resultados da Viga V134

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
	40.00			2 ø 12.5 2.11					0.00
1	615.00	20.00 x 70.00	2 ø 12.5 2.29			ø 5.0 c/ 14		2x3 ø 8.0	0.14
P18	40.00			2 ø 12.5 2.33					0.14
2	382.50	20.00 x 70.00	2 ø 16.0 3.08			ø 5.0 c/ 14		2x3 ø 8.0	0.12
P5	40.00			2 ø 12.5 2.11					0.08

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

Resultados da Viga V135

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P129	40.00			3 ø 20.0 8.35					0.16
1	782.50	20.00 x 70.00	3 ø 20.0 8.84		ø 6.3 c/ 19 109.00	ø 6.3 c/ 23		2x3 ø 8.0	0.16
P111	40.00			4 ø 20.0 11.63					0.08
2	487.11	20.00 x 70.00	2 ø 12.5 2.11			ø 5.0 c/ 14		2x3 ø 8.0	0.06
V156	15.28								0.00

Resultados da Viga V136

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
V156	15.29								0.00
1	1309.61	20.00 x 70.00	3 ø 20.0 8.67			ø 6.3 c/ 23		2x3 ø 8.0	0.16
P7	40.00			3 ø 20.0 7.42					0.14

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

Resultados da Viga V137

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P130	40.00			3 ø 20.0 8.87					0.17
1	782.50	20.00 x 70.00	3 ø 20.0 9.61		ø 6.3 c/ 16 109.00	ø 6.3 c/ 23	ø 6.3 c/ 19 109.00	2x3 ø 8.0	0.18
P112	40.00			5 ø 20.0 13.96					0.08
2	704.13	20.00 x 70.00	2 ø 12.5 2.11			ø 5.0 c/ 14		2x3 ø 8.0	0.09
V156	18.94								0.00

Resultados da Viga V138

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As eq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
V156	18.95								0.00
1	449.20	20.00 x 70.00	2 ø 12.5 2.11			ø 5.0 c/ 14		2x3 ø 8.0	0.07
P42	40.00			2 ø 20.0 4.96					0.16
2	580.00	20.00 x 70.00	2 ø 12.5 2.11			ø 5.0 c/ 14		2x3 ø 8.0	0.08
P20	40.00			2 ø 16.0 3.17					0.12
3	417.50	20.00 x 70.00	2 ø 16.0 3.87			ø 5.0 c/ 14		2x3 ø 8.0	0.18
P8	40.00			2 ø 12.5 2.51					0.16

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

Resultados da Viga V139

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
V119	45.00			2 ø 10.0 1.54					0.04
1	588.00	20.00 x 50.00	2 ø 16.0 2.78			ø 5.0 c/ 14			0.10
V117	40.00			2 ø 10.0 1.54					0.01

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

Resultados da Viga V140

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
V109	40.00			2 ø 10.0 1.54					0.00
1	568.00	20.00 x 50.00	2 ø 16.0 2.82			ø 5.0 c/ 14			0.10
V106	45.00			2 ø 10.0 1.54					0.06

Resultados da Viga V141

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P131	50.00			3 ø 16.0 4.80					0.09
1	782.50	15.00 x 70.00	2 ø 16.0 3.37			ø 5.0 c/ 19		2x4 ø 6.3	0.14
P113	20.00			2 ø 16.0 3.82					0.18
2	225.00	15.00 x 70.00	2 ø 10.0 1.58			ø 5.0 c/ 19		2x4 ø 6.3	0.00
	50.00			2 ø 10.0 1.58					0.00

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

Resultados da Viga V142

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P132	50.00			3 ø 16.0 4.96					0.09
1	782.50	15.00 x 70.00	2 ø 16.0 3.32			ø 5.0 c/ 19		2x4 ø 6.3	0.13
P114	20.00			2 ø 16.0 3.80					0.18
2	850.50	15.00 x 70.00	2 ø 12.5 1.88			ø 5.0 c/ 19		2x4 ø 6.3	0.09
P84	50.00			2 ø 16.0 3.27					0.13
3	149.50	15.00 x 70.00	2 ø 10.0 1.58			ø 5.0 c/ 19		2x4 ø 6.3	0.00
	60.00			2 ø 10.0 1.58					0.00

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

Resultados da Viga V143

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P103	50.00			2 ø 10.0 1.16					0.01
1	575.50	15.00 x 50.00	2 ø 10.0 1.16			ø 5.0 c/ 19			0.01
P83	50.00			2 ø 10.0 1.16					0.04

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

Resultados da Viga V144

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
	50.00								0.00
1	144.50	20.00 x 60.00	2 ø 12.5 1.83			ø 5.0 c/ 14		2x4 ø 6.3	0.02
P76	60.00			2 ø 12.5 1.87					0.07
2	340.00	20.00 x 60.00	2 ø 12.5 1.83			ø 5.0 c/ 14		2x4 ø 6.3	0.01
P64	60.00			2 ø 12.5 1.83					0.05

Resultados da Viga V145

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P65	20.00			2 ø 12.5 2.11					0.07
1	1052.50	20.00 x 70.00	2 ø 20.0 5.06			ø 6.3 c/ 23		2x3 ø 8.0	0.16
P33	20.00			3 ø 16.0 4.54					0.12
2	780.00	20.00 x 70.00	2 ø 16.0 4.00			ø 5.0 c/ 14		2x3 ø 8.0	0.20
P10	50.00			2 ø 16.0 3.47					0.15

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

Resultados da Viga V146

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P64	60.00		2 ø 10.0 0.56	2 ø 20.0 5.95					0.20
1	755.00	15.00 x 50.00	2 ø 12.5 2.16			ø 5.0 c/ 19			0.13
P43	50.00			2 ø 12.5 2.25					0.15

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

Resultados da Viga V147

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P9	50.00			2 ø 12.5 2.11					0.02
1	365.00	20.00 x 70.00	2 ø 12.5 2.11			ø 5.0 c/ 14		2x3 ø 8.0	0.04
P21	40.00			2 ø 12.5 2.11					0.02
2	375.00	20.00 x 70.00	2 ø 12.5 2.11			ø 5.0 c/ 14		2x3 ø 8.0	0.02
P32	20.00			2 ø 12.5 2.11					0.01
3	227.50	20.00 x 70.00	2 ø 12.5 2.11			ø 5.0 c/ 14		2x3 ø 8.0	0.00
P43	50.00			2 ø 12.5 2.11					0.02

Resultados da Viga V148

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P133	40.00			4 ø 20.0 10.24					0.07
1	782.50	20.00 x 70.00	3 ø 20.0 8.86		ø 6.3 c/ 16 109.00	ø 6.3 c/ 23	ø 6.3 c/ 19 109.00	2x3 ø 8.0	0.16
P115	40.00			5 ø 20.0 13.77					0.08
2	622.50	20.00 x 70.00	2 ø 12.5 2.11			ø 5.0 c/ 14		2x3 ø 8.0	0.09
P90	40.00			2 ø 20.0 5.27					0.18
3	377.50	20.00 x 70.00	2 ø 16.0 2.77			ø 5.0 c/ 14		2x3 ø 8.0	0.09
P78	20.00			2 ø 12.5 2.11					0.05

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

Resultados da Viga V149

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P66	20.00			2 ø 20.0 4.78					0.14
1	785.00	20.00 x 70.00	9 ø 12.5 11.60		ø 5.0 c/ 11 109.00	ø 5.0 c/ 14	ø 5.0 c/ 9 109.00	2x3 ø 8.0	0.07
P45	40.00			5 ø 20.0 16.28					0.09
2	1037.50	20.00 x 70.00	4 ø 20.0 11.27	3 ø 20.0 8.93		ø 6.3 c/ 23	ø 6.3 c/ 14 110.00	2x3 ø 8.0	0.17
P11	40.00			3 ø 20.0 8.18					0.16

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

Resultados da Viga V150

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P134	40.00			4 ø 20.0 10.82					0.08
1	782.50	20.00 x 70.00	4 ø 20.0 10.14		ø 6.3 c/ 13 109.00	ø 6.3 c/ 23	ø 6.3 c/ 17 109.00	2x3 ø 8.0	0.07
P116	40.00			5 ø 20.0 13.77					0.08
2	622.50	20.00 x 70.00	2 ø 12.5 2.22			ø 5.0 c/ 14		2x3 ø 8.0	0.13
P91	40.00			2 ø 20.0 5.55					0.20
3	377.50	20.00 x 70.00	2 ø 16.0 2.70			ø 5.0 c/ 14		2x3 ø 8.0	0.09
P79	20.00			2 ø 12.5 2.11					0.05

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

Resultados da Viga V151

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P67	20.00			2 ø 16.0 3.90					0.19
1	785.00	20.00 x 70.00	11 ø 12.5 13.14		ø 5.0 c/ 11 109.00	ø 5.0 c/ 14	ø 5.0 c/ 8 109.00	2x3 ø 8.0	0.07
P46	40.00			5 ø 20.0 16.53					0.09
2	1037.50	20.00 x 70.00	4 ø 20.0 11.77			ø 6.3 c/ 23	ø 6.3 c/ 16 110.00	2x3 ø 8.0	0.08
P12	40.00			3 ø 20.0 8.01					0.15

Resultados da Viga V152

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
V122	40.00			2 ø 10.0 1.16					0.00
1	215.00	15.00 x 50.00	2 ø 10.0 1.16			ø 5.0 c/ 19			0.00
V120	40.00			2 ø 10.0 1.16					0.06

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

Resultados da Viga V153

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
V107	40.00			2 ø 10.0 1.27					0.08
1	215.00	15.00 x 50.00	2 ø 10.0 1.16			ø 5.0 c/ 19			0.00
	40.00			2 ø 10.0 1.16					0.00

Resultados da Viga V154

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P135	40.00			2 ø 12.5 1.70					0.07
1	375.00	15.00 x 60.00	2 ø 10.0 1.37			ø 5.0 c/ 19		2x3 ø 6.3	0.05
P123	40.00			2 ø 12.5 2.19					0.12
2	367.50	15.00 x 60.00	2 ø 10.0 1.37			ø 5.0 c/ 19		2x3 ø 6.3	0.03
P117	40.00			2 ø 10.0 1.37					0.07

Resultados da Viga V154B

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P107	40.00			3 ø 20.0 6.90					0.08
1	775.00	15.00 x 60.00	3 ø 16.0 4.51			ø 5.0 c/ 19		2x3 ø 6.3	0.08
P80	40.00			3 ø 20.0 7.04					0.08

Resultados da Viga V154C

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P68	40.00			3 ø 20.0 7.40					0.08
1	775.00	15.00 x 60.00	3 ø 16.0 4.82			ø 5.0 c/ 19		2x3 ø 6.3	0.09
P47	40.00			3 ø 20.0 7.27					0.08

Resultados da Viga V154D

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P36	40.00			2 ø 10.0 1.37					0.07
1	371.25	15.00 x 60.00	2 ø 10.0 1.37			ø 5.0 c/ 19		2x3 ø 6.3	0.03
PE-1	40.00			2 ø 12.5 2.41					0.15
2	371.25	15.00 x 60.00	2 ø 10.0 1.37			ø 5.0 c/ 19		2x3 ø 6.3	0.07
P13	40.00			2 ø 10.0 1.37					0.07

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

Resultados da Viga V155

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
	20.39								0.00
1	266.50	15.00 x 70.00	2 ø 10.0 1.58			ø 5.0 c/ 19		2x4 ø 6.3	0.07
P94	50.00		2 ø 10.0 1.06	2 ø 20.0 5.48					0.13
2	755.07	15.00 x 70.00	2 ø 16.0 3.11	2 ø 10.0 0.94		ø 5.0 c/ 19		2x4 ø 6.3	0.06
P69	50.00		2 ø 10.0 0.98	3 ø 16.0 4.53					0.07
3	755.21	15.00 x 70.00	2 ø 16.0 3.17	2 ø 10.0 0.98		ø 5.0 c/ 19		2x4 ø 6.3	0.06
P51	50.00		2 ø 10.0 1.10	2 ø 20.0 5.55					0.13
4	266.36	15.00 x 70.00	2 ø 10.0 1.58			ø 5.0 c/ 19		2x4 ø 6.3	0.05
	20.39								0.00

Resultados da Viga V156

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
V135	20.04								0.00
1	468.07	15.00 x 70.00	2 ø 12.5 1.72	2 ø 10.0 0.59		ø 5.0 c/ 19		2x4 ø 6.3	0.04
P95	50.00		2 ø 10.0 1.63	3 ø 20.0 8.17					0.07
2	755.41	15.00 x 70.00	2 ø 20.0 6.06	2 ø 10.0 1.63		ø 6.3 c/ 24		2x4 ø 6.3	0.13
P72	50.00		2 ø 12.5 1.77	3 ø 20.0 8.94					0.08
3	754.83	15.00 x 70.00	2 ø 20.0 6.60	2 ø 12.5 1.77		ø 6.3 c/ 23		2x4 ø 6.3	0.16
P52	50.00		2 ø 12.5 1.77	3 ø 20.0 8.66					0.08
4	468.72	15.00 x 70.00	2 ø 10.0 1.62	2 ø 10.0 0.60		ø 5.0 c/ 19		2x4 ø 6.3	0.05
V136	20.04								0.00

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

Resultados da Viga V157

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P103	50.00			2 ø 10.0 0.95					0.00
1	176.50	15.00 x 40.00	2 ø 10.0 0.95			ø 5.0 c/ 19			0.00
PES2	40.00			2 ø 10.0 0.95					0.00

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

Resultados da Viga V158

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
PES1	40.00			2 ø 10.0 0.95					0.00
1	176.50	15.00 x 40.00	2 ø 16.0 3.15	2 ø 16.0 3.15		ø 5.0 c/ 19			0.00
P43	50.00		2 ø 16.0 3.15	2 ø 16.0 3.15					0.00

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

Resultados da Laje

TÉRREO NV-320	fck = 400.00 kgf/cm ²	E = 318758 kgf/cm ²	Peso Espec = 2500.00 kgf/m ³
Lance 2		coibr = 2.50 cm	

Nome	Espessura (cm)	Carga (kgf/m ²)	Mdx (kgf.m/m)	Mdy (kgf.m/m)	Asx	Asy
L101	15	869.28	2594	1134	As = 5.23 cm ² /m (ø12.5 c/20 - 6.14 cm ² /m)	As = 2.45 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)
L102	15	886.93	1698	664	As = 3.34 cm ² /m (ø10.0 c/20 - 3.93 cm ² /m)	As = 1.93 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)
L103	15	877.12	3529	1211	As = 7.35 cm ² /m (ø16.0 c/20 - 10.05 cm ² /m)	As = 2.74 cm ² /m (ø10.0 c/20 - 3.93 cm ² /m)
L104	15	869.28	3529	1192	As = 7.35 cm ² /m (ø16.0 c/20 - 10.05 cm ² /m)	As = 2.70 cm ² /m (ø10.0 c/20 - 3.93 cm ² /m)
L105	15	877.37	2540	1110	As = 5.12 cm ² /m (ø12.5 c/20 - 6.14 cm ² /m)	As = 2.40 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)
L106	15	880.41	3388	1684	As = 7.04 cm ² /m (ø16.0 c/20 - 10.05 cm ² /m)	As = 3.85 cm ² /m (ø10.0 c/20 - 3.93 cm ² /m)
L107	15	859.93	3946	1585	As = 8.28 cm ² /m (ø16.0 c/20 - 10.05 cm ² /m)	As = 5.78 cm ² /m (ø12.5 c/20 - 6.14 cm ² /m)
L108	15	887.18	3996	1665	As = 8.25 cm ² /m (ø12.5 c/14 - 8.77 cm ² /m)	As = 4.65 cm ² /m (ø10.0 c/16 - 4.91 cm ² /m)
L109	15	815.00		679	As = 1.77 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)	As = 1.89 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)
L110	15	815.00	650		As = 1.77 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)	As = 1.89 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)
L111	15	815.00		1819	As = 1.30 cm ² /m (ø6.3 c/23 - 1.36 cm ² /m)	As = 3.79 cm ² /m (ø10.0 c/20 - 3.93 cm ² /m)
L112	15	815.00		1807	As = 1.30 cm ² /m (ø6.3 c/23 - 1.36 cm ² /m)	As = 3.77 cm ² /m (ø10.0 c/20 - 3.93 cm ² /m)
L113	15	815.00	222	998	As = 1.77 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)	As = 2.07 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)
L114	15	815.00		1337	As = 1.30 cm ² /m (ø6.3 c/23 - 1.36 cm ² /m)	As = 2.83 cm ² /m (ø10.0 c/20 - 3.93 cm ² /m)
L115	15	815.00		1638	As = 1.30 cm ² /m (ø6.3 c/23 - 1.36 cm ² /m)	As = 3.41 cm ² /m (ø10.0 c/20 - 3.93 cm ² /m)
L116	15	815.00		1640	As = 1.30 cm ² /m (ø6.3 c/23 - 1.36 cm ² /m)	As = 3.41 cm ² /m (ø10.0 c/20 - 3.93 cm ² /m)
L117	15	887.51	2336	1543	As = 4.69 cm ² /m	As = 3.40 cm ² /m

					(ø12.5 c/20 - 6.14 cm ² /m)	(ø10.0 c/20 - 3.93 cm ² /m)
L118	15	871.27	1132	1162	As = 2.19 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)	As = 2.41 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)
L119	15	815.00	1374	1350	As = 2.69 cm ² /m (ø10.0 c/20 - 3.93 cm ² /m)	As = 2.89 cm ² /m (ø10.0 c/20 - 3.93 cm ² /m)
L120	15	815.00	770	158	As = 1.77 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)	As = 1.89 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)
L121	15	815.00	720	712	As = 1.77 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)	As = 1.89 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)
L122	15	877.62	2332	1708	As = 4.68 cm ² /m (ø12.5 c/20 - 6.14 cm ² /m)	As = 3.77 cm ² /m (ø10.0 c/20 - 3.93 cm ² /m)
L123	15	815.00	1236	1474	As = 2.39 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)	As = 3.10 cm ² /m (ø10.0 c/20 - 3.93 cm ² /m)
L124	15	909.44	2349	1962	As = 4.72 cm ² /m (ø12.5 c/20 - 6.14 cm ² /m)	As = 4.41 cm ² /m (ø12.5 c/20 - 6.14 cm ² /m)
L125	15	829.50	989	578	As = 2.30 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)	As = 1.89 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)
L126	15	815.00	379	312	As = 1.77 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)	As = 1.89 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)
L127	15	815.00	236	444	As = 1.77 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)	As = 1.89 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)
L128	15	815.00	1120	757	As = 2.16 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)	As = 1.89 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)
L129	15	815.00	761	386	As = 1.77 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)	As = 1.89 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)
L130	15	815.00	443	576	As = 1.77 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)	As = 1.89 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)
L131	15	859.88	2311	1534	As = 4.64 cm ² /m (ø12.5 c/20 - 6.14 cm ² /m)	As = 3.38 cm ² /m (ø10.0 c/20 - 3.93 cm ² /m)
L132	15	825.87	398	325	As = 1.77 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)	As = 1.89 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)
L133	15	815.00	240	446	As = 1.77 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)	As = 1.89 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)
L134	15	815.00	431	616	As = 1.77 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)	As = 1.89 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)
L135	15	878.27	2774	1062	As = 5.61 cm ² /m (ø12.5 c/20 - 6.14 cm ² /m)	As = 2.29 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)
L136	15	894.54	1799	540	As = 3.54 cm ² /m (ø10.0 c/20 - 3.93 cm ² /m)	As = 1.93 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)
L137	15	895.80	2568	1418	As = 5.18 cm ² /m	As = 3.11 cm ² /m

					(ø12.5 c/20 - 6.14 cm ² /m)	(ø10.0 c/20 - 3.93 cm ² /m)
L138	15	907.46	1135	447	As = 2.19 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)	As = 1.89 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)
L139	15	815.00	1378	1350	As = 2.70 cm ² /m (ø10.0 c/20 - 3.93 cm ² /m)	As = 2.89 cm ² /m (ø10.0 c/20 - 3.93 cm ² /m)
L140	15	815.00	791	647	As = 1.77 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)	As = 1.89 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)
L141	15	829.50	883	232	As = 2.04 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)	As = 1.89 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)
L142	15	815.00	804	179	As = 1.77 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)	As = 1.89 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)
L143	15	816.54		565	As = 1.77 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)	As = 1.89 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)
L144	15	820.57		271	As = 1.77 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)	As = 1.89 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)
L145	15	820.57	22	344	As = 1.77 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)	As = 1.89 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)
L146	15	820.57	20	305	As = 1.77 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)	As = 1.89 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)
L147	15	820.57	176	834	As = 1.77 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)	As = 1.89 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)
L148	15	820.73		499	As = 1.77 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)	As = 1.89 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)
L149	15	820.57		267	As = 1.77 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)	As = 1.89 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)
L150	15	821.31		524	As = 1.77 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)	As = 1.89 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)
L151	15	885.19	2592	1154	As = 5.23 cm ² /m (ø12.5 c/20 - 6.14 cm ² /m)	As = 2.50 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)
L152	15	883.89	1692	657	As = 3.33 cm ² /m (ø10.0 c/20 - 3.93 cm ² /m)	As = 1.93 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)
L153	15	875.38	1657	1014	As = 3.26 cm ² /m (ø10.0 c/20 - 3.93 cm ² /m)	As = 2.14 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)
L154	15	875.38	1443	1285	As = 2.82 cm ² /m (ø10.0 c/20 - 3.93 cm ² /m)	As = 2.75 cm ² /m (ø10.0 c/20 - 3.93 cm ² /m)
L155	15	875.38	2326	1627	As = 4.67 cm ² /m (ø12.5 c/20 - 6.14 cm ² /m)	As = 3.59 cm ² /m (ø10.0 c/20 - 3.93 cm ² /m)
L156	15	877.02	2270	1547	As = 4.55 cm ² /m (ø12.5 c/20 - 6.14 cm ² /m)	As = 3.41 cm ² /m (ø10.0 c/20 - 3.93 cm ² /m)
L157	15	885.19	1347	1286	As = 2.61 cm ² /m	As = 2.70 cm ² /m

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

					(ø8.0 c/19 - 2.65 cm ² /m)	(ø10.0 c/20 - 3.93 cm ² /m)
L158	15	885.41	2438	1515	As = 4.90 cm ² /m (ø12.5 c/20 - 6.14 cm ² /m)	As = 3.33 cm ² /m (ø10.0 c/20 - 3.93 cm ² /m)

ARMADURA NEGATIVA							
Dados				Resultados			
Viga	Trecho	Laje 1	Laje 2	Reação 1 (kgf/m)	Reação 2 (kgf/m)	Md (kgf.m/m)	As (cm ²)
V103	2	L101	L109	2046	699	-3087	As = 6.38 cm ² /m (ø16.0 c/20 - 10.05 cm ² /m)
V103	3	L101	L109	1882	1961	-1332	As = 6.38 cm ² /m (ø16.0 c/20 - 10.05 cm ² /m)
V129	4	L101	L102	1199	1246	-5433	As = 14.27 cm ² /m (ø16.0 c/14 - 14.36 cm ² /m)
V129	5	L101	L102	2037	1910	-6466	As = 14.27 cm ² /m (ø16.0 c/14 - 14.36 cm ² /m)
V134	3	L102	L103	1502	1489	-4863	As = 13.33 cm ² /m (ø16.0 c/15 - 13.40 cm ² /m)
V103	4	L102	L110	2054	1760	-1246	As = 2.68 cm ² /m (ø10.0 c/20 - 3.93 cm ² /m)
V103	5	L102	L110	1575	828	-1742	As = 2.68 cm ² /m (ø10.0 c/20 - 3.93 cm ² /m)
V134	2	L102	L103	1617	1646	-6088	As = 13.33 cm ² /m (ø16.0 c/15 - 13.40 cm ² /m)
V104	3	L107	L115	3341	1556	-8437	As = 22.27 cm ² /m (ø16.0 c/9 - 22.34 cm ² /m)
V104	4	L107	L115	11257	5280	-9398	As = 22.27 cm ² /m (ø16.0 c/9 - 22.34 cm ² /m)
V151	3	L107	L108	304	398	-3108	As = 6.43 cm ² /m (ø16.0 c/20 - 10.05 cm ² /m)
V149	3	L107	L106	563	634	-3208	As = 6.64 cm ² /m (ø16.0 c/20 - 10.05 cm ² /m)
V104	6	L108	L116	2336	711	-3273	As = 22.98 cm ² /m (ø16.0 c/8 - 25.13 cm ² /m)
V104	5	L108	L116	11511	5368	-9634	As = 22.98 cm ² /m (ø16.0 c/8 - 25.13 cm ² /m)
V129	3	L110	L109	-1174	-1331	-509	As = 2.68 cm ² /m (ø10.0 c/20 - 3.93 cm ² /m)
V105	3	L110	L118	1643	2289	-3912	As = 8.21 cm ² /m (ø16.0 c/20 - 10.05 cm ² /m)
V105	4	L110	L119	1320	1886	-3931	As = 8.25 cm ² /m

							(ø16.0 c/20 - 10.05 cm ² /m)
V134	1	L110	L111	-653	-657	-332	As = 2.68 cm ² /m (ø10.0 c/20 - 3.93 cm ² /m)
V149	2	L115	L114	-1530	-1609	-455	As = 2.68 cm ² /m (ø10.0 c/20 - 3.93 cm ² /m)
V107	2	L115	L123	907	992	-2633	As = 5.31 cm ² /m (ø12.5 c/20 - 6.14 cm ² /m)
V151	2	L115	L116	-1823	-1862	-456	As = 2.68 cm ² /m (ø10.0 c/20 - 3.93 cm ² /m)
V105	2	L117	L109	2991	1301	-4798	As = 10.23 cm ² /m (ø16.0 c/19 - 10.58 cm ² /m)
V129	1	L117	L126	881	1842	-4035	As = 8.48 cm ² /m (ø16.0 c/20 - 10.05 cm ² /m)
V129	2	L117	L118	1308	1069	-6155	As = 13.49 cm ² /m (ø16.0 c/14 - 14.36 cm ² /m)
V151	1	L123	L124	1731	1978	-3457	As = 7.19 cm ² /m (ø16.0 c/20 - 10.05 cm ² /m)
V149	1	L123	L122	1749	1898	-3508	As = 7.31 cm ² /m (ø16.0 c/20 - 10.05 cm ² /m)
V107	3	L124	L116	1958	897	-4576	As = 9.72 cm ² /m (ø16.0 c/20 - 10.05 cm ² /m)
V118	2	L131	L143	1876	879	-4459	As = 9.45 cm ² /m (ø16.0 c/20 - 10.05 cm ² /m)
V128	4	L131	L138	2105	1910	-6091	As = 13.33 cm ² /m (ø16.0 c/15 - 13.40 cm ² /m)
V128	5	L131	L132	891	1820	-4015	As = 8.44 cm ² /m (ø16.0 c/20 - 10.05 cm ² /m)
V150	4	L136	L137	2547	2670	-6084	As = 12.59 cm ² /m (ø16.0 c/15 - 13.40 cm ² /m)
V148	4	L136	L135	2529	2666	-5801	As = 12.62 cm ² /m (ø16.0 c/15 - 13.40 cm ² /m)
V148	3	L136	L135	1910	1897	-5524	As = 12.62 cm ² /m (ø16.0 c/15 - 13.40 cm ² /m)
V120	2	L136	L149	856	568	-1707	As = 3.36 cm ² /m (ø10.0 c/20 - 3.93 cm ² /m)
V150	3	L136	L137	1828	1867	-5786	As = 12.59 cm ² /m (ø16.0 c/15 - 13.40 cm ² /m)
V120	3	L137	L150	1778	736	-4267	As = 9.01 cm ² /m (ø16.0 c/20 - 10.05 cm ² /m)
V121	2	L143	L151	677	2032	-2913	As = 5.91 cm ² /m

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

							(ø12.5 c/20 - 6.14 cm ² /m)
V121	3	L143	L151	929	355	-801	As = 5.91 cm ² /m (ø12.5 c/20 - 6.14 cm ² /m)
V128	3	L143	L144	117	250	-675	As = 2.68 cm ² /m (ø10.0 c/20 - 3.93 cm ² /m)
V128	2	L151	L152	1812	1806	-4875	As = 11.64 cm ² /m (ø16.0 c/17 - 11.83 cm ² /m)
V128	1	L151	L152	2140	2004	-5394	As = 11.64 cm ² /m (ø16.0 c/17 - 11.83 cm ² /m)
V133	2	L152	L153	1754	1726	-4282	As = 9.92 cm ² /m (ø16.0 c/20 - 10.05 cm ² /m)
V121	5	L152	L144	1194	626	-1730	As = 3.40 cm ² /m (ø10.0 c/20 - 3.93 cm ² /m)
V121	4	L152	L144	167	792	-577	As = 3.40 cm ² /m (ø10.0 c/20 - 3.93 cm ² /m)
V133	1	L152	L153	1933	1962	-4663	As = 9.92 cm ² /m (ø16.0 c/20 - 10.05 cm ² /m)
V118	4	L144	L139	1326	1801	-3927	As = 8.24 cm ² /m (ø16.0 c/20 - 10.05 cm ² /m)
V118	3	L144	L138	1023	946	-1713	As = 3.37 cm ² /m (ø10.0 c/20 - 3.93 cm ² /m)
V133	3	L144	L145	-255	-239	-399	As = 2.68 cm ² /m (ø10.0 c/20 - 3.93 cm ² /m)
V118	5	L145	L139	786	1295	-3992	As = 8.38 cm ² /m (ø16.0 c/20 - 10.05 cm ² /m)
V121	6	L145	L153	901	1366	-2390	As = 4.80 cm ² /m (ø12.5 c/20 - 6.14 cm ² /m)
V121	7	L145	L153	1303	727	-1805	As = 4.80 cm ² /m (ø12.5 c/20 - 6.14 cm ² /m)
V135	2	L145	L146	318	290	-662	As = 2.68 cm ² /m (ø10.0 c/20 - 3.93 cm ² /m)
V118	6	L142	L146	649	405	-638	As = 2.68 cm ² /m (ø10.0 c/20 - 3.93 cm ² /m)
V137	3	L142	L140	760	1069	-1404	As = 2.75 cm ² /m (ø10.0 c/20 - 3.93 cm ² /m)
V135	3	L142	L139	679	631	-1010	As = 2.68 cm ² /m (ø10.0 c/20 - 3.93 cm ² /m)
V113	3	L129	L133	637	54	-782	As = 2.68 cm ² /m (ø10.0 c/20 - 3.93 cm ² /m)
V110	3	L129	L127	640	69	-782	As = 2.68 cm ² /m

							($\phi 10.0$ c/20 - 3.93 cm ² /m)
V135	1	L153	L154	1735	1710	-2829	As = 5.73 cm ² /m ($\phi 12.5$ c/20 - 6.14 cm ² /m)
V137	1	L154	L155	1919	1969	-3515	As = 7.32 cm ² /m ($\phi 16.0$ c/20 - 10.05 cm ² /m)
V121	9	L154	L146	1538	1065	-2712	As = 5.48 cm ² /m ($\phi 12.5$ c/20 - 6.14 cm ² /m)
V121	8	L154	L146	740	1326	-1861	As = 5.48 cm ² /m ($\phi 12.5$ c/20 - 6.14 cm ² /m)
V150	1	L157	L158	1858	1935	-3268	As = 6.78 cm ² /m ($\phi 16.0$ c/20 - 10.05 cm ² /m)
V122	4	L157	L149	685	1389	-1958	As = 5.40 cm ² /m ($\phi 12.5$ c/20 - 6.14 cm ² /m)
V122	3	L157	L149	1530	1028	-2674	As = 5.40 cm ² /m ($\phi 12.5$ c/20 - 6.14 cm ² /m)
V148	1	L157	L156	1894	1956	-3407	As = 7.08 cm ² /m ($\phi 16.0$ c/20 - 10.05 cm ² /m)
V122	6	L158	L150	2258	781	-3132	As = 6.48 cm ² /m ($\phi 16.0$ c/20 - 10.05 cm ² /m)
V122	5	L158	L150	842	1464	-2140	As = 6.48 cm ² /m ($\phi 16.0$ c/20 - 10.05 cm ² /m)
V137	2	L146	L147	397	87	-812	As = 2.68 cm ² /m ($\phi 10.0$ c/20 - 3.93 cm ² /m)
V150	2	L149	L150	214	58	-693	As = 2.68 cm ² /m ($\phi 10.0$ c/20 - 3.93 cm ² /m)
V148	2	L149	L148	115	48	-606	As = 2.68 cm ² /m ($\phi 10.0$ c/20 - 3.93 cm ² /m)
V120	1	L135	L148	1204	665	-2717	As = 5.49 cm ² /m ($\phi 12.5$ c/20 - 6.14 cm ² /m)
V105	5	L111	L119	782	1297	-3973	As = 8.34 cm ² /m ($\phi 16.0$ c/20 - 10.05 cm ² /m)
V136	2	L111	L112	-1714	-1689	-449	As = 2.68 cm ² /m ($\phi 10.0$ c/20 - 3.93 cm ² /m)
V103	7	L111	L103	5819	9994	-8311	As = 19.14 cm ² /m ($\phi 16.0$ c/10 - 20.11 cm ² /m)
V103	6	L111	L103	1127	1781	-2700	As = 19.14 cm ² /m ($\phi 16.0$ c/10 - 20.11 cm ² /m)
V138	1	L120	L121	807	1074	-1484	As = 2.91 cm ² /m ($\phi 10.0$ c/20 - 3.93 cm ² /m)
V105	6	L120	L112	644	515	-697	As = 2.68 cm ² /m

							(ø10.0 c/20 - 3.93 cm ² /m)
V136	1	L120	L119	686	643	-1016	As = 2.68 cm ² /m (ø10.0 c/20 - 3.93 cm ² /m)
V136	3	L103	L104	99	82	-2359	As = 4.74 cm ² /m (ø12.5 c/20 - 6.14 cm ² /m)
V138	4	L105	L104	1913	1822	-5845	As = 12.73 cm ² /m (ø16.0 c/15 - 13.40 cm ² /m)
V138	3	L105	L104	1720	1659	-5903	As = 12.73 cm ² /m (ø16.0 c/15 - 13.40 cm ² /m)
V103	10	L105	L113	1694	1025	-2797	As = 5.66 cm ² /m (ø12.5 c/20 - 6.14 cm ² /m)
V103	11	L105	L113	2058	1641	-2026	As = 5.66 cm ² /m (ø12.5 c/20 - 6.14 cm ² /m)
V104	1	L106	L114	1592	1542	-1858	As = 20.45 cm ² /m (ø16.0 c/9 - 22.34 cm ² /m)
V104	2	L106	L114	3881	1659	-8775	As = 20.45 cm ² /m (ø16.0 c/9 - 22.34 cm ² /m)
V107	1	L114	L122	920	1767	-3482	As = 7.25 cm ² /m (ø16.0 c/20 - 10.05 cm ² /m)
V119	1	L147	L140	741	458	-1786	As = 3.52 cm ² /m (ø10.0 c/20 - 3.93 cm ² /m)
V121	10	L147	L155	1183	1793	-3381	As = 7.02 cm ² /m (ø16.0 c/20 - 10.05 cm ² /m)
V121	11	L147	L155	1704	2104	-2590	As = 7.02 cm ² /m (ø16.0 c/20 - 10.05 cm ² /m)
V122	1	L148	L156	1127	1427	-1984	As = 6.63 cm ² /m (ø16.0 c/20 - 10.05 cm ² /m)
V122	2	L148	L156	1099	1855	-3200	As = 6.63 cm ² /m (ø16.0 c/20 - 10.05 cm ² /m)
V103	8	L104	L112	9702	5769	-8286	As = 19.07 cm ² /m (ø16.0 c/10 - 20.11 cm ² /m)
V103	9	L104	L112	1561	1006	-2635	As = 19.07 cm ² /m (ø16.0 c/10 - 20.11 cm ² /m)
V138	2	L112	L113	270	-43	-830	As = 2.68 cm ² /m (ø10.0 c/20 - 3.93 cm ² /m)
V111	1	L128	L130	1766	1109	-3040	As = 6.28 cm ² /m (ø16.0 c/20 - 10.05 cm ² /m)
V109	2	L128	L125	-434	372	-320	As = 2.68 cm ² /m (ø10.0 c/20 - 3.93 cm ² /m)
V109	1	L128	L121	-286	362	0	

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

V130	3	L126	L127	44	-448	-366	As = 2.68 cm ² /m (ø10.0 c/20 - 3.93 cm ² /m)
V108	1	L126	L118	103	-330	-2104	As = 4.21 cm ² /m (ø12.5 c/20 - 6.14 cm ² /m)
V108	3	L127	L119	1119	539	-1734	As = 3.41 cm ² /m (ø10.0 c/20 - 3.93 cm ² /m)
V108	2	L127	L118	1490	-983	-1680	As = 3.30 cm ² /m (ø10.0 c/20 - 3.93 cm ² /m)
V130	1	L132	L133	54	-460	-381	As = 2.68 cm ² /m (ø10.0 c/20 - 3.93 cm ² /m)
V116	1	L132	L138	118	-161	-2178	As = 4.36 cm ² /m (ø12.5 c/20 - 6.14 cm ² /m)
V116	2	L133	L138	1539	-990	-1720	As = 3.38 cm ² /m (ø10.0 c/20 - 3.93 cm ² /m)
V116	3	L133	L139	1131	524	-1752	As = 3.45 cm ² /m (ø10.0 c/20 - 3.93 cm ² /m)
V131	1	L138	L139	926	872	-2052	As = 4.10 cm ² /m (ø12.5 c/20 - 6.14 cm ² /m)
V132	1	L118	L119	874	828	-1998	As = 3.99 cm ² /m (ø12.5 c/20 - 6.14 cm ² /m)
V140	1	L125	L121	860	529	-281	As = 2.68 cm ² /m (ø10.0 c/20 - 3.93 cm ² /m)
V106	1	L121	L113	432	1186	-2480	As = 4.99 cm ² /m (ø12.5 c/20 - 6.14 cm ² /m)
V139	2	L141	L140	142	-26	-2	As = 2.68 cm ² /m (ø10.0 c/20 - 3.93 cm ² /m)
V117	2	L141	L134	825	267	-778	As = 2.68 cm ² /m (ø10.0 c/20 - 3.93 cm ² /m)
V117	1	L140	L134	539	-44	-348	As = 2.68 cm ² /m (ø10.0 c/20 - 3.93 cm ² /m)
V114	1	L130	L134	997	1304	-1556	As = 3.05 cm ² /m (ø10.0 c/20 - 3.93 cm ² /m)

Resultados da Escada

TÉRREO NV-320	fck = 400.00 kgf/cm ²	E = 318758 kgf/cm ²	Peso Espec = 2500.00 kgf/m ³
Lance 2		cobr = 2.50 cm	

ESCADA: E1

ARMADURAS NA LAJE								
Trecho	Esforços				Resultados			
	Ndx Rdx (tf)	Ndy Rdy (tf)	Mdx (kgf.m/m)	Mdy (kgf.m/m)	Armadura inferior		Armadura superior	
					Asx	Asy	Asx	Asy
LE1	34.92 -17.86	4.79 -2.71	2745	684	As = 7.72 cm ² /m ø16.0 c/20 (10.05 cm ² /m)	As = 2.20 cm ² /m ø8.0 c/20 (2.51 cm ² /m)	A's = 5.88 cm ² /m ø12.5 c/20 (6.14 cm ² /m)	A's = 3.18 cm ² /m ø10.0 c/20 (3.93 cm ² /m)
LE2	13.04 -3.30	6.86 -6.39	4754	1547	As = 7.31 cm ² /m ø16.0 c/20 (10.05 cm ² /m)	As = 3.47 cm ² /m ø10.0 c/20 (3.93 cm ² /m)	A's = 4.83 cm ² /m ø12.5 c/20 (6.14 cm ² /m)	ø8.0 c/20 (2.51 cm ² /m)
LE3	14.25 -13.66	0.00 -5.37	5078	375	As = 11.23 cm ² /m ø16.0 c/17 (11.83 cm ² /m)	As = 2.25 cm ² /m ø10.0 c/25 (3.14 cm ² /m)	A's = 2.63 cm ² /m ø10.0 c/20 (3.93 cm ² /m)	A's = 3.20 cm ² /m ø10.0 c/20 (3.93 cm ² /m)

ARMADURAS NA CONTINUIDADE					
Viga Trecho	Laje 1 Laje 2	Momentos fletores (kgf.m/m)		Armaduras	
		Md negativo	Md positivo	As (superior)	A's (inferior)
Barra	LE2 LE3	-300	4781	As = 2.94 cm ² /m ø10.0 c/20 (3.93 cm ² /m)	A's = 8.66 cm ² /m ø16.0 c/20 (10.05 cm ² /m)
Barra	LE2 LE1	-4425	1150	As = 10.71 cm ² /m ø16.0 c/18 (11.17 cm ² /m)	A's = 4.99 cm ² /m ø12.5 c/20 (6.14 cm ² /m)

ESCADA: E2

ARMADURAS NA LAJE	
Esforços	Resultados

Trecho	Ndx Rdx (tf)	Ndy Rdy (tf)	Mdx (kgf.m/m)	Mdy (kgf.m/m)	Armadura inferior		Armadura superior	
					Asx	Asy	Asx	Asy
LE4	33.84 -16.61	4.98 -2.57	2837	681	As = 7.67 cm ² /m ø16.0 c/20 (10.05 cm ² /m)	As = 2.20 cm ² /m ø8.0 c/20 (2.51 cm ² /m)	A's = 5.68 cm ² /m ø12.5 c/20 (6.14 cm ² /m)	A's = 3.25 cm ² /m ø10.0 c/20 (3.93 cm ² /m)
LE5	11.54 -2.74	6.93 -6.23	4734	1365	As = 7.19 cm ² /m ø16.0 c/20 (10.05 cm ² /m)	As = 3.17 cm ² /m ø10.0 c/20 (3.93 cm ² /m)	A's = 4.90 cm ² /m ø12.5 c/20 (6.14 cm ² /m)	A's = 2.05 cm ² /m ø8.0 c/20 (2.51 cm ² /m)
LE6	14.03 -14.95	0.00 -6.18	4864	413	As = 11.04 cm ² /m ø16.0 c/18 (11.17 cm ² /m)	As = 2.21 cm ² /m ø10.0 c/25 (3.14 cm ² /m)	A's = 2.86 cm ² /m ø10.0 c/20 (3.93 cm ² /m)	A's = 3.19 cm ² /m ø10.0 c/20 (3.93 cm ² /m)

ARMADURAS NA CONTINUIDADE					
Viga Trecho	Laje 1 Laje 2	Momentos fletores (kgf.m/m)		Armaduras	
		Md negativo	Md positivo	As (superior)	A's (inferior)
Barra	LE5 LE6	-303	4531	As = 2.94 cm ² /m ø10.0 c/20 (3.93 cm ² /m)	A's = 8.17 cm ² /m ø16.0 c/20 (10.05 cm ² /m)
Barra	LE5 LE4	-4546	1471	As = 10.72 cm ² /m ø16.0 c/18 (11.17 cm ² /m)	A's = 5.32 cm ² /m ø12.5 c/20 (6.14 cm ² /m)

Pavimento SUPERIOR NV-640

Resultados dos Pilares

SUPERIOR NV-640	fck = 400.00 kgf/cm ²	E = 318758 kgf/cm ²	Peso Espec = 2500.00 kgf/m ³
Lance 3		coibr = 3.00 cm	

Dados				Resultados						
Pilar	Seção (cm)	Nível Altura (cm)	lib vinc lih vinc (cm)	Nd máx Nd mín (tf)	MBd topo MBd base (kgf.m)	MHd topo MHd base (kgf.m)	As b Armaduras As h total		Estribo Topo Base cota	Esb b Esb h
P1 1:20	20.00 X 40.00	655.00 325.00	325.00 RR 325.00 RR	16.85 10.47	2614 2775	7066 3385	4.02 6.03 1.5	2 ø 16.0 3 ø 16.0 6 ø 16.0	ø 5.0 c/13 ø 5.0 c/13 60	56.23 28.11
P3 1:20	20.00 X 40.00	655.00 325.00	325.00 RR 325.00 RR	18.72 11.57	350 345	2738 3631	1.57 2.36 0.6	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 60	56.23 28.11
P5 1:20	20.00 X 40.00	655.00 325.00	325.00 RR 325.00 RR	17.69 10.88	1538 1457	3013 3653	1.57 2.36 0.6	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 60	56.23 28.11
P7 1:20	20.00 X 40.00	655.00 325.00	325.00 RR 325.00 RR	27.08 16.98	964 912	13108 13427	6.03 6.03 2.0	3 ø 16.0 3 ø 16.0 8 ø 16.0	ø 5.0 c/13 ø 5.0 c/13 60	56.23 28.11
P8 1:20	20.00 X 40.00	655.00 325.00	325.00 RR 325.00 RR	21.52 13.40	1634 1707	4525 4923	1.57 2.36 0.6	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 60	56.23 28.11
P9 1:20	15.00 X 50.00	655.00 325.00	325.00 RR 325.00 RR	8.69 5.12	1073 1116	1650 1809	1.57 2.36 0.6	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 60	74.97 22.49
P10 1:20	15.00 X 50.00	655.00 325.00	325.00 RR	12.96 7.86	1869 1939	6552 4416	4.02 8.04 2.1	2 ø 16.0 4 ø 16.0 8 ø 16.0	ø 5.0 c/15	74.97 22.49

			325.00 RR						ø 5.0 c/15 60	
P11 1:20	20.00 X 40.00	655.00 325.00	325.00 RR 325.00 RR	28.04 17.42	437 385	15122 18683	9.42 9.42 3.1	3 ø 20.0 3 ø 20.0 8 ø 20.0	ø 5.0 c/13 ø 5.0 c/13 60	56.23 28.11
P12 1:20	20.00 X 40.00	655.00 325.00	325.00 RR 325.00 RR	27.91 17.33	897 858	13397 18026	9.42 9.42 3.1	3 ø 20.0 3 ø 20.0 8 ø 20.0	ø 5.0 c/13 ø 5.0 c/13 60	56.23 28.11
P13 1:20	20.00 X 40.00	655.00 325.00	325.00 RR 325.00 RR	16.14 10.00	1950 2140	5754 1586	2.45 3.68 0.9	2 ø 12.5 3 ø 12.5 6 ø 12.5	ø 5.0 c/13 ø 5.0 c/13 60	56.23 28.11
P16 1:20	15.00 X 40.00	655.00 325.00	325.00 RR 325.00 RR	23.77 14.39	17 114	992 915	1.57 2.36 0.8	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 50	74.97 28.11
P18 1:20	15.00 X 40.00	655.00 325.00	325.00 RR 325.00 RR	20.37 12.31	68 206	455 491	1.57 2.36 0.8	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 50	74.97 28.11
P20 1:20	15.00 X 40.00	655.00 325.00	325.00 RR 325.00 RR	23.92 14.80	208 216	1012 1041	1.57 2.36 0.8	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 50	74.97 28.11
P21 1:20	15.00 X 40.00	655.00 325.00	325.00 RR 325.00 RR	8.73 5.16	322 249	786 625	1.57 2.36 0.8	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 60	74.97 28.11
P23 1:20	20.00 X 40.00	655.00 325.00	325.00 RR 325.00 RR	19.57 12.18	1903 3595	4281 2075	1.57 4.71 1.2	2 ø 10.0 6 ø 10.0 12 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 60	56.23 28.11
P27 1:20	20.00 X 40.00	655.00 325.00	325.00 RR 325.00 RR	18.42 11.15	1413 1836	1816 1565	1.57 2.36 0.6	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 50	56.23 28.11
P31 1:20	20.00 X 40.00	655.00 325.00	325.00 RR	11.50 6.33	1581 1957	2112 1395	1.57 2.36 0.6	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12	56.23 28.11

			325.00 RR						ø 5.0 c/12 50	
P34 1:20	20.00 X 40.00	655.00 325.00	325.00 RR 325.00 RR	28.61 17.78	831 1169	12797 14609	9.42 6.28 2.4	3 ø 20.0 2 ø 20.0 6 ø 20.0	ø 5.0 c/13 ø 5.0 c/13 60	56.23 28.11
P36 1:20	20.00 X 40.00	655.00 325.00	325.00 RR 325.00 RR	19.36 11.87	2663 3454	6724 4514	2.45 6.14 1.5	2 ø 12.5 5 ø 12.5 10 ø 12.5	ø 5.0 c/13 ø 5.0 c/13 60	56.23 28.11
P37 1:20	20.00 X 40.00	655.00 325.00	325.00 RR 325.00 RR	18.32 11.24	4563 4873	6457 7784	4.02 12.06 3.0	2 ø 16.0 6 ø 16.0 12 ø 16.0	ø 5.0 c/13 ø 5.0 c/13 60	56.23 28.11
P38 1:20	20.00 X 40.00	655.00 325.00	325.00 RR 325.00 RR	28.97 18.07	907 916	5121 5120	1.57 2.36 0.6	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 50	56.23 28.11
P39 1:20	20.00 X 40.00	655.00 325.00	325.00 RR 325.00 RR	14.36 8.62	2458 2668	3252 3274	1.57 3.93 1.0	2 ø 10.0 5 ø 10.0 10 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 50	56.23 28.11
P40 1:20	20.00 X 40.00	655.00 325.00	325.00 RR 325.00 RR	20.00 12.76	2762 2458	1051 1107	1.57 3.14 0.8	2 ø 10.0 4 ø 10.0 8 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 50	56.23 28.11
P41 1:20	20.00 X 40.00	655.00 325.00	325.00 RR 325.00 RR	44.79 29.93	402 690	10546 6026	4.02 4.02 1.0	2 ø 16.0 2 ø 16.0 4 ø 16.0	ø 5.0 c/13 ø 5.0 c/13 50	56.23 28.11
P42 1:20	20.00 X 40.00	740.00 410.00	410.00 RR 410.00 RR	47.40 31.18	2301 1996	10758 8001	6.28 6.28 1.6	2 ø 20.0 2 ø 20.0 4 ø 20.0	ø 5.0 c/13 ø 5.0 c/13 150	70.93 35.46
P43 1:20	15.00 X 50.00	700.00 370.00	370.00 RR 370.00 RR	11.10 6.48	1221 1163	2262 2426	1.57 3.14 0.8	2 ø 10.0 4 ø 10.0 8 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 105	85.35 25.60
P44 1:20	15.00 X 50.00	655.00 325.00	325.00 RR	15.44 9.35	2002 2107	1497 2059	1.57 5.50 1.5	2 ø 10.0 7 ø 10.0 14 ø 10.0	ø 5.0 c/12	74.97 22.49

			325.00 RR						ø 5.0 c/12 60	
P45 1:20	20.00 X 40.00	655.00 325.00	325.00 RR 325.00 RR	39.11 24.21	1020 1220	8331 9791	4.02 4.02 1.0	2 ø 16.0 2 ø 16.0 4 ø 16.0	ø 5.0 c/13 ø 5.0 c/13 60	56.23 28.11
P46 1:20	20.00 X 40.00	655.00 325.00	325.00 RR 325.00 RR	37.10 23.24	1114 1322	8947 12534	6.28 6.28 1.6	2 ø 20.0 2 ø 20.0 4 ø 20.0	ø 5.0 c/13 ø 5.0 c/13 60	56.23 28.11
P47 1:20	20.00 X 40.00	655.00 325.00	325.00 RR 325.00 RR	18.22 11.20	3062 3558	4916 6236	2.45 7.36 1.8	2 ø 12.5 6 ø 12.5 12 ø 12.5	ø 5.0 c/13 ø 5.0 c/13 60	56.23 28.11
P57 1:20	15.00 X 50.00	655.00 325.00	325.00 RR 325.00 RR	18.45 10.80	379 569	7067 7277	2.45 3.68 1.0	2 ø 12.5 3 ø 12.5 6 ø 12.5	ø 5.0 c/15 ø 5.0 c/15 50	74.97 22.49
P61 1:20	20.00 X 40.00	655.00 325.00	325.00 RR 325.00 RR	20.38 12.82	2597 2944	5933 8194	4.02 6.03 1.5	2 ø 16.0 3 ø 16.0 6 ø 16.0	ø 5.0 c/13 ø 5.0 c/13 60	56.23 28.11
P62 1:20	20.00 X 40.00	655.00 325.00	325.00 RR 325.00 RR	11.57 6.81	269 215	1183 960	1.57 2.36 0.6	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 60	56.23 28.11
P63 1:20	15.00 X 40.00	655.00 325.00	325.00 RR 325.00 RR	7.91 4.77	212 147	6556 5866	2.45 6.14 2.0	2 ø 12.5 5 ø 12.5 10 ø 12.5	ø 5.0 c/15 ø 5.0 c/15 66	74.97 28.11
P66 1:20	20.00 X 40.00	655.00 325.00	325.00 RR 325.00 RR	27.79 17.45	6790 8387	1379 978	4.02 14.07 3.5	2 ø 16.0 7 ø 16.0 14 ø 16.0	ø 5.0 c/13 ø 5.0 c/13 60	56.23 28.11
P67 1:20	20.00 X 40.00	655.00 325.00	330.00 RR 330.00 RR	28.16 17.69	6968 9285	1064 565	6.28 15.71 3.9	2 ø 20.0 5 ø 20.0 10 ø 20.0	ø 5.0 c/13 ø 5.0 c/13 60	57.09 28.54
P68 1:20	20.00 X 40.00	655.00 325.00	325.00 RR	19.62 12.24	2658 3597	6868 10794	6.28 9.42 2.4	2 ø 20.0 3 ø 20.0 6 ø 20.0	ø 5.0 c/13	56.23 28.11

			325.00 RR						ø 5.0 c/13 60	
P73 1:20	20.00 X 40.00	655.00 325.00	325.00 RR 325.00 RR	19.91 12.48	2660 2968	6231 8703	6.28 9.42 2.4	2 ø 20.0 3 ø 20.0 6 ø 20.0	ø 5.0 c/13 ø 5.0 c/13 60	56.23 28.11
P74 1:20	20.00 X 40.00	655.00 325.00	325.00 RR 325.00 RR	11.05 6.38	478 542	1329 977	1.57 2.36 0.6	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 60	56.23 28.11
P75 1:20	15.00 X 40.00	655.00 325.00	325.00 RR 325.00 RR	10.07 6.15	136 198	7287 6168	2.45 6.14 2.0	2 ø 12.5 5 ø 12.5 10 ø 12.5	ø 5.0 c/15 ø 5.0 c/15 66	74.97 28.11
P78 1:20	20.00 X 40.00	655.00 325.00	325.00 RR 325.00 RR	27.99 17.69	5172 3458	1017 1344	1.57 7.07 1.8	2 ø 10.0 9 ø 10.0 18 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 60	56.23 28.11
P79 1:20	20.00 X 40.00	655.00 325.00	325.00 RR 325.00 RR	28.69 18.08	5407 3602	1047 420	1.57 7.07 1.8	2 ø 10.0 9 ø 10.0 18 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 60	56.23 28.11
P80 1:20	20.00 X 40.00	655.00 325.00	325.00 RR 325.00 RR	19.57 12.24	2373 3238	6634 9815	6.28 9.42 2.4	2 ø 20.0 3 ø 20.0 6 ø 20.0	ø 5.0 c/13 ø 5.0 c/13 60	56.23 28.11
P81 1:20	15.00 X 50.00	655.00 325.00	325.00 RR 325.00 RR	17.77 10.45	443 645	8375 8512	2.45 4.91 1.3	2 ø 12.5 4 ø 12.5 8 ø 12.5	ø 5.0 c/15 ø 5.0 c/15 60	74.97 22.49
P83 1:20	15.00 X 50.00	655.00 325.00	325.00 RR 325.00 RR	2.98 1.36	399 1529	3009 2794	1.57 4.71 1.3	2 ø 10.0 6 ø 10.0 12 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 60	74.97 22.49
P84 1:20	15.00 X 50.00	655.00 325.00	325.00 RR 325.00 RR	9.43 5.27	332 287	4438 4699	1.57 2.36 0.6	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 60	74.97 22.49
P97 1:20	20.00 X 40.00	655.00 325.00	325.00 RR	19.82 12.43	3970 4435	5404 6927	6.28 9.42 2.4	2 ø 20.0 3 ø 20.0 6 ø 20.0	ø 5.0 c/13	56.23 28.11

			325.00 RR						ø 5.0 c/13 60	
P98 1:20	20.00 X 40.00	655.00 325.00	325.00 RR 325.00 RR	23.00 14.40	733 758	4982 4867	1.57 2.36 0.6	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 50	56.23 28.11
P99 1:20	20.00 X 40.00	655.00 325.00	325.00 RR 325.00 RR	19.46 12.20	2059 2330	3236 3469	1.57 3.14 0.8	2 ø 10.0 4 ø 10.0 8 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 65	56.23 28.11
P100 1:20	20.00 X 40.00	655.00 325.00	325.00 RR 325.00 RR	14.97 9.58	2568 2356	1023 1040	1.57 3.14 0.8	2 ø 10.0 4 ø 10.0 8 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 50	56.23 28.11
P101 1:20	20.00 X 40.00	655.00 325.00	325.00 RR 325.00 RR	42.62 28.45	427 654	9401 5701	4.02 4.02 1.0	2 ø 16.0 2 ø 16.0 4 ø 16.0	ø 5.0 c/13 ø 5.0 c/13 50	56.23 28.11
P103 1:20	15.00 X 50.00	700.00 325.00	325.00 RR 325.00 RR	9.97 5.73	1178 1153	1188 517	1.57 2.36 0.6	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 105	74.97 22.49
P104 1:20	15.00 X 50.00	655.00 325.00	325.00 RR 325.00 RR	12.97 7.78	1805 1775	1141 2524	1.57 4.71 1.3	2 ø 10.0 6 ø 10.0 12 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 60	74.97 22.49
P105 1:20	20.00 X 40.00	655.00 325.00	325.00 RR 325.00 RR	39.30 24.01	805 933	8514 5060	2.45 2.45 0.6	2 ø 12.5 2 ø 12.5 4 ø 12.5	ø 5.0 c/13 ø 5.0 c/13 50	56.23 28.11
P106 1:20	20.00 X 40.00	655.00 325.00	325.00 RR 325.00 RR	38.93 24.16	2959 1971	2445 3206	1.57 2.36 0.6	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 50	56.23 28.11
P107 1:20	20.00 X 40.00	655.00 325.00	325.00 RR 325.00 RR	19.98 12.42	2839 3210	5153 6480	2.45 6.14 1.5	2 ø 12.5 5 ø 12.5 10 ø 12.5	ø 5.0 c/13 ø 5.0 c/13 60	56.23 28.11
P108 1:20	20.00 X 40.00	655.00 325.00	325.00 RR	17.80 10.82	2926 4140	5373 2847	2.45 7.36 1.8	2 ø 12.5 6 ø 12.5 12 ø 12.5	ø 5.0 c/13	56.23 28.11

			325.00 RR						ø 5.0 c/13 60	
P110 1:20	20.00 X 40.00	655.00 325.00	325.00 RR 325.00 RR	34.53 21.25	1276 1662	8895 5175	4.02 4.02 1.0	2 ø 16.0 2 ø 16.0 4 ø 16.0	ø 5.0 c/13 ø 5.0 c/13 50	56.23 28.11
P112 1:20	20.00 X 40.00	655.00 325.00	325.00 RR 325.00 RR	24.73 15.20	1547 2148	11812 12963	9.42 6.28 2.4	3 ø 20.0 2 ø 20.0 6 ø 20.0	ø 5.0 c/13 ø 5.0 c/13 50	56.23 28.11
P115 1:20	20.00 X 40.00	655.00 325.00	325.00 RR 325.00 RR	27.74 17.22	800 1100	12828 12235	6.03 6.03 2.0	3 ø 16.0 3 ø 16.0 8 ø 16.0	ø 5.0 c/13 ø 5.0 c/13 50	56.23 28.11
P117 1:20	20.00 X 40.00	655.00 325.00	325.00 RR 325.00 RR	17.03 10.37	2086 3182	5670 3817	1.57 4.71 1.2	2 ø 10.0 6 ø 10.0 12 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 60	56.23 28.11
P126 1:20	20.00 X 40.00	655.00 325.00	325.00 RR 325.00 RR	16.64 10.33	3089 3368	7119 3791	4.02 6.03 1.5	2 ø 16.0 3 ø 16.0 6 ø 16.0	ø 5.0 c/13 ø 5.0 c/13 60	56.23 28.11
P127 1:20	20.00 X 40.00	655.00 325.00	325.00 RR 325.00 RR	28.09 17.52	627 537	12065 6998	6.28 6.28 1.6	2 ø 20.0 2 ø 20.0 4 ø 20.0	ø 5.0 c/13 ø 5.0 c/13 60	56.23 28.11
P128 1:20	20.00 X 40.00	655.00 325.00	325.00 RR 325.00 RR	25.78 16.03	1144 1248	10131 6121	6.28 6.28 1.6	2 ø 20.0 2 ø 20.0 4 ø 20.0	ø 5.0 c/13 ø 5.0 c/13 60	56.23 28.11
P129 1:20	20.00 X 40.00	655.00 325.00	325.00 RR 325.00 RR	28.04 17.55	977 1002	14668 19685	9.42 12.57 3.9	3 ø 20.0 4 ø 20.0 10 ø 20.0	ø 5.0 c/13 ø 5.0 c/13 60	56.23 28.11
P130 1:20	20.00 X 40.00	655.00 325.00	325.00 RR 325.00 RR	29.69 18.61	1563 1716	14896 20918	9.42 15.71 4.7	3 ø 20.0 5 ø 20.0 12 ø 20.0	ø 5.0 c/13 ø 5.0 c/13 60	56.23 28.11
P131 1:20	15.00 X 50.00	655.00 325.00	325.00 RR	13.32 8.10	1480 1521	7921 8702	4.02 8.04 2.1	2 ø 16.0 4 ø 16.0 8 ø 16.0	ø 5.0 c/15	74.97 22.49

			325.00 RR						ø 5.0 c/15 60	
P132 1:20	15.00 X 50.00	655.00 325.00	325.00 RR 325.00 RR	13.22 8.04	1724 1762	7921 8325	2.45 9.82 2.6	2 ø 12.5 8 ø 12.5 16 ø 12.5	ø 5.0 c/15 ø 5.0 c/15 60	74.97 22.49
P133 1:20	20.00 X 40.00	655.00 325.00	325.00 RR 325.00 RR	27.63 17.16	764 851	12280 16621	9.42 6.28 2.4	3 ø 20.0 2 ø 20.0 6 ø 20.0	ø 5.0 c/13 ø 5.0 c/13 60	56.23 28.11
P134 1:20	20.00 X 40.00	655.00 325.00	325.00 RR 325.00 RR	27.94 17.36	498 602	13734 19364	9.42 9.42 3.1	3 ø 20.0 3 ø 20.0 8 ø 20.0	ø 5.0 c/13 ø 5.0 c/13 60	56.23 28.11
P135 1:20	20.00 X 40.00	655.00 325.00	325.00 RR 325.00 RR	16.77 10.40	2385 2650	6623 2926	2.45 4.91 1.2	2 ø 12.5 4 ø 12.5 8 ø 12.5	ø 5.0 c/13 ø 5.0 c/13 60	56.23 28.11
P136 1:20	20.00 X 40.00	655.00 325.00	325.00 RR 325.00 RR	14.53 8.93	1900 2279	72 346	1.57 2.36 0.6	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 50	56.23 28.11
P139 1:20	20.00 X 40.00	655.00 325.00	325.00 RR 325.00 RR	14.09 8.21	1346 1941	240 1187	1.57 2.36 0.6	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 50	56.23 28.11
P140 1:20	20.00 X 40.00	655.00 325.00	325.00 RR 325.00 RR	12.21 7.51	2794 3122	28 93	1.57 3.93 1.0	2 ø 10.0 5 ø 10.0 10 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 50	56.23 28.11
P141 1:20	20.00 X 40.00	655.00 325.00	325.00 RR 325.00 RR	16.73 10.46	2556 3857	336 2157	1.57 5.50 1.4	2 ø 10.0 7 ø 10.0 14 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 50	56.23 28.11
P142 1:20	20.00 X 40.00	655.00 325.00	325.00 RR 325.00 RR	17.36 10.49	296 844	303 3171	1.57 2.36 0.6	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 50	56.23 28.11
P143 1:20	20.00 X 40.00	655.00 325.00	325.00 RR	19.81 12.14	2016 2993	293 2835	1.57 3.93 1.0	2 ø 10.0 5 ø 10.0 10 ø 10.0	ø 5.0 c/12	56.23 28.11

			325.00 RR						ø 5.0 c/12 50	
P144 1:20	20.00 X 40.00	655.00 325.00	325.00 RR 325.00 RR	23.42 14.45	1532 2259	286 490	1.57 2.36 0.6	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 50	56.23 28.11
P147 1:20	20.00 X 40.00	655.00 325.00	325.00 RR 325.00 RR	16.34 9.68	1749 2230	320 2309	1.57 2.36 0.6	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 50	56.23 28.11
P148 1:20	20.00 X 40.00	655.00 325.00	325.00 RR 325.00 RR	18.63 11.69	2894 3722	231 1538	1.57 4.71 1.2	2 ø 10.0 6 ø 10.0 12 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 50	56.23 28.11
P149 1:20	20.00 X 40.00	655.00 325.00	325.00 RR 325.00 RR	16.92 10.55	2768 3790	268 1620	1.57 5.50 1.4	2 ø 10.0 7 ø 10.0 14 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 50	56.23 28.11
P150 1:20	20.00 X 40.00	655.00 325.00	325.00 RR 325.00 RR	15.93 9.66	705 1119	389 2516	1.57 2.36 0.6	2 ø 10.0 3 ø 10.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 50	56.23 28.11
P151 1:20	20.00 X 40.00	655.00 325.00	325.00 RR 325.00 RR	18.56 11.43	2126 2801	370 2292	1.57 3.93 1.0	2 ø 10.0 5 ø 10.0 10 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 50	56.23 28.11

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

Resultados da Vigas

Resultados da Viga V201

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
	15.00								0.00
1	22.50	40.00 x 15.00	7 ø 10.0 1.63	7 ø 10.0 0.45		ø 6.3 c/ 5			0.00
P1	20.00		7 ø 10.0 0.45	7 ø 10.0 2.56					0.02

Resultados da Viga V202

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
V243	15.00			2 ø 10.0 0.74					0.02
1	657.50	15.00 x 30.00	2 ø 10.0 0.74			ø 5.0 c/ 15			0.03
V250	40.00			2 ø 10.0 1.13					0.08
2	605.00	15.00 x 30.00	2 ø 10.0 0.74			ø 5.0 c/ 15			0.02
V259	40.00			2 ø 10.0 0.88					0.05
3	605.00	15.00 x 30.00	2 ø 10.0 0.74			ø 5.0 c/ 15			0.02
V263	40.00			2 ø 10.0 0.74					0.03
4	605.00	15.00 x 30.00	2 ø 10.0 0.74			ø 5.0 c/ 15			0.01
V267	40.00			2 ø 10.0 0.74					0.03
5	612.50	15.00 x 30.00	2 ø 10.0 0.74			ø 5.0 c/ 15			0.01
V275	20.00			2 ø 10.0 0.74					0.01

Resultados da Viga V203

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P1	20.00			2 ø 10.0 1.65					0.16
1	625.00	15.00 x 60.00	2 ø 12.5 1.99			ø 5.0 c/ 19		2x3 ø 6.3	0.12
P3	20.00			2 ø 16.0 2.66					0.10
2	625.00	15.00 x 60.00	2 ø 10.0 1.37			ø 5.0 c/ 19		2x3 ø 6.3	0.04
P5	20.00			2 ø 12.5 2.51					0.19
3	625.00	15.00 x 60.00	2 ø 10.0 1.39			ø 5.0 c/ 19		2x3 ø 6.3	0.11
P7	20.00			2 ø 16.0 2.83					0.12
4	625.00	15.00 x 60.00	2 ø 10.0 1.37			ø 5.0 c/ 19		2x3 ø 6.3	0.08
P8	20.00			2 ø 16.0 3.33					0.16
5	627.50	15.00 x 60.00	2 ø 12.5 2.07			ø 5.0 c/ 19		2x3 ø 6.3	0.13
P9	15.00			2 ø 10.0 1.37					0.01

Resultados da Viga V204

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P10	15.00			2 ø 10.0 1.37					0.04
1	1255.50	15.00 x 60.00	2 ø 12.5 2.20	2 ø 10.0 1.57		ø 5.0 c/ 19		2x3 ø 6.3	0.15
P12	20.00			2 ø 12.5 1.73					0.09
2	615.00	15.00 x 60.00	2 ø 12.5 2.06			ø 5.0 c/ 19		2x3 ø 6.3	0.13
P13	20.00			2 ø 10.0 1.37					0.11

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

Resultados da Viga V205

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
V276	20.00			2 ø 10.0 0.74					0.03
1	595.50	15.00 x 30.00	2 ø 10.0 0.74			ø 5.0 c/ 15			0.02
V280	40.00			2 ø 10.0 1.25					0.10
2	605.00	15.00 x 30.00	2 ø 10.0 0.74			ø 5.0 c/ 15			0.02
V284	40.00			2 ø 10.0 0.94					0.06
3	647.50	15.00 x 30.00	2 ø 10.0 0.74			ø 5.0 c/ 15			0.03
V286	15.00			2 ø 10.0 0.74					0.01

Resultados da Viga V206

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P13	20.00		5 ø 10.0 0.74	5 ø 10.0 2.89					0.05
1	22.50	40.00 x 15.00	5 ø 10.0 1.92	5 ø 10.0 0.74		ø 6.3 c/ 5			0.00
	15.00		5 ø 10.0 0.74	5 ø 10.0 1.92					0.00

Resultados da Viga V207

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
	15.00								0.00
1	22.50	40.00 x 15.00	7 ø 10.0 1.17			ø 5.0 c/ 5			0.00
P23	20.00			7 ø 10.0 2.60					0.04

Resultados da Viga V208

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P23	20.00			2 ø 16.0 3.11					0.05
1	515.00	40.00 x 50.00	2 ø 16.0 3.11			ø 5.0 c/ 7			0.01
P136	20.00			2 ø 16.0 3.11					0.04
2	200.00	40.00 x 50.00	2 ø 16.0 3.11			ø 5.0 c/ 7			0.00
P137	20.00			2 ø 16.0 3.11					0.01
3	515.00	40.00 x 50.00	2 ø 16.0 3.11			ø 5.0 c/ 7			0.00
P27	20.00			2 ø 16.0 3.11					0.03
4	515.00	40.00 x 50.00	2 ø 16.0 3.11			ø 5.0 c/ 7			0.01
P138	20.00			2 ø 16.0 3.11					0.03
5	200.00	40.00 x 50.00	2 ø 16.0 3.11			ø 5.0 c/ 7			0.00
P139	20.00			2 ø 16.0 3.11					0.04
6	515.00	40.00 x 50.00	2 ø 16.0 3.11			ø 5.0 c/ 7			0.00
P31	20.00			2 ø 16.0 3.11					0.04
7	515.00	40.00 x 50.00	2 ø 16.0 3.11			ø 5.0 c/ 7			0.01
P140	20.00			2 ø 16.0 3.11					0.02
8	87.50	40.00 x 50.00	2 ø 16.0 3.11			ø 5.0 c/ 7			0.00
V274	20.00			2 ø 16.0 3.11					0.00

Resultados da Viga V209

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
	20.00								0.00
1	70.50	40.00 x 50.00	2 ø 16.0 3.11			ø 5.0 c/ 7			0.00
P141	20.00			2 ø 16.0 3.11					0.06
2	515.00	40.00 x 50.00	2 ø 16.0 3.11			ø 5.0 c/ 7			0.01
P34	20.00			2 ø 16.0 3.11					0.04
3	515.00	40.00 x 50.00	2 ø 16.0 3.11			ø 5.0 c/ 7			0.00
P142	20.00			2 ø 16.0 3.11					0.05
4	200.00	40.00 x 50.00	2 ø 16.0 3.11			ø 5.0 c/ 7			0.01
P143	20.00			2 ø 16.0 3.11					0.06
5	505.00	40.00 x 50.00	2 ø 16.0 3.11			ø 5.0 c/ 7			0.01
P36	20.00			2 ø 16.0 3.11					0.04

Resultados da Viga V210

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P36	20.00			5 ø 10.0 1.17					0.01
1	22.50	40.00 x 15.00	5 ø 10.0 1.17			ø 5.0 c/ 5			0.00
	15.00								0.00

Resultados da Viga V211

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P37	20.00			2 ø 16.0 3.11					0.08
1	625.00	40.00 x 50.00	2 ø 20.0 4.96			ø 6.3 c/ 11			0.19
P38	20.00			2 ø 20.0 5.20					0.21
2	362.50	40.00 x 50.00	2 ø 16.0 3.11			ø 5.0 c/ 7			0.01
P39	40.00			2 ø 16.0 3.11					0.01
3	222.50	40.00 x 50.00	2 ø 16.0 3.11			ø 5.0 c/ 7			0.00
P40	20.00			3 ø 16.0 6.30					0.26
4	625.00	40.00 x 50.00	3 ø 20.0 6.42			ø 6.3 c/ 11			0.14
P41	20.00			2 ø 20.0 6.03					0.28
5	625.00	40.00 x 50.00	2 ø 16.0 3.11			ø 5.0 c/ 7			0.04
P42	20.00			2 ø 20.0 5.45					0.23
6	627.50	40.00 x 50.00	2 ø 16.0 3.35			ø 5.0 c/ 7			0.16
P43	15.00			2 ø 16.0 3.11					0.00

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

Resultados da Viga V212

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P44	15.00			2 ø 16.0 3.11					0.02
1	610.50	40.00 x 50.00	2 ø 16.0 4.19			ø 5.0 c/ 7			0.26
P45	20.00			2 ø 20.0 6.28					0.29
2	625.00	40.00 x 50.00	2 ø 16.0 3.11			ø 5.0 c/ 7			0.09
P46	20.00			2 ø 20.0 6.26					0.29
3	615.00	40.00 x 50.00	3 ø 16.0 4.32			ø 5.0 c/ 7			0.12
P47	20.00			2 ø 16.0 3.11					0.08

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

Resultados da Viga V213

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P47	20.00			7 ø 10.0 2.82					0.04
1	22.50	40.00 x 15.00	7 ø 10.0 1.17			ø 5.0 c/ 5			0.00
	15.00			7 ø 10.0 1.17					0.00

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

Resultados da Viga V214

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
	15.00			2 ø 16.0 3.11					0.00
1	385.00	40.00 x 50.00	2 ø 16.0 3.11			ø 5.0 c/ 7			0.00
P58	20.00			3 ø 20.0 8.57					0.26
2	216.34	40.00 x 50.00	2 ø 16.0 3.11			ø 5.0 c/ 7			0.04
	21.41								0.00

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

Resultados da Viga V215

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
	15.00			7 ø 10.0 1.17					0.00
1	22.50	40.00 x 15.00	7 ø 10.0 1.17			ø 5.0 c/ 5			0.00
P61	20.00			7 ø 10.0 2.95					0.04

Resultados da Viga V216

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P61	20.00			2 ø 12.5 1.78					0.10
1	615.00	15.00 x 60.00	2 ø 12.5 1.76			ø 5.0 c/ 19		2x3 ø 6.3	0.10
P62	40.00			2 ø 12.5 1.90					0.11
2	541.82	15.00 x 60.00	2 ø 10.0 1.37	2 ø 16.0 3.11		ø 5.0 c/ 19		2x3 ø 6.3	0.14
	20.00								0.00

Resultados da Viga V217

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
V246	15.00			2 ø 10.0 1.37					0.00
1	573.50	15.00 x 60.00	2 ø 10.0 1.37			ø 5.0 c/ 19		2x3 ø 6.3	0.05
V249	20.00			2 ø 10.0 1.37					0.07
2	288.25	15.00 x 60.00	2 ø 10.0 1.37			ø 5.0 c/ 19		2x3 ø 6.3	0.00
	15.00								0.00

Resultados da Viga V218

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
	20.00								0.00
1	307.92	50.00 x 50.00	3 ø 12.5 3.87			ø 5.0 c/ 8			0.08
P64	60.00			5 ø 20.0 14.47					0.26

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

Resultados da Viga V219

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
V273	20.00			2 ø 10.0 1.16					0.00
1	605.50	15.00 x 50.00	2 ø 10.0 1.16			ø 5.0 c/ 19			0.06
V279	20.00			2 ø 10.0 1.49					0.14
2	625.00	15.00 x 50.00	2 ø 10.0 1.16			ø 5.0 c/ 19			0.04
V283	20.00			2 ø 10.0 1.51					0.14
3	561.50	15.00 x 50.00	2 ø 10.0 1.16			ø 5.0 c/ 19			0.06
V285	15.00			2 ø 10.0 1.16					0.00

Resultados da Viga V220

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P65	30.00			2 ø 12.5 1.76					0.09
1	1875.50	15.00 x 60.00	2 ø 12.5 1.78			ø 5.0 c/ 19		2x3 ø 6.3	0.10
P68	20.00			2 ø 12.5 1.71					0.09

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

Resultados da Viga V221

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P68	20.00			7 ø 10.0 2.46					0.03
1	22.50	40.00 x 15.00	7 ø 10.0 1.17			ø 5.0 c/ 5			0.00
	15.00			7 ø 10.0 1.17					0.00

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

Resultados da Viga V222

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
	15.00			7 ø 10.0 1.17					0.00
1	22.50	40.00 x 15.00	7 ø 10.0 1.17			ø 5.0 c/ 5			0.00
P73	20.00			7 ø 10.0 2.50					0.03

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

Resultados da Viga V223

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P73	20.00			2 ø 12.5 1.72					0.09
1	615.00	15.00 x 60.00	2 ø 12.5 1.76			ø 5.0 c/ 19		2x3 ø 6.3	0.10
P74	40.00			2 ø 12.5 1.80					0.10
2	260.05	15.00 x 60.00	2 ø 10.0 1.37			ø 5.0 c/ 19		2x3 ø 6.3	0.00
P75	40.00			3 ø 16.0 4.92					0.10
3	241.77	15.00 x 60.00	2 ø 10.0 1.37			ø 5.0 c/ 19		2x3 ø 6.3	0.05
	20.00								0.00

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

Resultados da Viga V224

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
V246	15.00			2 ø 10.0 1.37					0.00
1	571.00	15.00 x 60.00	2 ø 10.0 1.37			ø 5.0 c/ 19		2x3 ø 6.3	0.05
V248	25.00			2 ø 10.0 1.37					0.07
2	285.75	15.00 x 60.00	2 ø 10.0 1.37			ø 5.0 c/ 19		2x3 ø 6.3	0.00
	15.00								0.00

Resultados da Viga V225

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
	20.00								0.00
1	304.23	50.00 x 50.00	3 ø 12.5 3.87			ø 5.0 c/ 8			0.08
P76	60.00			5 ø 20.0 14.62					0.26

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

Resultados da Viga V226

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
	15.00								0.00
1	608.00	15.00 x 60.00	2 ø 10.0 1.37			ø 5.0 c/ 19		2x3 ø 6.3	0.07
V278	25.00			2 ø 12.5 1.71					0.09
2	620.00	15.00 x 60.00	2 ø 10.0 1.37			ø 5.0 c/ 19		2x3 ø 6.3	0.04
V282	25.00			2 ø 12.5 1.80					0.10
3	559.00	15.00 x 60.00	2 ø 10.0 1.37			ø 5.0 c/ 19		2x3 ø 6.3	0.06
V285	15.00			2 ø 10.0 1.37					0.00

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

Resultados da Viga V227

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P77	15.00			2 ø 12.5 2.01					0.12
1	600.50	15.00 x 60.00	2 ø 12.5 1.70			ø 5.0 c/ 19		2x3 ø 6.3	0.09
P78	40.00			2 ø 10.0 1.46					0.13
2	605.00	15.00 x 60.00	2 ø 10.0 1.37			ø 5.0 c/ 19		2x3 ø 6.3	0.08
P79	40.00			2 ø 10.0 1.56					0.14
3	605.00	15.00 x 60.00	2 ø 12.5 1.73			ø 5.0 c/ 19		2x3 ø 6.3	0.09
P80	20.00			2 ø 10.0 1.58					0.14

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

Resultados da Viga V228

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P80	20.00			7 ø 10.0 2.42					0.03
1	22.50	40.00 x 15.00	7 ø 10.0 1.17			ø 5.0 c/ 5			0.00
	15.00			7 ø 10.0 1.17					0.00

Resultados da Viga V229

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
	15.00			2 ø 16.0 3.67					0.00
1	385.00	40.00 x 60.00	2 ø 16.0 3.67			ø 5.0 c/ 7		2x5 ø 8.0	0.00
P82	20.00			3 ø 20.0 8.93					0.28
2	216.34	40.00 x 60.00	2 ø 16.0 3.67			ø 5.0 c/ 7		2x5 ø 8.0	0.01
	21.41								0.00

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

Resultados da Viga V230

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
	15.00			7 ø 10.0 1.17					0.00
1	22.50	40.00 x 15.00	7 ø 10.0 1.17			ø 5.0 c/ 5			0.00
P97	20.00			7 ø 10.0 2.76					0.04

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

Resultados da Viga V231

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P97	20.00			2 ø 16.0 3.11					0.11
1	625.00	40.00 x 50.00	3 ø 16.0 4.53			ø 5.0 c/ 7			0.13
P98	20.00			2 ø 20.0 4.71					0.17
2	625.00	40.00 x 50.00	2 ø 16.0 3.11			ø 5.0 c/ 7			0.02
P100	20.00			2 ø 20.0 5.87					0.27
3	625.00	40.00 x 50.00	2 ø 20.0 6.03			ø 6.3 c/ 11			0.28
P101	20.00			2 ø 20.0 5.67					0.25
4	625.00	40.00 x 50.00	2 ø 16.0 3.11			ø 5.0 c/ 7			0.03
P102	20.00			2 ø 20.0 5.13					0.20
5	627.50	40.00 x 50.00	2 ø 16.0 3.11			ø 5.0 c/ 7			0.14
P103	15.00			2 ø 16.0 3.11					0.00

Resultados da Viga V232

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P104	15.00			2 ø 16.0 3.11					0.01
1	610.50	40.00 x 50.00	2 ø 16.0 4.07			ø 5.0 c/ 7			0.24
P105	20.00			3 ø 20.0 6.46					0.14
2	615.00	40.00 x 50.00	2 ø 16.0 3.11			ø 5.0 c/ 7			0.12
P106	40.00			3 ø 20.0 7.57					0.19
3	605.00	40.00 x 50.00	3 ø 16.0 4.40			ø 5.0 c/ 7			0.13
P107	20.00			2 ø 16.0 3.11					0.09

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

Resultados da Viga V233

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P107	20.00			7 ø 10.0 3.34					0.06
1	22.50	40.00 x 15.00	7 ø 10.0 1.17			ø 5.0 c/ 5			0.00
	15.00			7 ø 10.0 1.17					0.00

Resultados da Viga V234

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P108	20.00			2 ø 16.0 3.11					0.03
1	515.00	40.00 x 50.00	2 ø 16.0 3.11			ø 5.0 c/ 7			0.01
P144	20.00			2 ø 16.0 3.11					0.08
2	200.00	40.00 x 50.00	2 ø 16.0 3.11			ø 5.0 c/ 7			0.02
P145	20.00			2 ø 16.0 3.11					0.05
3	515.00	40.00 x 50.00	2 ø 16.0 3.11			ø 5.0 c/ 7			0.01
P110	20.00			2 ø 16.0 3.11					0.04
4	515.00	40.00 x 50.00	2 ø 16.0 3.11			ø 5.0 c/ 7			0.01
P146	20.00			2 ø 16.0 3.11					0.03
5	200.00	40.00 x 50.00	2 ø 16.0 3.11			ø 5.0 c/ 7			0.00
P147	20.00			2 ø 16.0 3.11					0.06
6	515.00	40.00 x 50.00	2 ø 16.0 3.11			ø 5.0 c/ 7			0.01
P112	20.00			2 ø 16.0 3.11					0.02
7	515.00	40.00 x 50.00	2 ø 16.0 3.11			ø 5.0 c/ 7			0.02
P148	20.00			2 ø 16.0 3.11					0.06
8	87.50	40.00 x 50.00	2 ø 16.0 3.11			ø 5.0 c/ 7			0.00
V271	20.00			2 ø 16.0 3.11					0.00

Resultados da Viga V235

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
V270	20.00								0.00
1	70.50	40.00 x 50.00	2 ø 16.0 3.11			ø 5.0 c/ 7			0.00
P149	20.00			2 ø 16.0 3.11					0.05
2	515.00	40.00 x 50.00	2 ø 16.0 3.11			ø 5.0 c/ 7			0.01
P115	20.00			2 ø 16.0 3.11					0.04
3	515.00	40.00 x 50.00	2 ø 16.0 3.11			ø 5.0 c/ 7			0.01
P150	20.00			2 ø 16.0 3.11					0.05
4	200.00	40.00 x 50.00	2 ø 16.0 3.11			ø 5.0 c/ 7			0.00
P151	20.00			2 ø 16.0 3.11					0.06
5	505.00	40.00 x 50.00	2 ø 16.0 3.11			ø 5.0 c/ 7			0.01
P117	20.00			2 ø 16.0 3.11					0.03

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

Resultados da Viga V236

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P117	20.00			5 ø 10.0 1.17					0.00
1	22.50	40.00 x 15.00	5 ø 10.0 1.17			ø 5.0 c/ 5			0.00
	15.00								0.00

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

Resultados da Viga V237

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
	15.00								0.00
1	22.50	40.00 x 15.00	5 ø 10.0 1.70	5 ø 10.0 0.53		ø 6.3 c/ 5			0.00
P126	20.00		5 ø 10.0 0.53	5 ø 10.0 2.09					0.03

Resultados da Viga V238

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
V243	15.00			2 ø 10.0 0.74					0.02
1	657.50	15.00 x 30.00	2 ø 10.0 0.74			ø 5.0 c/ 15			0.03
V247	40.00			2 ø 10.0 1.31					0.11
2	605.00	15.00 x 30.00	2 ø 10.0 0.74			ø 5.0 c/ 15			0.02
V256	40.00			2 ø 10.0 0.98					0.06
3	605.00	15.00 x 30.00	2 ø 10.0 0.74			ø 5.0 c/ 15			0.03
V260	40.00			2 ø 10.0 0.89					0.05
4	605.00	15.00 x 30.00	2 ø 10.0 0.74			ø 5.0 c/ 15			0.02
V264	40.00			2 ø 10.0 0.93					0.06
5	612.50	15.00 x 30.00	2 ø 10.0 0.74			ø 5.0 c/ 15			0.02
V269	20.00			2 ø 10.0 0.74					0.02

Resultados da Viga V239

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P126	20.00			2 ø 12.5 1.70					0.09
1	625.00	15.00 x 60.00	2 ø 12.5 2.21			ø 5.0 c/ 19		2x3 ø 6.3	0.15
P127	20.00			2 ø 12.5 1.89					0.11
2	625.00	15.00 x 60.00	2 ø 10.0 1.59			ø 5.0 c/ 19		2x3 ø 6.3	0.15
P128	20.00			2 ø 12.5 1.91					0.11
3	625.00	15.00 x 60.00	2 ø 10.0 1.64			ø 5.0 c/ 19		2x3 ø 6.3	0.16
P129	20.00			2 ø 12.5 1.73					0.09
4	625.00	15.00 x 60.00	2 ø 10.0 1.50			ø 5.0 c/ 19		2x3 ø 6.3	0.13
P130	20.00			2 ø 12.5 2.19					0.15
5	627.50	15.00 x 60.00	2 ø 12.5 2.50			ø 5.0 c/ 19		2x3 ø 6.3	0.19
P131	15.00			2 ø 10.0 1.37					0.02

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

Resultados da Viga V240

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P132	15.00			2 ø 10.0 1.37					0.03
1	610.50	15.00 x 60.00	2 ø 12.5 2.36			ø 5.0 c/ 19		2x3 ø 6.3	0.17
P133	20.00			2 ø 12.5 2.06					0.13
2	625.00	15.00 x 60.00	2 ø 10.0 1.55			ø 5.0 c/ 19		2x3 ø 6.3	0.14
P134	20.00			2 ø 12.5 1.88					0.11
3	615.00	15.00 x 60.00	2 ø 12.5 2.12			ø 5.0 c/ 19		2x3 ø 6.3	0.14
P135	20.00			2 ø 10.0 1.46					0.12

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

Resultados da Viga V241

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
V268	20.00			2 ø 10.0 0.74					0.03
1	595.50	15.00 x 30.00	2 ø 10.0 0.74			ø 5.0 c/ 15			0.02
V277	40.00			2 ø 10.0 1.08					0.07
2	605.00	15.00 x 30.00	2 ø 10.0 0.74			ø 5.0 c/ 15			0.02
V281	40.00			2 ø 10.0 0.95					0.06
3	647.50	15.00 x 30.00	2 ø 10.0 0.74			ø 5.0 c/ 15			0.03
V286	15.00			2 ø 10.0 0.74					0.01

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

Resultados da Viga V242

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P135	20.00		5 ø 10.0 0.70	5 ø 10.0 2.39					0.03
1	22.50	40.00 x 15.00	5 ø 10.0 1.88	5 ø 10.0 0.70		ø 6.3 c/ 5			0.00
	15.00								0.00

Resultados da Viga V243

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
	15.00			2 ø 10.0 0.86					0.05
1	12.50	15.00 x 30.00	2 ø 10.0 0.74			ø 5.0 c/ 15			0.00
V237	40.00			2 ø 10.0 1.25					0.09
2	1030.00	15.00 x 30.00	2 ø 10.0 1.01			ø 5.0 c/ 15			0.07
V230	40.00			2 ø 10.0 1.35					0.12
3	775.00	15.00 x 30.00	2 ø 10.0 0.77			ø 5.0 c/ 15			0.04
V222	40.00			2 ø 10.0 0.87					0.05
4	375.00	15.00 x 30.00	2 ø 10.0 0.74			ø 5.0 c/ 15			0.02
V215	40.00		2 ø 10.0 0.43	2 ø 10.0 1.43					0.07
5	1030.00	15.00 x 30.00	2 ø 10.0 1.25	2 ø 10.0 0.43		ø 5.0 c/ 15			0.05
V207	40.00		2 ø 10.0 0.43	2 ø 10.0 1.62					0.09
6	775.00	15.00 x 30.00	2 ø 10.0 1.06			ø 5.0 c/ 15			0.07
V201	40.00			2 ø 10.0 1.25					0.09
7	12.50	15.00 x 30.00	2 ø 10.0 0.74			ø 5.0 c/ 15			0.00
	15.00			2 ø 10.0 0.75					0.04

Resultados da Viga V244

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P126	40.00			2 ø 16.0 2.64					0.10
1	1852.50	15.00 x 60.00	2 ø 16.0 3.48			ø 5.0 c/ 19		2x3 ø 6.3	0.18
	40.00			2 ø 16.0 2.69					0.10

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

Resultados da Viga V245

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P61	40.00			2 ø 12.5 2.57					0.19
1	1852.50	15.00 x 60.00	2 ø 16.0 3.38	2 ø 16.0 2.85		ø 5.0 c/ 19		2x3 ø 6.3	0.17
P1	40.00			2 ø 12.5 2.58					0.20

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

Resultados da Viga V246

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
V223	15.00		2 ø 10.0 0.49	2 ø 12.5 1.86					0.00
1	25.00	15.00 x 60.00	2 ø 10.0 1.43	2 ø 10.0 1.43		ø 5.0 c/ 19		2x3 ø 6.3	0.00
V224	15.00		2 ø 10.0 0.49	2 ø 12.5 1.86					0.00
2	320.00	15.00 x 60.00	2 ø 10.0 1.37			ø 5.0 c/ 19		2x3 ø 6.3	0.01
V217	15.00		2 ø 10.0 0.49	2 ø 12.5 1.86					0.00
3	25.00	15.00 x 60.00	2 ø 10.0 1.42	2 ø 10.0 1.42		ø 5.0 c/ 19		2x3 ø 6.3	0.00
V216	15.00		2 ø 10.0 0.49	2 ø 12.5 1.86					0.00

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

Resultados da Viga V247

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
	15.00			5 ø 10.0 1.17					0.00
1	5.00	40.00 x 15.00	5 ø 10.0 1.17			ø 5.0 c/ 5			0.00
P127	40.00			5 ø 10.0 1.38					0.02

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

Resultados da Viga V248

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P127	40.00			3 ø 20.0 6.51					0.14
1	782.50	25.00 x 50.00	3 ø 20.0 6.68			ø 6.3 c/ 18			0.15
V234	40.00			2 ø 20.0 5.75					0.24
2	847.50	25.00 x 50.00	2 ø 16.0 3.02			ø 5.0 c/ 11			0.13
P81	50.00			2 ø 20.0 5.83					0.25
3	142.50	25.00 x 50.00	2 ø 12.5 1.94			ø 5.0 c/ 11			0.00
P74	20.00			2 ø 16.0 3.66					0.02
4	22.50	25.00 x 50.00	2 ø 12.5 1.94			ø 5.0 c/ 11			0.00
	15.00			2 ø 12.5 1.94					0.00

Resultados da Viga V249

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
	15.00			2 ø 10.0 1.54					0.00
1	22.50	20.00 x 50.00	2 ø 10.0 1.54			ø 5.0 c/ 14			0.00
P62	20.00			2 ø 16.0 2.92					0.01
2	142.50	20.00 x 50.00	2 ø 10.0 1.54			ø 5.0 c/ 14			0.00
P57	50.00			2 ø 20.0 5.30					0.20
3	592.50	20.00 x 50.00	2 ø 16.0 2.69			ø 5.0 c/ 14			0.11
P38	40.00			3 ø 16.0 4.40					0.12
4	627.50	20.00 x 50.00	2 ø 10.0 1.54			ø 5.0 c/ 14			0.11
P16	40.00			2 ø 16.0 3.59					0.18
5	370.00	20.00 x 50.00	2 ø 10.0 1.54			ø 5.0 c/ 14			0.13
P3	40.00			2 ø 10.0 1.54					0.11

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

Resultados da Viga V250

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P3	40.00		5 ø 10.0 0.76	5 ø 10.0 2.29					0.02
1	5.00	40.00 x 15.00	5 ø 10.0 1.93	5 ø 10.0 0.76		ø 6.3 c/ 5			0.00
	15.00		5 ø 10.0 0.76	5 ø 10.0 1.93					0.00

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

Resultados da Viga V251

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
V229	40.00			2 ø 10.0 0.95					0.02
1	150.00	15.00 x 40.00	2 ø 10.0 0.95			ø 5.0 c/ 19			0.01
	15.00								0.00

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

Resultados da Viga V252

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P75	15.00			2 ø 12.5 2.48					0.00
1	400.00	15.00 x 110.00	2 ø 12.5 2.48			ø 5.0 c/ 19		2x6 ø 6.3	0.01
P63	15.00			2 ø 12.5 2.48					0.00

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

Resultados da Viga V253

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P63	15.00			2 ø 10.0 0.95					0.00
1	150.00	15.00 x 40.00	2 ø 10.0 0.95			ø 5.0 c/ 19			0.01
V214	40.00			2 ø 10.0 0.95					0.02

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

Resultados da Viga V254

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P99	20.00			2 ø 12.5 1.83					0.05
1	607.50	20.00 x 60.00	2 ø 12.5 1.90			ø 5.0 c/ 14		2x4 ø 6.3	0.11
P82	40.00			2 ø 12.5 1.83					0.10

Resultados da Viga V255

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P58	40.00			2 ø 12.5 1.66					0.08
1	607.50	20.00 x 50.00	2 ø 12.5 1.77			ø 5.0 c/ 14			0.10
P39	20.00			2 ø 12.5 1.69					0.09

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

Resultados da Viga V256

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
	15.00			5 ø 10.0 1.17					0.00
1	5.00	40.00 x 15.00	5 ø 10.0 1.17			ø 5.0 c/ 5			0.00
P128	40.00			5 ø 10.0 1.17					0.01

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

Resultados da Viga V257

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P128	40.00			2 ø 20.0 5.24					0.20
1	782.50	25.00 x 50.00	2 ø 20.0 6.05			ø 6.3 c/ 18			0.27
P110	40.00			4 ø 20.0 10.41					0.16
2	215.00	25.00 x 50.00	2 ø 12.5 1.94			ø 5.0 c/ 11			0.00
	40.00			2 ø 12.5 1.94					0.00

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

Resultados da Viga V258

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P40	40.00			2 ø 10.0 1.54					0.00
1	215.00	20.00 x 50.00	2 ø 10.0 1.54			ø 5.0 c/ 14			0.00
P27	40.00			2 ø 12.5 2.21					0.14
2	360.00	20.00 x 50.00	2 ø 10.0 1.54			ø 5.0 c/ 14			0.11
P18	40.00			2 ø 10.0 1.54					0.13
3	382.50	20.00 x 50.00	2 ø 12.5 1.77			ø 5.0 c/ 14			0.10
P5	40.00			2 ø 10.0 1.55					0.13

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

Resultados da Viga V259

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P5	40.00			5 ø 10.0 1.35					0.02
1	5.00	40.00 x 15.00	5 ø 10.0 1.17			ø 5.0 c/ 5			0.00
	15.00			5 ø 10.0 1.17					0.00

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

Resultados da Viga V260

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
	15.00			5 ø 10.0 1.17					0.00
1	5.00	40.00 x 15.00	5 ø 10.0 1.17			ø 5.0 c/ 5			0.00
P129	40.00			5 ø 10.0 1.17					0.01

Resultados da Viga V261

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P129	40.00			3 ø 20.0 7.65					0.18
1	1037.50	40.00 x 50.00	3 ø 20.0 8.10			ø 6.3 c/ 11			0.22
P101	40.00			5 ø 20.0 16.19					0.27
2	160.65	40.00 x 50.00	2 ø 16.0 3.11			ø 6.3 c/ 11	ø 6.3 c/ 6 108.00		0.01
	20.83								0.00

Resultados da Viga V262

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
	20.83								0.00
1	160.65	40.00 x 50.00	2 ø 16.0 3.11		ø 6.3 c/ 5 108.00	ø 6.3 c/ 11			0.00
P41	40.00			6 ø 20.0 16.90					0.19
2	1037.50	40.00 x 50.00	3 ø 20.0 7.31			ø 6.3 c/ 11			0.18
P7	40.00			2 ø 20.0 6.48					0.30

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

Resultados da Viga V263

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P7	40.00			5 ø 10.0 1.17					0.01
1	5.00	40.00 x 15.00	5 ø 10.0 1.17			ø 5.0 c/ 5			0.00
	15.00			5 ø 10.0 1.17					0.00

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

Resultados da Viga V264

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
	15.00			7 ø 10.0 1.17					0.00
1	5.00	40.00 x 15.00	7 ø 10.0 1.17			ø 5.0 c/ 5			0.00
P130	40.00			7 ø 10.0 1.17					0.00

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

Resultados da Viga V265

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P130	40.00			3 ø 20.0 7.78					0.19
1	782.50	40.00 x 50.00	3 ø 20.0 8.09			ø 6.3 c/ 11			0.22
P112	40.00			3 ø 20.0 7.11					0.17
2	215.00	40.00 x 50.00	2 ø 16.0 3.11			ø 5.0 c/ 7			0.00
P102	40.00			4 ø 20.0 9.64					0.18
3	348.87	40.00 x 50.00	2 ø 16.0 3.61			ø 5.0 c/ 7			0.20
	20.83								0.00

Resultados da Viga V266

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
	20.83								0.00
1	348.87	40.00 x 50.00	2 ø 16.0 3.57			ø 5.0 c/ 7			0.20
P42	40.00			3 ø 20.0 8.46					0.25
2	580.00	40.00 x 50.00	2 ø 16.0 3.11			ø 5.0 c/ 7			0.04
P20	40.00			2 ø 16.0 3.11					0.07
3	417.50	40.00 x 50.00	2 ø 16.0 3.14			ø 5.0 c/ 7			0.14
P8	40.00			2 ø 16.0 3.11					0.06

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

Resultados da Viga V267

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P8	40.00			5 ø 10.0 1.17					0.01
1	5.00	40.00 x 15.00	5 ø 10.0 1.17			ø 5.0 c/ 5			0.00
	15.00			5 ø 10.0 1.17					0.00

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

Resultados da Viga V268

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
	15.00		3 ø 10.0 1.11	3 ø 10.0 1.70					0.00
1	5.00	20.00 x 15.00	3 ø 10.0 1.70	3 ø 10.0 1.11		ø 5.0 c/ 5			0.00
P132	50.00		3 ø 10.0 1.11	3 ø 10.0 1.70					0.00

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

Resultados da Viga V269

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
	15.00		3 ø 10.0 1.25	3 ø 10.0 1.83					0.00
1	5.00	20.00 x 15.00	3 ø 10.0 1.83	3 ø 10.0 1.25		ø 5.0 c/ 5			0.00
P131	50.00		3 ø 10.0 1.25	3 ø 10.0 1.83					0.00

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

Resultados da Viga V270

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P132	50.00			2 ø 16.0 3.24					0.15
1	1027.50	20.00 x 60.00	2 ø 16.0 3.21			ø 5.0 c/ 14		2x4 ø 6.3	0.15
P104	50.00			2 ø 12.5 2.38					0.16
2	575.50	20.00 x 60.00	2 ø 12.5 1.83			ø 5.0 c/ 14		2x4 ø 6.3	0.05
P84	50.00			2 ø 12.5 2.20					0.15
3	149.50	20.00 x 60.00	2 ø 12.5 1.83			ø 5.0 c/ 14		2x4 ø 6.3	0.00
P77	60.00			2 ø 12.5 1.83					0.00

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

Resultados da Viga V271

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P131	50.00			2 ø 16.0 3.24					0.15
1	1027.50	20.00 x 60.00	2 ø 16.0 3.22			ø 5.0 c/ 14		2x4 ø 6.3	0.15
P103	50.00			2 ø 12.5 2.50					0.18
2	575.50	20.00 x 60.00	2 ø 12.5 1.83			ø 5.0 c/ 14		2x4 ø 6.3	0.01
P83	50.00			2 ø 12.5 1.83					0.02
3	144.50	20.00 x 60.00	2 ø 12.5 1.83			ø 5.0 c/ 14		2x4 ø 6.3	0.00
P76	60.00			2 ø 12.5 1.83					0.01

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

Resultados da Viga V272

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P76	60.00			3 ø 20.0 7.65					0.01
1	340.00	30.00 x 170.00	3 ø 20.0 7.65			ø 6.3 c/ 15		2x11 ø 8.0	0.00
P64	60.00			3 ø 20.0 7.65					0.02

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

Resultados da Viga V273

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
	15.00			2 ø 12.5 1.83					0.00
1	22.50	20.00 x 60.00	2 ø 12.5 1.83			ø 5.0 c/ 14		2x4 ø 6.3	0.00
P65	20.00			2 ø 16.0 3.15					0.04
2	775.00	20.00 x 60.00	2 ø 16.0 3.22			ø 5.0 c/ 14		2x4 ø 6.3	0.16
P44	50.00			2 ø 16.0 2.85					0.12
3	1027.50	20.00 x 60.00	2 ø 16.0 3.32			ø 5.0 c/ 14		2x4 ø 6.3	0.16
P10	50.00			2 ø 16.0 2.67					0.10

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

Resultados da Viga V274

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P64	60.00			2 ø 12.5 1.83					0.06
1	755.00	20.00 x 60.00	2 ø 12.5 1.83			ø 5.0 c/ 14		2x4 ø 6.3	0.03
P43	50.00			2 ø 12.5 1.83					0.08
2	622.50	20.00 x 60.00	2 ø 12.5 1.83			ø 5.0 c/ 14		2x4 ø 6.3	0.02
P21	40.00			2 ø 12.5 1.83					0.03
3	365.00	20.00 x 60.00	2 ø 12.5 1.83			ø 5.0 c/ 14		2x4 ø 6.3	0.02
P9	50.00			2 ø 12.5 1.83					0.01

Resultados da Viga V275

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P9	50.00		3 ø 10.0 0.96	3 ø 10.0 1.55					0.00
1	5.00	20.00 x 15.00	3 ø 10.0 1.55	3 ø 10.0 0.96		ø 5.0 c/ 5			0.00
	15.00		3 ø 10.0 0.96	3 ø 10.0 1.55					0.00

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

Resultados da Viga V276

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P10	50.00		3 ø 10.0 1.00	3 ø 10.0 1.58					0.00
1	5.00	20.00 x 15.00	3 ø 10.0 1.58	3 ø 10.0 1.00		ø 5.0 c/ 5			0.00
	15.00		3 ø 10.0 1.00	3 ø 10.0 1.58					0.00

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

Resultados da Viga V277

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
	15.00			5 ø 10.0 1.17					0.00
1	5.00	40.00 x 15.00	5 ø 10.0 1.17			ø 5.0 c/ 5			0.00
P133	40.00			5 ø 10.0 1.17					0.01

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

Resultados da Viga V278

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P133	40.00			2 ø 20.0 6.45					0.29
1	782.50	25.00 x 50.00	2 ø 20.0 6.05			ø 6.3 c/ 18			0.27
P115	40.00			4 ø 20.0 10.12					0.15
2	215.00	25.00 x 50.00	2 ø 12.5 1.94			ø 5.0 c/ 11			0.00
P105	40.00			3 ø 20.0 9.86					0.27
3	785.00	25.00 x 50.00	3 ø 20.0 6.51			ø 6.3 c/ 18			0.14
P78	20.00			2 ø 16.0 4.23					0.25
4	22.50	25.00 x 50.00	2 ø 12.5 1.94			ø 5.0 c/ 11			0.00
	15.00			2 ø 12.5 1.94					0.00

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

Resultados da Viga V279

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
	15.00			2 ø 12.5 2.11					0.00
1	22.50	20.00 x 70.00	2 ø 12.5 2.11			ø 5.0 c/ 14		2x3 ø 8.0	0.00
P66	20.00			2 ø 16.0 4.20					0.15
2	785.00	20.00 x 70.00	2 ø 20.0 6.14			ø 6.3 c/ 23		2x3 ø 8.0	0.28
P45	40.00			3 ø 20.0 7.66					0.16
3	215.00	20.00 x 70.00	2 ø 12.5 2.11			ø 5.0 c/ 14		2x3 ø 8.0	0.00
P34	40.00			3 ø 20.0 8.39					0.17
4	782.50	20.00 x 70.00	2 ø 20.0 5.49			ø 6.3 c/ 23		2x3 ø 8.0	0.23
P11	40.00			2 ø 20.0 6.19					0.27

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

Resultados da Viga V280

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P11	40.00			7 ø 10.0 1.47					0.01
1	5.00	40.00 x 15.00	7 ø 10.0 1.17			ø 5.0 c/ 5			0.00
	15.00			7 ø 10.0 1.17					0.00

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

Resultados da Viga V281

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
	15.00			5 ø 10.0 1.17					0.00
1	5.00	40.00 x 15.00	5 ø 10.0 1.17			ø 5.0 c/ 5			0.00
P134	40.00			5 ø 10.0 1.17					0.01

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

Resultados da Viga V282

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P134	40.00			3 ø 20.0 7.23					0.17
1	1047.50	25.00 x 50.00	3 ø 20.0 6.57			ø 6.3 c/ 18			0.14
P106	20.00			3 ø 20.0 8.57					0.23
2	795.00	25.00 x 50.00	3 ø 20.0 6.71			ø 6.3 c/ 18			0.15
P79	20.00			3 ø 16.0 4.43					0.13
3	22.50	25.00 x 50.00	2 ø 12.5 1.94			ø 5.0 c/ 11			0.00
	15.00			2 ø 12.5 1.94					0.00

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

Resultados da Viga V283

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
	15.00			2 ø 12.5 2.11					0.00
1	22.50	20.00 x 70.00	2 ø 12.5 2.11			ø 5.0 c/ 14		2x3 ø 8.0	0.00
P67	20.00			2 ø 16.0 4.20					0.16
2	785.00	20.00 x 70.00	2 ø 20.0 5.91			ø 6.3 c/ 23		2x3 ø 8.0	0.26
P46	40.00			3 ø 20.0 8.15					0.17
3	1037.50	20.00 x 70.00	2 ø 20.0 6.24			ø 6.3 c/ 23		2x3 ø 8.0	0.29
P12	40.00			2 ø 20.0 5.14					0.19

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

Resultados da Viga V284

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P12	40.00			5 ø 10.0 1.17					0.01
1	5.00	40.00 x 15.00	5 ø 10.0 1.17			ø 5.0 c/ 5			0.00
	15.00			5 ø 10.0 1.17					0.00

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

Resultados da Viga V285

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
V227	15.00		2 ø 10.0 0.49	2 ø 12.5 1.86					0.00
1	25.00	15.00 x 60.00	2 ø 10.0 1.59	2 ø 10.0 1.59		ø 5.0 c/ 19		2x3 ø 6.3	0.01
V226	15.00		2 ø 10.0 0.49	2 ø 12.5 1.86					0.00
2	320.00	15.00 x 60.00	2 ø 10.0 1.37			ø 5.0 c/ 19		2x3 ø 6.3	0.01
V219	15.00		2 ø 10.0 0.49	2 ø 12.5 1.86					0.00
3	25.00	15.00 x 60.00	2 ø 10.0 1.50	2 ø 10.0 1.50		ø 5.0 c/ 19		2x3 ø 6.3	0.00
V220	15.00		2 ø 10.0 0.49	2 ø 12.5 1.86					0.00

Resultados da Viga V286

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
	15.00		2 ø 10.0 0.58	2 ø 10.0 1.32					0.03
1	12.50	15.00 x 30.00	2 ø 10.0 1.32	2 ø 10.0 0.58		ø 5.0 c/ 15			0.00
V242	40.00		2 ø 10.0 0.60	2 ø 12.5 1.72					0.04
2	775.00	15.00 x 30.00	2 ø 10.0 1.03			ø 5.0 c/ 15			0.07
V236	40.00		2 ø 10.0 0.31	2 ø 10.0 1.12					0.04
3	215.00	15.00 x 30.00	2 ø 10.0 1.05	2 ø 10.0 0.31		ø 5.0 c/ 15			0.02
V233	40.00		2 ø 10.0 0.31	2 ø 10.0 1.47					0.09
4	775.00	15.00 x 30.00	2 ø 10.0 0.74			ø 5.0 c/ 15			0.04
V228	40.00			2 ø 10.0 0.86					0.05
5	375.00	15.00 x 30.00	2 ø 10.0 0.74			ø 5.0 c/ 15			0.02
V221	40.00			2 ø 10.0 0.86					0.05
6	775.00	15.00 x 30.00	2 ø 10.0 0.84			ø 5.0 c/ 15			0.05
V213	40.00			2 ø 10.0 0.88					0.05
7	215.00	15.00 x 30.00	2 ø 10.0 0.74			ø 5.0 c/ 15			0.00
V210	40.00			2 ø 10.0 0.74					0.03
8	775.00	15.00 x 30.00	2 ø 10.0 0.93			ø 5.0 c/ 15			0.06
V206	40.00			2 ø 10.0 1.25					0.07
9	12.50	15.00	2 ø 10.0			ø 5.0 c/ 15			0.00

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

		x 30.00	0.74						
	15.00			2 ø 10.0 0.74					0.02

Resultados da Viga V287

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P135	40.00			2 ø 12.5 2.40					0.17
1	1852.50	15.00 x 60.00	2 ø 16.0 3.41			ø 5.0 c/ 19		2x3 ø 6.3	0.17
	40.00			2 ø 16.0 2.84					0.11

Resultados da Viga V288

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
	40.00			2 ø 16.0 2.92					0.12
1	1030.00	15.00 x 60.00	2 ø 16.0 2.78			ø 5.0 c/ 19		2x3 ø 6.3	0.12
P36	40.00			3 ø 16.0 5.21					0.10
2	782.50	15.00 x 60.00	2 ø 16.0 3.18			ø 5.0 c/ 19		2x3 ø 6.3	0.15
P13	40.00			2 ø 12.5 2.06					0.13

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

Resultados da Viga V289

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P137	26.94			2 ø 12.5 2.40					0.00
1	352.17	20.00 x 80.00	2 ø 12.5 2.40			ø 5.0 c/ 14		2x6 ø 6.3	0.00
P39	29.85			2 ø 16.0 3.20					0.16
2	401.43	20.00 x 80.00	2 ø 12.5 2.40			ø 5.0 c/ 14		2x6 ø 6.3	0.00
V292	20.00			2 ø 12.5 2.40					0.03
3	142.47	20.00 x 80.00	2 ø 12.5 2.40			ø 5.0 c/ 14		2x6 ø 6.3	0.03
	20.05								0.00

Resultados da Viga V290

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P64	75.72			3 ø 20.0 7.21					0.15
1	974.33	20.00 x 110.00	3 ø 20.0 8.68			ø 6.3 c/ 23		2x8 ø 6.3	0.18
P42	32.78			2 ø 16.0 3.30					0.14

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

Resultados da Viga V291

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
	20.19								0.00
1	198.41	20.00 x 80.00	2 ø 12.5 2.40			ø 5.0 c/ 14		2x6 ø 6.3	0.02
V290	20.43			2 ø 16.0 4.06					0.25
2	497.25	20.00 x 80.00	2 ø 12.5 2.40			ø 5.0 c/ 14		2x6 ø 6.3	0.00
P43	23.05			2 ø 12.5 2.40					0.00

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

Resultados da Viga V292

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P58	30.45			2 ø 16.0 3.30					0.01
1	803.73	20.00 x 110.00	3 ø 16.0 4.40			ø 5.0 c/ 14		2x8 ø 6.3	0.14
V211	53.05			2 ø 16.0 3.30					0.00
2	296.44	20.00 x 110.00	2 ø 16.0 3.30			ø 5.0 c/ 14		2x8 ø 6.3	0.00
P138	30.45			2 ø 16.0 3.30					0.00

Resultados da Viga V293

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P103	23.26			2 ø 12.5 2.40					0.02
1	502.56	20.00 x 80.00	2 ø 12.5 2.40			ø 5.0 c/ 14		2x6 ø 6.3	0.00
V296	20.51			2 ø 16.0 4.05					0.25
2	194.65	20.00 x 80.00	2 ø 12.5 2.40			ø 5.0 c/ 14		2x6 ø 6.3	0.02
	20.22								0.00

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

Resultados da Viga V294

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
V261	40.53		2 ø 10.0 1.34	3 ø 16.0 4.59					0.03
1	777.82	20.00 x 110.00	2 ø 16.0 3.35	2 ø 10.0 1.34		ø 5.0 c/ 12		2x8 ø 6.3	0.05
V229	44.97		2 ø 10.0 1.34	3 ø 16.0 4.59					0.00
2	1578.63	20.00 x 110.00	2 ø 16.0 4.23	2 ø 10.0 1.34		ø 5.0 c/ 12		2x8 ø 6.3	0.06
V262	40.53		2 ø 10.0 1.34	3 ø 16.0 4.59					0.03

Resultados da Viga V295

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
V261	40.10		2 ø 16.0 2.69	2 ø 20.0 5.95					0.04
1	2807.06	20.00 x 110.00	2 ø 20.0 5.95	2 ø 16.0 2.69		ø 6.3 c/ 21		2x8 ø 6.3	0.05
V262	40.10		2 ø 16.0 2.69	2 ø 20.0 5.95					0.05

Resultados da Viga V296

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P102	33.16			2 ø 16.0 3.30					0.15
1	986.32	20.00 x 110.00	3 ø 20.0 8.61			ø 6.3 c/ 23		2x8 ø 6.3	0.18
P76	75.22			3 ø 20.0 7.36					0.16

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

Resultados da Viga V297

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
	30.45			2 ø 16.0 3.30					0.00
1	296.44	20.00 x 110.00	2 ø 16.0 3.30			ø 5.0 c/ 14		2x8 ø 6.3	0.00
V231	53.05			2 ø 16.0 3.30					0.00
2	803.73	20.00 x 110.00	2 ø 16.0 3.59			ø 5.0 c/ 14		2x8 ø 6.3	0.20
P82	30.45			2 ø 16.0 3.30					0.01

Resultados da Viga V298

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
	26.94			2 ø 16.0 3.30					0.00
1	352.17	20.00 x 110.00	2 ø 16.0 3.30			ø 5.0 c/ 14		2x8 ø 6.3	0.00
P99	29.85			2 ø 20.0 4.92					0.19
2	563.84	20.00 x 110.00	2 ø 16.0 3.30			ø 5.0 c/ 14		2x8 ø 6.3	0.00
	20.05								0.00

Resultados da Laje

SUPERIOR NV-640	fck = 400.00 kgf/cm ²	E = 318758 kgf/cm ²	Peso Espec = 2500.00 kgf/m ³
Lance 3		cobr = 2.50 cm	

Nome	Espessura (cm)	Carga (kgf/m ²)	Mdx (kgf.m/m)	Mdy (kgf.m/m)	Asx	Asy
L201	15	605.00	199	968	As = 1.77 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)	As = 2.00 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)
L202	15	605.00	122	570	As = 1.77 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)	As = 1.89 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)
L203	15	555.00	1498	1011	As = 2.94 cm ² /m (ø10.0 c/20 - 3.93 cm ² /m)	As = 2.13 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)
L204	15	525.00	1069	525	As = 2.06 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)	As = 1.89 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)
L205	15	605.00	88	293	As = 1.77 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)	As = 1.89 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)
L206	15	525.00	1529	1021	As = 3.00 cm ² /m (ø10.0 c/20 - 3.93 cm ² /m)	As = 2.15 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)
L207	15	605.00	93	329	As = 1.77 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)	As = 1.89 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)
L208	15	605.00	36	237	As = 1.77 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)	As = 1.89 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)
L209	15	525.00	991	1018	As = 1.91 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)	As = 2.11 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)
L210	15	605.00	17	529	As = 1.77 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)	As = 1.89 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)
L211	15	525.00	1593	619	As = 3.13 cm ² /m (ø10.0 c/20 - 3.93 cm ² /m)	As = 1.93 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)
L212	15	605.00	156	590	As = 1.77 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)	As = 1.89 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)
L213	15	525.00	1320	1103	As = 2.56 cm ² /m (ø8.0 c/19 - 2.65 cm ² /m)	As = 2.29 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)
L214	15	525.00	1123	986	As = 2.17 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)	As = 2.04 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)
L215	15	605.00	152	292	As = 1.77 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)	As = 1.89 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)
L216	15	525.00	1298	1160	As = 2.51 cm ² /m	As = 2.41 cm ² /m

					(ø8.0 c/20 - 2.51 cm ² /m)	(ø8.0 c/20 - 2.51 cm ² /m)
L217	15	605.00	59	599	As = 1.77 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)	As = 1.89 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)
L218	15	605.00	163	857	As = 1.77 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)	As = 1.89 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)
L219	15	605.00	128	812	As = 1.77 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)	As = 1.89 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)
L220	15	525.00		1265	As = 1.30 cm ² /m (ø6.3 c/23 - 1.36 cm ² /m)	As = 2.83 cm ² /m (ø10.0 c/20 - 3.93 cm ² /m)
L221	15	525.00	319	159	As = 1.77 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)	As = 1.89 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)
L222	15	525.00	437	503	As = 1.77 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)	As = 1.89 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)
L223	15	525.00		879	As = 1.77 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)	As = 1.89 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)
L224	15	525.00	161	527	As = 1.77 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)	As = 1.89 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)
L225	15	525.00	43	724	As = 1.77 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)	As = 1.89 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)
L226	15	525.00	196	963	As = 1.77 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)	As = 1.99 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)
L227	15	525.00		997	As = 1.77 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)	As = 2.06 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)
L228	15	525.00		764	As = 1.77 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)	As = 1.89 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)
L229	15	525.00		1191	As = 1.30 cm ² /m (ø6.3 c/23 - 1.36 cm ² /m)	As = 2.83 cm ² /m (ø10.0 c/20 - 3.93 cm ² /m)
L230	15	605.00	115	16	As = 1.77 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)	As = 1.89 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)
L231	15	525.00	1334	1049	As = 2.59 cm ² /m (ø8.0 c/19 - 2.65 cm ² /m)	As = 2.17 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)
L232	15	525.00	141	733	As = 1.77 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)	As = 1.89 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)
L233	10	400.00	165	3	As = 1.33 cm ² /m (ø6.3 c/20 - 1.56 cm ² /m)	As = 1.46 cm ² /m (ø6.3 c/20 - 1.56 cm ² /m)
L234	10	400.00	232	265	As = 1.33 cm ² /m (ø6.3 c/20 - 1.56 cm ² /m)	As = 1.46 cm ² /m (ø6.3 c/20 - 1.56 cm ² /m)
L235	10	400.00	171	170	As = 1.33 cm ² /m (ø6.3 c/20 - 1.56 cm ² /m)	As = 1.46 cm ² /m (ø6.3 c/20 - 1.56 cm ² /m)
L236	10	400.00	140	177	As = 1.33 cm ² /m	As = 1.46 cm ² /m

					(ø6.3 c/20 - 1.56 cm ² /m)	(ø6.3 c/20 - 1.56 cm ² /m)
L237	10	400.00	105	193	As = 1.33 cm ² /m (ø6.3 c/20 - 1.56 cm ² /m)	As = 1.46 cm ² /m (ø6.3 c/20 - 1.56 cm ² /m)
L238	10	400.00	87	166	As = 1.33 cm ² /m (ø6.3 c/20 - 1.56 cm ² /m)	As = 1.46 cm ² /m (ø6.3 c/20 - 1.56 cm ² /m)
L239	10	400.00	179	183	As = 1.33 cm ² /m (ø6.3 c/20 - 1.56 cm ² /m)	As = 1.46 cm ² /m (ø6.3 c/20 - 1.56 cm ² /m)
L240	15	525.00	1291	1208	As = 2.50 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)	As = 2.51 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)
L241	15	525.00	740	1084	As = 1.77 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)	As = 2.25 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)
L242	15	525.00	1174	1184	As = 2.27 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)	As = 2.46 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)
L243	15	605.00	159	858	As = 1.77 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)	As = 1.89 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)
L244	10	400.00	129	19	As = 1.33 cm ² /m (ø6.3 c/20 - 1.56 cm ² /m)	As = 1.46 cm ² /m (ø6.3 c/20 - 1.56 cm ² /m)
L245	10	400.00	128	152	As = 1.33 cm ² /m (ø6.3 c/20 - 1.56 cm ² /m)	As = 1.46 cm ² /m (ø6.3 c/20 - 1.56 cm ² /m)
L246	15	525.00	919		As = 1.77 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)	As = 1.89 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)
L247	10	400.00	1230	42	As = 4.36 cm ² /m (ø12.5 c/20 - 6.14 cm ² /m)	As = 1.20 cm ² /m (ø6.3 c/25 - 1.25 cm ² /m)
L248	15	605.00	2260	1	As = 4.53 cm ² /m (ø12.5 c/20 - 6.14 cm ² /m)	As = 1.47 cm ² /m (ø8.0 c/25 - 2.01 cm ² /m)
L249	15	605.00	105	1256	As = 1.30 cm ² /m (ø6.3 c/23 - 1.36 cm ² /m)	As = 2.83 cm ² /m (ø10.0 c/20 - 3.93 cm ² /m)
L250	15	605.00	41		As = 1.77 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)	As = 1.89 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)
L251	10	400.00	258	1330	As = 0.99 cm ² /m (ø6.3 c/25 - 1.25 cm ² /m)	As = 5.30 cm ² /m (ø12.5 c/20 - 6.14 cm ² /m)
L252	15	525.00	159	656	As = 1.77 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)	As = 1.89 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)
L253	15	605.00	106	399	As = 1.77 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)	As = 1.89 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)
L254	15	605.00	115	232	As = 1.77 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)	As = 1.89 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)
L255	15	605.00	123	1167	As = 1.30 cm ² /m (ø6.3 c/23 - 1.36 cm ² /m)	As = 2.83 cm ² /m (ø10.0 c/20 - 3.93 cm ² /m)
L256	15	605.00	2687	92	As = 5.43 cm ² /m	As = 1.47 cm ² /m

					($\varnothing 12.5$ c/20 - 6.14 cm ² /m)	($\varnothing 8.0$ c/25 - 2.01 cm ² /m)
L257	15	605.00	139	860	As = 1.77 cm ² /m ($\varnothing 8.0$ c/20 - 2.51 cm ² /m)	As = 1.89 cm ² /m ($\varnothing 8.0$ c/20 - 2.51 cm ² /m)
L258	15	525.00	1338	1038	As = 2.59 cm ² /m ($\varnothing 8.0$ c/19 - 2.65 cm ² /m)	As = 2.15 cm ² /m ($\varnothing 8.0$ c/20 - 2.51 cm ² /m)
L259	15	605.00	104	1246	As = 1.30 cm ² /m ($\varnothing 6.3$ c/23 - 1.36 cm ² /m)	As = 2.83 cm ² /m ($\varnothing 10.0$ c/20 - 3.93 cm ² /m)
L260	15	605.00		105	As = 1.77 cm ² /m ($\varnothing 8.0$ c/20 - 2.51 cm ² /m)	As = 1.89 cm ² /m ($\varnothing 8.0$ c/20 - 2.51 cm ² /m)
L261	15	525.00	437		As = 1.77 cm ² /m ($\varnothing 8.0$ c/20 - 2.51 cm ² /m)	As = 1.89 cm ² /m ($\varnothing 8.0$ c/20 - 2.51 cm ² /m)
L262	10	400.00	139	30	As = 1.33 cm ² /m ($\varnothing 6.3$ c/20 - 1.56 cm ² /m)	As = 1.46 cm ² /m ($\varnothing 6.3$ c/20 - 1.56 cm ² /m)
L263	10	400.00	200	127	As = 1.33 cm ² /m ($\varnothing 6.3$ c/20 - 1.56 cm ² /m)	As = 1.46 cm ² /m ($\varnothing 6.3$ c/20 - 1.56 cm ² /m)
L264	10	400.00	207	160	As = 1.33 cm ² /m ($\varnothing 6.3$ c/20 - 1.56 cm ² /m)	As = 1.46 cm ² /m ($\varnothing 6.3$ c/20 - 1.56 cm ² /m)
L265	15	555.00	15	420	As = 1.77 cm ² /m ($\varnothing 8.0$ c/20 - 2.51 cm ² /m)	As = 1.89 cm ² /m ($\varnothing 8.0$ c/20 - 2.51 cm ² /m)
L266	15	525.00	1366	1510	As = 2.67 cm ² /m ($\varnothing 10.0$ c/20 - 3.93 cm ² /m)	As = 3.24 cm ² /m ($\varnothing 10.0$ c/20 - 3.93 cm ² /m)
L267	15	525.00	640	1627	As = 1.77 cm ² /m ($\varnothing 8.0$ c/20 - 2.51 cm ² /m)	As = 3.44 cm ² /m ($\varnothing 10.0$ c/20 - 3.93 cm ² /m)
L268	15	605.00	71	227	As = 1.77 cm ² /m ($\varnothing 8.0$ c/20 - 2.51 cm ² /m)	As = 1.89 cm ² /m ($\varnothing 8.0$ c/20 - 2.51 cm ² /m)
L269	15	605.00	143	1420	As = 1.30 cm ² /m ($\varnothing 6.3$ c/23 - 1.36 cm ² /m)	As = 2.94 cm ² /m ($\varnothing 10.0$ c/20 - 3.93 cm ² /m)
L270	15	525.00	1087	1557	As = 2.10 cm ² /m ($\varnothing 8.0$ c/20 - 2.51 cm ² /m)	As = 3.28 cm ² /m ($\varnothing 10.0$ c/20 - 3.93 cm ² /m)
L271	15	605.00	166	851	As = 1.77 cm ² /m ($\varnothing 8.0$ c/20 - 2.51 cm ² /m)	As = 1.89 cm ² /m ($\varnothing 8.0$ c/20 - 2.51 cm ² /m)
L272	15	525.00	141	673	As = 1.77 cm ² /m ($\varnothing 8.0$ c/20 - 2.51 cm ² /m)	As = 1.89 cm ² /m ($\varnothing 8.0$ c/20 - 2.51 cm ² /m)
L273	10	400.00	140	18	As = 1.33 cm ² /m ($\varnothing 6.3$ c/20 - 1.56 cm ² /m)	As = 1.46 cm ² /m ($\varnothing 6.3$ c/20 - 1.56 cm ² /m)
L274	10	400.00	125	33	As = 1.33 cm ² /m ($\varnothing 6.3$ c/20 - 1.56 cm ² /m)	As = 1.46 cm ² /m ($\varnothing 6.3$ c/20 - 1.56 cm ² /m)
L275	10	400.00	112	179	As = 1.33 cm ² /m ($\varnothing 6.3$ c/20 - 1.56 cm ² /m)	As = 1.46 cm ² /m ($\varnothing 6.3$ c/20 - 1.56 cm ² /m)
L276	10	400.00	175	161	As = 1.33 cm ² /m	As = 1.46 cm ² /m

					(ø6.3 c/20 - 1.56 cm ² /m)	(ø6.3 c/20 - 1.56 cm ² /m)
L277	10	400.00	140	186	As = 1.33 cm ² /m (ø6.3 c/20 - 1.56 cm ² /m)	As = 1.46 cm ² /m (ø6.3 c/20 - 1.56 cm ² /m)
L278	10	400.00	97	167	As = 1.33 cm ² /m (ø6.3 c/20 - 1.56 cm ² /m)	As = 1.46 cm ² /m (ø6.3 c/20 - 1.56 cm ² /m)
L279	10	400.00	255	195	As = 1.33 cm ² /m (ø6.3 c/20 - 1.56 cm ² /m)	As = 1.46 cm ² /m (ø6.3 c/20 - 1.56 cm ² /m)
L280	15	605.00	148	951	As = 1.77 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)	As = 1.97 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)
L281	15	525.00		1321	As = 1.30 cm ² /m (ø6.3 c/23 - 1.36 cm ² /m)	As = 2.83 cm ² /m (ø10.0 c/20 - 3.93 cm ² /m)
L282	15	525.00		493	As = 1.77 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)	As = 1.89 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)
L283	15	525.00		784	As = 1.77 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)	As = 1.89 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)
L284	15	525.00	17	1024	As = 1.30 cm ² /m (ø6.3 c/23 - 1.36 cm ² /m)	As = 2.83 cm ² /m (ø10.0 c/20 - 3.93 cm ² /m)
L285	15	525.00	105	498	As = 1.77 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)	As = 1.89 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)
L286	15	525.00		905	As = 1.77 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)	As = 1.89 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)
L287	15	525.00	232	1147	As = 1.77 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)	As = 2.38 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)
L288	15	525.00		1067	As = 1.30 cm ² /m (ø6.3 c/23 - 1.36 cm ² /m)	As = 2.83 cm ² /m (ø10.0 c/20 - 3.93 cm ² /m)
L289	15	525.00		838	As = 1.77 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)	As = 1.89 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)
L290	15	525.00		1243	As = 1.30 cm ² /m (ø6.3 c/23 - 1.36 cm ² /m)	As = 2.83 cm ² /m (ø10.0 c/20 - 3.93 cm ² /m)
L291	15	605.00	140	135	As = 1.77 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)	As = 1.89 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)
L292	15	525.00	1523	1465	As = 2.99 cm ² /m (ø10.0 c/20 - 3.93 cm ² /m)	As = 3.14 cm ² /m (ø10.0 c/20 - 3.93 cm ² /m)
L293	15	525.00	1463	1446	As = 2.87 cm ² /m (ø10.0 c/20 - 3.93 cm ² /m)	As = 3.10 cm ² /m (ø10.0 c/20 - 3.93 cm ² /m)
L294	15	525.00	1613	1371	As = 3.17 cm ² /m (ø10.0 c/20 - 3.93 cm ² /m)	As = 2.94 cm ² /m (ø10.0 c/20 - 3.93 cm ² /m)
L295	15	525.00	994	1276	As = 1.92 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)	As = 2.68 cm ² /m (ø10.0 c/20 - 3.93 cm ² /m)
L296	15	525.00	1301	1356	As = 2.52 cm ² /m	As = 2.85 cm ² /m

					(ø8.0 c/19 - 2.65 cm ² /m)	(ø10.0 c/20 - 3.93 cm ² /m)
L297	15	525.00	1254	1471	As = 2.43 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)	As = 3.10 cm ² /m (ø10.0 c/20 - 3.93 cm ² /m)
L298	15	525.00	889	1485	As = 1.77 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)	As = 3.13 cm ² /m (ø10.0 c/20 - 3.93 cm ² /m)
L299	15	525.00	1306	1497	As = 2.53 cm ² /m (ø8.0 c/19 - 2.65 cm ² /m)	As = 3.15 cm ² /m (ø10.0 c/20 - 3.93 cm ² /m)
L300	15	605.00	161	946	As = 1.77 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)	As = 1.96 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)
L301	15	605.00	46	620	As = 1.77 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)	As = 1.89 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)
L302	15	605.00	14	371	As = 1.77 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)	As = 1.89 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)
L303	15	605.00	21	399	As = 1.77 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)	As = 1.89 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)
L304	15	605.00	40	341	As = 1.77 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)	As = 1.89 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)
L305	15	605.00	45	642	As = 1.77 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)	As = 1.89 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)
L306	15	605.00	43	621	As = 1.77 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)	As = 1.89 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)
L307	15	605.00	10	331	As = 1.77 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)	As = 1.89 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)
L308	15	605.00	25	617	As = 1.77 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)	As = 1.89 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)

ARMADURA NEGATIVA							
Dados				Resultados			
Viga	Trecho	Laje 1	Laje 2	Reação 1 (kgf/m)	Reação 2 (kgf/m)	Md (kgf.m/m)	As (cm ²)
V208	1	L203	L220	1136	315	-3597	As = 7.50 cm ² /m (ø16.0 c/20 - 10.05 cm ² /m)
V208	2	L203	L220	2173	1748	-2570	As = 7.50 cm ² /m (ø16.0 c/20 - 10.05 cm ² /m)
V249	5	L203	L204	852	1165	-3744	As = 7.83 cm ² /m (ø16.0 c/20 - 10.05 cm ² /m)
V249	6	L203	L204	1373	1304	-3889	As = 7.83 cm ² /m (ø16.0 c/20 - 10.05 cm ² /m)
V203	1	L203	L202	976	425	-1862	As = 3.67 cm ² /m (ø10.0 c/20 - 3.93 cm ² /m)
V245	3	L203	L201	408	-329	-1042	As = 2.68 cm ² /m

							(ø10.0 c/20 - 3.93 cm ² /m)
V208	3	L204	L221	202	-427	-706	As = 2.68 cm ² /m (ø10.0 c/20 - 3.93 cm ² /m)
V208	4	L204	L222	380	-340	-901	As = 2.68 cm ² /m (ø10.0 c/20 - 3.93 cm ² /m)
V258	2	L204	L206	1706	1733	-4478	As = 9.49 cm ² /m (ø16.0 c/20 - 10.05 cm ² /m)
V258	3	L204	L206	959	845	-3337	As = 9.49 cm ² /m (ø16.0 c/20 - 10.05 cm ² /m)
V209	4	L214	L228	2791	927	-3479	As = 7.12 cm ² /m (ø12.5 c/17 - 7.22 cm ² /m)
V283	4	L214	L216	776	741	-2011	As = 4.02 cm ² /m (ø12.5 c/20 - 6.14 cm ² /m)
V204	2	L214	L215	-14	-192	-1027	As = 2.68 cm ² /m (ø10.0 c/20 - 3.93 cm ² /m)
V279	4	L214	L213	1564	1628	-3259	As = 6.76 cm ² /m (ø16.0 c/20 - 10.05 cm ² /m)
V209	3	L214	L228	592	100	-2725	As = 7.12 cm ² /m (ø12.5 c/17 - 7.22 cm ² /m)
V204	3	L216	L217	861	105	-1706	As = 3.35 cm ² /m (ø10.0 c/20 - 3.93 cm ² /m)
V209	5	L216	L229	3406	1654	-4288	As = 9.06 cm ² /m (ø16.0 c/20 - 10.05 cm ² /m)
V209	6	L216	L229	972	358	-3669	As = 9.06 cm ² /m (ø16.0 c/20 - 10.05 cm ² /m)
V288	3	L216	L218	573	63	-655	As = 2.68 cm ² /m (ø10.0 c/20 - 3.93 cm ² /m)
V249	4	L220	L221	45	637	-865	As = 2.68 cm ² /m (ø10.0 c/20 - 3.93 cm ² /m)
V245	2	L220	L219	-338	-1200	-1273	As = 2.68 cm ² /m (ø10.0 c/20 - 3.93 cm ² /m)
V211	1	L220	L231	791	1304	-3577	As = 7.46 cm ² /m (ø16.0 c/20 - 10.05 cm ² /m)
V212	2	L228	L241	638	848	-1769	As = 3.48 cm ² /m (ø10.0 c/20 - 3.93 cm ² /m)
V283	3	L228	L229	105	-95	-819	As = 2.68 cm ² /m (ø10.0 c/20 - 3.93 cm ² /m)
V279	3	L228	L227	801	820	-1704	As = 3.35 cm ² /m (ø10.0 c/20 - 3.93 cm ² /m)
V212	3	L229	L242	803	1387	-3446	As = 7.17 cm ² /m

							(ø16.0 c/20 - 10.05 cm ² /m)
V288	2	L229	L230	-279	-431	-667	As = 2.68 cm ² /m (ø10.0 c/20 - 3.93 cm ² /m)
V216	2	L231	L249	656	390	-3859	As = 8.09 cm ² /m (ø16.0 c/20 - 10.05 cm ² /m)
V249	2	L231	L246	1670	1921	-3176	As = 6.57 cm ² /m (ø16.0 c/20 - 10.05 cm ² /m)
V249	3	L231	L232	1258	1163	-3511	As = 7.31 cm ² /m (ø16.0 c/20 - 10.05 cm ² /m)
V245	1	L231	L219	-53	391	-545	As = 2.68 cm ² /m (ø10.0 c/20 - 3.93 cm ² /m)
V216	1	L231	L248	5164	7231	-3584	As = 7.47 cm ² /m (ø16.0 c/20 - 10.05 cm ² /m)
V220	2	L241	L254	136	-475	-127	As = 2.68 cm ² /m (ø10.0 c/20 - 3.93 cm ² /m)
V283	2	L241	L242	1192	1283	-2379	As = 4.78 cm ² /m (ø12.5 c/20 - 6.14 cm ² /m)
V279	2	L241	L240	1158	1240	-2093	As = 4.19 cm ² /m (ø12.5 c/20 - 6.14 cm ² /m)
V220	3	L242	L255	672	-55	-4325	As = 9.14 cm ² /m (ø16.0 c/20 - 10.05 cm ² /m)
V220	4	L242	L256	4521	6365	-3390	As = 7.04 cm ² /m (ø16.0 c/20 - 10.05 cm ² /m)
V288	1	L242	L243	-78	-189	-265	As = 2.68 cm ² /m (ø10.0 c/20 - 3.93 cm ² /m)
V248	4	L258	L261	1828	1699	-3385	As = 7.03 cm ² /m (ø16.0 c/20 - 10.05 cm ² /m)
V223	2	L258	L259	629	373	-3833	As = 8.03 cm ² /m (ø16.0 c/20 - 10.05 cm ² /m)
V223	1	L258	L248	5151	7183	-3571	As = 7.44 cm ² /m (ø16.0 c/20 - 10.05 cm ² /m)
V244	3	L258	L257	-73	-30	-748	As = 2.68 cm ² /m (ø10.0 c/20 - 3.93 cm ² /m)
V231	1	L258	L281	1336	680	-3611	As = 7.53 cm ² /m (ø16.0 c/20 - 10.05 cm ² /m)
V248	3	L258	L272	1287	1112	-3715	As = 7.76 cm ² /m (ø16.0 c/20 - 10.05 cm ² /m)
V227	2	L267	L268	485	-443	-918	As = 2.68 cm ² /m (ø10.0 c/20 - 3.93 cm ² /m)
V278	3	L267	L266	1059	1279	-2429	As = 4.88 cm ² /m

							(ø12.5 c/20 - 6.14 cm ² /m)
V232	2	L267	L289	1060	648	-2272	As = 4.56 cm ² /m (ø12.5 c/20 - 6.14 cm ² /m)
V282	3	L267	L270	862	928	-2207	As = 4.42 cm ² /m (ø12.5 c/20 - 6.14 cm ² /m)
V227	4	L270	L256	4770	7432	-3602	As = 7.51 cm ² /m (ø16.0 c/20 - 10.05 cm ² /m)
V227	3	L270	L269	898	-39	-4674	As = 9.94 cm ² /m (ø16.0 c/20 - 10.05 cm ² /m)
V232	3	L270	L290	1687	992	-3581	As = 7.47 cm ² /m (ø16.0 c/20 - 10.05 cm ² /m)
V287	3	L270	L271	-119	-179	-318	As = 2.68 cm ² /m (ø10.0 c/20 - 3.93 cm ² /m)
V248	2	L281	L282	-77	545	-778	As = 2.68 cm ² /m (ø10.0 c/20 - 3.93 cm ² /m)
V244	2	L281	L280	-371	-633	-1180	As = 2.68 cm ² /m (ø10.0 c/20 - 3.93 cm ² /m)
V234	1	L281	L292	432	1232	-4427	As = 11.82 cm ² /m (ø16.0 c/17 - 11.83 cm ² /m)
V234	2	L281	L292	2183	4287	-5468	As = 11.82 cm ² /m (ø16.0 c/17 - 11.83 cm ² /m)
V235	4	L289	L298	361	3233	-4309	As = 7.03 cm ² /m (ø16.0 c/20 - 10.05 cm ² /m)
V282	2	L289	L290	211	29	-944	As = 2.68 cm ² /m (ø10.0 c/20 - 3.93 cm ² /m)
V278	2	L289	L288	1330	1453	-2138	As = 4.28 cm ² /m (ø12.5 c/20 - 6.14 cm ² /m)
V235	3	L289	L298	-75	577	-3384	As = 7.03 cm ² /m (ø16.0 c/20 - 10.05 cm ² /m)
V235	5	L290	L299	1064	3776	-4992	As = 10.69 cm ² /m (ø16.0 c/18 - 11.17 cm ² /m)
V235	6	L290	L299	321	1280	-4234	As = 10.69 cm ² /m (ø16.0 c/18 - 11.17 cm ² /m)
V287	2	L290	L291	-527	-985	-1300	As = 2.68 cm ² /m (ø10.0 c/20 - 3.93 cm ² /m)
V239	1	L292	L301	901	146	-1985	As = 3.92 cm ² /m (ø10.0 c/20 - 3.93 cm ² /m)
V248	1	L292	L293	625	600	-2590	As = 5.22 cm ² /m (ø12.5 c/20 - 6.14 cm ² /m)
V244	1	L292	L280	399	515	-1084	As = 2.68 cm ² /m

							(ø10.0 c/20 - 3.93 cm ² /m)
V239	2	L293	L302	608	-31	-2040	As = 4.08 cm ² /m (ø12.5 c/20 - 6.14 cm ² /m)
V257	1	L293	L294	1138	1146	-2650	As = 5.35 cm ² /m (ø12.5 c/20 - 6.14 cm ² /m)
V234	4	L293	L283	518	-346	-3707	As = 7.75 cm ² /m (ø16.0 c/20 - 10.05 cm ² /m)
V234	3	L293	L282	4220	987	-5584	As = 12.10 cm ² /m (ø16.0 c/16 - 12.57 cm ² /m)
V282	1	L298	L299	594	562	-2201	As = 4.41 cm ² /m (ø12.5 c/20 - 6.14 cm ² /m)
V278	1	L298	L297	1156	1207	-2569	As = 5.18 cm ² /m (ø12.5 c/20 - 6.14 cm ² /m)
V240	2	L298	L307	713	-31	-2168	As = 4.34 cm ² /m (ø12.5 c/20 - 6.14 cm ² /m)
V240	3	L299	L308	1023	161	-2209	As = 4.43 cm ² /m (ø12.5 c/20 - 6.14 cm ² /m)
V287	1	L299	L300	383	-193	-1474	As = 2.89 cm ² /m (ø10.0 c/20 - 3.93 cm ² /m)
V222	1	L248	L257	1462	4254	-3512	As = 7.31 cm ² /m (ø16.0 c/20 - 10.05 cm ² /m)
V246	1	L248	L259	-8886	-3680	0	
V246	4	L248	L249	-8951	-3721	0	
V215	1	L248	L219	1457	4419	-3577	As = 7.46 cm ² /m (ø16.0 c/20 - 10.05 cm ² /m)
V207	1	L219	L201	5504	6178	-5991	As = 12.85 cm ² /m (ø12.5 c/9 - 13.64 cm ² /m)
V247	1	L301	L302	2100	2484	-2764	As = 5.68 cm ² /m (ø16.0 c/20 - 10.05 cm ² /m)
V256	1	L302	L303	2704	2845	-2339	As = 4.77 cm ² /m (ø16.0 c/20 - 10.05 cm ² /m)
V277	1	L307	L306	3371	2080	-2821	As = 5.80 cm ² /m (ø16.0 c/20 - 10.05 cm ² /m)
V281	1	L307	L308	3280	3486	-2853	As = 5.87 cm ² /m (ø16.0 c/20 - 10.05 cm ² /m)
V242	1	L308	L300	241	4808	-3978	As = 8.36 cm ² /m (ø16.0 c/20 - 10.05 cm ² /m)
V236	1	L300	L291	2596	1744	-4454	As = 9.44 cm ² /m (ø16.0 c/20 - 10.05 cm ² /m)
V233	1	L291	L271	4039	5277	-4534	As = 9.62 cm ² /m

							(ø16.0 c/20 - 10.05 cm ² /m)
V228	1	L271	L256	3923	1525	-3432	As = 7.14 cm ² /m (ø16.0 c/20 - 10.05 cm ² /m)
V221	1	L256	L243	1530	4120	-3470	As = 7.22 cm ² /m (ø16.0 c/20 - 10.05 cm ² /m)
V285	4	L256	L255	-8185	-3339	0	
V285	1	L256	L269	-9958	-4317	0	
V213	1	L243	L230	5161	3599	-4374	As = 9.25 cm ² /m (ø16.0 c/20 - 10.05 cm ² /m)
V210	1	L230	L218	2142	2023	-1887	As = 3.82 cm ² /m (ø16.0 c/20 - 10.05 cm ² /m)
V206	1	L218	L217	4524	34	-3541	As = 7.38 cm ² /m (ø16.0 c/20 - 10.05 cm ² /m)
V284	1	L215	L217	5012	4617	-3110	As = 6.43 cm ² /m (ø16.0 c/20 - 10.05 cm ² /m)
V280	1	L215	L212	5338	3097	-2779	As = 5.71 cm ² /m (ø16.0 c/20 - 10.05 cm ² /m)
V201	1	L202	L201	-173	5242	-4031	As = 8.47 cm ² /m (ø16.0 c/20 - 10.05 cm ² /m)
V279	1	L254	L253	4863	4289	-3400	As = 7.07 cm ² /m (ø16.0 c/20 - 10.05 cm ² /m)
V283	1	L254	L255	4673	5363	-3932	As = 8.25 cm ² /m (ø16.0 c/20 - 10.05 cm ² /m)
V278	4	L268	L265	4192	3871	-3217	As = 6.66 cm ² /m (ø16.0 c/20 - 10.05 cm ² /m)
V282	4	L268	L269	3863	4709	-3675	As = 7.67 cm ² /m (ø16.0 c/20 - 10.05 cm ² /m)
V249	1	L249	L250	-471	394	-346	As = 2.71 cm ² /m (ø12.5 c/20 - 6.14 cm ² /m)
V248	5	L259	L260	-435	362	-389	As = 2.71 cm ² /m (ø12.5 c/20 - 6.14 cm ² /m)
V252	4	L250	L251	2821	9155	-2483	As = 9.47 cm ² /m (ø12.5 c/12 - 10.23 cm ² /m)
V216	3	L250	L246	48	-534	-88	As = 2.68 cm ² /m (ø10.0 c/20 - 3.93 cm ² /m)
V223	3	L260	L261	513	90	-150	As = 2.68 cm ² /m (ø10.0 c/20 - 3.93 cm ² /m)
V252	1	L260	L251	37	3607	-1211	As = 4.29 cm ² /m (ø12.5 c/20 - 6.14 cm ² /m)
V239	3	L294	L303	599	-21	-2034	As = 4.06 cm ² /m

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

							(ø12.5 c/20 - 6.14 cm ² /m)
V261	1	L294	L295	513	725	-2022	As = 4.04 cm ² /m (ø12.5 c/20 - 6.14 cm ² /m)
V234	6	L294	L285	5708	2037	-6209	As = 13.63 cm ² /m (ø16.0 c/14 - 14.36 cm ² /m)
V234	5	L294	L284	345	-27	-3612	As = 7.53 cm ² /m (ø16.0 c/20 - 10.05 cm ² /m)
V239	4	L295	L304	442	-100	-1397	As = 2.73 cm ² /m (ø10.0 c/20 - 3.93 cm ² /m)
V265	1	L295	L296	1236	1313	-4170	As = 8.79 cm ² /m (ø16.0 c/20 - 10.05 cm ² /m)
V234	8	L295	L286	604	-161	-3153	As = 6.52 cm ² /m (ø16.0 c/20 - 10.05 cm ² /m)
V234	7	L295	L286	3127	757	-3958	As = 6.52 cm ² /m (ø16.0 c/20 - 10.05 cm ² /m)
V239	5	L296	L305	585	121	-1384	As = 2.71 cm ² /m (ø10.0 c/20 - 3.93 cm ² /m)
V234	10	L296	L287	4337	3523	-4946	As = 10.58 cm ² /m (ø16.0 c/19 - 10.58 cm ² /m)
V234	9	L296	L287	675	73	-3909	As = 10.58 cm ² /m (ø16.0 c/19 - 10.58 cm ² /m)
V235	2	L297	L288	1046	394	-4616	As = 9.81 cm ² /m (ø16.0 c/20 - 10.05 cm ² /m)
V235	1	L297	L288	2218	2168	-2807	As = 9.81 cm ² /m (ø16.0 c/20 - 10.05 cm ² /m)
V240	1	L297	L306	745	176	-2276	As = 4.57 cm ² /m (ø12.5 c/20 - 6.14 cm ² /m)
V232	1	L288	L266	348	799	-1984	As = 3.92 cm ² /m (ø10.0 c/20 - 3.93 cm ² /m)
V231	7	L287	L278	35	241	-911	As = 3.12 cm ² /m (ø10.0 c/20 - 3.93 cm ² /m)
V265	2	L287	L286	2171	1842	-4193	As = 8.84 cm ² /m (ø16.0 c/20 - 10.05 cm ² /m)
V231	6	L286	L277	202	651	-1506	As = 5.42 cm ² /m (ø12.5 c/20 - 6.14 cm ² /m)
V261	2	L286	L285	822	1226	-1348	As = 2.68 cm ² /m (ø10.0 c/20 - 3.93 cm ² /m)
V223	4	L251	L262	-163	-21	-251	As = 2.05 cm ² /m (ø10.0 c/20 - 3.93 cm ² /m)
V216	4	L251	L247	-965	-943	-117	As = 2.05 cm ² /m

							(ø10.0 c/20 - 3.93 cm ² /m)
V265	3	L277	L275	297	-62	-328	As = 2.05 cm ² /m (ø10.0 c/20 - 3.93 cm ² /m)
V261	3	L277	L276	146	352	-369	As = 2.05 cm ² /m (ø10.0 c/20 - 3.93 cm ² /m)
V227	1	L266	L265	416	97	-864	As = 2.68 cm ² /m (ø10.0 c/20 - 3.93 cm ² /m)
V203	3	L207	L206	449	908	-1466	As = 2.87 cm ² /m (ø10.0 c/20 - 3.93 cm ² /m)
V263	1	L207	L208	1429	1303	-737	As = 2.75 cm ² /m (ø16.0 c/20 - 10.05 cm ² /m)
V208	6	L206	L224	5545	1915	-5749	As = 12.50 cm ² /m (ø16.0 c/16 - 12.57 cm ² /m)
V262	3	L206	L209	191	408	-1138	As = 2.68 cm ² /m (ø10.0 c/20 - 3.93 cm ² /m)
V208	5	L206	L223	324	-31	-3228	As = 6.69 cm ² /m (ø16.0 c/20 - 10.05 cm ² /m)
V203	4	L208	L209	445	837	-1468	As = 2.87 cm ² /m (ø10.0 c/20 - 3.93 cm ² /m)
V267	1	L208	L210	651	1849	-1029	As = 2.75 cm ² /m (ø16.0 c/20 - 10.05 cm ² /m)
V208	8	L209	L225	459	65	-2714	As = 6.99 cm ² /m (ø12.5 c/17 - 7.22 cm ² /m)
V266	3	L209	L211	1593	1621	-4152	As = 8.75 cm ² /m (ø16.0 c/20 - 10.05 cm ² /m)
V266	4	L209	L211	1235	1294	-4001	As = 8.75 cm ² /m (ø16.0 c/20 - 10.05 cm ² /m)
V208	7	L209	L225	2841	354	-3419	As = 6.99 cm ² /m (ø12.5 c/17 - 7.22 cm ² /m)
V203	5	L210	L211	356	562	-350	As = 2.68 cm ² /m (ø10.0 c/20 - 3.93 cm ² /m)
V208	10	L211	L226	1971	1758	-2917	As = 5.08 cm ² /m (ø12.5 c/20 - 6.14 cm ² /m)
V208	9	L211	L226	473	222	-2521	As = 5.08 cm ² /m (ø12.5 c/20 - 6.14 cm ² /m)
V204	1	L212	L213	66	122	-859	As = 2.68 cm ² /m (ø10.0 c/20 - 3.93 cm ² /m)
V209	2	L213	L227	1110	519	-4313	As = 9.11 cm ² /m (ø16.0 c/20 - 10.05 cm ² /m)
V209	1	L213	L227	598	477	-2561	As = 9.11 cm ² /m

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

							(ø16.0 c/20 - 10.05 cm ² /m)
V260	1	L303	L304	3688	3345	-2555	As = 5.23 cm ² /m (ø16.0 c/20 - 10.05 cm ² /m)
V264	1	L304	L305	5066	5563	-3574	As = 7.45 cm ² /m (ø16.0 c/20 - 10.05 cm ² /m)
V220	1	L253	L240	4	518	-582	As = 2.68 cm ² /m (ø10.0 c/20 - 3.93 cm ² /m)
V262	2	L225	L224	1023	1306	-1419	As = 2.78 cm ² /m (ø10.0 c/20 - 3.93 cm ² /m)
V211	6	L225	L236	279	659	-1463	As = 5.25 cm ² /m (ø12.5 c/20 - 6.14 cm ² /m)
V266	2	L225	L226	1178	1553	-1434	As = 2.81 cm ² /m (ø10.0 c/20 - 3.93 cm ² /m)
V266	1	L236	L237	282	-44	-328	As = 2.05 cm ² /m (ø10.0 c/20 - 3.93 cm ² /m)
V262	1	L236	L235	156	363	-380	As = 2.05 cm ² /m (ø10.0 c/20 - 3.93 cm ² /m)
V211	7	L226	L238	193	243	-906	As = 3.10 cm ² /m (ø10.0 c/20 - 3.93 cm ² /m)
V251	1	L262	L261	-24	-412	-272	As = 2.05 cm ² /m (ø10.0 c/20 - 3.93 cm ² /m)
V229	2	L262	L272	604	1856	-1327	As = 4.73 cm ² /m (ø12.5 c/20 - 6.14 cm ² /m)
V229	3	L262	L274	576	185	-793	As = 2.70 cm ² /m (ø10.0 c/20 - 3.93 cm ² /m)
V229	1	L261	L272	100	148	-1601	As = 3.14 cm ² /m (ø10.0 c/20 - 3.93 cm ² /m)
V253	1	L247	L246	1316	520	-1583	As = 5.72 cm ² /m (ø12.5 c/20 - 6.14 cm ² /m)
V214	3	L247	L244	604	21	-925	As = 3.17 cm ² /m (ø10.0 c/20 - 3.93 cm ² /m)
V214	2	L247	L232	639	1902	-1507	As = 5.43 cm ² /m (ø12.5 c/20 - 6.14 cm ² /m)
V214	1	L246	L232	51	98	-1790	As = 3.52 cm ² /m (ø10.0 c/20 - 3.93 cm ² /m)
V212	1	L227	L240	660	1021	-1771	As = 3.48 cm ² /m (ø10.0 c/20 - 3.93 cm ² /m)
V225	1	L252	L263	1186	625	-1919	As = 7.07 cm ² /m (ø12.5 c/17 - 7.22 cm ² /m)
V218	1	L252	L245	1193	589	-1961	As = 7.24 cm ² /m

							($\phi 12.5$ c/16 - 7.67 cm ² /m)
V296	1	L275	L278	438	311	-390	As = 2.05 cm ² /m ($\phi 10.0$ c/20 - 3.93 cm ² /m)
V293	2	L275	L263	201	115	-82	As = 2.05 cm ² /m ($\phi 10.0$ c/20 - 3.93 cm ² /m)
V296	2	L263	L264	135	378	-429	As = 2.05 cm ² /m ($\phi 10.0$ c/20 - 3.93 cm ² /m)
V293	1	L264	L278	323	306	-236	As = 2.05 cm ² /m ($\phi 10.0$ c/20 - 3.93 cm ² /m)
V290	2	L238	L237	291	429	-378	As = 2.05 cm ² /m ($\phi 10.0$ c/20 - 3.93 cm ² /m)
V291	2	L238	L239	314	341	-264	As = 2.05 cm ² /m ($\phi 10.0$ c/20 - 3.93 cm ² /m)
V291	1	L237	L245	212	77	-80	As = 2.05 cm ² /m ($\phi 10.0$ c/20 - 3.93 cm ² /m)
V290	1	L245	L239	176	410	-481	As = 2.05 cm ² /m ($\phi 10.0$ c/20 - 3.93 cm ² /m)
V289	1	L222	L221	948	211	-838	As = 2.68 cm ² /m ($\phi 10.0$ c/20 - 3.93 cm ² /m)
V211	3	L222	L234	621	765	-1181	As = 4.18 cm ² /m ($\phi 12.5$ c/20 - 6.14 cm ² /m)
V258	1	L222	L223	631	677	-1479	As = 2.90 cm ² /m ($\phi 10.0$ c/20 - 3.93 cm ² /m)
V211	2	L221	L232	305	478	-951	As = 2.68 cm ² /m ($\phi 10.0$ c/20 - 3.93 cm ² /m)
V289	3	L244	L235	66	219	-84	As = 2.05 cm ² /m ($\phi 10.0$ c/20 - 3.93 cm ² /m)
V292	1	L244	L233	360	308	-372	As = 2.05 cm ² /m ($\phi 10.0$ c/20 - 3.93 cm ² /m)
V292	2	L235	L234	353	-282	-203	As = 2.05 cm ² /m ($\phi 10.0$ c/20 - 3.93 cm ² /m)
V211	5	L235	L224	322	45	-843	As = 2.88 cm ² /m ($\phi 10.0$ c/20 - 3.93 cm ² /m)
V292	3	L223	L224	722	-824	-718	As = 2.68 cm ² /m ($\phi 10.0$ c/20 - 3.93 cm ² /m)
V211	4	L223	L234	394	862	-852	As = 2.91 cm ² /m ($\phi 10.0$ c/20 - 3.93 cm ² /m)
V231	5	L285	L276	23	313	-798	As = 2.72 cm ² /m ($\phi 10.0$ c/20 - 3.93 cm ² /m)
V297	1	L285	L284	-783	617	-896	As = 2.68 cm ² /m

							($\phi 10.0$ c/20 - 3.93 cm ² /m)
V231	4	L284	L279	131	709	-755	As = 2.56 cm ² /m ($\phi 10.0$ c/20 - 3.93 cm ² /m)
V257	2	L284	L283	1147	1054	-2255	As = 4.52 cm ² /m ($\phi 12.5$ c/20 - 6.14 cm ² /m)
V297	2	L279	L276	-174	360	-201	As = 2.05 cm ² /m ($\phi 10.0$ c/20 - 3.93 cm ² /m)
V298	2	L279	L273	-107	57	-92	As = 2.05 cm ² /m ($\phi 10.0$ c/20 - 3.93 cm ² /m)
V231	3	L279	L283	665	240	-986	As = 3.39 cm ² /m ($\phi 10.0$ c/20 - 3.93 cm ² /m)
V298	3	L276	L274	236	103	-88	As = 2.05 cm ² /m ($\phi 10.0$ c/20 - 3.93 cm ² /m)
V297	3	L274	L273	267	253	-270	As = 2.05 cm ² /m ($\phi 10.0$ c/20 - 3.93 cm ² /m)
V298	1	L282	L283	97	932	-1127	As = 2.68 cm ² /m ($\phi 10.0$ c/20 - 3.93 cm ² /m)
V231	2	L282	L272	75	455	-782	As = 2.68 cm ² /m ($\phi 10.0$ c/20 - 3.93 cm ² /m)
V254	1	L272	L273	256	321	-472	As = 2.05 cm ² /m ($\phi 10.0$ c/20 - 3.93 cm ² /m)
V289	2	L234	L233	-158	119	-107	As = 2.05 cm ² /m ($\phi 10.0$ c/20 - 3.93 cm ² /m)
V255	1	L233	L232	241	212	-380	As = 2.05 cm ² /m ($\phi 10.0$ c/20 - 3.93 cm ² /m)

Pavimento PLATIBANDA NV-770

Resultados dos Pilares

PLATIBANDA NV-770	fck = 400.00 kgf/cm ²	E = 318758 kgf/cm ²	Peso Espec = 2500.00 kgf/m ³
Lance 4		cobr = 3.00 cm	

Dados				Resultados					
Pilar	Seção (cm)	Nível Altura (cm)	lib vínc lih vínc (cm)	Nd máx Nd mín (tf)	MBd topo MBd base (kgf.m)	MHd topo MHd base (kgf.m)	As b Armaduras As h % armad total	Estribo Topo Base cota	Esb b Esb h
P58 1:20	20.00 X 40.00	700.00 370.00	264.29 RR 264.29 RR	33.86 0.00	0 2679	0 5403	1.57 2 ø 10.0 6.28 8 ø 10.0 1.6 16 ø 10.0	ø 5.0 c/12	45.72 22.86
P64 1:20	60.00 X 60.00	785.00 455.00	260.00 EL 260.00 EL	45.81 0.07	25 12661	100 5397	12.57 4 ø 20.0 12.57 4 ø 20.0 1.0 12 ø 20.0	ø 5.0 c/4 ø 5.0 c/4 20	14.99 14.99
P65 1:20	20.00 X 30.00	785.00 455.00	325.00 RR 325.00 RR	12.80 0.15	81 4010	24 3021	2.45 2 ø 12.5 8.59 7 ø 12.5 2.9 14 ø 12.5	ø 5.0 c/13 ø 5.0 c/13 20	56.23 37.48
P76 1:20	60.00 X 60.00	785.00 455.00	325.00 RR 650.00 EL	40.69 0.01	10 11869	29 6551	15.71 5 ø 20.0 15.71 5 ø 20.0 1.4 16 ø 20.0	ø 5.0 c/4 ø 5.0 c/4 20	18.74 37.48
P77 1:20	15.00 X 60.00	785.00 455.00	325.00 RR 325.00 RR	7.19 0.17	214 2239	39 2240	1.57 2 ø 10.0 6.28 8 ø 10.0 1.4 16 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 20	74.97 18.74
P82 1:20	20.00 X 40.00	700.00 370.00	264.29 RR 264.29 RR	36.07 0.00	0 2496	0 6224	2.45 2 ø 12.5 6.14 5 ø 12.5 1.5 10 ø 12.5	ø 5.0 c/13	45.72 22.86
P102 1:20	20.00 X 40.00	700.00 370.00	264.29 RR	45.96 0.00	0 2020	0 7590	6.28 2 ø 20.0	ø 5.0 c/13	45.72 22.86

			264.29 RR				6.28 2 ø 20.0 1.6 4 ø 20.0		
P137 1:20	20.00 X 40.00	700.00 370.00	264.29 RR 264.29 RR	7.36 0.00	0 1445	0 307	1.57 2 ø 10.0 2.36 3 ø 10.0 0.6 6 ø 10.0	ø 5.0 c/12	45.72 22.86
P138 1:20	20.00 X 40.00	700.00 370.00	264.29 RR 264.29 RR	18.18 0.00	0 1260	0 986	1.57 2 ø 10.0 2.36 3 ø 10.0 0.6 6 ø 10.0	ø 5.0 c/12	45.72 22.86
P145 1:20	20.00 X 40.00	700.00 370.00	264.29 RR 264.29 RR	15.91 0.00	0 1371	0 365	1.57 2 ø 10.0 2.36 3 ø 10.0 0.6 6 ø 10.0	ø 5.0 c/12	45.72 22.86
P146 1:20	20.00 X 40.00	700.00 370.00	264.29 RR 264.29 RR	18.67 0.00	0 1033	0 1937	1.57 2 ø 10.0 2.36 3 ø 10.0 0.6 6 ø 10.0	ø 5.0 c/12	45.72 22.86
P152 1:20	15.00 X 30.00	785.00 130.00	130.00 RR 130.00 RR	0.94 0.54	315 503	557 697	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 20	29.99 14.99
P153 1:20	15.00 X 30.00	785.00 130.00	260.00 EL 130.00 RR	0.21 0.00	3 8	141 245	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 20	59.97 14.99
P154 1:20	15.00 X 30.00	785.00 130.00	260.00 EL 130.00 RR	0.85 0.48	5 81	53 156	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 20	59.97 14.99
P155 1:20	15.00 X 30.00	785.00 130.00	260.00 EL 130.00 RR	0.16 -0.05	3 9	66 214	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 20	59.97 14.99
P156 1:20	15.00 X 30.00	785.00 130.00	260.00 EL 130.00 RR	0.75 0.41	3 71	52 683	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 20	59.97 14.99
P157 1:20	15.00 X 30.00	785.00 130.00	260.00 EL	0.25 0.03	2 19	71 365	1.57 2 ø 10.0	ø 5.0 c/12 ø 5.0 c/12	59.97 14.99

			130.00 RR				1.57 2 ø 10.0 0.7 4 ø 10.0	20	
P158 1:20	15.00 X 30.00	785.00 130.00	260.00 EL 130.00 RR	0.59 0.30	4 61	145 761	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 20	59.97 14.99
P159 1:20	15.00 X 30.00	785.00 130.00	260.00 EL 130.00 RR	0.46 0.20	4 44	279 931	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 20	59.97 14.99
P160 1:20	15.00 X 30.00	785.00 130.00	260.00 EL 130.00 RR	0.33 0.10	2 27	60 248	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 20	59.97 14.99
P161 1:20	15.00 X 30.00	785.00 130.00	260.00 EL 130.00 RR	0.65 0.34	1 55	146 814	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 20	59.97 14.99
P162 1:20	15.00 X 30.00	785.00 130.00	260.00 EL 130.00 RR	0.15 -0.06	4 10	72 136	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 20	59.97 14.99
P163 1:20	15.00 X 30.00	785.00 130.00	260.00 EL 130.00 RR	0.49 0.22	8 62	297 782	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 20	59.97 14.99
P164 1:20	15.00 X 30.00	785.00 130.00	260.00 EL 130.00 RR	0.53 0.24	5 55	398 1029	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 20	59.97 14.99
P165 1:20	15.00 X 30.00	785.00 130.00	260.00 EL 130.00 RR	0.14 -0.08	4 10	72 209	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 20	59.97 14.99
P166 1:20	15.00 X 30.00	785.00 130.00	260.00 EL 130.00 RR	0.84 0.47	10 104	77 139	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 20	59.97 14.99
P167 1:20	15.00 X 30.00	785.00 130.00	260.00 EL	0.14 -0.08	3 10	124 315	1.57 2 ø 10.0	ø 5.0 c/12 ø 5.0 c/12	59.97 14.99

			130.00 RR				1.57 2 ø 10.0 0.7 4 ø 10.0	20	
P168 1:20	15.00 X 30.00	785.00 130.00	260.00 EL 130.00 RR	0.78 0.43	3 56	33 642	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 20	59.97 14.99
P169 1:20	15.00 X 30.00	785.00 130.00	260.00 EL 130.00 RR	0.23 0.01	5 19	136 421	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 20	59.97 14.99
P170 1:20	15.00 X 30.00	785.00 130.00	260.00 EL 130.00 RR	0.06 -0.16	6 11	517 865	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 20	59.97 14.99
P171 1:20	15.00 X 30.00	785.00 130.00	130.00 RR 130.00 RR	1.09 0.63	256 312	451 511	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 20	29.99 14.99
P172 1:20	15.00 X 30.00	785.00 130.00	260.00 EL 130.00 RR	0.18 -0.04	6 11	465 1143	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 20	59.97 14.99
P173 1:20	15.00 X 30.00	785.00 130.00	260.00 EL 130.00 RR	0.19 -0.03	4 7	305 806	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 20	59.97 14.99
P174 1:20	15.00 X 30.00	785.00 130.00	260.00 EL 130.00 RR	0.26 0.03	10 32	450 1298	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 20	59.97 14.99
P175 1:20	15.00 X 30.00	785.00 130.00	260.00 EL 130.00 RR	0.27 0.05	6 22	539 1329	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 20	59.97 14.99
P176 1:20	15.00 X 30.00	785.00 130.00	260.00 EL 130.00 RR	0.93 0.53	14 95	78 599	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 20	59.97 14.99
P177 1:20	15.00 X 30.00	785.00 130.00	260.00 EL	0.85 0.47	4 58	287 576	1.57 2 ø 10.0	ø 5.0 c/12 ø 5.0 c/12	59.97 14.99

			130.00 RR				1.57 2 ø 10.0 0.7 4 ø 10.0	20	
P178 1:20	15.00 X 30.00	785.00 130.00	260.00 EL 130.00 RR	0.33 0.11	9 16	403 1037	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 20	59.97 14.99
P179 1:20	15.00 X 30.00	785.00 130.00	260.00 EL 130.00 RR	0.56 0.27	2 48	454 1602	2.45 2 ø 12.5 2.45 2 ø 12.5 1.1 4 ø 12.5	ø 5.0 c/15 ø 5.0 c/15 20	59.97 14.99
P180 1:20	15.00 X 30.00	785.00 130.00	260.00 EL 130.00 RR	0.09 -0.14	5 10	424 773	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 20	59.97 14.99
P181 1:20	15.00 X 30.00	785.00 130.00	260.00 EL 130.00 RR	0.08 -0.15	4 9	80 150	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 20	59.97 14.99
P182 1:20	15.00 X 30.00	785.00 130.00	260.00 EL 130.00 RR	0.79 0.44	7 60	590 2047	2.45 2 ø 12.5 2.45 2 ø 12.5 1.1 4 ø 12.5	ø 5.0 c/15 ø 5.0 c/15 20	59.97 14.99
P183 1:20	15.00 X 30.00	785.00 130.00	260.00 EL 130.00 RR	0.69 0.37	1 39	378 1513	2.45 2 ø 12.5 2.45 2 ø 12.5 1.1 4 ø 12.5	ø 5.0 c/15 ø 5.0 c/15 20	59.97 14.99
P184 1:20	15.00 X 30.00	785.00 130.00	130.00 RR 130.00 RR	0.55 0.25	90 163	169 1047	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 20	29.99 14.99
P185 1:20	15.00 X 30.00	785.00 130.00	260.00 EL 130.00 RR	0.26 0.04	3 17	152 667	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 20	59.97 14.99
P186 1:20	15.00 X 30.00	785.00 130.00	260.00 EL 130.00 RR	0.65 0.33	1 51	198 784	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 20	59.97 14.99
P187 1:20	15.00 X 30.00	785.00 130.00	130.00 RR	0.45 0.19	82 136	26 556	1.57 2 ø 10.0	ø 5.0 c/12 ø 5.0 c/12	29.99 14.99

			130.00 RR				1.57 2 ø 10.0 0.7 4 ø 10.0	20	
P188 1:20	15.00 X 30.00	785.00 130.00	260.00 EL 130.00 RR	0.32 0.08	13 54	169 341	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 20	59.97 14.99
P189 1:20	15.00 X 30.00	785.00 130.00	260.00 EL 130.00 RR	0.73 0.40	8 92	99 434	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 20	59.97 14.99
P190 1:20	15.00 X 30.00	785.00 130.00	260.00 EL 130.00 RR	0.27 0.04	5 20	23 260	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 20	59.97 14.99
P191 1:20	15.00 X 30.00	785.00 130.00	260.00 EL 130.00 RR	0.73 0.39	5 66	56 559	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 20	59.97 14.99
P192 1:20	15.00 X 30.00	785.00 130.00	260.00 EL 130.00 RR	0.31 0.08	2 22	237 1174	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 20	59.97 14.99
P193 1:20	15.00 X 30.00	785.00 130.00	130.00 RR 130.00 RR	0.53 0.23	82 156	143 1019	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 20	29.99 14.99
P194 1:20	15.00 X 30.00	785.00 130.00	260.00 EL 130.00 RR	0.51 0.24	7 39	29 78	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 20	59.97 14.99
P195 1:20	15.00 X 30.00	785.00 130.00	260.00 EL 130.00 RR	0.20 0.00	4 40	26 55	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 20	59.97 14.99
P196 1:20	15.00 X 30.00	785.00 130.00	260.00 EL 130.00 RR	0.21 0.01	6 30	21 50	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 20	59.97 14.99
P197 1:20	15.00 X 30.00	785.00 130.00	260.00 EL	0.36 0.13	7 114	84 199	1.57 2 ø 10.0	ø 5.0 c/12 ø 5.0 c/12	59.97 14.99

			130.00 RR				1.57 2 ø 10.0 0.7 4 ø 10.0	20	
P198 1:20	15.00 X 30.00	785.00 130.00	260.00 EL 130.00 RR	0.20 0.00	8 19	30 61	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 20	59.97 14.99
P199 1:20	15.00 X 30.00	785.00 130.00	260.00 EL 130.00 RR	0.47 0.21	2 31	27 59	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 20	59.97 14.99
P200 1:20	15.00 X 30.00	785.00 130.00	130.00 RR 130.00 RR	0.55 0.25	90 166	170 1059	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 20	29.99 14.99
P201 1:20	15.00 X 30.00	785.00 130.00	260.00 EL 130.00 RR	0.25 0.03	3 17	163 682	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 20	59.97 14.99
P202 1:20	15.00 X 30.00	785.00 130.00	260.00 EL 130.00 RR	0.66 0.34	1 50	211 900	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 20	59.97 14.99
P203 1:20	15.00 X 30.00	785.00 130.00	130.00 RR 130.00 RR	0.45 0.19	83 137	19 695	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 20	29.99 14.99
P204 1:20	15.00 X 30.00	785.00 130.00	260.00 EL 130.00 RR	0.24 0.01	9 44	198 926	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 20	59.97 14.99
P205 1:20	15.00 X 30.00	785.00 130.00	260.00 EL 130.00 RR	0.71 0.38	14 114	210 680	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 20	59.97 14.99
P206 1:20	15.00 X 30.00	785.00 130.00	260.00 EL 130.00 RR	0.33 0.09	8 31	58 62	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 20	59.97 14.99
P207 1:20	15.00 X 30.00	785.00 130.00	260.00 EL	0.72 0.38	9 82	69 424	1.57 2 ø 10.0	ø 5.0 c/12 ø 5.0 c/12	59.97 14.99

			130.00 RR				1.57 2 ø 10.0 0.7 4 ø 10.0	20	
P208 1:20	15.00 X 30.00	785.00 130.00	260.00 EL 130.00 RR	0.35 0.11	3 28	311 1510	2.45 2 ø 12.5 2.45 2 ø 12.5 1.1 4 ø 12.5	ø 5.0 c/15 ø 5.0 c/15 20	59.97 14.99
P209 1:20	15.00 X 30.00	785.00 130.00	130.00 RR 130.00 RR	0.49 0.21	82 151	79 769	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 20	29.99 14.99
P210 1:20	15.00 X 30.00	785.00 130.00	260.00 EL 130.00 RR	0.69 0.36	3 39	396 1558	2.45 2 ø 12.5 2.45 2 ø 12.5 1.1 4 ø 12.5	ø 5.0 c/15 ø 5.0 c/15 20	59.97 14.99
P211 1:20	15.00 X 30.00	785.00 130.00	260.00 EL 130.00 RR	0.69 0.36	1 39	348 1442	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 20	59.97 14.99
P212 1:20	15.00 X 30.00	785.00 130.00	260.00 EL 130.00 RR	0.08 -0.15	2 7	73 137	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 20	59.97 14.99
P213 1:20	15.00 X 30.00	785.00 130.00	260.00 EL 130.00 RR	0.08 -0.14	5 10	52 104	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 20	59.97 14.99
P214 1:20	15.00 X 30.00	785.00 130.00	260.00 EL 130.00 RR	0.65 0.35	1 42	337 1540	2.45 2 ø 12.5 2.45 2 ø 12.5 1.1 4 ø 12.5	ø 5.0 c/15 ø 5.0 c/15 20	59.97 14.99
P215 1:20	15.00 X 30.00	785.00 130.00	260.00 EL 130.00 RR	0.66 0.34	4 62	343 1525	2.45 2 ø 12.5 2.45 2 ø 12.5 1.1 4 ø 12.5	ø 5.0 c/15 ø 5.0 c/15 20	59.97 14.99
P216 1:20	15.00 X 30.00	785.00 130.00	260.00 EL 130.00 RR	0.81 0.44	1 32	505 1199	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 20	59.97 14.99
P217 1:20	15.00 X 30.00	785.00 130.00	260.00 EL	0.82 0.45	6 67	510 1093	1.57 2 ø 10.0	ø 5.0 c/12 ø 5.0 c/12	59.97 14.99

			130.00 RR				1.57 2 ø 10.0 0.7 4 ø 10.0	20	
P218 1:20	15.00 X 30.00	785.00 130.00	260.00 EL 130.00 RR	0.17 -0.04	6 11	547 1253	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 20	59.97 14.99
P219 1:20	15.00 X 30.00	785.00 130.00	260.00 EL 130.00 RR	0.17 -0.05	9 25	545 1243	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 20	59.97 14.99
P220 1:20	15.00 X 30.00	785.00 130.00	260.00 EL 130.00 RR	0.18 -0.04	4 10	463 1093	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 20	59.97 14.99
P221 1:20	15.00 X 30.00	785.00 130.00	260.00 EL 130.00 RR	0.20 -0.02	5 15	453 1120	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 20	59.97 14.99
P222 1:20	15.00 X 30.00	785.00 130.00	130.00 RR 130.00 RR	0.95 0.55	333 530	563 840	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 20	29.99 14.99
P223 1:20	15.00 X 30.00	785.00 130.00	260.00 EL 130.00 RR	0.17 -0.06	4 12	208 354	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 20	59.97 14.99
P224 1:20	15.00 X 30.00	785.00 130.00	260.00 EL 130.00 RR	0.92 0.53	10 103	106 300	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 20	59.97 14.99
P225 1:20	15.00 X 30.00	785.00 130.00	260.00 EL 130.00 RR	0.14 -0.08	4 11	73 218	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 20	59.97 14.99
P226 1:20	15.00 X 30.00	785.00 130.00	260.00 EL 130.00 RR	0.81 0.45	3 68	28 612	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 20	59.97 14.99
P227 1:20	15.00 X 30.00	785.00 130.00	260.00 EL	0.21 0.00	2 18	164 578	1.57 2 ø 10.0	ø 5.0 c/12 ø 5.0 c/12	59.97 14.99

			130.00 RR				1.57 2 ø 10.0 0.7 4 ø 10.0	20	
P228 1:20	15.00 X 30.00	785.00 130.00	260.00 EL 130.00 RR	0.62 0.32	2 53	100 861	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 20	59.97 14.99
P229 1:20	15.00 X 30.00	785.00 130.00	260.00 EL 130.00 RR	0.44 0.19	3 40	358 1210	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 20	59.97 14.99
P230 1:20	15.00 X 30.00	785.00 130.00	260.00 EL 130.00 RR	0.28 0.05	3 25	23 398	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 20	59.97 14.99
P231 1:20	15.00 X 30.00	785.00 130.00	260.00 EL 130.00 RR	0.69 0.37	1 52	98 983	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 20	59.97 14.99
P232 1:20	15.00 X 30.00	785.00 130.00	260.00 EL 130.00 RR	0.11 -0.11	3 10	123 280	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 20	59.97 14.99
P233 1:20	15.00 X 30.00	785.00 130.00	260.00 EL 130.00 RR	0.54 0.24	7 60	349 897	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 20	59.97 14.99
P234 1:20	15.00 X 30.00	785.00 130.00	260.00 EL 130.00 RR	0.53 0.24	3 50	392 1024	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 20	59.97 14.99
P235 1:20	15.00 X 30.00	785.00 130.00	260.00 EL 130.00 RR	0.15 -0.08	2 8	60 163	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 20	59.97 14.99
P236 1:20	15.00 X 30.00	785.00 130.00	260.00 EL 130.00 RR	0.82 0.46	5 81	44 168	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 20	59.97 14.99
P237 1:20	15.00 X 30.00	785.00 130.00	260.00 EL	0.14 -0.08	3 9	62 213	1.57 2 ø 10.0	ø 5.0 c/12 ø 5.0 c/12	59.97 14.99

			130.00 RR				1.57 2 ø 10.0 0.7 4 ø 10.0	20	
P238 1:20	15.00 X 30.00	785.00 130.00	260.00 EL 130.00 RR	0.81 0.45	3 60	17 694	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 20	59.97 14.99
P239 1:20	15.00 X 30.00	785.00 130.00	260.00 EL 130.00 RR	0.23 0.01	5 19	164 509	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 20	59.97 14.99
P240 1:20	15.00 X 30.00	785.00 130.00	260.00 EL 130.00 RR	0.12 -0.10	4 9	454 814	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 20	59.97 14.99
P241 1:20	15.00 X 30.00	785.00 130.00	130.00 RR 130.00 RR	1.06 0.61	210 222	525 628	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 20	29.99 14.99

Resultados da Vigas

Resultados da Viga V301

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P152	15.00			2 ø 10.0 0.54					0.02
1	660.75	15.00 x 20.00	2 ø 10.0 0.54			ø 5.0 c/ 8			0.01
P154	30.00			2 ø 10.0 0.54					0.02
2	570.00	15.00 x 20.00	2 ø 10.0 0.54			ø 5.0 c/ 8			0.01
P156	30.00		2 ø 10.0 1.57	2 ø 10.0 1.57					0.01
3	570.00	15.00 x 20.00	2 ø 10.0 1.57	2 ø 10.0 1.57		ø 5.0 c/ 8			0.00
P158	30.00		2 ø 10.0 1.57	2 ø 10.0 1.57					0.01
4	189.75	15.00 x 20.00	2 ø 10.0 1.57	2 ø 10.0 1.57		ø 5.0 c/ 8			0.00
P159	30.00		2 ø 10.0 1.57	2 ø 10.0 1.57					0.01
5	570.00	15.00 x 20.00	2 ø 10.0 0.54			ø 5.0 c/ 8			0.00
P161	30.00			2 ø 10.0 0.54					0.01
6	524.50	15.00 x 20.00	2 ø 10.0 0.54			ø 5.0 c/ 8			0.00
P163	30.00			2 ø 10.0 0.54					0.01

Resultados da Viga V302

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P164	30.00			2 ø 10.0 0.54					0.02
1	583.50	15.00 x 20.00	2 ø 10.0 0.54			ø 5.0 c/ 8			0.01
P166	30.00			2 ø 10.0 0.54					0.02
2	570.00	15.00 x 20.00	2 ø 10.0 0.54			ø 5.0 c/ 8			0.01
P168	30.00			2 ø 10.0 0.54					0.01
3	704.50	15.00 x 20.00	2 ø 10.0 0.54			ø 5.0 c/ 8			0.01
P171	15.00			2 ø 10.0 0.54					0.01

Resultados da Viga V303

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P184	30.00			2 ø 10.0 0.54					0.00
1	551.75	15.00 x 20.00	2 ø 10.0 0.54			ø 5.0 c/ 8			0.00
P186	30.00		2 ø 10.0 1.57	2 ø 10.0 1.57					0.01
2	270.00	15.00 x 20.00	2 ø 10.0 1.57	2 ø 10.0 1.57		ø 5.0 c/ 8			0.00
P187	30.00		2 ø 10.0 1.57	2 ø 10.0 1.57					0.00

Resultados da Viga V304

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
V314	15.00			2 ø 10.0 0.54					0.00
1	598.50	15.00 x 20.00	2 ø 10.0 0.54			ø 5.0 c/ 8			0.00
P189	30.00			2 ø 10.0 0.54					0.01
2	570.00	15.00 x 20.00	2 ø 10.0 0.54			ø 5.0 c/ 8			0.00
P191	30.00		2 ø 10.0 1.57	2 ø 10.0 1.57					0.01
3	593.50	15.00 x 20.00	2 ø 10.0 1.57	2 ø 10.0 1.57		ø 5.0 c/ 8			0.00
P193	30.00			2 ø 10.0 0.54					0.00

Resultados da Viga V305

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P200	30.00			2 ø 10.0 0.54					0.00
1	551.75	15.00 x 20.00	2 ø 10.0 0.54			ø 5.0 c/ 8			0.00
P202	30.00		2 ø 10.0 1.57	2 ø 10.0 1.57					0.02
2	270.00	15.00 x 20.00	2 ø 10.0 1.57	2 ø 10.0 1.57		ø 5.0 c/ 8			0.00
P203	30.00		2 ø 10.0 1.57	2 ø 10.0 1.57					0.00

Resultados da Viga V306

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P77	15.00			2 ø 10.0 0.54					0.01
1	598.50	15.00 x 20.00	2 ø 10.0 0.54			ø 5.0 c/ 8			0.01
P205	30.00		2 ø 10.0 1.57	2 ø 10.0 1.57					0.02
2	570.00	15.00 x 20.00	2 ø 10.0 1.57	2 ø 10.0 1.57		ø 5.0 c/ 8			0.00
P207	30.00		2 ø 10.0 1.57	2 ø 10.0 1.57					0.02
3	270.00	15.00 x 20.00	2 ø 10.0 1.57	2 ø 10.0 1.57		ø 5.0 c/ 8			0.01
P208	30.00		2 ø 10.0 1.57	2 ø 10.0 1.57					0.00
4	293.50	15.00 x 20.00	2 ø 10.0 0.54			ø 5.0 c/ 8			0.00
P209	30.00			2 ø 10.0 0.54					0.00

Resultados da Viga V307

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P222	15.00			2 ø 10.0 0.54					0.02
1	660.75	15.00 x 20.00	2 ø 10.0 0.54			ø 5.0 c/ 8			0.01
P224	30.00			2 ø 10.0 0.64					0.03
2	570.00	15.00 x 20.00	2 ø 10.0 0.54			ø 5.0 c/ 8			0.01
P226	30.00		2 ø 10.0 1.57	2 ø 10.0 1.57					0.02
3	570.00	15.00 x 20.00	2 ø 10.0 1.57	2 ø 10.0 1.57		ø 5.0 c/ 8			0.01
P228	30.00		2 ø 10.0 1.57	2 ø 10.0 1.57					0.01
4	189.75	15.00 x 20.00	2 ø 10.0 1.57	2 ø 10.0 1.57		ø 5.0 c/ 8			0.00
P229	30.00		2 ø 10.0 1.57	2 ø 10.0 1.57					0.01
5	570.00	15.00 x 20.00	2 ø 10.0 0.54			ø 5.0 c/ 8			0.00
P231	30.00			2 ø 10.0 0.54					0.01
6	524.50	15.00 x 20.00	2 ø 10.0 0.54			ø 5.0 c/ 8			0.01
P233	30.00			2 ø 10.0 0.54					0.01

Resultados da Viga V308

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P234	30.00			2 ø 10.0 0.54					0.02
1	583.50	15.00 x 20.00	2 ø 10.0 0.54			ø 5.0 c/ 8			0.01
P236	30.00			2 ø 10.0 0.54					0.02
2	570.00	15.00 x 20.00	2 ø 10.0 0.54			ø 5.0 c/ 8			0.01
P238	30.00			2 ø 10.0 0.54					0.01
3	704.50	15.00 x 20.00	2 ø 10.0 0.54			ø 5.0 c/ 8			0.01
P241	15.00			2 ø 10.0 0.54					0.01

Resultados da Viga V309

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P222	30.00			2 ø 10.0 0.80					0.04
1	895.00	15.00 x 20.00	2 ø 10.0 0.61			ø 5.0 c/ 8			0.02
P216	30.00		2 ø 10.0 1.57	2 ø 10.0 1.57					0.05
2	270.00	15.00 x 20.00	2 ø 10.0 1.57	2 ø 10.0 1.57		ø 5.0 c/ 8			0.00
P214	30.00		2 ø 10.0 1.57	2 ø 10.0 1.57					0.02
3	570.00	15.00 x 20.00	2 ø 10.0 0.54			ø 5.0 c/ 8			0.01
P210	30.00		2 ø 10.0 1.57	2 ø 10.0 1.57					0.03
4	270.00	15.00 x 20.00	2 ø 10.0 1.57	2 ø 10.0 1.57		ø 5.0 c/ 8			0.00
P194	30.00		2 ø 10.0 1.57	2 ø 10.0 1.57					0.00
5	270.00	15.00 x 20.00	2 ø 10.0 1.57	2 ø 10.0 1.57		ø 5.0 c/ 8			0.00
P182	30.00		2 ø 10.0 1.57	2 ø 10.0 1.57					0.06
6	870.00	15.00 x 20.00	2 ø 10.0 0.62			ø 5.0 c/ 8			0.03
P176	30.00			2 ø 10.0 0.61					0.03
7	895.00	15.00 x 20.00	2 ø 10.0 0.59			ø 5.0 c/ 8			0.02
P152	30.00			2 ø 10.0 0.80					0.04

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

Resultados da Viga V310

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P200	15.00			2 ø 10.0 0.54					0.00
1	320.00	15.00 x 20.00	2 ø 10.0 0.54			ø 5.0 c/ 8			0.00
P184	15.00			2 ø 10.0 0.54					0.00

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

Resultados da Viga V311

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P203	15.00			2 ø 10.0 0.54					0.00
1	320.00	15.00 x 20.00	2 ø 10.0 0.54			ø 5.0 c/ 8			0.00
P187	15.00			2 ø 10.0 0.54					0.00

Resultados da Viga V312

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
	60.00		2 ø 10.0 1.57	2 ø 10.0 1.57					0.02
1	147.50	15.00 x 20.00	2 ø 10.0 1.57	2 ø 10.0 1.57		ø 5.0 c/ 8			0.02
P197	30.00		2 ø 10.0 1.57	2 ø 10.0 1.57					0.03
2	162.50	15.00 x 20.00	2 ø 10.0 1.57	2 ø 10.0 1.57		ø 5.0 c/ 8			0.02
P64	60.00		2 ø 10.0 1.57	2 ø 10.0 1.57					0.03

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

Resultados da Viga V314

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
	15.00		2 ø 10.0 0.18	2 ø 10.0 0.71					0.00
1	22.50	15.00 x 20.00	2 ø 10.0 0.71	2 ø 10.0 0.18		ø 5.0 c/ 8			0.00
P65	20.00		2 ø 10.0 0.18	2 ø 10.0 0.71					0.00

Resultados da Viga V315

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P209	15.00			2 ø 10.0 0.54					0.00
1	320.00	15.00 x 20.00	2 ø 10.0 0.54			ø 5.0 c/ 8			0.00
P193	15.00			2 ø 10.0 0.54					0.00

Resultados da Viga V316

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P241	30.00			2 ø 10.0 0.76					0.04
1	895.00	15.00 x 20.00	2 ø 10.0 0.62			ø 5.0 c/ 8			0.03
P217	30.00		2 ø 10.0 1.57	2 ø 10.0 1.57					0.05
2	270.00	15.00 x 20.00	2 ø 10.0 1.57	2 ø 10.0 1.57		ø 5.0 c/ 8			0.00
P215	30.00		2 ø 10.0 1.57	2 ø 10.0 1.57					0.02
3	570.00	15.00 x 20.00	2 ø 10.0 0.54			ø 5.0 c/ 8			0.01
P211	30.00		2 ø 10.0 1.57	2 ø 10.0 1.57					0.03
4	270.00	15.00 x 20.00	2 ø 10.0 1.57	2 ø 10.0 1.57		ø 5.0 c/ 8			0.00
P199	30.00		2 ø 10.0 1.57	2 ø 10.0 1.57					0.00
5	270.00	15.00 x 20.00	2 ø 10.0 1.57	2 ø 10.0 1.57		ø 5.0 c/ 8			0.00
P183	30.00		2 ø 10.0 1.57	2 ø 10.0 1.57					0.03
6	570.00	15.00 x 20.00	2 ø 10.0 0.54			ø 5.0 c/ 8			0.01
P179	30.00		2 ø 10.0 1.57	2 ø 10.0 1.57					0.02
7	270.00	15.00 x 20.00	2 ø 10.0 1.57	2 ø 10.0 1.57		ø 5.0 c/ 8			0.00
P177	30.00		2 ø 10.0 1.57	2 ø 10.0 1.57					0.04
8	895.00	15.00 x 20.00	2 ø 10.0 0.54			ø 5.0 c/ 8			0.02
P171	30.00			2 ø 10.0 0.67					0.03

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

Relatório de Resultados das Sapatas

NV-000	fck = 400.00 kgf/cm ²	E = 318758 kgf/cm ²	Peso Espec = 2500.00 kgf/m ³
Lance 1		cobr = 4.50 cm	

Nome	Dimensões (cm)		Armaduras inferiores		Armaduras superiores	
	B H	H0 H1	Dir. B	Dir. H	Dir. B	Dir. H
S1	90.00 110.00	20.00 40.00	13 ø 8.0 c/8 (6.53 cm ²)	11 ø 8.0 c/8 (5.53 cm ²)		
S2	55.00 80.00	30.00 40.00	8 ø 10.0 c/9 (6.28 cm ²)	6 ø 10.0 c/9 (4.71 cm ²)		
S3	105.00 125.00	20.00 40.00	10 ø 10.0 c/12 (7.85 cm ²)	12 ø 8.0 c/8 (6.03 cm ²)		
S4	55.00 80.00	30.00 40.00	8 ø 10.0 c/9 (6.28 cm ²)	6 ø 10.0 c/9 (4.71 cm ²)		
S5	105.00 125.00	20.00 40.00	10 ø 10.0 c/12 (7.85 cm ²)	12 ø 8.0 c/8 (6.03 cm ²)		
S6	60.00 85.00	30.00 40.00	7 ø 10.0 c/11 (5.50 cm ²)	6 ø 10.0 c/10 (4.71 cm ²)		
S7	130.00 150.00	20.00 40.00	11 ø 10.0 c/13 (8.64 cm ²)	10 ø 10.0 c/13 (7.85 cm ²)		
S8	120.00 140.00	20.00 40.00	11 ø 10.0 c/13 (8.64 cm ²)	13 ø 8.0 c/9 (6.53 cm ²)		
S11	145.00 165.00	20.00 45.00	13 ø 10.0 c/12 (10.21 cm ²)	12 ø 10.0 c/12 (9.42 cm ²)		
S12	145.00 165.00	20.00 45.00	13 ø 10.0 c/12 (10.21 cm ²)	12 ø 10.0 c/12 (9.42 cm ²)		
S13	90.00 105.00	25.00 40.00	8 ø 10.0 c/12 (6.28 cm ²)	11 ø 8.0 c/8 (5.53 cm ²)		
S14	70.00 95.00	25.00 40.00	8 ø 10.0 c/12 (6.28 cm ²)	8 ø 8.0 c/8 (4.02 cm ²)		
S15	55.00 80.00	30.00 40.00	8 ø 10.0 c/9 (6.28 cm ²)	6 ø 10.0 c/9 (4.71 cm ²)		
S16	120.00 145.00	20.00 40.00	11 ø 10.0 c/13 (8.64 cm ²)	13 ø 8.0 c/9 (6.53 cm ²)		
S17	55.00 80.00	30.00 40.00	8 ø 10.0 c/9 (6.28 cm ²)	6 ø 10.0 c/9 (4.71 cm ²)		
S18	120.00 145.00	20.00 40.00	11 ø 10.0 c/13 (8.64 cm ²)	13 ø 8.0 c/9 (6.53 cm ²)		
S19	55.00 80.00	30.00 40.00	8 ø 10.0 c/9 (6.28 cm ²)	6 ø 10.0 c/9 (4.71 cm ²)		
S20	125.00 150.00	20.00 40.00	11 ø 10.0 c/13 (8.64 cm ²)	15 ø 8.0 c/8 (7.54 cm ²)		
S21	85.00 110.00	20.00 40.00	13 ø 8.0 c/8 (6.53 cm ²)	10 ø 8.0 c/8 (5.03 cm ²)		
S22	55.00 80.00	30.00 40.00	8 ø 10.0 c/9 (6.28 cm ²)	6 ø 10.0 c/9 (4.71 cm ²)		

S23	105.00 125.00	20.00 40.00	10 ø 10.0 c/12 (7.85 cm ²)	12 ø 8.0 c/8 (6.03 cm ²)		
S24	55.00 80.00	30.00 40.00	8 ø 10.0 c/9 (6.28 cm ²)	6 ø 10.0 c/9 (4.71 cm ²)		
S25	130.00 150.00	20.00 40.00	11 ø 10.0 c/13 (8.64 cm ²)	16 ø 8.0 c/8 (8.04 cm ²)		
S26	55.00 80.00	30.00 40.00	8 ø 10.0 c/9 (6.28 cm ²)	6 ø 10.0 c/9 (4.71 cm ²)		
S27	125.00 145.00	20.00 40.00	11 ø 10.0 c/13 (8.64 cm ²)	13 ø 8.0 c/9 (6.53 cm ²)		
S28	55.00 80.00	30.00 40.00	8 ø 10.0 c/9 (6.28 cm ²)	6 ø 10.0 c/9 (4.71 cm ²)		
S29	155.00 175.00	20.00 45.00	17 ø 10.0 c/10 (13.35 cm ²)	15 ø 10.0 c/10 (11.78 cm ²)		
S30	90.00 115.00	40.00 40.00	11 ø 10.0 c/10 (8.64 cm ²)	9 ø 10.0 c/10 (7.07 cm ²)	14 ø 8.0 c/8 (7.04 cm ²)	10 ø 8.0 c/8 (5.03 cm ²)
S31	125.00 145.00	20.00 40.00	11 ø 10.0 c/13 (8.64 cm ²)	13 ø 8.0 c/9 (6.53 cm ²)		
S34	160.00 180.00	20.00 50.00	16 ø 10.0 c/11 (12.57 cm ²)	16 ø 10.0 c/10 (12.57 cm ²)		
S35	160.00 180.00	20.00 50.00	16 ø 10.0 c/11 (12.57 cm ²)	16 ø 10.0 c/10 (12.57 cm ²)		
S36	105.00 125.00	20.00 40.00	10 ø 10.0 c/12 (7.85 cm ²)	12 ø 8.0 c/8 (6.03 cm ²)		
S37	115.00 135.00	20.00 40.00	10 ø 10.0 c/13 (7.85 cm ²)	14 ø 8.0 c/8 (7.04 cm ²)		
S38	145.00 165.00	20.00 45.00	15 ø 10.0 c/11 (11.78 cm ²)	13 ø 10.0 c/11 (10.21 cm ²)		
S39	100.00 120.00	20.00 40.00	10 ø 10.0 c/12 (7.85 cm ²)	12 ø 8.0 c/8 (6.03 cm ²)		
S40	115.00 135.00	20.00 40.00	10 ø 10.0 c/13 (7.85 cm ²)	14 ø 8.0 c/8 (7.04 cm ²)		
S41	135.00 155.00	20.00 40.00	13 ø 10.0 c/12 (10.21 cm ²)	11 ø 10.0 c/12 (8.64 cm ²)		
S42	155.00 175.00	20.00 45.00	17 ø 10.0 c/10 (13.35 cm ²)	15 ø 10.0 c/10 (11.78 cm ²)		
S45	170.00 190.00	20.00 50.00	13 ø 12.5 c/15 (15.95 cm ²)	12 ø 12.5 c/14 (14.73 cm ²)		
S46	175.00 195.00	20.00 55.00	19 ø 10.0 c/10 (14.92 cm ²)	12 ø 12.5 c/15 (14.73 cm ²)		
S47	110.00 130.00	20.00 40.00	10 ø 10.0 c/13 (7.85 cm ²)	13 ø 8.0 c/8 (6.53 cm ²)		
S48	80.00 105.00	40.00 40.00	10 ø 10.0 c/10 (7.85 cm ²)	8 ø 10.0 c/10 (6.28 cm ²)	12 ø 8.0 c/8 (6.03 cm ²)	9 ø 8.0 c/8 (4.52 cm ²)
S49	55.00 80.00	30.00 40.00	8 ø 10.0 c/9 (6.28 cm ²)	6 ø 10.0 c/9 (4.71 cm ²)		
S50	65.00 90.00	40.00 40.00	9 ø 10.0 c/10 (7.07 cm ²)	6 ø 10.0 c/10 (4.71 cm ²)	10 ø 8.0 c/8 (5.03 cm ²)	7 ø 8.0 c/8 (3.52 cm ²)
S51	100.00 130.00	20.00 40.00	11 ø 10.0 c/12 (8.64 cm ²)	12 ø 8.0 c/8 (6.03 cm ²)		
S52	115.00 145.00	20.00 40.00	12 ø 10.0 c/12 (9.42 cm ²)	14 ø 8.0 c/8 (7.04 cm ²)		
S53	140.00 165.00	45.00 45.00	12 ø 12.5 c/14 (14.73 cm ²)	15 ø 10.0 c/9 (11.78 cm ²)	13 ø 10.0 c/12 (10.21 cm ²)	11 ø 10.0 c/12 (8.64 cm ²)
S54	95.00 120.00	40.00 40.00	12 ø 10.0 c/10 (9.42 cm ²)	9 ø 10.0 c/10 (7.07 cm ²)	14 ø 8.0 c/8 (7.04 cm ²)	11 ø 8.0 c/8 (5.53 cm ²)
S55	60.00 90.00	30.00 40.00	9 ø 10.0 c/9 (7.07 cm ²)	6 ø 10.0 c/10 (4.71 cm ²)		
S56	60.00 90.00	30.00 40.00	9 ø 10.0 c/9 (7.07 cm ²)	6 ø 10.0 c/10 (4.71 cm ²)		

S57	120.00 155.00	20.00 40.00	13 ø 10.0 c/12 (10.21 cm ²)	13 ø 8.0 c/9 (6.53 cm ²)		
S58	130.00 145.00	20.00 40.00	11 ø 10.0 c/13 (8.64 cm ²)	14 ø 8.0 c/9 (7.04 cm ²)		
S59	70.00 90.00	25.00 40.00	7 ø 10.0 c/12 (5.50 cm ²)	8 ø 8.0 c/8 (4.02 cm ²)		
S60	65.00 95.00	30.00 40.00	8 ø 10.0 c/11 (6.28 cm ²)	6 ø 10.0 c/11 (4.71 cm ²)		
S61	110.00 130.00	20.00 40.00	10 ø 10.0 c/13 (7.85 cm ²)	13 ø 8.0 c/8 (6.53 cm ²)		
S62	85.00 105.00	25.00 40.00	8 ø 10.0 c/12 (6.28 cm ²)	10 ø 8.0 c/8 (5.03 cm ²)		
S63	75.00 95.00	25.00 40.00	8 ø 10.0 c/12 (6.28 cm ²)	9 ø 8.0 c/8 (4.52 cm ²)		
S66	135.00 155.00	20.00 40.00	12 ø 10.0 c/13 (9.42 cm ²)	11 ø 10.0 c/12 (8.64 cm ²)		
S67	140.00 160.00	20.00 40.00	13 ø 10.0 c/12 (10.21 cm ²)	11 ø 10.0 c/12 (8.64 cm ²)		
S68	110.00 130.00	20.00 40.00	10 ø 10.0 c/13 (7.85 cm ²)	13 ø 8.0 c/8 (6.53 cm ²)		
S69	90.00 120.00	20.00 40.00	10 ø 10.0 c/12 (7.85 cm ²)	11 ø 8.0 c/8 (5.53 cm ²)		
S70	60.00 90.00	30.00 40.00	9 ø 10.0 c/9 (7.07 cm ²)	6 ø 10.0 c/10 (4.71 cm ²)		
S71	60.00 90.00	30.00 40.00	9 ø 10.0 c/9 (7.07 cm ²)	6 ø 10.0 c/10 (4.71 cm ²)		
S72	105.00 130.00	20.00 40.00	11 ø 10.0 c/12 (8.64 cm ²)	12 ø 8.0 c/8 (6.03 cm ²)		
S73	110.00 130.00	20.00 40.00	10 ø 10.0 c/13 (7.85 cm ²)	13 ø 8.0 c/8 (6.53 cm ²)		
S74	85.00 105.00	25.00 40.00	8 ø 10.0 c/12 (6.28 cm ²)	10 ø 8.0 c/8 (5.03 cm ²)		
S75	80.00 105.00	25.00 40.00	8 ø 10.0 c/12 (6.28 cm ²)	9 ø 8.0 c/8 (4.52 cm ²)		
S78	125.00 145.00	20.00 40.00	11 ø 10.0 c/13 (8.64 cm ²)	13 ø 8.0 c/9 (6.53 cm ²)		
S79	120.00 140.00	20.00 40.00	11 ø 10.0 c/13 (8.64 cm ²)	13 ø 8.0 c/9 (6.53 cm ²)		
S80	110.00 130.00	20.00 40.00	10 ø 10.0 c/13 (7.85 cm ²)	13 ø 8.0 c/8 (6.53 cm ²)		
S81	115.00 150.00	20.00 40.00	12 ø 10.0 c/12 (9.42 cm ²)	12 ø 8.0 c/9 (6.03 cm ²)		
S82	130.00 150.00	20.00 40.00	11 ø 10.0 c/13 (8.64 cm ²)	10 ø 10.0 c/13 (7.85 cm ²)		
S85	60.00 90.00	30.00 40.00	9 ø 10.0 c/9 (7.07 cm ²)	6 ø 10.0 c/10 (4.71 cm ²)		
S86	60.00 90.00	30.00 40.00	9 ø 10.0 c/9 (7.07 cm ²)	6 ø 10.0 c/10 (4.71 cm ²)		
S87	65.00 90.00	25.00 40.00	7 ø 10.0 c/12 (5.50 cm ²)	7 ø 8.0 c/8 (3.52 cm ²)		
S88	70.00 100.00	25.00 40.00	8 ø 10.0 c/12 (6.28 cm ²)	8 ø 8.0 c/8 (4.02 cm ²)		
S89	80.00 105.00	25.00 40.00	8 ø 10.0 c/12 (6.28 cm ²)	9 ø 8.0 c/8 (4.52 cm ²)		
S90	110.00 135.00	20.00 40.00	10 ø 10.0 c/13 (7.85 cm ²)	12 ø 8.0 c/9 (6.03 cm ²)		
S91	105.00 130.00	20.00 40.00	10 ø 10.0 c/13 (7.85 cm ²)	11 ø 8.0 c/9 (5.53 cm ²)		
S92	55.00 80.00	30.00 40.00	8 ø 10.0 c/9 (6.28 cm ²)	6 ø 10.0 c/9 (4.71 cm ²)		

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

S93	65.00 90.00	40.00 40.00	9 ø 10.0 c/10 (7.07 cm ²)	6 ø 10.0 c/10 (4.71 cm ²)	10 ø 8.0 c/8 (5.03 cm ²)	7 ø 8.0 c/8 (3.52 cm ²)
S94	100.00 130.00	20.00 40.00	11 ø 10.0 c/12 (8.64 cm ²)	12 ø 8.0 c/8 (6.03 cm ²)		
S95	115.00 145.00	20.00 40.00	12 ø 10.0 c/12 (9.42 cm ²)	14 ø 8.0 c/8 (7.04 cm ²)		
S96	55.00 80.00	30.00 40.00	8 ø 10.0 c/9 (6.28 cm ²)	6 ø 10.0 c/9 (4.71 cm ²)		
S97	120.00 140.00	20.00 40.00	11 ø 10.0 c/13 (8.64 cm ²)	13 ø 8.0 c/9 (6.53 cm ²)		
S98	145.00 165.00	20.00 45.00	15 ø 10.0 c/11 (11.78 cm ²)	13 ø 10.0 c/11 (10.21 cm ²)		
S99	105.00 125.00	20.00 40.00	10 ø 10.0 c/12 (7.85 cm ²)	12 ø 8.0 c/8 (6.03 cm ²)		
S100	105.00 125.00	20.00 40.00	10 ø 10.0 c/12 (7.85 cm ²)	12 ø 8.0 c/8 (6.03 cm ²)		
S101	125.00 145.00	20.00 40.00	11 ø 10.0 c/13 (8.64 cm ²)	13 ø 8.0 c/9 (6.53 cm ²)		
S102	140.00 160.00	20.00 40.00	13 ø 10.0 c/12 (10.21 cm ²)	12 ø 10.0 c/11 (9.42 cm ²)		
S105	140.00 160.00	20.00 40.00	13 ø 10.0 c/12 (10.21 cm ²)	12 ø 10.0 c/11 (9.42 cm ²)		
S106	135.00 155.00	20.00 40.00	13 ø 10.0 c/12 (10.21 cm ²)	11 ø 10.0 c/12 (8.64 cm ²)		
S107	115.00 135.00	20.00 40.00	10 ø 10.0 c/13 (7.85 cm ²)	14 ø 8.0 c/8 (7.04 cm ²)		
S108	105.00 125.00	20.00 40.00	10 ø 10.0 c/12 (7.85 cm ²)	12 ø 8.0 c/8 (6.03 cm ²)		
S109	145.00 165.00	20.00 45.00	13 ø 10.0 c/12 (10.21 cm ²)	12 ø 10.0 c/12 (9.42 cm ²)		
S110	140.00 160.00	20.00 40.00	14 ø 10.0 c/11 (11.00 cm ²)	12 ø 10.0 c/11 (9.42 cm ²)		
S111	165.00 185.00	20.00 50.00	18 ø 10.0 c/10 (14.14 cm ²)	18 ø 10.0 c/9 (14.14 cm ²)		
S112	170.00 190.00	20.00 50.00	12 ø 12.5 c/16 (14.73 cm ²)	11 ø 12.5 c/15 (13.50 cm ²)		
S115	165.00 185.00	20.00 50.00	18 ø 10.0 c/10 (14.14 cm ²)	18 ø 10.0 c/9 (14.14 cm ²)		
S116	175.00 195.00	20.00 55.00	12 ø 12.5 c/16 (14.73 cm ²)	12 ø 12.5 c/15 (14.73 cm ²)		
S117	105.00 120.00	20.00 40.00	10 ø 10.0 c/12 (7.85 cm ²)	12 ø 8.0 c/8 (6.03 cm ²)		
S118	80.00 105.00	25.00 40.00	8 ø 10.0 c/12 (6.28 cm ²)	9 ø 8.0 c/8 (4.52 cm ²)		
S119	110.00 130.00	20.00 40.00	10 ø 10.0 c/13 (7.85 cm ²)	12 ø 8.0 c/9 (6.03 cm ²)		
S120	100.00 125.00	20.00 40.00	10 ø 10.0 c/12 (7.85 cm ²)	11 ø 8.0 c/9 (5.53 cm ²)		
S121	110.00 135.00	40.00 40.00	13 ø 10.0 c/10 (10.21 cm ²)	11 ø 10.0 c/10 (8.64 cm ²)	10 ø 10.0 c/13 (7.85 cm ²)	13 ø 8.0 c/8 (6.53 cm ²)
S122	55.00 80.00	30.00 40.00	8 ø 10.0 c/9 (6.28 cm ²)	6 ø 10.0 c/9 (4.71 cm ²)		
S123	70.00 95.00	25.00 40.00	8 ø 10.0 c/12 (6.28 cm ²)	8 ø 8.0 c/8 (4.02 cm ²)		
S124	55.00 80.00	30.00 40.00	8 ø 10.0 c/9 (6.28 cm ²)	6 ø 10.0 c/9 (4.71 cm ²)		
S125	75.00 100.00	25.00 40.00	8 ø 10.0 c/12 (6.28 cm ²)	9 ø 8.0 c/8 (4.52 cm ²)		
S126	90.00 110.00	20.00 40.00	13 ø 8.0 c/8 (6.53 cm ²)	11 ø 8.0 c/8 (5.53 cm ²)		

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

S127	120.00 140.00	20.00 40.00	11 ø 10.0 c/13 (8.64 cm ²)	13 ø 8.0 c/9 (6.53 cm ²)		
S128	115.00 135.00	20.00 40.00	10 ø 10.0 c/13 (7.85 cm ²)	14 ø 8.0 c/8 (7.04 cm ²)		
S129	140.00 160.00	20.00 40.00	12 ø 10.0 c/13 (9.42 cm ²)	11 ø 10.0 c/12 (8.64 cm ²)		
S130	145.00 165.00	20.00 45.00	13 ø 10.0 c/12 (10.21 cm ²)	12 ø 10.0 c/12 (9.42 cm ²)		
S133	135.00 155.00	20.00 40.00	12 ø 10.0 c/13 (9.42 cm ²)	11 ø 10.0 c/12 (8.64 cm ²)		
S134	135.00 155.00	20.00 40.00	13 ø 10.0 c/12 (10.21 cm ²)	11 ø 10.0 c/12 (8.64 cm ²)		
S135	90.00 110.00	20.00 40.00	13 ø 8.0 c/8 (6.53 cm ²)	11 ø 8.0 c/8 (5.53 cm ²)		
S9-10	125.00 145.00	50.00 50.00	11 ø 12.5 c/13 (13.50 cm ²)	15 ø 10.0 c/8 (11.78 cm ²)	13 ø 10.0 c/11 (10.21 cm ²)	11 ø 10.0 c/11 (8.64 cm ²)
S32-33	180.00 140.00	60.00 60.00	12 ø 12.5 c/11 (14.73 cm ²)	16 ø 12.5 c/11 (19.63 cm ²)	10 ø 12.5 c/14 (12.27 cm ²)	13 ø 12.5 c/14 (15.95 cm ²)
S43-44	155.00 170.00	60.00 60.00	15 ø 12.5 c/11 (18.41 cm ²)	14 ø 12.5 c/11 (17.18 cm ²)	12 ø 12.5 c/14 (14.73 cm ²)	11 ø 12.5 c/14 (13.50 cm ²)
S64-65	210.00 180.00	70.00 70.00	19 ø 12.5 c/9 (23.32 cm ²)	13 ø 16.0 c/16 (26.14 cm ²)	15 ø 12.5 c/12 (18.41 cm ²)	17 ø 12.5 c/12 (20.86 cm ²)
S76-77	180.00 170.00	60.00 60.00	15 ø 12.5 c/11 (18.41 cm ²)	16 ø 12.5 c/11 (19.63 cm ²)	12 ø 12.5 c/14 (14.73 cm ²)	13 ø 12.5 c/14 (15.95 cm ²)
S83-84	125.00 140.00	50.00 50.00	11 ø 12.5 c/13 (13.50 cm ²)	15 ø 10.0 c/8 (11.78 cm ²)	12 ø 10.0 c/11 (9.42 cm ²)	11 ø 10.0 c/11 (8.64 cm ²)
S103-104	125.00 145.00	50.00 50.00	11 ø 12.5 c/13 (13.50 cm ²)	15 ø 10.0 c/8 (11.78 cm ²)	13 ø 10.0 c/11 (10.21 cm ²)	11 ø 10.0 c/11 (8.64 cm ²)
S113-114	185.00 145.00	65.00 65.00	14 ø 12.5 c/10 (17.18 cm ²)	18 ø 12.5 c/10 (22.09 cm ²)	11 ø 12.5 c/13 (13.50 cm ²)	14 ø 12.5 c/13 (17.18 cm ²)
S131-132	150.00 165.00	55.00 55.00	13 ø 12.5 c/12 (15.95 cm ²)	12 ø 12.5 c/12 (14.73 cm ²)	16 ø 10.0 c/10 (12.57 cm ²)	14 ø 10.0 c/10 (11.00 cm ²)
SB1	70.00 95.00	40.00 40.00	9 ø 10.0 c/10 (7.07 cm ²)	7 ø 10.0 c/10 (5.50 cm ²)	11 ø 8.0 c/8 (5.53 cm ²)	8 ø 8.0 c/8 (4.02 cm ²)
SB2	70.00 85.00	40.00 40.00	8 ø 10.0 c/10 (6.28 cm ²)	7 ø 10.0 c/9 (5.50 cm ²)	10 ø 8.0 c/8 (5.03 cm ²)	8 ø 8.0 c/8 (4.02 cm ²)
SB3	55.00 80.00	30.00 40.00	8 ø 10.0 c/9 (6.28 cm ²)	6 ø 10.0 c/9 (4.71 cm ²)		
SB4	55.00 80.00	30.00 40.00	8 ø 10.0 c/9 (6.28 cm ²)	6 ø 10.0 c/9 (4.71 cm ²)		
SE-1	75.00 100.00	25.00 40.00	8 ø 10.0 c/12 (6.28 cm ²)	9 ø 8.0 c/8 (4.52 cm ²)		
SES1	55.00 80.00	30.00 40.00	8 ø 10.0 c/9 (6.28 cm ²)	6 ø 10.0 c/9 (4.71 cm ²)		
SES2	60.00 85.00	30.00 40.00	7 ø 10.0 c/11 (5.50 cm ²)	6 ø 10.0 c/10 (4.71 cm ²)		

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

**MEMÓRIA DE CÁLCULO DE ESTRUTURA DE
CONCRETO ARMADO
QUADRA DE ESPORTES
CENTRO DE ENSINO FUNDAMENTAL 01 DA
CANDANGOLÂNDIA**

R00	15/09/2023	Versão inicial	DALMO CINNANTI
REVISÃO	DATA	DESCRIÇÃO	RESPONSÁVEL
<i>Nome do projeto</i>		MEMÓRIA DE CÁLCULO DE ESTRUTURA DE CONCRET- QUADRA	
<i>Número do projeto</i>		314-SEEDF-CEF 01 DA CANDANGOLANDIA-MEM-EST-QUADRA-R00	
<i>Local</i>		EQR 2/4, AE 7 - Candangolândia - DF	

Memorial de cálculo

Sumário

Resumo de resultados.....	3
Pavimento FUNDAÇÕES NV--60.....	5
Resultado dos Blocos	5
Cálculo dos Pilares.....	8
Resultados da Vigas.....	12
Resultados do Radier.....	38
Pavimento QUADRA-NV 000.....	39
Cálculo dos Pilares.....	39
Resultados da Vigas.....	41
Pavimento TÉRREO NV 300.....	47
Cálculo dos Pilares.....	47
Resultados da Vigas.....	49
Pavimento COBERTURA NV 620.....	64
Cálculo dos Pilares.....	64
Resultados da Vigas.....	66

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

Resumo de resultados

Cargas verticais:

Peso próprio = 447.27 tf

Adicional = 281.81 tf

Acidental = 187.10 tf

Vento X+ = 0.00 tf

Vento X- = 0.00 tf

Vento Y+ = 0.00 tf

Vento Y- = 0.00 tf

Desaprumo X+ = 0.00 tf

Desaprumo X- = 0.00 tf

Desaprumo Y+ = 0.00 tf

Desaprumo Y- = 0.00 tf

Total = 916.17 tf

Área aproximada = 661.87 m²

Relação = 1384.21 kgf/m²

Deslocamento horizontal:

X+ = 0.11 cm (limite 0.43)

X- = 0.11 cm (limite 0.43)

Y+ = 0.06 cm (limite 0.43)

Y- = 0.06 cm (limite 0.43)

Verificação de estabilidade (Gama-Z):

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

X+ = 1.08 (limite 1.10)

X- = 1.08 (limite 1.10)

Y+ = 1.01 (limite 1.10)

Y- = 1.01 (limite 1.10)

Análise de 2ª ordem:

Processo P-Delta

Deslocamentos no topo da edificação:

Vento X+: 0.59 »» 0.66 (+11.50%)

Vento X-: 0.59 »» 0.66 (+11.50%)

Vento Y+: 0.30 »» 0.31 (+3.35%)

Vento Y-: 0.30 »» 0.31 (+3.35%)

Desaprumo X+: 0.17 »» 0.19 (+11.59%)

Desaprumo X-: 0.17 »» 0.19 (+11.59%)

Desaprumo Y+: 0.04 »» 0.04 (+3.66%)

Desaprumo Y-: 0.04 »» 0.04 (+3.66%)

Pavimento FUNDAÇÕES NV--60

Resultado dos Blocos

FUNDAÇÕES NV--60	fck = 400.00 kgf/cm ²	E = 318758 kgf/cm ²	Peso Espec = 2500.00 kgf/m ³
Lance 1		cobr = 4.50 cm	

Blocos	ne Estaca	LB LH (cm)	hb (cm)	Principal (cm ²)		Estribo (cm ²)		Superior (cm ²)		As dist. (cm ²)
				X	Y	Hor.	Vert.	X	Y	
B1	2 E40-7m	190.00 70.00	55.00	5.03 (10 ø 8.0)	-	1.56 (5 ø 6.3)	8.04 2x(8 ø 8.0)	2.01 (4 ø 8.0)	-	1.01 (ø 8.0 c/10)
B2	2 E40-7m	190.00 70.00	55.00	5.03 (10 ø 8.0)	-	1.56 (5 ø 6.3)	8.04 2x(8 ø 8.0)	2.01 (4 ø 8.0)	-	1.01 (ø 8.0 c/10)
B3	2 E40-7m	190.00 70.00	55.00	5.03 (10 ø 8.0)	-	1.56 (5 ø 6.3)	8.04 2x(8 ø 8.0)	2.01 (4 ø 8.0)	-	1.01 (ø 8.0 c/10)
B4	2 E40-7m	190.00 70.00	55.00	5.03 (10 ø 8.0)	-	1.56 (5 ø 6.3)	8.04 2x(8 ø 8.0)	2.01 (4 ø 8.0)	-	1.01 (ø 8.0 c/10)
B5	2 E40-7m	190.00 70.00	55.00	5.03 (10 ø 8.0)	-	1.56 (5 ø 6.3)	8.04 2x(8 ø 8.0)	2.01 (4 ø 8.0)	-	1.01 (ø 8.0 c/10)
B6	2 E40-7m	190.00 70.00	55.00	4.52 (9 ø 8.0)	-	1.56 (5 ø 6.3)	8.04 2x(8 ø 8.0)	2.01 (4 ø 8.0)	-	1.01 (ø 8.0 c/10)
B7	2 E40-7m	190.00 70.00	55.00	5.03 (10 ø 8.0)	-	1.56 (5 ø 6.3)	8.04 2x(8 ø 8.0)	2.01 (4 ø 8.0)	-	1.01 (ø 8.0 c/10)
B8	1 E40-7m	70.00 70.00		-	-	1.56 (5 ø 6.3)	1.25 2x(2 ø 6.3)	-	-	-
B9	1 E30-6m	60.00 60.00		-	-	1.56 (5 ø 6.3)	1.25 2x(2 ø 6.3)	-	-	-
B10	2 E40-7m	190.00 70.00	55.00	3.93 (5 ø 10.0)	-	1.56 (5 ø 6.3)	8.04 2x(8 ø 8.0)	2.01 (4 ø 8.0)	-	1.01 (ø 8.0 c/10)
B11	1 E40-7m	70.00 70.00		-	-	1.56 (5 ø 6.3)	1.25 2x(2 ø 6.3)	-	-	-
B12	2 E40-7m	190.00 70.00	55.00	4.52 (9 ø 8.0)	-	1.56 (5 ø 6.3)	8.04 2x(8 ø 8.0)	2.01 (4 ø 8.0)	-	1.01 (ø 8.0 c/10)
B13	1 E30-6m	60.00 60.00		-	-	1.56 (5 ø 6.3)	1.25 2x(2 ø 6.3)	-	-	-
B14	2 E40-7m	190.00 70.00	55.00	4.71 (6 ø 10.0)	-	1.56 (5 ø 6.3)	8.04 2x(8 ø 8.0)	2.01 (4 ø 8.0)	-	1.01 (ø 8.0 c/10)

B15	2 E40-7m	190.00 70.00	55.00	5.03 (10 ø 8.0)	-	1.56 (5 ø 6.3)	8.04 2x(8 ø 8.0)	2.01 (4 ø 8.0)	-	1.01 (ø 8.0 c/10)
B16	2 E40-7m	190.00 70.00	55.00	5.03 (10 ø 8.0)	-	1.56 (5 ø 6.3)	8.04 2x(8 ø 8.0)	2.01 (4 ø 8.0)	-	1.01 (ø 8.0 c/10)
B17	2 E40-7m	190.00 70.00	55.00	5.50 (7 ø 10.0)	-	1.56 (5 ø 6.3)	8.04 2x(8 ø 8.0)	2.01 (4 ø 8.0)	-	1.01 (ø 8.0 c/10)
B18	1 E30-6m	60.00 60.00		-	-	1.56 (5 ø 6.3)	1.25 2x(2 ø 6.3)	-	-	-
B19	1 E40-7m	70.00 70.00		-	-	1.56 (5 ø 6.3)	1.25 2x(2 ø 6.3)	-	-	-
B20	1 E40-7m	70.00 70.00		-	-	1.56 (5 ø 6.3)	1.25 2x(2 ø 6.3)	-	-	-
B21	2 E40-7m	190.00 70.00	55.00	4.52 (9 ø 8.0)	-	1.56 (5 ø 6.3)	8.04 2x(8 ø 8.0)	2.01 (4 ø 8.0)	-	1.01 (ø 8.0 c/10)
B22	1 E40-7m	70.00 70.00		-	-	1.56 (5 ø 6.3)	1.25 2x(2 ø 6.3)	-	-	-
B23	2 E40-7m	190.00 70.00	55.00	5.03 (10 ø 8.0)	-	1.56 (5 ø 6.3)	8.04 2x(8 ø 8.0)	2.01 (4 ø 8.0)	-	1.01 (ø 8.0 c/10)
B24	2 E40-7m	190.00 70.00	55.00	5.03 (10 ø 8.0)	-	1.56 (5 ø 6.3)	8.04 2x(8 ø 8.0)	2.01 (4 ø 8.0)	-	1.01 (ø 8.0 c/10)
B25	2 E40-7m	190.00 70.00	55.00	5.03 (10 ø 8.0)	-	1.56 (5 ø 6.3)	8.04 2x(8 ø 8.0)	2.01 (4 ø 8.0)	-	1.01 (ø 8.0 c/10)
B26	2 E40-7m	190.00 70.00	55.00	5.03 (10 ø 8.0)	-	1.56 (5 ø 6.3)	8.04 2x(8 ø 8.0)	2.01 (4 ø 8.0)	-	1.01 (ø 8.0 c/10)
B27	2 E40-7m	190.00 70.00	55.00	5.03 (10 ø 8.0)	-	1.56 (5 ø 6.3)	8.04 2x(8 ø 8.0)	2.01 (4 ø 8.0)	-	1.01 (ø 8.0 c/10)
B28	2 E40-7m	190.00 70.00	55.00	6.28 (8 ø 10.0)	-	1.56 (5 ø 6.3)	8.04 2x(8 ø 8.0)	2.01 (4 ø 8.0)	-	1.01 (ø 8.0 c/10)
B29	1 E40-7m	70.00 70.00		-	-	1.56 (5 ø 6.3)	1.25 2x(2 ø 6.3)	-	-	-
B30	2 E40-7m	190.00 70.00	55.00	5.03 (10 ø 8.0)	-	1.56 (5 ø 6.3)	8.04 2x(8 ø 8.0)	2.01 (4 ø 8.0)	-	1.01 (ø 8.0 c/10)
BA1	1 E30-6m	60.00 60.00		-	-	1.56 (5 ø 6.3)	1.25 2x(2 ø 6.3)	-	-	-
BA2	1 E30-6m	60.00 60.00		-	-	1.56 (5 ø 6.3)	1.25 2x(2 ø 6.3)	-	-	-
BA3	1 E30-6m	60.00 60.00		-	-	1.56 (5 ø 6.3)	1.25 2x(2 ø 6.3)	-	-	-
BA4	1 E30-6m	60.00 60.00		-	-	1.56 (5 ø 6.3)	1.25 2x(2 ø 6.3)	-	-	-

BA5	1 E30-6m	60.00 60.00		-	-	1.56 (5 ø 6.3)	1.25 2x(2 ø 6.3)	-	-	-
BA6	1 E30-6m	60.00 60.00		-	-	1.56 (5 ø 6.3)	1.25 2x(2 ø 6.3)	-	-	-
BA7	1 E30-6m	60.00 60.00		-	-	1.56 (5 ø 6.3)	1.25 2x(2 ø 6.3)	-	-	-
BA8	1 E30-6m	60.00 60.00		-	-	1.56 (5 ø 6.3)	1.25 2x(2 ø 6.3)	-	-	-
BA9	1 E30-6m	60.00 60.00		-	-	1.56 (5 ø 6.3)	1.25 2x(2 ø 6.3)	-	-	-
BA10	1 E30-6m	60.00 60.00		-	-	1.56 (5 ø 6.3)	1.25 2x(2 ø 6.3)	-	-	-
BA11	1 E30-6m	60.00 60.00		-	-	1.56 (5 ø 6.3)	1.25 2x(2 ø 6.3)	-	-	-
BA12	1 E30-6m	60.00 60.00		-	-	1.56 (5 ø 6.3)	1.25 2x(2 ø 6.3)	-	-	-
BA13	1 E30-6m	60.00 60.00		-	-	1.56 (5 ø 6.3)	1.25 2x(2 ø 6.3)	-	-	-
BR1	1 E30-6m	60.00 60.00		-	-	1.56 (5 ø 6.3)	1.25 2x(2 ø 6.3)	-	-	-
BR2	1 E30-6m	60.00 60.00		-	-	1.56 (5 ø 6.3)	1.25 2x(2 ø 6.3)	-	-	-
BR3	1 E30-6m	60.00 60.00		-	-	1.56 (5 ø 6.3)	1.25 2x(2 ø 6.3)	-	-	-

Cálculo dos Pilares

FUNDAÇÕES	fck = 400.00 kgf/cm ²	E = 318758 kgf/cm ²	Peso Espec = 2500.00 kgf/m ³
NV-60			
Lance 1		cobr = 3.00 cm	

Pilar	Seção (cm)	vínc esb B vínc esb H	Nd máx Nd mín (tf)	Msd(x) Msd(y) (kgf.m)	Mrd(x) Mrd(y) (kgf.m)	Mrd/Msd	As b As h (cm ²)
P1	20.00 X 60.00	RR	22.17	466	2552	(*) 5.48	2.45
		RR	13.39	1908	10458		3.68 (3 ø 12.5)
P2	20.00 X 60.00	RR	23.09	589	4291	(*) 7.29	2.45
		RR	11.68	403	2939		4.91 (4 ø 12.5)
P3	20.00 X 60.00	RR	23.45	598	4103	(*) 6.86	2.45
		RR	11.90	618	4241		4.91 (4 ø 12.5)
P4	20.00 X 60.00	RR	23.57	628	4228	(*) 6.73	2.45
		RR	11.81	572	3849		4.91 (4 ø 12.5)
P5	20.00 X 60.00	RR	23.53	600	4097	(*) 6.83	2.45
		RR	11.86	630	4298		4.91 (4 ø 12.5)
P6	20.00 X 60.00	RR	20.93	510	4622	(*) 9.06	2.45
		RR	12.76	53	478		4.91 (4 ø 12.5)
P7	20.00 X 60.00	RR	24.38	649	4230	(*) 6.51	2.45
		RR	15.01	629	4096		4.91 (4 ø 12.5)
P8	30.00 X 50.00	RR	11.81	1707	4777	2.80	1.57
		RR	5.96	281	786		3.14 (4 ø 10.0)
P9	15.00 X 40.00	EL	6.80	133	513	(*) 3.87	1.57
		RR	1.62	1091	4225		2.36 (3 ø 10.0)
P10	20.00 X 50.00	RR	12.51	920	2298	2.50	1.57
		RR	8.35	417	1041		2.36 (3 ø 10.0)
P11	15.00 X 40.00	RR	14.91	500	1316	(*) 2.63	1.57
		RR	9.25	1066	2805		2.36 (3 ø 10.0)

P12	15.00 X 50.00	RR 14.99 RR 4.50	20.45 13.70	528 1660	1477 4643	2.80	1.57 (2 ø 10.0) 2.36 (3 ø 10.0)
P13	15.00 X 40.00	RR 14.30 RR 5.36	9.09 5.21	504 992	1223 2407	(*) 2.43	1.57 (2 ø 10.0) 2.36 (3 ø 10.0)
P14	20.00 X 60.00	RR 25.95 RR 8.65	18.46 12.15	1320 384	4039 1175	(*) 3.06	2.45 (2 ø 12.5) 4.91 (4 ø 12.5)
P15	20.00 X 60.00	EL 24.22 RR 1.61	21.09 13.35	391 2701	1981 13679	(*) 5.06	2.45 (2 ø 12.5) 4.91 (4 ø 12.5)
P16	20.00 X 60.00	RR 11.76 RR 3.92	19.15 12.78	1325 514	4011 1556	(*) 3.03	2.45 (2 ø 12.5) 4.91 (4 ø 12.5)
P17	20.00 X 60.00	EL 24.22 RR 4.04	21.02 13.29	390 2927	1843 13843	(*) 4.73	2.45 (2 ø 12.5) 4.91 (4 ø 12.5)
P18	15.00 X 40.00	RR 14.30 RR 5.36	9.14 5.22	550 992	1253 2260	(*) 2.28	1.57 (2 ø 10.0) 2.36 (3 ø 10.0)
P19	20.00 X 50.00	EL 51.90 RR 10.38	11.89 7.85	168 1558	649 6016	3.86	1.57 (2 ø 10.0) 2.36 (3 ø 10.0)
P20	15.00 X 40.00	RR 14.30 RR 5.36	14.93 9.26	491 1275	1235 3205	(*) 2.51	1.57 (2 ø 10.0) 2.36 (3 ø 10.0)
P21	15.00 X 50.00	RR 14.99 RR 4.50	20.48 13.69	469 1987	1322 5600	2.82	1.57 (2 ø 10.0) 2.36 (3 ø 10.0)
P22	15.00 X 40.00	EL 42.44 RR 7.96	8.32 1.34	211 2583	377 4609	(*) 1.78	1.57 (2 ø 10.0) 2.36 (3 ø 10.0)
P23	20.00 X 60.00	RR 25.95 RR 8.65	23.20 14.60	619 866	3941 5518	(*) 6.37	2.45 (2 ø 12.5) 4.91 (4 ø 12.5)
P24	20.00 X 60.00	RR 25.95 RR 8.65	23.09 11.67	588 404	4289 2948	(*) 7.29	2.45 (2 ø 12.5) 4.91 (4 ø 12.5)
P25	20.00 X 60.00	RR 25.95 RR 8.65	23.41 11.88	597 594	4124 4099	(*) 6.90	2.45 (2 ø 12.5) 4.91 (4 ø 12.5)
P26	20.00 X 60.00	RR 25.95 RR 8.65	23.50 11.75	626 520	4273 3548	(*) 6.83	2.45 (2 ø 12.5) 4.91 (4 ø 12.5)

P27	20.00 X 60.00	RR 25.95 RR 8.65	23.42 11.62	624 421	4366 2945	(*) 7.00	2.45 (2 ø 12.5) 4.91 (4 ø 12.5)
P28	20.00 X 60.00	RR 25.95 RR 8.65	24.24 12.00	375 3875	1378 14255	(*) 3.68	2.45 (2 ø 12.5) 4.91 (4 ø 12.5)
P29	30.00 X 40.00	RR 17.30 RR 12.97	12.29 6.28	1505 466	5105 1580	(*) 3.39	2.45 (2 ø 12.5) 3.68 (3 ø 12.5)
P30	20.00 X 60.00	RR 25.95 RR 8.65	24.51 15.16	653 597	4268 3901	(*) 6.53	2.45 (2 ø 12.5) 4.91 (4 ø 12.5)
PA1	15.00 X 40.00	RR 14.30 RR 5.36	3.83 1.86	20 1172	65 3832	(*) 3.27	1.57 (2 ø 10.0) 2.36 (3 ø 10.0)
PA2	15.00 X 40.00	RR 14.30 RR 5.36	5.77 1.09	25 1342	74 3933	(*) 2.93	1.57 (2 ø 10.0) 2.36 (3 ø 10.0)
PA3	15.00 X 40.00	RR 14.30 RR 5.36	6.94 2.23	34 1022	135 4016	(*) 3.93	1.57 (2 ø 10.0) 2.36 (3 ø 10.0)
PA4	15.00 X 40.00	RR 14.30 RR 5.36	6.97 2.11	39 1014	154 4007	(*) 3.95	1.57 (2 ø 10.0) 2.36 (3 ø 10.0)
PA5	15.00 X 40.00	RR 14.30 RR 5.36	6.99 2.08	40 1010	160 4007	(*) 3.97	1.57 (2 ø 10.0) 2.36 (3 ø 10.0)
PA6	15.00 X 40.00	RR 14.30 RR 5.36	5.70 2.26	29 1328	89 4054	(*) 3.05	1.57 (2 ø 10.0) 2.36 (3 ø 10.0)
PA7	15.00 X 40.00	RR 14.30 RR 5.36	4.21 2.13	28 1058	104 3855	3.64	1.57 (2 ø 10.0) 2.36 (3 ø 10.0)
PA8	15.00 X 40.00	RR 14.30 RR 5.36	2.22 0.76	6 974	22 3597	(*) 3.69	1.57 (2 ø 10.0) 2.36 (3 ø 10.0)
PA9	15.00 X 40.00	RR 14.30 RR 5.36	5.97 1.31	18 1134	62 3847	(*) 3.39	1.57 (2 ø 10.0) 2.36 (3 ø 10.0)
PA10	15.00 X 40.00	RR 14.30 RR 5.36	6.95 2.24	34 1032	132 4017	(*) 3.89	1.57 (2 ø 10.0) 2.36 (3 ø 10.0)
PA11	15.00 X 40.00	RR 14.30 RR 5.36	7.00 2.14	38 1054	145 4011	(*) 3.80	1.57 (2 ø 10.0) 2.36 (3 ø 10.0)

PA12	15.00 X 40.00	RR 14.30 RR 5.36	7.07 2.13	37 1088	135 4019	(*) 3.69	1.57 (2 ø 10.0) 2.36 (3 ø 10.0)
PA13	15.00 X 40.00	RR 14.30 RR 5.36	6.88 2.33	33 1088	123 4036	(*) 3.71	1.57 (2 ø 10.0) 2.36 (3 ø 10.0)
PR1	15.00 X 40.00	RR 23.07 RR 8.65	8.35 4.48	232 225	1402 1364	(*) 6.05	1.57 (2 ø 10.0) 2.36 (3 ø 10.0)
PR2	20.00 X 40.00	RR 10.73 RR 5.36	9.56 5.54	755 248	2231 734	(*) 2.96	1.57 (2 ø 10.0) 2.36 (3 ø 10.0)
PR3	15.00 X 40.00	RR 25.37 RR 9.52	3.49 1.10	351 94	1395 374	(*) 3.97	1.57 (2 ø 10.0) 2.36 (3 ø 10.0)

(*) Quantidade de barras alterada pelo usuário (para mais)

Resultados da Vigas

Resultados da Viga VB1

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
VB21	15.00			2 ø 10.0 1.37					0.00
1	82.50	15.00 x 60.00	2 ø 10.0 1.37			ø 5.0 c/ 19		2x3 ø 6.3	0.00
P8	50.00		2 ø 10.0 0.14	2 ø 10.0 1.37					0.03
2	347.50	15.00 x 60.00	2 ø 10.0 1.37	2 ø 10.0 0.14		ø 5.0 c/ 19		2x3 ø 6.3	0.01
VB24	15.00		2 ø 10.0 0.14	2 ø 10.0 1.37					0.00

Resultados da Viga VB2

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
VB10	15.00			2 ø 10.0 0.95					0.00
1	150.00	15.00 x 40.00	2 ø 10.0 0.95			ø 5.0 c/ 19			0.00
PA1	40.00			2 ø 10.0 0.95					0.01
2	193.75	15.00 x 88.00	3 ø 10.0 1.98			ø 5.0 c/ 19		2x5 ø 6.3	0.00
PA2	40.00			3 ø 10.0 1.99					0.00
3	206.25	15.00 x 88.00	3 ø 10.0 1.98			ø 5.0 c/ 19		2x5 ø 6.3	0.00
VB12	15.00			3 ø 10.0 1.99					0.00
4	295.00	15.00 x 88.00	3 ø 10.0 1.98			ø 5.0 c/ 19		2x5 ø 6.3	0.00
PA3	40.00			3 ø 10.0 1.99					0.01
5	295.00	15.00 x 88.00	3 ø 10.0 1.98			ø 5.0 c/ 19		2x5 ø 6.3	0.00
VB14	15.00			3 ø 10.0 1.99					0.00
6	295.00	15.00 x 88.00	3 ø 10.0 1.98			ø 5.0 c/ 19		2x5 ø 6.3	0.00
PA4	40.00			3 ø 10.0 1.99					0.01
7	295.00	15.00 x 88.00	3 ø 10.0 1.98			ø 5.0 c/ 19		2x5 ø 6.3	0.00
VB16	15.00			3 ø 10.0 1.99					0.00
8	295.00	15.00 x 88.00	3 ø 10.0 1.98			ø 5.0 c/ 19		2x5 ø 6.3	0.00
PA5	40.00			3 ø 10.0 1.99					0.01
9	295.00	15.00	3 ø 10.0			ø 5.0 c/ 19		2x5 ø 6.3	0.00

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

		x 88.00	1.98						
VB18	15.00			3 ø 10.0 1.99					0.00
10	278.75	15.00 x 88.00	3 ø 10.0 1.98			ø 5.0 c/ 19		2x5 ø 6.3	0.00
PA6	40.00			3 ø 10.0 1.99					0.00
11	266.25	15.00 x 88.00	3 ø 10.0 1.98			ø 5.0 c/ 19		2x5 ø 6.3	0.00
PA7	40.00			2 ø 10.0 0.95					0.01
12	145.00	15.00 x 40.00	2 ø 10.0 0.95			ø 5.0 c/ 19			0.00
VB21	15.00			2 ø 10.0 0.95					0.00

Resultados da Viga VB3

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P11	15.00			2 ø 10.0 1.16					0.01
1	365.00	15.00 x 50.00	2 ø 10.0 1.16			ø 5.0 c/ 19			0.01
P12	15.00			2 ø 10.0 1.16					0.01

Resultados da Viga VB4

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P13	40.00			2 ø 10.0 1.16					0.02
1	340.00	15.00 x 50.00	2 ø 10.0 1.16			ø 5.0 c/ 19			0.01
VB24	15.00			2 ø 10.0 1.16					0.00

Resultados da Viga VB5

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P18	40.00			2 ø 10.0 1.16					0.02
1	340.00	15.00 x 50.00	2 ø 10.0 1.16			ø 5.0 c/ 19			0.01
VB24	15.00			2 ø 10.0 1.16					0.00

Resultados da Viga VB6

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
VB10	15.00			2 ø 10.0 0.95					0.00
1	140.00	15.00 x 40.00	2 ø 10.0 0.95			ø 5.0 c/ 19			0.00
PR2	20.00			2 ø 10.0 0.95					0.01

Resultados da Viga VB7

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P20	15.00			2 ø 10.0 1.16					0.01
1	365.00	15.00 x 50.00	2 ø 10.0 1.16			ø 5.0 c/ 19			0.01
P21	15.00			2 ø 10.0 1.16					0.01

Resultados da Viga VB8

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
VB10	15.00		2 ø 10.0 0.13	2 ø 10.0 0.95					0.00
1	150.00	15.00 x 40.00	2 ø 10.0 0.95	2 ø 10.0 0.13		ø 5.0 c/ 19			0.00
PA8	40.00		2 ø 10.0 0.13	2 ø 10.0 0.95					0.00
2	193.75	15.00 x 88.00	3 ø 10.0 1.98			ø 5.0 c/ 19		2x5 ø 6.3	0.00
PA9	40.00			3 ø 10.0 1.99					0.00
3	206.25	15.00 x 88.00	3 ø 10.0 1.98			ø 5.0 c/ 19		2x5 ø 6.3	0.00
VB11	15.00			3 ø 10.0 1.99					0.00
4	295.00	15.00 x 88.00	3 ø 10.0 1.98			ø 5.0 c/ 19		2x5 ø 6.3	0.00
PA10	40.00			3 ø 10.0 1.99					0.01
5	295.00	15.00 x 88.00	3 ø 10.0 1.98			ø 5.0 c/ 19		2x5 ø 6.3	0.00
VB13	15.00			3 ø 10.0 1.99					0.00
6	295.00	15.00 x 88.00	3 ø 10.0 1.98			ø 5.0 c/ 19		2x5 ø 6.3	0.00
PA11	40.00			3 ø 10.0 1.99					0.01
7	295.00	15.00 x 88.00	3 ø 10.0 1.98			ø 5.0 c/ 19		2x5 ø 6.3	0.00
VB15	15.00			3 ø 10.0 1.99					0.00
8	295.00	15.00 x 88.00	3 ø 10.0 1.98			ø 5.0 c/ 19		2x5 ø 6.3	0.00
PA12	40.00			3 ø 10.0 1.99					0.01
9	295.00	15.00	3 ø 10.0			ø 5.0 c/ 19		2x5 ø 6.3	0.00

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

		x 88.00	1.98						
VB17	15.00			3 ø 10.0 1.99					0.00
10	278.75	15.00 x 88.00	3 ø 10.0 1.98			ø 5.0 c/ 19		2x5 ø 6.3	0.00
PA13	40.00			3 ø 10.0 1.99					0.01
11	311.25	15.00 x 88.00	3 ø 10.0 1.98			ø 5.0 c/ 19		2x5 ø 6.3	0.00
VB19	15.00			2 ø 10.0 0.95					0.00
12	125.00	15.00 x 40.00	2 ø 10.0 0.95			ø 5.0 c/ 19			0.00
VB20	15.00			2 ø 10.0 0.95					0.00

Resultados da Viga VB9

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
	15.00			3 ø 10.0 1.92					0.00
1	87.50	15.00 x 85.00	3 ø 10.0 1.91			ø 5.0 c/ 19		2x5 ø 6.3	0.00
P29	40.00			3 ø 10.0 1.92					0.01
2	352.50	15.00 x 85.00	3 ø 10.0 1.91			ø 5.0 c/ 19		2x5 ø 6.3	0.00
VB24	15.00			3 ø 10.0 1.92					0.00

Resultados da Viga VB10

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P23	60.00			3 ø 10.0 1.82					0.01
1	409.00	15.00 x 80.00	3 ø 10.0 1.80			ø 5.0 c/ 19		2x4 ø 6.3	0.00
P19	50.00			3 ø 10.0 1.82					0.02
2	315.99	15.00 x 80.00	3 ø 10.0 1.80			ø 5.0 c/ 19		2x4 ø 6.3	0.00
P16	60.00			3 ø 10.0 1.82					0.01
3	193.00	15.00 x 80.00	3 ø 10.0 1.80			ø 5.0 c/ 19		2x4 ø 6.3	0.00
P14	60.00			3 ø 10.0 1.82					0.01
4	319.76	15.00 x 80.00	3 ø 10.0 1.80			ø 5.0 c/ 19		2x4 ø 6.3	0.00
P10	50.00			3 ø 10.0 1.82					0.02
5	405.25	15.00 x 80.00	3 ø 10.0 1.80			ø 5.0 c/ 19		2x4 ø 6.3	0.00
P1	60.00			3 ø 10.0 1.82					0.01

Resultados da Viga VB11

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P24	60.00			3 ø 10.0 1.99					0.01
1	78.00	15.00 x 88.00	3 ø 10.0 1.98			ø 5.0 c/ 19		2x5 ø 6.3	0.00
VB8	15.00			3 ø 10.0 1.99					0.00

Resultados da Viga VB12

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
VB2	15.00			3 ø 10.0 1.99					0.00
1	78.00	15.00 x 88.00	3 ø 10.0 1.98			ø 5.0 c/ 19		2x5 ø 6.3	0.00
P2	60.00			3 ø 10.0 1.99					0.01

Resultados da Viga VB13

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P25	60.00			3 ø 10.0 1.99					0.01
1	78.00	15.00 x 88.00	3 ø 10.0 1.98			ø 5.0 c/ 19		2x5 ø 6.3	0.00
VB8	15.00			3 ø 10.0 1.99					0.00

Resultados da Viga VB14

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
VB2	15.00			3 ø 10.0 1.99					0.00
1	78.00	15.00 x 88.00	3 ø 10.0 1.98			ø 5.0 c/ 19		2x5 ø 6.3	0.00
P3	60.00			3 ø 10.0 1.99					0.01

Resultados da Viga VB15

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P26	60.00			3 ø 10.0 1.99					0.01
1	78.00	15.00 x 88.00	3 ø 10.0 1.98			ø 5.0 c/ 19		2x5 ø 6.3	0.00
VB8	15.00			3 ø 10.0 1.99					0.00

Resultados da Viga VB16

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
VB2	15.00			3 ø 10.0 1.99					0.00
1	78.00	15.00 x 88.00	3 ø 10.0 1.98			ø 5.0 c/ 19		2x5 ø 6.3	0.00
P4	60.00			3 ø 10.0 1.99					0.01

Resultados da Viga VB17

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P27	60.00			3 ø 10.0 1.99					0.01
1	78.00	15.00 x 88.00	3 ø 10.0 1.98			ø 5.0 c/ 19		2x5 ø 6.3	0.00
VB8	15.00			3 ø 10.0 1.99					0.00

Resultados da Viga VB18

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
VB2	15.00			3 ø 10.0 1.99					0.00
1	78.29	15.00 x 88.00	3 ø 10.0 1.98			ø 5.0 c/ 19		2x5 ø 6.3	0.00
P5	60.00			3 ø 10.0 1.99					0.01

Resultados da Viga VB19

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P28	60.00		2 ø 10.0 0.94	3 ø 10.0 1.99					0.01
1	78.00	15.00 x 88.00	3 ø 10.0 1.98	2 ø 10.0 0.94		ø 5.0 c/ 19		2x5 ø 6.3	0.00
VB8	15.00								0.00

Resultados da Viga VB20

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
VB9	15.00			3 ø 10.0 1.99					0.00
1	145.00	15.00 x 88.00	3 ø 10.0 1.98			ø 5.0 c/ 19		2x5 ø 6.3	0.00
P22	40.00			3 ø 10.0 1.99					0.00

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

Resultados da Viga VB21

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P9	40.00			2 ø 10.0 1.16					0.01
1	145.00	15.00 x 50.00	2 ø 10.0 1.16			ø 5.0 c/ 19			0.00
VB1	15.00			2 ø 10.0 1.16					0.00

Resultados da Viga VB22

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P29	30.00			2 ø 10.0 1.16					0.01
1	380.00	15.00 x 50.00	2 ø 10.0 1.16			ø 5.0 c/ 19			0.00
P20	40.00			2 ø 10.0 1.16					0.03
2	230.00	15.00 x 50.00	2 ø 10.0 1.16			ø 5.0 c/ 19			0.00
P18	15.00			2 ø 10.0 1.16					0.00

Resultados da Viga VB23

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P13	15.00			2 ø 10.0 1.16					0.00
1	230.00	15.00 x 50.00	2 ø 10.0 1.16			ø 5.0 c/ 19			0.00
P11	40.00			2 ø 10.0 1.16					0.03
2	380.00	15.00 x 50.00	2 ø 10.0 1.16			ø 5.0 c/ 19			0.00
P8	30.00			2 ø 10.0 1.16					0.02

Resultados da Viga VB24

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P30	60.00			3 ø 10.0 2.03					0.01
1	377.50	15.00 x 90.00	3 ø 10.0 2.02			ø 5.0 c/ 19		2x5 ø 6.3	0.00
P21	50.00			3 ø 10.0 2.03					0.01
2	347.50	15.00 x 90.00	3 ø 10.0 2.02			ø 5.0 c/ 19		2x5 ø 6.3	0.00
P17	60.00			3 ø 10.0 2.03					0.01
3	193.00	15.00 x 90.00	3 ø 10.0 2.02			ø 5.0 c/ 19		2x5 ø 6.3	0.00
P15	60.00			3 ø 10.0 2.03					0.01
4	347.50	15.00 x 90.00	3 ø 10.0 2.02			ø 5.0 c/ 19		2x5 ø 6.3	0.00
P12	50.00			3 ø 10.0 2.03					0.01
5	377.50	15.00 x 90.00	3 ø 10.0 2.02			ø 5.0 c/ 19		2x5 ø 6.3	0.00
P7	60.00			3 ø 10.0 2.03					0.01

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

Resultados do Radier

FUNDAÇÕES	fck = 400.00	E = 318758	Peso Espec = 2500.00
NV-60	kgf/cm ²	kgf/cm ²	kgf/m ³
Lance 1		cobr = 4.50 cm	

Nome	Espessura (cm)	Carga (kgf/m ²)	Mdx (kgf.m/m)	Mdy (kgf.m/m)	Asx	Asy
L1	20	900.00	692	663	As = 2.52 cm ² /m (ø8.0 c/19 - 2.65 cm ² /m)	As = 2.65 cm ² /m (ø6.3 c/11 - 2.83 cm ² /m)

Pavimento QUADRA-NV 000

Cálculo dos Pilares

QUADRA-NV 000	fck = 400.00 kgf/cm ²	E = 318758 kgf/cm ²	Peso Espec = 2500.00 kgf/m ³
Lance 2		cobr = 3.00 cm	

Pilar	Seção (cm)	vínc esb B vínc esb H	Nd máx Nd mín (tf)	Msd(x) Msd(y) (kgf.m)	Mrd(x) Mrd(y) (kgf.m)	Mrd/Msd	As b As h (cm ²)
P8	30.00	RR					1.57
	X	40.71	6.05	101	493	(*)	(2 ø 10.0)
	50.00	RR	2.91	1422	6933	4.87	3.14 (4 ø 10.0)
P29	30.00	RR					2.45
	X	35.18	5.57	99	405	(*)	(2 ø 12.5)
	40.00	RR	2.91	1509	6161	4.08	3.68 (3 ø 12.5)
PA1	15.00	EL					1.57
	X	22.14	0.11	67	1217	(*)	(2 ø 10.0)
	40.00	EL	0.00	0	0	18.26	2.36 (3 ø 10.0)
PA2	15.00	EL					1.57
	X	22.14	0.11	67	1217	(*)	(2 ø 10.0)
	40.00	EL	0.00	0	0	18.26	2.36 (3 ø 10.0)
PA3	15.00	EL					1.57
	X	22.14	0.11	67	1217	(*)	(2 ø 10.0)
	40.00	EL	0.00	0	0	18.26	2.36 (3 ø 10.0)
PA4	15.00	EL					2.45
	X	22.14	0.11	67	1737	(*)	(2 ø 12.5)
	40.00	EL	0.00	0	0	26.06	3.68 (3 ø 12.5)
PA5	15.00	EL					1.57
	X	22.14	0.11	67	1217	(*)	(2 ø 10.0)
	40.00	EL	0.00	0	0	18.26	2.36 (3 ø 10.0)
PA6	15.00	EL					1.57
	X	22.14	0.11	67	1217	(*)	(2 ø 10.0)
	40.00	EL	0.00	0	0	18.26	2.36 (3 ø 10.0)
PA7	15.00	EL					1.57
	X	22.14	0.11	67	1217	(*)	(2 ø 10.0)
	40.00	EL	0.00	0	0	18.26	2.36 (3 ø 10.0)
PA8	15.00	EL					1.57
	X	22.14	0.11	67	1217	(*)	(2 ø 10.0)
	40.00	EL	0.00	0	0	18.26	2.36 (3 ø 10.0)
PA9	15.00	EL	0.11	67	1217	(*)	1.57

	X 40.00	22.14 EL 8.30	0.00	0	0	18.26	(2 ø 10.0) 2.36 (3 ø 10.0)
PA10	15.00 X 40.00	EL 22.14 EL 8.30	0.11 0.00	67 0	1217 0	(*) 18.26	1.57 (2 ø 10.0) 2.36 (3 ø 10.0)
PA11	15.00 X 40.00	EL 22.14 EL 8.30	0.11 0.00	67 0	1217 0	(*) 18.26	1.57 (2 ø 10.0) 2.36 (3 ø 10.0)
PA12	15.00 X 40.00	EL 22.14 EL 8.30	0.11 0.00	67 0	1217 0	(*) 18.26	1.57 (2 ø 10.0) 2.36 (3 ø 10.0)
PA13	15.00 X 40.00	EL 22.14 EL 8.30	0.11 0.00	67 0	1217 0	(*) 18.26	1.57 (2 ø 10.0) 2.36 (3 ø 10.0)
PR1	15.00 X 40.00	RR 11.07 RR 4.15	1.48 -0.41	402 40	1271 127	(*) 3.17	1.57 (2 ø 10.0) 2.36 (3 ø 10.0)
PR3	15.00 X 40.00	RR 25.37 RR 9.52	3.34 1.01	622 90	1354 197	(*) 2.18	1.57 (2 ø 10.0) 2.36 (3 ø 10.0)

(*) Quantidade de barras alterada pelo usuário (para mais)

Resultados da Vigas

Resultados da Viga V1

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P1	20.00			2 ø 10.0 0.95					0.00
1	140.00	15.00 x 40.00	2 ø 10.0 0.95			ø 5.0 c/ 19			0.00
PR1	15.00			2 ø 10.0 0.95					0.00

Resultados da Viga V2

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
									0.00
1	22.50	15.00 x 50.00	2 ø 10.0 1.16			ø 5.0 c/ 19			0.00
P6	20.00			3 ø 10.0 2.16					0.00
2	220.00	15.00 x 50.00	2 ø 10.0 1.16			ø 5.0 c/ 19			0.00
P8	50.00			2 ø 10.0 1.16					0.01

Resultados da Viga V3

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P23	20.00			2 ø 10.0 0.95					0.01
1	140.00	15.00 x 40.00	2 ø 10.0 0.95			ø 5.0 c/ 19			0.01
PR3	15.00			2 ø 10.0 0.95					0.00

Resultados da Viga V4

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
	20.00								
1	225.00	15.00 x 50.00	Erro D25						
	40.00								

Resultados da Viga V5

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
1		15.00 x 50.00	Erro D15						
P22	40.00								

Resultados da Viga V6

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P9	40.00		2 ø 10.0 0.41	2 ø 10.0 1.16					0.00
1	159.99	15.00 x 50.00	2 ø 10.0 1.16	2 ø 10.0 0.41		ø 5.0 c/ 19			0.00
V2	15.00		2 ø 10.0 0.41	2 ø 10.0 1.16					0.00

Pavimento TÉRREO NV 300

Cálculo dos Pilares

TÉRREO NV 300	$f_{ck} = 400.00$ kgf/cm ²	$E = 318758$ kgf/cm ²	Peso Espec = 2500.00 kgf/m ³
Lance 3		coibr = 3.00 cm	

Pilar	Seção (cm)	vínc esb B vínc esb H	Nd máx Nd mín (tf)	Msd(x) Msd(y) (kgf.m)	Mrd(x) Mrd(y) (kgf.m)	Mrd/Msd	As b As h (cm ²)
P1	20.00 X 60.00	RR 108.13 RR 17.59	18.49 10.86	3013 576	3874 740	(*) 1.29	2.45 (2 ø 12.5) 3.68 (3 ø 12.5)
P7	20.00 X 60.00	RR 61.07 RR 20.36	19.65 12.16	1218 855	4226 2966	(*) 3.47	2.45 (2 ø 12.5) 4.91 (4 ø 12.5)
P8	15.00 X 50.00	RR 81.43 RR 21.11	5.58 2.51	226 2804	434 5378	(*) 1.92	1.57 (2 ø 10.0) 2.36 (3 ø 10.0)
P9	15.00 X 40.00	EL 136.09 RR 25.52	2.50 -0.36	453 896	1045 2069	(*) 2.31	1.57 (2 ø 10.0) 2.36 (3 ø 10.0)
P10	20.00 X 50.00	EL 122.14 RR 24.43	5.53 2.90	1762 93	2105 111	1.19	1.57 (2 ø 10.0) 2.36 (3 ø 10.0)
P11	15.00 X 40.00	RR 81.43 RR 30.53	8.01 4.24	1009 672	1445 962	(*) 1.43	1.57 (2 ø 10.0) 2.36 (3 ø 10.0)
P12	15.00 X 50.00	RR 81.43 RR 24.43	11.76 6.85	1277 111	1836 160	1.44	1.57 (2 ø 10.0) 2.36 (3 ø 10.0)
P13	15.00 X 40.00	RR 81.43 RR 30.53	3.17 1.31	39 1855	84 4007	(*) 2.16	1.57 (2 ø 10.0) 2.36 (3 ø 10.0)
P14	20.00 X 60.00	EL 122.14 RR 20.36	13.05 7.94	3211 126	4242 166	(*) 1.32	2.45 (2 ø 12.5) 4.91 (4 ø 12.5)
P15	20.00 X 60.00	EL 124.56 RR 20.76	14.13 8.89	2541 387	4269 650	(*) 1.68	2.45 (2 ø 12.5) 4.91 (4 ø 12.5)
P16	20.00	EL	13.20	3316	4223	(*)	2.45

	X 60.00	122.14 RR 20.36	7.99	293	373	1.27	(2 ø 12.5) 4.91 (4 ø 12.5)
P17	20.00 X 60.00	EL 124.56 RR 20.76	14.13 8.89	2554 414	4264 691	(*) 1.67	2.45 (2 ø 12.5) 4.91 (4 ø 12.5)
P18	15.00 X 40.00	RR 81.43 RR 30.53	3.19 1.28	51 1891	108 4006	(*) 2.12	1.57 (2 ø 10.0) 2.36 (3 ø 10.0)
P19	20.00 X 50.00	EL 122.14 RR 24.43	5.54 2.79	1304 38	2105 62	1.61	1.57 (2 ø 10.0) 2.36 (3 ø 10.0)
P20	15.00 X 40.00	RR 81.43 RR 30.53	8.04 4.26	1034 739	1437 1027	(*) 1.39	1.57 (2 ø 10.0) 2.36 (3 ø 10.0)
P21	15.00 X 50.00	RR 81.43 RR 24.43	11.77 6.85	1295 153	1829 216	1.41	1.57 (2 ø 10.0) 2.36 (3 ø 10.0)
P22	15.00 X 40.00	EL 136.09 RR 25.52	2.27 -0.37	471 325	1157 797	(*) 2.46	1.57 (2 ø 10.0) 2.36 (3 ø 10.0)
P23	20.00 X 60.00	RR 61.07 RR 20.36	20.14 10.90	1923 750	4520 1762	(*) 2.35	2.45 (2 ø 12.5) 4.91 (4 ø 12.5)
P29	15.00 X 40.00	RR 70.35 RR 30.53	5.36 2.49	170 2280	298 4004	(*) 1.76	1.57 (2 ø 10.0) 2.36 (3 ø 10.0)
P30	20.00 X 60.00	RR 61.07 RR 20.36	19.68 12.22	1236 618	4341 2170	(*) 3.51	2.45 (2 ø 12.5) 4.91 (4 ø 12.5)

(*) Quantidade de barras alterada pelo usuário (para mais)

Resultados da Vigas

Resultados da Viga V101

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
V110	15.00			2 ø 10.0 1.16					0.00
1	82.50	15.00 x 50.00	2 ø 10.0 1.16			ø 5.0 c/ 19			0.00
P8	50.00			2 ø 10.0 1.16					0.02
2	347.50	15.00 x 50.00	2 ø 10.0 1.16			ø 5.0 c/ 19			0.02
V114	15.00			2 ø 10.0 1.16					0.00

Resultados da Viga V102

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P11	15.00			2 ø 10.0 1.16					0.01
1	365.00	15.00 x 50.00	2 ø 10.0 1.48			ø 5.0 c/ 19			0.12
P12	15.00			2 ø 10.0 1.16					0.02

Resultados da Viga V103

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P13	40.00			2 ø 10.0 1.16					0.01
1	340.00	15.00 x 50.00	2 ø 10.0 1.16			ø 5.0 c/ 19			0.02
V114	15.00			2 ø 10.0 1.16					0.00

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

Resultados da Viga V104

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P18	40.00			2 ø 10.0 1.16					0.01
1	340.00	15.00 x 50.00	2 ø 10.0 1.16			ø 5.0 c/ 19			0.02
V113	15.00			2 ø 10.0 1.16					0.00

Resultados da Viga V105

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P20	15.00			2 ø 10.0 1.16					0.01
1	365.00	15.00 x 50.00	2 ø 10.0 1.48			ø 5.0 c/ 19			0.12
P21	15.00			2 ø 10.0 1.16					0.02

Resultados da Viga V106

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
V109	15.00			2 ø 10.0 1.16					0.00
1	87.50	15.00 x 50.00	2 ø 10.0 1.16			ø 5.0 c/ 19			0.00
P29	40.00			2 ø 10.0 1.16					0.02
2	352.50	15.00 x 50.00	2 ø 10.0 1.16			ø 5.0 c/ 19			0.02
V113	15.00			2 ø 10.0 1.16					0.00

Resultados da Viga V107

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P23	60.00			2 ø 10.0 1.37					0.01
1	409.00	15.00 x 60.00	2 ø 10.0 1.37			ø 5.0 c/ 19		2x3 ø 6.3	0.00
P19	50.00			2 ø 10.0 1.37					0.01
2	315.99	15.00 x 60.00	2 ø 10.0 1.37			ø 5.0 c/ 19		2x3 ø 6.3	0.00
P16	60.00			2 ø 10.0 1.37					0.00

Resultados da Viga V108

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P14	60.00			2 ø 10.0 1.37					0.00
1	319.76	15.00 x 60.00	2 ø 10.0 1.37			ø 5.0 c/ 19		2x3 ø 6.3	0.00
P10	50.00			2 ø 10.0 1.37					0.01
2	405.25	15.00 x 60.00	2 ø 10.0 1.37			ø 5.0 c/ 19		2x3 ø 6.3	0.00
P1	60.00			2 ø 10.0 1.37					0.01

Resultados da Viga V109

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
V106	15.00			2 ø 10.0 1.16					0.00
1	145.00	15.00 x 50.00	2 ø 10.0 1.16			ø 5.0 c/ 19			0.00
P22	40.00			2 ø 10.0 1.16					0.00

Resultados da Viga V110

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P9	40.00			2 ø 10.0 1.16					0.00
1	145.00	15.00 x 50.00	2 ø 10.0 1.16			ø 5.0 c/ 19			0.00
V101	15.00			2 ø 10.0 1.16					0.00

Resultados da Viga V111

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P29	15.00			2 ø 10.0 1.16					0.00
1	380.00	15.00 x 50.00	2 ø 10.0 1.16			ø 5.0 c/ 19			0.02
P20	40.00			2 ø 10.0 1.16					0.02
2	230.00	15.00 x 50.00	2 ø 10.0 1.16			ø 5.0 c/ 19			0.00
P18	15.00			2 ø 10.0 1.16					0.00

Resultados da Viga V112

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P13	15.00			2 ø 10.0 1.16					0.00
1	230.00	15.00 x 50.00	2 ø 10.0 1.16			ø 5.0 c/ 19			0.00
P11	40.00			2 ø 10.0 1.16					0.02
2	380.00	15.00 x 50.00	2 ø 10.0 1.16			ø 5.0 c/ 19			0.02
P8	15.00			2 ø 10.0 1.16					0.00

Resultados da Viga V113

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P30	60.00		2 ø 10.0 0.74	3 ø 10.0 1.93					0.02
1	377.50	15.00 x 50.00	3 ø 10.0 1.90	2 ø 10.0 0.74		ø 5.0 c/ 6		2x3 ø 6.3	0.00
P21	50.00		2 ø 10.0 0.74	3 ø 10.0 1.93					0.02
2	347.50	15.00 x 50.00	2 ø 10.0 1.16			ø 5.0 c/ 19			0.01
P17	60.00			2 ø 10.0 1.16					0.03

Resultados da Viga V114

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P15	60.00			2 ø 10.0 1.16					0.03
1	347.50	15.00 x 50.00	2 ø 10.0 1.16			ø 5.0 c/ 19			0.01
P12	50.00		2 ø 10.0 0.68	3 ø 10.0 1.87					0.02
2	377.50	15.00 x 50.00	3 ø 10.0 1.84	2 ø 10.0 0.68		ø 5.0 c/ 7		2x3 ø 6.3	0.00
P7	60.00		2 ø 10.0 0.68	3 ø 10.0 1.87					0.02

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

Resultados da Laje

TÉRREO NV 300	fck = 400.00 kgf/cm ²	E = 318758 kgf/cm ²	Peso Espec = 2500.00 kgf/m ³
Lance 3		cofr = 2.50 cm	

Nome	Espessura (cm)	Carga (kgf/m ²)	Mdx (kgf.m/m)	Mdy (kgf.m/m)	Asx	Asy
L101	10	430.00	379	385	As = 1.33 cm ² /m (ø6.3 c/20 - 1.56 cm ² /m)	As = 1.46 cm ² /m (ø6.3 c/20 - 1.56 cm ² /m)
L102	10	430.00	241	157	As = 1.33 cm ² /m (ø6.3 c/20 - 1.56 cm ² /m)	As = 1.46 cm ² /m (ø6.3 c/20 - 1.56 cm ² /m)
L103	10	430.00	241	157	As = 1.33 cm ² /m (ø6.3 c/20 - 1.56 cm ² /m)	As = 1.46 cm ² /m (ø6.3 c/20 - 1.56 cm ² /m)
L104	10	430.00	380	384	As = 1.33 cm ² /m (ø6.3 c/20 - 1.56 cm ² /m)	As = 1.46 cm ² /m (ø6.3 c/20 - 1.56 cm ² /m)

ARMADURA NEGATIVA							
Dados				Resultados			
Viga	Trecho	Laje 1	Laje 2	Reação 1 (kgf/m)	Reação 2 (kgf/m)	Md (kgf.m/m)	As (cm ²)
V102	1	L101	L102	524	487	-588	As = 2.00 cm ² /m (ø6.3 c/15 - 2.08 cm ² /m)
V105	1	L103	L104	487	524	-589	As = 2.00 cm ² /m (ø6.3 c/15 - 2.08 cm ² /m)

Pavimento COBERTURA NV 620

Cálculo dos Pilares

COBERTURA NV 620	fck = 400.00 kgf/cm ²	E = 318758 kgf/cm ²	Peso Espec = 2500.00 kgf/m ³
Lance 4		cobr = 3.00 cm	

Pilar	Seção (cm)	vínc esb B vínc esb H	Nd máx Nd mín (tf)	Msd(x) Msd(y) (kgf.m)	Mrd(x) Mrd(y) (kgf.m)	Mrd/Msd	As b As h (cm ²)
P1	20.00 X 60.00	RR					2.45
		108.13	15.37	1907	3709	(*)	(2 ø 12.5)
		RR	9.81	158	306	1.95	3.68
		18.45					(3 ø 12.5)
P2	20.00 X 60.00	RR					2.45
		108.13	18.62	2229	3804	(*)	(2 ø 12.5)
		RR	11.32	3569	6090	1.71	4.91
		36.04					(4 ø 12.5)
P3	20.00 X 60.00	RR					2.45
		108.13	18.56	2227	3787	(*)	(2 ø 12.5)
		RR	11.36	3652	6210	1.70	4.91
		36.04					(4 ø 12.5)
P4	20.00 X 60.00	RR					2.45
		108.13	18.56	2227	3788	(*)	(2 ø 12.5)
		RR	11.36	3646	6204	1.70	4.91
		36.04					(4 ø 12.5)
P5	20.00 X 60.00	RR					2.45
		108.13	18.57	2229	3775	(*)	(2 ø 12.5)
		RR	11.35	3719	6299	1.69	4.91
		36.04					(4 ø 12.5)
P6	20.00 X 60.00	RR					2.45
		108.13	20.67	3691	4719	(*)	(2 ø 12.5)
		RR	11.26	480	613	1.28	4.91
		36.04					(4 ø 12.5)
P7	20.00 X 60.00	RR					2.45
		61.07	15.40	1511	4194	(*)	(2 ø 12.5)
		RR	9.74	590	1637	2.78	4.91
		20.36					(4 ø 12.5)
P10	20.00 X 50.00	EL					1.57
		110.72	2.82	525	1905	3.63	(2 ø 10.0)
		RR	1.33	46	166		2.36
		22.14					(3 ø 10.0)
P12	15.00 X 50.00	RR					1.57
		73.81	2.90	953	1396	1.47	(2 ø 10.0)
		RR	1.46	88	129		2.36
		22.14					(3 ø 10.0)
P14	20.00 X 60.00	EL					2.45
		110.72	11.21	1584	4128	(*)	(2 ø 12.5)
		RR	6.65	17	45	2.61	4.91
		18.45					(4 ø 12.5)
P15	20.00	EL	11.39	1939	4098	(*)	2.45

	X 60.00	114.18 RR 18.45	6.81	196	415	2.11	(2 ø 12.5) 4.91 (4 ø 12.5)
P16	20.00 X 60.00	EL 110.72 RR 18.45	11.30 6.76	1553 24	4132 64	(*) 2.66	2.45 (2 ø 12.5) 4.91 (4 ø 12.5)
P17	20.00 X 60.00	EL 114.18 RR 18.45	11.39 6.81	1931 207	4095 440	(*) 2.12	2.45 (2 ø 12.5) 4.91 (4 ø 12.5)
P19	20.00 X 50.00	EL 110.72 RR 22.14	2.81 1.25	451 57	1896 240	4.20	1.57 (2 ø 10.0) 2.36 (3 ø 10.0)
P21	15.00 X 50.00	RR 73.81 RR 22.14	2.90 1.46	956 93	1396 135	1.46	1.57 (2 ø 10.0) 2.36 (3 ø 10.0)
P23	20.00 X 60.00	RR 55.36 RR 18.45	15.38 9.84	801 164	4324 883	(*) 5.40	2.45 (2 ø 12.5) 4.91 (4 ø 12.5)
P24	20.00 X 60.00	RR 108.13 RR 36.04	18.61 11.31	2228 3565	3804 6087	(*) 1.71	2.45 (2 ø 12.5) 4.91 (4 ø 12.5)
P25	20.00 X 60.00	RR 108.13 RR 36.04	18.56 11.36	2227 3654	3787 6214	(*) 1.70	2.45 (2 ø 12.5) 4.91 (4 ø 12.5)
P26	20.00 X 60.00	RR 116.43 RR 38.81	18.56 11.36	2520 3649	3873 5608	(*) 1.54	2.45 (2 ø 12.5) 4.91 (4 ø 12.5)
P27	20.00 X 60.00	RR 108.13 RR 36.04	18.56 11.36	2227 3714	3775 6296	(*) 1.70	2.45 (2 ø 12.5) 4.91 (4 ø 12.5)
P28	20.00 X 60.00	RR 108.13 RR 36.04	20.37 11.25	3711 402	4715 511	(*) 1.27	2.45 (2 ø 12.5) 4.91 (4 ø 12.5)
P30	20.00 X 60.00	RR 55.36 RR 18.45	15.41 9.74	1442 586	4185 1702	(*) 2.90	2.45 (2 ø 12.5) 4.91 (4 ø 12.5)

(*) Quantidade de barras alterada pelo usuário (para mais)

Resultados da Vigas

Resultados da Viga V201

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P23	60.00			3 ø 10.0 1.83					0.00
1	409.00	20.00 x 60.00	3 ø 10.0 1.83			ø 5.0 c/ 14		2x4 ø 6.3	0.00
P19	50.00			3 ø 10.0 1.83					0.00
2	315.99	20.00 x 60.00	3 ø 10.0 1.83			ø 5.0 c/ 14		2x4 ø 6.3	0.00
P16	60.00			3 ø 10.0 1.83					0.00
3	193.00	20.00 x 60.00	3 ø 10.0 1.83			ø 5.0 c/ 14		2x4 ø 6.3	0.00
P14	60.00			3 ø 10.0 1.83					0.00
4	319.76	20.00 x 60.00	3 ø 10.0 1.83			ø 5.0 c/ 14		2x4 ø 6.3	0.00
P10	50.00			3 ø 10.0 1.83					0.00
5	405.25	20.00 x 60.00	3 ø 10.0 1.83			ø 5.0 c/ 14		2x4 ø 6.3	0.00
P1	60.00			3 ø 10.0 1.83					0.00

Resultados da Viga V202

fck = 400.00 kgf/cm ²	Ecs = 318758 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P30	60.00			3 ø 10.0 1.83					0.00
1	377.50	20.00 x 60.00	3 ø 10.0 1.83			ø 5.0 c/ 14		2x4 ø 6.3	0.00
P21	50.00			3 ø 10.0 1.83					0.00
2	347.50	20.00 x 60.00	3 ø 10.0 1.83			ø 5.0 c/ 14		2x4 ø 6.3	0.00
P17	60.00			3 ø 10.0 1.83					0.00
3	193.00	20.00 x 60.00	3 ø 10.0 1.83			ø 5.0 c/ 14		2x4 ø 6.3	0.00
P15	60.00			3 ø 10.0 1.83					0.00
4	347.50	20.00 x 60.00	3 ø 10.0 1.83			ø 5.0 c/ 14		2x4 ø 6.3	0.00
P12	50.00			3 ø 10.0 1.83					0.00
5	377.50	20.00 x 60.00	3 ø 10.0 1.83			ø 5.0 c/ 14		2x4 ø 6.3	0.00
P7	60.00			3 ø 10.0 1.83					0.00

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

**MEMÓRIA DE CÁLCULO DE ESTRUTURA DE
CONCRETO ARMADO
MURO E GRADIL
CENTRO DE ENSINO FUNDAMENTAL 01 DA
CANDANGOLÂNDIA**

R00	15/09/2023	Versão inicial	DALMO CINNANTI
REVISÃO	DATA	DESCRIÇÃO	RESPONSÁVEL
<i>Nome do projeto</i>		MEMÓRIA DE CÁLCULO DE FUNDAÇÕES–MURO E GRADIL	
<i>Número do projeto</i>		314-SEEDF-CEF 01 DA CANDANGOLANDIA-MEM-EST-MURO E GRADIL-R00	
<i>Local</i>		EQR 2/4, AE 7 - Candangolândia - DF	

Memorial de cálculo

Resumo de resultados.....	4
Pavimento BASE	6
Resultado dos Blocos	6
Resultados dos Pilares.....	7
Resultados da Vigas.....	8
Pavimento NV1-1	9
Resultado dos Blocos	9
Resultados dos Pilares.....	10
Resultados da Vigas.....	12
Pavimento NV1-2	16
Resultado dos Blocos	16
Resultados dos Pilares.....	17
Resultados da Vigas.....	18
Pavimento NV1-3	19
Resultado dos Blocos	19
Resultados dos Pilares.....	21
Resultados da Vigas.....	24
Pavimento NV1-4	39
Resultado dos Blocos	39
Resultados dos Pilares.....	40
Resultados da Vigas.....	42
Pavimento NV1-5	46
Resultado dos Blocos	46
Resultados dos Pilares.....	47
Resultados da Vigas.....	49
Pavimento NV1-6	56
Resultado dos Blocos	56
Resultados dos Pilares.....	57
Resultados da Vigas.....	59
Pavimento NV1-7	64

Resultado dos Blocos	64
Resultados dos Pilares.....	65
Resultados da Vigas.....	66
Pavimento NV1-8	67
Resultado dos Blocos	67
Resultados dos Pilares.....	68
Resultados da Vigas.....	70
Pavimento NV1-9	79
Resultado dos Blocos	79
Resultados dos Pilares.....	80
Resultados da Vigas.....	84
Pavimento NV1-10	100
Resultado dos Blocos	100
Resultados dos Pilares.....	101
Resultados da Viga	103
Pavimento NV1-11	106
Resultado dos Blocos	106
Resultados dos Pilares.....	110
Resultados da Vigas.....	120
Pavimento N2-7.....	157
Resultados dos Pilares.....	157
Resultados da Vigas.....	160
Pavimento N2-4.....	162
Resultados dos Pilares.....	162
Resultados da Vigas.....	163
Pavimento N2-3.....	169
Resultados dos Pilares.....	169
Resultados da Vigas.....	170
Pavimento N2-1.....	173
Resultados dos Pilares.....	173
Resultados da Vigas.....	174
Pavimento NV2-0	175
Resultados dos Pilares.....	175

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

Resultados da Vigas.....	179
Pavimento NV3.....	192
Resultados dos Pilares.....	192
Resultados da Vigas.....	195

Resumo de resultados

Cargas verticais:

Peso próprio = 165.60 tf

Adicional = 48.15 tf

Total = 213.75 tf

Deslocamento horizontal:

X+ = 0.04 cm (limite 0.44)

X- = 0.04 cm (limite 0.44)

Y+ = 0.17 cm (limite 0.44)

Y- = 0.17 cm (limite 0.44)

Verificação de estabilidade (Gama-Z):

X+ = 1.00 (limite 1.10)

X- = 1.00 (limite 1.10)

Y+ = 1.00 (limite 1.10)

Y- = 1.00 (limite 1.10)

Análise de 2ª ordem:

Processo P-Delta

Deslocamentos no topo da edificação:

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

Vento X+: 0.05 »» 0.05 (+1.25%)

Vento X-: 0.05 »» 0.05 (+1.25%)

Vento Y+: 0.67 »» 0.68 (+1.53%)

Vento Y-: 0.67 »» 0.68 (+1.53%)

Desaprumo Y+: 0.01 »» 0.01 (+1.55%)

Desaprumo Y-: 0.01 »» 0.01 (+1.55%)

Pavimento BASE

Resultado dos Blocos

BASE	fck = 250.00 kgf/cm ²	E = 241500 kgf/cm ²	Peso Espec = 2500.00 kgf/m ³
Lance 1		cobr = 4.50 cm	

Blocos	ne Estaca	LB LH (cm)	hb (cm)	Principal (cm ²)		Estribo (cm ²)		Superior (cm ²)		As dist. (cm ²)
				X	Y	Hor.	Vert.	X	Y	
B35	1 E30-3m	60.00 60.00		-	-	3.93 (5 ø 10.0)	3.14 2x(2 ø 10.0)	-	-	-
B36	1 E30-12m	60.00 60.00		-	-	3.93 (5 ø 10.0)	3.14 2x(2 ø 10.0)	-	-	-
B37	1 E30-12m	60.00 60.00		-	-	3.93 (5 ø 10.0)	3.14 2x(2 ø 10.0)	-	-	-
B38	1 E30-12m	60.00 60.00		-	-	3.93 (5 ø 10.0)	3.14 2x(2 ø 10.0)	-	-	-
B39	1 E30-12m	60.00 60.00		-	-	3.93 (5 ø 10.0)	3.14 2x(2 ø 10.0)	-	-	-

Resultados dos Pilares

BASE	fck = 250.00 kgf/cm ²	E = 241500 kgf/cm ²	Peso Espec = 2500.00 kgf/m ³
Lance 1		cobr = 3.00 cm	

Dados				Resultados					
Pilar	Seção (cm)	Nível Altura (cm)	lib vinc lih vinc (cm)	Nd máx Nd mín (tf)	MBd topo MBd base (kgf.m)	MHd topo MHd base (kgf.m)	As b Armaduras As h % armad total	Estribo Topo Base cota	Esb b Esb h
P35 1:20	15.00 X 40.00	0.00 90.00	200.00 EL 100.00 RR	2.18 1.50	409 564	258 225	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12	46.13 8.65
P36 1:20	15.00 X 30.00	0.00 90.00	200.00 EL 100.00 RR	2.21 1.62	359 504	48 140	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12	46.13 11.53
P37 1:20	15.00 X 30.00	0.00 90.00	200.00 EL 100.00 RR	2.18 1.61	377 524	39 149	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12	46.13 11.53
P38 1:20	15.00 X 30.00	0.00 90.00	200.00 EL 100.00 RR	2.33 1.65	342 495	39 185	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12	46.13 11.53
P39 1:20	15.00 X 40.00	0.00 90.00	100.00 RR 100.00 RR	2.05 1.10	121 157	119 144	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12	23.07 8.65

Resultados da Vigas

Resultados da Viga VB-N1

fck = 250.00 kgf/cm ²	Ecs = 241500 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P39	15.07			2 ø 10.0 0.90					0.00
1	411.03	15.00 x 40.00	2 ø 10.0 0.90			ø 5.0 c/ 21			0.00
P38	30.00			2 ø 10.0 0.90					0.01
2	411.03	15.00 x 40.00	2 ø 10.0 0.90			ø 5.0 c/ 21			0.00
P37	30.00			2 ø 10.0 0.90					0.00
3	411.02	15.00 x 40.00	2 ø 10.0 0.90			ø 5.0 c/ 21			0.00
P36	30.00			2 ø 10.0 0.90					0.00
4	406.03	15.00 x 40.00	2 ø 10.0 0.90			ø 5.0 c/ 21			0.00
P35	40.00			2 ø 10.0 0.90					0.00

Pavimento NV1-1

Resultado dos Blocos

NV1-1	fck = 250.00 kgf/cm ²	E = 241500 kgf/cm ²	Peso Espec = 2500.00 kgf/m ³
Lance 2		cobr = 4.50 cm	

Blocos	ne Estaca	LB LH (cm)	hb (cm)	Principal (cm ²)		Estribo (cm ²)		Superior (cm ²)		As dist. (cm ²)
				X	Y	Hor.	Vert.	X	Y	
B26	1 E30-12m	60.00 60.00		-	-	3.93 (5 ø 10.0)	3.14 2x(2 ø 10.0)	-	-	-
B27	1 E30-12m	60.00 60.00		-	-	3.93 (5 ø 10.0)	3.14 2x(2 ø 10.0)	-	-	-
B28	1 E30-12m	60.00 60.00		-	-	3.93 (5 ø 10.0)	3.14 2x(2 ø 10.0)	-	-	-
B29	1 E30-12m	60.00 60.00		-	-	3.93 (5 ø 10.0)	3.14 2x(2 ø 10.0)	-	-	-
B30	1 E30-12m	60.00 60.00		-	-	3.93 (5 ø 10.0)	3.14 2x(2 ø 10.0)	-	-	-
B31	1 E30-12m	60.00 60.00		-	-	3.93 (5 ø 10.0)	3.14 2x(2 ø 10.0)	-	-	-
B32	1 E30-12m	60.00 60.00		-	-	3.93 (5 ø 10.0)	3.14 2x(2 ø 10.0)	-	-	-
B33	1 E30-12m	60.00 60.00		-	-	3.93 (5 ø 10.0)	3.14 2x(2 ø 10.0)	-	-	-
B34	1 E30-12m	60.00 60.00		-	-	3.93 (5 ø 10.0)	3.14 2x(2 ø 10.0)	-	-	-
B40	1 E30-12m	60.00 60.00		-	-	3.93 (5 ø 10.0)	3.14 2x(2 ø 10.0)	-	-	-
B41	1 E30-12m	60.00 60.00		-	-	3.93 (5 ø 10.0)	3.14 2x(2 ø 10.0)	-	-	-
B24-25	3 E30-12m	159.28 137.94	65.00	3.14 (4 ø 10.0)	-	3.93 (5 ø 10.0)	-	5.50 (7 ø 10.0)	6.28 (8 ø 10.0)	0.30 (ø 8.0 c/20)

Resultados dos Pilares

NV1-1	fck = 250.00 kgf/cm ²	E = 241500 kgf/cm ²	Peso Espec = 2500.00 kgf/m ³
Lance 2		cobr = 3.00 cm	

Dados				Resultados					
Pilar	Seção (cm)	Nível Altura (cm)	lib vinc lih vinc (cm)	Nd máx Nd mín (tf)	MBd topo MBd base (kgf.m)	MHd topo MHd base (kgf.m)	As b Armaduras As h % armad total	Estribo Topo Base cota	Esb b Esb h
P24 1:20	15.00 X 40.00	35.00 100.00	420.00 EL 210.00 RR	1.49 0.63	466 643	111 89	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12	96.88 18.16
P25 1:20	15.00 X 40.00	35.00 100.00	200.00 EL 100.00 RR	1.68 0.73	484 671	291 361	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 30	46.13 8.65
P26 1:20	15.00 X 40.00	35.00 90.00	200.00 EL 100.00 RR	1.98 1.40	430 607	144 384	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 30	46.13 8.65
P27 1:20	15.00 X 30.00	35.00 90.00	200.00 EL 100.00 RR	1.75 1.25	341 490	70 204	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 30	46.13 11.53
P28 1:20	15.00 X 30.00	35.00 90.00	200.00 EL 100.00 RR	1.69 1.22	350 502	49 199	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 30	46.13 11.53
P29 1:20	15.00 X 30.00	35.00 90.00	200.00 EL 100.00 RR	1.69 1.23	352 505	50 200	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 30	46.13 11.53
P30 1:20	15.00 X 30.00	35.00 90.00	200.00 EL 100.00 RR	1.69 1.23	352 505	50 202	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 30	46.13 11.53

P31 1:20	15.00 X 30.00	35.00 90.00	200.00 EL 100.00 RR	1.69 1.23	352 504	49 206	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 30	46.13 11.53
P32 1:20	15.00 X 30.00	35.00 90.00	200.00 EL 100.00 RR	1.69 1.23	347 499	46 215	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 30	46.13 11.53
P33 1:20	15.00 X 30.00	35.00 90.00	200.00 EL 100.00 RR	1.71 1.20	331 477	45 232	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 30	46.13 11.53
P34 1:20	15.00 X 40.00	35.00 90.00	200.00 EL 100.00 RR	1.87 1.30	405 581	136 529	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 30	46.13 8.65
P40 1:20	15.00 X 30.00	35.00 90.00	560.00 EL 280.00 RR	1.35 0.89	90 0	35 0	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12	129.17 32.29
P41 1:20	15.00 X 40.00	35.00 90.00	200.00 EL 100.00 RR	1.59 0.91	19 0	77 0	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12	46.13 8.65

Resultados da Vigas

Resultados da Viga VB-M1

fck = 250.00 kgf/cm ²	Ecs = 241500 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P27	30.00			2 ø 10.0 0.68					0.00
1	355.93	15.00 x 30.00	2 ø 10.0 0.68			ø 5.0 c/ 15			0.00
P26	40.00			2 ø 10.0 0.68					0.00
2	350.94	15.00 x 30.00	2 ø 10.0 0.68			ø 5.0 c/ 15			0.00
P25	40.00			2 ø 10.0 0.68					0.00

Resultados da Viga VB-M2

fck = 250.00 kgf/cm ²	Ecs = 241500 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P31	30.00			2 ø 10.0 0.68					0.00
1	328.74	15.00 x 30.00	2 ø 10.0 0.68			ø 5.0 c/ 15			0.00
P30	30.00			2 ø 10.0 0.68					0.00
2	328.74	15.00 x 30.00	2 ø 10.0 0.68			ø 5.0 c/ 15			0.00
P29	30.00			2 ø 10.0 0.68					0.00
3	328.74	15.00 x 30.00	2 ø 10.0 0.68			ø 5.0 c/ 15			0.00
P28	30.00			2 ø 10.0 0.68					0.00
4	328.75	15.00 x 30.00	2 ø 10.0 0.68			ø 5.0 c/ 15			0.00
P27	30.00			2 ø 10.0 0.68					0.00

Resultados da Viga VB-M3

fck = 250.00 kgf/cm ²	Ecs = 241500 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P35	40.00		3 ø 10.0 1.73	3 ø 10.0 1.73					0.00
1	318.75	15.00 x 30.00	3 ø 10.0 1.73	3 ø 10.0 1.73		ø 5.0 c/ 15			0.00
P34	40.00		3 ø 10.0 1.73	3 ø 10.0 1.73					0.00
2	323.76	15.00 x 30.00	2 ø 10.0 0.68			ø 5.0 c/ 15			0.00
P33	30.00			2 ø 10.0 0.68					0.00
3	328.75	15.00 x 30.00	2 ø 10.0 0.68			ø 5.0 c/ 15			0.00
P32	30.00			2 ø 10.0 0.68					0.00
4	328.75	15.00 x 30.00	2 ø 10.0 0.68			ø 5.0 c/ 15			0.00
P31	30.00			2 ø 10.0 0.68					0.00

Resultados da Viga VB-M4

fck = 250.00 kgf/cm ²	Ecs = 241500 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P41	40.00		3 ø 10.0 2.30	3 ø 10.0 2.30					0.00
1	175.39	15.00 x 40.00	3 ø 10.0 2.30	3 ø 10.0 2.30		ø 5.0 c/ 21			0.00
P40	30.00		3 ø 10.0 2.30	3 ø 10.0 2.30					0.00
2	170.39	15.00 x 40.00	3 ø 10.0 2.30	3 ø 10.0 2.30		ø 5.0 c/ 21			0.00
P39	40.00		3 ø 10.0 2.30	3 ø 10.0 2.30					0.00

Pavimento NV1-2

Resultado dos Blocos

NV1-2	fck = 250.00 kgf/cm ²	E = 241500 kgf/cm ²	Peso Espec = 2500.00 kgf/m ³
Lance 3		cobr = 4.50 cm	

Blocos	ne Estaca	LB LH (cm)	hb (cm)	Principal (cm ²)		Estribo (cm ²)		Superior (cm ²)		As dist. (cm ²)
				X	Y	Hor.	Vert.	X	Y	
B1	1	60.00		-	-	3.93	3.14	-	-	-
	E30-12m	60.00				(5 ø 10.0)	2x(2 ø 10.0)			
B42	1	60.00		-	-	3.93	3.14	-	-	-
	E30-12m	60.00				(5 ø 10.0)	2x(2 ø 10.0)			
B43	1	60.00		-	-	3.93	3.14	-	-	-
	E30-12m	60.00				(5 ø 10.0)	2x(2 ø 10.0)			
B44	1	60.00		-	-	3.93	3.14	-	-	-
	E30-12m	60.00				(5 ø 10.0)	2x(2 ø 10.0)			
B45	1	60.00		-	-	3.93	3.14	-	-	-
	E30-12m	60.00				(5 ø 10.0)	2x(2 ø 10.0)			

Resultados dos Pilares

NV1-2	fck = 250.00 kgf/cm ²	E = 241500 kgf/cm ²	Peso Espec = 2500.00 kgf/m ³
Lance 3		cobr = 3.00 cm	

Dados				Resultados					
Pilar	Seção (cm)	Nível Altura (cm)	lib vinc lih vinc (cm)	Nd máx Nd mín (tf)	MBd topo MBd base (kgf.m)	MHd topo MHd base (kgf.m)	As b Armaduras As h % armad total	Estribo Topo Base cota	Esb b Esb h
P1 1:20	15.00 X 40.00	70.00 90.00	97.00 RR 97.00 RR	1.72 0.66	76 0	141 0	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12	22.37 8.39
P42 1:20	15.00 X 40.00	70.00 90.00	200.00 EL 100.00 RR	1.54 0.95	626 1004	45 408	2.45 2 ø 12.5 3.68 3 ø 12.5 1.2 6 ø 12.5	ø 5.0 c/15 ø 5.0 c/15 0	46.13 8.65
P43 1:20	15.00 X 30.00	70.00 90.00	200.00 EL 100.00 RR	1.37 0.83	406 494	71 185	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12	46.13 11.53
P44 1:20	15.00 X 30.00	70.00 90.00	200.00 EL 100.00 RR	1.40 0.83	313 469	30 142	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12	46.13 11.53
P45 1:20	15.00 X 40.00	70.00 90.00	200.00 EL 100.00 RR	1.59 0.91	299 434	39 213	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12	46.13 8.65

Resultados da Vigas

Resultados da Viga VB-L1

fck = 250.00 kgf/cm ²	Ecs = 241500 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P45	40.00		3 ø 10.0 2.30	3 ø 10.0 2.30					0.00
1	175.39	15.00 x 40.00	3 ø 10.0 2.30	3 ø 10.0 2.30		ø 5.0 c/ 21			0.00
P44	30.00		3 ø 10.0 2.30	3 ø 10.0 2.30					0.00
2	180.38	15.00 x 40.00	3 ø 10.0 2.30	3 ø 10.0 2.30		ø 5.0 c/ 21			0.00
P43	30.00		3 ø 10.0 2.30	3 ø 10.0 2.30					0.00
3	175.38	15.00 x 40.00	3 ø 10.0 2.30	3 ø 10.0 2.30		ø 5.0 c/ 21			0.00
P42	40.00		3 ø 10.0 2.30	3 ø 10.0 2.30					0.00
4	170.39	15.00 x 40.00	3 ø 10.0 2.30	3 ø 10.0 2.30		ø 5.0 c/ 21			0.00
P41	40.00		3 ø 10.0 2.30	3 ø 10.0 2.30					0.00

Pavimento NV1-3

Resultado dos Blocos

NV1-3	fck = 250.00 kgf/cm ²	E = 241500 kgf/cm ²	Peso Espec = 2500.00 kgf/m ³
Lance 4		cobr = 4.50 cm	

Blocos	ne Estaca	LB LH (cm)	hb (cm)	Principal (cm ²)		Estribo (cm ²)		Superior (cm ²)		As dist. (cm ²)
				X	Y	Hor.	Vert.	X	Y	
B2	1 E30-12m	60.00 60.00		-	-	3.93 (5 ø 10.0)	3.14 2x(2 ø 10.0)	-	-	-
B3	1 E30-12m	60.00 60.00		-	-	3.93 (5 ø 10.0)	3.14 2x(2 ø 10.0)	-	-	-
B4	1 E30-12m	60.00 60.00		-	-	3.93 (5 ø 10.0)	3.14 2x(2 ø 10.0)	-	-	-
B6	1 E30-12m	60.00 60.00		-	-	3.93 (5 ø 10.0)	3.14 2x(2 ø 10.0)	-	-	-
B9	1 E30-12m	60.00 60.00		-	-	3.93 (5 ø 10.0)	3.14 2x(2 ø 10.0)	-	-	-
B12	1 E30-12m	60.00 60.00		-	-	3.93 (5 ø 10.0)	3.14 2x(2 ø 10.0)	-	-	-
B13	1 E30-12m	60.00 60.00		-	-	3.93 (5 ø 10.0)	3.14 2x(2 ø 10.0)	-	-	-
B14	1 E30-12m	60.00 60.00		-	-	3.93 (5 ø 10.0)	3.14 2x(2 ø 10.0)	-	-	-
B15	1 E30-12m	60.00 60.00		-	-	3.93 (5 ø 10.0)	3.14 2x(2 ø 10.0)	-	-	-
B16	1 E30-12m	60.00 60.00		-	-	3.93 (5 ø 10.0)	3.14 2x(2 ø 10.0)	-	-	-
B17	1 E30-12m	60.00 60.00		-	-	3.93 (5 ø 10.0)	3.14 2x(2 ø 10.0)	-	-	-
B18	1 E30-12m	60.00 60.00		-	-	3.93 (5 ø 10.0)	3.14 2x(2 ø 10.0)	-	-	-
B19	1 E30-12m	60.00 60.00		-	-	3.93 (5 ø 10.0)	3.14 2x(2 ø 10.0)	-	-	-
B20	1 E30-12m	60.00 60.00		-	-	3.93 (5 ø 10.0)	3.14 2x(2 ø 10.0)	-	-	-
B21	1 E30-12m	60.00 60.00		-	-	3.93 (5 ø 10.0)	3.14 2x(2 ø 10.0)	-	-	-
B22	1 E30-12m	60.00 60.00		-	-	3.93 (5 ø 10.0)	3.14 2x(2 ø 10.0)	-	-	-
B23	1 E30-12m	60.00 60.00		-	-	3.93 (5 ø 10.0)	3.14 2x(2 ø 10.0)	-	-	-
B49	1 E30-12m	60.00 60.00		-	-	3.93 (5 ø 10.0)	3.14 2x(2 ø 10.0)	-	-	-
B55	1 E30-12m	60.00 60.00		-	-	3.93 (5 ø 10.0)	3.14 2x(2 ø 10.0)	-	-	-
B56	1 E30-12m	60.00 60.00		-	-	3.93 (5 ø 10.0)	3.14 2x(2 ø 10.0)	-	-	-
B57	1 E30-12m	60.00 60.00		-	-	3.93 (5 ø 10.0)	3.14 2x(2 ø 10.0)	-	-	-

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

B58	1 E30-12m	60.00 60.00		-	-	3.93 (5 ø 10.0)	3.14 2x(2 ø 10.0)	-	-	-
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Resultados dos Pilares

NV1-3	fck = 250.00 kgf/cm ²	E = 241500 kgf/cm ²	Peso Espec = 2500.00 kgf/m ³
Lance 4		cobr = 3.00 cm	

Dados				Resultados					
Pilar	Seção (cm)	Nível Altura (cm)	lib vnc lih vnc (cm)	Nd máx Nd mín (tf)	MBd topo MBd base (kgf.m)	MHd topo MHd base (kgf.m)	As b Armaduras As h % armad total	Estribo Topo Base cota	Esb b Esb h
P2 1:20	15.00 X 40.00	105.00 90.00	200.00 EL 100.00 RR	1.49 0.97	316 470	75 431	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 30	46.13 8.65
P3 1:20	15.00 X 40.00	105.00 90.00	200.00 EL 100.00 RR	1.43 1.00	365 521	102 355	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 30	46.13 8.65
P4 1:20	15.00 X 40.00	105.00 90.00	200.00 EL 100.00 RR	1.43 1.01	372 527	118 325	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 30	46.13 8.65
P6 1:20	15.00 X 40.00	105.00 90.00	200.00 EL 100.00 RR	1.43 1.00	371 525	124 315	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 30	46.13 8.65
P9 1:20	15.00 X 40.00	105.00 90.00	200.00 EL 100.00 RR	1.54 0.98	371 526	115 258	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 30	46.13 8.65
P12 1:20	15.00 X 40.00	105.00 90.00	200.00 EL 100.00 RR	1.53 0.95	373 528	112 268	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 30	46.13 8.65
P13 1:20	15.00 X 40.00	105.00 90.00	200.00 EL 100.00 RR	1.38 0.97	371 527	101 271	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 30	46.13 8.65

P14 1:20	15.00 X 40.00	105.00 90.00	200.00 EL 100.00 RR	1.57 0.98	373 528	128 261	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 30	46.13 8.65
P15 1:20	15.00 X 40.00	105.00 90.00	200.00 EL 100.00 RR	1.58 1.12	376 533	126 294	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 30	46.13 8.65
P16 1:20	15.00 X 40.00	105.00 90.00	200.00 EL 100.00 RR	1.81 1.21	379 535	179 272	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 30	46.13 8.65
P17 1:20	15.00 X 40.00	105.00 90.00	200.00 EL 100.00 RR	1.82 1.03	368 519	240 399	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 30	46.13 8.65
P18 1:20	15.00 X 40.00	105.00 90.00	200.00 EL 100.00 RR	1.34 0.93	356 509	129 362	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 30	46.13 8.65
P19 1:20	15.00 X 40.00	105.00 90.00	200.00 EL 100.00 RR	1.84 1.01	362 511	223 344	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 30	46.13 8.65
P20 1:20	15.00 X 40.00	105.00 90.00	200.00 EL 100.00 RR	1.84 1.22	374 528	169 305	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 30	46.13 8.65
P21 1:20	15.00 X 40.00	105.00 90.00	200.00 EL 100.00 RR	1.63 1.15	368 522	153 348	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 30	46.13 8.65
P22 1:20	15.00 X 40.00	105.00 90.00	200.00 EL 100.00 RR	1.64 1.16	373 520	143 377	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 30	46.13 8.65
P23 1:20	15.00 X 40.00	105.00 90.00	200.00 EL 100.00 RR	1.60 1.10	457 642	106 462	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 30	46.13 8.65

P49 1:20	15.00 X 40.00	105.00 90.00	200.00 EL 100.00 RR	1.61 0.95	163 278	67 465	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12	46.13 8.65
P55 1:20	15.00 X 40.00	105.00 90.00	62.00 RR 62.00 RR	2.02 0.23	44 101	183 87	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12	14.30 5.36
P56 1:20	15.00 X 30.00	105.00 90.00	188.00 EL 59.00 RR	1.02 0.44	11 50	173 158	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12	43.37 6.80
P57 1:20	15.00 X 30.00	105.00 90.00	94.00 RR 94.00 RR	0.91 0.61	26 55	8 33	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12	21.68 10.84
P58 1:20	15.00 X 30.00	105.00 90.00	188.00 EL 94.00 RR	0.90 0.61	12 46	14 44	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12	43.37 10.84

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

Resultados da Vigas

Resultados da Viga VB-J1

fck = 250.00 kgf/cm ²	Ecs = 241500 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P2	40.01		3 ø 10.0 1.73	3 ø 10.0 1.73					0.00
1	244.47	15.00 x 30.00	3 ø 10.0 1.73	3 ø 10.0 1.73		ø 5.0 c/ 15			0.00
P1	40.00		3 ø 10.0 1.73	3 ø 10.0 1.73					0.00

Resultados da Viga VB-J2

fck = 250.00 kgf/cm ²	Ecs = 241500 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P56	30.00		4 ø 10.0 2.88	4 ø 10.0 2.88					0.00
1	253.88	15.00 x 50.00	4 ø 10.0 2.88	4 ø 10.0 2.88		ø 5.0 c/ 26			0.00
P1	15.02		4 ø 10.0 2.88	4 ø 10.0 2.88					0.00

Resultados da Viga VB-J3

fck = 250.00 kgf/cm ²	Ecs = 241500 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P4	40.00			2 ø 10.0 0.68					0.00
1	242.51	15.00 x 30.00	2 ø 10.0 0.68			ø 5.0 c/ 15			0.00
P3	40.00		3 ø 10.0 1.73	3 ø 10.0 1.73					0.00
2	242.49	15.00 x 30.00	3 ø 10.0 1.73	3 ø 10.0 1.73		ø 5.0 c/ 15			0.00
P2	40.00		3 ø 10.0 1.73	3 ø 10.0 1.73					0.00

Resultados da Viga VB-J4

fck = 250.00 kgf/cm ²	Ecs = 241500 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P9	40.00			2 ø 10.0 0.68					0.00
1	242.54	15.00 x 30.00	2 ø 10.0 0.68			ø 5.0 c/ 15			0.00
P6	40.00			2 ø 10.0 0.68					0.00
2	242.54	15.00 x 30.00	2 ø 10.0 0.68			ø 5.0 c/ 15			0.00
P4	40.00			2 ø 10.0 0.68					0.00

Resultados da Viga VB-J5

fck = 250.00 kgf/cm ²	Ecs = 241500 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P9	40.00			2 ø 10.0 0.68					0.00
1	270.00	15.00 x 30.00	2 ø 10.0 0.68			ø 5.0 c/ 15			0.00
P12	40.00			2 ø 10.0 0.68					0.00

Resultados da Viga VB-J6

fck = 250.00 kgf/cm ²	Ecs = 241500 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P13	40.00			2 ø 10.0 0.68					0.00
1	230.00	15.00 x 30.00	2 ø 10.0 0.68			ø 5.0 c/ 15			0.00
P12	40.00			2 ø 10.0 0.68					0.00

Resultados da Viga VB-J7

fck = 250.00 kgf/cm ²	Ecs = 241500 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P14	40.00			2 ø 10.0 0.68					0.00
1	229.99	15.00 x 30.00	2 ø 10.0 0.68			ø 5.0 c/ 15			0.00
P13	40.00			2 ø 10.0 0.68					0.00

Resultados da Viga VB-J8

fck = 250.00 kgf/cm ²	Ecs = 241500 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P14	40.00			2 ø 10.0 0.68					0.00
1	294.99	15.00 x 30.00	2 ø 10.0 0.68			ø 5.0 c/ 15			0.00
P15	40.00			2 ø 10.0 0.68					0.00
2	294.99	15.00 x 30.00	2 ø 10.0 0.68			ø 5.0 c/ 15			0.00
P16	40.00			2 ø 10.0 0.68					0.00

Resultados da Viga VB-J9

fck = 250.00 kgf/cm ²	Ecs = 241500 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P17	40.00			2 ø 10.0 0.68					0.00
1	409.80	15.00 x 30.00	2 ø 10.0 0.68			ø 5.0 c/ 15			0.00
P16	40.00			2 ø 10.0 0.68					0.00

Resultados da Viga VB-J10

fck = 250.00 kgf/cm ²	Ecs = 241500 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P18	40.01			2 ø 10.0 0.68					0.00
1	225.04	15.00 x 30.00	2 ø 10.0 0.68			ø 5.0 c/ 15			0.00
P17	40.00			2 ø 10.0 0.68					0.00

Resultados da Viga VB-J11

fck = 250.00 kgf/cm ²	Ecs = 241500 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P19	40.01			2 ø 10.0 0.68					0.00
1	225.03	15.00 x 30.00	2 ø 10.0 0.68			ø 5.0 c/ 15			0.00
P18	40.01			2 ø 10.0 0.68					0.00

Resultados da Viga VB-J12

fck = 250.00 kgf/cm ²	Ecs = 241500 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P20	40.00			2 ø 10.0 0.68					0.00
1	410.10	15.00 x 30.00	2 ø 10.0 0.68			ø 5.0 c/ 15			0.00
P19	40.01			2 ø 10.0 0.68					0.00

Resultados da Viga VB-J13

fck = 250.00 kgf/cm ²	Ecs = 241500 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P24	40.00		3 ø 10.0 1.73	3 ø 10.0 1.73					0.00
1	270.01	15.00 x 30.00	3 ø 10.0 1.73	3 ø 10.0 1.73		ø 5.0 c/ 15			0.00
P23	40.00		3 ø 10.0 1.73	3 ø 10.0 1.73					0.00
2	312.01	15.00 x 30.00	3 ø 10.0 1.73	3 ø 10.0 1.73		ø 5.0 c/ 15			0.00
P22	40.00		3 ø 10.0 1.73	3 ø 10.0 1.73					0.00
3	312.01	15.00 x 30.00	2 ø 10.0 0.68			ø 5.0 c/ 15			0.00
P21	40.00			2 ø 10.0 0.68					0.00
4	312.01	15.00 x 30.00	2 ø 10.0 0.68			ø 5.0 c/ 15			0.00
P20	40.00			2 ø 10.0 0.68					0.00

Resultados da Viga VB-J14

fck = 250.00 kgf/cm ²	Ecs = 241500 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P49	40.00		3 ø 10.0 2.30	3 ø 10.0 2.30					0.00
1	170.38	15.00 x 40.00	3 ø 10.0 2.30	3 ø 10.0 2.30		ø 5.0 c/ 21			0.00
P45	40.00		3 ø 10.0 2.30	3 ø 10.0 2.30					0.00

Resultados da Viga VB-J15

fck = 250.00 kgf/cm ²	Ecs = 241500 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P55	16.21			2 ø 10.0 0.90					0.00
1	175.39	15.00 x 40.00	2 ø 10.0 0.90			ø 5.0 c/ 21			0.00
P49	40.00			2 ø 10.0 0.90					0.00

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

Pavimento NV1-4

Resultado dos Blocos

NV1-4	fck = 250.00 kgf/cm ²	E = 241500 kgf/cm ²	Peso Espec = 2500.00 kgf/m ³
Lance 5		cobr = 4.50 cm	

Blocos	ne Estaca	LB LH (cm)	hb (cm)	Principal (cm ²)		Estribo (cm ²)		Superior (cm ²)		As dist. (cm ²)
				X	Y	Hor.	Vert.	X	Y	
B5	1 E30-12m	60.00 60.00		-	-	3.93 (5 ø 10.0)	3.14 2x(2 ø 10.0)	-	-	-
B7	1 E30-12m	60.00 60.00		-	-	3.93 (5 ø 10.0)	3.14 2x(2 ø 10.0)	-	-	-
B8	1 E30-12m	60.00 60.00		-	-	3.93 (5 ø 10.0)	3.14 2x(2 ø 10.0)	-	-	-
B10	1 E30-12m	60.00 60.00		-	-	3.93 (5 ø 10.0)	3.14 2x(2 ø 10.0)	-	-	-
B52	1 E30-12m	60.00 60.00		-	-	3.93 (5 ø 10.0)	3.14 2x(2 ø 10.0)	-	-	-
B53	1 E30-12m	60.00 60.00		-	-	3.93 (5 ø 10.0)	3.14 2x(2 ø 10.0)	-	-	-
B54	1 E30-12m	60.00 60.00		-	-	3.93 (5 ø 10.0)	3.14 2x(2 ø 10.0)	-	-	-

Resultados dos Pilares

NV1-4	fck = 250.00 kgf/cm ²	E = 241500 kgf/cm ²	Peso Espec = 2500.00 kgf/m ³
Lance 5		cobr = 3.00 cm	

Dados				Resultados					
Pilar	Seção (cm)	Nível Altura (cm)	lib vnc lih vnc (cm)	Nd máx Nd mín (tf)	MBd topo MBd base (kgf.m)	MHd topo MHd base (kgf.m)	As b Armaduras As h % armad total	Estribo Topo Base cota	Esb b Esb h
P5 1:20	15.00 X 30.00	140.00 90.00	188.00 EL 59.00 RR	0.78 0.52	17 49	77 41	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12	43.37 6.80
P7 1:20	15.00 X 30.00	140.00 90.00	188.00 EL 94.00 RR	0.80 0.55	11 47	7 46	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12	43.37 10.84
P8 1:20	15.00 X 30.00	140.00 90.00	188.00 EL 94.00 RR	0.69 0.46	11 47	11 40	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12	43.37 10.84
P10 1:20	15.00 X 30.00	140.00 90.00	188.00 EL 94.00 RR	0.62 0.40	10 44	15 54	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12	43.37 10.84
P52 1:20	15.00 X 40.00	140.00 90.00	200.00 EL 100.00 RR	1.55 0.70	399 576	50 190	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12	46.13 8.65
P53 1:20	15.00 X 40.00	140.00 90.00	200.00 EL 100.00 RR	1.32 0.91	329 517	48 239	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12	46.13 8.65
P54 1:20	15.00 X 40.00	140.00 90.00	200.00 EL 100.00 RR	1.40 0.84	193 337	15 299	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12	46.13 8.65

P56 1:20	15.00 X 30.00	140.00 35.00	188.00 EL 35.00 RR	0.41 0.26	3 11	144 132	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12	43.37 4.04
P57 1:20	15.00 X 30.00	140.00 35.00	94.00 RR 94.00 RR	0.82 0.57	23 26	20 8	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12	21.68 10.84
P58 1:20	15.00 X 30.00	140.00 35.00	188.00 EL 94.00 RR	0.82 0.57	2 12	37 14	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12	43.37 10.84

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

Resultados da Vigas

Resultados da Viga VB-H1

fck = 250.00 kgf/cm ²	Ecs = 241500 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P57	30.23			2 ø 10.0 1.13					0.00
1	271.50	15.00 x 50.00	2 ø 10.0 1.13			ø 5.0 c/ 26			0.00
P56	30.00			2 ø 10.0 1.13					0.00

Resultados da Viga VB-H2

fck = 250.00 kgf/cm ²	Ecs = 241500 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P5	30.02			2 ø 10.0 1.13					0.00
1	272.62	15.00 x 50.00	2 ø 10.0 1.13			ø 5.0 c/ 26			0.00
P58	30.00			2 ø 10.0 1.13					0.00
2	272.62	15.00 x 50.00	2 ø 10.0 1.13			ø 5.0 c/ 26			0.00
P57	30.00			2 ø 10.0 1.13					0.00

Resultados da Viga VB-H3

fck = 250.00 kgf/cm ²	Ecs = 241500 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P52	40.00		3 ø 10.0 2.30	3 ø 10.0 2.30					0.00
1	158.31	15.00 x 40.00	3 ø 10.0 2.30	3 ø 10.0 2.30		ø 5.0 c/ 21			0.00
P53	40.00		3 ø 10.0 2.30	3 ø 10.0 2.30					0.00

Resultados da Viga VB-H4

fck = 250.00 kgf/cm ²	Ecs = 241500 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P53	40.00		3 ø 10.0 2.30	3 ø 10.0 2.30					0.00
1	158.31	15.00 x 40.00	3 ø 10.0 2.30	3 ø 10.0 2.30		ø 5.0 c/ 21			0.00
P54	40.00		3 ø 10.0 2.30	3 ø 10.0 2.30					0.00
2	153.30	15.00 x 40.00	3 ø 10.0 2.30	3 ø 10.0 2.30		ø 5.0 c/ 21			0.00
P55	40.00		3 ø 10.0 2.30	3 ø 10.0 2.30					0.00

Pavimento NV1-5

Resultado dos Blocos

NV1-5	fck = 250.00 kgf/cm ²	E = 241500 kgf/cm ²	Peso Espec = 2500.00 kgf/m ³
Lance 6		cobr = 4.50 cm	

Blocos	ne Estaca	LB LH (cm)	hb (cm)	Principal (cm ²)		Estribo (cm ²)		Superior (cm ²)		As dist. (cm ²)
				X	Y	Hor.	Vert.	X	Y	
B11	1 E30-12m	60.00 60.00		-	-	3.93 (5 ø 10.0)	3.14 2x(2 ø 10.0)	-	-	-
B46	1 E30-12m	60.00 60.00		-	-	3.93 (5 ø 10.0)	3.14 2x(2 ø 10.0)	-	-	-
B47	1 E30-12m	60.00 60.00		-	-	3.93 (5 ø 10.0)	3.14 2x(2 ø 10.0)	-	-	-
B48	1 E30-12m	60.00 60.00		-	-	3.93 (5 ø 10.0)	3.14 2x(2 ø 10.0)	-	-	-
B50	1 E30-12m	60.00 60.00		-	-	3.93 (5 ø 10.0)	3.14 2x(2 ø 10.0)	-	-	-
B51	1 E30-12m	60.00 60.00		-	-	3.93 (5 ø 10.0)	3.14 2x(2 ø 10.0)	-	-	-

Resultados dos Pilares

NV1-5	fck = 250.00 kgf/cm ²	E = 241500 kgf/cm ²	Peso Espec = 2500.00 kgf/m ³
Lance 6		cobr = 3.00 cm	

Dados				Resultados					
Pilar	Seção (cm)	Nível Altura (cm)	lib vnc lih vnc (cm)	Nd máx Nd mín (tf)	MBd topo MBd base (kgf.m)	MHd topo MHd base (kgf.m)	As b Armaduras As h % armad total	Estribo Topo Base cota	Esb b Esb h
P5 1:20	15.00 X 30.00	175.00 35.00	188.00 EL 35.00 RR	0.35 0.22	3 13	96 100	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12	43.37 4.04
P7 1:20	15.00 X 30.00	175.00 35.00	188.00 EL 94.00 RR	0.71 0.51	0 11	28 7	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12	43.37 10.84
P8 1:20	15.00 X 30.00	175.00 35.00	188.00 EL 94.00 RR	0.60 0.42	0 11	18 11	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12	43.37 10.84
P10 1:20	15.00 X 30.00	175.00 35.00	188.00 EL 94.00 RR	0.53 0.36	0 10	45 15	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12	43.37 10.84
P11 1:20	15.00 X 30.00	175.00 90.00	188.00 EL 59.00 RR	0.83 0.56	12 50	83 113	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12	43.37 6.80
P46 1:20	15.00 X 30.00	175.00 90.00	200.00 EL 100.00 RR	1.34 0.89	581 786	44 80	1.57 2 ø 10.0 2.36 3 ø 10.0 1.0 6 ø 10.0	ø 5.0 c/12	46.13 11.53
P47 1:20	15.00 X 30.00	175.00 90.00	200.00 EL 100.00 RR	1.36 0.68	538 763	27 89	1.57 2 ø 10.0 2.36 3 ø 10.0 1.0 6 ø 10.0	ø 5.0 c/12	46.13 11.53

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

P48 1:20	15.00 X 30.00	175.00 90.00	200.00 EL 100.00 RR	1.16 0.81	491 698	37 102	1.57 2 ø 10.0 2.36 3 ø 10.0 1.0 6 ø 10.0	ø 5.0 c/12	46.13 11.53
P50 1:20	15.00 X 30.00	175.00 90.00	200.00 EL 100.00 RR	1.27 0.75	451 636	51 119	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12	46.13 11.53
P51 1:20	15.00 X 30.00	175.00 90.00	200.00 EL 100.00 RR	1.57 0.43	401 624	108 170	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12	46.13 11.53

Resultados da Vigas

Resultados da Viga VB-G1

fck = 250.00 kgf/cm ²	Ecs = 241500 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P46	30.00			2 ø 10.0 0.90					0.00
1	150.31	15.00 x 40.00	2 ø 10.0 0.90			ø 5.0 c/ 21			0.00
P47	30.00			2 ø 10.0 0.90					0.00

Resultados da Viga VB-G2

fck = 250.00 kgf/cm ²	Ecs = 241500 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P47	30.00			2 ø 10.0 0.90					0.00
1	150.31	15.00 x 40.00	2 ø 10.0 0.90			ø 5.0 c/ 21			0.00
P48	30.00			2 ø 10.0 0.90					0.00

Resultados da Viga VB-G3

fck = 250.00 kgf/cm ²	Ecs = 241500 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P48	30.00			2 ø 10.0 0.90					0.00
1	150.31	15.00 x 40.00	2 ø 10.0 0.90			ø 5.0 c/ 21			0.00
P50	30.00			2 ø 10.0 0.90					0.00

Resultados da Viga VB-G4

fck = 250.00 kgf/cm ²	Ecs = 241500 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P50	30.00		3 ø 10.0 2.30	3 ø 10.0 2.30					0.00
1	150.31	15.00 x 40.00	3 ø 10.0 2.30	3 ø 10.0 2.30		ø 5.0 c/ 21			0.00
P51	30.01		3 ø 10.0 2.30	3 ø 10.0 2.30					0.00

Resultados da Viga VB-G5

fck = 250.00 kgf/cm ²	Ecs = 241500 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P8	30.00			2 ø 10.0 1.13					0.00
1	224.14	15.00 x 50.00	2 ø 10.0 1.13			ø 5.0 c/ 26			0.00
P7	30.00			2 ø 10.0 1.13					0.00
2	224.13	15.00 x 50.00	2 ø 10.0 1.13			ø 5.0 c/ 26			0.00
P5	30.02			2 ø 10.0 1.13					0.00

Resultados da Viga VB-G6

fck = 250.00 kgf/cm ²	Ecs = 241500 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P11	30.00			2 ø 10.0 1.13					0.00
1	166.29	15.00 x 50.00	2 ø 10.0 1.13			ø 5.0 c/ 26			0.00
P10	30.00			2 ø 10.0 1.13					0.00
2	166.29	15.00 x 50.00	2 ø 10.0 1.13			ø 5.0 c/ 26			0.00
P8	30.00			2 ø 10.0 1.13					0.00

Resultados da Viga VB-G7

fck = 250.00 kgf/cm ²	Ecs = 241500 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P51	30.01		3 ø 10.0 2.30	3 ø 10.0 2.30					0.00
1	163.31	15.00 x 40.00	3 ø 10.0 2.30	3 ø 10.0 2.30		ø 5.0 c/ 21			0.00
P52	40.00		3 ø 10.0 2.30	3 ø 10.0 2.30					0.00

Pavimento NV1-6

Resultado dos Blocos

NV1-6	fck = 250.00 kgf/cm ²	E = 241500 kgf/cm ²	Peso Espec = 2500.00 kgf/m ³
Lance 7		cobr = 4.50 cm	

Blocos	ne Estaca	LB LH (cm)	hb (cm)	Principal (cm ²)		Estribo (cm ²)		Superior (cm ²)		As dist. (cm ²)
				X	Y	Hor.	Vert.	X	Y	
B59	1 E30-12m	60.00 60.00		-	-	3.93 (5 ø 10.0)	3.14 2x(2 ø 10.0)	-	-	-
B60	1 E30-12m	60.00 60.00		-	-	3.93 (5 ø 10.0)	3.14 2x(2 ø 10.0)	-	-	-
B61	1 E30-12m	60.00 60.00		-	-	3.93 (5 ø 10.0)	3.14 2x(2 ø 10.0)	-	-	-
B62	1 E30-12m	60.00 60.00		-	-	3.93 (5 ø 10.0)	3.14 2x(2 ø 10.0)	-	-	-
B63	1 E30-12m	60.00 60.00		-	-	3.93 (5 ø 10.0)	3.14 2x(2 ø 10.0)	-	-	-
B64	1 E30-12m	60.00 60.00		-	-	3.93 (5 ø 10.0)	3.14 2x(2 ø 10.0)	-	-	-
B65	1 E30-12m	60.00 60.00		-	-	3.93 (5 ø 10.0)	3.14 2x(2 ø 10.0)	-	-	-

Resultados dos Pilares

NV1-6	fck = 250.00 kgf/cm ²	E = 241500 kgf/cm ²	Peso Espec = 2500.00 kgf/m ³
Lance 7		cobr = 3.00 cm	

Dados				Resultados					
Pilar	Seção (cm)	Nível Altura (cm)	lib vínc lih vínc (cm)	Nd máx Nd mín (tf)	MBd topo MBd base (kgf.m)	MHd topo MHd base (kgf.m)	As b Armaduras As h % armad total	Estribo Topo Base cota	Esb b Esb h
P11 1:20	15.00 X 30.00	210.00 35.00	188.00 EL 35.00 RR	0.53 0.35	1 12	246 120	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12	43.37 4.04
P59 1:20	15.00 X 30.00	210.00 90.00	59.00 RR 59.00 RR	0.91 0.62	45 53	201 107	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12	13.61 6.80
P60 1:20	15.00 X 30.00	210.00 90.00	188.00 EL 94.00 RR	0.82 0.56	15 51	25 68	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12	43.37 10.84
P61 1:20	15.00 X 30.00	210.00 90.00	200.00 EL 100.00 RR	1.44 0.67	426 594	68 74	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12	46.13 11.53
P62 1:20	15.00 X 30.00	210.00 90.00	200.00 EL 100.00 RR	1.73 0.64	482 690	6 73	1.57 2 ø 10.0 2.36 3 ø 10.0 1.0 6 ø 10.0	ø 5.0 c/12	46.13 11.53
P63 1:20	15.00 X 30.00	210.00 90.00	200.00 EL 100.00 RR	1.52 0.94	536 755	19 136	1.57 2 ø 10.0 2.36 3 ø 10.0 1.0 6 ø 10.0	ø 5.0 c/12	46.13 11.53
P64 1:20	15.00 X 30.00	210.00 90.00	200.00 EL 100.00 RR	1.43 1.01	585 801	27 120	1.57 2 ø 10.0 2.36 3 ø 10.0 1.0 6 ø 10.0	ø 5.0 c/12	46.13 11.53

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

P65 1:20	15.00 X 30.00	210.00 90.00	200.00 EL 100.00 RR	1.59 0.93	628 892	46 120	2.45 2 ø 12.5 2.45 2 ø 12.5 1.1 4 ø 12.5	ø 5.0 c/15	46.13 11.53
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Resultados da Vigas

Resultados da Viga VB-F1

fck = 250.00 kgf/cm ²	Ecs = 241500 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P61	30.00			2 ø 10.0 0.90					0.00
1	179.27	15.00 x 40.00	2 ø 10.0 0.90			ø 5.0 c/ 21			0.00
P62	30.01			2 ø 10.0 0.90					0.00

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

Resultados da Viga VB-F2

fck = 250.00 kgf/cm ²	Ecs = 241500 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P59	30.20			2 ø 10.0 1.13					0.00
1	369.29	15.00 x 50.00	2 ø 10.0 1.13			ø 5.0 c/ 26			0.00
P11	30.00			2 ø 10.0 1.13					0.00

Resultados da Viga VB-F3

fck = 250.00 kgf/cm ²	Ecs = 241500 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P62	30.01			2 ø 10.0 0.90					0.00
1	208.25	15.00 x 40.00	2 ø 10.0 0.90			ø 5.0 c/ 21			0.00
P63	30.00			2 ø 10.0 0.90					0.00
2	208.25	15.00 x 40.00	2 ø 10.0 0.90			ø 5.0 c/ 21			0.00
P64	30.00			2 ø 10.0 0.90					0.00

Resultados da Viga VB-F4

fck = 250.00 kgf/cm ²	Ecs = 241500 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P64	30.00			2 ø 10.0 0.90					0.00
1	208.25	15.00 x 40.00	2 ø 10.0 0.90			ø 5.0 c/ 21			0.00
P65	30.00			2 ø 10.0 0.90					0.00

Resultados da Viga VB-F5

fck = 250.00 kgf/cm ²	Ecs = 241500 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P65	30.00			2 ø 10.0 0.90					0.00
1	208.24	15.00 x 40.00	2 ø 10.0 0.90			ø 5.0 c/ 21			0.00
P46	30.00			2 ø 10.0 0.90					0.00

Pavimento NV1-7

Resultado dos Blocos

NV1-7	$f_{ck} = 250.00$ kgf/cm ²	$E = 241500$ kgf/cm ²	Peso Espec = 2500.00 kgf/m ³
Lance 8		cobr = 4.50 cm	

Blocos	ne Estaca	LB LH (cm)	hb (cm)	Principal (cm ²)		Estribo (cm ²)		Superior (cm ²)		As dist. (cm ²)
				X	Y	Hor.	Vert.	X	Y	
B66	1	60.00				3.93	3.14			
	E30-12m	60.00		-	-	(5 ø 10.0)	2x(2 ø 10.0)	-	-	-
B67	1	60.00				3.93	3.14			
	E30-12m	60.00		-	-	(5 ø 10.0)	2x(2 ø 10.0)	-	-	-
B68	1	60.00				3.93	3.14			
	E30-12m	60.00		-	-	(5 ø 10.0)	2x(2 ø 10.0)	-	-	-

Resultados dos Pilares

NV1-7	fck = 250.00 kgf/cm ²	E = 241500 kgf/cm ²	Peso Espec = 2500.00 kgf/m ³
Lance 8		cobr = 3.00 cm	

Dados				Resultados					
Pilar	Seção (cm)	Nível Altura (cm)	lib vñc lih vñc (cm)	Nd máx Nd mín (tf)	MBd topo MBd base (kgf.m)	MHd topo MHd base (kgf.m)	As b Armaduras As h % armad total	Estribo Topo Base cota	Esb b Esb h
P59 1:20	15.00 X 30.00	245.00 35.00	70.00 EL 35.00 RR	0.31 0.19	1 12	90 132	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12	16.15 4.04
P60 1:20	15.00 X 30.00	245.00 35.00	188.00 EL 94.00 RR	0.74 0.52	4 15	71 25	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12	43.37 10.84
P66 1:20	15.00 X 30.00	245.00 90.00	188.00 EL 59.00 RR	0.83 0.57	14 52	46 63	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12	43.37 6.80
P67 1:20	15.00 X 30.00	245.00 90.00	188.00 EL 94.00 RR	0.91 0.63	13 50	11 38	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12	43.37 10.84
P68 1:20	15.00 X 30.00	245.00 90.00	188.00 EL 94.00 RR	0.89 0.61	11 49	16 50	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12	43.37 10.84

Resultados da Vigas

Resultados da Viga VB-E1

fck = 250.00 kgf/cm ²	Ecs = 241500 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P66	30.00			2 ø 10.0 1.13					0.00
1	270.06	15.00 x 50.00	2 ø 10.0 1.13			ø 5.0 c/ 26			0.00
P60	30.00			2 ø 10.0 1.13					0.00
2	199.76	15.00 x 50.00	2 ø 10.0 1.13			ø 5.0 c/ 26			0.00
P59	30.00			2 ø 10.0 1.13					0.00

Pavimento NV1-8

Resultado dos Blocos

NV1-8	fck = 250.00 kgf/cm ²	E = 241500 kgf/cm ²	Peso Espec = 2500.00 kgf/m ³
Lance 9		cobr = 4.50 cm	

Blocos	ne Estaca	LB LH (cm)	hb (cm)	Principal (cm ²)		Estribo (cm ²)		Superior (cm ²)		As dist. (cm ²)
				X	Y	Hor.	Vert.	X	Y	
B69	1 E30-12m	60.00 60.00		-	-	3.93 (5 ø 10.0)	3.14 2x(2 ø 10.0)	-	-	-
B70	1 E30-12m	60.00 60.00		-	-	3.93 (5 ø 10.0)	3.14 2x(2 ø 10.0)	-	-	-
B71	1 E30-12m	60.00 60.00		-	-	3.93 (5 ø 10.0)	3.14 2x(2 ø 10.0)	-	-	-
B72	1 E30-12m	60.00 60.00		-	-	3.93 (5 ø 10.0)	3.14 2x(2 ø 10.0)	-	-	-
B73	1 E30-12m	60.00 60.00		-	-	3.93 (5 ø 10.0)	3.14 2x(2 ø 10.0)	-	-	-
B74	1 E30-12m	60.00 60.00		-	-	3.93 (5 ø 10.0)	3.14 2x(2 ø 10.0)	-	-	-
B75	1 E30-12m	60.00 60.00		-	-	3.93 (5 ø 10.0)	3.14 2x(2 ø 10.0)	-	-	-
B76	1 E30-12m	60.00 60.00		-	-	3.93 (5 ø 10.0)	3.14 2x(2 ø 10.0)	-	-	-
B77	1 E30-12m	60.00 60.00		-	-	3.93 (5 ø 10.0)	3.14 2x(2 ø 10.0)	-	-	-

Resultados dos Pilares

NV1-8	fck = 250.00 kgf/cm ²	E = 241500 kgf/cm ²	Peso Espec = 2500.00 kgf/m ³
Lance 9		cobr = 3.00 cm	

Dados				Resultados					
Pilar	Seção (cm)	Nível Altura (cm)	lib vinc lih vinc (cm)	Nd máx Nd mín (tf)	MBd topo MBd base (kgf.m)	MHd topo MHd base (kgf.m)	As b Armaduras As h % armad total	Estribo Topo Base cota	Esb b Esb h
P36 1:20	15.00 X 30.00	280.00 280.00	560.00 EL 280.00 RR	1.28 0.65	5 360	119 213	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 40	129.17 32.29
P37 1:20	15.00 X 30.00	280.00 280.00	560.00 EL 280.00 RR	1.25 0.64	12 378	112 205	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 40	129.17 32.29
P38 1:20	15.00 X 30.00	280.00 280.00	560.00 EL 280.00 RR	1.34 0.69	23 353	166 240	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 40	129.17 32.29
P66 1:20	15.00 X 30.00	280.00 35.00	188.00 EL 35.00 RR	0.40 0.25	1 12	128 119	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12	43.37 4.04
P67 1:20	15.00 X 30.00	280.00 35.00	188.00 EL 94.00 RR	0.82 0.59	1 13	17 11	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12	43.37 10.84
P68 1:20	15.00 X 30.00	280.00 35.00	188.00 EL 94.00 RR	0.80 0.57	1 11	47 16	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12	43.37 10.84
P69 1:20	15.00 X 30.00	280.00 90.00	188.00 EL 59.00 RR	0.82 0.56	13 50	51 59	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12	43.37 6.80

P70 1:20	15.00 X 30.00	280.00 90.00	188.00 EL 94.00 RR	0.91 0.63	12 50	12 54	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12	43.37 10.84
P71 1:20	15.00 X 30.00	280.00 90.00	94.00 RR 94.00 RR	0.89 0.59	26 49	13 45	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12	21.68 10.84
P72 1:20	15.00 X 30.00	280.00 90.00	200.00 EL 100.00 RR	1.21 0.75	399 575	25 74	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 30	46.13 11.53
P73 1:20	15.00 X 30.00	280.00 90.00	200.00 EL 100.00 RR	1.16 0.80	415 616	34 81	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 30	46.13 11.53
P74 1:20	15.00 X 30.00	280.00 90.00	200.00 EL 100.00 RR	1.21 0.75	406 596	17 93	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 30	46.13 11.53
P75 1:20	15.00 X 30.00	280.00 90.00	200.00 EL 100.00 RR	1.34 0.61	394 584	8 104	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 30	46.13 11.53
P76 1:20	15.00 X 30.00	280.00 90.00	200.00 EL 100.00 RR	1.19 0.79	428 600	18 120	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 30	46.13 11.53
P77 1:20	15.00 X 30.00	280.00 90.00	200.00 EL 100.00 RR	1.16 0.79	479 738	36 137	1.57 2 ø 10.0 2.36 3 ø 10.0 1.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 30	46.13 11.53

Resultados da Vigas

Resultados da Viga VB-D1

fck = 250.00 kgf/cm ²	Ecs = 241500 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P72	30.00			2 ø 10.0 0.68					0.00
1	179.29	15.00 x 30.00	2 ø 10.0 0.68			ø 5.0 c/ 15			0.00
P73	30.00			2 ø 10.0 0.68					0.00

Resultados da Viga VB-D2

fck = 250.00 kgf/cm ²	Ecs = 241500 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P73	30.00			2 ø 10.0 0.68					0.00
1	179.30	15.00 x 30.00	2 ø 10.0 0.68			ø 5.0 c/ 15			0.00
P74	30.00			2 ø 10.0 0.68					0.00

Resultados da Viga VB-D3

fck = 250.00 kgf/cm ²	Ecs = 241500 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P74	30.00			2 ø 10.0 0.68					0.00
1	179.31	15.00 x 30.00	2 ø 10.0 0.68			ø 5.0 c/ 15			0.00
P75	30.01			2 ø 10.0 0.68					0.00

Resultados da Viga VB-D4

fck = 250.00 kgf/cm ²	Ecs = 241500 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P75	30.01			2 ø 10.0 0.68					0.00
1	179.28	15.00 x 30.00	2 ø 10.0 0.68			ø 5.0 c/ 15			0.00
P76	30.00			2 ø 10.0 0.68					0.00

Resultados da Viga VB-D5

fck = 250.00 kgf/cm ²	Ecs = 241500 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P76	30.00		3 ø 10.0 1.73	3 ø 10.0 1.73					0.00
1	179.28	15.00 x 30.00	3 ø 10.0 1.73	3 ø 10.0 1.73		ø 5.0 c/ 15			0.00
P77	30.00		3 ø 10.0 1.73	3 ø 10.0 1.73					0.00

Resultados da Viga VB-D6

fck = 250.00 kgf/cm ²	Ecs = 241500 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P77	30.00		3 ø 10.0 1.73	3 ø 10.0 1.73					0.00
1	179.28	15.00 x 30.00	3 ø 10.0 1.73	3 ø 10.0 1.73		ø 5.0 c/ 15			0.00
P61	30.00		3 ø 10.0 1.73	3 ø 10.0 1.73					0.00

Resultados da Viga VB-D7

fck = 250.00 kgf/cm ²	Ecs = 241500 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P68	30.01			2 ø 10.0 1.13					0.00
1	270.21	15.00 x 50.00	2 ø 10.0 1.13			ø 5.0 c/ 26			0.00
P67	30.00			2 ø 10.0 1.13					0.00
2	270.07	15.00 x 50.00	2 ø 10.0 1.13			ø 5.0 c/ 26			0.00
P66	30.00			2 ø 10.0 1.13					0.00

Resultados da Viga VB-D8

fck = 250.00 kgf/cm ²	Ecs = 241500 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P69	30.00			2 ø 10.0 1.13					0.00
1	270.04	15.00 x 50.00	2 ø 10.0 1.13			ø 5.0 c/ 26			0.00
P68	30.00			2 ø 10.0 1.13					0.00

Resultados da Viga VB-D9

fck = 250.00 kgf/cm ²	Ecs = 241500 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P39	15.07		3 ø 10.0 2.30	3 ø 10.0 2.30					0.00
1	411.03	15.00 x 40.00	3 ø 10.0 2.30	3 ø 10.0 2.30		ø 5.0 c/ 21			0.00
P38	30.00		3 ø 10.0 2.30	3 ø 10.0 2.30					0.00
2	411.03	15.00 x 40.00	3 ø 10.0 2.30	3 ø 10.0 2.30		ø 5.0 c/ 21			0.00
P37	30.00		3 ø 10.0 2.30	3 ø 10.0 2.30					0.00
3	411.02	15.00 x 40.00	3 ø 10.0 2.30	3 ø 10.0 2.30		ø 5.0 c/ 21			0.00
P36	30.00		3 ø 10.0 2.30	3 ø 10.0 2.30					0.00
4	406.03	15.00 x 40.00	3 ø 10.0 2.30	3 ø 10.0 2.30		ø 5.0 c/ 21			0.00
P35	40.00		3 ø 10.0 2.30	3 ø 10.0 2.30					0.00

Pavimento NV1-9

Resultado dos Blocos

NV1-9	fck = 250.00 kgf/cm ²	E = 241500 kgf/cm ²	Peso Espec = 2500.00 kgf/m ³
Lance 10		cobr = 4.50 cm	

Blocos	ne Estaca	LB LH (cm)	hb (cm)	Principal (cm ²)		Estribo (cm ²)		Superior (cm ²)		As dist. (cm ²)
				X	Y	Hor.	Vert.	X	Y	
B78	1 E30-12m	60.00 60.00		-	-	3.93 (5 ø 10.0)	3.14 2x(2 ø 10.0)	-	-	-
B79	1 E30-12m	60.00 60.00		-	-	3.93 (5 ø 10.0)	3.14 2x(2 ø 10.0)	-	-	-
B82	1 E30-12m	60.00 60.00		-	-	3.93 (5 ø 10.0)	3.14 2x(2 ø 10.0)	-	-	-
B83	1 E30-12m	60.00 60.00		-	-	3.93 (5 ø 10.0)	3.14 2x(2 ø 10.0)	-	-	-
B84	1 E30-12m	60.00 60.00		-	-	3.93 (5 ø 10.0)	3.14 2x(2 ø 10.0)	-	-	-
B85	1 E30-12m	60.00 60.00		-	-	3.93 (5 ø 10.0)	3.14 2x(2 ø 10.0)	-	-	-
B86	1 E30-12m	60.00 60.00		-	-	3.93 (5 ø 10.0)	3.14 2x(2 ø 10.0)	-	-	-
B87	1 E30-12m	60.00 60.00		-	-	3.93 (5 ø 10.0)	3.14 2x(2 ø 10.0)	-	-	-
B88	1 E30-12m	60.00 60.00		-	-	3.93 (5 ø 10.0)	3.14 2x(2 ø 10.0)	-	-	-
B89	1 E30-12m	60.00 60.00		-	-	3.93 (5 ø 10.0)	3.14 2x(2 ø 10.0)	-	-	-
B81-80	2 E30-12m	150.00 60.00	55.00	3.14 (4 ø 10.0)	-	3.93 (5 ø 10.0)	7.04 2x(7 ø 8.0)	2.36 (3 ø 10.0)	-	1.01 (ø 8.0 c/10)

Resultados dos Pilares

NV1-9	fck = 250.00 kgf/cm ²	E = 241500 kgf/cm ²	Peso Espec = 2500.00 kgf/m ³
Lance 10		cobr = 3.00 cm	

Dados				Resultados					
Pilar	Seção (cm)	Nível Altura (cm)	lib vinc lih vinc (cm)	Nd máx Nd mín (tf)	MBd topo MBd base (kgf.m)	MHd topo MHd base (kgf.m)	As b Armaduras As h % armad total	Estribo Topo Base cota	Esb b Esb h
P26 1:20	15.00 X 40.00	315.00 280.00	560.00 EL 280.00 RR	1.31 0.57	5 429	180 267	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 40	129.17 24.22
P27 1:20	15.00 X 30.00	315.00 280.00	560.00 EL 280.00 RR	1.14 0.53	3 339	122 190	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 40	129.17 32.29
P28 1:20	15.00 X 30.00	315.00 280.00	560.00 EL 280.00 RR	1.10 0.52	1 350	118 188	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 40	129.17 32.29
P29 1:20	15.00 X 30.00	315.00 280.00	560.00 EL 280.00 RR	1.10 0.53	1 352	117 188	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 40	129.17 32.29
P30 1:20	15.00 X 30.00	315.00 280.00	560.00 EL 280.00 RR	1.10 0.53	0 352	119 189	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 40	129.17 32.29
P31 1:20	15.00 X 30.00	315.00 280.00	560.00 EL 280.00 RR	1.10 0.53	1 352	120 190	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 40	129.17 32.29
P32 1:20	15.00 X 30.00	315.00 280.00	560.00 EL 280.00 RR	1.10 0.53	1 348	119 189	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 40	129.17 32.29

P33 1:20	15.00 X 30.00	315.00 280.00	560.00 EL 280.00 RR	1.11 0.51	1 331	130 192	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 40	129.17 32.29
P34 1:20	15.00 X 40.00	315.00 280.00	560.00 EL 280.00 RR	1.24 0.50	2 401	236 303	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 40	129.17 24.22
P35 1:20	15.00 X 40.00	315.00 315.00	70.00 EL 35.00 RR	1.68 0.18	2 406	336 434	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 40	16.15 3.03
P39 1:20	15.00 X 40.00	315.00 315.00	70.00 EL 35.00 RR	1.55 0.03	5 251	210 164	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 40	16.15 3.03
P40 1:20	15.00 X 30.00	315.00 280.00	560.00 EL 280.00 RR	0.82 0.31	1 53	136 219	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 40	129.17 32.29
P69 1:20	15.00 X 30.00	315.00 35.00	188.00 EL 35.00 RR	0.40 0.25	0 11	138 111	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12	43.37 4.04
P70 1:20	15.00 X 30.00	315.00 35.00	188.00 EL 94.00 RR	0.83 0.59	2 12	33 12	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12	43.37 10.84
P71 1:20	15.00 X 30.00	315.00 35.00	94.00 RR 94.00 RR	0.80 0.55	26 26	39 13	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12	21.68 10.84
P78 1:20	15.00 X 30.00	315.00 90.00	188.00 EL 59.00 RR	0.84 0.57	17 65	72 31	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12	43.37 6.80
P79 1:20	15.00 X 30.00	315.00 90.00	188.00 EL 94.00 RR	0.92 0.64	16 62	7 20	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12	43.37 10.84

P80 1:20	15.00 X 30.00	315.00 90.00	188.00 EL 94.00 RR	0.97 0.37	531 736	59 51	1.57 2 ø 10.0 2.36 3 ø 10.0 1.0 6 ø 10.0	ø 5.0 c/12	43.37 10.84
P81 1:20	15.00 X 30.00	315.00 90.00	270.00 EL 135.00 RR	1.09 0.36	546 771	109 156	1.57 2 ø 10.0 2.36 3 ø 10.0 1.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 30	62.28 15.57
P82 1:20	15.00 X 30.00	315.00 90.00	270.00 EL 135.00 RR	1.21 0.79	474 680	30 158	1.57 2 ø 10.0 2.36 3 ø 10.0 1.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 30	62.28 15.57
P83 1:20	15.00 X 30.00	315.00 90.00	270.00 EL 135.00 RR	1.14 0.80	425 622	29 156	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 30	62.28 15.57
P84 1:20	15.00 X 30.00	315.00 90.00	270.00 EL 135.00 RR	1.20 0.75	401 591	30 157	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 30	62.28 15.57
P85 1:20	15.00 X 30.00	315.00 90.00	270.00 EL 135.00 RR	1.35 0.59	392 579	21 108	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 30	62.28 15.57
P86 1:20	15.00 X 30.00	315.00 90.00	270.00 EL 135.00 RR	1.20 0.75	399 590	10 98	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 30	62.28 15.57
P87 1:20	15.00 X 30.00	315.00 90.00	270.00 EL 135.00 RR	1.14 0.80	408 604	5 103	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 30	62.28 15.57
P88 1:20	15.00 X 30.00	315.00 90.00	270.00 EL 135.00 RR	1.21 0.76	418 604	17 114	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 30	62.28 15.57
P89 1:20	15.00 X 30.00	315.00 90.00	270.00 EL 100.00 RR	1.15 0.78	429 648	33 128	1.57 2 ø 10.0 2.36 3 ø 10.0 1.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 30	62.28 11.53

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

Resultados da Vigas

Resultados da Viga VB-C1

fck = 250.00 kgf/cm ²	Ecs = 241500 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P81	30.00			2 ø 10.0 0.68					0.00
1	179.24	15.00 x 30.00	2 ø 10.0 0.68			ø 5.0 c/ 15			0.00
P82	30.00			2 ø 10.0 0.68					0.00

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

Resultados da Viga VB-C2

fck = 250.00 kgf/cm ²	Ecs = 241500 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P82	30.00			2 ø 10.0 0.68					0.00
1	179.24	15.00 x 30.00	2 ø 10.0 0.68			ø 5.0 c/ 15			0.00
P83	30.00			2 ø 10.0 0.68					0.00

Resultados da Viga VB-C3

fck = 250.00 kgf/cm ²	Ecs = 241500 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P83	30.00			2 ø 10.0 0.68					0.00
1	179.24	15.00 x 30.00	2 ø 10.0 0.68			ø 5.0 c/ 15			0.00
P84	30.00			2 ø 10.0 0.68					0.00

Resultados da Viga VB-C4

fck = 250.00 kgf/cm ²	Ecs = 241500 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P84	30.00			2 ø 10.0 0.68					0.00
1	179.24	15.00 x 30.00	2 ø 10.0 0.68			ø 5.0 c/ 15			0.00
P85	30.01			2 ø 10.0 0.68					0.00

Resultados da Viga VB-C5

fck = 250.00 kgf/cm ²	Ecs = 241500 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P85	30.01			2 ø 10.0 0.68					0.00
1	179.25	15.00 x 30.00	2 ø 10.0 0.68			ø 5.0 c/ 15			0.00
P86	30.00			2 ø 10.0 0.68					0.00

Resultados da Viga VB-C6

fck = 250.00 kgf/cm ²	Ecs = 241500 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P86	30.00			2 ø 10.0 0.68					0.00
1	179.25	15.00 x 30.00	2 ø 10.0 0.68			ø 5.0 c/ 15			0.00
P87	30.00			2 ø 10.0 0.68					0.00

Resultados da Viga VB-C7

fck = 250.00 kgf/cm ²	Ecs = 241500 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P87	30.00			2 ø 10.0 0.68					0.00
1	179.34	15.00 x 30.00	2 ø 10.0 0.68			ø 5.0 c/ 15			0.00
P88	30.00			2 ø 10.0 0.68					0.00

Resultados da Viga VB-C8

fck = 250.00 kgf/cm ²	Ecs = 241500 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P88	30.00		3 ø 10.0 1.73	3 ø 10.0 1.73					0.00
1	179.34	15.00 x 30.00	3 ø 10.0 1.73	3 ø 10.0 1.73		ø 5.0 c/ 15			0.00
P89	30.00		3 ø 10.0 1.73	3 ø 10.0 1.73					0.00

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

Resultados da Viga VB-C9

fck = 250.00 kgf/cm ²	Ecs = 241500 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P89	30.00		3 ø 10.0 1.73	3 ø 10.0 1.73					0.00
1	179.30	15.00 x 30.00	3 ø 10.0 1.73	3 ø 10.0 1.73		ø 5.0 c/ 15			0.00
P72	30.00		3 ø 10.0 1.73	3 ø 10.0 1.73					0.00

Resultados da Viga VB-C10

fck = 250.00 kgf/cm ²	Ecs = 241500 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P70	30.00			2 ø 10.0 1.13					0.00
1	270.00	15.00 x 50.00	2 ø 10.0 1.13			ø 5.0 c/ 26			0.00
P69	30.00			2 ø 10.0 1.13					0.00

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

Resultados da Viga VB-C11

fck = 250.00 kgf/cm ²	Ecs = 241500 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P71	30.09			2 ø 10.0 1.13					0.00
1	271.38	15.00 x 50.00	2 ø 10.0 1.13			ø 5.0 c/ 26			0.00
P70	30.00			2 ø 10.0 1.13					0.00

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

Resultados da Viga VB-C12

fck = 250.00 kgf/cm ²	Ecs = 241500 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P78	30.00			2 ø 10.0 1.13					0.00
1	274.39	15.00 x 50.00	2 ø 10.0 1.13			ø 5.0 c/ 26			0.00
P71	30.09			2 ø 10.0 1.13					0.00

Resultados da Viga VB-C13

fck = 250.00 kgf/cm ²	Ecs = 241500 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P27	30.00		3 ø 10.0 2.30	3 ø 10.0 2.30					0.00
1	355.93	15.00 x 40.00	3 ø 10.0 2.30	3 ø 10.0 2.30		ø 5.0 c/ 21			0.00
P26	40.00		3 ø 10.0 2.30	3 ø 10.0 2.30					0.00
2	350.94	15.00 x 40.00	3 ø 10.0 2.30	3 ø 10.0 2.30		ø 5.0 c/ 21			0.00
P25	40.00		3 ø 10.0 2.30	3 ø 10.0 2.30					0.00

Resultados da Viga VB-C14

fck = 250.00 kgf/cm ²	Ecs = 241500 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P31	30.00		3 ø 10.0 2.30	3 ø 10.0 2.30					0.00
1	328.74	15.00 x 40.00	3 ø 10.0 2.30	3 ø 10.0 2.30		ø 5.0 c/ 21			0.00
P30	30.00		3 ø 10.0 2.30	3 ø 10.0 2.30					0.00
2	328.74	15.00 x 40.00	3 ø 10.0 2.30	3 ø 10.0 2.30		ø 5.0 c/ 21			0.00
P29	30.00		3 ø 10.0 2.30	3 ø 10.0 2.30					0.00
3	328.74	15.00 x 40.00	3 ø 10.0 2.30	3 ø 10.0 2.30		ø 5.0 c/ 21			0.00
P28	30.00		3 ø 10.0 2.30	3 ø 10.0 2.30					0.00
4	328.75	15.00 x 40.00	3 ø 10.0 2.30	3 ø 10.0 2.30		ø 5.0 c/ 21			0.00
P27	30.00		3 ø 10.0 2.30	3 ø 10.0 2.30					0.00

Resultados da Viga VB-C15

fck = 250.00 kgf/cm ²	Ecs = 241500 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P35	40.00		3 ø 10.0 2.30	3 ø 10.0 2.30					0.00
1	318.75	15.00 x 40.00	3 ø 10.0 2.30	3 ø 10.0 2.30		ø 5.0 c/ 21			0.00
P34	40.00		3 ø 10.0 2.30	3 ø 10.0 2.30					0.00
2	323.76	15.00 x 40.00	2 ø 10.0 0.90			ø 5.0 c/ 21			0.00
P33	30.00		3 ø 10.0 2.30	3 ø 10.0 2.30					0.00
3	328.75	15.00 x 40.00	3 ø 10.0 2.30	3 ø 10.0 2.30		ø 5.0 c/ 21			0.00
P32	30.00		3 ø 10.0 2.30	3 ø 10.0 2.30					0.00
4	328.75	15.00 x 40.00	3 ø 10.0 2.30	3 ø 10.0 2.30		ø 5.0 c/ 21			0.00
P31	30.00		3 ø 10.0 2.30	3 ø 10.0 2.30					0.00

Resultados da Viga VB-C16

fck = 250.00 kgf/cm ²	Ecs = 241500 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P41	40.00			2 ø 10.0 0.90					0.00
1	175.39	15.00 x 40.00	2 ø 10.0 0.90			ø 5.0 c/ 21			0.00
P40	30.00			2 ø 10.0 0.90					0.00
2	170.39	15.00 x 40.00	2 ø 10.0 0.90			ø 5.0 c/ 21			0.00
P39	40.00			2 ø 10.0 0.90					0.00

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

Pavimento NV1-10

Resultado dos Blocos

NV1-10	fck = 250.00 kgf/cm ²	E = 241500 kgf/cm ²	Peso Espec = 2500.00 kgf/m ³
Lance 11		cobr = 4.50 cm	

Blocos	ne Estaca	LB LH (cm)	hb (cm)	Principal (cm ²)		Estribo (cm ²)		Superior (cm ²)		As dist. (cm ²)
				X	Y	Hor.	Vert.	X	Y	
B90	1	60.00				3.93	3.14			
	E30-12m	60.00		-	-	(5 ø 10.0)	2x(2 ø 10.0)	-	-	-
B91	1	60.00				3.93	3.14			
	E30-12m	60.00		-	-	(5 ø 10.0)	2x(2 ø 10.0)	-	-	-
B92	1	60.00				3.93	3.14			
	E30-12m	60.00		-	-	(5 ø 10.0)	2x(2 ø 10.0)	-	-	-
B93	1	60.00				3.93	3.14			
	E30-12m	60.00		-	-	(5 ø 10.0)	2x(2 ø 10.0)	-	-	-
B94	1	60.00				3.93	3.14			
	E30-12m	60.00		-	-	(5 ø 10.0)	2x(2 ø 10.0)	-	-	-

Resultados dos Pilares

NV1-10	fck = 250.00 kgf/cm ²	E = 241500 kgf/cm ²	Peso Espec = 2500.00 kgf/m ³
Lance 11		cobr = 3.00 cm	

Dados				Resultados					
Pilar	Seção (cm)	Nível Altura (cm)	lib vinc lih vinc (cm)	Nd máx Nd mín (tf)	MBd topo MBd base (kgf.m)	MHd topo MHd base (kgf.m)	As b Armaduras As h % armad total	Estribo Topo Base cota	Esb b Esb h
P41 1:20	15.00 X 40.00	350.00 315.00	490.00 EL 245.00 RR	1.38 -0.01	18 23	223 105	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 40	113.03 21.19
P42 1:20	15.00 X 40.00	350.00 280.00	560.00 EL 280.00 RR	1.00 0.25	36 600	261 340	2.45 2 ø 12.5 3.68 3 ø 12.5 1.2 6 ø 12.5	ø 5.0 c/15 ø 5.0 c/15 40	129.17 24.22
P43 1:20	15.00 X 30.00	350.00 280.00	560.00 EL 280.00 RR	0.85 0.25	3 398	125 214	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 40	129.17 32.29
P44 1:20	15.00 X 30.00	350.00 280.00	560.00 EL 280.00 RR	0.91 0.21	1 316	138 224	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 40	129.17 32.29
P78 1:20	15.00 X 30.00	350.00 35.00	188.00 EL 35.00 RR	0.39 0.25	0 16	124 112	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12	43.37 4.04
P79 1:20	15.00 X 30.00	350.00 35.00	188.00 EL 94.00 RR	0.84 0.60	1 16	9 7	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12	43.37 10.84
P90 1:20	15.00 X 30.00	350.00 90.00	188.00 EL 59.00 RR	0.77 0.52	15 61	64 29	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12	43.37 6.80

P91 1:20	15.00 X 40.00	350.00 90.00	200.00 EL 100.00 RR	2.11 1.17	500 702	96 127	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 30	46.13 8.65
P92 1:20	15.00 X 30.00	350.00 90.00	200.00 EL 100.00 RR	1.30 0.72	446 658	21 97	1.57 2 ø 10.0 2.36 3 ø 10.0 1.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 30	46.13 11.53
P93 1:20	15.00 X 30.00	350.00 90.00	200.00 EL 100.00 RR	1.19 0.83	496 692	16 93	1.57 2 ø 10.0 2.36 3 ø 10.0 1.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 30	46.13 11.53
P94 1:20	15.00 X 30.00	350.00 90.00	200.00 EL 100.00 RR	1.22 0.75	547 803	16 98	1.57 2 ø 10.0 2.36 3 ø 10.0 1.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 30	46.13 11.53

Resultados da Viga

Resultados da Viga VB-B1

fck = 250.00 kgf/cm ²	Ecs = 241500 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P91	40.01			2 ø 10.0 0.68					0.00
1	174.37	15.00 x 30.00	2 ø 10.0 0.68			ø 5.0 c/ 15			0.00
P92	30.00			2 ø 10.0 0.68					0.00
2	179.37	15.00 x 30.00	2 ø 10.0 0.68			ø 5.0 c/ 15			0.00
P93	30.00			2 ø 10.0 0.68					0.00
3	179.37	15.00 x 30.00	2 ø 10.0 0.68			ø 5.0 c/ 15			0.00
P94	30.00			2 ø 10.0 0.68					0.00
4	147.37	15.00 x 30.00	2 ø 10.0 0.68			ø 5.0 c/ 15			0.00
P80	30.00			2 ø 10.0 0.68					0.00

Resultados da Viga VB-B2

fck = 250.00 kgf/cm ²	Ecs = 241500 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P90	30.05			2 ø 10.0 1.13					0.00
1	270.92	15.00 x 50.00	2 ø 10.0 1.13			ø 5.0 c/ 26			0.00
P79	30.00			2 ø 10.0 1.13					0.00
2	270.52	15.00 x 50.00	2 ø 10.0 1.13			ø 5.0 c/ 26			0.00
P78	30.00			2 ø 10.0 1.13					0.00

Resultados da Viga VB-B3

fck = 250.00 kgf/cm ²	Ecs = 241500 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P45	40.00			2 ø 10.0 0.90					0.00
1	175.39	15.00 x 40.00	2 ø 10.0 0.90			ø 5.0 c/ 21			0.00
P44	30.00			2 ø 10.0 0.90					0.00
2	180.38	15.00 x 40.00	2 ø 10.0 0.90			ø 5.0 c/ 21			0.00
P43	30.00			2 ø 10.0 0.90					0.00
3	175.38	15.00 x 40.00	2 ø 10.0 0.90			ø 5.0 c/ 21			0.00
P42	40.00			2 ø 10.0 0.90					0.00
4	170.39	15.00 x 40.00	2 ø 10.0 0.90			ø 5.0 c/ 21			0.00
P41	40.00			2 ø 10.0 0.90					0.00

Pavimento NV1-11

Resultado dos Blocos

NV1-11	fck = 250.00 kgf/cm ²	E = 241500 kgf/cm ²	Peso Espec = 2500.00 kgf/m ³
Lance 12		cobr = 4.50 cm	

Blocos	ne Estaca	LB LH (cm)	hb (cm)	Principal (cm ²)		Estribo (cm ²)		Superior (cm ²)		As dist. (cm ²)
				X	Y	Hor.	Vert.	X	Y	
B95	1 E30-12m	60.00 60.00		-	-	3.93 (5 ø 10.0)	3.14 2x(2 ø 10.0)	-	-	-
B96	1 E30-12m	60.00 60.00		-	-	3.93 (5 ø 10.0)	3.14 2x(2 ø 10.0)	-	-	-
B97	1 E30-12m	60.00 60.00		-	-	3.93 (5 ø 10.0)	3.14 2x(2 ø 10.0)	-	-	-
B98	1 E30-12m	60.00 60.00		-	-	3.93 (5 ø 10.0)	3.14 2x(2 ø 10.0)	-	-	-
B99	1 E30-12m	60.00 60.00		-	-	3.93 (5 ø 10.0)	3.14 2x(2 ø 10.0)	-	-	-
B100	1 E30-12m	60.00 60.00		-	-	3.93 (5 ø 10.0)	3.14 2x(2 ø 10.0)	-	-	-
B101	1 E30-12m	60.00 60.00		-	-	3.93 (5 ø 10.0)	3.14 2x(2 ø 10.0)	-	-	-
B102	1 E30-12m	60.00 60.00		-	-	3.93 (5 ø 10.0)	3.14 2x(2 ø 10.0)	-	-	-
B103	1 E30-12m	60.00 60.00		-	-	3.93 (5 ø 10.0)	3.14 2x(2 ø 10.0)	-	-	-
B104	1 E30-12m	60.00 60.00		-	-	3.93 (5 ø 10.0)	3.14 2x(2 ø 10.0)	-	-	-
B105	1 E30-12m	60.00 60.00		-	-	3.93 (5 ø 10.0)	3.14 2x(2 ø 10.0)	-	-	-
B106	1 E30-12m	60.00 60.00		-	-	3.93 (5 ø 10.0)	3.14 2x(2 ø 10.0)	-	-	-
B107	1 E30-12m	60.00 60.00		-	-	3.93 (5 ø 10.0)	3.14 2x(2 ø 10.0)	-	-	-
B108	1 E30-12m	60.00 60.00		-	-	3.93 (5 ø 10.0)	3.14 2x(2 ø 10.0)	-	-	-

B109	1 E30-12m	60.00 60.00		-	-	3.93 (5 ø 10.0)	3.14 2x(2 ø 10.0)	-	-	-
B110	1 E30-12m	60.00 60.00		-	-	3.93 (5 ø 10.0)	3.14 2x(2 ø 10.0)	-	-	-
B111	1 E30-12m	60.00 60.00		-	-	3.93 (5 ø 10.0)	3.14 2x(2 ø 10.0)	-	-	-
B112	1 E30-12m	60.00 60.00		-	-	3.93 (5 ø 10.0)	3.14 2x(2 ø 10.0)	-	-	-
B113	1 E30-12m	60.00 60.00		-	-	3.93 (5 ø 10.0)	3.14 2x(2 ø 10.0)	-	-	-
B114	1 E30-12m	60.00 60.00		-	-	3.93 (5 ø 10.0)	3.14 2x(2 ø 10.0)	-	-	-
B115	1 E30-12m	60.00 60.00		-	-	3.93 (5 ø 10.0)	3.14 2x(2 ø 10.0)	-	-	-
B116	1 E30-12m	60.00 60.00		-	-	3.93 (5 ø 10.0)	3.14 2x(2 ø 10.0)	-	-	-
B117	1 E30-12m	60.00 60.00		-	-	3.93 (5 ø 10.0)	3.14 2x(2 ø 10.0)	-	-	-
B118	1 E30-12m	60.00 60.00		-	-	3.93 (5 ø 10.0)	3.14 2x(2 ø 10.0)	-	-	-
B119	1 E30-12m	60.00 60.00		-	-	3.93 (5 ø 10.0)	3.14 2x(2 ø 10.0)	-	-	-
B120	1 E30-12m	60.00 60.00		-	-	3.93 (5 ø 10.0)	3.14 2x(2 ø 10.0)	-	-	-
B121	1 E30-12m	60.00 60.00		-	-	3.93 (5 ø 10.0)	3.14 2x(2 ø 10.0)	-	-	-
B122	1 E30-12m	60.00 60.00		-	-	3.93 (5 ø 10.0)	3.14 2x(2 ø 10.0)	-	-	-
B123	1 E30-12m	60.00 60.00		-	-	3.93 (5 ø 10.0)	3.14 2x(2 ø 10.0)	-	-	-
B124	1 E30-12m	60.00 60.00		-	-	3.93 (5 ø 10.0)	3.14 2x(2 ø 10.0)	-	-	-
B125	1 E30-12m	60.00 60.00		-	-	3.93 (5 ø 10.0)	3.14 2x(2 ø 10.0)	-	-	-
B126	1 E30-12m	60.00 60.00		-	-	3.93 (5 ø 10.0)	3.14 2x(2 ø 10.0)	-	-	-
B127	1 E30-12m	60.00 60.00		-	-	3.93 (5 ø 10.0)	3.14 2x(2 ø 10.0)	-	-	-
B128	1 E30-12m	60.00 60.00		-	-	3.93 (5 ø 10.0)	3.14 2x(2 ø 10.0)	-	-	-

B129	1 E30-12m	60.00 60.00		-	-	3.93 (5 ø 10.0)	3.14 2x(2 ø 10.0)	-	-	-
B130	1 E30-12m	60.00 60.00		-	-	3.93 (5 ø 10.0)	3.14 2x(2 ø 10.0)	-	-	-
B131	1 E30-12m	60.00 60.00		-	-	3.93 (5 ø 10.0)	3.14 2x(2 ø 10.0)	-	-	-
B132	1 E30-12m	60.00 60.00		-	-	3.93 (5 ø 10.0)	3.14 2x(2 ø 10.0)	-	-	-
B133	1 E30-12m	60.00 60.00		-	-	3.93 (5 ø 10.0)	3.14 2x(2 ø 10.0)	-	-	-
B134	1 E30-12m	60.00 60.00		-	-	3.93 (5 ø 10.0)	3.14 2x(2 ø 10.0)	-	-	-
B135	1 E30-12m	60.00 60.00		-	-	3.93 (5 ø 10.0)	3.14 2x(2 ø 10.0)	-	-	-
B138	1 E30-12m	60.00 60.00		-	-	3.93 (5 ø 10.0)	3.14 2x(2 ø 10.0)	-	-	-
B139	1 E30-12m	60.00 60.00		-	-	3.93 (5 ø 10.0)	3.14 2x(2 ø 10.0)	-	-	-
B140	1 E30-12m	60.00 60.00		-	-	3.93 (5 ø 10.0)	3.14 2x(2 ø 10.0)	-	-	-
B141	1 E30-12m	60.00 60.00		-	-	3.93 (5 ø 10.0)	3.14 2x(2 ø 10.0)	-	-	-
B142	1 E30-12m	60.00 60.00		-	-	3.93 (5 ø 10.0)	3.14 2x(2 ø 10.0)	-	-	-
B143	1 E30-12m	60.00 60.00		-	-	3.93 (5 ø 10.0)	3.14 2x(2 ø 10.0)	-	-	-
B144	1 E30-12m	60.00 60.00		-	-	3.93 (5 ø 10.0)	3.14 2x(2 ø 10.0)	-	-	-
B145	1 E30-12m	60.00 60.00		-	-	3.93 (5 ø 10.0)	3.14 2x(2 ø 10.0)	-	-	-
B146	1 E30-12m	60.00 60.00		-	-	3.93 (5 ø 10.0)	3.14 2x(2 ø 10.0)	-	-	-
B147	1 E30-12m	60.00 60.00		-	-	3.93 (5 ø 10.0)	3.14 2x(2 ø 10.0)	-	-	-
B148	1 E30-12m	60.00 60.00		-	-	3.93 (5 ø 10.0)	3.14 2x(2 ø 10.0)	-	-	-
B149	1 E30-12m	60.00 60.00		-	-	3.93 (5 ø 10.0)	3.14 2x(2 ø 10.0)	-	-	-
B150	1 E30-12m	60.00 60.00		-	-	3.93 (5 ø 10.0)	3.14 2x(2 ø 10.0)	-	-	-

B151	1 E30-12m	60.00 60.00		-	-	3.93 (5 ø 10.0)	3.14 2x(2 ø 10.0)	-	-	-
B152	1 E30-12m	60.00 60.00		-	-	3.93 (5 ø 10.0)	3.14 2x(2 ø 10.0)	-	-	-
B153	1 E30-12m	60.00 60.00		-	-	3.93 (5 ø 10.0)	3.14 2x(2 ø 10.0)	-	-	-
B154	1 E30-12m	60.00 60.00		-	-	3.93 (5 ø 10.0)	3.14 2x(2 ø 10.0)	-	-	-
B155	1 E30-12m	60.00 60.00		-	-	3.93 (5 ø 10.0)	3.14 2x(2 ø 10.0)	-	-	-
B156	1 E30-12m	60.00 60.00		-	-	3.93 (5 ø 10.0)	3.14 2x(2 ø 10.0)	-	-	-
B157	1 E30-12m	60.00 60.00		-	-	3.93 (5 ø 10.0)	3.14 2x(2 ø 10.0)	-	-	-
B158	1 E30-12m	60.00 60.00		-	-	3.93 (5 ø 10.0)	3.14 2x(2 ø 10.0)	-	-	-
B159	1 E30-12m	60.00 60.00		-	-	3.93 (5 ø 10.0)	3.14 2x(2 ø 10.0)	-	-	-
B160	1 E30-12m	60.00 60.00		-	-	3.93 (5 ø 10.0)	3.14 2x(2 ø 10.0)	-	-	-
B161	1 E30-12m	60.00 60.00		-	-	3.93 (5 ø 10.0)	3.14 2x(2 ø 10.0)	-	-	-
B162	1 E30-12m	60.00 60.00		-	-	3.93 (5 ø 10.0)	3.14 2x(2 ø 10.0)	-	-	-
B137-136	2 E30-12m	150.00 60.00	55.00	3.14 (4 ø 10.0)	-	3.93 (5 ø 10.0)	7.04 2x(7 ø 8.0)	2.36 (3 ø 10.0)	-	1.01 (ø 8.0 c/10)

Resultados dos Pilares

NV1-11	fck = 250.00 kgf/cm ²	E = 241500 kgf/cm ²	Peso Espec = 2500.00 kgf/m ³
Lance 12		cobr = 3.00 cm	

Dados				Resultados					
Pilar	Seção (cm)	Nível Altura (cm)	lib vinc lih vinc (cm)	Nd máx Nd mín (tf)	MBd topo MBd base (kgf.m)	MHd topo MHd base (kgf.m)	As b Armaduras As h % armad total	Estribo Topo Base cota	Esb b Esb h
P1 1:20	15.00 X 40.00	385.00 315.00	560.00 EL 280.00 RR	1.60 0.05	5 76	209 141	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 30	129.17 24.22
P2 1:20	15.00 X 40.00	385.00 280.00	560.00 EL 280.00 RR	0.98 0.26	6 328	200 267	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 30	129.17 24.22
P3 1:20	15.00 X 40.00	385.00 280.00	560.00 EL 280.00 RR	0.93 0.29	3 366	155 265	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 30	129.17 24.22
P4 1:20	15.00 X 40.00	385.00 280.00	560.00 EL 280.00 RR	0.93 0.29	1 373	163 274	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 30	129.17 24.22
P6 1:20	15.00 X 40.00	385.00 280.00	560.00 EL 280.00 RR	0.93 0.29	0 370	168 279	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 30	129.17 24.22
P9 1:20	15.00 X 40.00	385.00 280.00	560.00 EL 280.00 RR	0.99 0.27	3 371	136 227	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 30	129.17 24.22
P12 1:20	15.00 X 40.00	385.00 280.00	560.00 EL 280.00 RR	0.99 0.26	3 373	155 247	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 30	129.17 24.22

P13 1:20	15.00 X 40.00	385.00 280.00	560.00 EL 280.00 RR	0.90 0.27	2 372	178 259	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 30	129.17 24.22
P14 1:20	15.00 X 40.00	385.00 280.00	560.00 EL 280.00 RR	1.00 0.27	3 372	156 246	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 30	129.17 24.22
P15 1:20	15.00 X 40.00	385.00 280.00	560.00 EL 280.00 RR	1.00 0.35	0 376	154 249	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 30	129.17 24.22
P16 1:20	15.00 X 40.00	385.00 280.00	560.00 EL 280.00 RR	1.12 0.40	5 375	199 267	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 30	129.17 24.22
P17 1:20	15.00 X 40.00	385.00 280.00	560.00 EL 280.00 RR	1.14 0.30	6 364	329 416	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 30	129.17 24.22
P18 1:20	15.00 X 40.00	385.00 280.00	560.00 EL 280.00 RR	0.87 0.24	5 361	286 368	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 30	129.17 24.22
P19 1:20	15.00 X 40.00	385.00 280.00	560.00 EL 280.00 RR	1.15 0.29	11 356	295 365	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 30	129.17 24.22
P20 1:20	15.00 X 40.00	385.00 280.00	560.00 EL 280.00 RR	1.14 0.40	6 374	205 287	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 30	129.17 24.22
P21 1:20	15.00 X 40.00	385.00 280.00	560.00 EL 280.00 RR	1.03 0.36	1 368	158 287	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 30	129.17 24.22
P22 1:20	15.00 X 40.00	385.00 280.00	560.00 EL 280.00 RR	1.03 0.37	5 370	158 283	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 30	129.17 24.22

P23 1:20	15.00 X 40.00	385.00 280.00	560.00 EL 280.00 RR	1.01 0.34	2 449	184 285	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 30	129.17 24.22
P24 1:20	15.00 X 40.00	385.00 350.00	420.00 EL 210.00 RR	1.37 -0.11	4 466	287 111	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 30	96.88 18.16
P25 1:20	15.00 X 40.00	385.00 350.00	420.00 EL 210.00 RR	1.32 -0.35	7 485	85 360	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 30	96.88 18.16
P45 1:20	15.00 X 40.00	385.00 315.00	70.00 EL 35.00 RR	1.40 -0.04	23 293	247 197	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 40	16.15 3.03
P49 1:20	15.00 X 40.00	385.00 280.00	560.00 EL 280.00 RR	1.07 0.23	7 158	281 369	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 40	129.17 24.22
P52 1:20	15.00 X 40.00	385.00 245.00	420.00 EL 210.00 RR	1.41 0.13	3 403	476 220	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 40	96.88 18.16
P53 1:20	15.00 X 40.00	385.00 245.00	490.00 EL 245.00 RR	0.85 0.26	9 334	351 370	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 40	113.03 21.19
P54 1:20	15.00 X 40.00	385.00 245.00	490.00 EL 245.00 RR	0.91 0.21	11 193	366 365	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 40	113.03 21.19
P55 1:20	15.00 X 40.00	385.00 280.00	280.00 RR 245.00 RR	1.53 -0.06	53 171	218 108	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 40	64.59 21.19
P90 1:20	15.00 X 30.00	385.00 35.00	188.00 EL 35.00 RR	0.34 0.22	4 13	82 108	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12	43.37 4.04

P95 1:20	15.00 X 30.00	385.00 90.00	118.00 EL 59.00 RR	0.81 0.56	5 27	19 24	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12	27.22 6.80
P96 1:20	15.00 X 30.00	385.00 90.00	118.00 EL 59.00 RR	0.82 0.56	7 27	17 21	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12	27.22 6.80
P97 1:20	15.00 X 30.00	385.00 90.00	118.00 EL 59.00 RR	0.82 0.56	14 33	12 10	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12	27.22 6.80
P98 1:20	15.00 X 30.00	385.00 90.00	118.00 EL 59.00 RR	0.82 0.56	5 27	9 12	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12	27.22 6.80
P99 1:20	15.00 X 30.00	385.00 90.00	118.00 EL 59.00 RR	0.82 0.56	0 22	13 17	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12	27.22 6.80
P100 1:20	15.00 X 30.00	385.00 90.00	118.00 EL 59.00 RR	0.83 0.57	1 23	23 29	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12	27.22 6.80
P101 1:20	15.00 X 30.00	385.00 90.00	59.00 RR 59.00 RR	0.61 0.38	22 13	67 13	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12	13.61 6.80
P102 1:20	15.00 X 30.00	385.00 90.00	118.00 EL 59.00 RR	0.72 0.48	2 11	48 21	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12	27.22 6.80
P103 1:20	15.00 X 30.00	385.00 90.00	118.00 EL 59.00 RR	0.83 0.57	0 10	22 25	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12	27.22 6.80
P104 1:20	15.00 X 30.00	385.00 90.00	118.00 EL 59.00 RR	0.82 0.56	0 10	12 16	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12	27.22 6.80

P105 1:20	15.00 X 30.00	385.00 90.00	118.00 EL 59.00 RR	0.82 0.56	0 10	16 23	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12	27.22 6.80
P106 1:20	15.00 X 40.00	385.00 90.00	200.00 EL 100.00 RR	2.12 1.23	184 269	454 257	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12	46.13 8.65
P107 1:20	15.00 X 30.00	385.00 90.00	118.00 EL 59.00 RR	0.86 0.59	0 10	46 47	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12	27.22 6.80
P108 1:20	15.00 X 40.00	385.00 90.00	200.00 EL 100.00 RR	3.46 2.45	185 271	113 377	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12	46.13 8.65
P109 1:20	15.00 X 30.00	385.00 90.00	118.00 EL 59.00 RR	0.42 0.25	0 10	113 30	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12	27.22 6.80
P110 1:20	15.00 X 40.00	385.00 90.00	200.00 EL 100.00 RR	3.40 2.43	186 271	70 308	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12	46.13 8.65
P111 1:20	15.00 X 40.00	385.00 90.00	200.00 EL 100.00 RR	3.40 2.43	186 271	60 283	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12	46.13 8.65
P112 1:20	15.00 X 40.00	385.00 90.00	200.00 EL 100.00 RR	3.40 2.43	186 271	56 273	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12	46.13 8.65
P113 1:20	15.00 X 40.00	385.00 90.00	200.00 EL 100.00 RR	3.40 2.43	186 271	57 268	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12	46.13 8.65
P114 1:20	15.00 X 40.00	385.00 90.00	200.00 EL 100.00 RR	3.40 2.43	186 271	58 266	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12	46.13 8.65

P115 1:20	15.00 X 40.00	385.00 90.00	200.00 EL 100.00 RR	3.40 2.43	186 271	58 266	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12	46.13 8.65
P116 1:20	15.00 X 40.00	385.00 90.00	200.00 EL 100.00 RR	3.40 2.43	186 271	58 265	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12	46.13 8.65
P117 1:20	15.00 X 40.00	385.00 90.00	200.00 EL 100.00 RR	3.40 2.43	186 271	59 265	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12	46.13 8.65
P118 1:20	15.00 X 40.00	385.00 90.00	200.00 EL 100.00 RR	3.40 2.43	188 273	59 265	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12	46.13 8.65
P119 1:20	15.00 X 40.00	385.00 90.00	200.00 EL 100.00 RR	3.40 2.43	190 276	60 270	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12	46.13 8.65
P120 1:20	15.00 X 40.00	385.00 90.00	200.00 EL 100.00 RR	3.40 2.43	188 275	63 282	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12	46.13 8.65
P121 1:20	15.00 X 40.00	385.00 90.00	200.00 EL 100.00 RR	3.41 2.42	171 255	70 308	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12	46.13 8.65
P122 1:20	15.00 X 40.00	385.00 90.00	200.00 EL 100.00 RR	3.55 2.48	106 173	124 399	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12	46.13 8.65
P123 1:20	15.00 X 40.00	385.00 90.00	62.00 RR 62.00 RR	3.26 2.06	212 124	129 180	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12	14.30 5.36
P124 1:20	15.00 X 40.00	385.00 90.00	200.00 EL 100.00 RR	2.78 1.53	438 638	8 101	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12	46.13 8.65

P125 1:20	15.00 X 40.00	385.00 90.00	200.00 EL 100.00 RR	2.52 1.78	464 661	13 129	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12	46.13 8.65
P126 1:20	15.00 X 40.00	385.00 90.00	200.00 EL 100.00 RR	2.52 1.79	447 655	9 97	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12	46.13 8.65
P127 1:20	15.00 X 40.00	385.00 90.00	200.00 EL 100.00 RR	2.57 1.73	440 646	9 108	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12	46.13 8.65
P128 1:20	15.00 X 40.00	385.00 90.00	200.00 EL 100.00 RR	2.57 1.73	440 648	7 112	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12	46.13 8.65
P129 1:20	15.00 X 40.00	385.00 90.00	200.00 EL 100.00 RR	2.57 1.82	503 751	52 176	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12	46.13 8.65
P130 1:20	15.00 X 40.00	385.00 90.00	62.00 RR 62.00 RR	3.32 2.02	250 188	306 230	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12	14.30 5.36
P131 1:20	15.00 X 40.00	385.00 90.00	200.00 EL 100.00 RR	2.63 1.70	453 659	31 128	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12	46.13 8.65
P132 1:20	15.00 X 40.00	385.00 90.00	200.00 EL 100.00 RR	2.54 1.76	450 658	16 98	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12	46.13 8.65
P133 1:20	15.00 X 40.00	385.00 90.00	200.00 EL 100.00 RR	2.62 1.81	492 706	76 219	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12	46.13 8.65
P134 1:20	15.00 X 40.00	385.00 90.00	200.00 EL 100.00 RR	2.57 1.78	462 671	32 163	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12	46.13 8.65

P135 1:20	15.00 X 40.00	385.00 90.00	200.00 EL 100.00 RR	3.16 0.99	566 791	38 233	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12	46.13 8.65
P136 1:20	15.00 X 40.00	385.00 90.00	124.00 EL 62.00 RR	2.20 0.17	562 791	221 288	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12	28.60 5.36
P137 1:20	15.00 X 40.00	385.00 90.00	200.00 EL 100.00 RR	1.81 0.93	538 765	234 139	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12	46.13 8.65
P138 1:20	15.00 X 40.00	385.00 90.00	200.00 EL 100.00 RR	3.79 2.52	126 197	132 498	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12	46.13 8.65
P139 1:20	15.00 X 40.00	385.00 90.00	200.00 EL 100.00 RR	2.57 1.81	568 799	42 109	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12	46.13 8.65
P140 1:20	15.00 X 40.00	385.00 90.00	200.00 EL 100.00 RR	2.68 1.72	566 797	58 121	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12	46.13 8.65
P141 1:20	15.00 X 40.00	385.00 90.00	200.00 EL 100.00 RR	2.80 1.60	561 787	25 97	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12	46.13 8.65
P142 1:20	15.00 X 40.00	385.00 90.00	200.00 EL 100.00 RR	2.62 1.76	563 793	31 115	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12	46.13 8.65
P143 1:20	15.00 X 40.00	385.00 90.00	200.00 EL 100.00 RR	2.59 1.84	565 795	12 94	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12	46.13 8.65
P144 1:20	15.00 X 40.00	385.00 90.00	200.00 EL 100.00 RR	2.65 1.78	562 791	18 94	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12	46.13 8.65

P145 1:20	15.00 X 40.00	385.00 90.00	200.00 EL 100.00 RR	2.78 1.65	557 783	10 91	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12	46.13 8.65
P146 1:20	15.00 X 40.00	385.00 90.00	200.00 EL 100.00 RR	2.64 1.79	560 789	11 94	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12	46.13 8.65
P147 1:20	15.00 X 40.00	385.00 90.00	200.00 EL 100.00 RR	2.25 1.11	211 301	560 412	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12	46.13 8.65
P148 1:20	15.00 X 40.00	385.00 90.00	200.00 EL 100.00 RR	2.61 1.82	556 785	10 92	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12	46.13 8.65
P149 1:20	15.00 X 40.00	385.00 90.00	200.00 EL 100.00 RR	2.64 1.79	559 787	10 89	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12	46.13 8.65
P150 1:20	15.00 X 40.00	385.00 90.00	200.00 EL 100.00 RR	2.79 1.56	496 705	52 92	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12	46.13 8.65
P151 1:20	15.00 X 40.00	385.00 90.00	200.00 EL 100.00 RR	2.66 1.79	534 757	36 97	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12	46.13 8.65
P152 1:20	15.00 X 40.00	385.00 90.00	200.00 EL 100.00 RR	2.47 1.73	441 644	19 131	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12	46.13 8.65
P153 1:20	15.00 X 40.00	385.00 90.00	200.00 EL 100.00 RR	2.63 1.58	461 669	37 141	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12	46.13 8.65
P154 1:20	15.00 X 40.00	385.00 90.00	200.00 EL 100.00 RR	2.66 1.43	422 616	44 173	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12	46.13 8.65

P155 1:20	15.00 X 40.00	385.00 90.00	200.00 EL 100.00 RR	2.52 1.68	426 626	30 112	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12	46.13 8.65
P156 1:20	15.00 X 40.00	385.00 90.00	200.00 EL 100.00 RR	2.33 1.64	438 641	24 215	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12	46.13 8.65
P157 1:20	15.00 X 40.00	385.00 90.00	200.00 EL 100.00 RR	2.38 1.58	427 627	19 229	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12	46.13 8.65
P158 1:20	15.00 X 40.00	385.00 90.00	200.00 EL 370.00 RR	1.84 -0.24	72 128	206 476	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12	46.13 32.01
P159 1:20	15.00 X 40.00	385.00 90.00	200.00 EL 100.00 RR	2.84 1.91	411 609	214 320	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12	46.13 8.65
P160 1:20	15.00 X 40.00	385.00 90.00	200.00 EL 100.00 RR	2.31 1.60	435 639	39 220	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12	46.13 8.65
P161 1:20	15.00 X 40.00	385.00 90.00	200.00 EL 100.00 RR	3.29 2.30	282 447	121 364	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12	46.13 8.65
P162 1:20	15.00 X 40.00	385.00 90.00	62.00 RR 62.00 RR	3.34 0.40	83 127	466 290	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12	14.30 5.36

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

Resultados da Vigas

Resultados da Viga VB-A1

fck = 250.00 kgf/cm ²	Ecs = 241500 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P2	40.01			2 ø 10.0 0.68					0.00
1	244.47	15.00 x 30.00	2 ø 10.0 0.68			ø 5.0 c/ 15			0.00
P1	40.00			2 ø 10.0 0.68					0.00

Resultados da Viga VB-A2

fck = 250.00 kgf/cm ²	Ecs = 241500 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P4	40.00			2 ø 10.0 0.68					0.00
1	242.51	15.00 x 30.00	2 ø 10.0 0.68			ø 5.0 c/ 15			0.00
P3	40.00			2 ø 10.0 0.68					0.00
2	242.49	15.00 x 30.00	2 ø 10.0 0.68			ø 5.0 c/ 15			0.00
P2	40.00			2 ø 10.0 0.68					0.00

Resultados da Viga VB-A3

fck = 250.00 kgf/cm ²	Ecs = 241500 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P9	40.00			2 ø 10.0 0.68					0.00
1	242.54	15.00 x 30.00	2 ø 10.0 0.68			ø 5.0 c/ 15			0.00
P6	40.00			2 ø 10.0 0.68					0.00
2	242.54	15.00 x 30.00	2 ø 10.0 0.68			ø 5.0 c/ 15			0.00
P4	40.00			2 ø 10.0 0.68					0.00

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

Resultados da Viga VB-A4

fck = 250.00 kgf/cm ²	Ecs = 241500 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P9	40.00			2 ø 10.0 0.68					0.00
1	270.00	15.00 x 30.00	2 ø 10.0 0.68			ø 5.0 c/ 15			0.00
P12	40.00			2 ø 10.0 0.68					0.00

Resultados da Viga VB-A5

fck = 250.00 kgf/cm ²	Ecs = 241500 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P13	40.00			2 ø 10.0 0.68					0.00
1	230.00	15.00 x 30.00	2 ø 10.0 0.68			ø 5.0 c/ 15			0.00
P12	40.00			2 ø 10.0 0.68					0.00

Resultados da Viga VB-A6

fck = 250.00 kgf/cm ²	Ecs = 241500 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P14	40.00			2 ø 10.0 0.68					0.00
1	229.99	15.00 x 30.00	2 ø 10.0 0.68			ø 5.0 c/ 15			0.00
P13	40.00			2 ø 10.0 0.68					0.00

Resultados da Viga VB-A7

fck = 250.00 kgf/cm ²	Ecs = 241500 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P14	40.00			2 ø 10.0 0.68					0.00
1	294.99	15.00 x 30.00	2 ø 10.0 0.68			ø 5.0 c/ 15			0.00
P15	40.00		3 ø 10.0 1.73	3 ø 10.0 1.73					0.00
2	294.99	15.00 x 30.00	3 ø 10.0 1.73	3 ø 10.0 1.73		ø 5.0 c/ 15			0.00
P16	40.00		3 ø 10.0 1.73	3 ø 10.0 1.73					0.00

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

Resultados da Viga VB-A8

fck = 250.00 kgf/cm ²	Ecs = 241500 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P17	40.00			2 ø 10.0 0.68					0.00
1	409.80	15.00 x 30.00	2 ø 10.0 0.68			ø 5.0 c/ 15			0.00
P16	40.00			2 ø 10.0 0.68					0.00

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

Resultados da Viga VB-A9

fck = 250.00 kgf/cm ²	Ecs = 241500 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P19	40.01		3 ø 10.0 1.73	3 ø 10.0 1.73					0.00
1	225.03	15.00 x 30.00	3 ø 10.0 1.73	3 ø 10.0 1.73		ø 5.0 c/ 15			0.00
P18	40.01		3 ø 10.0 1.73	3 ø 10.0 1.73					0.00
2	225.04	15.00 x 30.00	3 ø 10.0 1.73	3 ø 10.0 1.73		ø 5.0 c/ 15			0.00
P17	40.00		3 ø 10.0 1.73	3 ø 10.0 1.73					0.00

Resultados da Viga VB-A10

fck = 250.00 kgf/cm ²	Ecs = 241500 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P20	40.00			2 ø 10.0 0.68					0.00
1	410.10	15.00 x 30.00	2 ø 10.0 0.68			ø 5.0 c/ 15			0.00
P19	40.01			2 ø 10.0 0.68					0.00

Resultados da Viga VB-A11

fck = 250.00 kgf/cm ²	Ecs = 241500 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P97	30.19			2 ø 10.0 1.13					0.00
1	270.93	15.00 x 50.00	2 ø 10.0 1.13			ø 5.0 c/ 26			0.00
P96	30.00			2 ø 10.0 1.13					0.00
2	269.99	15.00 x 50.00	2 ø 10.0 1.13			ø 5.0 c/ 26			0.00
P95	30.00			2 ø 10.0 1.13					0.00
3	235.37	15.00 x 50.00	2 ø 10.0 1.13			ø 5.0 c/ 26			0.00
P90	30.01			2 ø 10.0 1.13					0.00

Resultados da Viga VB-A12

fck = 250.00 kgf/cm ²	Ecs = 241500 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P98	30.01			2 ø 10.0 1.13					0.00
1	270.11	15.00 x 50.00	2 ø 10.0 1.13			ø 5.0 c/ 26			0.00
P97	30.01			2 ø 10.0 1.13					0.00

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

Resultados da Viga VB-A13

fck = 250.00 kgf/cm ²	Ecs = 241500 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P99	30.00			2 ø 10.0 1.13					0.00
1	270.00	15.00 x 50.00	2 ø 10.0 1.13			ø 5.0 c/ 26			0.00
P98	30.00			2 ø 10.0 1.13					0.00

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

Resultados da Viga VB-A14

fck = 250.00 kgf/cm ²	Ecs = 241500 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P100	30.00			2 ø 10.0 1.13					0.00
1	269.99	15.00 x 50.00	2 ø 10.0 1.13			ø 5.0 c/ 26			0.00
P99	30.00			2 ø 10.0 1.13					0.00

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

Resultados da Viga VB-A15

fck = 250.00 kgf/cm ²	Ecs = 241500 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P101	30.00			2 ø 10.0 1.13					0.00
1	255.00	15.00 x 50.00	2 ø 10.0 1.13			ø 5.0 c/ 26			0.00
P100	30.00			2 ø 10.0 1.13					0.00

Resultados da Viga VB-A16

fck = 250.00 kgf/cm ²	Ecs = 241500 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P25	40.00		3 ø 10.0 1.73	3 ø 10.0 1.73					0.00
1	2.00	15.00 x 30.00	3 ø 10.0 1.73	3 ø 10.0 1.73		ø 5.0 c/ 15			0.00
P24	40.00		3 ø 10.0 1.73	3 ø 10.0 1.73					0.00
2	270.01	15.00 x 30.00	3 ø 10.0 1.73	3 ø 10.0 1.73		ø 5.0 c/ 15			0.00
P23	40.00		3 ø 10.0 1.73	3 ø 10.0 1.73					0.00
3	312.01	15.00 x 30.00	3 ø 10.0 1.73	3 ø 10.0 1.73		ø 5.0 c/ 15			0.00
P22	40.00		3 ø 10.0 1.73	3 ø 10.0 1.73					0.00
4	312.01	15.00 x 30.00	3 ø 10.0 1.73	3 ø 10.0 1.73		ø 5.0 c/ 15			0.00
P21	40.00		3 ø 10.0 1.73	3 ø 10.0 1.73					0.00
5	312.01	15.00 x 30.00	3 ø 10.0 1.73	3 ø 10.0 1.73		ø 5.0 c/ 15			0.00
P20	40.00		3 ø 10.0 1.73	3 ø 10.0 1.73					0.00

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

Resultados da Viga VB-A17

fck = 250.00 kgf/cm ²	Ecs = 241500 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P102	30.00			2 ø 10.0 1.13					0.00
1	172.19	15.00 x 50.00	2 ø 10.0 1.13			ø 5.0 c/ 26			0.00
P101	10.91			2 ø 10.0 1.13					0.00

Resultados da Viga VB-A18

fck = 250.00 kgf/cm ²	Ecs = 241500 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P109	30.00			2 ø 10.0 1.13					0.00
1	270.00	15.00 x 50.00	2 ø 10.0 1.13			ø 5.0 c/ 26			0.00
P107	30.00			2 ø 10.0 1.13					0.00
2	270.00	15.00 x 50.00	2 ø 10.0 1.13			ø 5.0 c/ 26			0.00
P105	30.00			2 ø 10.0 1.13					0.00
3	270.00	15.00 x 50.00	2 ø 10.0 1.13			ø 5.0 c/ 26			0.00
P104	30.00			2 ø 10.0 1.13					0.00
4	270.01	15.00 x 50.00	2 ø 10.0 1.13			ø 5.0 c/ 26			0.00
P103	30.00			2 ø 10.0 1.13					0.00
5	269.99	15.00 x 50.00	2 ø 10.0 1.13			ø 5.0 c/ 26			0.00
P102	30.00			2 ø 10.0 1.13					0.00

Resultados da Viga VB-A19

fck = 250.00 kgf/cm ²	Ecs = 241500 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P123	19.56			2 ø 10.0 0.90					0.01
1	262.82	15.00 x 40.00	2 ø 10.0 0.90			ø 5.0 c/ 21			0.00
P122	40.00			2 ø 10.0 0.90					0.02
2	260.00	15.00 x 40.00	2 ø 10.0 0.90			ø 5.0 c/ 21			0.00
P121	40.00			2 ø 10.0 0.90					0.01
3	260.01	15.00 x 40.00	2 ø 10.0 0.90			ø 5.0 c/ 21			0.00
P120	40.00			2 ø 10.0 0.90					0.01
4	260.00	15.00 x 40.00	2 ø 10.0 0.90			ø 5.0 c/ 21			0.00
P119	40.00			2 ø 10.0 0.90					0.01
5	260.00	15.00 x 40.00	2 ø 10.0 0.90			ø 5.0 c/ 21			0.00
P118	40.00			2 ø 10.0 0.90					0.01
6	260.00	15.00 x 40.00	2 ø 10.0 0.90			ø 5.0 c/ 21			0.00
P117	40.00			2 ø 10.0 0.90					0.01
7	260.00	15.00 x 40.00	2 ø 10.0 0.90			ø 5.0 c/ 21			0.00
P116	40.00			2 ø 10.0 0.90					0.01
8	260.00	15.00 x 40.00	2 ø 10.0 0.90			ø 5.0 c/ 21			0.00
P115	40.00			2 ø 10.0 0.90					0.01
9	260.00	15.00	2 ø 10.0			ø 5.0 c/ 21			0.00

		x 40.00	0.90						
P114	40.00			2 ø 10.0 0.90					0.01
10	260.00	15.00 x 40.00	2 ø 10.0 0.90			ø 5.0 c/ 21			0.00
P113	40.00			2 ø 10.0 0.90					0.01
11	260.00	15.00 x 40.00	2 ø 10.0 0.90			ø 5.0 c/ 21			0.00
P112	40.00			2 ø 10.0 0.90					0.01
12	260.00	15.00 x 40.00	2 ø 10.0 0.90			ø 5.0 c/ 21			0.00
P111	40.00			2 ø 10.0 0.90					0.01
13	260.00	15.00 x 40.00	2 ø 10.0 0.90			ø 5.0 c/ 21			0.00
P110	40.00			2 ø 10.0 0.90					0.01
14	260.00	15.00 x 40.00	2 ø 10.0 0.90			ø 5.0 c/ 21			0.00
P108	40.00			2 ø 10.0 0.90					0.01
15	260.01	15.00 x 40.00	2 ø 10.0 0.90			ø 5.0 c/ 21			0.00
P106	40.00			2 ø 10.0 0.90					0.01

Resultados da Viga VB-A20

fck = 250.00 kgf/cm ²	Ecs = 241500 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P124	40.00			2 ø 10.0 0.90					0.00
1	169.15	15.00 x 40.00	2 ø 10.0 0.90			ø 5.0 c/ 21			0.00
P128	40.00			2 ø 10.0 0.90					0.00
2	169.16	15.00 x 40.00	2 ø 10.0 0.90			ø 5.0 c/ 21			0.00
P125	40.00			2 ø 10.0 0.90					0.00
3	169.15	15.00 x 40.00	2 ø 10.0 0.90			ø 5.0 c/ 21			0.00
P129	40.00			2 ø 10.0 0.90					0.00
4	169.15	15.00 x 40.00	2 ø 10.0 0.90			ø 5.0 c/ 21			0.00
P91	40.01			2 ø 10.0 0.90					0.00

Resultados da Viga VB-A21

fck = 250.00 kgf/cm ²	Ecs = 241500 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P51	30.01		3 ø 10.0 2.30	3 ø 10.0 2.30					0.00
1	163.31	15.00 x 40.00	3 ø 10.0 2.30	3 ø 10.0 2.30		ø 5.0 c/ 21			0.00
P52	40.00		3 ø 10.0 2.30	3 ø 10.0 2.30					0.00
2	158.31	15.00 x 40.00	3 ø 10.0 2.30	3 ø 10.0 2.30		ø 5.0 c/ 21			0.00
P53	40.00		3 ø 10.0 2.30	3 ø 10.0 2.30					0.00
3	158.31	15.00 x 40.00	2 ø 10.0 0.90			ø 5.0 c/ 21			0.00
P54	40.00			2 ø 10.0 0.90					0.00
4	153.30	15.00 x 40.00	2 ø 10.0 0.90			ø 5.0 c/ 21			0.00
P55	40.00			2 ø 10.0 0.90					0.00

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

Resultados da Viga VB-A22

fck = 250.00 kgf/cm ²	Ecs = 241500 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P130	40.00			2 ø 10.0 0.90					0.00
1	215.91	15.00 x 40.00	2 ø 10.0 0.90			ø 5.0 c/ 21			0.00
P123	40.00			2 ø 10.0 0.90					0.01

Resultados da Viga VB-A23

fck = 250.00 kgf/cm ²	Ecs = 241500 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P126	40.00			2 ø 10.0 0.90					0.00
1	169.32	15.00 x 40.00	2 ø 10.0 0.90			ø 5.0 c/ 21			0.00
P127	40.00			2 ø 10.0 0.90					0.00
2	169.32	15.00 x 40.00	2 ø 10.0 0.90			ø 5.0 c/ 21			0.00
P124	40.01			2 ø 10.0 0.90					0.00

Resultados da Viga VB-A24

fck = 250.00 kgf/cm ²	Ecs = 241500 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P131	40.00			2 ø 10.0 0.90					0.00
1	169.31	15.00 x 40.00	2 ø 10.0 0.90			ø 5.0 c/ 21			0.00
P132	40.00			2 ø 10.0 0.90					0.00
2	169.32	15.00 x 40.00	2 ø 10.0 0.90			ø 5.0 c/ 21			0.00
P126	40.00			2 ø 10.0 0.90					0.00

Resultados da Viga VB-A25

fck = 250.00 kgf/cm ²	Ecs = 241500 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P55	16.21		3 ø 10.0 2.30	3 ø 10.0 2.30					0.00
1	175.39	15.00 x 40.00	3 ø 10.0 2.30	3 ø 10.0 2.30		ø 5.0 c/ 21			0.00
P49	40.00		3 ø 10.0 2.30	3 ø 10.0 2.30					0.00
2	170.38	15.00 x 40.00	3 ø 10.0 2.30	3 ø 10.0 2.30		ø 5.0 c/ 21			0.00
P45	40.00		3 ø 10.0 2.30	3 ø 10.0 2.30					0.00

Resultados da Viga VB-A26

fck = 250.00 kgf/cm ²	Ecs = 241500 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P133	40.00			2 ø 10.0 0.90					0.00
1	172.16	15.00 x 40.00	2 ø 10.0 0.90			ø 5.0 c/ 21			0.00
P134	40.00			2 ø 10.0 0.90					0.00
2	172.16	15.00 x 40.00	2 ø 10.0 0.90			ø 5.0 c/ 21			0.00
P131	40.00			2 ø 10.0 0.90					0.00

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

Resultados da Viga VB-A27

fck = 250.00 kgf/cm ²	Ecs = 241500 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P137	40.00			2 ø 10.0 0.90					0.00
1	172.16	15.00 x 40.00	2 ø 10.0 0.90			ø 5.0 c/ 21			0.00
P133	40.00			2 ø 10.0 0.90					0.00

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

Resultados da Viga VB-A28

fck = 250.00 kgf/cm ²	Ecs = 241500 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P135	40.01			2 ø 10.0 0.90					0.00
1	130.15	15.00 x 40.00	2 ø 10.0 0.90			ø 5.0 c/ 21			0.00
P136	40.00			2 ø 10.0 0.90					0.00

Resultados da Viga VB-A29

fck = 250.00 kgf/cm ²	Ecs = 241500 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P147	40.00			2 ø 10.0 0.90					0.01
1	256.04	15.00 x 40.00	2 ø 10.0 0.90			ø 5.0 c/ 21			0.00
P138	40.00			2 ø 10.0 0.90					0.02
2	265.28	15.00 x 40.00	2 ø 10.0 0.90			ø 5.0 c/ 21			0.00
P130	15.06			2 ø 10.0 0.90					0.01

Resultados da Viga VB-A30

fck = 250.00 kgf/cm ²	Ecs = 241500 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P141	40.00			2 ø 10.0 0.90					0.00
1	166.50	15.00 x 40.00	2 ø 10.0 0.90			ø 5.0 c/ 21			0.00
P142	40.00			2 ø 10.0 0.90					0.00
2	166.49	15.00 x 40.00	2 ø 10.0 0.90			ø 5.0 c/ 21			0.00
P139	40.00			2 ø 10.0 0.90					0.00
3	166.49	15.00 x 40.00	2 ø 10.0 0.90			ø 5.0 c/ 21			0.00
P140	40.00			2 ø 10.0 0.90					0.00
4	166.49	15.00 x 40.00	2 ø 10.0 0.90			ø 5.0 c/ 21			0.00
P135	40.01			2 ø 10.0 0.90					0.00

Resultados da Viga VB-A31

fck = 250.00 kgf/cm ²	Ecs = 241500 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P145	40.00			2 ø 10.0 0.90					0.00
1	169.29	15.00 x 40.00	2 ø 10.0 0.90			ø 5.0 c/ 21			0.00
P146	40.00			2 ø 10.0 0.90					0.00
2	169.30	15.00 x 40.00	2 ø 10.0 0.90			ø 5.0 c/ 21			0.00
P143	40.00			2 ø 10.0 0.90					0.00
3	169.30	15.00 x 40.00	2 ø 10.0 0.90			ø 5.0 c/ 21			0.00
P144	40.00			2 ø 10.0 0.90					0.00
4	169.30	15.00 x 40.00	2 ø 10.0 0.90			ø 5.0 c/ 21			0.00
P141	40.00			2 ø 10.0 0.90					0.00

Resultados da Viga VB-A32

fck = 250.00 kgf/cm ²	Ecs = 241500 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P150	40.00		3 ø 10.0 2.30	3 ø 10.0 2.30					0.00
1	169.32	15.00 x 40.00	3 ø 10.0 2.30	3 ø 10.0 2.30		ø 5.0 c/ 21			0.00
P151	40.00		3 ø 10.0 2.30	3 ø 10.0 2.30					0.00
2	169.31	15.00 x 40.00	2 ø 10.0 0.90			ø 5.0 c/ 21			0.00
P148	40.00			2 ø 10.0 0.90					0.00
3	169.31	15.00 x 40.00	2 ø 10.0 0.90			ø 5.0 c/ 21			0.00
P149	40.00			2 ø 10.0 0.90					0.00
4	169.31	15.00 x 40.00	2 ø 10.0 0.90			ø 5.0 c/ 21			0.00
P145	40.00			2 ø 10.0 0.90					0.00

Resultados da Viga VB-A33

fck = 250.00 kgf/cm ²	Ecs = 241500 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P154	40.00			2 ø 10.0 0.90					0.00
1	162.78	15.00 x 40.00	2 ø 10.0 0.90			ø 5.0 c/ 21			0.00
P155	40.00			2 ø 10.0 0.90					0.00
2	162.79	15.00 x 40.00	2 ø 10.0 0.90			ø 5.0 c/ 21			0.00
P152	40.00			2 ø 10.0 0.90					0.00
3	162.78	15.00 x 40.00	2 ø 10.0 0.90			ø 5.0 c/ 21			0.00
P153	40.00			2 ø 10.0 0.90					0.00
4	162.79	15.00 x 40.00	2 ø 10.0 0.90			ø 5.0 c/ 21			0.00
P150	40.00			2 ø 10.0 0.90					0.00

Resultados da Viga VB-A34

fck = 250.00 kgf/cm ²	Ecs = 241500 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P159	40.00			2 ø 10.0 0.90					0.00
1	149.52	15.00 x 40.00	2 ø 10.0 0.90			ø 5.0 c/ 21			0.00
P160	40.00			2 ø 10.0 0.90					0.00
2	149.52	15.00 x 40.00	2 ø 10.0 0.90			ø 5.0 c/ 21			0.00
P156	40.00			2 ø 10.0 0.90					0.00
3	149.52	15.00 x 40.00	2 ø 10.0 0.90			ø 5.0 c/ 21			0.00
P157	40.00			2 ø 10.0 0.90					0.00
4	149.52	15.00 x 40.00	2 ø 10.0 0.90			ø 5.0 c/ 21			0.00
P154	40.00			2 ø 10.0 0.90					0.00

Resultados da Viga VB-A35

fck = 250.00 kgf/cm ²	Ecs = 241500 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P162	15.08			2 ø 10.0 0.90					0.00
1	105.51	15.00 x 40.00	2 ø 10.0 0.90			ø 5.0 c/ 21			0.00
P158	40.00			2 ø 10.0 0.90					0.00

Resultados da Viga VB-A36

fck = 250.00 kgf/cm ²	Ecs = 241500 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P162	40.00			2 ø 10.0 0.90					0.01
1	238.88	15.00 x 40.00	2 ø 10.0 0.90			ø 5.0 c/ 21			0.00
P161	40.00			2 ø 10.0 0.90					0.01
2	238.88	15.00 x 40.00	2 ø 10.0 0.90			ø 5.0 c/ 21			0.00
P159	40.00			2 ø 10.0 0.90					0.01

Pavimento N2-7

Resultados dos Pilares

N2-7	fck = 250.00 kgf/cm ²	E = 241500 kgf/cm ²	Peso Espec = 2500.00 kgf/m ³
Lance 13		cobr = 3.00 cm	

Dados				Resultados					
Pilar	Seção (cm)	Nível Altura (cm)	lib vinc lih vinc (cm)	Nd máx Nd mín (tf)	MBd topo MBd base (kgf.m)	MHd topo MHd base (kgf.m)	As b Armaduras As h % armad total	Estribo Topo Base cota	Esb b Esb h
P47 1:20	15.00 X 30.00	445.00 270.00	540.00 EL 270.00 RR	0.95 0.08	3 540	98 136	1.57 2 ø 10.0 2.36 3 ø 10.0 1.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 40	124.56 31.14
P48 1:20	15.00 X 30.00	445.00 270.00	540.00 EL 270.00 RR	0.73 0.25	2 490	52 131	1.57 2 ø 10.0 2.36 3 ø 10.0 1.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 40	124.56 31.14
P50 1:20	15.00 X 30.00	445.00 270.00	540.00 EL 270.00 RR	0.88 0.15	1 450	75 130	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 40	124.56 31.14
P51 1:20	15.00 X 30.00	445.00 270.00	120.00 EL 60.00 RR	0.92 -0.02	14 401	215 142	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 40	27.68 6.92

Resultados da Viga VA-1

fck = 250.00 kgf/cm ²	Ecs = 241500 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P46	30.00		3 ø 10.0 2.30	3 ø 10.0 2.30					0.00
1	150.31	15.00 x 40.00	3 ø 10.0 2.30	3 ø 10.0 2.30		ø 5.0 c/ 21			0.00
P47	30.00		3 ø 10.0 2.30	3 ø 10.0 2.30					0.00
2	150.31	15.00 x 40.00	3 ø 10.0 2.30	3 ø 10.0 2.30		ø 5.0 c/ 21			0.00
P48	30.00		3 ø 10.0 2.30	3 ø 10.0 2.30					0.00
3	150.31	15.00 x 40.00	3 ø 10.0 2.30	3 ø 10.0 2.30		ø 5.0 c/ 21			0.00
P50	30.00		3 ø 10.0 2.30	3 ø 10.0 2.30					0.00
4	150.31	15.00 x 40.00	3 ø 10.0 2.30	3 ø 10.0 2.30		ø 5.0 c/ 21			0.00
P51	30.01		3 ø 10.0 2.30	3 ø 10.0 2.30					0.00

Pavimento N2-5

Resultados dos Pilares

N2-5	fck = 250.00 kgf/cm ²	E = 241500 kgf/cm ²	Peso Espec = 2500.00 kgf/m ³
Lance 15		cobr = 3.00 cm	

Dados				Resultados					
Pilar	Seção (cm)	Nível Altura (cm)	lib vinc lih vinc (cm)	Nd máx Nd mín (tf)	MBd topo MBd base (kgf.m)	MHd topo MHd base (kgf.m)	As b Armaduras As h % armad total	Estribo Topo Base cota	Esb b Esb h
P46 1:20	15.00 X 30.00	505.00 330.00	120.00 EL 60.00 RR	1.11 -0.04	1 583	362 71	1.57 2 ø 10.0 2.36 3 ø 10.0 1.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 40	27.68 6.92
P61 1:20	15.00 X 30.00	505.00 295.00	450.00 EL 225.00 RR	1.15 0.12	12 421	89 46	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 40	103.80 25.95
P62 1:20	15.00 X 30.00	505.00 295.00	590.00 EL 295.00 RR	1.08 0.10	7 486	92 124	1.57 2 ø 10.0 2.36 3 ø 10.0 1.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 40	136.09 34.02
P63 1:20	15.00 X 30.00	505.00 295.00	590.00 EL 295.00 RR	0.96 0.28	2 536	197 203	1.57 2 ø 10.0 2.36 3 ø 10.0 1.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 40	136.09 34.02
P64 1:20	15.00 X 30.00	505.00 295.00	590.00 EL 295.00 RR	0.90 0.33	2 584	165 182	1.57 2 ø 10.0 2.36 3 ø 10.0 1.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 40	136.09 34.02
P65 1:20	15.00 X 30.00	505.00 295.00	590.00 EL 295.00 RR	1.05 0.22	11 619	206 196	2.45 2 ø 12.5 2.45 2 ø 12.5 1.1 4 ø 12.5	ø 5.0 c/15 ø 5.0 c/15 40	136.09 34.02

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

Resultados da Vigas

Resultados da Viga VC-1

fck = 250.00 kgf/cm ²	Ecs = 241500 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P77	30.00		3 ø 10.0 2.30	3 ø 10.0 2.30					0.00
1	179.28	15.00 x 40.00	3 ø 10.0 2.30	3 ø 10.0 2.30		ø 5.0 c/ 21			0.00
P61	30.00		3 ø 10.0 2.30	3 ø 10.0 2.30					0.00
2	179.27	15.00 x 40.00	3 ø 10.0 2.30	3 ø 10.0 2.30		ø 5.0 c/ 21			0.00
P62	30.01		3 ø 10.0 2.30	3 ø 10.0 2.30					0.00

Resultados da Viga VC-2

fck = 250.00 kgf/cm ²	Ecs = 241500 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P62	30.01		3 ø 10.0 2.30	3 ø 10.0 2.30					0.00
1	208.25	15.00 x 40.00	3 ø 10.0 2.30	3 ø 10.0 2.30		ø 5.0 c/ 21			0.00
P63	30.00		3 ø 10.0 2.30	3 ø 10.0 2.30					0.00
2	208.25	15.00 x 40.00	3 ø 10.0 2.30	3 ø 10.0 2.30		ø 5.0 c/ 21			0.00
P64	30.00		3 ø 10.0 2.30	3 ø 10.0 2.30					0.00
3	208.25	15.00 x 40.00	3 ø 10.0 2.30	3 ø 10.0 2.30		ø 5.0 c/ 21			0.00
P65	30.00		3 ø 10.0 2.30	3 ø 10.0 2.30					0.00
4	208.24	15.00 x 40.00	3 ø 10.0 2.30	3 ø 10.0 2.30		ø 5.0 c/ 21			0.00
P46	30.00		3 ø 10.0 2.30	3 ø 10.0 2.30					0.00

Pavimento N2-4

Resultados dos Pilares

N2-4	fck = 250.00 kgf/cm ²	E = 241500 kgf/cm ²	Peso Espec = 2500.00 kgf/m ³
Lance 16		cobr = 3.00 cm	

Dados				Resultados					
Pilar	Seção (cm)	Nível Altura (cm)	lib vinc lih vinc (cm)	Nd máx Nd mín (tf)	MBd topo MBd base (kgf.m)	MHd topo MHd base (kgf.m)	As b Armaduras As h % armad total	Estribo Topo Base cota	Esb b Esb h
P72 1:20	15.00 X 30.00	535.00 255.00	440.00 EL 220.00 RR	0.98 0.23	5 397	94 63	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 40	101.49 25.37
P73 1:20	15.00 X 30.00	535.00 255.00	510.00 EL 255.00 RR	0.80 0.28	3 416	90 103	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 40	117.64 29.41
P74 1:20	15.00 X 30.00	535.00 255.00	510.00 EL 255.00 RR	0.83 0.24	0 406	104 100	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 40	117.64 29.41
P75 1:20	15.00 X 30.00	535.00 255.00	510.00 EL 255.00 RR	0.91 0.16	6 392	63 98	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 40	117.64 29.41
P76 1:20	15.00 X 30.00	535.00 255.00	510.00 EL 255.00 RR	0.83 0.26	3 425	67 95	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 40	117.64 29.41
P77 1:20	15.00 X 30.00	535.00 255.00	60.00 EL 30.00 RR	0.77 0.04	9 471	215 111	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 40	13.84 3.46

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

Resultados da Vigas

Resultados da Viga VD-1

fck = 250.00 kgf/cm ²	Ecs = 241500 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P89	30.00		3 ø 10.0 2.30	3 ø 10.0 2.30					0.00
1	179.30	15.00 x 40.00	3 ø 10.0 2.30	3 ø 10.0 2.30		ø 5.0 c/ 21			0.00
P72	30.00		3 ø 10.0 2.30	3 ø 10.0 2.30					0.00

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

Resultados da Viga VD-2

fck = 250.00 kgf/cm ²	Ecs = 241500 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P72	30.00		3 ø 10.0 2.30	3 ø 10.0 2.30					0.00
1	179.29	15.00 x 40.00	3 ø 10.0 2.30	3 ø 10.0 2.30		ø 5.0 c/ 21			0.00
P73	30.00		3 ø 10.0 2.30	3 ø 10.0 2.30					0.00

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

Resultados da Viga VD-3

fck = 250.00 kgf/cm ²	Ecs = 241500 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P73	30.00		3 ø 10.0 2.30	3 ø 10.0 2.30					0.00
1	179.30	15.00 x 40.00	3 ø 10.0 2.30	3 ø 10.0 2.30		ø 5.0 c/ 21			0.00
P74	30.00		3 ø 10.0 2.30	3 ø 10.0 2.30					0.00

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

Resultados da Viga VD-4

fck = 250.00 kgf/cm ²	Ecs = 241500 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P74	30.00		3 ø 10.0 2.30	3 ø 10.0 2.30					0.00
1	179.31	15.00 x 40.00	3 ø 10.0 2.30	3 ø 10.0 2.30		ø 5.0 c/ 21			0.00
P75	30.01		3 ø 10.0 2.30	3 ø 10.0 2.30					0.00

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

Resultados da Viga VD-5

fck = 250.00 kgf/cm ²	Ecs = 241500 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P75	30.01		3 ø 10.0 2.30	3 ø 10.0 2.30					0.00
1	179.28	15.00 x 40.00	3 ø 10.0 2.30	3 ø 10.0 2.30		ø 5.0 c/ 21			0.00
P76	30.00		3 ø 10.0 2.30	3 ø 10.0 2.30					0.00

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

Resultados da Viga VD-6

fck = 250.00 kgf/cm ²	Ecs = 241500 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P76	30.00		3 ø 10.0 2.30	3 ø 10.0 2.30					0.00
1	179.28	15.00 x 40.00	3 ø 10.0 2.30	3 ø 10.0 2.30		ø 5.0 c/ 21			0.00
P77	30.00		3 ø 10.0 2.30	3 ø 10.0 2.30					0.00

Pavimento N2-3

Resultados dos Pilares

N2-3	fck = 250.00 kgf/cm ²	E = 241500 kgf/cm ²	Peso Espec = 2500.00 kgf/m ³
Lance 17		cobr = 3.00 cm	

Dados				Resultados					
Pilar	Seção (cm)	Nível Altura (cm)	lib vinc lih vinc (cm)	Nd máx Nd mín (tf)	MBd topo MBd base (kgf.m)	MHd topo MHd base (kgf.m)	As b Armaduras As h % armad total	Estribo Topo Base cota	Esb b Esb h
P82 1:20	15.00 X 30.00	565.00 250.00	430.00 EL 215.00 RR	0.83 0.29	6 473	232 212	1.57 2 ø 10.0 2.36 3 ø 10.0 1.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 40	99.19 24.80
P83 1:20	15.00 X 30.00	565.00 250.00	430.00 EL 215.00 RR	0.76 0.30	5 424	218 207	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 40	99.19 24.80
P84 1:20	15.00 X 30.00	565.00 250.00	430.00 EL 215.00 RR	0.82 0.25	3 400	234 215	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 40	99.19 24.80
P85 1:20	15.00 X 30.00	565.00 250.00	430.00 EL 215.00 RR	0.92 0.15	2 391	160 149	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 40	99.19 24.80
P86 1:20	15.00 X 30.00	565.00 250.00	430.00 EL 215.00 RR	0.82 0.25	0 399	86 95	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 40	99.19 24.80
P87 1:20	15.00 X 30.00	565.00 250.00	430.00 EL 215.00 RR	0.77 0.30	1 409	104 94	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 40	99.19 24.80
P88 1:20	15.00 X 30.00	565.00 250.00	430.00 EL 215.00 RR	0.85 0.24	0 418	90 92	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 40	99.19 24.80

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

P89 1:20	15.00 X 30.00	565.00 250.00	60.00 EL 30.00 RR	0.76 0.12	2 424	103 138	1.57 2 ø 10.0 2.36 3 ø 10.0 1.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 40	13.84 3.46
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Resultados da Vigas

Resultados da Viga VE-1

fck = 250.00 kgf/cm ²	Ecs = 241500 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P81	30.00			2 ø 10.0 0.90					0.00
1	179.24	15.00 x 40.00	2 ø 10.0 0.90			ø 5.0 c/ 21			0.00
P82	30.00		3 ø 10.0 2.30	3 ø 10.0 2.30					0.00
2	179.24	15.00 x 40.00	3 ø 10.0 2.30	3 ø 10.0 2.30		ø 5.0 c/ 21			0.00
P83	30.00		3 ø 10.0 2.30	3 ø 10.0 2.30					0.00
3	179.24	15.00 x 40.00	3 ø 10.0 2.30	3 ø 10.0 2.30		ø 5.0 c/ 21			0.00
P84	30.00		3 ø 10.0 2.30	3 ø 10.0 2.30					0.00
4	179.24	15.00 x 40.00	3 ø 10.0 2.30	3 ø 10.0 2.30		ø 5.0 c/ 21			0.00
P85	30.01		3 ø 10.0 2.30	3 ø 10.0 2.30					0.00

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

Resultados da Viga VE-2

fck = 250.00 kgf/cm ²	Ecs = 241500 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P85	30.01		3 ø 10.0 2.30	3 ø 10.0 2.30					0.00
1	179.25	15.00 x 40.00	3 ø 10.0 2.30	3 ø 10.0 2.30		ø 5.0 c/ 21			0.00
P86	30.00		3 ø 10.0 2.30	3 ø 10.0 2.30					0.00
2	179.25	15.00 x 40.00	3 ø 10.0 2.30	3 ø 10.0 2.30		ø 5.0 c/ 21			0.00
P87	30.00		3 ø 10.0 2.30	3 ø 10.0 2.30					0.00

Resultados da Viga VE-3

fck = 250.00 kgf/cm ²	Ecs = 241500 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P87	30.00		3 ø 10.0 2.30	3 ø 10.0 2.30					0.00
1	179.34	15.00 x 40.00	3 ø 10.0 2.30	3 ø 10.0 2.30		ø 5.0 c/ 21			0.00
P88	30.00		3 ø 10.0 2.30	3 ø 10.0 2.30					0.00
2	179.34	15.00 x 40.00	3 ø 10.0 2.30	3 ø 10.0 2.30		ø 5.0 c/ 21			0.00
P89	30.00		3 ø 10.0 2.30	3 ø 10.0 2.30					0.00

Pavimento N2-1

Resultados dos Pilares

N2-1	fck = 250.00 kgf/cm ²	E = 241500 kgf/cm ²	Peso Espec = 2500.00 kgf/m ³
Lance 19		cobr = 3.00 cm	

Dados				Resultados					
Pilar	Seção (cm)	Nível Altura (cm)	lib vinc lih vinc (cm)	Nd máx Nd mín (tf)	MBd topo MBd base (kgf.m)	MHd topo MHd base (kgf.m)	As b Armaduras As h % armad total	Estribo Topo Base cota	Esb b Esb h
P80 1:20	15.00 X 30.00	625.00 310.00	550.00 EL 275.00 RR	0.89 0.00	1 531	133 59	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 40	126.87 31.72
P81 1:20	15.00 X 30.00	625.00 310.00	120.00 EL 60.00 RR	0.77 0.00	0 549	0 205	1.57 2 ø 10.0 2.36 3 ø 10.0 1.0 6 ø 10.0	ø 5.0 c/12	27.68 6.92
P92 1:20	15.00 X 30.00	625.00 275.00	550.00 EL 275.00 RR	0.92 0.20	1 447	159 132	1.57 2 ø 10.0 2.36 3 ø 10.0 1.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 40	126.87 31.72
P93 1:20	15.00 X 30.00	625.00 275.00	550.00 EL 275.00 RR	0.81 0.29	1 494	134 120	1.57 2 ø 10.0 2.36 3 ø 10.0 1.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 40	126.87 31.72
P94 1:20	15.00 X 30.00	625.00 275.00	550.00 EL 275.00 RR	0.84 0.25	9 538	144 124	1.57 2 ø 10.0 2.36 3 ø 10.0 1.0 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 40	126.87 31.72

Resultados da Vigas

Resultados da Viga VF-1

fck = 250.00 kgf/cm ²	Ecs = 241500 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P91	40.01		3 ø 10.0 2.30	3 ø 10.0 2.30					0.00
1	174.37	15.00 x 40.00	3 ø 10.0 2.30	3 ø 10.0 2.30		ø 5.0 c/ 21			0.00
P92	30.00		3 ø 10.0 2.30	3 ø 10.0 2.30					0.00
2	179.37	15.00 x 40.00	3 ø 10.0 2.30	3 ø 10.0 2.30		ø 5.0 c/ 21			0.00
P93	30.00		3 ø 10.0 2.30	3 ø 10.0 2.30					0.00
3	179.37	15.00 x 40.00	2 ø 10.0 0.90			ø 5.0 c/ 21			0.00
P94	30.00			2 ø 10.0 0.90					0.00
4	147.37	15.00 x 40.00	2 ø 10.0 0.90			ø 5.0 c/ 21			0.00
P80	30.00			2 ø 10.0 0.90					0.00

Pavimento NV2-0

Resultados dos Pilares

NV2-0	fck = 250.00 kgf/cm ²	E = 241500 kgf/cm ²	Peso Espec = 2500.00 kgf/m ³
Lance 20		cobr = 3.00 cm	

Dados				Resultados					
Pilar	Seção (cm)	Nível Altura (cm)	lib vinc lih vinc (cm)	Nd máx Nd mín (tf)	MBd topo MBd base (kgf.m)	MHd topo MHd base (kgf.m)	As b Armaduras As h % armad total	Estribo Topo Base cota	Esb b Esb h
P91 1:20	15.00 X 40.00	655.00 305.00	480.00 EL 240.00 RR	1.79 0.11	3 496	113 219	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 40	110.72 20.76
P106 1:20	15.00 X 40.00	655.00 270.00	540.00 EL 270.00 RR	0.86 0.14	0 184	239 416	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 40	124.56 23.36
P108 1:20	15.00 X 40.00	655.00 270.00	540.00 EL 270.00 RR	1.10 0.42	0 185	188 286	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 40	124.56 23.36
P110 1:20	15.00 X 40.00	655.00 270.00	540.00 EL 270.00 RR	1.08 0.42	0 186	179 287	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 40	124.56 23.36
P111 1:20	15.00 X 40.00	655.00 270.00	540.00 EL 270.00 RR	1.08 0.43	0 186	182 292	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 40	124.56 23.36
P112 1:20	15.00 X 40.00	655.00 270.00	540.00 EL 270.00 RR	1.08 0.43	0 186	181 294	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 40	124.56 23.36
P113 1:20	15.00 X 40.00	655.00 270.00	540.00 EL	1.08 0.43	0 186	181 294	1.57 2 ø 10.0	ø 5.0 c/12 ø 5.0 c/12	124.56 23.36

			270.00 RR				2.36 3 ø 10.0 0.8 6 ø 10.0	40	
P114 1:20	15.00 X 40.00	655.00 270.00	540.00 EL 270.00 RR	1.08 0.43	0 186	181 294	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 40	124.56 23.36
P115 1:20	15.00 X 40.00	655.00 270.00	540.00 EL 270.00 RR	1.08 0.43	0 186	181 294	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 40	124.56 23.36
P116 1:20	15.00 X 40.00	655.00 270.00	540.00 EL 270.00 RR	1.08 0.43	0 186	181 294	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 40	124.56 23.36
P117 1:20	15.00 X 40.00	655.00 270.00	540.00 EL 270.00 RR	1.08 0.43	0 186	181 294	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 40	124.56 23.36
P118 1:20	15.00 X 40.00	655.00 270.00	540.00 EL 270.00 RR	1.08 0.43	0 187	182 295	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 40	124.56 23.36
P119 1:20	15.00 X 40.00	655.00 270.00	540.00 EL 270.00 RR	1.08 0.42	1 188	184 297	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 40	124.56 23.36
P120 1:20	15.00 X 40.00	655.00 270.00	540.00 EL 270.00 RR	1.08 0.43	2 189	185 299	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 40	124.56 23.36
P121 1:20	15.00 X 40.00	655.00 270.00	540.00 EL 270.00 RR	1.08 0.42	5 171	192 305	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 40	124.56 23.36
P122 1:20	15.00 X 40.00	655.00 270.00	540.00 EL 270.00 RR	1.15 0.41	3 109	174 287	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 40	124.56 23.36
P123 1:20	15.00 X 40.00	655.00 270.00	270.00 RR	1.10 0.29	69 197	141 195	1.57 2 ø 10.0	ø 5.0 c/12 ø 5.0 c/12	62.28 23.36

			270.00 RR				2.36 3 ø 10.0 0.8 6 ø 10.0	40	
P124 1:20	15.00 X 40.00	655.00 270.00	540.00 EL 270.00 RR	1.06 0.13	3 436	89 129	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 40	124.56 23.36
P125 1:20	15.00 X 40.00	655.00 270.00	540.00 EL 270.00 RR	0.91 0.29	3 462	93 133	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 40	124.56 23.36
P126 1:20	15.00 X 40.00	655.00 270.00	540.00 EL 270.00 RR	0.91 0.28	2 448	120 125	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 40	124.56 23.36
P127 1:20	15.00 X 40.00	655.00 270.00	540.00 EL 270.00 RR	0.95 0.25	0 440	138 146	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 40	124.56 23.36
P128 1:20	15.00 X 40.00	655.00 270.00	540.00 EL 270.00 RR	0.94 0.25	2 439	94 134	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 40	124.56 23.36
P129 1:20	15.00 X 40.00	655.00 270.00	540.00 EL 270.00 RR	0.91 0.28	4 494	88 126	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 40	124.56 23.36
P131 1:20	15.00 X 40.00	655.00 270.00	540.00 EL 270.00 RR	0.96 0.23	2 451	152 171	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 40	124.56 23.36
P132 1:20	15.00 X 40.00	655.00 270.00	540.00 EL 270.00 RR	0.92 0.27	0 450	114 132	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 40	124.56 23.36
P133 1:20	15.00 X 40.00	655.00 270.00	540.00 EL 270.00 RR	0.94 0.28	4 489	189 219	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 40	124.56 23.36
P134 1:20	15.00 X 40.00	655.00 270.00	540.00 EL	0.93 0.28	3 460	186 203	1.57 2 ø 10.0	ø 5.0 c/12 ø 5.0 c/12	124.56 23.36

			270.00 RR				2.36 3 ø 10.0 0.8 6 ø 10.0	40	
P152 1:20	15.00 X 40.00	655.00 270.00	540.00 EL 270.00 RR	0.91 0.26	1 441	163 197	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 40	124.56 23.36
P153 1:20	15.00 X 40.00	655.00 270.00	540.00 EL 270.00 RR	1.06 0.13	3 461	226 228	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 40	124.56 23.36
P154 1:20	15.00 X 40.00	655.00 270.00	540.00 EL 270.00 RR	1.03 0.12	3 420	231 267	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 40	124.56 23.36
P155 1:20	15.00 X 40.00	655.00 270.00	540.00 EL 270.00 RR	0.94 0.24	1 426	147 184	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 40	124.56 23.36
P156 1:20	15.00 X 40.00	655.00 270.00	540.00 EL 270.00 RR	0.87 0.26	3 439	297 332	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 40	124.56 23.36
P157 1:20	15.00 X 40.00	655.00 270.00	540.00 EL 270.00 RR	0.91 0.22	0 427	314 342	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 40	124.56 23.36
P159 1:20	15.00 X 40.00	655.00 270.00	540.00 EL 270.00 RR	0.98 0.30	12 412	357 414	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 40	124.56 23.36
P160 1:20	15.00 X 40.00	655.00 270.00	540.00 EL 270.00 RR	0.87 0.24	5 437	286 323	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 40	124.56 23.36
P161 1:20	15.00 X 40.00	655.00 270.00	540.00 EL 270.00 RR	1.08 0.38	9 289	355 394	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 40	124.56 23.36

Resultados da Vigas

Resultados da Viga VG-1

fck = 250.00 kgf/cm ²	Ecs = 241500 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P123	19.56			2 ø 10.0 0.90					0.00
1	262.82	15.00 x 40.00	2 ø 10.0 0.90			ø 5.0 c/ 21			0.00
P122	40.00			2 ø 10.0 0.90					0.00
2	260.00	15.00 x 40.00	2 ø 10.0 0.90			ø 5.0 c/ 21			0.00
P121	40.00			2 ø 10.0 0.90					0.00
3	260.01	15.00 x 40.00	2 ø 10.0 0.90			ø 5.0 c/ 21			0.00
P120	40.00			2 ø 10.0 0.90					0.00
4	260.00	15.00 x 40.00	2 ø 10.0 0.90			ø 5.0 c/ 21			0.00
P119	40.00			2 ø 10.0 0.90					0.00
5	260.00	15.00 x 40.00	2 ø 10.0 0.90			ø 5.0 c/ 21			0.00
P118	40.00			2 ø 10.0 0.90					0.00
6	260.00	15.00 x 40.00	2 ø 10.0 0.90			ø 5.0 c/ 21			0.00
P117	40.00			2 ø 10.0 0.90					0.00
7	260.00	15.00 x 40.00	2 ø 10.0 0.90			ø 5.0 c/ 21			0.00
P116	40.00			2 ø 10.0 0.90					0.00
8	260.00	15.00 x 40.00	2 ø 10.0 0.90			ø 5.0 c/ 21			0.00
P115	40.00			2 ø 10.0 0.90					0.00
9	260.00	15.00	2 ø 10.0			ø 5.0 c/ 21			0.00

		x 40.00	0.90						
P114	40.00			2 ø 10.0 0.90					0.00
10	260.00	15.00 x 40.00	2 ø 10.0 0.90			ø 5.0 c/ 21			0.00
P113	40.00			2 ø 10.0 0.90					0.00
11	260.00	15.00 x 40.00	2 ø 10.0 0.90			ø 5.0 c/ 21			0.00
P112	40.00			2 ø 10.0 0.90					0.00
12	260.00	15.00 x 40.00	2 ø 10.0 0.90			ø 5.0 c/ 21			0.00
P111	40.00			2 ø 10.0 0.90					0.00
13	260.00	15.00 x 40.00	2 ø 10.0 0.90			ø 5.0 c/ 21			0.00
P110	40.00			2 ø 10.0 0.90					0.00
14	260.00	15.00 x 40.00	2 ø 10.0 0.90			ø 5.0 c/ 21			0.00
P108	40.00			2 ø 10.0 0.90					0.00
15	260.01	15.00 x 40.00	2 ø 10.0 0.90			ø 5.0 c/ 21			0.00
P106	40.00			2 ø 10.0 0.90					0.00

Resultados da Viga VG-2

fck = 250.00 kgf/cm ²	Ecs = 241500 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P124	40.00		3 ø 10.0 2.30	3 ø 10.0 2.30					0.00
1	169.15	15.00 x 40.00	3 ø 10.0 2.30	3 ø 10.0 2.30		ø 5.0 c/ 21			0.00
P128	40.00		3 ø 10.0 2.30	3 ø 10.0 2.30					0.00
2	169.16	15.00 x 40.00	3 ø 10.0 2.30	3 ø 10.0 2.30		ø 5.0 c/ 21			0.00
P125	40.00		3 ø 10.0 2.30	3 ø 10.0 2.30					0.00
3	169.15	15.00 x 40.00	3 ø 10.0 2.30	3 ø 10.0 2.30		ø 5.0 c/ 21			0.00
P129	40.00		3 ø 10.0 2.30	3 ø 10.0 2.30					0.00
4	169.15	15.00 x 40.00	3 ø 10.0 2.30	3 ø 10.0 2.30		ø 5.0 c/ 21			0.00
P91	40.01		3 ø 10.0 2.30	3 ø 10.0 2.30					0.00

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

Resultados da Viga VG-3

fck = 250.00 kgf/cm ²	Ecs = 241500 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P130	40.00			2 ø 10.0 0.90					0.00
1	215.91	15.00 x 40.00	2 ø 10.0 0.90			ø 5.0 c/ 21			0.00
P123	40.00			2 ø 10.0 0.90					0.00

Resultados da Viga VG-4

fck = 250.00 kgf/cm ²	Ecs = 241500 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P126	40.00		3 ø 10.0 2.30	3 ø 10.0 2.30					0.00
1	169.32	15.00 x 40.00	3 ø 10.0 2.30	3 ø 10.0 2.30		ø 5.0 c/ 21			0.00
P127	40.00		3 ø 10.0 2.30	3 ø 10.0 2.30					0.00
2	169.32	15.00 x 40.00	3 ø 10.0 2.30	3 ø 10.0 2.30		ø 5.0 c/ 21			0.00
P124	40.01		3 ø 10.0 2.30	3 ø 10.0 2.30					0.00

Resultados da Viga VG-5

fck = 250.00 kgf/cm ²	Ecs = 241500 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P131	40.00		3 ø 10.0 2.30	3 ø 10.0 2.30					0.00
1	169.31	15.00 x 40.00	3 ø 10.0 2.30	3 ø 10.0 2.30		ø 5.0 c/ 21			0.00
P132	40.00		3 ø 10.0 2.30	3 ø 10.0 2.30					0.00
2	169.32	15.00 x 40.00	3 ø 10.0 2.30	3 ø 10.0 2.30		ø 5.0 c/ 21			0.00
P126	40.00		3 ø 10.0 2.30	3 ø 10.0 2.30					0.00

Resultados da Viga VG-6

fck = 250.00 kgf/cm ²	Ecs = 241500 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P133	40.00			2 ø 10.0 0.90					0.00
1	172.16	15.00 x 40.00	2 ø 10.0 0.90			ø 5.0 c/ 21			0.00
P134	40.00		3 ø 10.0 2.30	3 ø 10.0 2.30					0.00
2	172.16	15.00 x 40.00	3 ø 10.0 2.30	3 ø 10.0 2.30		ø 5.0 c/ 21			0.00
P131	40.00		3 ø 10.0 2.30	3 ø 10.0 2.30					0.00

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

Resultados da Viga VG-7

fck = 250.00 kgf/cm ²	Ecs = 241500 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P137	40.00			2 ø 10.0 0.90					0.00
1	172.16	15.00 x 40.00	2 ø 10.0 0.90			ø 5.0 c/ 21			0.00
P133	40.00			2 ø 10.0 0.90					0.00

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

Resultados da Viga VG-8

fck = 250.00 kgf/cm ²	Ecs = 241500 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P153	40.00		3 ø 10.0 2.30	3 ø 10.0 2.30					0.00
1	162.79	15.00 x 40.00	3 ø 10.0 2.30	3 ø 10.0 2.30		ø 5.0 c/ 21			0.00
P150	40.00		3 ø 10.0 2.30	3 ø 10.0 2.30					0.00

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

Resultados da Viga VG-9

fck = 250.00 kgf/cm ²	Ecs = 241500 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P152	40.00		3 ø 10.0 2.30	3 ø 10.0 2.30					0.00
1	162.78	15.00 x 40.00	3 ø 10.0 2.30	3 ø 10.0 2.30		ø 5.0 c/ 21			0.00
P153	40.00		3 ø 10.0 2.30	3 ø 10.0 2.30					0.00

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

Resultados da Viga VG-10

fck = 250.00 kgf/cm ²	Ecs = 241500 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P154	40.00		3 ø 10.0 2.30	3 ø 10.0 2.30					0.00
1	162.78	15.00 x 40.00	3 ø 10.0 2.30	3 ø 10.0 2.30		ø 5.0 c/ 21			0.00
P155	40.00		3 ø 10.0 2.30	3 ø 10.0 2.30					0.00
2	162.79	15.00 x 40.00	3 ø 10.0 2.30	3 ø 10.0 2.30		ø 5.0 c/ 21			0.00
P152	40.00		3 ø 10.0 2.30	3 ø 10.0 2.30					0.00

Resultados da Viga VG-11

fck = 250.00 kgf/cm ²	Ecs = 241500 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P159	40.00		3 ø 10.0 2.30	3 ø 10.0 2.30					0.00
1	149.52	15.00 x 40.00	3 ø 10.0 2.30	3 ø 10.0 2.30		ø 5.0 c/ 21			0.00
P160	40.00		3 ø 10.0 2.30	3 ø 10.0 2.30					0.00
2	149.52	15.00 x 40.00	3 ø 10.0 2.30	3 ø 10.0 2.30		ø 5.0 c/ 21			0.00
P156	40.00		3 ø 10.0 2.30	3 ø 10.0 2.30					0.00
3	149.52	15.00 x 40.00	3 ø 10.0 2.30	3 ø 10.0 2.30		ø 5.0 c/ 21			0.00
P157	40.00		3 ø 10.0 2.30	3 ø 10.0 2.30					0.00
4	149.52	15.00 x 40.00	3 ø 10.0 2.30	3 ø 10.0 2.30		ø 5.0 c/ 21			0.00
P154	40.00		3 ø 10.0 2.30	3 ø 10.0 2.30					0.00

Resultados da Viga VG-12

fck = 250.00 kgf/cm ²	Ecs = 241500 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P162	40.00			2 ø 10.0 0.90					0.00
1	238.88	15.00 x 40.00	2 ø 10.0 0.90			ø 5.0 c/ 21			0.00
P161	40.00			2 ø 10.0 0.90					0.00
2	238.88	15.00 x 40.00	2 ø 10.0 0.90			ø 5.0 c/ 21			0.00
P159	40.00			2 ø 10.0 0.90					0.00

Pavimento NV3

Resultados dos Pilares

NV3	fck = 250.00 kgf/cm ²	E = 241500 kgf/cm ²	Peso Espec = 2500.00 kgf/m ³
Lance 21		cobr = 3.00 cm	

Dados				Resultados					
Pilar	Seção (cm)	Nível Altura (cm)	lib vinc lih vinc (cm)	Nd máx Nd mín (tf)	MBd topo MBd base (kgf.m)	MHd topo MHd base (kgf.m)	As b Armaduras As h % armad total	Estribo Topo Base cota	Esb b Esb h
P130 1:20	15.00 X 40.00	690.00 305.00	305.00 RR 270.00 RR	1.17 0.15	88 244	25 264	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 40	70.35 23.36
P135 1:20	15.00 X 40.00	690.00 305.00	540.00 EL 270.00 RR	1.38 -0.18	8 566	393 368	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 40	124.56 23.36
P136 1:20	15.00 X 40.00	690.00 305.00	600.00 EL 305.00 RR	1.20 -0.35	1 562	433 457	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 40	138.40 26.38
P137 1:20	15.00 X 40.00	690.00 305.00	540.00 EL 270.00 RR	0.88 0.00	0 540	0 246	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12	124.56 23.36
P138 1:20	15.00 X 40.00	690.00 305.00	540.00 EL 270.00 RR	1.31 0.38	2 129	326 485	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 40	124.56 23.36
P139 1:20	15.00 X 40.00	690.00 305.00	540.00 EL 270.00 RR	0.98 0.27	1 568	202 180	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 40	124.56 23.36
P140 1:20	15.00 X 40.00	690.00 305.00	540.00 EL	1.06 0.20	1 566	173 166	1.57 2 ø 10.0	ø 5.0 c/12 ø 5.0 c/12	124.56 23.36

			270.00 RR				2.36 3 ø 10.0 0.8 6 ø 10.0	40	
P141 1:20	15.00 X 40.00	690.00 305.00	540.00 EL 270.00 RR	1.11 0.15	2 559	134 134	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 40	124.56 23.36
P142 1:20	15.00 X 40.00	690.00 305.00	540.00 EL 270.00 RR	1.01 0.24	0 563	216 190	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 40	124.56 23.36
P143 1:20	15.00 X 40.00	690.00 305.00	540.00 EL 270.00 RR	0.98 0.28	1 565	76 129	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 40	124.56 23.36
P144 1:20	15.00 X 40.00	690.00 305.00	540.00 EL 270.00 RR	1.01 0.25	0 562	75 129	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 40	124.56 23.36
P145 1:20	15.00 X 40.00	690.00 305.00	540.00 EL 270.00 RR	1.09 0.17	2 556	71 125	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 40	124.56 23.36
P146 1:20	15.00 X 40.00	690.00 305.00	540.00 EL 270.00 RR	1.01 0.25	0 560	90 130	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 40	124.56 23.36
P147 1:20	15.00 X 40.00	690.00 305.00	540.00 EL 270.00 RR	0.97 0.04	10 215	301 510	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 40	124.56 23.36
P148 1:20	15.00 X 40.00	690.00 305.00	540.00 EL 270.00 RR	0.99 0.27	4 557	68 121	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 40	124.56 23.36
P149 1:20	15.00 X 40.00	690.00 305.00	540.00 EL 270.00 RR	1.01 0.26	1 559	67 120	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 40	124.56 23.36
P150 1:20	15.00 X 40.00	690.00 305.00	540.00 EL	1.09 0.05	9 494	187 127	1.57 2 ø 10.0	ø 5.0 c/12 ø 5.0 c/12	124.56 23.36

			270.00 RR				2.36 3 ø 10.0 0.8 6 ø 10.0	40	
P151 1:20	15.00 X 40.00	690.00 305.00	540.00 EL 270.00 RR	1.07 0.21	3 535	70 122	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 40	124.56 23.36
P158 1:20	15.00 X 40.00	690.00 305.00	600.00 EL 300.00 RR	1.05 -0.24	10 79	400 610	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 40	138.40 25.95
P162 1:20	15.00 X 40.00	690.00 305.00	305.00 RR 270.00 RR	1.45 -0.24	73 224	20 435	1.57 2 ø 10.0 2.36 3 ø 10.0 0.8 6 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 40	70.35 23.36

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

Resultados da Vigas

Resultados da Viga VH-1

fck = 250.00 kgf/cm ²	Ecs = 241500 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P135	40.01		3 ø 10.0 2.30	3 ø 10.0 2.30					0.00
1	130.15	15.00 x 40.00	3 ø 10.0 2.30	3 ø 10.0 2.30		ø 5.0 c/ 21			0.00
P136	40.00		3 ø 10.0 2.30	3 ø 10.0 2.30					0.00

Resultados da Viga VH-2

fck = 250.00 kgf/cm ²	Ecs = 241500 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P147	40.00			2 ø 10.0 0.90					0.00
1	256.04	15.00 x 40.00	2 ø 10.0 0.90			ø 5.0 c/ 21			0.00
P138	40.00			2 ø 10.0 0.90					0.00
2	265.28	15.00 x 40.00	2 ø 10.0 0.90			ø 5.0 c/ 21			0.00
P130	15.06			2 ø 10.0 0.90					0.00

Resultados da Viga VH-3

fck = 250.00 kgf/cm ²	Ecs = 241500 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P141	40.00		3 ø 10.0 2.30	3 ø 10.0 2.30					0.00
1	166.50	15.00 x 40.00	3 ø 10.0 2.30	3 ø 10.0 2.30		ø 5.0 c/ 21			0.00
P142	40.00		3 ø 10.0 2.30	3 ø 10.0 2.30					0.00
2	166.49	15.00 x 40.00	3 ø 10.0 2.30	3 ø 10.0 2.30		ø 5.0 c/ 21			0.00
P139	40.00		3 ø 10.0 2.30	3 ø 10.0 2.30					0.00
3	166.49	15.00 x 40.00	3 ø 10.0 2.30	3 ø 10.0 2.30		ø 5.0 c/ 21			0.00
P140	40.00		3 ø 10.0 2.30	3 ø 10.0 2.30					0.00
4	166.49	15.00 x 40.00	3 ø 10.0 2.30	3 ø 10.0 2.30		ø 5.0 c/ 21			0.00
P135	40.01		3 ø 10.0 2.30	3 ø 10.0 2.30					0.00

Resultados da Viga VH-4

fck = 250.00 kgf/cm ²	Ecs = 241500 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P145	40.00		3 ø 10.0 2.30	3 ø 10.0 2.30					0.00
1	169.29	15.00 x 40.00	3 ø 10.0 2.30	3 ø 10.0 2.30		ø 5.0 c/ 21			0.00
P146	40.00		3 ø 10.0 2.30	3 ø 10.0 2.30					0.00
2	169.30	15.00 x 40.00	3 ø 10.0 2.30	3 ø 10.0 2.30		ø 5.0 c/ 21			0.00
P143	40.00		3 ø 10.0 2.30	3 ø 10.0 2.30					0.00
3	169.30	15.00 x 40.00	3 ø 10.0 2.30	3 ø 10.0 2.30		ø 5.0 c/ 21			0.00
P144	40.00		3 ø 10.0 2.30	3 ø 10.0 2.30					0.00
4	169.30	15.00 x 40.00	3 ø 10.0 2.30	3 ø 10.0 2.30		ø 5.0 c/ 21			0.00
P141	40.00		3 ø 10.0 2.30	3 ø 10.0 2.30					0.00

Resultados da Viga VH-5

fck = 250.00 kgf/cm ²	Ecs = 241500 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P148	40.00		3 ø 10.0 2.30	3 ø 10.0 2.30					0.00
1	169.31	15.00 x 40.00	3 ø 10.0 2.30	3 ø 10.0 2.30		ø 5.0 c/ 21			0.00
P149	40.00		3 ø 10.0 2.30	3 ø 10.0 2.30					0.00
2	169.31	15.00 x 40.00	3 ø 10.0 2.30	3 ø 10.0 2.30		ø 5.0 c/ 21			0.00
P145	40.00		3 ø 10.0 2.30	3 ø 10.0 2.30					0.00

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

Resultados da Viga VH-6

fck = 250.00 kgf/cm ²	Ecs = 241500 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio 1 e 1o (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P150	40.00		3 ø 10.0 2.30	3 ø 10.0 2.30					0.00
1	169.32	15.00 x 40.00	3 ø 10.0 2.30	3 ø 10.0 2.30		ø 5.0 c/ 21			0.00
P151	40.00		3 ø 10.0 2.30	3 ø 10.0 2.30					0.00
2	169.31	15.00 x 40.00	3 ø 10.0 2.30	3 ø 10.0 2.30		ø 5.0 c/ 21			0.00
P148	40.00		3 ø 10.0 2.30	3 ø 10.0 2.30					0.00

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

Resultados da Viga VH-7

fck = 250.00 kgf/cm ²	Ecs = 241500 kgf/cm ²
Cobrimento = 3.00 cm	Peso específico = 2500.00 kgf/m ³

Dados			Resultados						
Pilar Trecho	Apoio l e lo (cm)	Seção (cm)	As Inf (cm ²)	As Sup (cm ²)	As esq trecho (cm ²)	Asw min (cm ²)	As dir trecho (cm ²)	Asw Pele (cm ²)	Fissura (mm)
P162	15.08			2 ø 10.0 0.90					0.00
1	105.51	15.00 x 40.00	2 ø 10.0 0.90			ø 5.0 c/ 21			0.00
P158	40.00			2 ø 10.0 0.90					0.00

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

**MEMÓRIA DE CÁLCULO DE ESTRUTURA DE
CONCRETO ARMADO
GUARITA
CENTRO DE ENSINO FUNDAMENTAL 01 DA
CANDANGOLÂNDIA**

R00	15/09/2023	Versão inicial	DALMO CINNANTI
REVISÃO	DATA	DESCRIÇÃO	RESPONSÁVEL
<i>Nome do projeto</i>		MEMÓRIA DE CÁLCULO DE FUNDAÇÕES- GUARITA	
<i>Número do projeto</i>		314-SEEDF-CEF 01 DA CANDANGOLANDIA-MEM-EST-GUARITA-R00	
<i>Local</i>		EQR 2/4, AE 7 - Candangolândia - DF	

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

Memorial de cálculo

Resumo de resultados

Cargas verticais:

Peso próprio = 17.02 tf

Adicional = 6.57 tf

Acidental = 2.85 tf

Total = 26.45 tf

Área aproximada = 19.03 m²

Relação = 1389.97 kgf/m²

AVISO: Relação de carga por área não usual para edifícios

Deslocamento horizontal:

X+ = 0.03 cm (limite 0.20)

X- = 0.03 cm (limite 0.20)

Y+ = 0.01 cm (limite 0.20)

Y- = 0.01 cm (limite 0.20)

Verificação de estabilidade (Gama-Z):

X+ = 1.04 (limite 1.10)

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

X- = 1.02 (limite 1.10)

Y+ = 1.01 (limite 1.10)

Y- = 1.01 (limite 1.10)

Análise de 2ª ordem:

Processo P-Delta

Deslocamentos no topo da edificação:

Vento X+: 0.14 »» 0.15 (+3.00%)

Vento X-: 0.14 »» 0.15 (+3.00%)

Vento Y+: 0.04 »» 0.04 (+0.83%)

Vento Y-: 0.04 »» 0.04 (+0.83%)

Desaprumo X+: 0.04 »» 0.04 (+2.99%)

Desaprumo X-: 0.04 »» 0.04 (+2.99%)

Desaprumo Y+: 0.01 »» 0.01 (+0.85%)

Desaprumo Y-: 0.01 »» 0.01 (+0.85%)

Pavimento BASE

Relatório de Resultados das Sapatas

BASE	fck = 250.00 kgf/cm ²	E = 241500 kgf/cm ²	Peso Espec = 2500.00 kgf/m ³
Lance 1		cobr = 4.50 cm	

Nome	Dimensões (cm)		Armaduras inferiores		Armaduras superiores	
	B H	H0 H1	Dir. B	Dir. H	Dir. B	Dir. H
S1	55.00	25.00	6 ø 8.0 c/12	6 ø 8.0 c/9		
	70.00	25.00	(3.02 cm ²)	(3.02 cm ²)		
S2	55.00	25.00	6 ø 8.0 c/12	6 ø 8.0 c/9		
	70.00	25.00	(3.02 cm ²)	(3.02 cm ²)		
S3	55.00	25.00	6 ø 8.0 c/12	6 ø 8.0 c/9		
	70.00	25.00	(3.02 cm ²)	(3.02 cm ²)		
S4	60.00	25.00	6 ø 8.0 c/13	6 ø 8.0 c/10		
	80.00	25.00	(3.02 cm ²)	(3.02 cm ²)		
S5	55.00	25.00	6 ø 8.0 c/13	6 ø 8.0 c/9		
	75.00	25.00	(3.02 cm ²)	(3.02 cm ²)		
S6	55.00	25.00	6 ø 8.0 c/12	6 ø 8.0 c/9		
	70.00	25.00	(3.02 cm ²)	(3.02 cm ²)		

Relatório de Cálculos das Sapatas

BASE	fck = 250.00 kgf/cm ²	E = 241500 kgf/cm ²	Peso Espec = 2500.00 kgf/m ³
Lance 1		cobr = 4.50 cm	

Esforços e pressões

Nome	MB MH (kgf.m)	FB FH (tf)	Carga Carga total (tf)	Pressão Sig1 (kgf/cm ²)	Pressão Sig2 (kgf/cm ²)	Pressão Sig3 (kgf/cm ²)	Pressão Sig4 (kgf/cm ²)
S1	107.55	0.19	4.26	1.70	1.09	0.90	1.51
	84.25	0.11	5.02	(lim = 2.00)	(lim = 2.00)	(lim = 2.00)	(lim = 2.00)
S2	115.99	0.20	4.31	0.89	1.55	1.74	1.08
	110.76	0.16	5.08	(lim = 2.00)	(lim = 2.00)	(lim = 2.00)	(lim = 2.00)
S3	192.84	0.37	3.03	1.46	0.37	0.50	1.60
	120.93	0.18	3.79	(lim = 2.00)	(lim = 2.00)	(lim = 2.00)	(lim = 2.00)
S4	159.82	0.33	6.59	1.31	1.97	1.77	1.11
	90.06	0.10	7.56	(lim = 2.00)	(lim = 2.00)	(lim = 2.00)	(lim = 2.00)
S5	161.07	0.33	5.34	1.78	0.93	1.13	1.98
	91.02	0.10	6.16	(lim = 2.00)	(lim = 2.00)	(lim = 2.00)	(lim = 2.00)
S6	187.90	0.36	4.18	0.69	1.33	1.87	1.24
	122.83	0.17	4.95	(lim = 2.00)	(lim = 2.00)	(lim = 2.00)	(lim = 2.00)

Estabilidade

Nome	Tombamento B		Tombamento H		Deslizamento		Arrancamento	
	Mrd Msd (kgf.m)	Mrd / Msd	Mrd Msd (kgf.m)	Mrd / Msd	Frd Fsd (tf)	Frd / Fsd	Nt (tf)	Ns (tf)
S1	1381.15	12.84	1693.01	20.09	1.84	9.45		
	107.55	(lim = 1.50)	84.25	(lim = 1.50)	0.19	lim = (1.50)		
S2	1394.21	12.02	1600.56	14.45	1.86	8.25		
	115.99	(lim = 1.50)	110.76	(lim = 1.50)	0.22	lim = (1.50)		
S3	1041.65	5.40	1264.49	10.46	1.39	3.71		
	192.84	(lim = 1.50)	120.93	(lim = 1.50)	0.37	lim = (1.50)		
S4	2215.24	13.86	2746.58	31.20	2.70	8.19		
	159.82	(lim = 1.50)	88.02	(lim = 1.50)	0.33	lim = (1.50)		
S5	1648.51	10.23	2279.35	25.04	2.19	6.64		
	161.07	(lim = 1.50)	91.02	(lim = 1.50)	0.33	lim = (1.50)		
S6	1309.73	6.97	1727.23	14.06	1.74	4.78		
	187.90	(lim = 1.50)	122.83	(lim = 1.50)	0.36	lim = (1.50)		

Dimensionamento

Nome	Armaduras inferiores		Armaduras superiores	
	Dir. B	Dir. H	Dir. B	Dir. H
	Md (kgf.m/m) As (cm ² /m)	Md (kgf.m/m) As (cm ² /m)	Md (kgf.m/m) A's (cm ² /m)	Md (kgf.m/m) A's (cm ² /m)
S1	1984.79 3.90	1984.79 3.90	0.00 0.00	0.00 0.00
S2	1984.79 3.90	1984.79 3.90	0.00 0.00	0.00 0.00
S3	1984.79 3.90	1984.79 3.90	0.00 0.00	0.00 0.00
S4	1984.79 3.90	1984.79 3.90	0.00 0.00	0.00 0.00
S5	1984.79 3.90	1984.79 3.90	0.00 0.00	0.00 0.00
S6	1984.79 3.90	1984.79 3.90	0.00 0.00	0.00 0.00

Resultados dos Pilares

BASE	fck = 250.00 kgf/cm ²	E = 241500 kgf/cm ²	Peso Espec = 2500.00 kgf/m ³
Lance 1		cobr = 3.00 cm	

Dados				Resultados					
Pilar	Seção (cm)	Nível Altura (cm)	lib vñc lih vñc (cm)	Nd máx Nd mín (tf)	MBd topo MBd base (kgf.m)	MHd topo MHd base (kgf.m)	As b Armaduras As h % armad total	Estribo Topo Base cota	Esb b Esb h
P1	14.00 X 30.00	0.00 120.00	120.00 RR 120.00 RR	5.68 3.22	167 149	73 117	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 30	29.66 13.84
P2	14.00 X 30.00	0.00 120.00	120.00 RR 120.00 RR	5.79 3.32	174 160	235 153	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 30	29.66 13.84
P3	14.00 X 30.00	0.00 120.00	120.00 RR 120.00 RR	4.11 2.48	347 265	125 169	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 30	29.66 13.84
P4	14.00 X 30.00	0.00 120.00	120.00 RR 120.00 RR	8.78 5.41	327 222	47 126	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 30	29.66 13.84
P5	14.00 X 30.00	0.00 120.00	120.00 RR 120.00 RR	7.13 4.38	324 223	43 127	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 30	29.66 13.84
P6	14.00 X 30.00	0.00 120.00	120.00 RR 120.00 RR	5.61 3.31	334 258	108 171	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 30	29.66 13.84

Pavimento COBERTURA

Resultados dos Pilares

COBERTURA	fck = 250.00 kgf/cm ²	E = 241500 kgf/cm ²	Peso Espec = 2500.00 kgf/m ³
Lance 2		cobr = 3.00 cm	

Dados				Resultados					
Pilar	Seção (cm)	Nível Altura (cm)	lib vnc lih vnc (cm)	Nd máx Nd mín (tf)	MBd topo MBd base (kgf.m)	MHd topo MHd base (kgf.m)	As b Armaduras As h % armad total	Estribo Topo Base cota	Esb b Esb h
P1 1:20	14.00 X 30.00	280.00 280.00	280.00 RR 280.00 RR	4.28 2.39	450 279	194 133	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 30	69.20 32.29
P2 1:20	14.00 X 30.00	280.00 280.00	280.00 RR 280.00 RR	3.93 2.04	390 231	170 260	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 30	69.20 32.29
P3 1:20	14.00 X 30.00	280.00 280.00	280.00 RR 280.00 RR	1.49 0.51	183 184	182 178	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 30	69.20 32.29
P4 1:20	14.00 X 30.00	280.00 280.00	280.00 RR 280.00 RR	6.95 4.07	451 175	263 161	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 30	69.20 32.29
P5 1:20	14.00 X 30.00	280.00 280.00	280.00 RR 280.00 RR	5.44 3.13	465 221	210 157	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 30	69.20 32.29
P6 1:20	14.00 X 30.00	280.00 280.00	280.00 RR 280.00 RR	3.64 1.90	322 154	156 153	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 30	69.20 32.29

Resultados da Laje

COBERTURA	fck = 250.00 kgf/cm ²	E = 241500 kgf/cm ²	Peso Espec = 2500.00 kgf/m ³
Lance 2		cobr = 2.50 cm	

Nome	Espessura (cm)	Carga (kgf/m ²)	Mdx (kgf.m/m)	Mdy (kgf.m/m)	Asx	Asy
L101	15	575.00	11	53	As = 1.51 cm ² /m (ø6.3 c/20 - 1.56 cm ² /m)	As = 1.51 cm ² /m (ø6.3 c/20 - 1.56 cm ² /m)
L102	15	575.00	19	64	As = 1.51 cm ² /m (ø6.3 c/20 - 1.56 cm ² /m)	As = 1.51 cm ² /m (ø6.3 c/20 - 1.56 cm ² /m)
L103	15	575.00	82		As = 1.51 cm ² /m (ø6.3 c/20 - 1.56 cm ² /m)	As = 1.51 cm ² /m (ø6.3 c/20 - 1.56 cm ² /m)
L104	15	575.00	27	23	As = 1.51 cm ² /m (ø6.3 c/20 - 1.56 cm ² /m)	As = 1.51 cm ² /m (ø6.3 c/20 - 1.56 cm ² /m)
L105	15	575.00	57		As = 1.51 cm ² /m (ø6.3 c/20 - 1.56 cm ² /m)	As = 1.51 cm ² /m (ø6.3 c/20 - 1.56 cm ² /m)
L106	15	575.00	18	2	As = 1.51 cm ² /m (ø6.3 c/20 - 1.56 cm ² /m)	As = 1.51 cm ² /m (ø6.3 c/20 - 1.56 cm ² /m)
L107	15	575.00	86	10	As = 1.51 cm ² /m (ø6.3 c/20 - 1.56 cm ² /m)	As = 1.51 cm ² /m (ø6.3 c/20 - 1.56 cm ² /m)

ARMADURA NEGATIVA							
Dados				Resultados			
Viga	Trecho	Laje 1	Laje 2	Reação 1 (kgf/m)	Reação 2 (kgf/m)	Md (kgf.m/m)	As (cm ²)
V102	1	L101	L102	562	447	-408	As = 2.25 cm ² /m (ø6.3 c/13 - 2.40 cm ² /m)
V102	2	L101	L103	383	906	-473	As = 2.25 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)
V102	3	L101	L104	449	122	-519	As = 2.25 cm ² /m (ø6.3 c/13 - 2.40 cm ² /m)
V107	2	L102	L103	55	-280	-231	As = 2.25 cm ² /m (ø6.3 c/13 - 2.40 cm ² /m)
V104	1	L102	L107	572	672	-435	As = 2.25 cm ² /m (ø6.3 c/13 - 2.40 cm ² /m)
V107	1	L102	L105	-19	-115	-344	As = 2.25 cm ² /m (ø6.3 c/13 - 2.40 cm ² /m)
V103	1	L103	L105	-16	56	-129	As = 2.25 cm ² /m

							(ø8.0 c/20 - 2.51 cm ² /m)
V108	1	L103	L104	74	-230	-503	As = 2.25 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)
V109	1	L105	L106	-495	-411	-383	As = 2.25 cm ² /m (ø6.3 c/13 - 2.40 cm ² /m)
V103	2	L105	L104	891	433	-703	As = 2.25 cm ² /m (ø6.3 c/13 - 2.40 cm ² /m)
V104	2	L105	L107	522	326	-350	As = 2.25 cm ² /m (ø6.3 c/13 - 2.40 cm ² /m)
V104	3	L107	L106	534	388	-276	As = 2.25 cm ² /m (ø6.3 c/13 - 2.40 cm ² /m)
V103	3	L104	L106	1396	935	-1179	As = 2.29 cm ² /m (ø6.3 c/13 - 2.40 cm ² /m)

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

**MEMÓRIA DE CÁLCULO DE ESTRUTURA DE
CONCRETO ARMADO
CASTELO POTÁVEL
CENTRO DE ENSINO FUNDAMENTAL 01 DA
CANDANGOLÂNDIA**

R00	15/09/2023	Versão inicial	DALMO CINNANTI
REVISÃO	DATA	DESCRIÇÃO	RESPONSÁVEL
<i>Nome do projeto</i>		MEMÓRIA DE CÁLCULO DE FUNDAÇÕES– CASTELO D´ÁGUA	
<i>Número do projeto</i>		314-SEEDF-CEF 01 DA CANDANGOLANDIA-MEM-EST-CASTELO-R00	
<i>Local</i>		EQR 2/4, AE 7 - Candangolândia - DF	

Memorial de cálculo

Resumo de resultados.....	3
Pavimento NV-000	5
Relatório de Resultados das Sapatas	5
Resultados dos Pilares.....	6
Vigas do pavimento NV-000.....	7
Pavimento NV-245	8
Resultados dos Pilares.....	8
Vigas do pavimento NV-245.....	9
Pavimento NV-701	10
Resultados dos Pilares.....	10
Vigas do pavimento NV-701.....	11
Resultados do Reservatório	12
Pavimento NV-921	16
Resultados dos Pilares.....	16
Vigas do pavimento NV-921.....	17
Pavimento NV-1324	18
Resultados dos Pilares.....	18
Vigas do pavimento NV-1324.....	19
Resultados do Reservatório	20

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

Resumo de resultados

Cargas verticais:

Peso próprio = 95.49 tf

Adicional = 18.21 tf

Acidental = 6.69 tf

Água = 90.21 tf

Total = 210.60 tf

Área aproximada = 47.86 m²

Relação = 4400.07 kgf/m²

Deslocamento horizontal:

X+ = 0.09 cm (limite 0.83)

X- = 0.09 cm (limite 0.83)

Y+ = 0.07 cm (limite 0.83)

Y- = 0.07 cm (limite 0.83)

Aceleração horizontal:

X+ = 0.636 m/s² (limite 0.147)

X- = 0.636 m/s² (limite 0.147)

Y+ = 0.327 m/s² (limite 0.147)

Y- = 0.327 m/s² (limite 0.147)

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

Verificação de estabilidade (Gama-Z):

X+ = 1.02 (limite 1.10)

X- = 1.02 (limite 1.10)

Y+ = 1.01 (limite 1.10)

Y- = 1.01 (limite 1.10)

Análise de 2ª ordem:

Processo P-Delta

Deslocamentos no topo da edificação:

Água: 0.04 »» 0.04 (+2.10%)

Vento X+: 0.49 »» 0.50 (+1.75%)

Vento X-: 0.49 »» 0.50 (+1.75%)

Vento Y+: 0.28 »» 0.29 (+1.30%)

Vento Y-: 0.28 »» 0.29 (+1.30%)

Desaprumo X+: 0.04 »» 0.04 (+1.82%)

Desaprumo X-: 0.04 »» 0.04 (+1.82%)

Desaprumo Y+: 0.03 »» 0.03 (+1.41%)

Desaprumo Y-: 0.03 »» 0.03 (+1.41%)

Análise dinâmica:

Frequência natural: 1.91 Hz

Pavimento NV-000

Relatório de Resultados das Sapatas

NV-000	fck = 300.00 kgf/cm ²	E = 268384 kgf/cm ²	Peso Espec = 2500.00 kgf/m ³
Lance 1		cobr = 4.50 cm	

Nome	Dimensões (cm)		Armaduras inferiores		Armaduras superiores	
	B H	H0 H1	Dir. B	Dir. H	Dir. B	Dir. H
S1	160.00	20.00	14 ø 10.0 c/13 (11.00 cm ²)	13 ø 10.0 c/12 (10.21 cm ²)		
	190.00	50.00				
S2	160.00	20.00	14 ø 10.0 c/13 (11.00 cm ²)	13 ø 10.0 c/12 (10.21 cm ²)		
	190.00	50.00				
S5	160.00	20.00	14 ø 10.0 c/13 (11.00 cm ²)	12 ø 10.0 c/13 (9.42 cm ²)		
	190.00	50.00				
S6	160.00	20.00	14 ø 10.0 c/13 (11.00 cm ²)	12 ø 10.0 c/13 (9.42 cm ²)		
	190.00	50.00				

Resultados dos Pilares

NV-000	fck = 300.00 kgf/cm ²	E = 268384 kgf/cm ²	Peso Espec = 2500.00 kgf/m ³
Lance 1		cobr = 3.00 cm	

Dados				Resultados					
Pilar	Seção (cm)	Nível Altura (cm)	lib vínc lih vínc (cm)	Nd máx Nd mín (tf)	MBd topo MBd base (kgf.m)	MHd topo MHd base (kgf.m)	As b Armaduras As h % armad total	Estribo Topo Base cota	Esb b Esb h
P1 1:20	20.00 X 50.00	0.00 150.00	150.00 RR 150.00 RR	80.09 27.18	3257 3040	620 5175	2.45 2 ø 12.5 3.68 3 ø 12.5 0.7 6 ø 12.5	ø 5.0 c/15 ø 5.0 c/15 50	25.95 10.38
P2 1:20	20.00 X 50.00	0.00 150.00	150.00 RR 150.00 RR	80.09 27.18	3257 3040	620 5175	2.45 2 ø 12.5 3.68 3 ø 12.5 0.7 6 ø 12.5	ø 5.0 c/15 ø 5.0 c/15 50	25.95 10.38
P5 1:20	20.00 X 50.00	0.00 150.00	150.00 RR 150.00 RR	74.52 27.22	4182 2828	1548 4469	2.45 2 ø 12.5 3.68 3 ø 12.5 0.7 6 ø 12.5	ø 5.0 c/15 ø 5.0 c/15 50	25.95 10.38
P6 1:20	20.00 X 50.00	0.00 150.00	150.00 RR 150.00 RR	74.52 27.22	4182 2828	1548 4468	2.45 2 ø 12.5 3.68 3 ø 12.5 0.7 6 ø 12.5	ø 5.0 c/15 ø 5.0 c/15 50	25.95 10.38

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

Vigas do pavimento NV-000

Viga	Vãos			Nós			Avisos
	Md (kgf.m)	As	Als	Md (kgf.m)	As	Als	
VB1	1653.10	2 ø 16.0	2 ø 16.0	-3204.07 -3204.12	2 ø 16.0 2 ø 16.0	2 ø 16.0 2 ø 16.0	
VB2	1482.48	2 ø 16.0	2 ø 16.0	-2943.15 -2943.08	2 ø 16.0 2 ø 16.0	2 ø 16.0 2 ø 16.0	
VB3	9199.19	2 ø 20.0	3 ø 16.0	-6971.90 -5788.17	3 ø 16.0 3 ø 16.0	3 ø 16.0 3 ø 16.0	
VB4	9199.24	2 ø 20.0	3 ø 16.0	-6971.95 -5788.09	3 ø 16.0 3 ø 16.0	3 ø 16.0 3 ø 16.0	

Pavimento NV-245

Resultados dos Pilares

NV-245	fck = 300.00 kgf/cm ²	E = 268384 kgf/cm ²	Peso Espec = 2500.00 kgf/m ³
Lance 2		cofr = 3.00 cm	

Dados				Resultados					
Pilar	Seção (cm)	Nível Altura (cm)	lib vinc lih vinc (cm)	Nd máx Nd mín (tf)	MBd topo MBd base (kgf.m)	MHd topo MHd base (kgf.m)	As b Armaduras As h % armad total	Estribo Topo Base cota	Esb b Esb h
P1 1:20	20.00 X 50.00	245.00 245.00	245.00 RR 245.00 RR	71.16 23.31	2563 2493	6846 4011	2.45 2 ø 12.5 3.68 3 ø 12.5 0.7 6 ø 12.5	ø 5.0 c/15	42.39 16.95
P2 1:20	20.00 X 50.00	245.00 245.00	245.00 RR 245.00 RR	71.16 23.31	2563 2493	6846 4011	2.45 2 ø 12.5 3.68 3 ø 12.5 0.7 6 ø 12.5	ø 5.0 c/15	42.39 16.95
P3 1:20	20.00 X 50.00	245.00 245.00	245.00 RR 245.00 RR	14.20 2.85	1212 158	5643 5898	2.45 2 ø 12.5 4.91 4 ø 12.5 1.0 8 ø 12.5	ø 5.0 c/15	42.39 16.95
P4 1:20	20.00 X 50.00	245.00 245.00	245.00 RR 245.00 RR	14.20 2.85	1212 158	5643 5898	2.45 2 ø 12.5 4.91 4 ø 12.5 1.0 8 ø 12.5	ø 5.0 c/15	42.39 16.95
P5 1:20	20.00 X 50.00	245.00 245.00	245.00 RR 245.00 RR	59.91 21.79	2832 2752	4523 4303	2.45 2 ø 12.5 3.68 3 ø 12.5 0.7 6 ø 12.5	ø 5.0 c/15	42.39 16.95
P6 1:20	20.00 X 50.00	245.00 245.00	245.00 RR 245.00 RR	59.91 21.79	2832 2752	4523 4302	2.45 2 ø 12.5 3.68 3 ø 12.5 0.7 6 ø 12.5	ø 5.0 c/15	42.39 16.95

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

Vigas do pavimento NV-245

Viga	Vãos			Nós			Avisos
	Md (kgf.m)	As	Als	Md (kgf.m)	As	Als	
V101	1720.41	2 ø 10.0		-3639.70 -3639.61	2 ø 12.5 2 ø 12.5		
V102	9863.93	2 ø 20.0		-4809.21	2 ø 12.5		
V103	9863.95	2 ø 20.0		-4809.23	2 ø 12.5		

Pavimento NV-701

Resultados dos Pilares

NV-701	fck = 300.00 kgf/cm ²	E = 268384 kgf/cm ²	Peso Espec = 2500.00 kgf/m ³
Lance 3		cobr = 3.00 cm	

Dados				Resultados					
Pilar	Seção (cm)	Nível Altura (cm)	lib vinc lih vinc (cm)	Nd máx Nd mín (tf)	MBd topo MBd base (kgf.m)	MHd topo MHd base (kgf.m)	As b Armaduras As h % armad total	Estribo Topo Base cota	Esb b Esb h
P1 1:20	20.00 X 50.00	701.00 456.00	456.00 RR 456.00 RR	44.92 5.02	384 446	1276 3236	2.45 2 ø 12.5 3.68 3 ø 12.5 0.7 6 ø 12.5	ø 5.0 c/15	78.89 31.56
P2 1:20	20.00 X 50.00	701.00 456.00	456.00 RR 456.00 RR	44.92 5.02	384 446	1276 3236	2.45 2 ø 12.5 3.68 3 ø 12.5 0.7 6 ø 12.5	ø 5.0 c/15	78.89 31.56
P3 1:20	15.00 X 50.00	701.00 456.00	456.00 RR 456.00 RR	6.08 -7.79	310 465	4480 7122	2.45 2 ø 12.5 4.91 4 ø 12.5 1.3 8 ø 12.5	ø 5.0 c/9 ø 5.0 c/9 50	105.18 31.56
P4 1:20	15.00 X 50.00	701.00 456.00	456.00 RR 456.00 RR	6.08 -7.79	310 465	4480 7122	2.45 2 ø 12.5 4.91 4 ø 12.5 1.3 8 ø 12.5	ø 5.0 c/9 ø 5.0 c/9 50	105.18 31.56
P5 1:20	20.00 X 50.00	701.00 456.00	456.00 RR 456.00 RR	44.39 15.04	1706 1917	2643 2259	2.45 2 ø 12.5 3.68 3 ø 12.5 0.7 6 ø 12.5	ø 5.0 c/15 ø 5.0 c/15 50	78.89 31.56
P6 1:20	20.00 X 50.00	701.00 456.00	456.00 RR 456.00 RR	44.39 15.04	1706 1917	2643 2259	2.45 2 ø 12.5 3.68 3 ø 12.5 0.7 6 ø 12.5	ø 5.0 c/15 ø 5.0 c/15 50	78.89 31.56

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

Vigas do pavimento NV-701

Viga	Vãos			Nós			Avisos
	Md (kgf.m)	As	Als	Md (kgf.m)	As	Als	
V201	892.06	2 ø 16.0	2 ø 16.0	-2006.57 -2006.52	2 ø 16.0 2 ø 16.0	2 ø 16.0 2 ø 16.0	
V202	6863.02	2 ø 16.0	2 ø 16.0	-3892.98	2 ø 16.0	2 ø 16.0	
V203	6863.04	2 ø 16.0	2 ø 16.0	-3893.02	2 ø 16.0	2 ø 16.0	

Resultados do Reservatório

NV-701	fck = 300.00 kgf/cm ²	E = 268384 kgf/cm ²	Peso Espec = 2500.00 kgf/m ³
Lance 3		cobr = 3.00 cm	

Reservatório INFERIOR

ARMADURAS NA LAJE								
Trecho	Esforços				Resultados			
	Ndx Rdx (tf)	Ndy Rdy (tf)	Mdx (kgf.m/m)	Mdy (kgf.m/m)	Armadura inferior		Armadura superior	
					Asx	Asy	Asx	Asy
L101	0.00 -12.07	0.12 -13.65	1898	887	As = 3.59 cm ² /m ø12.5 c/20 (6.14 cm ² /m)	As = 2.89 cm ² /m ø10.0 c/20 (3.93 cm ² /m)	A's = 12.25 cm ² /m ø16.0 c/20 (10.05 cm ² /m)	A's = 4.82 cm ² /m ø12.5 c/20 (6.14 cm ² /m)
L102	0.00 -12.07	0.12 -13.65	1898	887	As = 3.59 cm ² /m ø12.5 c/20 (6.14 cm ² /m)	As = 2.89 cm ² /m ø10.0 c/20 (3.93 cm ² /m)	A's = 12.25 cm ² /m ø16.0 c/20 (10.05 cm ² /m)	A's = 4.82 cm ² /m ø12.5 c/20 (6.14 cm ² /m)
L201	2.56 -4.53	5.28 -0.75	302	179	As = 1.51 cm ² /m ø6.3 c/20 (1.56 cm ² /m)	As = 1.60 cm ² /m ø6.3 c/19 (1.64 cm ² /m)		
L202	2.56 -4.53	5.28 -0.75	302	179	As = 1.51 cm ² /m ø6.3 c/20 (1.56 cm ² /m)	As = 1.60 cm ² /m ø6.3 c/19 (1.64 cm ² /m)		
PAR-I-1-A	4.38 -10.51	16.98 -4.40	713	620	As = 2.63 cm ² /m ø8.0 c/19 (2.65 cm ² /m)	As = 2.18 cm ² /m ø8.0 c/20 (2.51 cm ² /m)	A's = 3.32 cm ² /m ø10.0 c/20 (3.93 cm ² /m)	A's = 1.64 cm ² /m ø8.0 c/20 (2.51 cm ² /m)
PAR-I-1-B	4.38 -10.51	16.98 -4.40	713	621	As = 2.63 cm ² /m ø8.0 c/19 (2.65 cm ² /m)	As = 2.18 cm ² /m ø8.0 c/20 (2.51 cm ² /m)	A's = 3.32 cm ² /m ø10.0 c/20 (3.93 cm ² /m)	A's = 1.64 cm ² /m ø8.0 c/20 (2.51 cm ² /m)
PAR-I-2-A	7.76 -4.54	27.61 -17.28	873	433	As = 2.58 cm ² /m ø10.0 c/20 (3.93 cm ² /m)	As = 4.04 cm ² /m ø10.0 c/19 (4.13 cm ² /m)	A's = 1.98 cm ² /m ø8.0 c/20 (2.51 cm ² /m)	A's = 3.43 cm ² /m ø10.0 c/20 (3.93 cm ² /m)
PAR-I-2-B	7.76 -4.54	27.61 -17.28	873	433	As = 2.58 cm ² /m	As = 4.04 cm ² /m	A's = 1.98 cm ² /m	A's = 3.43 cm ² /m

					ø10.0 c/20 (3.93 cm ² /m)	ø10.0 c/19 (4.13 cm ² /m)	ø8.0 c/20 (2.51 cm ² /m)	ø10.0 c/20 (3.93 cm ² /m)
PAR-I-3-A	13.97 -24.01	27.61 -17.28	1062	1743	As = 5.98 cm ² /m ø16.0 c/20 (10.05 cm ² /m)	As = 7.88 cm ² /m ø12.5 c/15 (8.18 cm ² /m)	A's = 6.63 cm ² /m ø16.0 c/20 (10.05 cm ² /m)	A's = 4.97 cm ² /m ø12.5 c/20 (6.14 cm ² /m)
PAR-I-3-B	6.95 -6.53	28.35 -4.36	1122	1743	As = 3.49 cm ² /m ø12.5 c/20 (6.14 cm ² /m)	As = 5.02 cm ² /m ø12.5 c/20 (6.14 cm ² /m)	A's = 4.62 cm ² /m ø10.0 c/20 (3.93 cm ² /m)	A's = 2.01 cm ² /m ø8.0 c/20 (2.51 cm ² /m)
PAR-I-4	0.62 -5.87	1.63 -10.40	41	153	As = 1.51 cm ² /m ø6.3 c/20 (1.56 cm ² /m)	As = 1.92 cm ² /m ø8.0 c/20 (2.51 cm ² /m)	A's = 1.51 cm ² /m ø6.3 c/20 (1.56 cm ² /m)	A's = 1.94 cm ² /m ø8.0 c/20 (2.51 cm ² /m)
PAR-I-5-A	13.97 -24.01	27.61 -17.28	1062	1743	As = 6.63 cm ² /m ø16.0 c/20 (10.05 cm ² /m)	As = 4.97 cm ² /m ø12.5 c/20 (6.14 cm ² /m)	A's = 7.09 cm ² /m ø12.5 c/20 (6.14 cm ² /m)	A's = 8.03 cm ² /m ø16.0 c/20 (10.05 cm ² /m)
PAR-I-5-B	6.95 -6.53	28.35 -4.36	1122	1743	As = 3.08 cm ² /m ø12.5 c/20 (6.14 cm ² /m)	As = 2.01 cm ² /m ø8.0 c/20 (2.51 cm ² /m)	A's = 5.02 cm ² /m ø10.0 c/20 (3.93 cm ² /m)	A's = 5.02 cm ² /m ø12.5 c/20 (6.14 cm ² /m)

ARMADURAS NA CONTINUIDADE					
Viga Trecho	Laje 1 Laje 2	Momentos fletores (kgf.m/m)		Armaduras	
		Md negativo	Md positivo	As (superior)	A's (inferior)
Barra	L102 PAR-I-4	-1522		As = 5.40 cm ² /m ø16.0 c/20 (10.05 cm ² /m)	
Barra	PAR-I-4 L101	-1522		As = 5.40 cm ² /m ø16.0 c/20 (10.05 cm ² /m)	
Barra	L101 L102	-16		As = 2.29 cm ² /m ø8.0 c/20 (2.51 cm ² /m)	
Barra	L101 PAR-I-1-B	-887		As = 2.58 cm ² /m ø10.0 c/20 (3.93 cm ² /m)	
Barra	PAR-I-1-B L101	-621		As = 2.29 cm ² /m ø8.0 c/20 (2.51 cm ² /m)	
Barra	PAR-I-3-B L101	-1898		As = 5.94 cm ² /m ø16.0 c/20 (10.05 cm ² /m)	
Barra	L101 PAR-I-3-B	-251		As = 2.29 cm ² /m ø8.0 c/20 (2.51 cm ² /m)	
Barra	PAR-I-3-A L101	-1422		As = 6.13 cm ² /m ø16.0 c/20 (10.05 cm ² /m)	
Barra	L101 PAR-I-3-A	-1087		As = 5.43 cm ² /m ø16.0 c/20 (10.05 cm ² /m)	

Barra	PAR-I-2-B L101	-881		As = 6.05 cm ² /m ø16.0 c/20 (10.05 cm ² /m)	
Barra	L101 PAR-I-2-B	-272		As = 4.12 cm ² /m ø12.5 c/20 (6.14 cm ² /m)	
Barra	L102 PAR-I-5-B	-1898		As = 5.94 cm ² /m ø16.0 c/20 (10.05 cm ² /m)	
Barra	PAR-I-5-B L102	-620		As = 3.13 cm ² /m ø10.0 c/20 (3.93 cm ² /m)	
Barra	L102 PAR-I-1-A	-887		As = 2.58 cm ² /m ø10.0 c/20 (3.93 cm ² /m)	
Barra	PAR-I-1-A L102	-620		As = 2.29 cm ² /m ø8.0 c/20 (2.51 cm ² /m)	
Barra	PAR-I-2-A L102	-881		As = 6.05 cm ² /m ø16.0 c/20 (10.05 cm ² /m)	
Barra	L102 PAR-I-2-A	-823		As = 5.87 cm ² /m ø16.0 c/20 (10.05 cm ² /m)	
Barra	L102 PAR-I-5-A	-1422		As = 6.13 cm ² /m ø16.0 c/20 (10.05 cm ² /m)	
Barra	PAR-I-5-A L102	-433		As = 3.63 cm ² /m ø10.0 c/20 (3.93 cm ² /m)	
Barra	PAR-I-1-A PAR-I-5-B	-1850		As = 5.83 cm ² /m ø16.0 c/20 (10.05 cm ² /m)	
Barra	PAR-I-5-B PAR-I-1-A	-32		As = 2.29 cm ² /m ø8.0 c/20 (2.51 cm ² /m)	
Barra	PAR-I-1-A PAR-I-1-B	-19		As = 2.29 cm ² /m ø8.0 c/20 (2.51 cm ² /m)	
Barra	PAR-I-1-B PAR-I-4	-721		As = 2.87 cm ² /m ø10.0 c/20 (3.93 cm ² /m)	
Barra	PAR-I-4 PAR-I-1-A	-721		As = 2.87 cm ² /m ø10.0 c/20 (3.93 cm ² /m)	
Barra	PAR-I-1-B PAR-I-3-B	-32		As = 2.29 cm ² /m ø8.0 c/20 (2.51 cm ² /m)	
Barra	PAR-I-3-B PAR-I-1-B	-1850		As = 5.83 cm ² /m ø16.0 c/20 (10.05 cm ² /m)	
Barra	PAR-I-2-B PAR-I-3-A	-1757		As = 12.09 cm ² /m ø16.0 c/16 (12.57 cm ² /m)	
Barra	PAR-I-3-A PAR-I-2-B	-202		As = 3.91 cm ² /m ø12.5 c/20 (6.14 cm ² /m)	
Barra	PAR-I-3-B PAR-I-3-A	-963		As = 2.73 cm ² /m ø10.0 c/20 (3.93 cm ² /m)	

Barra	PAR-I-3-A PAR-I-3-B	-366		As = 2.29 cm ² /m ø8.0 c/20 (2.51 cm ² /m)	
Barra	PAR-I-5-A PAR-I-2-A	-1757		As = 12.09 cm ² /m ø16.0 c/16 (12.57 cm ² /m)	
Barra	PAR-I-2-A PAR-I-5-A	-202		As = 3.91 cm ² /m ø12.5 c/20 (6.14 cm ² /m)	
Barra	PAR-I-5-B PAR-I-5-A	-366		As = 2.29 cm ² /m ø8.0 c/20 (2.51 cm ² /m)	
Barra	PAR-I-5-A PAR-I-5-B	-963		As = 2.73 cm ² /m ø10.0 c/20 (3.93 cm ² /m)	
Barra	PAR-I-2-A PAR-I-4	-704		As = 2.43 cm ² /m ø8.0 c/20 (2.51 cm ² /m)	
Barra	PAR-I-4 PAR-I-2-B	-704		As = 2.43 cm ² /m ø8.0 c/20 (2.51 cm ² /m)	
Barra	PAR-I-2-B PAR-I-2-A	-31		As = 2.29 cm ² /m ø8.0 c/20 (2.51 cm ² /m)	
Barra	L202 L201	-302		As = 2.29 cm ² /m ø8.0 c/20 (2.51 cm ² /m)	
Barra	L201 PAR-I-4	-135		As = 2.29 cm ² /m ø8.0 c/20 (2.51 cm ² /m)	
Barra	PAR-I-4 L202	-153		As = 2.29 cm ² /m ø8.0 c/20 (2.51 cm ² /m)	

Pavimento NV-921

Resultados dos Pilares

NV-921	fck = 300.00 kgf/cm ²	E = 268384 kgf/cm ²	Peso Espec = 2500.00 kgf/m ³
Lance 4		cofr = 3.00 cm	

Dados				Resultados					
Pilar	Seção (cm)	Nível Altura (cm)	lib vinc lih vinc (cm)	Nd máx Nd mín (tf)	MBd topo MBd base (kgf.m)	MHd topo MHd base (kgf.m)	As b Armaduras As h % armad total	Estribo Topo Base cota	Esb b Esb h
P1 1:20	20.00 X 50.00	921.00 220.00	220.00 RR 220.00 RR	15.01 6.42	1234 1073	2117 2088	2.45 2 ø 12.5 3.68 3 ø 12.5 0.7 6 ø 12.5	ø 5.0 c/15 ø 5.0 c/15 50	38.06 15.22
P2 1:20	20.00 X 50.00	921.00 220.00	220.00 RR 220.00 RR	15.01 6.42	1234 1073	2117 2088	2.45 2 ø 12.5 3.68 3 ø 12.5 0.7 6 ø 12.5	ø 5.0 c/15 ø 5.0 c/15 50	38.06 15.22
P5 1:20	20.00 X 50.00	921.00 220.00	220.00 RR 220.00 RR	31.96 10.34	1567 2154	3173 1805	2.45 2 ø 12.5 3.68 3 ø 12.5 0.7 6 ø 12.5	ø 5.0 c/15	38.06 15.22
P6 1:20	20.00 X 50.00	921.00 220.00	220.00 RR 220.00 RR	31.96 10.34	1567 2154	3173 1805	2.45 2 ø 12.5 3.68 3 ø 12.5 0.7 6 ø 12.5	ø 5.0 c/15	38.06 15.22
P7 1:20	15.00 X 50.00	921.00 220.00	220.00 RR 220.00 RR	17.80 6.02	738 674	1611 2766	2.45 2 ø 12.5 3.68 3 ø 12.5 1.0 6 ø 12.5	ø 5.0 c/15 ø 5.0 c/15 50	50.75 15.22
P8 1:20	15.00 X 50.00	921.00 220.00	220.00 RR 220.00 RR	17.80 6.02	738 674	1611 2766	2.45 2 ø 12.5 3.68 3 ø 12.5 1.0 6 ø 12.5	ø 5.0 c/15 ø 5.0 c/15 50	50.75 15.22

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

Vigas do pavimento NV-921

Viga	Vãos			Nós			Avisos
	Md (kgf.m)	As	Als	Md (kgf.m)	As	Als	
V301	936.97	2 ø 10.0		-2069.41 -2069.44	2 ø 10.0 2 ø 10.0		Aviso 26
V302	4042.21	2 ø 12.5		-2171.70	2 ø 10.0		Avisos 26, 38
V303	4042.16	2 ø 12.5		-2171.66	2 ø 10.0		Avisos 26, 38

Pavimento NV-1324

Resultados dos Pilares

NV-1324	fck = 300.00 kgf/cm ²	E = 268384 kgf/cm ²	Peso Espec = 2500.00 kgf/m ³
Lance 5		coibr = 3.00 cm	

Dados				Resultados					
Pilar	Seção (cm)	Nível Altura (cm)	lib vinc lih vinc (cm)	Nd máx Nd mín (tf)	MBd topo MBd base (kgf.m)	MHd topo MHd base (kgf.m)	As b Armaduras As h % armad total	Estribo Topo Base cota	Esb b Esb h
P1 1:20	20.00 X 50.00	1324.00 403.00	403.00 RR 403.00 RR	6.50 2.19	987 954	2057 1518	2.45 2 ø 12.5 3.68 3 ø 12.5 0.7 6 ø 12.5	ø 5.0 c/15 ø 5.0 c/15 50	69.72 27.89
P2 1:20	20.00 X 50.00	1324.00 403.00	403.00 RR 403.00 RR	6.50 2.19	987 954	2057 1518	2.45 2 ø 12.5 3.68 3 ø 12.5 0.7 6 ø 12.5	ø 5.0 c/15 ø 5.0 c/15 50	69.72 27.89
P5 1:20	20.00 X 50.00	1324.00 403.00	403.00 RR 403.00 RR	18.78 -0.08	126 171	52 1328	2.45 2 ø 12.5 3.68 3 ø 12.5 0.7 6 ø 12.5	ø 5.0 c/15	69.72 27.89
P6 1:20	20.00 X 50.00	1324.00 403.00	403.00 RR 403.00 RR	18.78 -0.08	126 171	52 1328	2.45 2 ø 12.5 3.68 3 ø 12.5 0.7 6 ø 12.5	ø 5.0 c/15	69.72 27.89
P7 1:20	15.00 X 50.00	1324.00 403.00	403.00 RR 403.00 RR	9.01 -0.89	109 334	1770 2381	2.45 2 ø 12.5 3.68 3 ø 12.5 1.0 6 ø 12.5	ø 5.0 c/15 ø 5.0 c/15 50	92.96 27.89
P8 1:20	15.00 X 50.00	1324.00 403.00	403.00 RR 403.00 RR	9.01 -0.89	109 334	1770 2381	2.45 2 ø 12.5 3.68 3 ø 12.5 1.0 6 ø 12.5	ø 5.0 c/15 ø 5.0 c/15 50	92.96 27.89

	CINNANTI ARQUITETURA E ENGENHARIA LTDA	
	SECRETARIA DE ESTADO DE EDUCAÇÃO DO DISTRITO FEDERAL -SEEDF	15/09/2023

Vigas do pavimento NV-1324

Viga	Vãos			Nós			Avisos
	Md (kgf.m)	As	Als	Md (kgf.m)	As	Als	
V401	632.56	2 ø 10.0		-771.13 -771.11	2 ø 10.0 2 ø 10.0		
V402	2802.51	2 ø 10.0		-992.57	2 ø 10.0		Aviso 38
V403	2802.56	2 ø 10.0		-992.60	2 ø 10.0		Aviso 38

Resultados do Reservatório

NV-1324	fck = 300.00 kgf/cm ²	E = 268384 kgf/cm ²	Peso Espec = 2500.00 kgf/m ³
Lance 5		cobr = 3.00 cm	

Reservatório SUPERIOR

ARMADURAS NA LAJE								
Trecho	Esforços				Resultados			
	Ndx Rdx (tf)	Ndy Rdy (tf)	Mdx (kgf.m/m)	Mdy (kgf.m/m)	Armadura inferior		Armadura superior	
					Asx	Asy	Asx	Asy
L301	0.25 -7.62	1.17 -5.51	1697	776	As = 2.49 cm ² /m ø10.0 c/20 (3.93 cm ² /m)	As = 1.74 cm ² /m ø8.0 c/20 (2.51 cm ² /m)	A's = 7.03 cm ² /m ø12.5 c/20 (6.14 cm ² /m)	A's = 2.62 cm ² /m ø10.0 c/20 (3.93 cm ² /m)
L302	0.25 -7.62	1.17 -5.51	1697	776	As = 2.49 cm ² /m ø10.0 c/20 (3.93 cm ² /m)	As = 1.74 cm ² /m ø8.0 c/20 (2.51 cm ² /m)	A's = 7.03 cm ² /m ø12.5 c/20 (6.14 cm ² /m)	A's = 2.62 cm ² /m ø10.0 c/20 (3.93 cm ² /m)
L401	5.00 -3.34	0.67 -1.00	177	119	As = 1.30 cm ² /m ø6.3 c/20 (1.56 cm ² /m)	As = 1.31 cm ² /m ø6.3 c/20 (1.56 cm ² /m)		
L402	0.17 -0.19	0.35 -0.55	38	43	As = 1.01 cm ² /m ø5.0 c/19 (1.03 cm ² /m)	As = 1.28 cm ² /m ø6.3 c/20 (1.56 cm ² /m)		
L403	1.41 -0.61	1.79 0.00	577	427	As = 2.25 cm ² /m ø10.0 c/20 (3.93 cm ² /m)	As = 1.40 cm ² /m ø6.3 c/20 (1.56 cm ² /m)		A's = 1.83 cm ² /m ø8.0 c/20 (2.51 cm ² /m)
L404	5.00 -3.34	0.67 -1.00	177	119	As = 1.30 cm ² /m ø6.3 c/20 (1.56 cm ² /m)	As = 1.31 cm ² /m ø6.3 c/20 (1.56 cm ² /m)		
L405	5.66 -0.96	1.50 -3.07	174	216	As = 1.01 cm ² /m ø5.0 c/19 (1.03 cm ² /m)	As = 1.28 cm ² /m ø6.3 c/20 (1.56 cm ² /m)		A's = 1.50 cm ² /m ø6.3 c/20 (1.56 cm ² /m)
L406	5.66 -0.96	1.50 -3.07	174	216	As = 1.01 cm ² /m	As = 1.28 cm ² /m		A's = 1.50 cm ² /m

					ø5.0 c/19 (1.03 cm ² /m)	ø6.3 c/20 (1.56 cm ² /m)		ø6.3 c/20 (1.56 cm ² /m)
L407	0.64 -0.40	1.82 0.00	30	19	As = 1.01 cm ² /m ø5.0 c/19 (1.03 cm ² /m)	As = 1.28 cm ² /m ø6.3 c/20 (1.56 cm ² /m)		
PAR-S-1-A	4.11 -4.33	13.02 -6.47	346	158	As = 1.51 cm ² /m ø6.3 c/20 (1.56 cm ² /m)	As = 1.60 cm ² /m ø6.3 c/19 (1.64 cm ² /m)	A's = 1.51 cm ² /m ø6.3 c/20 (1.56 cm ² /m)	A's = 1.60 cm ² /m ø6.3 c/19 (1.64 cm ² /m)
PAR-S-1-B	4.11 -4.33	13.02 -6.47	346	158	As = 1.51 cm ² /m ø6.3 c/20 (1.56 cm ² /m)	As = 1.60 cm ² /m ø6.3 c/19 (1.64 cm ² /m)	A's = 1.51 cm ² /m ø6.3 c/20 (1.56 cm ² /m)	A's = 1.60 cm ² /m ø6.3 c/19 (1.64 cm ² /m)
PAR-S-2-A	2.06 -5.15	6.56 -3.33	349	168	As = 1.60 cm ² /m ø6.3 c/19 (1.64 cm ² /m)	As = 1.60 cm ² /m ø6.3 c/19 (1.64 cm ² /m)	A's = 1.51 cm ² /m ø6.3 c/20 (1.56 cm ² /m)	A's = 1.60 cm ² /m ø6.3 c/19 (1.64 cm ² /m)
PAR-S-2-B	2.06 -5.15	6.56 -3.33	349	168	As = 1.60 cm ² /m ø6.3 c/19 (1.64 cm ² /m)	As = 1.60 cm ² /m ø6.3 c/19 (1.64 cm ² /m)	A's = 1.51 cm ² /m ø6.3 c/20 (1.56 cm ² /m)	A's = 1.60 cm ² /m ø6.3 c/19 (1.64 cm ² /m)
PAR-S-3	8.79 -6.48	13.02 -6.47	776	492	As = 1.55 cm ² /m ø6.3 c/20 (1.56 cm ² /m)	As = 1.83 cm ² /m ø8.0 c/20 (2.51 cm ² /m)	A's = 2.73 cm ² /m ø10.0 c/20 (3.93 cm ² /m)	A's = 2.26 cm ² /m ø8.0 c/20 (2.51 cm ² /m)
PAR-S-4	2.40 -5.06	1.30 -9.10	14	126	As = 1.51 cm ² /m ø6.3 c/20 (1.56 cm ² /m)	As = 1.65 cm ² /m ø8.0 c/20 (2.51 cm ² /m)	A's = 1.51 cm ² /m ø6.3 c/20 (1.56 cm ² /m)	A's = 1.67 cm ² /m ø8.0 c/20 (2.51 cm ² /m)
PAR-S-5	8.79 -6.48	13.02 -6.47	776	492	As = 1.55 cm ² /m ø6.3 c/20 (1.56 cm ² /m)	As = 1.83 cm ² /m ø8.0 c/20 (2.51 cm ² /m)	A's = 2.73 cm ² /m ø10.0 c/20 (3.93 cm ² /m)	A's = 2.26 cm ² /m ø8.0 c/20 (2.51 cm ² /m)

ARMADURAS NA CONTINUIDADE					
Viga Trecho	Laje 1 Laje 2	Momentos fletores (kgf.m/m)		Armaduras	
		Md negativo	Md positivo	As (superior)	A's (inferior)
Barra	PAR-S-3 L301	-1728		As = 4.84 cm ² /m ø16.0 c/20 (10.05 cm ² /m)	
Barra	L301 PAR-S-3	-307		As = 2.29 cm ² /m ø8.0 c/20 (2.51 cm ² /m)	
Barra	L301 PAR-S-2-A	-776		As = 2.29 cm ² /m ø8.0 c/20 (2.51 cm ² /m)	
Barra	PAR-S-2-A L301	-288		As = 2.29 cm ² /m ø8.0 c/20 (2.51 cm ² /m)	

Barra	L301 PAR-S-4	-1284		As = 4.27 cm ² /m ø12.5 c/20 (6.14 cm ² /m)	
Barra	PAR-S-4 L302	-1284		As = 4.27 cm ² /m ø12.5 c/20 (6.14 cm ² /m)	
Barra	L302 L301	-17		As = 2.40 cm ² /m ø8.0 c/20 (2.51 cm ² /m)	
Barra	L301 PAR-S-1-B	-771		As = 2.72 cm ² /m ø10.0 c/20 (3.93 cm ² /m)	
Barra	PAR-S-1-B L301	-107		As = 2.29 cm ² /m ø8.0 c/20 (2.51 cm ² /m)	
Barra	L302 PAR-S-2-B	-776		As = 2.29 cm ² /m ø8.0 c/20 (2.51 cm ² /m)	
Barra	PAR-S-2-B L302	-288		As = 2.29 cm ² /m ø8.0 c/20 (2.51 cm ² /m)	
Barra	PAR-S-5 L302	-1728		As = 4.84 cm ² /m ø16.0 c/20 (10.05 cm ² /m)	
Barra	L302 PAR-S-5	-307		As = 2.29 cm ² /m ø8.0 c/20 (2.51 cm ² /m)	
Barra	L302 PAR-S-1-A	-771		As = 2.72 cm ² /m ø10.0 c/20 (3.93 cm ² /m)	
Barra	PAR-S-1-A L302	-107		As = 2.29 cm ² /m ø8.0 c/20 (2.51 cm ² /m)	
Barra	L406 L403	-168		As = 1.81 cm ² /m ø8.0 c/20 (2.51 cm ² /m)	
Barra	L403 PAR-S-1-A	-577		As = 3.25 cm ² /m ø10.0 c/20 (3.93 cm ² /m)	
Barra	PAR-S-1-A L406	-121		As = 1.81 cm ² /m ø8.0 c/20 (2.51 cm ² /m)	
Barra	PAR-S-1-A PAR-S-5	-1394		As = 4.05 cm ² /m ø12.5 c/20 (6.14 cm ² /m)	
Barra	PAR-S-5 PAR-S-1-A	-56		As = 2.29 cm ² /m ø8.0 c/20 (2.51 cm ² /m)	
Barra	PAR-S-1-A PAR-S-1-B	-21		As = 2.29 cm ² /m ø8.0 c/20 (2.51 cm ² /m)	
Barra	PAR-S-1-B PAR-S-4	-632		As = 2.29 cm ² /m ø8.0 c/20 (2.51 cm ² /m)	
Barra	PAR-S-4 PAR-S-1-A	-632		As = 2.29 cm ² /m ø8.0 c/20 (2.51 cm ² /m)	
Barra	L405 L403	-168		As = 1.81 cm ² /m ø8.0 c/20 (2.51 cm ² /m)	

Barra	L403 PAR-S-1-B	-577		As = 3.25 cm ² /m ø10.0 c/20 (3.93 cm ² /m)	
Barra	PAR-S-1-B L405	-121		As = 1.81 cm ² /m ø8.0 c/20 (2.51 cm ² /m)	
Barra	PAR-S-1-B PAR-S-3	-56		As = 2.29 cm ² /m ø8.0 c/20 (2.51 cm ² /m)	
Barra	PAR-S-3 PAR-S-1-B	-1394		As = 4.05 cm ² /m ø12.5 c/20 (6.14 cm ² /m)	
Barra	L405 L407	-263		As = 1.81 cm ² /m ø8.0 c/20 (2.51 cm ² /m)	
Barra	L407 PAR-S-2-A	-288		As = 2.16 cm ² /m ø8.0 c/20 (2.51 cm ² /m)	
Barra	PAR-S-2-A L405	-126		As = 1.81 cm ² /m ø8.0 c/20 (2.51 cm ² /m)	
Barra	PAR-S-2-A PAR-S-3	-1448		As = 3.67 cm ² /m ø12.5 c/20 (6.14 cm ² /m)	
Barra	PAR-S-3 PAR-S-2-A	-62		As = 2.29 cm ² /m ø8.0 c/20 (2.51 cm ² /m)	
Barra	PAR-S-2-B PAR-S-4	-641		As = 2.29 cm ² /m ø8.0 c/20 (2.51 cm ² /m)	
Barra	PAR-S-4 PAR-S-2-A	-641		As = 2.29 cm ² /m ø8.0 c/20 (2.51 cm ² /m)	
Barra	PAR-S-2-A PAR-S-2-B	-17		As = 2.29 cm ² /m ø8.0 c/20 (2.51 cm ² /m)	
Barra	L406 L407	-263		As = 1.81 cm ² /m ø8.0 c/20 (2.51 cm ² /m)	
Barra	L407 PAR-S-2-B	-288		As = 2.16 cm ² /m ø8.0 c/20 (2.51 cm ² /m)	
Barra	PAR-S-2-B L406	-126		As = 1.81 cm ² /m ø8.0 c/20 (2.51 cm ² /m)	
Barra	PAR-S-5 PAR-S-2-B	-1448		As = 3.67 cm ² /m ø12.5 c/20 (6.14 cm ² /m)	
Barra	PAR-S-2-B PAR-S-5	-62		As = 2.29 cm ² /m ø8.0 c/20 (2.51 cm ² /m)	
Barra	L401 L405	-301		As = 1.81 cm ² /m ø8.0 c/20 (2.51 cm ² /m)	
Barra	L405 PAR-S-3	-288		As = 2.76 cm ² /m ø10.0 c/20 (3.93 cm ² /m)	
Barra	PAR-S-3 L401	-143		As = 2.25 cm ² /m ø8.0 c/20 (2.51 cm ² /m)	

Barra	L404 L406	-301		As = 1.81 cm ² /m ø8.0 c/20 (2.51 cm ² /m)	
Barra	L406 PAR-S-5	-288		As = 2.76 cm ² /m ø10.0 c/20 (3.93 cm ² /m)	
Barra	PAR-S-5 L404	-143		As = 2.25 cm ² /m ø8.0 c/20 (2.51 cm ² /m)	
Barra	L405 L406	-216		As = 1.81 cm ² /m ø8.0 c/20 (2.51 cm ² /m)	
Barra	L406 PAR-S-4	-6		As = 1.81 cm ² /m ø8.0 c/20 (2.51 cm ² /m)	
Barra	PAR-S-4 L405	-126		As = 1.81 cm ² /m ø8.0 c/20 (2.51 cm ² /m)	
V402 1	L401 L403	-427		As = 1.81 cm ² /m ø8.0 c/20 (2.51 cm ² /m)	
V401 1	L402 L403	-58		As = 1.81 cm ² /m ø8.0 c/20 (2.51 cm ² /m)	
V403 1	L403 L404	-427		As = 1.81 cm ² /m ø8.0 c/20 (2.51 cm ² /m)	