



CONSÓRCIO SAÚDE

CONCREMAT | MEP

MEMORIAL DESCRITIVO

PROJETO EXECUTIVO DE
ESTRUTURA DE CONCRETO

CENTRO ESPECIALIZADO EM
REABILITAÇÃO (CER)
TIPO 03

MARÇO/2026
VERSÃO R01

ASSUNTO:	MEMORIAL DESCRITIVO – PROJETO EXECUTIVO – ESTRUTURA DE CONCRETO	
OBRA:	CENTRO ESPECIALIZADO EM REABILITAÇÃO (CER) – TIPO 03	
LOCAL:	DIVERSOS	
CONTRATANTE:	SECRETARIA DE SAÚDE DO ESTADO DA BAHIA - SESAB	CNPJ: 13.937.131/0001-41
CONTRATADA:	CONSÓRCIO SAÚDE CONCREMAT-MEP	CNPJ: 60.255.454/0001-35

	CONTRATANTE SECRETARIA DA SAÚDE DO ESTADO DA BAHIA (SESAB) CNPJ: 13.937.131/0001-41	
	AUTOR DO MEMORIAL ROBERTO FILGUEIRAS DE MACEDO ENG. CIVIL – CREA/BA Nº 050019256-1	
	ESCALA: INDICADA	DATA: MARÇO/2026
	TEXTO: CONSÓRCIO SAÚDE CONCREMAT-MEP	

ÍNDICE

1. INTRODUÇÃO.....	4
2. CONCEPÇÃO ESTRUTURAL DA SUPRA-ESTRUTURA	4
3. CONCEPÇÃO ESTRUTURAL DA INFRA-ESTRUTURA.....	4
4. ESPECIFICAÇÕES TÉCNICAS	17
4.1 CONCRETO ARMADO.....	17
4.2 MATERIAIS	18
4.2.1 AÇO PARA ARMADURA DO CONCRETO ARMADO.....	18
4.2.2 AGREGADOS	19
4.2.3 ÁGUA.....	19
4.2.4 CIMENTO.....	19
4.2.5 FORMA E ESCORAMENTO	20
5. MEMÓRIA DE CÁLCULO (PRÉDIO PRINCIPAL)	22
6. MEMÓRIA DE CÁLCULO (EDÍCULA DE RESÍDUOS).....	181
7. MEMÓRIA DE CÁLCULO (CASA DE GASES).....	185

1. INTRODUÇÃO

O objetivo do presente documento é apresentar o memorial descritivo, de especificações e cálculos do Projeto Executivo de Estruturas para a construção do Centro Especializado em Reabilitação - CER – Tipo 3.

2. CONCEPÇÃO ESTRUTURAL DA SUPRA-ESTRUTURA

A supra-estrutura foi concebida em concreto armado “in loco” compreendendo lajes (maciças e treliçadas), vigas e pilares (concreto armado), estando as locações e dimensões compatibilizadas com o projeto arquitetônico.

Acompanha este memorial descritivo, os arquivos magnéticos e impressões contendo as pranchas que compõem o projeto estrutural, e a respectiva relação.

3. CONCEPÇÃO ESTRUTURAL DA INFRA-ESTRUTURA

A fundação e os pilares de arranque deverão ser dimensionados e detalhados de acordo com as implantações sugeridas e relatórios de sondagem específicos para cada terreno.

Relatório de Cargas nas Fundações - PRINCIPAL

Fundação		Carga (tf)											Carga máxima (tf)	
No me	Seção (cm)	Peso próprio	Adicional	Acidental	Vento X+	Vento X-	Vento Y+	Vento Y-	Desaprumo X+	Desaprumo X-	Desaprumo Y+	Desaprumo Y-	Positiva	Negativa
P1	30x30	4,58	3,56	0,77	-0,12	0,12	0,19	-0,19	-0,06	0,06	0,06	-0,06	9,05	0,00
P2	15x30	4,88	5,66	1,48	0,13	-0,13	0,18	-0,18	0,06	-0,06	0,06	-0,06	12,17	0,00
P3	15x30	4,55	5,15	1,35	0,09	0,09	0,16	-0,16	-0,05	0,05	0,06	-0,06	11,18	0,00

P4	30x30	6,82	6,89	1,91	0,01	-0,01	0,22	-0,22	0,00	0,00	0,08	-0,08	15,81	0,00
P5	30x30	9,22	7,15	3,14	-0,04	-0,04	0,10	-0,10	-0,03	0,03	0,04	-0,04	19,58	0,00
P6	30x30	5,94	4,41	1,33	-0,11	-0,11	0,19	-0,19	-0,05	0,05	0,09	-0,09	11,85	0,00
P7	30x30	3,88	2,23	0,52	0,25	-0,25	0,15	-0,15	0,12	-0,12	0,05	-0,05	6,85	0,00
P8	15x30	4,53	4,87	1,24	-0,10	-0,10	0,07	-0,07	-0,04	0,04	-0,01	0,01	10,73	0,00
P9	15x30	6,47	7,30	3,59	0,08	-0,08	0,15	-0,15	0,04	-0,04	-0,05	0,05	17,49	0,00
P10	15x30	4,90	6,23	2,55	-0,03	-0,03	0,15	-0,15	-0,01	0,01	-0,05	0,05	13,81	0,00
P11	15x30	8,15	7,26	4,74	0,01	-0,01	0,23	-0,23	0,01	-0,01	-0,08	0,08	20,34	0,00
P12	15x30	7,10	5,73	3,48	-0,12	-0,12	0,23	-0,23	-0,06	0,06	-0,09	0,09	16,50	0,00
P13	15x30	3,10	2,90	0,48	0,11	-0,11	0,00	-0,00	0,05	-0,05	-0,01	0,01	6,58	0,00
P14	30x30	7,18	7,19	1,72	-0,10	-0,10	0,14	-0,14	-0,06	0,06	0,05	-0,05	16,21	0,00
P15	30x30	7,70	8,68	3,26	0,08	-0,08	0,27	-0,27	0,03	-0,03	0,09	-0,09	19,85	0,00
P16	15x30	4,47	5,29	2,14	0,00	-0,00	0,16	-0,16	0,00	0,00	0,06	-0,06	12,03	0,00
P17	30x30	6,43	7,01	3,09	-0,02	-0,02	0,27	-0,27	-0,02	0,02	0,10	-0,10	16,75	0,00
P18	30x30	11,02	10,35	5,24	-0,03	-0,03	0,15	-0,15	-0,02	0,02	0,06	-0,06	26,74	0,00
P19	30x30	6,02	4,81	2,45	0,03	-0,03	0,19	-0,19	0,03	-0,03	0,09	-0,09	13,44	0,00
P20	30x30	4,32	3,21	0,79	0,10	-0,10	0,08	-0,08	0,04	-0,04	0,03	-0,03	8,40	0,00

P21	30x30	5,74	5,01	1,00	-0,15	0,15	-0,28	0,28	-0,06	0,06	-0,09	0,09	11,98	0,00
P22	30x30	7,63	7,80	1,98	0,05	0,05	-0,28	0,28	0,03	-0,03	-0,10	0,10	17,65	0,00
P23	15x30	4,51	5,03	1,46	0,01	0,01	-0,17	0,17	0,00	0,00	-0,06	0,06	11,13	0,00
P24	30x30	6,41	6,12	1,78	0,06	0,06	-0,27	0,27	-0,02	0,02	-0,10	0,10	14,53	0,00
P25	30x30	6,58	6,38	1,26	0,05	0,05	-0,20	0,20	-0,03	0,03	-0,09	0,09	14,40	0,00
P26	30x30	7,88	6,38	2,59	0,08	0,08	-0,03	0,03	0,05	-0,05	-0,03	0,03	16,92	0,00
P27	30x30	4,81	3,92	0,99	0,08	0,08	-0,03	0,03	0,04	-0,04	-0,01	0,01	9,79	0,00
P28	40x40	6,34	3,45	0,00	0,07	0,07	-0,10	0,10	-0,02	0,02	0,02	-0,02	9,90	0,00
P29	40x40	6,64	3,51	0,00	0,00	0,00	-0,01	0,01	0,00	0,00	0,00	0,00	10,17	0,00
P30	40x40	6,34	3,56	0,00	0,07	0,07	-0,10	0,10	0,02	-0,02	0,02	-0,02	10,01	0,00
P31	30x30	5,66	5,21	0,38	0,07	0,07	-0,22	0,22	-0,03	0,03	0,07	-0,07	11,42	0,00
P32	15x30	5,89	7,40	0,65	0,06	0,06	-0,10	0,10	-0,03	0,03	0,04	-0,04	14,03	0,00
P33	30x30	4,33	3,60	0,38	0,06	0,06	-0,21	0,21	0,03	-0,03	0,09	-0,09	8,49	0,00
P34	15x30	4,54	5,24	0,52	0,01	0,01	-0,14	0,14	0,00	0,00	0,06	-0,06	10,43	0,00
P35	30x30	5,84	5,74	0,55	0,02	0,02	-0,20	0,20	0,01	-0,01	0,08	-0,08	12,30	0,00
P36	15x30	4,34	5,10	0,45	0,04	0,04	-0,15	0,15	-0,02	0,02	0,07	-0,07	10,02	0,00
P37	30x30	4,69	4,36	0,37	0,07	0,07	-0,16	0,16	-0,03	0,03	0,07	-0,07	9,56	0,00

P38	15x30	3,68	4,31	0,35	0,02	-0,02	0,08	-0,08	0,01	-0,01	0,04	-0,04	8,41	0,00
P39	30x30	5,10	4,98	0,42	0,08	-0,08	0,19	-0,19	0,04	-0,04	0,08	-0,08	10,66	0,00
P40	15x30	5,18	5,79	0,55	0,03	-0,03	0,11	-0,11	-0,02	0,02	0,06	-0,06	11,61	0,00
P41	30x30	7,37	7,16	2,26	0,05	-0,05	0,03	-0,03	0,03	-0,03	0,00	0,00	16,84	0,00
P42	30x30	7,26	7,02	2,51	0,03	-0,03	0,02	-0,02	-0,01	0,01	0,00	0,00	16,80	0,00
P43	15x30	4,84	5,42	1,50	0,05	-0,05	0,14	-0,14	0,03	-0,03	0,06	-0,06	11,89	0,00
P44	15x30	4,38	4,80	1,35	0,01	-0,01	0,15	-0,15	-0,01	0,01	0,06	-0,06	10,65	0,00
P45	15x30	5,31	6,16	1,83	0,01	-0,01	0,14	-0,14	0,01	-0,01	0,06	-0,06	13,42	0,00
P46	15x30	5,24	6,05	1,80	0,11	-0,11	0,14	-0,14	-0,05	0,05	0,06	-0,06	13,21	0,00
P47	30x30	4,47	3,70	0,83	0,10	-0,10	0,19	-0,19	0,05	-0,05	0,08	-0,08	9,16	0,00
P48	40x40	7,37	2,28	0,00	0,02	-0,02	0,01	-0,01	-0,01	0,01	0,00	0,00	9,68	0,00
P49	30x30	2,68	0,28	0,00	0,00	-0,00	0,00	-0,00	0,00	0,00	0,00	0,00	2,97	0,00
P50	40x40	7,37	2,20	0,00	0,02	-0,02	0,01	-0,01	0,01	-0,01	0,00	0,00	9,59	0,00
P51	30x30	7,08	7,67	1,10	0,08	-0,08	0,04	-0,04	-0,04	0,04	0,02	-0,02	15,92	0,00
P52	15x30	6,42	8,61	1,84	0,11	-0,11	0,12	-0,12	-0,08	0,08	-0,05	0,05	16,98	0,00
P53	30x30	3,41	3,49	0,70	0,14	-0,14	0,17	-0,17	0,09	-0,09	-0,07	0,07	7,73	0,00
P54	15x30	4,42	6,02	1,46	0,02	-0,02	0,14	-0,14	-0,01	0,01	-0,06	0,06	12,02	0,00

P55	30x30	5,54	6,53	1,66	0,01	-	-	0,15	0,01	-0,01	-0,06	0,06	13,85	0,00
P56	15x30	4,76	5,72	1,47	0,04	-	-	0,14	-0,03	0,03	-0,06	0,06	12,07	0,00
P57	30x30	4,72	4,22	0,90	0,06	-	-	0,11	-0,03	0,03	-0,04	0,04	9,93	0,00
P58	15x30	3,65	3,98	0,94	0,01	-	-	0,06	0,01	-0,01	-0,03	0,03	8,63	0,00
P59	30x30	4,79	4,54	1,09	0,06	-	-	0,17	0,04	-0,04	-0,08	0,08	10,57	0,00
P60	15x30	4,50	5,94	1,12	0,02	-	-	0,11	-0,01	0,01	-0,05	0,05	11,67	0,00
P61	30x30	5,11	4,56	1,62	0,02	-	-	0,06	0,02	-0,02	-0,03	0,03	11,35	0,00
P62	30x30	5,52	5,29	2,70	0,01	-	-	0,06	0,00	0,00	-0,03	0,03	13,57	0,00
P63	15x30	5,04	6,08	2,58	0,05	-	-	0,13	0,03	-0,03	-0,05	0,05	13,80	0,00
P64	15x30	4,50	5,28	2,24	0,01	-	-	0,13	-0,01	0,01	-0,05	0,05	12,13	0,00
P65	15x30	5,61	6,86	3,04	0,03	-	-	0,13	0,01	-0,01	-0,05	0,05	15,62	0,00
P66	15x30	5,60	6,77	3,03	0,10	-	-	0,12	-0,06	0,06	-0,05	0,05	15,50	0,00
P67	30x30	5,33	5,01	1,34	0,10	-	-	0,05	0,06	-0,06	0,02	-0,02	11,77	0,00
P68	40x40	7,37	2,28	0,00	0,02	-	-	0,01	-0,01	0,01	0,00	0,00	9,68	0,00
P69	30x30	2,68	0,28	0,00	0,00	-	-	0,00	0,00	0,00	0,00	0,00	2,97	0,00
P72	15x30	7,33	9,08	3,02	0,27	-	-	0,03	0,14	-0,14	0,02	-0,02	19,68	0,00
P73	30x30	11,11	11,39	4,01	0,09	-	-	0,11	-0,05	0,05	0,03	-0,03	26,59	0,00

P74	15x3 0	4,39	5,98	1,17	0,0 8	- 0,0 8	0,1 0	- 0,1 0	0,05	-0,05	0,04	-0,04	11,6 2	0,00
P75	30x3 0	11,04	9,89	4,22	0,0 0	0,0 0	- 0,0 3	0,0 3	0,00	0,00	-0,02	0,02	25,1 7	0,00
P76	30x3 0	10,18	9,64	4,04	- 0,0 5	0,0 5	0,0 2	- 0,0 2	-0,03	0,03	0,01	-0,01	23,9 2	0,00
P77	30x3 0	6,56	5,91	2,31	- 0,0 2	0,0 2	0,0 1	- 0,0 1	-0,01	0,01	0,01	-0,01	14,8 0	0,00
P78	30x3 0	8,10	7,52	3,05	0,0 1	- 0,0 1	0,0 1	- 0,0 1	0,00	0,00	0,01	-0,01	18,6 9	0,00
P79	30x3 0	7,59	7,32	3,13	0,0 5	- 0,0 5	0,0 0	0,0 0	0,03	-0,03	0,00	0,00	18,0 9	0,00
P80	30x3 0	7,66	6,03	4,19	- 0,0 1	0,0 1	0,0 0	0,0 0	-0,01	0,01	0,00	0,00	17,8 9	0,00
P81	30x3 0	8,36	7,75	4,35	0,0 3	- 0,0 3	0,1 2	- 0,1 2	0,02	-0,02	0,06	-0,06	20,5 8	0,00
P82	30x3 0	8,61	9,80	4,59	- 0,0 6	0,0 6	0,1 2	- 0,1 2	-0,03	0,03	0,06	-0,06	23,1 2	0,00
P83	30x3 0	7,78	7,69	2,47	0,1 1	- 0,1 1	- 0,1 1	0,1 1	0,05	-0,05	-0,05	0,05	18,0 4	0,00
P84	15x3 0	6,80	6,74	4,50	- 0,0 1	0,0 1	0,0 8	- 0,0 8	-0,01	0,01	0,02	-0,02	18,1 0	0,00
P85	15x3 0	6,71	6,63	4,40	0,0 0	0,0 0	0,1 0	- 0,1 0	0,01	-0,01	0,02	-0,02	17,8 1	0,00
P86	40x4 0	6,34	3,45	0,00	- 0,0 7	0,0 7	- 0,1 0	0,1 0	-0,02	0,02	-0,02	0,02	9,90	0,00
P87	40x4 0	6,64	3,51	0,00	0,0 0	0,0 0	0,0 1	- 0,0 1	0,00	0,00	0,00	0,00	10,1 7	0,00
P90	15x3 0	6,53	7,48	0,89	0,2 2	- 0,2 2	- 0,0 8	0,0 8	0,13	-0,13	-0,02	0,02	15,1 1	0,00
P91	30x3 0	7,72	7,77	1,00	- 0,0 7	0,0 7	- 0,1 3	0,1 3	-0,05	0,05	-0,05	0,05	16,6 0	0,00
P92	15x3 0	4,65	4,94	0,25	0,0 4	- 0,0 4	- 0,0 7	0,0 7	0,03	-0,03	-0,04	0,04	9,90	0,00

P93	30x30	10,21	11,00	1,84	0,00	0,00	0,21	-0,21	0,00	0,00	0,09	-0,09	23,23	0,00
P94	30x30	11,23	13,22	2,13	-0,06	0,06	0,09	-0,09	-0,05	0,05	0,05	-0,05	26,66	0,00
P95	30x30	10,36	7,39	1,91	0,02	0,02	0,02	-0,02	-0,01	0,01	-0,01	0,01	19,69	0,00
P96	30x30	10,83	8,08	2,07	0,00	0,00	-0,01	0,01	0,00	0,00	-0,01	0,01	20,99	0,00
P97	30x30	8,67	8,97	2,66	0,08	-0,08	0,09	-0,09	0,06	-0,06	0,05	-0,05	20,39	0,00
P98	30x30	8,95	8,75	3,52	-0,04	0,04	0,12	-0,12	-0,02	0,02	0,04	-0,04	21,31	0,00
P99	30x30	8,08	8,03	2,18	0,04	-0,04	0,23	-0,23	0,03	-0,03	-0,09	0,09	18,48	0,00
P100	30x30	7,94	7,99	2,18	-0,03	0,03	0,26	-0,26	-0,02	0,02	-0,10	0,10	18,33	0,00
P101	30x30	6,38	5,64	1,52	0,12	-0,12	0,15	-0,15	0,05	-0,05	-0,05	0,05	13,67	0,00
P102	circu lar	8,18	4,24	1,25	0,02	-0,02	0,16	-0,16	0,00	0,00	-0,08	0,08	13,81	0,00
P103	14x30	0,58	0,06	0,04	-0,01	0,01	0,03	-0,03	0,00	0,00	0,00	0,00	0,70	0,00
P104	14x30	0,79	0,15	0,10	0,00	0,00	0,02	-0,02	0,00	0,00	0,00	0,00	1,05	0,00
P105	14x30	0,58	0,06	0,04	0,01	-0,01	0,03	-0,03	0,00	0,00	0,00	0,00	0,70	0,00
P106	14x30	0,58	0,06	0,04	-0,01	0,01	0,03	-0,03	0,00	0,00	0,00	0,00	0,70	0,00
P107	14x30	0,79	0,15	0,10	0,00	0,00	0,02	-0,02	0,00	0,00	0,00	0,00	1,05	0,00
P108	14x30	0,58	0,06	0,04	0,01	-0,01	0,03	-0,03	0,00	0,00	0,00	0,00	0,70	0,00
P117	30x30	9,24	9,24	3,92	-0,05	0,05	0,12	-0,12	-0,01	0,01	-0,04	0,04	22,49	0,00

P118	30x30	8,28	8,72	3,06	0,07	-0,07	0,10	-0,10	0,04	-0,04	0,05	-0,05	20,15	0,00
P119	15x30	6,58	8,07	2,74	0,04	-0,04	0,09	-0,09	-0,02	0,02	0,04	-0,04	17,45	0,00
P120	30x30	5,77	4,87	1,42	0,07	-0,07	0,13	-0,13	0,04	-0,04	0,05	-0,05	12,17	0,00
P127	14x30	0,58	0,06	0,04	0,01	-0,01	0,03	-0,03	0,00	0,00	0,00	0,00	0,70	0,00
P128	14x30	0,79	0,15	0,10	0,00	-0,00	0,02	-0,02	0,00	0,00	0,00	0,00	1,05	0,00
P129	14x30	0,58	0,06	0,04	0,01	-0,01	0,03	-0,03	0,00	0,00	0,00	0,00	0,70	0,00
P130	14x30	0,58	0,06	0,04	0,01	-0,01	0,03	-0,03	0,00	0,00	0,00	0,00	0,70	0,00
P131	14x30	0,79	0,15	0,10	0,00	-0,00	0,02	-0,02	0,00	0,00	0,00	0,00	1,05	0,00
P132	14x30	0,58	0,06	0,04	0,01	-0,01	0,03	-0,03	0,00	0,00	0,00	0,00	0,70	0,00
P135	circu lar	9,22	5,44	1,65	0,04	-0,04	0,04	-0,04	0,01	-0,01	0,02	-0,02	16,34	0,00
P138	30x30	3,70	2,71	0,17	0,13	-0,13	0,33	-0,33	-0,07	0,07	0,10	-0,10	6,93	0,00
P139	30x30	5,32	5,13	0,38	0,04	-0,04	0,31	-0,31	0,02	-0,02	0,11	-0,11	11,09	0,00
P140	30x30	5,78	5,62	0,19	0,02	-0,02	0,32	-0,32	0,02	-0,02	0,12	-0,12	11,93	0,00
P141	30x30	5,68	5,43	0,16	0,01	-0,01	0,32	-0,32	-0,01	0,01	0,12	-0,12	11,62	0,00
P142	30x30	5,94	5,85	0,13	0,05	-0,05	0,33	-0,33	0,03	-0,03	0,13	-0,13	12,30	0,00
P143	30x30	5,00	3,99	-0,26	0,17	-0,17	0,31	-0,31	-0,10	0,10	0,13	-0,13	9,38	0,00
P144	30x30	5,78	6,17	0,57	0,16	-0,16	0,14	-0,14	0,09	-0,09	0,08	-0,08	12,66	0,00

P14 5	30x3 0	10,79	11,00	1,82	- 0,1 1	0,1 1	- 0,1 5	0,1 5	-0,07	0,07	-0,07	0,07	23,7 4	0,00
P15 4	30x3 0	7,69	6,52	1,59	0,1 0	- 0,1 0	- 0,0 4	0,0 4	0,06	-0,06	-0,01	0,01	15,9 0	0,00
P15 5	30x3 0	7,26	7,52	4,07	0,0 2	0,0 2	0,0 2	0,0 2	-0,01	0,01	0,01	-0,01	18,8 7	0,00
P15 6	30x3 0	8,63	9,84	4,87	0,0 5	- 0,0 5	- 0,0 6	0,0 6	0,03	-0,03	-0,02	0,02	23,3 9	0,00
P15 7	15x3 0	8,53	10,33	5,44	0,0 4	0,0 4	- 0,0 7	0,0 7	-0,02	0,02	-0,02	0,02	24,3 5	0,00
P15 8	30x3 0	6,78	6,11	2,19	0,0 5	- 0,0 5	0,1 2	- 0,1 2	0,03	-0,03	0,06	-0,06	15,1 9	0,00
P15 9	30x3 0	6,19	5,15	0,74	0,0 6	0,0 6	- 0,2 3	0,2 3	-0,03	0,03	-0,08	0,08	12,2 6	0,00
P16 0	30x3 0	6,66	6,26	1,46	0,0 4	- 0,0 4	- 0,2 8	0,2 8	0,01	-0,01	-0,10	0,10	14,6 1	0,00
P16 1	30x3 0	8,89	8,90	2,72	0,0 0	0,0 0	- 0,2 5	0,2 5	0,00	0,00	-0,09	0,09	20,7 2	0,00
P16 2	30x3 0	8,56	8,67	2,72	- 0,0 1	0,0 1	- 0,2 5	0,2 5	-0,01	0,01	-0,09	0,09	20,1 5	0,00
P16 3	30x3 0	9,94	9,78	3,25	0,0 0	0,0 0	- 0,2 6	0,2 6	0,00	0,00	-0,10	0,10	23,1 8	0,00
P16 4	30x3 0	9,03	9,00	2,88	- 0,1 7	0,1 7	- 0,2 4	0,2 4	-0,11	0,11	-0,09	0,09	21,1 1	0,00
P16 5	30x3 0	9,72	12,58	1,88	0,1 3	- 0,1 3	- 0,1 8	0,1 8	0,09	-0,09	-0,08	0,08	24,3 4	0,00
P16 6	30x3 0	9,61	12,42	1,69	- 0,0 7	0,0 7	- 0,1 5	0,1 5	-0,05	0,05	0,07	-0,07	23,8 5	0,00
P16 7	30x3 0	4,49	3,57	0,57	0,0 0	0,0 0	- 0,0 4	0,0 4	0,00	0,00	-0,02	0,02	8,67	0,00
P16 8	30x3 0	7,48	7,09	2,06	0,0 4	- 0,0 4	- 0,1 1	0,1 1	0,03	-0,03	-0,05	0,05	16,7 4	0,00
P16 9	30x3 0	6,69	7,70	2,19	- 0,0 5	0,0 5	- 0,0 3	0,0 3	-0,04	0,04	-0,01	0,01	16,6 3	0,00

P17 0	30x3 0	8,59	8,62	3,96	0,0 6	- 0,0 6	- 0,0 4	0,0 4	0,04	-0,04	-0,02	0,02	21,2 3	0,00
P17 1	30x3 0	8,80	9,50	4,53	0,0 4	- 0,0 4	- 0,0 7	0,0 7	0,03	-0,03	0,02	-0,02	22,8 8	0,00
P17 2	15x3 0	4,75	5,68	1,68	0,0 7	- 0,0 7	- 0,1 2	0,1 2	-0,03	0,03	0,06	-0,06	12,2 1	0,00
P17 3	30x3 0	7,44	7,00	1,70	0,1 1	- 0,1 1	- 0,1 0	0,1 0	0,06	-0,06	-0,05	0,05	16,2 4	0,00
P17 4	15x2 5	6,32	6,38	2,23	0,0 0	0,0 0	- 0,1 0	0,1 0	0,00	0,00	-0,04	0,04	15,0 2	0,00
P17 5	15x3 0	6,27	6,88	3,56	0,0 3	- 0,0 3	- 0,0 7	0,0 7	-0,02	0,02	-0,05	0,05	16,7 8	0,00
P17 6	15x3 0	3,54	3,44	1,17	0,0 9	- 0,0 9	- 0,0 3	0,0 3	-0,07	0,07	0,01	-0,01	8,25	0,00
P17 7	15x3 0	4,87	5,00	2,14	0,1 1	- 0,1 1	0,0 3	- 0,0 3	0,08	-0,08	0,01	-0,01	12,1 2	0,00
P17 8	15x2 5	0,48	0,44	0,00	0,0 0	0,0 0	0,0 0	0,0 0	0,00	0,00	0,00	0,00	0,92	0,00
P17 9	15x3 0	8,88	11,38	3,16	0,0 4	- 0,0 4	- 0,0 4	0,0 4	0,03	-0,03	0,02	-0,02	23,4 7	0,00
P18 0	30x3 0	6,44	5,71	1,09	0,1 3	- 0,1 3	- 0,1 7	0,1 7	-0,08	0,08	0,05	-0,05	13,3 7	0,00
P18 1	30x3 0	4,87	5,84	1,11	0,0 5	- 0,0 5	- 0,0 3	0,0 3	0,02	-0,02	0,01	-0,01	11,8 7	0,00
P18 2	30x3 0	9,63	11,59	3,84	0,0 2	- 0,0 2	- 0,0 4	0,0 4	0,02	-0,02	-0,02	0,02	25,0 9	0,00
P18 3	30x3 0	9,89	11,90	4,12	0,0 3	- 0,0 3	- 0,0 3	0,0 3	-0,02	0,02	-0,02	0,02	25,9 3	0,00
P18 4	30x3 0	10,48	12,66	4,44	0,0 3	- 0,0 3	- 0,0 3	0,0 3	0,02	-0,02	-0,01	0,01	27,6 2	0,00
P18 5	30x3 0	8,21	9,63	3,45	0,0 1	- 0,0 1	- 0,0 5	0,0 5	0,00	0,00	-0,02	0,02	21,3 3	0,00
P18 6	30x3 0	6,50	7,45	1,29	0,0 1	- 0,0 1	- 0,0 2	0,0 2	-0,01	0,01	0,01	-0,01	15,2 5	0,00

P18 7	30x3 0	8,12	9,02	2,39	- 0,1 0	0,1 0	- 0,0 8	0,0 8	-0,07	0,07	-0,04	0,04	19,6 3	0,00
P18 8	30x3 0	11,31	10,24	4,17	0,1 0	0,1 0	0,0 7	0,0 7	0,08	-0,08	0,03	-0,03	25,8 4	0,00
P18 9	30x3 0	14,98	11,96	4,30	- 0,0 8	0,0 8	0,0 6	0,0 6	-0,05	0,05	0,03	-0,03	31,3 2	0,00
P19 0	30x3 0	8,15	5,07	2,28	- 0,0 3	0,0 3	0,0 4	0,0 4	-0,03	0,03	-0,02	0,02	15,5 4	0,00
P19 1	30x3 0	8,25	8,71	2,96	0,1 0	- 0,1 0	- 0,1 3	0,1 3	0,07	-0,07	-0,05	0,05	20,0 3	0,00
P19 2	15x3 0	6,36	7,28	1,87	- 0,0 8	0,0 8	- 0,1 0	0,1 0	-0,06	0,06	-0,03	0,03	15,5 9	0,00
P19 3	30x3 0	4,34	3,00	0,66	0,1 5	- 0,1 5	- 0,1 2	0,1 2	0,09	-0,09	-0,05	0,05	8,15	0,00
P19 4	30x3 0	5,75	5,01	0,29	- 0,1 2	0,1 2	- 0,1 3	0,1 3	-0,07	0,07	-0,04	0,04	11,1 6	0,00
P19 5	30x3 0	6,79	7,58	1,17	- 0,0 1	0,0 1	0,0 6	0,0 6	-0,02	0,02	0,02	-0,02	15,5 9	0,00
P19 6	30x3 0	5,61	6,37	0,82	0,0 7	- 0,0 7	0,0 8	0,0 8	0,06	-0,06	0,03	-0,03	12,8 8	0,00
P19 7	20x3 0	7,76	9,44	1,35	0,0 2	- 0,0 2	0,0 6	0,0 6	0,02	-0,02	0,02	-0,02	18,5 9	0,00
P19 8	30x3 0	7,46	8,47	0,99	- 0,0 5	0,0 5	0,0 7	0,0 7	-0,03	0,03	0,03	-0,03	16,9 8	0,00
P19 9	15x3 0	5,27	6,45	0,86	0,0 4	- 0,0 4	0,0 5	0,0 5	0,02	-0,02	0,02	-0,02	12,6 3	0,00
P20 0	30x3 0	9,07	8,63	1,48	- 0,0 1	0,0 1	0,0 8	0,0 8	0,00	0,00	0,03	-0,03	19,2 5	0,00
P20 1	15x3 0	5,11	6,74	0,86	0,0 1	- 0,0 1	0,1 9	0,1 9	0,01	-0,01	0,09	-0,09	12,8 9	0,00
P20 2	15x3 0	3,41	4,41	0,32	0,0 3	- 0,0 3	0,0 6	0,0 6	0,02	-0,02	0,03	-0,03	8,19	0,00
P20 3	15x3 0	4,46	4,29	0,83	0,0 1	- 0,0 1	0,0 5	0,0 5	0,00	0,00	-0,02	0,02	9,62	0,00

P20 4	30x3 0	10,56	6,38	1,06	- 0,1 7	0,1 7	0,1 3	- 0,1 3	-0,12	0,12	0,05	-0,05	18,1 8	0,00
P20 5	30x3 0	7,41	4,63	0,34	0,1 3	- 0,1 3	- 0,1 2	0,1 2	0,09	-0,09	-0,05	0,05	12,5 0	0,00
P20 6	30x3 0	7,93	3,78	0,31	- 0,0 1	- 0,0 1	- 0,2 2	0,2 2	-0,01	0,01	-0,10	0,10	12,2 1	0,00
P20 7	30x3 0	7,56	1,69	0,45	- 0,0 2	0,0 2	- 0,0 8	0,0 8	-0,01	0,01	-0,04	0,04	9,77	0,00
P20 8	30x3 0	7,67	1,40	0,61	- 0,0 2	0,0 2	0,0 0	0,0 0	-0,01	0,01	0,00	0,00	9,70	0,00
P20 9	30x3 5	7,47	-0,35	0,16	0,1 3	- 0,1 3	- 0,1 6	0,1 6	0,08	-0,08	-0,07	0,07	7,44	0,00
P21 0	30x3 0	4,88	4,20	0,24	- 0,1 2	0,1 2	- 0,1 3	0,1 3	-0,07	0,07	-0,04	0,04	9,43	0,00
P21 1	30x3 0	6,07	6,28	0,59	- 0,0 4	0,0 4	- 0,1 1	0,1 1	-0,03	0,03	-0,04	0,04	13,0 3	0,00
P21 2	30x3 0	6,08	6,15	0,70	0,0 7	- 0,0 7	- 0,1 2	0,1 2	0,04	-0,04	-0,04	0,04	13,0 3	0,00
P21 3	30x3 0	9,82	10,09	1,40	0,0 2	- 0,0 2	- 0,0 9	0,0 9	0,02	-0,02	-0,03	0,03	21,3 8	0,00
P21 4	30x3 0	8,56	8,54	1,07	- 0,0 8	0,0 8	- 0,1 3	0,1 3	-0,05	0,05	-0,05	0,05	18,2 7	0,00
P21 5	30x3 0	7,34	7,38	0,93	0,0 7	- 0,0 7	- 0,0 6	0,0 6	0,04	-0,04	-0,03	0,03	15,7 2	0,00
P21 6	30x3 0	7,46	6,91	0,73	- 0,0 9	0,0 9	- 0,1 3	0,1 3	-0,06	0,06	-0,05	0,05	15,2 1	0,00
P21 7	30x3 0	3,63	2,69	0,17	0,1 4	- 0,1 4	- 0,2 1	0,2 1	0,09	-0,09	-0,09	0,09	6,71	0,00
P70	40x4 0	7,37	2,20	0,00	0,0 2	- 0,0 2	- 0,0 1	0,0 1	0,01	-0,01	0,00	0,00	9,59	0,00
P71	30x3 0	5,24	4,25	0,33	- 0,3 1	0,3 1	- 0,1 1	0,1 1	-0,16	0,16	-0,05	0,05	10,1 2	0,00
P88	40x4 0	6,34	3,56	0,00	0,0 7	- 0,0 7	- 0,1 0	0,1 0	0,02	-0,02	-0,02	0,02	10,0 1	0,00

P89	30x30	4,05	2,90	0,20	-0,29	0,29	-0,11	0,11	-0,16	0,16	-0,04	0,04	7,47	0,00
P109	30x30	11,75	9,71	2,03	0,00	0,00	-0,08	0,08	0,02	-0,02	-0,04	0,04	23,56	0,00
P110	14x20	2,89	0,87	0,78	0,00	0,00	0,03	-0,03	-0,01	0,01	0,01	-0,01	4,57	0,00
P115	14x20	2,83	0,85	0,79	0,00	0,00	0,03	-0,03	0,01	-0,01	0,01	-0,01	4,48	0,00
P116	30x30	9,77	8,12	2,33	-0,03	0,03	-0,08	0,08	-0,05	0,05	-0,05	0,05	20,30	0,00
P148	14x20	2,99	0,95	0,81	-0,02	0,02	0,18	-0,18	-0,02	0,02	0,06	-0,06	4,90	0,00
P149	30x30	7,21	4,97	0,92	0,02	-0,02	0,09	-0,09	0,01	-0,01	-0,01	0,01	13,16	0,00
P150	30x30	7,65	5,33	0,85	-0,02	0,02	-0,04	0,04	-0,01	0,01	0,01	-0,01	13,85	0,00
P151	14x20	2,89	0,97	0,77	0,02	-0,02	0,16	-0,16	0,02	-0,02	0,05	-0,05	4,75	0,00
LA1		26,71	8,89	7,86	0,00	0,00	0,04	-0,04	0,00	0,00	0,01	-0,01	43,49	0,00
TOTAL:		1.279,98	1.174,67	329,20	-0,01	0,01	-0,04	0,04	0,02	-0,02	0,04	-0,04	2.783,85	

Relatório de Cargas nas Fundações - Resíduos

Fundação		Carga (tf)												Carga máxima (tf)	
No me	Seção (cm)	Peso próprio	Adicional	Acidental	Vento X+	Vento X-	Vento Y+	Vento Y-	Desaprumo X+	Desaprumo X-	Desaprumo Y+	Desaprumo Y-	Positiva	Negativa	
P1	15x25	1,09	1,01	0,07	-0,26	0,26	0,02	-0,02	-0,03	0,03	0,01	-0,01	2,43	0,00	

P2	15x 25	1,14	0,94	0,07	0,2 6	- 0,2 6	0,0 2	- 0,0 2	0,03	-0,03	0,02	-0,02	2,41	0,00
P3	14x 30	2,20	2,30	0,24	0,3 1	0,3 1	0,0 0	0,0 0	-0,03	0,03	0,00	0,00	5,00	0,00
P4	14x 30	2,43	2,33	0,24	0,3 2	0,3 2	0,0 1	0,0 1	0,03	-0,03	-0,01	0,01	5,27	0,00
P5	15x 25	1,25	1,23	0,09	0,2 7	0,2 7	0,0 1	0,0 1	-0,03	0,03	-0,01	0,01	2,83	0,00
P6	15x 25	1,25	0,69	0,09	0,2 7	0,2 7	0,0 2	0,0 2	0,03	-0,03	-0,01	0,01	2,29	0,00

Relatório de Cargas nas Fundações - Gases

Fundação		Carga (tf)												Carga máxima (tf)	
No me	Seção (cm)	Peso próprio	Adicional	Acidental	Vento X+	Vento X-	Vento Y+	Vento Y-	Desaprumo X+	Desaprumo X-	Desaprumo Y+	Desaprumo Y-	Positiva	Negativa	
P1	14x25	0,65	0,11	0,06	- 0,17	0,17	0,09	- 0,09	-0,02	0,02	0,01	-0,01	0,98	0,00	
P2	14x25	0,69	0,14	0,08	0,17	- 0,17	0,09	- 0,09	0,02	-0,02	0,01	-0,01	1,07	0,00	
P3	14x25	0,65	0,11	0,06	- 0,17	0,17	0,09	0,09	-0,02	0,02	-0,01	0,01	0,98	0,00	
P4	14x25	0,69	0,14	0,08	0,17	- 0,17	0,09	0,09	0,02	-0,02	-0,01	0,01	1,07	0,00	

4. ESPECIFICAÇÕES TÉCNICAS

4.1 CONCRETO ARMADO

O concreto armado a ser utilizado na obra deverá atender às normas e especificações da ABNT e NBR 6118, em sua versão mais atual – Projeto e execução de obras em concreto armado.

O concreto armado moldado “in loco” deverá atingir a tensão característica de projeto $f_{ck} \geq 35 \text{ MPa}$ (350 kgf/cm²).

Com o uso cada vez mais frequente do concreto dosado em central, as etapas de concretagem realizadas com grandes volumes de concreto bombeado e de uma só vez, reduzem as juntas de concretagem permitindo maior homogeneidade da estrutura concretada, com menor perda de água por evaporação e menores defasagens para início das reações do cimento.

Caso o concreto seja produzido no local, o transporte entre a betoneira até o local do lançamento, através de carros de mão, deverá ser feito observando-se alguns cuidados visando amortecer as trepidações que poderão provocar a segregação do concreto.

Recomendamos o uso de carrinhos com rodas pneumáticas transitando em caminhos bem preparados e com rampas suaves.

Qualquer que seja a forma de produção do concreto, julgamos necessário se fazer o controle tecnológico, com especificação da dosagem do traço, definição do fator água/cimento (A/C) e rompimentos de corpos de prova para aferição da resistência à compressão aos 7, 14, 21 e 28 dias, por Empresa tecnicamente idônea e atuante neste segmento.

4.2 MATERIAIS

4.2.1 AÇO PARA ARMADURA DO CONCRETO ARMADO

Todos os aços a serem aplicados na estrutura, deverão apresentar tensão de escoamento, real ou convencional, igual ou superior a 500 MPa (5.000 kgf/cm²) ou 600 MPa (6.000 kgf/cm²).

Além das recomendações das normas, deverão ser atendidas as exigências seguintes:

- As barras de aço não deverão apresentar excesso de ferrugem, manchas de óleo, argamassa aderente ou qualquer outra substância que impeça uma perfeita aderência ao concreto.
- Antes e durante o lançamento do concreto as plataformas de serviço (balancins, andaimes, etc.) deverão estar dispostas de modo a não provocarem deslocamento das armaduras.
- A armadura não poderá ficar em contato direto com a forma, obedecendo-se para isso, a distância mínima prevista pela NBR-6118:2010.
- No caso de cobrimento superior a 6cm (distância entre fôrma e a barra de aço), colocar-se-á uma armadura de pele complementar, em rede, cujo cobrimento não deve ser inferior aos limites mencionados na Norma.
- Nos casos de estruturas resistentes ao fogo, o cobrimento deverá atender às exigências da NBR-5627 (NB-503), além das especificadas neste item.
- Nos casos de estruturas sujeitas a abrasão, a altas temperaturas, a correntes elétricas ou a ambientes fortemente agressivos, deverão ser tomadas medidas especiais para aumentar a proteção da armadura, além de cobrimento mínimo.
- Deverão ser adotadas precauções para evitar oxidação excessiva das barras de espera. Antes do reinício da concretagem elas deverão estar razoavelmente limpas.

- As diferentes partidas de ferro deverão ser depositadas e arrumadas de acordo com a bitola, em lotes aproximadamente iguais, de acordo com a NBR-6118:2007, separadas umas das outras, de modo a ser estabelecida fácil correspondência entre os lotes e as amostras retiradas para ensaios.

4.2.2 AGREGADOS

A dimensão máxima característica do agregado deverá obedecer a NBR-6118:2019.

A qualidade dos agregados deverá ser avaliada através de índices, definidos por normas da ABNT, de acordo com os respectivos valores de qualidade que devem possuir os mesmos. Entretanto, em casos especiais, deverá se recorrer a normas estrangeiras para orientação mais precisa. Os índices de qualidade são assim definidos:

– Resistência aos esforços mecânicos:

Deverão ser executados ensaios conforme NBR-6465 (MB-170), devendo os valores obtidos se encontrarem dentro das prescrições da NBR-7211 (EB-4).

– Teor de substâncias nocivas:

Deverão ser executados ensaios para medição do teor de materiais nocivos, tais como torrões de argila, material pulverulento, etc.

Os ensaios obedecerão as normas NBR-7211 (EB-4), NBR-7218 (MB-8) e NBR-7219 (MB-9).

– Impurezas orgânicas:

Deverão ser executados ensaios para determinação do teor de impurezas orgânicas, conforme NBR-7220 (MB-10), sendo que os resultados obtidos deverão estar dentro dos limites prescritos na BNR-7220 (MB-10) e NBR-7211 (EB-4).

4.2.3 ÁGUA

- A água destinada ao amassamento do concreto obedecerá ao disposto nas NBR 6118 (NB-1) e NBR-6587 (PB-19), além das recomendações a seguir:

- A água considerada satisfatória para os fins aqui previstos será potável, limpa e isenta de ácidos, óleos, álcalis, sais, siltes, açúcares, materiais orgânicos, e outras substâncias agressivas ao concreto e que possam ocasionar alterações na pega do cimento.

– As quantidades máximas de matéria sólida em suspensão e sulfatos, serão respectivamente, 2.000 mg/l e 0,5%.

– Caso ocorra durante a estação chuvosa uma turbidez excessiva da água, deverá ser providenciada decantação ou filtragem.

– A água contaminada não deverá ser utilizada para a finalidade aqui referida, no caso de suspeita de contaminação, deverão ser efetuados ensaios comparativos periódicos para verificação.

4.2.4 CIMENTO

O cimento destinado ao uso do concreto deverá obedecer ao disposto na NBR-6118:2019,

além das recomendações a seguir:

- Nas peças sujeitas a ambientes agressivos, recomenda-se o uso de cimentos que atendam às especificações das Normas NBR-5736 (EB-758) e NBR-5737 (EB-903).
- Não será conveniente, em uma mesma concretagem, a mistura de tipos diferente de cimento, nem de marcas diferentes e ainda que do mesmo tipo.
- Não será conveniente o uso de traços de meio saco ou fração, os volumes mínimos a misturar de cada vez deverão corresponder a um saco de cimento.
- O cimento deverá ser obrigatoriamente medido em peso, não sendo, portanto, recomendável a sua medição em volume.
- A embalagem quando for em sacos deverão estar perfeitos na ocasião da inspeção e ter impressos de forma bem visíveis as seguintes características:
 - Indicação correspondente a 25, 32, 40 MPa (250, 320, 400 kgf/cm²) com 6 cm de altura no mínimo em cada extremidade;
 - No centro, a denominação normalizada, o nome e a marca do fabricante.
- Os sacos de cimento deverão ser armazenados em locais bem secos, protegidos e de forma a permitir fácil acesso à inspeção e identificação de cada embarque. As pilhas deverão ser colocadas sobre um estrado de madeira e não deverão conter mais de 10 sacos.
- A plataforma de madeira deverá ser montada, pelo menos, a 30cm do solo e das paredes do depósito.
- O cimento que não satisfizer a qualquer exigência das normas deverá ser rejeitado.
- O cimento armazenado em sacos por mais de três meses, deverá ser reensaiado, devendo ser igualmente rejeitado se não satisfizer a qualquer exigência das normas.
- As amostras de cimento a ser ensaiado deverão ser colhidas de acordo com a NBR-5741 (MB-508).

4.2.5 FORMA E ESCORAMENTO

Uma laje em processo de concretagem deverá ser suportada por, no mínimo três outras abaixo, quando houver.

Só é possível a total retirada das escoras sob uma laje, quando o concreto atingir 80% do Fck especificado em projeto, respeitando sempre o prazo mínimo de 14 dias.

A substituição das formas por escoras só deve acontecer quando o Fck do concreto for superior a 60% do Fck especificado em projeto, respeitando sempre o prazo mínimo de 4 dias.

As formas laterais de vigas e pilares podem ser retiradas no prazo mínimo de 48 horas (2 dias), após a concretagem.

As formas e escoramentos deverão obedecer às normas, especificações e critérios da NBR-7190 (NB-11) e / ou NB-14.

As formas deverão ser estanques e dimensionadas de modo que não possam sofrer deformações prejudiciais, quer sob a ação dos fatores ambientais, quer sob efeito de

cargas, especialmente a do concreto fresco, considerado nesta o efeito do adensamento sobre o empuxo do concreto.

As formas absorventes deverão ser molhadas até a saturação, antes da concretagem, visando evitar absorção da água do concreto.

Nas peças de grandes vãos, sujeitas a deformações provocadas pelo material nelas introduzido, as formas deverão ser dotadas de contra-flecha necessária.

Antes do início da concretagem, as formas deverão estar limpas e estanques, de modo a evitar eventuais fugas de pasta.

Os escoramentos deverão obedecer aos critérios estabelecidos pela NBR-6118:2019

5. MEMÓRIA DE CÁLCULO (PRÉDIO PRINCIPAL)

Cálculo dos Pilares

COBERTURA	$f_{ck} = 350.00$ kgf/cm ²	$E = 294029$ kgf/cm ²	Peso Espec = 2500.00 kgf/m ³
Lance 2		cobr = 2.50 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	30.00 X 30.00	RR 49.02 RR 49.02	8.15 3.90	407 648	2149 3423	5.28	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)
P2	15.00 X 30.00	RR 96.88 RR 48.44	12.37 6.32	772 613	1211 961	1.57	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P3	15.00 X 30.00	RR 96.88 RR 48.44	11.36 5.79	731 620	1161 986	1.59	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P4	30.00 X 30.00	RR 48.44 RR 48.44	13.96 6.94	1175 466	4148 1647	3.53	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)
P5	30.00 X 30.00	RR 49.02 RR 49.02	19.90 10.07	399 4402	451 4972	1.13	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)
P6	30.00 X 30.00	RR 49.02 RR 49.02	10.11 4.89	73 1054	271 3895	3.70	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)
P7	30.00 X 30.00	RR 49.02 RR 49.02	5.81 2.55	259 695	1214 3257	4.69	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)
P8	15.00 X 30.00	RR 96.88 RR 48.44	11.09 5.76	761 574	1175 887	1.54	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P9	15.00	RR	21.64	1343	1532	1.14	1.57

	X 30.00	96.88 RR 48.44	10.38	877	1000		(2 ø 10.0) 1.57 (2 ø 10.0)
P10	15.00 X 30.00	RR 96.88 RR 48.44	15.43 7.29	1062 707	1340 892	1.26	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P11	15.00 X 30.00	RR 96.88 RR 48.44	28.08 13.44	2245 1146	2268 1158	1.01	2.45 (2 ø 12.5) 3.68 (3 ø 12.5)
P12	15.00 X 30.00	RR 96.88 RR 48.44	21.68 10.37	1682 1059	1736 1094	1.03	1.57 (2 ø 10.0) 2.36 (3 ø 10.0)
P13	15.00 X 30.00	RR 96.88 RR 48.44	6.29 3.23	424 236	1017 565	2.40	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P14	30.00 X 30.00	RR 49.02 RR 49.02	13.03 6.53	2091 147	4235 298	2.03	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)
P15	30.00 X 30.00	RR 49.02 RR 49.02	17.81 8.24	1202 657	4287 2344	3.57	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)
P16	15.00 X 30.00	RR 96.88 RR 48.44	13.28 6.21	832 736	1219 1079	1.47	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P17	30.00 X 30.00	RR 48.44 RR 48.44	16.24 7.30	1149 390	4282 1455	3.73	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)
P18	30.00 X 30.00	RR 49.02 RR 49.02	26.92 12.85	308 2338	743 5639	2.41	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)
P19	30.00 X 30.00	RR 49.02 RR 49.02	13.61 6.19	298 775	1544 4014	5.18	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)
P20	30.00 X 30.00	RR 66.32 RR 49.02	7.86 3.70	378 473	2658 3324	7.02	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)
P21	30.00 X 30.00	RR 49.02 RR 49.02	9.86 4.85	1034 449	3660 1589	3.54	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)
P22	30.00	RR	14.85	577	2437	4.22	2.45

	X 30.00	49.02 RR 49.02	7.42	976	4124		(2 ø 12.5) 2.45 (2 ø 12.5)
P23	15.00 X 30.00	RR 96.88 RR 48.44	11.80 5.95	737 692	1159 1089	1.57	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P24	30.00 X 30.00	RR 48.44 RR 48.44	13.12 6.39	1167 94	4240 340	3.63	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)
P25	30.00 X 30.00	RR 49.02 RR 49.02	11.65 5.96	179 621	1126 3910	6.30	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)
P26	30.00 X 30.00	RR 49.02 RR 49.02	16.51 8.22	661 133	4132 831	6.25	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)
P27	30.00 X 30.00	RR 66.32 RR 49.02	9.04 4.37	542 79	3692 536	6.81	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)
P28	40.00 X 40.00	RR 35.90 RR 35.90	7.23 3.36	684 572	6781 5675	9.92	4.02 (2 ø 16.0) 4.02 (2 ø 16.0)
P29	40.00 X 40.00	EL 127.33 RR 36.33	7.04 3.33	2477 276	7181 800	2.90	4.02 (2 ø 16.0) 4.02 (2 ø 16.0)
P30	40.00 X 40.00	RR 36.33 RR 36.33	7.33 3.44	547 864	4375 6909	8.00	4.02 (2 ø 16.0) 4.02 (2 ø 16.0)
P31	30.00 X 30.00	RR 49.02 RR 49.02	9.03 4.92	1037 565	3552 1937	3.43	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)
P32	15.00 X 30.00	RR 96.88 RR 48.44	12.12 7.20	899 968	1144 1231	1.27	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P33	30.00 X 30.00	RR 49.02 RR 49.02	7.33 3.73	124 1356	324 3543	2.61	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)
P34	15.00 X 30.00	RR 96.88 RR 48.44	9.98 5.78	641 765	1055 1260	1.65	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P35	30.00	RR	10.12	107	308	2.89	2.45

	X 30.00	49.02 RR 49.02	5.58	1341	3869		(2 ø 12.5) 2.45 (2 ø 12.5)
P36	15.00 X 30.00	RR 96.88 RR 48.44	9.09 5.22	612 741	1024 1240	1.67	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P37	30.00 X 30.00	RR 49.02 RR 49.02	7.42 3.88	13 1129	42 3583	3.17	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)
P38	15.00 X 30.00	RR 96.88 RR 48.44	7.17 4.04	705 223	1101 348	1.56	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P39	30.00 X 30.00	RR 49.02 RR 49.02	8.22 4.34	55 1231	165 3664	2.98	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)
P40	15.00 X 30.00	RR 96.88 RR 48.44	10.76 6.39	697 893	1066 1365	1.53	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P41	30.00 X 30.00	RR 49.02 RR 49.02	15.89 8.07	402 620	2711 4181	6.74	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)
P42	30.00 X 30.00	RR 49.02 RR 49.02	16.31 8.12	607 622	3527 3614	5.81	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)
P43	15.00 X 30.00	RR 96.88 RR 48.44	12.34 6.29	865 812	1178 1106	1.36	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P44	15.00 X 30.00	RR 96.88 RR 48.44	11.15 5.61	748 794	1115 1184	1.49	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P45	15.00 X 30.00	RR 96.88 RR 48.44	14.30 7.30	906 892	1229 1210	1.36	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P46	15.00 X 30.00	RR 96.88 RR 48.44	14.14 7.20	877 881	1222 1228	1.39	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P47	30.00 X 30.00	RR 49.02 RR 49.02	8.11 3.84	468 741	2158 3414	4.61	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)
P48	40.00	RR	5.63	156	335	2.14	4.02

	X 40.00	36.33 EL 101.38	2.33	3259	6982		(2 ø 16.0) 4.02 (2 ø 16.0)
P50	40.00 X 40.00	RR 36.33 EL 101.38	5.63 2.33	174 4090	297 6985	1.71	4.02 (2 ø 16.0) 4.02 (2 ø 16.0)
P51	30.00 X 30.00	RR 49.02 RR 49.02	12.30 6.67	1693 125	4149 306	2.45	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)
P52	15.00 X 30.00	RR 96.88 RR 48.44	17.16 9.28	1412 938	1610 1069	1.14	1.57 (2 ø 10.0) 2.36 (3 ø 10.0)
P53	30.00 X 30.00	RR 49.02 RR 49.02	6.03 2.57	23 1132	69 3397	3.00	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)
P54	15.00 X 30.00	RR 96.88 RR 48.44	12.90 6.73	804 701	1210 1054	1.50	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P55	30.00 X 30.00	RR 49.02 RR 49.02	12.50 6.24	155 808	736 3844	4.76	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)
P56	15.00 X 30.00	RR 96.88 RR 48.44	13.09 6.84	882 761	1217 1050	1.38	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P57	30.00 X 30.00	RR 49.02 RR 49.02	8.26 4.03	78 773	357 3515	4.55	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)
P58	15.00 X 30.00	RR 96.88 RR 48.44	8.98 4.65	778 327	1165 490	1.50	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P59	30.00 X 30.00	RR 49.02 RR 49.02	9.22 4.42	12 1017	43 3764	3.70	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)
P60	15.00 X 30.00	RR 96.88 RR 48.44	10.92 5.78	700 790	1096 1238	1.57	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P61	30.00 X 30.00	RR 49.02 RR 49.02	11.22 5.37	267 670	1507 3784	5.65	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)
P62	30.00	RR	14.15	654	3187	4.87	2.45

	X 30.00	49.02 RR 49.02	6.37	759	3697		(2 ø 12.5) 2.45 (2 ø 12.5)
P63	15.00 X 30.00	RR 96.88 RR 48.44	15.66 7.38	1129 841	1328 989	1.18	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P64	15.00 X 30.00	RR 96.88 RR 48.44	13.69 6.41	956 793	1245 1033	1.30	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P65	15.00 X 30.00	RR 96.88 RR 48.44	18.04 8.55	1167 951	1380 1124	1.18	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P66	15.00 X 30.00	RR 96.88 RR 48.44	18.15 8.58	1169 941	1387 1117	1.19	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P67	30.00 X 30.00	RR 49.02 RR 49.02	10.26 4.97	1048 320	3806 1160	3.63	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)
P68	40.00 X 40.00	RR 36.33 EL 101.38	5.63 2.33	156 3259	335 6982	2.14	4.02 (2 ø 16.0) 4.02 (2 ø 16.0)
P70	40.00 X 40.00	RR 36.33 EL 101.38	5.63 2.33	174 4090	297 6985	1.71	4.02 (2 ø 16.0) 4.02 (2 ø 16.0)
P71	30.00 X 30.00	RR 48.44 RR 48.44	7.97 4.16	0 903	2 3631	4.02	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)
P72	15.00 X 30.00	RR 96.88 RR 48.44	23.10 11.92	2062 1229	2112 1259	1.02	2.45 (2 ø 12.5) 3.68 (3 ø 12.5)
P73	30.00 X 30.00	RR 48.44 RR 48.44	29.04 15.66	2341 905	5392 2084	2.30	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)
P74	15.00 X 30.00	RR 96.88 RR 48.44	9.42 4.73	651 1233	935 1772	1.44	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P75	30.00 X 30.00	RR 49.02 RR 66.32	29.13 15.56	1095 1869	3117 5317	2.85	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)
P76	30.00	RR	27.26	1040	2525	2.43	2.45

	X 30.00	49.02 RR 49.02	14.39	2110	5123		(2 ø 12.5) 2.45 (2 ø 12.5)
P77	30.00 X 30.00	RR 49.02 RR 66.32	16.29 8.38	138 1245	497 4466	3.59	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)
P78	30.00 X 30.00	RR 49.02 RR 66.32	21.96 11.64	650 1475	2152 4881	3.31	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)
P79	30.00 X 30.00	RR 49.02 RR 49.02	19.88 10.03	806 1189	2978 4394	3.69	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)
P80	30.00 X 30.00	RR 49.02 RR 49.02	21.04 9.80	701 1742	1870 4646	2.67	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)
P81	30.00 X 30.00	RR 48.44 RR 48.44	22.03 10.42	1002 250	4861 1213	4.85	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)
P82	30.00 X 30.00	RR 49.02 RR 49.02	23.14 10.91	890 257	5118 1476	5.75	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)
P83	30.00 X 30.00	RR 49.02 RR 49.02	16.75 8.46	2138 697	4471 1458	2.09	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)
P84	15.00 X 30.00	RR 131.48 RR 48.44	26.51 12.72	3089 1013	3097 1016	1.00	1.57 (2 ø 10.0) 6.28 (8 ø 10.0)
P85	15.00 X 30.00	RR 131.48 RR 48.44	26.01 12.47	3013 992	3004 989	1.00	2.45 (2 ø 12.5) 6.14 (5 ø 12.5)
P86	40.00 X 40.00	RR 36.33 RR 36.33	7.23 3.36	684 572	6781 5675	9.92	4.02 (2 ø 16.0) 4.02 (2 ø 16.0)
P87	40.00 X 40.00	RR 36.33 EL 127.33	7.04 3.33	276 2477	800 7181	2.90	4.02 (2 ø 16.0) 4.02 (2 ø 16.0)
P88	40.00 X 40.00	RR 36.33 RR 36.33	7.33 3.44	547 864	4375 6909	8.00	4.02 (2 ø 16.0) 4.02 (2 ø 16.0)
P89	30.00	RR	6.22	37	129	3.52	2.45

	X 30.00	48.44 RR 48.44	3.03	973	3429		(2 ø 12.5) 2.45 (2 ø 12.5)
P90	15.00 X 30.00	RR 96.88 RR 48.44	15.37 9.11	1447 811	1594 894	1.10	1.57 (2 ø 10.0) 2.36 (3 ø 10.0)
P91	30.00 X 30.00	RR 48.44 RR 48.44	14.96 8.60	2702 592	4360 955	1.61	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)
P92	15.00 X 30.00	RR 96.88 RR 48.44	7.62 4.56	30 1714	46 2609	1.52	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P93	30.00 X 30.00	RR 49.02 RR 49.02	23.33 13.70	662 1069	2966 4788	4.48	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)
P94	30.00 X 30.00	RR 49.02 RR 49.02	24.63 14.56	1562 890	4911 2797	3.14	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)
P95	30.00 X 30.00	RR 48.44 RR 48.44	21.69 12.89	51 2454	108 5226	2.13	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)
P96	30.00 X 30.00	RR 48.44 RR 48.44	23.19 13.80	2354 87	5372 199	2.28	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)
P97	30.00 X 30.00	RR 49.02 RR 49.02	19.62 10.44	329 887	1706 4601	5.19	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)
P98	30.00 X 30.00	RR 49.02 RR 49.02	21.16 10.50	626 1732	1759 4862	2.81	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)
P99	30.00 X 30.00	RR 48.44 RR 48.44	16.58 8.53	489 508	3457 3598	7.08	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)
P100	30.00 X 30.00	RR 49.02 RR 49.02	16.35 8.31	611 639	3489 3645	5.71	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)
P101	30.00 X 30.00	RR 49.02 RR 49.02	12.68 6.44	892 1369	2496 3830	2.80	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)
P102	Circ	RR	16.89	1391	3829	2.57	4.71

	0.00 X 30.00 0.00	56.00 -	9.97	539	0		(6 ø 10.0) -
P103	14.00 X 30.00	RR 35.59 RR 16.61	1.03 0.57	17 158	195 1799	11.42	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P104	14.00 X 30.00	RR 35.59 RR 16.61	1.65 0.96	0 345	0 1903	5.52	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P105	14.00 X 30.00	RR 35.59 RR 16.61	1.03 0.57	17 158	195 1799	11.42	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P106	14.00 X 30.00	RR 35.59 RR 16.61	1.03 0.57	17 158	195 1799	11.42	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P107	14.00 X 30.00	RR 35.59 RR 16.61	1.65 0.96	0 345	0 1903	5.52	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P108	14.00 X 30.00	RR 35.59 RR 16.61	1.03 0.57	17 158	195 1799	11.42	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P109	30.00 X 30.00	RR 48.44 RR 48.44	28.04 16.83	1007 1050	4030 4203	4.00	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)
P110	14.00 X 20.00	RR 10.87 EL 15.22	0.76 0.46	227 51	695 156	3.06	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P111	14.00 X 42.00	RR 10.87 EL 7.25	0.34 0.15	96 1	1169 14	12.20	1.57 (2 ø 10.0) 2.36 (3 ø 10.0)
P112	14.00 X 42.00	RR 10.87 EL 7.25	0.35 0.16	87 1	1169 15	13.51	1.57 (2 ø 10.0) 2.36 (3 ø 10.0)
P113	14.00 X 42.00	RR 10.87 EL 7.25	0.35 0.16	92 1	1169 14	12.75	1.57 (2 ø 10.0) 2.36 (3 ø 10.0)
P114	14.00 X 42.00	RR 10.87 EL 7.25	0.34 0.15	104 1	1169 12	11.26	1.57 (2 ø 10.0) 2.36 (3 ø 10.0)

P115	14.00 X 20.00	RR 10.87 EL 15.22	0.76 0.46	226 49	672 146	2.97	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P116	30.00 X 30.00	RR 48.44 RR 48.44	24.03 13.64	693 852	3510 4316	5.06	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)
P117	30.00 X 30.00	RR 49.02 RR 49.02	23.06 11.44	241 2055	617 5264	2.56	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)
P118	30.00 X 30.00	RR 49.02 RR 49.02	19.06 9.57	401 4353	450 4885	1.12	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)
P119	15.00 X 30.00	RR 96.88 RR 48.44	19.24 9.81	1241 1756	1263 1785	1.02	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P120	30.00 X 30.00	RR 48.44 RR 48.44	10.91 5.30	879 1482	2223 3750	2.53	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)
P121	14.00 X 20.00	RR 10.87 EL 15.22	0.42 0.21	459 94	683 139	1.49	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P122	14.00 X 42.00	RR 10.87 EL 7.25	0.34 0.15	65 2	1166 39	17.80	1.57 (2 ø 10.0) 2.36 (3 ø 10.0)
P123	14.00 X 42.00	RR 10.87 EL 7.25	0.34 0.15	64 2	1165 42	18.14	1.57 (2 ø 10.0) 2.36 (3 ø 10.0)
P124	14.00 X 42.00	RR 10.87 EL 7.25	0.34 0.15	65 3	1164 47	17.88	1.57 (2 ø 10.0) 2.36 (3 ø 10.0)
P125	14.00 X 42.00	RR 10.87 EL 7.25	0.34 0.15	65 3	1165 45	17.96	1.57 (2 ø 10.0) 2.36 (3 ø 10.0)
P126	14.00 X 20.00	RR 10.87 EL 15.22	0.38 0.18	433 79	666 122	1.54	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P127	14.00 X 30.00	RR 35.59 RR 16.61	1.03 0.57	17 158	195 1799	11.42	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)

P128	14.00 X 30.00	RR 35.59 RR 16.61	1.65 0.96	0 345	0 1903	5.52	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P129	14.00 X 30.00	RR 35.59 RR 16.61	1.03 0.57	17 158	195 1799	11.42	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P130	14.00 X 30.00	RR 35.59 RR 16.61	1.03 0.57	17 158	195 1799	11.42	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P131	14.00 X 30.00	RR 35.59 RR 16.61	1.65 0.96	0 345	0 1903	5.52	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P132	14.00 X 30.00	RR 35.59 RR 16.61	1.03 0.57	17 158	195 1799	11.42	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P133	14.00 X 20.00	RR 10.87 EL 15.22	0.00 -0.17	138 10	677 48	4.91	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P134	14.00 X 20.00	RR 10.87 EL 15.22	0.00 -0.13	113 13	664 79	5.87	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P135	Circ 0.00 X 30.00 0.00	RR 56.00 -	20.64 12.28	1336 846	4103 0	2.59	4.71 (6 ø 10.0) -
P136	14.00 X 20.00	RR 10.87 EL 15.22	0.43 0.23	375 125	670 223	1.78	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P137	14.00 X 20.00	RR 10.87 EL 15.22	0.46 0.25	352 160	620 282	1.76	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P138	30.00 X 30.00	RR 49.02 RR 49.02	5.59 2.60	579 137	3288 778	5.68	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)
P139	30.00 X 30.00	RR 49.02 RR 49.02	8.67 4.61	26 373	261 3712	9.95	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)
P140	30.00 X 30.00	RR 49.02 RR	8.74 4.84	275 687	1425 3554	5.17	2.45 (2 ø 12.5) 2.45

		49.02					(2 ø 12.5)
P141	30.00 X 30.00	RR 49.02 RR 49.02	8.50 4.69	311 714	1532 3515	4.92	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)
P142	30.00 X 30.00	RR 49.02 RR 49.02	8.86 4.94	471 682	2388 3456	5.07	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)
P143	30.00 X 30.00	RR 49.02 RR 49.02	5.98 2.64	937 310	3247 1075	3.47	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)
P144	30.00 X 30.00	RR 49.02 RR 49.02	10.84 6.10	1225 94	3930 302	3.21	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)
P145	30.00 X 30.00	RR 48.44 RR 48.44	21.47 12.72	1901 1204	4634 2934	2.44	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)
P146	14.00 X 20.00	RR 10.87 EL 15.22	0.97 0.61	82 629	141 1084	1.72	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P147	14.00 X 20.00	RR 10.87 EL 15.22	0.12 -0.02	40 122	323 992	8.15	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P148	14.00 X 20.00	RR 10.87 EL 15.22	0.51 0.29	110 1	709 6	6.45	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P149	30.00 X 30.00	RR 48.44 RR 48.44	17.09 9.89	131 641	937 4592	7.16	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)
P150	30.00 X 30.00	RR 48.44 RR 48.44	17.12 10.14	4 765	24 4693	6.13	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)
P151	14.00 X 20.00	RR 10.87 EL 15.22	0.57 0.32	142 5	702 26	4.94	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P152	14.00 X 20.00	RR 10.87 EL 15.22	0.04 -0.07	84 116	489 669	5.79	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P153	14.00 X 20.00	RR 10.87 EL	0.95 0.59	148 565	253 968	1.71	1.57 (2 ø 10.0) 1.57

		15.22					(2 ø 10.0)
P154	30.00 X 30.00	RR 48.44 RR 48.44	15.01 8.33	206 1273	701 4327	3.40	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)
P155	30.00 X 30.00	RR 49.02 RR 49.02	20.46 9.47	800 2154	1778 4788	2.22	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)
P156	30.00 X 30.00	RR 49.02 RR 49.02	24.05 11.31	474 2934	861 5328	1.82	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)
P157	15.00 X 30.00	RR 96.88 RR 48.44	31.25 15.08	2029 1777	2097 1837	1.03	2.45 (2 ø 12.5) 3.68 (3 ø 12.5)
P158	30.00 X 30.00	RR 48.44 RR 48.44	13.81 6.69	1620 839	4065 2106	2.51	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)
P159	30.00 X 30.00	RR 66.32 RR 49.02	11.58 6.39	678 877	2842 3676	4.19	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)
P160	30.00 X 30.00	RR 66.32 RR 49.02	15.63 8.50	330 1268	1122 4307	3.40	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)
P161	30.00 X 30.00	RR 66.32 RR 49.02	23.47 12.79	723 2568	1444 5134	2.00	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)
P162	30.00 X 30.00	RR 66.32 RR 49.02	22.71 12.26	412 2531	842 5175	2.04	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)
P163	30.00 X 30.00	RR 66.32 RR 49.02	26.92 14.72	1015 2548	2121 5326	2.09	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)
P164	30.00 X 30.00	RR 49.02 RR 49.02	23.87 12.94	1369 2403	2799 4913	2.04	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)
P165	30.00 X 30.00	RR 49.02 RR 49.02	18.28 10.08	2003 1054	4392 2312	2.19	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)
P166	30.00 X 30.00	RR 49.02 RR	18.02 10.08	1565 3089	2265 4469	1.45	2.45 (2 ø 12.5) 2.45

		49.02					(2 ø 12.5)
P167	30.00 X 30.00	RR 49.02 RR 66.32	8.12 4.19	293 467	2138 3409	7.30	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)
P168	30.00 X 30.00	RR 48.44 RR 48.44	17.94 9.70	21 2158	48 4823	2.24	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)
P169	30.00 X 30.00	RR 49.02 RR 49.02	16.11 8.25	180 1889	423 4443	2.35	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)
P170	30.00 X 30.00	RR 49.02 RR 49.02	21.19 10.11	642 2278	1342 4758	2.09	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)
P171	30.00 X 30.00	RR 49.02 RR 49.02	23.39 11.16	275 2569	570 5320	2.07	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)
P172	15.00 X 30.00	RR 96.88 RR 48.44	11.57 5.58	822 0	1374 0	1.67	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P173	30.00 X 30.00	RR 48.44 RR 48.44	12.54 6.18	848 1121	2839 3755	3.35	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)
P174	15.00 X 25.00	RR 96.88 RR 58.13	19.16 10.40	1282 995	1306 1014	1.02	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P175	15.00 X 30.00	RR 96.88 RR 48.44	21.49 10.46	1472 1764	1523 1826	1.04	1.57 (2 ø 10.0) 2.36 (3 ø 10.0)
P176	15.00 X 30.00	RR 96.88 RR 48.44	9.53 4.80	750 433	1154 666	1.54	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P177	15.00 X 30.00	RR 96.88 RR 48.44	15.72 7.98	1058 834	1320 1040	1.25	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P179	15.00 X 30.00	RR 96.88 RR 48.44	25.50 13.79	2192 1347	2216 1362	1.01	1.57 (2 ø 10.0) 3.93 (5 ø 10.0)
P180	30.00 X 30.00	RR 49.02 RR	11.41 6.07	812 357	3866 1701	4.76	2.45 (2 ø 12.5) 2.45

		49.02					(2 ø 12.5)
P181	30.00 X 30.00	RR 49.02 RR 66.32	9.84 4.86	322 648	1746 3514	5.42	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)
P182	30.00 X 30.00	RR 48.44 RR 48.44	25.71 13.55	1133 2130	2719 5109	2.40	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)
P183	30.00 X 30.00	RR 48.44 RR 48.44	27.25 14.38	1033 1503	3363 4893	3.26	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)
P184	30.00 X 30.00	RR 48.44 RR 48.44	28.85 15.18	1633 2193	3588 4818	2.20	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)
P185	30.00 X 30.00	RR 48.44 RR 48.44	22.12 11.36	1647 3463	2312 4863	1.40	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)
P186	30.00 X 30.00	RR 49.02 RR 49.02	12.27 6.47	422 718	2247 3821	5.32	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)
P187	30.00 X 30.00	RR 49.02 RR 49.02	17.98 9.48	481 3248	700 4725	1.45	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)
P188	30.00 X 30.00	RR 49.02 RR 66.32	31.79 17.46	246 1796	837 6109	3.40	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)
P189	30.00 X 30.00	RR 49.02 RR 49.02	36.23 20.48	1331 1334	4496 4506	3.38	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)
P190	30.00 X 30.00	RR 65.74 RR 48.44	15.04 7.47	2566 406	4407 697	1.72	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)
P191	30.00 X 30.00	RR 49.02 RR 49.02	18.78 9.43	870 3517	1171 4731	1.35	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)
P192	15.00 X 30.00	RR 96.88 RR 48.44	15.93 8.44	1178 1092	1289 1196	1.09	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P193	30.00 X 30.00	RR 48.44 RR	6.59 2.96	134 1332	345 3436	2.58	2.45 (2 ø 12.5) 2.45

		48.44					(2 ø 12.5)
P194	30.00 X 30.00	RR 49.02 RR 49.02	7.79 4.30	529 824	2170 3382	4.10	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)
P195	30.00 X 30.00	RR 49.02 RR 49.02	13.10 7.19	332 1462	929 4093	2.80	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)
P196	30.00 X 30.00	RR 48.44 RR 48.44	10.71 5.84	5 3327	5 3998	1.20	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)
P197	20.00 X 30.00	RR 72.66 RR 48.44	16.65 9.87	1773 718	2157 873	1.22	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P198	30.00 X 30.00	RR 48.44 RR 48.44	14.50 8.38	3541 1351	4212 1607	1.19	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)
P199	15.00 X 30.00	RR 96.88 RR 48.44	12.90 7.56	1343 625	1551 721	1.15	1.57 (2 ø 10.0) 2.36 (3 ø 10.0)
P200	30.00 X 30.00	RR 48.44 RR 48.44	18.15 10.50	1257 336	4590 1228	3.65	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)
P201	15.00 X 30.00	RR 96.88 RR 48.44	12.41 7.02	907 474	1274 666	1.40	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P202	15.00 X 30.00	RR 96.88 RR 48.44	6.29 3.49	522 270	1035 536	1.98	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P203	15.00 X 30.00	RR 96.88 RR 48.44	11.88 6.90	967 585	1235 747	1.28	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P204	30.00 X 30.00	RR 48.44 RR 48.44	18.72 11.22	241 725	1545 4648	6.41	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)
P205	30.00 X 30.00	RR 48.44 RR 48.44	9.18 5.19	1295 140	3754 407	2.90	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)
P206	30.00 X 30.00	RR 48.44 RR	9.31 5.19	893 173	3737 725	4.18	2.45 (2 ø 12.5) 2.45

		48.44					(2 ø 12.5)
P207	30.00 X 30.00	RR 65.74 RR 48.44	11.27 6.53	988 152	3990 613	4.04	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)
P208	30.00 X 30.00	RR 65.74 RR 48.44	11.76 6.81	641 304	3886 1843	6.06	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)
P209	30.00 X 35.00	RR 48.44 RR 41.52	8.03 4.32	900 479	3415 1815	3.79	1.57 (2 ø 10.0) 2.36 (3 ø 10.0)
P210	30.00 X 30.00	RR 49.02 RR 49.02	7.46 4.00	364 755	1639 3396	4.50	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)
P211	30.00 X 30.00	RR 49.02 RR 49.02	10.25 5.69	264 1478	685 3833	2.59	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)
P212	30.00 X 30.00	RR 48.44 RR 48.44	10.95 6.07	2970 112	4010 151	1.35	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)
P213	30.00 X 30.00	RR 48.44 RR 48.44	19.83 11.74	3840 515	4929 661	1.28	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)
P214	30.00 X 30.00	RR 48.44 RR 48.44	16.42 9.57	3189 802	4490 1129	1.41	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)
P215	30.00 X 30.00	RR 48.44 RR 48.44	13.75 7.90	3908 306	4314 338	1.10	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)
P216	30.00 X 30.00	RR 48.44 RR 48.44	13.04 7.52	1581 219	4164 577	2.63	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)
P217	30.00 X 30.00	RR 49.02 RR 49.02	5.74 2.78	140 355	1284 3247	9.15	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)

Cálculo dos Pilares

CLARABOIA	fck = 350.00 kgf/cm ²	E = 294029 kgf/cm ²	Peso Espec = 2500.00 kgf/m ³
Lance 3		cobr = 2.50 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	30.00 X 30.00	RR 11.07 RR 11.07	1.93 0.66	547 656	2284 2739	4.17	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)
P2	15.00 X 30.00	RR 22.14 EL 22.14	1.16 0.41	16 190	158 1822	9.60	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P3	15.00 X 30.00	RR 22.14 EL 22.14	0.99 0.32	71 52	790 582	11.11	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P4	30.00 X 30.00	EL 22.14 RR 11.07	1.96 0.67	88 736	350 2907	3.95	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)
P5	30.00 X 30.00	RR 11.07 EL 22.14	2.01 0.70	611 579	2643 2508	4.33	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)
P6	30.00 X 30.00	RR 11.07 EL 22.14	1.23 0.28	58 303	533 2800	9.22	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)
P7	30.00 X 30.00	RR 11.07 RR 11.07	1.31 0.32	303 478	1724 2715	5.68	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)
P8	15.00 X 30.00	RR 22.14 EL 22.14	1.22 0.40	127 50	828 328	6.51	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P13	15.00 X 30.00	RR 22.14 EL 22.14	0.99 0.32	128 95	790 583	6.15	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P14	30.00 X 30.00	EL 22.14 RR 11.07	1.28 0.31	246 179	2688 1965	10.94	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)
P20	30.00 X	EL 22.14	1.18 0.26	78 14	2797 503	35.95	2.45 (2 ø 12.5)

	30.00	RR 11.07					2.45 (2 ø 12.5)
P21	30.00 X 30.00	RR 11.07 RR 11.07	2.19 0.80	1097 592	2833 1529	2.58	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)
P22	30.00 X 30.00	RR 11.07 EL 22.14	2.04 0.73	698 1	2947 4	4.22	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)
P23	15.00 X 30.00	RR 22.14 EL 22.14	0.96 0.30	15 164	163 1799	10.94	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P24	30.00 X 30.00	EL 22.14 RR 11.07	1.68 0.51	234 68	2824 818	12.08	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)
P25	30.00 X 30.00	RR 11.07 EL 22.14	1.66 0.50	241 63	2837 736	11.77	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)
P27	30.00 X 30.00	EL 22.14 RR 11.07	1.23 0.30	29 206	399 2813	13.68	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)
P28	40.00 X 40.00	RR 14.79 RR 14.79	2.17 0.55	311 473	4025 6120	12.94	4.02 (2 ø 16.0) 4.02 (2 ø 16.0)
P29	40.00 X 40.00	EL 127.33 RR 14.36	1.74 0.27	662 51	6300 482	9.51	4.02 (2 ø 16.0) 4.02 (2 ø 16.0)
P30	40.00 X 40.00	RR 14.36 RR 14.36	2.21 0.59	266 591	2797 6220	10.53	4.02 (2 ø 16.0) 4.02 (2 ø 16.0)
P31	30.00 X 30.00	RR 11.07 RR 11.07	1.83 0.70	878 504	2785 1597	3.17	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)
P32	15.00 X 30.00	RR 22.14 EL 22.14	1.03 0.39	246 139	808 455	3.28	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P33	30.00 X 30.00	RR 11.07 EL 22.14	1.01 0.18	21 163	367 2788	17.12	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)
P34	15.00 X	RR 22.14	0.74 0.18	45 191	411 1723	9.03	1.57 (2 ø 10.0)

	30.00	EL 22.14					1.57 (2 ø 10.0)
P35	30.00 X 30.00	RR 11.07 EL 22.14	1.12 0.24	14 129	314 2806	21.79	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)
P36	15.00 X 30.00	RR 22.14 EL 22.14	0.78 0.22	100 145	732 1070	7.36	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P37	30.00 X 30.00	RR 11.07 EL 22.14	1.05 0.19	18 185	279 2799	15.11	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)
P38	15.00 X 30.00	EL 44.29 RR 11.07	0.71 0.16	155 37	819 196	5.30	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P39	30.00 X 30.00	RR 11.07 EL 22.14	1.12 0.25	150 25	2793 466	18.60	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)
P40	15.00 X 30.00	RR 22.14 EL 22.14	0.79 0.22	13 188	126 1787	9.51	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P42	30.00 X 30.00	RR 11.07 RR 11.07	1.66 0.51	362 216	2761 1649	7.62	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)
P43	15.00 X 30.00	RR 22.14 EL 22.14	1.02 0.31	171 148	782 678	4.58	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P44	15.00 X 30.00	RR 22.14 EL 22.14	0.85 0.22	129 10	839 65	6.51	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P45	15.00 X 30.00	RR 22.14 EL 22.14	1.14 0.40	11 132	147 1822	13.83	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P46	15.00 X 30.00	RR 22.14 EL 22.14	1.14 0.40	16 264	108 1828	6.93	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P47	30.00 X 30.00	RR 11.07 RR 11.07	1.56 0.46	627 787	2156 2708	3.44	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)
P48	40.00 X	RR 14.36	0.58 -0.77	31 862	219 6117	7.10	4.02 (2 ø 16.0)

	40.00	EL 101.38					4.02 (2 ø 16.0)
P50	40.00 X 40.00	RR 14.36 EL 101.38	0.56 -0.79	38 1164	201 6116	5.26	4.02 (2 ø 16.0) 4.02 (2 ø 16.0)
P51	30.00 X 30.00	EL 22.14 RR 11.07	1.13 0.23	292 407	1921 2676	6.57	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)
P67	30.00 X 30.00	EL 22.14 RR 11.07	1.17 0.25	21 483	125 2827	5.85	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)
P68	40.00 X 40.00	RR 14.36 EL 101.38	0.58 -0.77	31 862	219 6117	7.10	4.02 (2 ø 16.0) 4.02 (2 ø 16.0)
P70	40.00 X 40.00	RR 14.36 EL 101.38	0.56 -0.79	38 1164	201 6116	5.26	4.02 (2 ø 16.0) 4.02 (2 ø 16.0)
P71	30.00 X 30.00	EL 22.14 RR 11.07	1.76 0.63	387 695	1547 2781	4.00	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)
P83	30.00 X 30.00	EL 22.14 RR 11.07	2.01 0.70	142 1234	336 2914	2.36	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)
P86	40.00 X 40.00	RR 14.36 RR 14.36	2.17 0.55	311 473	4025 6120	12.94	4.02 (2 ø 16.0) 4.02 (2 ø 16.0)
P87	40.00 X 40.00	RR 14.36 EL 127.33	1.74 0.27	51 662	482 6300	9.51	4.02 (2 ø 16.0) 4.02 (2 ø 16.0)
P88	40.00 X 40.00	RR 14.36 RR 14.36	2.21 0.59	266 591	2797 6220	10.53	4.02 (2 ø 16.0) 4.02 (2 ø 16.0)
P89	30.00 X 30.00	RR 11.07 RR 11.07	1.80 0.67	116 1124	299 2893	2.57	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)
P90	15.00 X 30.00	EL 44.29 RR 11.07	1.47 0.66	550 767	757 1057	1.38	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P91	30.00 X	EL 22.14	1.81 0.68	106 778	393 2886	3.71	2.45 (2 ø 12.5)

	30.00	RR 11.07					2.45 (2 ø 12.5)
P92	15.00 X 30.00	RR 22.14 EL 22.14	0.67 0.11	11 315	61 1778	5.64	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P94	30.00 X 30.00	RR 27.68 RR 27.68	3.46 1.68	1350 449	3024 1006	2.24	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)
P95	30.00 X 30.00	RR 27.68 RR 27.68	12.69 7.46	388 7044	516 9352	1.33	6.03 (3 ø 16.0) 6.03 (3 ø 16.0)
P96	30.00 X 30.00	RR 27.68 RR 27.68	11.90 6.96	6922 549	9199 729	1.33	6.03 (3 ø 16.0) 6.03 (3 ø 16.0)
P97	30.00 X 30.00	RR 27.68 RR 27.68	3.36 1.63	407 772	1564 2966	3.84	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)
P99	30.00 X 30.00	RR 11.07 EL 22.14	2.00 0.72	357 92	2879 740	8.07	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)
P100	30.00 X 30.00	RR 11.07 EL 22.14	2.37 0.90	64 293	638 2918	9.95	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)
P101	30.00 X 30.00	RR 11.07 RR 11.07	3.09 1.30	1049 1837	1670 2925	1.59	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)
P109	30.00 X 30.00	RR 27.68 RR 27.68	14.80 8.73	5669 2116	5671 2116	1.00	4.02 (2 ø 16.0) 4.02 (2 ø 16.0)
P116	30.00 X 30.00	RR 27.68 RR 27.68	14.98 8.86	6627 2124	8731 2797	1.32	6.03 (3 ø 16.0) 6.03 (3 ø 16.0)
P118	30.00 X 30.00	RR 11.07 EL 22.14	1.55 0.46	59 358	465 2841	7.93	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)
P119	15.00 X 30.00	RR 22.14 EL 22.14	1.36 0.52	183 301	736 1211	4.02	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P120	30.00 X	RR 11.07	2.54 0.96	893 1800	1431 2883	1.60	2.45 (2 ø 12.5)

	30.00	RR 11.07					2.45 (2 ø 12.5)
P138	30.00 X 30.00	RR 11.07 RR 11.07	1.06 0.17	510 100	2776 542	5.44	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)
P139	30.00 X 30.00	RR 11.07 EL 22.14	1.29 0.35	30 141	592 2803	19.91	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)
P140	30.00 X 30.00	RR 11.07 EL 22.14	1.65 0.58	344 46	2867 383	8.34	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)
P141	30.00 X 30.00	RR 11.07 EL 22.14	1.64 0.58	458 57	2868 355	6.26	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)
P142	30.00 X 30.00	RR 11.07 EL 22.14	1.75 0.65	655 79	2882 346	4.40	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)
P143	30.00 X 30.00	RR 11.07 EL 22.14	1.67 0.59	1001 71	2883 205	2.88	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)
P145	30.00 X 30.00	RR 27.68 RR 27.68	4.92 2.61	2386 902	3178 1202	1.33	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)
P149	30.00 X 30.00	RR 27.68 RR 27.68	13.42 7.87	459 7155	603 9393	1.31	6.03 (3 ø 16.0) 6.03 (3 ø 16.0)
P150	30.00 X 30.00	RR 27.68 RR 27.68	12.63 7.40	709 6644	980 9178	1.38	6.03 (3 ø 16.0) 6.03 (3 ø 16.0)
P154	30.00 X 30.00	RR 27.68 RR 27.68	4.69 2.45	113 1605	228 3248	2.02	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)
P158	30.00 X 30.00	EL 22.14 RR 11.07	2.15 0.76	272 1321	599 2910	2.20	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)
P159	30.00 X 30.00	EL 22.14 RR 11.07	1.56 0.50	148 741	568 2838	3.83	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)
P173	30.00 X	EL 22.14	2.02 0.71	55 1111	144 2933	2.64	2.45 (2 ø 12.5)

	30.00	RR 11.07					2.45 (2 ø 12.5)
P180	30.00 X 30.00	EL 22.14 RR 11.07	1.52 0.46	92 783	333 2852	3.64	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)
P189	30.00 X 30.00	RR 28.37 RR 28.37	5.28 3.15	2470 589	3260 778	1.32	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)
P190	30.00 X 30.00	EL 56.74 RR 28.37	1.85 0.72	782 64	2902 239	3.71	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)
P191	30.00 X 30.00	RR 11.07 EL 22.14	2.28 0.87	1571 223	2942 418	1.87	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)
P192	15.00 X 30.00	RR 22.14 EL 22.14	1.65 0.71	272 296	788 856	2.89	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P193	30.00 X 30.00	RR 11.07 RR 11.07	1.90 0.64	330 1475	643 2876	1.95	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)
P194	30.00 X 30.00	EL 22.14 RR 11.07	1.10 0.21	87 358	672 2770	7.73	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)
P204	30.00 X 30.00	RR 28.37 RR 28.37	10.28 6.04	450 425	3306 3118	7.34	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)
P205	30.00 X 30.00	EL 56.74 RR 28.37	1.66 0.48	194 395	1357 2767	7.00	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)
P206	30.00 X 30.00	EL 56.74 RR 28.37	2.17 0.88	1092 90	2930 242	2.68	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)
P207	30.00 X 30.00	EL 56.74 RR 28.37	3.39 1.83	643 98	3066 468	4.77	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)
P208	30.00 X 30.00	EL 56.74 RR 28.37	2.33 1.05	876 162	2929 543	3.34	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)
P209	30.00 X	RR 28.37	2.09 0.76	803 53	2847 189	3.54	1.57 (2 ø 10.0)

	35.00	RR 24.32					2.36 (3 ø 10.0)
P210	30.00 X 30.00	RR 11.07 RR 11.07	1.41 0.44	550 356	2723 1761	4.95	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)
P211	30.00 X 30.00	RR 11.07 EL 22.14	1.21 0.30	384 88	2790 642	7.26	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)
P212	30.00 X 30.00	EL 22.14 RR 11.07	1.07 0.22	209 76	2745 999	13.14	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)
P213	30.00 X 30.00	EL 22.14 RR 11.07	1.78 0.66	148 805	527 2870	3.56	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)
P214	30.00 X 30.00	EL 22.14 RR 11.07	1.57 0.52	84 1153	208 2870	2.49	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)
P215	30.00 X 30.00	EL 22.14 RR 11.07	0.98 0.14	218 519	1142 2720	5.24	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)
P216	30.00 X 30.00	EL 22.14 RR 11.07	1.19 0.29	11 284	114 2830	9.98	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)
P217	30.00 X 30.00	RR 11.07 RR 11.07	1.12 0.23	185 71	2745 1056	14.82	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)
P218	15.00 X 25.00	EL 44.29 RR 13.29	0.21 -0.32	21 61	450 1298	21.33	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P219	15.00 X 25.00	EL 44.29 RR 13.29	0.35 -0.14	3 38	106 1387	36.59	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P220	15.00 X 25.00	EL 44.29 RR 13.29	0.43 -0.04	7 100	101 1398	14.03	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P221	15.00 X 25.00	EL 44.29 RR 13.29	0.12 -0.44	15 848	24 1369	1.62	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P222	15.00 X	EL 44.29	0.00 -0.84	2 89	32 1332	14.97	1.57 (2 ø 10.0)

	25.00	RR 13.29					1.57 (2 ø 10.0)
P223	15.00 X 25.00	EL 44.29 RR 13.29	0.20 -0.32	12 930	18 1380	1.48	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P224	15.00 X 25.00	EL 44.29 RR 13.29	0.29 -0.19	30 128	318 1353	10.54	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P225	15.00 X 25.00	EL 44.29 RR 13.29	0.28 -0.19	20 54	475 1295	24.13	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P226	15.00 X 25.00	EL 44.29 RR 13.29	0.04 -0.58	24 359	92 1351	3.76	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P227	15.00 X 25.00	EL 44.29 RR 13.29	0.00 -0.58	12 82	188 1335	16.20	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P228	15.00 X 25.00	EL 44.29 RR 13.29	0.25 -0.26	5 98	67 1380	14.15	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P229	15.00 X 25.00	EL 44.29 RR 13.29	0.42 -0.04	6 402	22 1410	3.50	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P230	15.00 X 25.00	EL 44.29 RR 13.29	0.44 -0.02	5 113	61 1406	12.42	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P231	15.00 X 25.00	EL 44.29 RR 13.29	0.39 -0.05	5 101	68 1401	13.80	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P232	15.00 X 25.00	EL 44.29 RR 13.29	0.08 -0.45	209 12	772 46	3.69	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P233	15.00 X 25.00	EL 44.29 RR 13.29	0.30 -0.18	6 118	66 1388	11.78	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P234	15.00 X 25.00	EL 44.29 RR 13.29	0.00 -0.61	59 669	119 1342	2.00	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P235	15.00 X	EL 44.29	0.00 -0.79	150 46	733 225	4.88	1.57 (2 ø 10.0)

	25.00	RR 13.29					1.57 (2 ø 10.0)
P236	15.00 X 25.00	EL 44.29 RR 13.29	0.05 -0.50	103 835	165 1344	1.61	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P237	15.00 X 25.00	EL 44.29 RR 13.29	0.41 -0.07	1 28	71 1400	49.48	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P238	15.00 X 25.00	EL 44.29 RR 13.29	0.35 -0.13	0 103	4 1403	13.62	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P239	15.00 X 25.00	EL 44.29 RR 13.29	0.27 -0.21	2 417	7 1394	3.34	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P240	15.00 X 25.00	EL 44.29 RR 13.29	0.00 -0.62	3 71	62 1349	19.01	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P241	15.00 X 25.00	EL 44.29 RR 13.29	0.32 -0.17	7 484	20 1395	2.88	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P242	15.00 X 25.00	EL 44.29 RR 13.29	0.33 -0.10	0 101	3 1405	13.88	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P243	15.00 X 25.00	RR 22.14 RR 13.29	0.64 0.12	51 7	799 114	15.69	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P244	15.00 X 25.00	EL 44.29 RR 13.29	0.62 0.14	9 114	110 1421	12.47	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P245	15.00 X 25.00	EL 44.29 RR 13.29	0.46 0.05	2 109	24 1416	12.94	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P246	15.00 X 25.00	EL 44.29 RR 13.29	0.10 -0.35	181 20	774 85	4.27	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P247	15.00 X 25.00	EL 44.29 RR 13.29	0.48 0.05	3 66	67 1412	21.50	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P248	15.00 X	EL 44.29	0.52 0.07	3 139	33 1421	10.19	1.57 (2 ø 10.0)

	25.00	RR 13.29					1.57 (2 ø 10.0)
P249	15.00 X 25.00	EL 44.29 RR 13.29	0.48 0.06	4 68	74 1410	20.85	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P250	15.00 X 25.00	RR 22.14 RR 13.29	0.65 0.15	10 127	107 1423	11.21	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P251	15.00 X 25.00	EL 44.29 RR 13.29	0.05 -0.47	22 474	63 1359	2.87	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P252	15.00 X 25.00	EL 44.29 RR 13.29	0.20 -0.33	11 223	65 1373	6.16	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P253	15.00 X 25.00	EL 44.29 RR 13.29	0.59 0.07	2 44	79 1417	32.43	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P254	15.00 X 25.00	EL 44.29 RR 13.29	0.32 -0.19	3 51	69 1388	27.33	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P255	15.00 X 25.00	EL 44.29 RR 13.29	0.36 -0.13	0 33	16 1401	41.92	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P256	15.00 X 25.00	EL 44.29 RR 13.29	0.20 -0.34	32 20	730 467	22.80	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P257	15.00 X 25.00	EL 44.29 RR 13.29	0.18 -0.34	41 323	175 1367	4.23	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P258	15.00 X 25.00	EL 44.29 RR 13.29	0.12 -0.37	51 2	779 37	15.17	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P259	15.00 X 25.00	EL 44.29 RR 13.29	0.08 -0.50	25 55	565 1223	22.20	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P260	15.00 X 25.00	EL 44.29 RR 13.29	0.60 0.09	4 71	74 1419	19.97	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P261	15.00 X	EL 44.29	0.72 0.20	5 57	114 1428	25.25	1.57 (2 ø 10.0)

	25.00	RR 13.29					1.57 (2 ø 10.0)
P262	15.00 X 25.00	EL 44.29 RR 13.29	0.00 -0.49	440 679	660 1020	1.50	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P263	15.00 X 25.00	EL 44.29 RR 13.29	0.05 -0.51	40 1206	45 1358	1.13	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P264	15.00 X 25.00	EL 44.29 RR 13.29	0.06 -0.37	90 75	714 593	7.92	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P265	15.00 X 25.00	EL 44.29 RR 13.29	0.00 -1.02	236 117	707 351	3.00	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P266	15.00 X 25.00	EL 44.29 RR 13.29	0.00 -0.56	46 630	99 1349	2.14	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P267	15.00 X 25.00	EL 44.29 RR 13.29	0.00 -0.97	74 1092	88 1310	1.20	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P268	15.00 X 25.00	EL 44.29 RR 13.29	0.05 -0.38	64 700	125 1358	1.94	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P269	15.00 X 25.00	EL 44.29 RR 13.29	0.00 -0.64	4 130	45 1346	10.36	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P270	15.00 X 25.00	EL 44.29 RR 13.29	0.12 -0.33	1 819	2 1382	1.69	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P271	15.00 X 25.00	EL 44.29 RR 13.29	0.60 0.13	44 12	785 220	17.98	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P272	15.00 X 25.00	RR 22.14 RR 13.29	0.89 0.30	53 473	162 1438	3.04	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P273	15.00 X 25.00	EL 44.29 RR 13.29	0.27 -0.22	13 225	79 1381	6.13	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P274	15.00 X	EL 44.29	0.36 -0.11	4 1151	5 1402	1.22	1.57 (2 ø 10.0)

	25.00	RR 13.29					1.57 (2 ø 10.0)
P275	15.00 X 25.00	EL 44.29 RR 13.29	0.00 -0.84	2 120	17 1334	11.08	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P276	15.00 X 25.00	EL 44.29 RR 13.29	0.27 -0.23	4 999	6 1391	1.39	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P277	15.00 X 25.00	EL 44.29 RR 13.29	0.41 -0.04	5 850	9 1410	1.66	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P278	15.00 X 25.00	EL 44.29 RR 13.29	0.00 -0.67	13 255	67 1338	5.25	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P279	15.00 X 25.00	EL 44.29 RR 13.29	0.00 -0.64	48 620	104 1340	2.16	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P280	15.00 X 25.00	EL 44.29 RR 13.29	0.68 0.09	22 182	172 1405	7.73	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P281	15.00 X 25.00	EL 44.29 RR 13.29	0.83 0.25	8 135	84 1436	10.65	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P282	15.00 X 25.00	EL 44.29 RR 13.29	0.46 0.03	25 138	250 1384	10.02	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P283	15.00 X 25.00	EL 44.29 RR 13.29	0.45 0.03	9 199	61 1409	7.07	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P284	15.00 X 25.00	RR 22.14 RR 13.29	1.11 0.40	115 529	313 1438	2.72	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P285	15.00 X 25.00	EL 44.29 RR 13.29	0.09 -0.48	11 128	117 1357	10.58	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P286	15.00 X 25.00	EL 44.29 RR 13.29	0.30 -0.22	23 211	148 1371	6.49	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P287	15.00 X	EL 44.29	0.09 -0.51	47 248	251 1329	5.35	1.57 (2 ø 10.0)

	25.00	RR 13.29					1.57 (2 ø 10.0)
P288	15.00 X 25.00	EL 44.29 RR 13.29	0.31 -0.09	4 45	115 1388	30.71	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P289	15.00 X 25.00	EL 44.29 RR 13.29	0.00 -0.92	46 1108	55 1320	1.19	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P290	15.00 X 25.00	EL 44.29 RR 13.29	0.47 0.04	7 164	56 1411	8.62	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P291	15.00 X 25.00	EL 44.29 RR 13.29	0.89 0.31	92 11	812 94	8.79	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P292	15.00 X 25.00	EL 44.29 RR 13.29	0.00 -0.90	16 135	155 1312	9.69	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P293	15.00 X 25.00	EL 44.29 RR 13.29	0.51 0.08	5 216	34 1420	6.56	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P294	15.00 X 25.00	EL 44.29 RR 13.29	0.01 -0.59	6 1194	7 1355	1.13	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P295	15.00 X 25.00	EL 44.29 RR 13.29	0.24 -0.19	7 70	134 1376	19.73	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P296	15.00 X 25.00	EL 44.29 RR 13.29	0.41 -0.01	1 59	28 1410	23.74	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P297	15.00 X 25.00	EL 44.29 RR 13.29	0.27 -0.16	5 607	12 1397	2.30	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P298	15.00 X 25.00	EL 44.29 RR 13.29	0.00 -0.48	4 32	158 1346	41.62	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P299	15.00 X 25.00	EL 44.29 RR 13.29	0.23 -0.20	5 616	12 1393	2.26	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P300	15.00 X	EL 44.29	0.46 0.03	1 34	58 1412	41.05	1.57 (2 ø 10.0)

	25.00	RR 13.29					1.57 (2 ø 10.0)
P301	15.00 X 25.00	EL 44.29 RR 13.29	0.23 -0.21	7 875	12 1392	1.59	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P302	15.00 X 25.00	EL 44.29 RR 13.29	0.00 -0.55	7 73	126 1344	18.41	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P303	15.00 X 25.00	EL 44.29 RR 13.29	0.12 -0.34	9 843	15 1378	1.63	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P304	15.00 X 25.00	RR 22.14 RR 13.29	0.53 -0.01	77 117	681 1040	8.88	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P305	15.00 X 25.00	EL 44.29 RR 13.29	0.74 0.21	11 50	300 1402	27.95	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P306	15.00 X 25.00	EL 44.29 RR 13.29	0.18 -0.26	24 761	44 1382	1.82	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P307	15.00 X 25.00	EL 44.29 RR 13.29	0.00 -0.59	60 984	83 1345	1.37	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P308	15.00 X 25.00	EL 44.29 RR 13.29	0.00 -0.68	5 65	108 1343	20.83	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P309	15.00 X 25.00	EL 44.29 RR 13.29	0.00 -0.76	91 15	747 123	8.17	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P310	15.00 X 25.00	EL 44.29 RR 13.29	0.23 -0.25	67 711	128 1372	1.93	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P311	15.00 X 25.00	EL 44.29 RR 13.29	0.00 -0.70	24 921	35 1344	1.46	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P312	15.00 X 25.00	EL 44.29 RR 13.29	0.00 -0.72	5 1467	6 2046	1.40	2.45 (2 ø 12.5) 2.45 (2 ø 12.5)
P313	15.00 X	EL 44.29	0.00 -0.99	25 116	283 1306	11.26	1.57 (2 ø 10.0)

	25.00	RR 13.29					1.57 (2 ø 10.0)
P314	15.00 X 25.00	EL 44.29 RR 13.29	0.41 0.01	128 988	179 1389	1.41	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P315	15.00 X 25.00	EL 44.29 RR 13.29	0.80 0.24	2 64	44 1445	22.44	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P316	15.00 X 25.00	EL 44.29 RR 13.29	0.36 -0.06	25 294	118 1393	4.75	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P317	20.00 X 30.00	EL 85.12 RR 28.37	0.00 -6.49	50 907	53 956	1.05	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P318	15.00 X 25.00	EL 44.29 RR 13.29	0.39 -0.01	71 12	785 138	11.06	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P319	15.00 X 25.00	EL 44.29 RR 13.29	0.35 -0.10	5 255	27 1405	5.50	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P320	15.00 X 25.00	EL 44.29 RR 13.29	0.21 -0.23	19 63	402 1330	21.18	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P321	15.00 X 25.00	EL 44.29 RR 13.29	0.52 0.08	10 87	161 1403	16.04	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P322	15.00 X 25.00	EL 44.29 RR 13.29	0.16 -0.28	3 852	5 1385	1.63	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P323	15.00 X 25.00	EL 44.29 RR 13.29	0.00 -0.60	7 55	161 1335	24.15	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P324	15.00 X 25.00	EL 44.29 RR 13.29	0.07 -0.39	13 838	22 1372	1.64	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P325	15.00 X 25.00	EL 44.29 RR 13.29	0.97 0.37	8 47	240 1434	30.44	1.57 (2 ø 10.0) 1.57 (2 ø 10.0)
P326	15.00 X	EL 44.29	0.33 -0.09	4 54	101 1391	25.81	1.57 (2 ø 10.0)

	25.00	RR 13.29					1.57 (2 ø 10.0)
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Vigas do pavimento TERREO

Viga	Vãos			Nós			Avisos
	Md (kgf.m)	As	Als	Md (kgf.m)	As	Als	
VA1	705.66	2 ø 10.0		-957.53	2 ø 10.0		26, 48
	611.52	2 ø 10.0		-1289.90	2 ø 10.0		
	379.28	2 ø 10.0		-982.15	2 ø 10.0		
	1457.67	2 ø 10.0		-2478.09	2 ø 10.0		
	626.72	2 ø 10.0		-2585.07	2 ø 10.0		
	485.17	2 ø 10.0		-1255.98	2 ø 10.0		
				-568.17	2 ø 10.0		
VA2	728.25	2 ø 10.0		-876.24	2 ø 10.0		26
	536.07	2 ø 10.0		-1251.03	2 ø 10.0		
	606.53	2 ø 10.0		-1201.90	2 ø 10.0		
	410.99	2 ø 10.0		-1141.39	2 ø 10.0		
	517.90	2 ø 10.0		-199.89	2 ø 10.0		
	385.14	2 ø 10.0		-1141.41	2 ø 10.0		
VA3	2940.28	2 ø 10.0		-3327.86	2 ø 10.0		26, 48
	297.63	2 ø 10.0		-3992.86	3 ø 10.0		
	601.71	2 ø 10.0		-796.49	2 ø 10.0		
	817.35	2 ø 10.0		-1627.58	2 ø 10.0		
	1105.78	2 ø 10.0		-1901.32	2 ø 10.0		
				-1415.98	2 ø 10.0		
VA4	1386.19	2 ø 10.0		-91.70	2 ø 10.0		26
VA5	1681.69	2 ø 10.0		-62.28	2 ø 10.0		26
				-62.02	2 ø 10.0		
VA6	2821.55	2 ø 10.0		-2664.59	2 ø 10.0		26, 48
	305.84	2 ø 10.0		-3769.01	2 ø 10.0		
	584.18	2 ø 10.0		-776.68	2 ø 10.0		
	842.72	2 ø 10.0		-1566.10	2 ø 10.0		
	1075.11	2 ø 10.0		-1903.06	2 ø 10.0		
				-1420.58	2 ø 10.0		
VA7	1354.67	2 ø 10.0		-2247.17	2 ø 10.0		26
	1354.23	2 ø 10.0		-2795.86	2 ø 10.0		
				-2368.16	2 ø 10.0		
VA8	2740.33	2 ø 10.0		-2517.72	2 ø 10.0		26, 48
	109.09	2 ø 10.0		-2564.62	2 ø 10.0		
	646.91	2 ø 10.0		-667.18	2 ø 10.0		
	379.37	2 ø 10.0		-950.66	2 ø 10.0		
	802.33	2 ø 10.0		-1278.07	2 ø 10.0		
	113.86	2 ø 10.0		-1012.54	2 ø 10.0		
	224.83	2 ø 10.0		-553.61	2 ø 10.0		
	346.51	2 ø 10.0		-608.61	2 ø 10.0		
	329.17	2 ø 10.0		-831.75	2 ø 10.0		

	412.37	2 ø 10.0		-679.05 -845.26	2 ø 10.0 2 ø 10.0		
VA9	1053.09 0.11 715.67 553.49 697.15	2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0		-1312.76 -1264.49 -808.99 -1291.32 -1210.30 -1086.33	2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0		26, 48
VA10	885.72 1077.08	3 ø 12.5 3 ø 12.5		-696.72 -1873.02 -271.44	3 ø 12.5 3 ø 12.5 3 ø 12.5		
VA11	710.59	2 ø 10.0		-73.79	2 ø 10.0		26
VA12	937.35	2 ø 10.0		-48.98 -56.16	2 ø 10.0 2 ø 10.0		26
VA13	1002.13	2 ø 10.0		-56.44 -54.89	2 ø 10.0 2 ø 10.0		26
VA14	1966.59	2 ø 10.0		-117.97 -82.36	2 ø 10.0 2 ø 10.0		26
VA15	486.04	2 ø 10.0		-39.72 -68.57	2 ø 10.0 2 ø 10.0		26
VA16	2546.14 0.11 593.13 397.23 828.38 82.76 300.16 117.10 367.04 441.41	2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0		-2744.07 -2574.32 -795.74 -895.18 -1377.23 -870.13 -593.56 -396.04 -649.11 -719.98 -736.66	2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0		26, 02, 48
VA17	1057.68 0.11 709.33 571.97 649.14	2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0		-1315.07 -1258.73 -817.39 -1300.17 -1184.09 -1215.48	2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0		26, 48
VA18	885.73 1077.08	3 ø 12.5 3 ø 12.5		-696.72 -1873.02 -271.44	3 ø 12.5 3 ø 12.5 3 ø 12.5		
VA19	28.89 1533.05 0.11 1625.56 218.42 670.19 373.77 634.61	2 ø 10.0 2 ø 10.0 2 ø 10.0 3 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0	2 ø 8.0 2 ø 6.3	-504.97 -2270.02 -2439.38 -1583.10 -2250.08 -1045.41 -1234.79 -1204.15 -1113.13	2 ø 10.0 2 ø 10.0 2 ø 10.0 3 ø 10.0 3 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0	2 ø 8.0 2 ø 8.0 2 ø 6.3	26, 02, 48
VA20	229.51 2045.78 1329.31	2 ø 10.0 2 ø 10.0 2 ø 10.0	2 ø 6.3	-494.11 -3251.76 -3883.75	2 ø 10.0 2 ø 10.0 2 ø 10.0	2 ø 6.3 2 ø 6.3	26, 48

				-2244.47	2 ø 10.0		
VA21	446.24	2 ø 10.0		-44.03 -6.18	2 ø 10.0 2 ø 10.0		26
VA22	1354.67 1354.23	2 ø 10.0 2 ø 10.0		-2247.16 -2795.86 -2368.16	2 ø 10.0 2 ø 10.0 2 ø 10.0		26
VA23	79.71 1531.25 0.11 1241.54 1561.87	2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0		-412.35 -2251.04 -2447.03 -1244.05 -3276.02 -2857.02	2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0		26, 02, 48
VA24	712.10 451.76 882.62	2 ø 10.0 2 ø 10.0 2 ø 10.0		-2146.60 -1334.83 -1627.59 -1267.52	2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0		48
VA25	1364.57 1921.81 1402.95	2 ø 10.0 2 ø 10.0 2 ø 10.0		-1920.92 -3647.58 -3711.61 -2012.20	2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0		26, 48
VA26	514.97	3 ø 8.0	2 ø 6.3	-989.13 -52.75	2 ø 10.0 2 ø 10.0	2 ø 6.3 2 ø 6.3	26
VA27	1093.98 716.40 950.70	2 ø 10.0 2 ø 10.0 2 ø 10.0		-1494.00 -2069.88 -1601.97 -1450.65	2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0		26, 48
VA28	481.09	3 ø 8.0	2 ø 6.3	-1146.24 -11.95	2 ø 10.0 2 ø 10.0	2 ø 6.3 2 ø 6.3	26
VA29	810.99 729.62 1522.63 557.64 2010.02 0.11 1951.99 597.76 850.38	2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0		-1070.52 -1628.53 -2705.27 -2703.47 -3401.25 -3242.02 -3197.13 -2128.47 -3466.14 -1086.79 -747.38 -1244.54 -1177.30	2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0		26, 06, 48
VA30	1093.28 733.77 899.31	2 ø 10.0 2 ø 10.0 2 ø 10.0		-1474.52 -2074.34 -1593.99 -1587.45	2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0		26, 48
VA31	1023.89 3816.57 521.35 364.16 620.60 261.20 959.57	2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0		-6397.53 -4696.52 -856.61 -1150.08 -1236.75 -1817.27 -1861.86	3 ø 12.5 3 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0		26, 48

	810.77 1591.20	2 ø 10.0 2 ø 10.0		-1954.39 -1820.30	2 ø 10.0 2 ø 10.0		
VA32	2146.64	2 ø 10.0		-474.15	2 ø 10.0		26
VA33	1052.10	2 ø 10.0		-160.72 -972.25	2 ø 10.0 2 ø 10.0		26
VA34	560.83	2 ø 10.0		-13.99 -43.34	2 ø 10.0 2 ø 10.0		26
VA35	2781.73	2 ø 10.0		-2453.76 -38.71	2 ø 10.0 2 ø 10.0		26
VA36	1121.85	2 ø 10.0		-595.76 -554.46	2 ø 10.0 2 ø 10.0		26
VA37	608.05	2 ø 10.0		-228.52	2 ø 10.0		26
VA38	1891.11	2 ø 10.0		-802.66 -94.50	2 ø 10.0 2 ø 10.0		26
VA39	1096.25 891.22 1473.49 639.40 2065.89	2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0		-1408.20 -2168.28 -2764.66 -2754.82 -3609.89 -3016.40	2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0		26, 48
VA40	176.55	2 ø 10.0		-1216.03 -23.92	2 ø 10.0 2 ø 10.0		26, 48
VA41	2423.44	2 ø 10.0		-2166.49 -1586.08	2 ø 10.0 2 ø 10.0		26, 48
VA42	2111.33 0.11 2008.41 74.08	2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0		-1324.89 -3160.25 -3178.25 -2676.37 -268.61	2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0		26, 48
VA43	1330.94 101.07 720.21 1738.15 192.64 886.84 486.55	2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0		-1587.94 -1859.86 -1200.02 -3048.54 -2955.64 -1397.24 -1971.49	2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0		26, 48
VA44	73.02 1373.01	2 ø 10.0 2 ø 10.0		-2646.27 -383.03	2 ø 10.0 2 ø 10.0		26
VA45	647.02	2 ø 10.0		-455.22	2 ø 10.0		26
VA46	198.01 1465.49 658.41 121.60 239.67	2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0		-286.75 -1972.57 -2015.35 -755.02 -472.95 -600.75	2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0		26
VA47	822.61 149.41 712.85 1744.28 172.62 939.38 413.38	2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0		-1136.87 -1482.33 -1257.68 -3136.85 -2863.47 -1622.57 -1573.69	2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0		26, 48

				-561.70	2 ø 10.0		
VA48	1759.80 0.11 1510.44 200.32	2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0		-2132.54 -2934.89 -2336.05 -2580.04 -706.06	2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0		26, 48
VA49	609.05	2 ø 10.0		-655.70	2 ø 10.0		26
VA50	402.16	2 ø 10.0		-281.37	2 ø 10.0		26
VA51	1109.59 1060.57 1109.59	2 ø 10.0 2 ø 10.0 2 ø 10.0		-1982.48 -2286.51 -2286.51 -1982.48	2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0		26
VA52	2589.74	2 ø 10.0		-3055.90 -3360.57	2 ø 10.0 2 ø 10.0		26, 48
VA53	942.01 298.06	2 ø 10.0 2 ø 10.0		-83.30 -1754.64 -748.35	2 ø 10.0 2 ø 10.0 2 ø 10.0		26, 48
VA54	421.38	2 ø 10.0		-15.12 -218.32	2 ø 10.0 2 ø 10.0		26
VA55	1599.42	2 ø 10.0	2 ø 6.3	-2578.22 -2893.81	2 ø 10.0 2 ø 10.0	2 ø 6.3 2 ø 6.3	26
VA56	1508.13 289.02	2 ø 10.0 2 ø 10.0		-2311.94 -2804.59 -685.15	2 ø 10.0 2 ø 10.0 2 ø 10.0		26, 48
VA57	1846.48	2 ø 10.0		-3281.43 -1826.89	2 ø 10.0 2 ø 10.0		26
VA58	1560.24 262.79	2 ø 10.0 2 ø 10.0		-2185.61 -2838.98 -766.78	2 ø 10.0 2 ø 10.0 2 ø 10.0		26, 48
VA59	1662.19 0.11 1170.70	2 ø 10.0 2 ø 10.0 2 ø 10.0		-2089.38 -2736.62 -2149.46 -1666.30	2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0		26, 48
VA60	1108.38 1055.59 1108.38	2 ø 10.0 2 ø 10.0 2 ø 10.0		-1988.20 -2283.34 -2283.34 -1988.20	2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0		26
VA61	1553.57	2 ø 10.0	2 ø 6.3	-2627.35 -2939.60	2 ø 10.0 2 ø 10.0	2 ø 6.3 2 ø 6.3	26
VA62	2899.73	2 ø 10.0		-1238.23 -1350.35	2 ø 10.0 2 ø 10.0		26
VA63	2178.01	2 ø 10.0		-43.94 -61.96	2 ø 10.0 2 ø 10.0		26
VA64	1505.32 285.84	2 ø 10.0 2 ø 10.0		-2328.90 -2807.75 -701.66	2 ø 10.0 2 ø 10.0 2 ø 10.0		26, 48
VA65	2193.15	2 ø 10.0		-3549.05 -1031.95	2 ø 10.0 2 ø 10.0		26
VA66	2117.07	2 ø 10.0		-652.02 -1897.81	2 ø 10.0 2 ø 10.0		26
VA67	821.68	2 ø 10.0		-1213.54 -1467.44	2 ø 10.0 2 ø 10.0		26, 48

VA68	2241.67	2 ø 10.0		-3080.40 -3121.42	2 ø 10.0 2 ø 10.0		26
VA69	1728.47	2 ø 10.0		-2595.65 -2607.93	2 ø 10.0 2 ø 10.0		26
VA70	2585.83	2 ø 10.0		-2529.29 -2708.24	2 ø 10.0 2 ø 10.0		26
VA71	906.57	2 ø 10.0		-1069.67 -1270.26	2 ø 10.0 2 ø 10.0		26
VA72	1350.04 161.35 827.78	2 ø 10.0 2 ø 10.0 2 ø 10.0		-1508.47 -1884.42 -974.48 -1104.10	2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0		26, 48
VA73	1856.03 256.43	2 ø 10.0 2 ø 10.0		-3029.31 -2999.59 -667.09	2 ø 10.0 2 ø 10.0 2 ø 10.0		26, 48
VA74	401.72	2 ø 10.0		-14.17	2 ø 10.0		26
VA75	597.47 1620.31 2072.95 232.53	2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0		-681.16 -2235.67 -3310.93 -3273.40 -652.45	2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0		26, 48
VA76	3797.47	2 ø 10.0		-314.77 -350.18	2 ø 10.0 2 ø 10.0		26
VA77	3151.52	2 ø 10.0		-93.27 -87.29	2 ø 10.0 2 ø 10.0		26
VA78	64.91 191.80 426.61	3 ø 8.0 3 ø 8.0 3 ø 8.0		-0.16 -414.22 -509.74 -50.51	2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0		26
VA79	796.07	2 ø 10.0		-1172.10 -1584.16	2 ø 10.0 2 ø 10.0		26, 48
VA80	819.49	2 ø 10.0		-860.37 -1081.68	2 ø 10.0 2 ø 10.0		26
VA81	1592.35 2017.01	2 ø 10.0 2 ø 10.0		-2208.12 -425.43 -4633.05 -6.40	2 ø 10.0 2 ø 10.0 3 ø 10.0 2 ø 10.0		26
VA82	628.37	2 ø 10.0		-1280.71 -1236.90	2 ø 10.0 2 ø 10.0		26, 48
VA83	610.62	2 ø 10.0		-329.47	2 ø 10.0		26
VA84	1237.21	2 ø 10.0		-1265.02 -1436.31	2 ø 10.0 2 ø 10.0		26
VA85	806.98	2 ø 10.0		-897.46 -1058.21	2 ø 10.0 2 ø 10.0		26
VA86	767.87	2 ø 10.0		-1020.44 -1027.98	2 ø 10.0 2 ø 10.0		26
VA87	308.95	2 ø 10.0		-1306.31	2 ø 10.0		26
VA88	2409.16	2 ø 10.0	2 ø 8.0	-4129.37 -2366.33 -4501.60	2 ø 12.5 3 ø 10.0 2 ø 12.5	2 ø 6.3 2 ø 6.3 2 ø 6.3	26, 48
VA89	1679.30 786.52	2 ø 10.0 2 ø 10.0	2 ø 6.3	-2323.20 -3140.17	2 ø 10.0 2 ø 10.0		26, 48

	1470.78	2 ø 10.0		-2856.69 -2390.87	2 ø 10.0 2 ø 10.0		
VA90	1822.65	2 ø 10.0		-1904.92 -2139.32	2 ø 10.0 2 ø 10.0		26, 48
VA91	735.54	2 ø 10.0		-740.74 -1487.82	2 ø 10.0 2 ø 10.0		26
VA92	167.58 171.00	2 ø 10.0 2 ø 10.0		-14.35 -1469.15 -190.18	2 ø 10.0 2 ø 10.0 2 ø 10.0		26
VA93	2136.84	2 ø 10.0		-245.63 -218.68	2 ø 10.0 2 ø 10.0		26
VA94	170.97	2 ø 10.0		-223.53 -21.59	2 ø 10.0 2 ø 10.0		26
VA95	2602.64	2 ø 10.0		-696.51 -770.04	2 ø 10.0 2 ø 10.0		26
VA96	638.82	2 ø 10.0		-1226.39 -1257.36	2 ø 10.0 2 ø 10.0		26
VA97	1677.01	2 ø 10.0		-1695.12 -1966.47	2 ø 10.0 2 ø 10.0		26, 48
VA98	0.11 492.19	2 ø 10.0 2 ø 10.0		-360.33 -135.30	2 ø 10.0 2 ø 10.0		26
VA99	1661.98 1176.90	2 ø 10.0 2 ø 10.0	2 ø 6.3	-1401.32 -2266.06 -2148.98	2 ø 10.0 2 ø 10.0 2 ø 10.0	2 ø 6.3 2 ø 6.3	26, 48
VA100	2557.24	2 ø 10.0		-1873.09 -2013.60	2 ø 10.0 2 ø 10.0		26
VA101	1143.67	2 ø 10.0		-69.40 -68.95	2 ø 10.0 2 ø 10.0		26
VA102	425.78	2 ø 10.0		-41.31	2 ø 10.0		26
VA103	329.06	2 ø 10.0		-796.51 -1256.34	2 ø 10.0 2 ø 10.0		26, 38, 48
VA104	1562.57	2 ø 10.0		-2605.50 -2452.06	2 ø 10.0 2 ø 10.0		26, 48
VA105	1477.91 654.01 1565.19	2 ø 10.0 2 ø 10.0 2 ø 10.0		-2262.85 -2888.02 -2856.87 -2222.57	2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0		26, 48
VA106	1493.34 536.07 928.28	2 ø 10.0 2 ø 10.0 2 ø 10.0		-1453.74 -2342.03 -1254.99 -1074.00	2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0		26, 48
VA107	731.96	2 ø 10.0		-736.64 -1450.06	2 ø 10.0 2 ø 10.0		26, 48
VA108	2547.06	2 ø 10.0		-181.22 -3345.42	2 ø 10.0 2 ø 10.0		26, 48
VA109	1672.32 448.63 1555.69	2 ø 10.0 2 ø 10.0 2 ø 10.0		-2339.90 -3055.03 -2827.07 -2277.13	2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0		26, 48
VA110	777.28 600.14 569.55	2 ø 10.0 2 ø 10.0 2 ø 10.0		-1091.83 -1675.26 -1378.23	2 ø 10.0 2 ø 10.0 2 ø 10.0		26, 48

	258.51 770.36	2 ø 10.0 2 ø 10.0		-1150.87 -1011.80 -1131.51	2 ø 10.0 2 ø 10.0 2 ø 10.0		
VA111	1525.97	2 ø 10.0	2 ø 6.3	-2832.29 -2430.81	2 ø 10.0 2 ø 10.0	2 ø 6.3 2 ø 6.3	26, 48
VA112	1680.15	2 ø 10.0	2 ø 6.3	-2244.17 -3274.46	2 ø 10.0 2 ø 10.0	2 ø 6.3 2 ø 6.3	26, 48
VA113	918.12	2 ø 10.0		-1122.92 -1227.44	2 ø 10.0 2 ø 10.0		26
VA114	379.40 445.65	2 ø 10.0 2 ø 10.0		-957.13 -708.63 -841.05	2 ø 10.0 2 ø 10.0 2 ø 10.0		26
VA115	937.26	2 ø 10.0		-1110.16 -1202.84	2 ø 10.0 2 ø 10.0		26
VA116	457.69	2 ø 10.0		-73.90 -616.65	2 ø 10.0 2 ø 10.0		26
VA117	1833.04	2 ø 10.0		-2003.35 -2654.93	2 ø 10.0 2 ø 10.0		26
VA118	889.16	2 ø 10.0		-1167.69 -1251.76	2 ø 10.0 2 ø 10.0		26
VA119	890.69	2 ø 10.0		-1805.67	2 ø 10.0		26
VA120	782.30	2 ø 10.0		-76.19	2 ø 10.0		26
VA121	372.79 429.10	2 ø 10.0 2 ø 10.0		-962.08 -715.12 -856.17	2 ø 10.0 2 ø 10.0 2 ø 10.0		26, 48
VA122	3180.67 0.11 1740.89	2 ø 10.0 2 ø 10.0 2 ø 10.0		-3171.22 -4422.27 -2607.31 -2565.34	2 ø 10.0 3 ø 10.0 2 ø 10.0 2 ø 10.0		26
VA123	896.31	2 ø 10.0		-1165.28 -1235.03	2 ø 10.0 2 ø 10.0		26
VA124	1583.21 134.66 822.22	2 ø 10.0 2 ø 10.0 2 ø 10.0		-2290.71 -2696.88 -1392.53 -1220.32	2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0		26, 48

Vigas do pavimento COBERTURA

Viga	Vãos			Nós			Avisos
	Md (kgf.m)	As	Als	Md (kgf.m)	As	Als	
VB1	1427.87 1346.95 893.77 2458.54 1434.06 822.87	2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0	2 ø 6.3	-1288.78 -2236.13 -1745.27 -3907.77 -4662.21 -1802.89 -564.65	2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0 3 ø 10.0 2 ø 10.0 2 ø 10.0		04, 48

VB2	2427.62 2006.61 227.89 6374.05 1603.36 625.15	2 ø 10.0 2 ø 10.0 2 ø 10.0 3 ø 12.5 2 ø 10.0 2 ø 10.0		-931.31 -3580.45 -1357.47 -9519.20 -131.47 -7158.11	2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 16.0 2 ø 10.0 3 ø 12.5		
VB3	4172.40 902.27 1255.21 2918.98 1219.23 1173.61	3 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0		-2721.86 -5804.22 -1740.55 -51.20 -4307.08 -4239.76 -2919.43 -263.67	2 ø 10.0 2 ø 12.5 2 ø 10.0 2 ø 10.0 3 ø 10.0 3 ø 10.0 2 ø 10.0 2 ø 10.0		
VB4	2087.04	2 ø 10.0		-260.00	2 ø 10.0		12
VB5	1916.91	2 ø 10.0		-119.66 -42.03	2 ø 10.0 2 ø 10.0		
VB6	2590.98 983.80 1112.30 1545.65 1462.02 1357.93	2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0 3 ø 10.0 2 ø 10.0	2 ø 6.3 2 ø 8.0	-2216.40 -3972.38 -1610.90 -2564.00 -3046.43 -2845.16 -280.65	2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0 3 ø 10.0 3 ø 10.0 2 ø 10.0	2 ø 6.3 2 ø 6.3	04, 06, 48
VB7	646.57 641.63	2 ø 10.0 2 ø 10.0		-1080.70 -1375.74 -1256.62	2 ø 10.0 2 ø 10.0 2 ø 10.0		26, 48
VB8	2819.47 489.58 329.97 650.31 0.11 333.98 228.07 195.23 2799.07 780.07 1802.83 0.11 1589.93 1267.68 1533.45	2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0 3 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0		-2059.88 -2012.51 -597.33 -445.52 -1052.66 -471.93 -716.11 -301.17 -702.36 -1093.99 -2497.95 -2889.24 -1911.25 -331.39 -1467.25 -2330.49 -2233.30 -1427.48	2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0		04, 48
VB9	1114.28	2 ø 10.0		-123.93	2 ø 10.0		
VB10	1236.96	2 ø 10.0		-43.64 -73.88	2 ø 10.0 2 ø 10.0		
VB11	408.05	2 ø 10.0		-33.96 -17.45	2 ø 10.0 2 ø 10.0		
VB12	2874.13	2 ø 10.0		-125.37 -51.03	2 ø 10.0 2 ø 10.0		

VB13	215.56	2 ø 10.0		-135.51	2 ø 10.0		
VB14				-2430.83	2 ø 10.0		
				-3536.14	2 ø 10.0		
				-553.10	2 ø 10.0		
	3540.46	2 ø 10.0		-394.62	2 ø 10.0		
	55.51	2 ø 10.0		-946.43	2 ø 10.0		
	487.03	2 ø 10.0		-2128.09	2 ø 10.0		
	762.56	2 ø 10.0		-1406.58	2 ø 10.0		
	1322.30	2 ø 10.0		-1186.67	2 ø 10.0		
	24.66	2 ø 10.0		-474.17	2 ø 10.0		
	687.64	2 ø 10.0	2 ø 6.3	-28.72	2 ø 10.0	2 ø 6.3	
	212.04	2 ø 10.0	2 ø 6.3	-1043.49	2 ø 10.0	2 ø 6.3	
	428.17	2 ø 10.0	2 ø 6.3	-153.49	2 ø 10.0	2 ø 6.3	
	1560.44	2 ø 10.0	2 ø 6.3	-1128.77	2 ø 10.0	2 ø 6.3	
	344.10	2 ø 10.0		-1827.43	2 ø 10.0	2 ø 6.3	
	3070.63	2 ø 10.0		-3925.39	2 ø 10.0		
	0.11	2 ø 10.0		-2937.54	2 ø 10.0		
	2380.98	2 ø 10.0		-793.36	2 ø 10.0		
	1357.89	2 ø 10.0		-2140.34	2 ø 10.0		
	2599.07	2 ø 10.0		-3264.74	2 ø 10.0		
				-3374.16	2 ø 10.0		
				-1398.57	2 ø 10.0		
VB15				-181.35	2 ø 10.0		
	353.83	2 ø 10.0		-4081.96	3 ø 10.0		
	3283.45	2 ø 10.0		-4601.32	3 ø 10.0		
	0.11	2 ø 10.0		-932.49	2 ø 10.0		
	1168.95	2 ø 10.0		-856.01	2 ø 10.0		
	3816.36	2 ø 10.0		-5661.76	2 ø 12.5		
	664.86	2 ø 10.0		-4931.46	3 ø 10.0		
	700.80	2 ø 10.0		-849.59	2 ø 10.0		
	3770.10	2 ø 10.0		-3149.01	2 ø 10.0		
	0.11	2 ø 10.0	2 ø 6.3	-4000.22	3 ø 10.0	2 ø 6.3	
	3570.77	2 ø 10.0		-4635.48	3 ø 10.0		
	5075.01	3 ø 10.0		-9078.17	2 ø 16.0		
	4311.58	3 ø 10.0		-9462.70	2 ø 16.0		
VB16				-2969.20	2 ø 10.0		
	0.11	2 ø 10.0		-646.79	2 ø 10.0		
	5154.43	3 ø 10.0	2 ø 6.3	-810.97	2 ø 10.0	2 ø 6.3	
	498.41	2 ø 10.0		-6418.26	3 ø 12.5		
	4589.34	3 ø 10.0		-65.80	2 ø 10.0		
	29.07	2 ø 10.0		-1178.97	2 ø 10.0		
	481.87	2 ø 10.0		-5387.27	2 ø 12.5		
	345.73	2 ø 10.0	2 ø 6.3	-4711.16	3 ø 10.0		
VB17				-230.31	2 ø 10.0		
				-1442.95	2 ø 10.0		
VB18	92.92	2 ø 10.0		-206.04	2 ø 10.0		
				-74.67	2 ø 10.0		
VB19	4974.50	3 ø 10.0		-85.95	2 ø 10.0		
	5114.65	3 ø 10.0		-10572.51	3 ø 16.0		
	5152.78	3 ø 10.0		-10205.10	3 ø 16.0		
				-332.83	2 ø 10.0		
VB19	646.57	2 ø 10.0		-1080.70	2 ø 10.0		
	641.63	2 ø 10.0		-1375.74	2 ø 10.0		

				-1256.62	2 ø 10.0		
VB20	0.11	2 ø 10.0	2 ø 6.3	-472.29	2 ø 10.0	2 ø 6.3 2 ø 6.3	02, 04, 48
	2076.04	2 ø 10.0		-2592.25	2 ø 10.0		
	318.01	2 ø 10.0		-3521.21	2 ø 10.0		
	719.48	3 ø 10.0		-0.04	2 ø 10.0		
	0.11	3 ø 10.0	2 ø 8.0	-583.37	3 ø 10.0		
	0.11	3 ø 10.0		-992.89	3 ø 10.0		
	4612.67	3 ø 10.0		-7275.54	3 ø 12.5		
				-5748.18	2 ø 12.5		
VB21	622.66	2 ø 10.0	2 ø 6.3	-3881.83	2 ø 10.0	2 ø 6.3 2 ø 6.3	
	341.90	2 ø 10.0		-294.67	2 ø 10.0		
	1761.27	2 ø 10.0		-1737.23	2 ø 10.0		
				-2483.48	2 ø 10.0		
VB22	547.97	2 ø 10.0	2 ø 6.3	-1333.44	2 ø 10.0	2 ø 6.3	04, 48
	3052.60	3 ø 10.0		-4255.61	3 ø 10.0		
	2654.10	2 ø 10.0	2 ø 6.3	-6005.68	2 ø 12.5		
	2122.82	2 ø 10.0		-5475.96	2 ø 12.5		
				-29.00	2 ø 10.0		
				-2407.15	2 ø 10.0		
VB23	48.44	2 ø 10.0	2 ø 6.3	-97.91	2 ø 10.0	2 ø 6.3	04
	6006.46	3 ø 12.5		-7177.99	3 ø 12.5		
				-270.42	2 ø 10.0		
VB24	2108.81	2 ø 10.0		-4590.42	3 ø 10.0		02, 04, 48
	2431.87	2 ø 10.0		-0.04	2 ø 10.0		
	3509.94	3 ø 10.0		-4253.97	3 ø 10.0		
	1760.06	2 ø 10.0		-3662.48	2 ø 10.0		
	2631.82	2 ø 10.0		-2174.75	2 ø 10.0		
VB25	99.63	2 ø 10.0	2 ø 6.3	-39.45	2 ø 10.0	2 ø 6.3	04
	5909.94	2 ø 12.5		-8068.00	3 ø 12.5		
				-129.63	2 ø 10.0		
VB26	1126.51	2 ø 10.0	2 ø 6.3	-1079.36	2 ø 10.0	2 ø 6.3 2 ø 6.3 3 ø 6.3 2 ø 8.0 2 ø 6.3	02, 04, 06, 48
	1058.85	2 ø 10.0		-2095.93	2 ø 10.0		
	1653.05	2 ø 10.0		-3238.67	2 ø 10.0		
	954.39	2 ø 10.0	2 ø 6.3	-3101.59	2 ø 10.0		
	2081.76	2 ø 10.0		-3958.86	2 ø 10.0		
	0.11	3 ø 10.0		-3345.32	2 ø 10.0		
	4132.49	3 ø 10.0	2 ø 6.3	-3435.32	3 ø 10.0		
	407.90	2 ø 10.0		-6186.10	3 ø 12.5		
	485.91	2 ø 10.0		-3859.93	2 ø 10.0		
	0.11	2 ø 10.0	2 ø 6.3	-5733.55	2 ø 12.5		
	804.49	2 ø 10.0	2 ø 6.3	-921.47	2 ø 10.0		
			2 ø 8.0	-875.79	3 ø 10.0		
			2 ø 6.3	-1665.30	3 ø 10.0		
				-1269.76	2 ø 10.0		
VB27	495.90	2 ø 10.0	2 ø 6.3	-935.91	2 ø 10.0	2 ø 6.3 2 ø 6.3	
	3775.27	2 ø 10.0		-5001.90	2 ø 12.5		
	2253.86	2 ø 10.0		-5529.31	2 ø 12.5		
	3956.17	2 ø 10.0		-5097.34	2 ø 12.5		
				-2433.75	2 ø 10.0		
VB28	1812.84	2 ø 10.0		-1059.22	2 ø 10.0		
	772.06	2 ø 10.0		-2483.10	2 ø 10.0		
	3025.22	2 ø 10.0		-4188.12	3 ø 10.0		

	541.88 3959.92 0.11 5167.78 283.68 848.53 1064.65	2 ø 10.0 2 ø 10.0 2 ø 10.0 3 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0		-4435.64 -5197.92 -4856.00 -6396.23 -5288.43 -699.19 -2247.15 -1612.79	3 ø 10.0 2 ø 12.5 3 ø 10.0 3 ø 12.5 2 ø 12.5 2 ø 10.0 2 ø 10.0 2 ø 10.0		
VB29	2349.01	2 ø 10.0		-327.93	2 ø 10.0		
VB30	311.21 4048.57 3056.48 2824.89	3 ø 10.0 3 ø 10.0 3 ø 10.0 3 ø 10.0		-800.19 -5421.07 -6491.72 -3693.92 -4723.01 -1374.77	2 ø 12.5 2 ø 12.5 3 ø 12.5 2 ø 12.5 2 ø 12.5 2 ø 12.5		
VB31	0.11 30.89	2 ø 10.0 2 ø 10.0		-70.86 -2706.69 -5748.25	2 ø 10.0 2 ø 10.0 2 ø 12.5		
VB32	1740.89 471.33 5290.43 0.11 6547.60 0.11 0.11 3489.26 91.67 4745.26	2 ø 10.0 2 ø 10.0 2 ø 12.5 2 ø 10.0 3 ø 12.5 2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0 3 ø 10.0	2 ø 6.3 2 ø 6.3 2 ø 6.3 2 ø 6.3 2 ø 6.3	-109.01 -3676.19 -4542.10 -5723.34 -7490.91 -5782.68 -2931.66 -2011.88 -63.67 -3514.06 -4946.37 -152.93	2 ø 10.0 2 ø 10.0 3 ø 10.0 2 ø 12.5 3 ø 12.5 2 ø 12.5 2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0 3 ø 10.0 2 ø 10.0	2 ø 6.3 2 ø 6.3 2 ø 6.3 2 ø 6.3	
VB33	3730.87	2 ø 10.0		-2412.73 -166.02	2 ø 10.0 2 ø 10.0		
VB34	543.69 369.58 880.16	2 ø 10.0 2 ø 10.0 2 ø 10.0		-2012.72 -4695.57 -25.72	2 ø 10.0 3 ø 10.0 2 ø 10.0		
VB35	3354.97	2 ø 10.0		-591.11 -8.67	2 ø 10.0 2 ø 10.0		
VB36	1905.16 1095.70 4464.48 919.72 5627.48 250.22	2 ø 10.0 2 ø 10.0 3 ø 10.0 2 ø 10.0 2 ø 12.5 2 ø 10.0	2 ø 8.0	-1383.14 -3035.25 -5841.35 -6467.86 -7490.19 -3968.92 -7636.61 -94.91	2 ø 10.0 2 ø 10.0 2 ø 12.5 3 ø 12.5 2 ø 16.0 2 ø 12.5 2 ø 16.0 2 ø 10.0	2 ø 6.3 2 ø 6.3 2 ø 6.3	
VB37	0.11 2822.72 0.11 10041.22	2 ø 12.5 2 ø 12.5 2 ø 12.5 3 ø 16.0	2 ø 8.0 3 ø 6.3	-1097.60 -965.04 -3328.26 -403.16 -1189.81 -11774.31 -12025.19	2 ø 12.5 2 ø 12.5 3 ø 12.5 3 ø 12.5 3 ø 12.5 3 ø 16.0 3 ø 16.0	3 ø 6.3 4 ø 6.3 4 ø 6.3 2 ø 10.0 2 ø 6.3	

VB38	2130.92 314.97 3216.65 324.54	2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0	2 ø 6.3	-7093.17 -1841.85 -5838.25 -3702.61 -7.13	3 ø 12.5 2 ø 10.0 2 ø 12.5 2 ø 10.0 2 ø 10.0		04, 06, 48
VB39	1980.64 99.90 434.33 258.54 3254.79 0.11 0.11 2451.78 546.92	2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0		-1209.68 -2053.57 -1009.00 -27.70 -4679.59 -3586.45 -1979.63 -1469.95 -3410.56	2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0 3 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0		02
VB40	101.39 2114.29	2 ø 10.0 2 ø 10.0		-3471.03 -229.76	2 ø 10.0 2 ø 10.0		
VB41	123.34 136.68	2 ø 10.0 2 ø 10.0		-3293.96	2 ø 10.0		
VB42	172.85 0.11 0.11 1335.72 839.97 690.98 1373.21	2 ø 12.5 2 ø 12.5 2 ø 12.5 2 ø 12.5 2 ø 12.5 2 ø 12.5 2 ø 12.5	2 ø 6.3 2 ø 6.3	-1543.04 -1216.82 -1546.69 -1519.32 -1213.53 -2284.36 -1231.45	2 ø 12.5 2 ø 12.5 2 ø 12.5 2 ø 12.5 2 ø 12.5 2 ø 12.5 2 ø 12.5	2 ø 6.3 2 ø 6.3	02, 04
VB43	1643.13 0.11 1086.97 3338.01 0.11 1728.73 988.02	2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0	2 ø 6.3	-1198.81 -1934.13 -1271.77 -5352.03 -4253.34 -579.30 -2002.51 -2243.56 -586.41	2 ø 10.0 2 ø 10.0 2 ø 10.0 3 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0		04, 48
VB44	638.88 0.11 2321.84 82.07	2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0	2 ø 6.3	-1074.84 -1540.31 -201.90 -3010.76 -3114.56 -68.91 -452.86	2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0		04, 48
VB45	980.40	2 ø 10.0		-831.00	2 ø 10.0		
VB46	701.61	2 ø 10.0		-315.47	2 ø 10.0		
VB47	521.72 480.30 521.72	2 ø 10.0 2 ø 10.0 2 ø 10.0		-962.84 -1175.31 -1175.31 -962.84	2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0		26, 48
VB48	2599.45 626.12	2 ø 10.0 2 ø 10.0		-1751.43 -4034.79	2 ø 10.0 3 ø 10.0		
VB49	5987.22 5.06	2 ø 12.5 2 ø 10.0		-320.13 -3663.31 -643.60	2 ø 10.0 2 ø 10.0 2 ø 10.0		

VB50	712.35	2 ø 10.0		-307.13	2 ø 10.0		
VB51	5341.53	2 ø 12.5		-3123.57 -3444.48	2 ø 10.0 2 ø 10.0		
VB52	0.11 9298.67 285.88	2 ø 10.0 2 ø 16.0 2 ø 10.0		-232.25 -8433.92 -8612.58 -410.45	2 ø 10.0 2 ø 16.0 2 ø 16.0 2 ø 10.0		
VB53	7477.19	3 ø 12.5		-4624.09 -2223.14	3 ø 10.0 2 ø 10.0		
VB54	0.11 9350.27 285.68	2 ø 10.0 2 ø 16.0 2 ø 10.0		-60.15 -10347.29 -8513.27 -409.65	2 ø 10.0 3 ø 16.0 2 ø 16.0 2 ø 10.0		
VB55	1703.75 425.32 1178.26	2 ø 10.0 2 ø 10.0 2 ø 10.0	2 ø 6.3	-1815.73 -3081.61 -2187.31 -1412.04	2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0	2 ø 6.3	04, 48
VB56	523.98 466.84 523.98	2 ø 10.0 2 ø 10.0 2 ø 10.0		-935.16 -1203.75 -1203.74 -935.16	2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0		26
VB57	5967.52	2 ø 12.5		-3677.66 -4126.25	2 ø 10.0 3 ø 10.0		
VB58	8313.87	3 ø 12.5		-1361.85 -1033.09	2 ø 12.5 2 ø 12.5		
VB59	2400.18	2 ø 10.0		-4.98 -207.57	2 ø 10.0 2 ø 10.0		12
VB60	0.11 11344.88 215.02	3 ø 10.0 3 ø 16.0 2 ø 16.0		-385.09 -9608.24 -10243.14 -538.11	2 ø 12.5 2 ø 16.0 3 ø 16.0 2 ø 12.5		
VB61	7220.92	3 ø 12.5		-4523.47 -1163.52	3 ø 10.0 2 ø 10.0		
VB62	3078.39	2 ø 10.0		-319.20 -1411.25	2 ø 10.0 2 ø 10.0		
VB63	2443.73	2 ø 10.0		-1208.60 -1377.18	2 ø 10.0 2 ø 10.0		
VB64	6361.74 0.11	3 ø 12.5 2 ø 12.5		-3194.13 -10666.81 -110.84	2 ø 12.5 3 ø 16.0 2 ø 12.5		
VB65	4305.69 0.11	2 ø 12.5 2 ø 12.5		-2055.28 -6005.02 -349.67	2 ø 12.5 2 ø 12.5 2 ø 12.5		
VB66	4031.06	3 ø 10.0		-1787.05 -1714.51	2 ø 10.0 2 ø 10.0		
VB67	10101.71 432.52	3 ø 16.0 2 ø 16.0		-4790.96 -10154.79 -270.88	2 ø 12.5 3 ø 16.0 2 ø 12.5		
VB68	3203.24	2 ø 10.0		-1196.57 -1253.63	2 ø 10.0 2 ø 10.0		
VB69	1889.25 414.72	2 ø 10.0 2 ø 10.0		-1468.63 -2200.63	2 ø 10.0 2 ø 10.0		04, 48

	1428.35	2 ø 10.0		-1554.39 -1389.43	2 ø 10.0 2 ø 10.0		
VB70	1437.76 486.31	2 ø 10.0 2 ø 10.0		-20.42 -866.31 -2.32	2 ø 10.0 2 ø 10.0 2 ø 10.0		12
VB71	546.49	2 ø 10.0					
VB72	201.14 1120.10 0.11	3 ø 10.0 3 ø 10.0 3 ø 10.0		-200.91 -2108.69 -1866.87 -596.54 -930.33	3 ø 10.0 3 ø 10.0 3 ø 10.0 3 ø 10.0 3 ø 10.0		02, 04, 12, 98, 48
VB73	737.26 1529.11 3610.77 0.11	2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0		-509.72 -1957.75 -5077.36 -4426.37 -595.57	2 ø 10.0 2 ø 10.0 2 ø 12.5 3 ø 10.0 2 ø 10.0		
VB74	3754.53	2 ø 10.0		-1014.84 -64.68	2 ø 10.0 2 ø 10.0		
VB75	4046.02	3 ø 10.0		-295.74 -151.15	2 ø 10.0 2 ø 10.0		
VB76	153.27 2058.01	2 ø 10.0 2 ø 10.0		-2525.81 -1644.86 -3436.03	2 ø 10.0 2 ø 10.0 2 ø 10.0		
VB77	4783.50 0.11 2629.07	3 ø 10.0 2 ø 10.0 2 ø 10.0		-5151.82 -8149.44 -2719.00 -1576.25	2 ø 12.5 3 ø 12.5 2 ø 10.0 2 ø 10.0		
VB78	841.27 2360.90	2 ø 10.0 2 ø 10.0		-127.32 -4219.45 -1115.98	2 ø 10.0 3 ø 10.0 2 ø 10.0		
VB79	1809.60 4221.88	2 ø 10.0 3 ø 10.0		-1723.75 -285.06 -7779.66	2 ø 10.0 2 ø 10.0 3 ø 12.5		
VB80	2409.22	2 ø 10.0		-1622.91 -1892.29	2 ø 10.0 2 ø 10.0		
VB81	1094.52	2 ø 10.0		-171.29	2 ø 10.0		
VB82	2787.23	2 ø 10.0		-1189.11 -1182.16	2 ø 10.0 2 ø 10.0		
VB83	1007.79 2716.74	2 ø 10.0 2 ø 10.0		-139.62 -3456.53 -1084.53	2 ø 10.0 2 ø 10.0 2 ø 10.0		
VB84	3519.06	2 ø 10.0		-1280.70 -1443.31	2 ø 10.0 2 ø 10.0		
VB85	1122.09	2 ø 10.0		-251.93	2 ø 10.0		
VB86	5477.10	3 ø 12.5	2 ø 6.3	-4185.16 -1885.34 -3894.83	3 ø 10.0 2 ø 10.0 2 ø 10.0	2 ø 6.3 2 ø 6.3 2 ø 6.3	
VB87	5030.74 1137.40 4979.21 0.11	2 ø 12.5 2 ø 10.0 3 ø 10.0 2 ø 10.0	2 ø 6.3 2 ø 6.3 2 ø 6.3 2 ø 6.3	-3554.02 -6497.28 -6191.92 -8413.08 -1295.27	3 ø 10.0 3 ø 12.5 3 ø 12.5 2 ø 16.0 2 ø 10.0	2 ø 6.3 2 ø 6.3 2 ø 6.3 2 ø 6.3	

VB88	2189.92	2 ø 10.0		-1990.28 -1173.39	2 ø 10.0 2 ø 10.0		
VB89	1293.90 2942.58	2 ø 10.0 2 ø 10.0		-165.16 -3577.96 -1682.04	2 ø 10.0 2 ø 10.0 2 ø 10.0		
VB90	887.80 173.40	2 ø 10.0 2 ø 10.0		-312.54 -1912.04	2 ø 10.0 2 ø 10.0		
VB91	3735.11	2 ø 10.0		-1801.90 -196.37	2 ø 10.0 2 ø 10.0		
VB92	52.16	2 ø 10.0		-266.50	2 ø 10.0		
VB93	3283.10	2 ø 10.0		-377.58 -480.75	2 ø 10.0 2 ø 10.0		
VB94	3242.21	2 ø 10.0		-1843.56 -2129.21	2 ø 10.0 2 ø 10.0		
VB95	2401.28 4015.48 1804.85	2 ø 10.0 3 ø 10.0 2 ø 10.0	2 ø 6.3	-880.18 -5200.12 -2107.14 -2496.14	2 ø 10.0 2 ø 12.5 2 ø 10.0 2 ø 10.0	2 ø 6.3	
VB96	4857.51 350.78	3 ø 10.0 2 ø 10.0		-2283.33 -6441.79 -126.14	2 ø 10.0 3 ø 12.5 2 ø 10.0		
VB97	2543.13	2 ø 10.0		-1369.57 -1404.10	2 ø 10.0 2 ø 10.0		
VB98	5932.12 603.38	2 ø 12.5 2 ø 10.0		-406.81 -8115.96	2 ø 10.0 3 ø 12.5		
VB99	4620.47 226.02	3 ø 10.0 2 ø 10.0		-2192.08 -6908.47 -99.78	2 ø 10.0 3 ø 12.5 2 ø 10.0		
VB100	1163.05 8389.27	2 ø 10.0 3 ø 12.5		-880.53 -10904.06 -5723.62	2 ø 10.0 3 ø 16.0 2 ø 12.5		
VB101	2603.56	2 ø 10.0		-1110.98 -1282.38	2 ø 10.0 2 ø 10.0		
VB102	4451.28 0.11 1484.01 730.61	3 ø 10.0 2 ø 10.0 2 ø 10.0 3 ø 10.0	2 ø 6.3 2 ø 6.3	-234.60 -4515.39 -1409.32 -2162.56 -544.50	2 ø 10.0 3 ø 10.0 2 ø 10.0 2 ø 10.0 3 ø 10.0	2 ø 6.3	04, 12, 98, 48
VB103	1595.27	2 ø 10.0		-695.99 -116.58	2 ø 10.0 2 ø 10.0		
VB104	3070.64	2 ø 10.0		-84.56	2 ø 10.0		
VB105	1698.31	2 ø 10.0	2 ø 6.3	-895.58 -5691.80	2 ø 10.0 2 ø 12.5	2 ø 6.3	38
VB106	5991.00 0.11	3 ø 12.5 2 ø 10.0	2 ø 6.3 2 ø 6.3	-7890.22 -6601.04 -1681.59	3 ø 12.5 3 ø 12.5 2 ø 10.0	2 ø 6.3 2 ø 6.3 2 ø 6.3	
VB107	3128.56 369.95 3239.02 0.11 1552.29 1038.29	2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0	2 ø 6.3 2 ø 6.3 2 ø 6.3	-3847.42 -4987.14 -4465.82 -4570.92 -1849.67 -2756.42	3 ø 10.0 2 ø 12.5 3 ø 10.0 3 ø 10.0 2 ø 10.0 2 ø 10.0	2 ø 6.3 2 ø 6.3 2 ø 6.3	

	1995.89	2 ø 10.0		-2819.14 -1420.86	2 ø 10.0 2 ø 10.0		
VB108	2084.95	2 ø 10.0		-1445.19 -1157.84	2 ø 10.0 2 ø 10.0		
VB109	5322.18 0.11 6060.62 0.11 6040.11 0.11 2659.12 947.11 1109.92 521.34 1421.50	2 ø 12.5 2 ø 10.0 3 ø 12.5 2 ø 10.0 2 ø 12.5 2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0	2 ø 6.3 2 ø 6.3 2 ø 6.3 2 ø 6.3 2 ø 6.3 2 ø 6.3 2 ø 6.3 2 ø 6.3 2 ø 6.3 2 ø 6.3 2 ø 6.3	-99.09 -6278.82 -6849.10 -7432.56 -6543.75 -7201.19 -2607.26 -3618.73 -1878.64 -1540.89 -1649.17 -1193.83	2 ø 10.0 3 ø 12.5 3 ø 12.5 3 ø 12.5 3 ø 12.5 3 ø 12.5 2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0	2 ø 6.3 2 ø 6.3 2 ø 6.3 2 ø 6.3 2 ø 6.3 2 ø 6.3 2 ø 6.3 2 ø 6.3 2 ø 6.3 2 ø 6.3 2 ø 6.3	04, 48
VB110	7252.54	3 ø 12.5		-3627.97 -339.55	2 ø 12.5 2 ø 12.5		
VB111	1505.12	3 ø 10.0		-400.95 -268.10	3 ø 10.0 3 ø 10.0		04, 12, 98, 48
VB112	7034.26 0.11 8449.27	3 ø 12.5 2 ø 10.0 3 ø 12.5		-4485.54 -7752.26 -9139.48 -5456.05	3 ø 10.0 3 ø 12.5 2 ø 16.0 2 ø 12.5		
VB113	3868.51	2 ø 10.0		-1626.82 -1518.32	2 ø 10.0 2 ø 10.0		
VB114	1727.04 1086.23 1696.70	2 ø 10.0 2 ø 10.0 2 ø 10.0		-1464.83 -1275.21 -2715.67 -288.42	2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0		
VB115	3819.68	2 ø 10.0		-1513.49 -1311.38	2 ø 10.0 2 ø 10.0		
VB116	2288.23 70.18	2 ø 10.0 2 ø 10.0		-3972.15 -152.85	2 ø 10.0 2 ø 10.0		
VB117	225.09 8327.39	2 ø 10.0 3 ø 12.5		-9779.03 -3493.91	2 ø 16.0 2 ø 10.0		
VB118	4385.59	3 ø 10.0		-1785.86 -1582.60	2 ø 10.0 2 ø 10.0		
VB119	2068.33	2 ø 10.0		-1854.81	2 ø 10.0		
VB120	1170.21	2 ø 10.0		-211.45	2 ø 10.0		
VB121	1750.69 968.67 1577.35	2 ø 10.0 2 ø 10.0 2 ø 10.0		-1515.85 -1222.78 -3009.90 -170.15	2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0		
VB122	2835.36 0.11 2984.36	2 ø 10.0 2 ø 10.0 2 ø 10.0	2 ø 6.3 2 ø 6.3	-2716.14 -3748.66 -4272.36 -3425.51	2 ø 10.0 2 ø 10.0 3 ø 10.0 2 ø 10.0	2 ø 6.3 2 ø 6.3	04, 48
VB123	4290.65	3 ø 10.0		-1806.88 -1686.08	2 ø 10.0 2 ø 10.0		
VB124	3608.10 200.07	2 ø 10.0 2 ø 10.0	2 ø 6.3	-3483.45 -4990.61	2 ø 10.0 3 ø 10.0	2 ø 6.3	04, 48

	1802.75	2 ø 10.0		-2294.98 -1633.38	2 ø 10.0 2 ø 10.0		
VB125	26.68	6 ø 6.3		-46.27 -52.36	6 ø 12.5 6 ø 12.5		
VB126	26.51	6 ø 6.3		-53.43 -45.78	6 ø 12.5 6 ø 12.5		
VB127	170.52 170.52	2 ø 10.0 2 ø 10.0	2 ø 6.3 2 ø 6.3	-22.76 -84.43 -22.76	2 ø 10.0 2 ø 10.0 2 ø 10.0	2 ø 6.3	
VB128	170.52 170.52	2 ø 10.0 2 ø 10.0	2 ø 6.3 2 ø 6.3	-22.76 -84.43 -22.76	2 ø 10.0 2 ø 10.0 2 ø 10.0	2 ø 6.3	
VB129	170.54 170.54	2 ø 10.0 2 ø 10.0	2 ø 6.3 2 ø 6.3	-22.76 -84.40 -22.76	2 ø 10.0 2 ø 10.0 2 ø 10.0	2 ø 6.3	
VB130	170.54 170.54	2 ø 10.0 2 ø 10.0	2 ø 6.3 2 ø 6.3	-22.76 -84.40 -22.76	2 ø 10.0 2 ø 10.0 2 ø 10.0	2 ø 6.3	
VB131	28.40	6 ø 6.3		-47.81 -46.83	6 ø 12.5 6 ø 12.5		
VB132	28.41	6 ø 6.3		-47.52 -47.32	6 ø 12.5 6 ø 12.5		
VB133	10.57 68.12 0.11	6 ø 10.0 6 ø 10.0 6 ø 10.0		-151.44 -94.82	6 ø 12.5 6 ø 12.5		02, 38
VB134	0.11 95.02 10.97	6 ø 10.0 6 ø 10.0 6 ø 10.0		-119.35 -133.25	6 ø 12.5 6 ø 12.5		38
VB135	158.56	2 ø 10.0		-142.13 -142.17	2 ø 10.0 2 ø 10.0		48
VB136	15.86	2 ø 10.0		-331.10	2 ø 10.0		48
VB137	15.86	2 ø 10.0		-331.10	2 ø 10.0		48
VB138	158.56	2 ø 10.0		-142.13 -142.16	2 ø 10.0 2 ø 10.0		48
VB139	158.56	2 ø 10.0		-142.13 -142.17	2 ø 10.0 2 ø 10.0		48
VB140	15.86	2 ø 10.0		-331.10	2 ø 10.0		48
VB141	15.85	2 ø 10.0		-331.08	2 ø 10.0		48
VB142	158.56	2 ø 10.0		-142.13 -142.17	2 ø 10.0 2 ø 10.0		48
VB143	127.15 162.07 0.11	6 ø 12.5 6 ø 10.0 6 ø 10.0		-84.13 -96.34 -169.30 -199.52	6 ø 12.5 6 ø 12.5 6 ø 12.5 6 ø 12.5		38
VB144	106.59 149.68 0.11	6 ø 12.5 6 ø 10.0 6 ø 10.0		-83.75 -101.99 -152.81 -198.78	6 ø 12.5 6 ø 12.5 6 ø 12.5 6 ø 12.5		38

Vigas do pavimento CLARABOIA

Viga	Vãos			Nós			Avisos
	Md (kgf.m)	As	Als	Md (kgf.m)	As	Als	
VC1				-226.41	2 ø 8.0		
				-182.57	2 ø 8.0		
	157.02	2 ø 8.0		-144.64	2 ø 8.0		
	114.73	2 ø 8.0		-1.89	2 ø 8.0		
	70.50	2 ø 8.0		-593.81	2 ø 8.0		
	408.48	2 ø 8.0		-141.53	2 ø 8.0		
	121.05	2 ø 8.0		-196.73	2 ø 8.0		
	88.73	2 ø 8.0		-593.77	2 ø 8.0		
				-146.95	2 ø 8.0		
				-114.25	2 ø 8.0		
VC2				-561.59	2 ø 8.0		
				-80.84	2 ø 8.0		
	390.32	2 ø 8.0		-148.43	2 ø 8.0		
	71.38	2 ø 8.0		-580.70	2 ø 8.0		
	113.88	2 ø 8.0		-114.36	2 ø 8.0		
	212.90	2 ø 8.0		-303.51	2 ø 8.0		
	66.41	2 ø 8.0		-75.71	2 ø 8.0		
				-106.34	2 ø 8.0		
				-327.64	2 ø 8.0		
				-30.04	2 ø 8.0		
VC3	370.20	2 ø 10.0		-511.57	2 ø 10.0		26
	367.20	2 ø 10.0		-746.43	2 ø 10.0		
				-615.90	2 ø 10.0		
VC4	255.43	2 ø 8.0		-355.17	2 ø 8.0		
	0.11	2 ø 8.0		-253.19	2 ø 8.0		
	43.63	2 ø 8.0		-84.94	2 ø 8.0		
	10.65	2 ø 8.0		-58.12	2 ø 8.0		
	41.48	2 ø 8.0		-48.38	2 ø 8.0		
	59.12	2 ø 8.0		-99.83	2 ø 8.0		
	12.83	2 ø 8.0		-86.29	2 ø 8.0		
	20.70	2 ø 8.0		-92.05	2 ø 8.0		
	39.87	2 ø 8.0		-49.28	2 ø 8.0		
	35.21	2 ø 8.0		-124.98	2 ø 8.0		
	9.42	2 ø 8.0		-60.58	2 ø 8.0		
				-35.05	2 ø 8.0		
VC5	232.91	2 ø 8.0		-323.10	2 ø 8.0		
	0.11	2 ø 8.0		-55.14	2 ø 8.0		
	0.11	2 ø 8.0		-204.13	2 ø 8.0		
	142.35	2 ø 8.0		-78.07	2 ø 8.0		
	99.64	2 ø 8.0		-139.61	2 ø 8.0		
	170.37	2 ø 8.0		-186.07	2 ø 8.0		
				-178.83	2 ø 8.0		
VC6	370.20	2 ø 10.0		-511.57	2 ø 10.0		26
	367.20	2 ø 10.0		-746.43	2 ø 10.0		

				-615.90	2 ø 10.0		
VC7	6.39 374.12 11.46 13.51 12.15	2 ø 8.0 2 ø 8.0 2 ø 8.0 2 ø 8.0 2 ø 8.0		-123.56 -470.08 -89.28 -165.18 -556.22 -36.71 -45.94 -1.92	2 ø 8.0 2 ø 8.0 2 ø 8.0 2 ø 8.0 2 ø 8.0 2 ø 8.0 2 ø 8.0 2 ø 8.0		
VC8	1067.01 354.12 896.18	2 ø 10.0 2 ø 10.0 2 ø 10.0	2 ø 6.3	-362.22 -1194.18 -1131.84 -448.62	2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0	2 ø 6.3 2 ø 6.3	
VC9	197.22 434.95 388.19	2 ø 8.0 2 ø 8.0 2 ø 8.0		-182.02 -615.99 -286.42 -207.04 -609.98 -256.82 -31.24 -553.38	2 ø 8.0 2 ø 8.0 2 ø 8.0 2 ø 8.0 2 ø 8.0 2 ø 8.0 2 ø 8.0 2 ø 8.0		
VC10	11364.56	2 ø 16.0		-6273.84 -7222.57	2 ø 12.5 2 ø 12.5		
VC11	212.24 203.76 339.92	2 ø 8.0 2 ø 8.0 2 ø 8.0		-229.71 -299.80 -340.52 -331.97	2 ø 8.0 2 ø 8.0 2 ø 8.0 2 ø 8.0		
VC12	137.75 84.83 279.62 51.60 417.25 22.45	2 ø 8.0 2 ø 8.0 2 ø 8.0 2 ø 8.0 2 ø 8.0 2 ø 8.0		-188.55 -193.09 -395.82 -127.46 -121.68 -414.81 -540.43 -186.62 -136.45 -576.84 -40.94	2 ø 8.0 2 ø 8.0 2 ø 8.0 2 ø 8.0 2 ø 8.0 2 ø 8.0 2 ø 8.0 2 ø 8.0 2 ø 8.0 2 ø 8.0 2 ø 8.0		
VC13	988.03 339.78 957.77	2 ø 10.0 2 ø 10.0 2 ø 10.0		-627.54 -1227.62 -1255.43 -294.48	2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0		
VC14	2585.16	3 ø 16.0	2 ø 6.3	-76.19	3 ø 16.0	2 ø 6.3	26
VC15	34.20 712.47 64.17	2 ø 8.0 2 ø 8.0 2 ø 8.0	2 ø 6.3 2 ø 6.3 2 ø 6.3	-123.54 -971.37 -242.52 -241.18 -446.47	2 ø 8.0 2 ø 10.0 2 ø 8.0 2 ø 8.0 2 ø 8.0	2 ø 6.3 2 ø 6.3 2 ø 6.3 2 ø 6.3	
VC16	677.26 0.11 0.11 571.11	3 ø 16.0 3 ø 16.0 3 ø 16.0 3 ø 16.0		-8318.15 -3328.09 -1243.01 -374.92	3 ø 16.0 3 ø 16.0 3 ø 16.0 3 ø 16.0		26, 02

	360.12 293.67 177.80	3 ø 16.0 3 ø 16.0 3 ø 16.0		-491.74 -159.19 -144.00 -220.66	3 ø 16.0 3 ø 16.0 3 ø 16.0 3 ø 16.0		
VC17	150.29 26.73 24.48 34.73 422.24 124.92 37.41	2 ø 8.0 2 ø 8.0 2 ø 8.0 2 ø 8.0 2 ø 8.0 2 ø 8.0 2 ø 8.0	2 ø 6.3	-201.05 -205.96 -98.75 -4.34 -557.52 -166.95 -127.84 -585.67 -141.06 -196.05 -182.69 -88.03	2 ø 8.0 2 ø 8.0 2 ø 8.0 2 ø 8.0 2 ø 8.0 2 ø 8.0 2 ø 8.0 2 ø 8.0 2 ø 8.0 2 ø 8.0 2 ø 8.0 2 ø 8.0		
VC18	136.94 49.20 29.20 337.44 21.65 40.36	2 ø 8.0 2 ø 8.0 2 ø 8.0 2 ø 8.0 2 ø 8.0 2 ø 8.0		-197.80 -44.84 -60.51 -205.46 -93.40 -475.33 -144.98 -150.47 -485.65 -76.23 -1.64	2 ø 8.0 2 ø 8.0 2 ø 8.0 2 ø 8.0 2 ø 8.0 2 ø 8.0 2 ø 8.0 2 ø 8.0 2 ø 8.0 2 ø 8.0 2 ø 8.0		
VC19	291.02 243.84 291.02	2 ø 10.0 2 ø 10.0 2 ø 10.0		-433.31 -668.08 -668.08 -433.31	2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0		26
VC20	372.76 7.04 32.06 162.41	2 ø 8.0 2 ø 8.0 2 ø 8.0 2 ø 8.0		-529.33 -67.44 -126.55 -502.79 -55.01 -209.77 -56.12 -277.57	2 ø 8.0 2 ø 8.0 2 ø 8.0 2 ø 8.0 2 ø 8.0 2 ø 8.0 2 ø 8.0 2 ø 8.0		
VC21	292.26 230.30 292.26	2 ø 10.0 2 ø 10.0 2 ø 10.0		-404.60 -699.90 -699.90 -404.60	2 ø 10.0 2 ø 10.0 2 ø 10.0 2 ø 10.0		26
VC22	197.16 36.71 215.53	2 ø 8.0 2 ø 8.0 2 ø 8.0		-271.71 -214.43 -37.14 -173.47 -88.82 -30.79 -346.71	2 ø 8.0 2 ø 8.0 2 ø 8.0 2 ø 8.0 2 ø 8.0 2 ø 8.0 2 ø 8.0		
VC23	66.68 80.30	2 ø 8.0 2 ø 8.0	2 ø 6.3	-82.79 -117.09	2 ø 8.0 2 ø 8.0	2 ø 6.3	

	23.66 0.11	2 ø 8.0 2 ø 8.0	2 ø 6.3	-43.22 -48.85 -113.18 -116.43 -11.31	2 ø 8.0 2 ø 8.0 2 ø 8.0 2 ø 8.0 2 ø 8.0	2 ø 6.3 2 ø 6.3 2 ø 6.3 2 ø 6.3	
VC24	60.36	2 ø 8.0		-83.75 -123.83	2 ø 8.0 2 ø 8.0		
VC25	2293.58 787.61	2 ø 10.0 2 ø 10.0		-1609.38 -3966.61 -484.83	2 ø 10.0 2 ø 10.0 2 ø 10.0		
VC26	13096.52	3 ø 16.0		-7006.67 -6888.37	2 ø 12.5 2 ø 12.5		
VC27	12789.52	3 ø 16.0		-6512.95 -6804.52	2 ø 12.5 2 ø 12.5		
VC28	31.62 23.07	2 ø 8.0 2 ø 8.0		-46.75 -49.03 -37.14	2 ø 8.0 2 ø 8.0 2 ø 8.0		
VC29	2824.90	3 ø 16.0		-643.39	3 ø 16.0		26, 38
VC30	2442.06 610.16	2 ø 10.0 2 ø 10.0		-1427.74 -3967.61 -572.58	2 ø 10.0 2 ø 10.0 2 ø 10.0		
VC31	62.94 140.14 52.75 167.86	2 ø 8.0 2 ø 8.0 2 ø 8.0 2 ø 8.0		-89.67 -195.73 -120.43 -20.82 -167.86 -192.19	2 ø 8.0 2 ø 8.0 2 ø 8.0 2 ø 8.0 2 ø 8.0 2 ø 8.0		
VC32	89.54	2 ø 8.0		-120.60 -7.33 -61.30	2 ø 8.0 2 ø 8.0 2 ø 8.0		
VC33	507.37 15.08 628.62	2 ø 8.0 2 ø 8.0 2 ø 8.0		-728.07 -125.29 -151.01 -699.35 -811.52 -218.98 -118.04 -875.69	2 ø 8.0 2 ø 8.0 2 ø 8.0 2 ø 8.0 2 ø 8.0 2 ø 8.0 2 ø 8.0 2 ø 8.0		
VC34	631.58 18.03 26.36 234.49	2 ø 8.0 2 ø 8.0 2 ø 8.0 2 ø 8.0		-909.97 -111.14 -246.36 -783.74 -81.30 -270.37 -305.86	2 ø 8.0 2 ø 8.0 2 ø 8.0 2 ø 8.0 2 ø 8.0 2 ø 8.0 2 ø 8.0		

Cálculos das Lajes

COBERTURA	fck = 350.00 kgf/cm ²	E = 294029 kgf/cm ²	Peso Espec = 2500.00 kgf/m ³
Lance 2		cobr = 2.00 cm	

ARMADURAS POSITIVAS (LAJE)												
Laje	Direção	Momento positivo				Momento negativo				Armadura inferior	Armadura superior	Cisalhamento
		Seção	Flexão	Verificação axial (compressão)	Verificação axial (tração)	Seção	Flexão	Verificação axial (compressão)	Verificação axial (tração)			
LB1	X	bw = 100.0 cm h = 10.0 cm	Md = 635 kgf.m/m As = 1.97 cm ² /m A's = 0.00 cm ² /m	Fd = 0.07 tf Situação : GE As = 1.96 cm ² /m A's = 0.00 cm ² /m	Fd = 0.09 tf Situação : GE As = 1.99 cm ² /m A's = 0.00 cm ² /m	bw = 100.0 cm h = 10.0 cm				As = 1.99 cm ² /m ø8.0 c/20 (2.51 cm ² /m) M = 268.52 kgf.m/m F = 0.05 tf fiss = 0.03 mm		vsd = 2.06 tf/m vrd1 = 6.19 tf/m Modelo I vrd2 = 41.22 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² /m
	Y	bw = 100.0 cm h = 10.0 cm	Md = 644 kgf.m/m As = 2.25 cm ² /m A's = 0.00 cm ² /m	Fd = 0.05 tf Situação : GE As = 2.25 cm ² /m A's = 0.00 cm ² /m	Fd = 0.25 tf Situação : GE As = 2.30 cm ² /m A's = 0.00 cm ² /m	bw = 100.0 cm h = 10.0 cm				As = 2.30 cm ² /m ø8.0 c/20 (2.51 cm ² /m) M = 264.62 kgf.m/m F = 0.14 tf fiss = 0.04 mm		vsd = 2.06 tf/m vrd1 = 5.63 tf/m vrd2 = 36.57 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² /m
LB2	X	bw = 100.0 cm h = 10.0 cm	Md = 635 kgf.m/m As = 1.97 cm ² /m	Fd = 0.05 tf Situação : GE As = 1.97 cm ² /m	Fd = 0.04 tf Situação : GE As = 1.98 cm ² /m	bw = 100.0 cm h = 10.0 cm				As = 1.98 cm ² /m ø8.0 c/20 (2.51 cm ² /m) M = 265.43		vsd = 2.03 tf/m vrd1 = 6.19 tf/m Modelo I vrd2 = 41.22 tf/m

			A's = 0.00 cm ² /m	A's = 0.00 cm ² /m	A's = 0.00 cm ² /m					kgf.m/ m F = 0.02 tf fiss = 0.03 mm		vsw = 0.00 tf/m asw = 0.00 cm ² /m
	Y	bw = 100 .0 cm h = 10. 0 cm	Md = 647 kgf. m/m As = 2.27 cm ² / m A's = 0.00 cm ² / m	Fd = 0.08 tf Situação : GE As = 2.25 cm ² /m A's = 0.00 cm ² /m		bw = 100 .0 cm h = 10. 0 cm				As = 2.27 cm ² /m ø8.0 c/20 (2.51 cm ² /m) M = 269.71 kgf.m/ m F = 0.00 tf fiss = 0.04 mm		vsd = 2.07 tf/m vrd1 = 5.63 tf/m vrd2 = 36.57 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² /m
LB3	X	bw = 100 .0 cm h = 10. 0 cm	Md = 681 kgf. m/m As = 2.12 cm ² / m A's = 0.00 cm ² / m	Fd = 0.07 tf Situação : GE As = 2.11 cm ² /m A's = 0.00 cm ² /m	Fd = 0.17 tf Situaçã o: GE As = 2.15 cm ² /m A's = 0.00 cm ² /m	bw = 100 .0 cm h = 10. 0 cm				As = 2.15 cm ² /m ø8.0 c/20 (2.51 cm ² /m) M = 249.82 kgf.m/ m F = 0.09 tf fiss = 0.03 mm		vsd = 2.00 tf/m vrd1 = 6.19 tf/m Modelo I vrd2 = 41.22 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² /m
	Y	bw = 100 .0 cm h = 10. 0 cm	Md = 705 kgf. m/m As = 2.48 cm ² / m A's = 0.00 cm ² / m	Fd = 0.17 tf Situação : GE As = 2.45 cm ² /m A's = 0.00 cm ² /m		bw = 100 .0 cm h = 10. 0 cm				As = 2.48 cm ² /m ø8.0 c/20 (2.51 cm ² /m) M = 270.87 kgf.m/ m F = 0.01 tf		vsd = 2.15 tf/m vrd1 = 5.63 tf/m vrd2 = 36.57 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² /m

										fiss = 0.04 mm		
LB4	X	bw = 100.0 cm h = 10.0 cm	Md = 1123 kgf. m/m As = 3.62 cm ² /m A's = 0.00 cm ² /m	Fd = 0.76 tf Situação : GE As = 3.51 cm ² /m A's = 0.00 cm ² /m	Fd = 0.10 tf Situação : GE As = 3.64 cm ² /m A's = 0.00 cm ² /m	bw = 100.0 cm h = 10.0 cm	Md = 669 kgf. m/m As = 2.08 cm ² /m A's = 0.00 cm ² /m	Fd = 0.76 tf Situação : GE As = 1.97 cm ² /m A's = 0.00 cm ² /m	Fd = 0.10 tf Situação : GE As = 2.10 cm ² /m A's = 0.00 cm ² /m	As = 3.64 cm ² /m ø10.0 c/20 (3.93 cm ² /m) M = 523.74 kgf.m/ m F = 0.05 tf fiss = 0.06 mm	A's = 1.68 cm ² /m ø8.0 c/20 (2.51 cm ² /m) M = 0.00 kgf.m/ m F = 0.05 tf fiss = 0.00 mm	vsd = 2.21 tf/m vrd1 = 6.47 tf/m Modelo I vrd2 = 40.64 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² /m
	Y	bw = 100.0 cm h = 10.0 cm	Md = 1050 kgf. m/m As = 3.96 cm ² /m A's = 0.00 cm ² /m	Fd = 0.03 tf Situação : GE As = 3.96 cm ² /m A's = 0.00 cm ² /m	Fd = 0.55 tf Situação : GE As = 4.05 cm ² /m A's = 0.00 cm ² /m	bw = 100.0 cm h = 10.0 cm	Md = 613 kgf. m/m As = 2.14 cm ² /m A's = 0.00 cm ² /m	Fd = 0.03 tf Situação : GE As = 2.14 cm ² /m A's = 0.00 cm ² /m	Fd = 0.55 tf Situação : GE As = 2.23 cm ² /m A's = 0.00 cm ² /m	As = 4.05 cm ² /m ø10.0 c/19 (4.13 cm ² /m) M = 257.92 kgf.m/ m F = 0.30 tf fiss = 0.02 mm	A's = 2.18 cm ² /m ø8.0 c/20 (2.51 cm ² /m) M = 12.18 kgf.m/ m F = 0.30 tf fiss = 0.00 mm	vsd = 2.60 tf/m vrd1 = 5.82 tf/m vrd2 = 34.83 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² /m
LB5	X	bw = 100.0 cm h = 10.0 cm	Md = 373 kgf. m/m As = 0.94 cm ² /m A's = 0.00 cm ² /m	Fd = 0.17 tf Situação : GE As = 0.90 cm ² /m A's = 0.00 cm ² /m	Fd = 0.31 tf Situação : GE As = 0.96 cm ² /m A's = 0.00 cm ² /m	bw = 100.0 cm h = 10.0 cm				As = 1.01 cm ² /m ø5.0 c/19 (1.03 cm ² /m) M = 227.60 kgf.m/ m F = 0.17 tf fiss = 0.12 mm		vsd = 1.44 tf/m vrd1 = 5.93 tf/m Modelo I vrd2 = 42.09 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² /m

	Y	bw = 100.0 cm h = 10.0 cm	Md = 373 kgf. m/m As = 1.00 cm ² /m A's = 0.00 cm ² /m	Fd = 0.43 tf Situação : GE As = 0.59 cm ² /m A's = 0.00 cm ² /m	Fd = 0.12 tf Situação : GE As = 0.67 cm ² /m A's = 0.00 cm ² /m	bw = 100.0 cm h = 10.0 cm				As = 1.01 cm ² /m ø5.0 c/19 (1.03 cm ² /m) M = 151.28 kgf.m/m F = 0.06 tf fiss = 0.06 mm		vsd = 1.67 tf/m vrd1 = 5.59 tf/m vrd2 = 39.18 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² /m
LB6	X	bw = 100.0 cm h = 10.0 cm	Md = 373 kgf. m/m As = 0.94 cm ² /m A's = 0.00 cm ² /m		Fd = 0.45 tf Situação : GE As = 0.58 cm ² /m A's = 0.00 cm ² /m	bw = 100.0 cm h = 10.0 cm				As = 1.01 cm ² /m ø5.0 c/19 (1.03 cm ² /m) M = 131.12 kgf.m/m F = 0.24 tf fiss = 0.04 mm		vsd = 1.06 tf/m vrd1 = 5.93 tf/m Modelo I vrd2 = 42.09 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² /m
	Y	bw = 100.0 cm h = 10.0 cm	Md = 373 kgf. m/m As = 1.00 cm ² /m A's = 0.00 cm ² /m	Fd = 0.96 tf Situação : GE As = 0.33 cm ² /m A's = 0.00 cm ² /m	Fd = 0.06 tf Situação : GE As = 0.47 cm ² /m A's = 0.00 cm ² /m	bw = 100.0 cm h = 10.0 cm				As = 1.01 cm ² /m ø5.0 c/19 (1.03 cm ² /m) M = 107.14 kgf.m/m F = 0.03 tf fiss = 0.03 mm		vsd = 1.30 tf/m vrd1 = 5.59 tf/m vrd2 = 39.18 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² /m
LB7	X	bw = 100.0 cm	Md = 423 kgf. m/m	Fd = 0.16 tf Situação : GE	Fd = 0.27 tf Situação : GE	bw = 100.0 cm				As = 1.33 cm ² /m ø6.3 c/20		vsd = 1.59 tf/m vrd1 = 6.02 tf/m Modelo I

		h = 10. 0 cm	As = 1.29 cm ² / m A's = 0.00 cm ² / m	As = 1.27 cm ² / m A's = 0.00 cm ² / m	As = 1.33 cm ² / m A's = 0.00 cm ² / m	h = 10. 0 cm				(1.56 cm ² / m) M = 261.31 kgf.m/ m F = 0.14 tf fiss = 0.05 mm		vr2 = 41.71 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² / m
	Y	bw = 100. 0 cm h = 10. 0 cm	Md = 373 kgf. m/m As = 1.02 cm ² / m A's = 0.00 cm ² / m	Fd = 0.18 tf Situação : GE As = 0.84 cm ² / m A's = 0.00 cm ² / m	Fd = 0.34 tf Situaã o: GE As = 0.91 cm ² / m A's = 0.00 cm ² / m	bw = 100. 0 cm h = 10. 0 cm				As = 1.02 cm ² / m ø5.0 c/19 (1.03 cm ² / m) M = 169.08 kgf.m/ m F = 0.18 tf fiss = 0.08 mm		vsd = 1.96 tf/m vr1 = 5.49 tf/m vr2 = 38.43 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² / m
LB8	X	bw = 100. 0 cm h = 10. 0 cm	Md = 421 kgf. m/m As = 1.28 cm ² / m A's = 0.00 cm ² / m	Fd = 0.12 tf Situação : GE As = 1.26 cm ² / m A's = 0.00 cm ² / m	Fd = 0.11 tf Situaã o: GE As = 1.30 cm ² / m A's = 0.00 cm ² / m	bw = 100. 0 cm h = 10. 0 cm				As = 1.30 cm ² / m ø6.3 c/20 (1.56 cm ² / m) M = 259.72 kgf.m/ m F = 0.06 tf fiss = 0.05 mm		vsd = 1.63 tf/m vr1 = 6.02 tf/m Modelo I vr2 = 41.71 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² / m
	Y	bw = 100. 0 cm h = 10. 0 cm	Md = 373 kgf. m/m As = 1.02 cm ² / m A's = 0.00 cm ² / m	Fd = 0.23 tf Situação : GE As = 0.86 cm ² / m A's = 0.00 cm ² / m	Fd = 0.03 tf Situaã o: GE As = 0.90 cm ² / m A's = 0.00 cm ² / m	bw = 100. 0 cm h = 10. 0 cm				As = 1.02 cm ² / m ø5.0 c/19 (1.03 cm ² / m) M = 176.06		vsd = 1.91 tf/m vr1 = 5.49 tf/m vr2 = 38.43 tf/m vsw = 0.00 tf/m

			A's = 0.00 cm ² / m							kgf.m/ m F = 0.02 tf fiss = 0.08 mm		asw = 0.00 cm ² /m
LB9	X	bw = 100 .0 cm h = 10. 0 cm	Md = 438 kgf. m/m As = 1.33 cm ² / m A's = 0.00 cm ² / m	Fd = 0.09 tf Situação : GE As = 1.32 cm ² /m A's = 0.00 cm ² /m	Fd = 0.15 tf Situaçã o: GE As = 1.36 cm ² /m A's = 0.00 cm ² /m	bw = 100 .0 cm h = 10. 0 cm				As = 1.36 cm ² /m ø6.3 c/20 (1.56 cm ² /m) M = 267.58 kgf.m/ m F = 0.08 tf fiss = 0.06 mm		vsd = 2.00 tf/m vrd1 = 6.02 tf/m Modelo I vrd2 = 41.71 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² /m
	Y	bw = 100 .0 cm h = 10. 0 cm	Md = 396 kgf. m/m As = 1.32 cm ² / m A's = 0.00 cm ² / m	Fd = 0.21 tf Situação : GE As = 1.28 cm ² /m A's = 0.00 cm ² /m		bw = 100 .0 cm h = 10. 0 cm				As = 1.32 cm ² /m ø6.3 c/20 (1.56 cm ² /m) M = 168.56 kgf.m/ m F = 0.00 tf fiss = 0.03 mm		vsd = 1.99 tf/m vrd1 = 5.58 tf/m vrd2 = 38.05 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² /m
LB10	X	bw = 100 .0 cm h = 10. 0 cm	Md = 441 kgf. m/m As = 1.34 cm ² / m A's = 0.00 cm ² / m	Fd = 0.07 tf Situação : GE As = 1.33 cm ² /m A's = 0.00 cm ² /m	Fd = 0.08 tf Situaçã o: GE As = 1.35 cm ² /m A's = 0.00 cm ² /m	bw = 100 .0 cm h = 10. 0 cm				As = 1.35 cm ² /m ø6.3 c/20 (1.56 cm ² /m) M = 272.32 kgf.m/ m F = 0.04 tf		vsd = 1.76 tf/m vrd1 = 6.02 tf/m Modelo I vrd2 = 41.71 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² /m

										fiss = 0.06 mm		
	Y	bw = 100.0 cm h = 10.0 cm	Md = 373 kgf. m/m As = 1.02 cm ² / m A's = 0.00 cm ² / m	Fd = 0.05 tf Situação : GE As = 0.95 cm ² / m A's = 0.00 cm ² / m	Fd = 0.02 tf Situaçã o: GE As = 0.96 cm ² / m A's = 0.00 cm ² / m	bw = 100.0 cm h = 10.0 cm				As = 1.02 cm ² / m ø5.0 c/19 (1.03 cm ² / m) M = 148.93 kgf.m/ m F = 0.01 tf fiss = 0.06 mm		vsd = 1.87 tf/m vrd1 = 5.49 tf/m vrd2 = 38.43 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² / m
	X	bw = 100.0 cm h = 10.0 cm	Md = 699 kgf. m/m As = 2.18 cm ² / m A's = 0.00 cm ² / m	Fd = 0.46 tf Situação : GE As = 2.11 cm ² / m A's = 0.00 cm ² / m	Fd = 0.07 tf Situaçã o: GE As = 2.19 cm ² / m A's = 0.00 cm ² / m	bw = 100.0 cm h = 10.0 cm				As = 2.19 cm ² / m ø8.0 c/20 (2.51 cm ² / m) M = 402.32 kgf.m/ m F = 0.03 tf fiss = 0.06 mm		vsd = 1.86 tf/m vrd1 = 6.19 tf/m Modelo I vrd2 = 41.22 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² / m
LB1 1	Y	bw = 100.0 cm h = 10.0 cm	Md = 528 kgf. m/m As = 1.84 cm ² / m A's = 0.00 cm ² / m		Fd = 0.06 tf Situaçã o: GE As = 1.85 cm ² / m A's = 0.00 cm ² / m	bw = 100.0 cm h = 10.0 cm				As = 1.85 cm ² / m ø8.0 c/20 (2.51 cm ² / m) M = 185.72 kgf.m/ m F = 0.03 tf fiss = 0.02 mm		vsd = 2.13 tf/m vrd1 = 5.63 tf/m vrd2 = 36.57 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² / m

LB1 2	X	bw = 100.0 cm h = 10.0 cm	Md = 730 kgf. m/m As = 2.28 cm ² / m A's = 0.00 cm ² / m	Fd = 1.27 tf Situação : GE As = 2.09 cm ² / m A's = 0.00 cm ² / m	Fd = 0.56 tf Situação : GE As = 2.36 cm ² / m A's = 0.00 cm ² / m	bw = 100.0 cm h = 10.0 cm				As = 2.36 cm ² / m ø8.0 c/20 (2.51 cm ² / m) M = 450.94 kgf.m/ m F = 0.30 tf fiss = 0.08 mm	vsd = 1.89 tf/m vrd1 = 6.19 tf/m Modelo I vrd2 = 41.22 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² / m
	Y	bw = 100.0 cm h = 10.0 cm	Md = 437 kgf. m/m As = 1.49 cm ² / m A's = 0.00 cm ² / m	Fd = 0.06 tf Situação : GE As = 1.48 cm ² / m A's = 0.00 cm ² / m	Fd = 0.08 tf Situação : GE As = 1.51 cm ² / m A's = 0.00 cm ² / m	bw = 100.0 cm h = 10.0 cm				As = 1.51 cm ² / m ø6.3 c/20 (1.56 cm ² / m) M = 185.36 kgf.m/ m F = 0.04 tf fiss = 0.03 mm	vsd = 2.14 tf/m vrd1 = 5.46 tf/m vrd2 = 37.06 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² / m
LB1 3	X	bw = 100.0 cm h = 10.0 cm	Md = 373 kgf. m/m As = 0.94 cm ² / m A's = 0.00 cm ² / m	Fd = 0.52 tf Situação : GE As = 0.22 cm ² / m A's = 0.00 cm ² / m		bw = 100.0 cm h = 10.0 cm				As = 1.01 cm ² / m ø5.0 c/19 (1.03 cm ² / m) M = 70.44 kgf.m/ m F = 0.00 tf fiss = 0.01 mm	vsd = 0.88 tf/m vrd1 = 5.93 tf/m Modelo I vrd2 = 42.09 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² / m
	Y	bw = 100.0 cm	Md = 373 kgf. m/m		Fd = 0.21 tf Situação : GE	bw = 100.0 cm				As = 1.01 cm ² / m ø5.0 c/19	vsd = 0.82 tf/m vrd1 = 5.59 tf/m

		h = 10. 0 cm	As = 1.00 cm ² / m A's = 0.00 cm ² / m		As = 0.25 cm ² / m A's = 0.00 cm ² / m	h = 10. 0 cm				(1.03 cm ² / m) M = 52.99 kgf.m/ m F = 0.11 tf fiss = 0.01 mm		vr2 = 39.18 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² / m
LB1 4	X	bw = 100. 0 cm h = 10. 0 cm	Md = 373 kgf. m/m As = 0.94 cm ² / m A's = 0.00 cm ² / m		Fd = 0.09 tf Situaçã o: GE As = 0.38 cm ² / m A's = 0.00 cm ² / m	bw = 100. 0 cm h = 10. 0 cm				As = 1.01 cm ² / m ø5.0 c/19 (1.03 cm ² / m) M = 90.88 kgf.m/ m F = 0.05 tf fiss = 0.02 mm		vsd = 1.00 tf/m vr1 = 5.93 tf/m Modelo I vr2 = 42.09 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² / m
	Y	bw = 100. 0 cm h = 10. 0 cm	Md = 373 kgf. m/m As = 1.00 cm ² / m A's = 0.00 cm ² / m	Fd = 0.34 tf Situação : GE As = 0.40 cm ² / m A's = 0.00 cm ² / m	Fd = 0.01 tf Situaçã o: GE As = 0.45 cm ² / m A's = 0.00 cm ² / m	bw = 100. 0 cm h = 10. 0 cm				As = 1.01 cm ² / m ø5.0 c/19 (1.03 cm ² / m) M = 103.97 kgf.m/ m F = 0.01 tf fiss = 0.03 mm		vsd = 1.03 tf/m vr1 = 5.59 tf/m vr2 = 39.18 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² / m
LB1 5	X	bw = 100. 0 cm h = 10. 0 cm	Md = 373 kgf. m/m As = 0.94 cm ² / m	Fd = 0.28 tf Situação : GE As = 0.75 cm ² / m A's = 0.00 cm ² / m	Fd = 0.34 tf Situaçã o: GE As = 0.83 cm ² / m A's = 0.00 cm ² / m	bw = 100. 0 cm h = 10. 0 cm				As = 1.01 cm ² / m ø5.0 c/19 (1.03 cm ² / m) M = 194.59		vsd = 1.22 tf/m vr1 = 5.93 tf/m Modelo I vr2 = 42.09 tf/m vsw = 0.00 tf/m

			A's = 0.00 cm ² / m							kgf.m/ m F = 0.18 tf fiss = 0.09 mm		asw = 0.00 cm ² /m
	Y	bw = 100.0 cm h = 10.0 cm	Md = 373 kgf. m/m As = 1.00 cm ² / m A's = 0.00 cm ² / m	Fd = 0.11 tf Situação : GE As = 0.51 cm ² /m A's = 0.00 cm ² /m	Fd = 0.10 tf Situaçã o: GE As = 0.53 cm ² /m A's = 0.00 cm ² /m	bw = 100.0 cm h = 10.0 cm				As = 1.01 cm ² /m ø5.0 c/19 (1.03 cm ² /m) M = 120.94 kgf.m/ m F = 0.05 tf fiss = 0.04 mm		vsd = 1.46 tf/m vrd1 = 5.59 tf/m vrd2 = 39.18 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² /m
LB1 6	X	bw = 100.0 cm h = 10.0 cm	Md = 646 kgf. m/m As = 2.01 cm ² / m A's = 0.00 cm ² / m	Fd = 0.15 tf Situação : GE As = 1.99 cm ² /m A's = 0.00 cm ² /m	Fd = 0.43 tf Situaçã o: GE As = 2.07 cm ² /m A's = 0.00 cm ² /m	bw = 100.0 cm h = 10.0 cm	Md = 531 kgf. m/m As = 1.64 cm ² / m A's = 0.00 cm ² / m	Fd = 0.15 tf Situação : GE As = 1.62 cm ² /m A's = 0.00 cm ² /m	Fd = 0.43 tf Situaçã o: GE As = 1.71 cm ² /m A's = 0.00 cm ² /m	As = 2.07 cm ² /m ø8.0 c/20 (2.51 cm ² /m) M = 207.95 kgf.m/ m F = 0.23 tf fiss = 0.02 mm	A's = 1.65 cm ² /m ø8.0 c/20 (2.51 cm ² /m) M = 41.73 kgf.m/ m F = 0.23 tf fiss = 0.00 mm	vsd = 4.81 tf/m vrd1 = 6.19 tf/m Modelo I vrd2 = 41.22 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² /m
	Y	bw = 100.0 cm h = 10.0 cm	Md = 685 kgf. m/m As = 2.41 cm ² / m A's = 0.00 cm ² / m	Fd = 0.52 tf Situação : GE As = 2.32 cm ² /m A's = 0.00 cm ² /m	Fd = 0.05 tf Situaçã o: GE As = 2.41 cm ² /m A's = 0.00 cm ² /m	bw = 100.0 cm h = 10.0 cm	Md = 525 kgf. m/m As = 1.83 cm ² / m A's = 0.00 cm ² / m		Fd = 0.05 tf Situaçã o: GE As = 1.84 cm ² /m A's = 0.00 cm ² /m	As = 2.41 cm ² /m ø8.0 c/20 (2.51 cm ² /m) M = 230.29 kgf.m/ m F = 0.02 tf	A's = 1.83 cm ² /m ø8.0 c/20 (2.51 cm ² /m) M = 0.00 kgf.m/ m F = 0.02 tf	vsd = 4.25 tf/m vrd1 = 5.63 tf/m vrd2 = 36.57 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² /m

										fiss = 0.03 mm	fiss = 0.00 mm	
LB1 7	X	bw = 100.0 cm h = 10.0 cm	Md = 613 kgf. m/m As = 1.90 cm ² /m A's = 0.00 cm ² /m	Fd = 0.18 tf Situação : GE As = 1.88 cm ² /m A's = 0.00 cm ² /m	Fd = 0.06 tf Situação : GE As = 1.91 cm ² /m A's = 0.00 cm ² /m	bw = 100.0 cm h = 10.0 cm				As = 1.91 cm ² /m ø8.0 c/20 (2.51 cm ² /m) M = 254.97 kgf.m/m F = 0.02 tf fiss = 0.03 mm		vsd = 1.97 tf/m vrd1 = 6.19 tf/m Modelo I vrd2 = 41.22 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² /m
	Y	bw = 100.0 cm h = 10.0 cm	Md = 638 kgf. m/m As = 2.23 cm ² /m A's = 0.00 cm ² /m	Fd = 0.32 tf Situação : GE As = 2.18 cm ² /m A's = 0.00 cm ² /m		bw = 100.0 cm h = 10.0 cm				As = 2.23 cm ² /m ø8.0 c/20 (2.51 cm ² /m) M = 272.99 kgf.m/m F = 0.00 tf fiss = 0.04 mm		vsd = 2.05 tf/m vrd1 = 5.63 tf/m vrd2 = 36.57 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² /m
LB1 8	X	bw = 100.0 cm h = 10.0 cm	Md = 871 kgf. m/m As = 2.74 cm ² /m A's = 0.00 cm ² /m	Fd = 0.18 tf Situação : GE As = 2.71 cm ² /m A's = 0.00 cm ² /m	Fd = 0.04 tf Situação : GE As = 2.74 cm ² /m A's = 0.00 cm ² /m	bw = 100.0 cm h = 10.0 cm	Md = 455 kgf. m/m As = 1.39 cm ² /m A's = 0.00 cm ² /m	Fd = 0.18 tf Situação : GE As = 1.36 cm ² /m A's = 0.00 cm ² /m	Fd = 0.04 tf Situação : GE As = 1.39 cm ² /m A's = 0.00 cm ² /m	As = 2.74 cm ² /m ø8.0 c/18 (2.79 cm ² /m) M = 355.17 kgf.m/m F = 0.02 tf fiss = 0.04 mm	A's = 1.39 cm ² /m ø6.3 c/20 (1.56 cm ² /m) M = 17.43 kgf.m/m F = 0.02 tf fiss = 0.00 mm	vsd = 2.11 tf/m vrd1 = 6.26 tf/m Modelo I vrd2 = 41.22 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² /m

	Y	bw = 100.0 cm h = 10.0 cm	Md = 863 kgf.m/m As = 3.11 cm ² /m A's = 0.00 cm ² /m	Fd = 0.35 tf Situação : GE As = 3.05 cm ² /m A's = 0.00 cm ² /m		bw = 100.0 cm h = 10.0 cm	Md = 670 kgf.m/m As = 2.29 cm ² /m A's = 0.00 cm ² /m	Fd = 0.35 tf Situação : GE As = 2.23 cm ² /m A's = 0.00 cm ² /m		As = 3.11 cm ² /m ø10.0 c/20 (3.93 cm ² /m) M = 264.25 kgf.m/m F = 0.00 tf fiss = 0.02 mm	A's = 2.29 cm ² /m ø8.0 c/20 (2.51 cm ² /m) M = 0.00 kgf.m/m F = 0.00 tf fiss = 0.00 mm	vsd = 2.39 tf/m vrd1 = 5.91 tf/m vrd2 = 35.99 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² /m
LB1 9	X	bw = 100.0 cm h = 10.0 cm	Md = 373 kgf.m/m As = 0.94 cm ² /m A's = 0.00 cm ² /m	Fd = 0.80 tf Situação : GE As = 0.46 cm ² /m A's = 0.00 cm ² /m		bw = 100.0 cm h = 10.0 cm				As = 1.01 cm ² /m ø5.0 c/19 (1.03 cm ² /m) M = 138.06 kgf.m/m F = 0.00 tf fiss = 0.04 mm		vsd = 1.26 tf/m vrd1 = 5.93 tf/m Modelo I vrd2 = 42.09 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² /m
	Y	bw = 100.0 cm h = 10.0 cm	Md = 373 kgf.m/m As = 1.00 cm ² /m A's = 0.00 cm ² /m	Fd = 0.11 tf Situação : GE As = 0.58 cm ² /m A's = 0.00 cm ² /m	Fd = 0.09 tf Situação : GE As = 0.60 cm ² /m A's = 0.00 cm ² /m	bw = 100.0 cm h = 10.0 cm				As = 1.01 cm ² /m ø5.0 c/19 (1.03 cm ² /m) M = 137.90 kgf.m/m F = 0.05 tf fiss = 0.05 mm		vsd = 1.66 tf/m vrd1 = 5.59 tf/m vrd2 = 39.18 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² /m
LB2 0	X	bw = 100.0 cm	Md = 373 kgf.m/m	Fd = 0.12 tf Situação : GE	Fd = 0.11 tf Situação : GE	bw = 100.0 cm				As = 1.01 cm ² /m ø5.0 c/19		vsd = 0.60 tf/m vrd1 = 5.93 tf/m Modelo I

		h = 10. 0 cm	As = 0.94 cm ² / m A's = 0.00 cm ² / m	As = 0.19 cm ² /m A's = 0.00 cm ² /m	As = 0.22 cm ² /m A's = 0.00 cm ² /m	h = 10. 0 cm				(1.03 cm ² /m) M = 51.87 kgf.m/ m F = 0.06 tf fiss = 0.01 mm		vr2 = 42.09 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² /m
	Y	bw = 100. 0 cm h = 10. 0 cm	Md = 373 kgf. m/m As = 1.00 cm ² / m A's = 0.00 cm ² / m	Fd = 1.01 tf Situação : GE As = 0.07 cm ² /m A's = 0.00 cm ² /m		bw = 100. 0 cm h = 10. 0 cm				As = 1.01 cm ² /m ø5.0 c/19 (1.03 cm ² /m) M = 47.01 kgf.m/ m F = 0.00 tf fiss = 0.01 mm		vsd = 0.69 tf/m vr1 = 5.59 tf/m vr2 = 39.18 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² /m
LB2 1	X	bw = 100. 0 cm h = 10. 0 cm	Md = 444 kgf. m/m As = 1.35 cm ² / m A's = 0.00 cm ² / m	Fd = 0.56 tf Situação : GE As = 1.27 cm ² /m A's = 0.00 cm ² /m	Fd = 0.21 tf Situaçã o: GE As = 1.38 cm ² /m A's = 0.00 cm ² /m	bw = 100. 0 cm h = 10. 0 cm				As = 1.38 cm ² /m ø6.3 c/20 (1.56 cm ² /m) M = 273.88 kgf.m/ m F = 0.11 tf fiss = 0.06 mm		vsd = 1.59 tf/m vr1 = 6.02 tf/m Modelo I vr2 = 41.71 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² /m
	Y	bw = 100. 0 cm h = 10. 0 cm	Md = 373 kgf. m/m As = 1.02 cm ² / m	Fd = 0.43 tf Situação : GE As = 0.71 cm ² /m A's = 0.00 cm ² /m	Fd = 1.12 tf Situaçã o: GE As = 0.92 cm ² /m A's = 0.00 cm ² /m	bw = 100. 0 cm h = 10. 0 cm				As = 1.02 cm ² /m ø5.0 c/19 (1.03 cm ² /m) M = 157.64		vsd = 1.87 tf/m vr1 = 5.49 tf/m vr2 = 38.43 tf/m vsw = 0.00 tf/m

			A's = 0.00 cm ² / m							kgf.m/ m F = 0.58 tf fiss = 0.08 mm		asw = 0.00 cm ² /m
LB2 2	X	bw = 100 .0 cm h = 10. 0 cm	Md = 373 kgf. m/m As = 0.94 cm ² / m A's = 0.00 cm ² / m	Fd = 0.01 tf Situação : GE As = 0.78 cm ² /m A's = 0.00 cm ² /m	Fd = 0.20 tf Situaçã o: GE As = 0.80 cm ² /m A's = 0.00 cm ² /m	bw = 100 .0 cm h = 10. 0 cm				As = 1.01 cm ² /m ø5.0 c/19 (1.03 cm ² /m) M = 191.41 kgf.m/ m F = 0.11 tf fiss = 0.08 mm		vsd = 1.25 tf/m vrd1 = 5.93 tf/m Modelo I vrd2 = 42.09 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² /m
	Y	bw = 100 .0 cm h = 10. 0 cm	Md = 373 kgf. m/m As = 1.00 cm ² / m A's = 0.00 cm ² / m	Fd = 0.06 tf Situação : GE As = 0.51 cm ² /m A's = 0.00 cm ² /m	Fd = 0.43 tf Situaçã o: GE As = 0.57 cm ² /m A's = 0.00 cm ² /m	bw = 100 .0 cm h = 10. 0 cm				As = 1.01 cm ² /m ø5.0 c/19 (1.03 cm ² /m) M = 119.65 kgf.m/ m F = 0.23 tf fiss = 0.04 mm		vsd = 1.28 tf/m vrd1 = 5.59 tf/m vrd2 = 39.18 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² /m
LB2 3	X	bw = 100 .0 cm h = 10. 0 cm	Md = 373 kgf. m/m As = 0.94 cm ² / m A's = 0.00 cm ² / m	Fd = 2.05 tf Situação : GE As = 0.38 cm ² /m A's = 0.00 cm ² /m	Fd = 0.03 tf Situaçã o: GE As = 0.63 cm ² /m A's = 0.00 cm ² /m	bw = 100 .0 cm h = 10. 0 cm				As = 1.01 cm ² /m ø5.0 c/19 (1.03 cm ² /m) M = 154.82 kgf.m/ m F = 0.01 tf		vsd = 1.22 tf/m vrd1 = 5.93 tf/m Modelo I vrd2 = 42.09 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² /m

										fiss = 0.05 mm		
	Y	bw = 100.0 cm h = 10.0 cm	Md = 373 kgf. m/m As = 1.00 cm ² / m A's = 0.00 cm ² / m	Fd = 0.48 tf Situação : GE As = 0.36 cm ² / m A's = 0.00 cm ² / m		bw = 100.0 cm h = 10.0 cm				As = 1.01 cm ² / m ø5.0 c/19 (1.03 cm ² / m) M = 98.92 kgf.m/ m F = 0.00 tf fiss = 0.02 mm		vsd = 1.21 tf/m vrd1 = 5.59 tf/m vrd2 = 39.18 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² / m
LB2 4	X	bw = 100.0 cm h = 10.0 cm	Md = 373 kgf. m/m As = 0.94 cm ² / m A's = 0.00 cm ² / m	Fd = 0.54 tf Situação : GE As = 0.17 cm ² / m A's = 0.00 cm ² / m		bw = 100.0 cm h = 10.0 cm				As = 1.01 cm ² / m ø5.0 c/19 (1.03 cm ² / m) M = 57.90 kgf.m/ m F = 0.00 tf fiss = 0.01 mm		vsd = 0.66 tf/m vrd1 = 5.93 tf/m Modelo I vrd2 = 42.09 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² / m
	Y	bw = 100.0 cm h = 10.0 cm	Md = 373 kgf. m/m As = 1.00 cm ² / m A's = 0.00 cm ² / m			bw = 100.0 cm h = 10.0 cm				As = 1.01 cm ² / m ø5.0 c/19 (1.03 cm ² / m) M = 35.02 kgf.m/ m F = 0.00 tf fiss = 0.00 mm		vsd = 0.59 tf/m vrd1 = 5.59 tf/m vrd2 = 39.18 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² / m

LB2 5	X	bw = 100.0 cm h = 10.0 cm	Md = 373 kgf. m/m As = 0.94 cm ² / m A's = 0.00 cm ² / m	Fd = 0.43 tf Situação : GE As = 0.31 cm ² / m A's = 0.00 cm ² / m	Fd = 0.02 tf Situaçã o: GE As = 0.36 cm ² / m A's = 0.00 cm ² / m	bw = 100.0 cm h = 10.0 cm				As = 1.01 cm ² / m ø5.0 c/19 (1.03 cm ² / m) M = 89.21 kgf.m/ m F = 0.01 tf fiss = 0.02 mm	vsd = 0.67 tf/m vrd1 = 5.93 tf/m Modelo I vrd2 = 42.09 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² / m
	Y	bw = 100.0 cm h = 10.0 cm	Md = 373 kgf. m/m As = 1.00 cm ² / m A's = 0.00 cm ² / m			bw = 100.0 cm h = 10.0 cm				As = 1.01 cm ² / m ø5.0 c/19 (1.03 cm ² / m) M = 38.38 kgf.m/ m F = 0.00 tf fiss = 0.00 mm	vsd = 0.58 tf/m vrd1 = 5.59 tf/m vrd2 = 39.18 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² / m
LB2 6	X	bw = 100.0 cm h = 10.0 cm	Md = 426 kgf. m/m As = 1.30 cm ² / m A's = 0.00 cm ² / m	Fd = 0.40 tf Situação : GE As = 1.24 cm ² / m A's = 0.00 cm ² / m	Fd = 0.08 tf Situaçã o: GE As = 1.31 cm ² / m A's = 0.00 cm ² / m	bw = 100.0 cm h = 10.0 cm				As = 1.31 cm ² / m ø6.3 c/20 (1.56 cm ² / m) M = 262.77 kgf.m/ m F = 0.04 tf fiss = 0.05 mm	vsd = 1.60 tf/m vrd1 = 6.02 tf/m Modelo I vrd2 = 41.71 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² / m
	Y	bw = 100.0 cm	Md = 373 kgf. m/m	Fd = 0.43 tf Situação : GE	Fd = 1.09 tf Situaçã o: GE	bw = 100.0 cm				As = 1.02 cm ² / m ø5.0 c/19	vsd = 1.87 tf/m vrd1 = 5.49 tf/m

		h = 10. 0 cm	As = 1.02 cm ² / m A's = 0.00 cm ² / m	As = 0.71 cm ² /m A's = 0.00 cm ² /m	As = 0.91 cm ² /m A's = 0.00 cm ² /m	h = 10. 0 cm				(1.03 cm ² /m) M = 166.18 kgf.m/ m F = 0.57 tf fiss = 0.09 mm		vr2 = 38.43 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² /m
LB2 7	X	bw = 10. 0 cm h = 17. 0 cm bf = 40. 0 cm hf = 5.0 cm	Md = 215 kgf. m/N As = 0.27 cm ² / N A's = 0.00 cm ² / N	Fd = 0.01 tf/N Situação : GE As = 0.22 cm ² /N A's = 0.00 cm ² /N	Fd = 0.02 tf/N Situaã o: GE As = 0.23 cm ² /N A's = 0.00 cm ² /N	bw = 10. 0 cm h = 17. 0 cm				As = 0.48 cm ² /N (TR 12645 - 0.39 cm ² /N) 1ø5.0 c/N (0.20 cm ² /N) M = 120.18 kgf.m/ N F = 0.01 tf/N fiss = 0.01 mm		vsd = 0.34 tf/N vr1 = 1.12 tf/N Modelo I vr2 = 8.71 tf/N vsw = 0.00 tf/N asw = 0.00 cm ² /m
LB2 8	X	bw = 10. 0 cm h = 17. 0 cm bf = 40. 0 cm hf = 5.0 cm	Md = 215 kgf. m/N As = 0.27 cm ² / N A's = 0.00 cm ² / N		Fd = 0.04 tf/N Situaã o: GE As = 0.23 cm ² /N A's = 0.00 cm ² /N	bw = 10. 0 cm h = 17. 0 cm				As = 0.48 cm ² /N (TR 12645 - 0.39 cm ² /N) 1ø5.0 c/N (0.20 cm ² /N) M = 122.84 kgf.m/ N F = 0.02 tf/N fiss = 0.01 mm		vsd = 0.35 tf/N vr1 = 1.12 tf/N Modelo I vr2 = 8.71 tf/N vsw = 0.00 tf/N asw = 0.00 cm ² /m

LB2 9	X	bw = 10.0 cm h = 17.0 cm bf = 40.0 cm hf = 5.0 cm	Md = 215 kgf.m/N As = 0.27 cm ² /N A's = 0.00 cm ² /N	Fd = 0.04 tf/N Situação : GE As = 0.15 cm ² /N A's = 0.00 cm ² /N	Fd = 0.02 tf/N Situação : GE As = 0.16 cm ² /N A's = 0.00 cm ² /N	bw = 10.0 cm h = 17.0 cm				As = 0.48 cm ² /N (TR 12645 - 0.39 cm ² /N) 1ø5.0 c/N (0.20 cm ² /N) M = 84.03 kgf.m/N F = 0.01 tf/N fiss = 0.01 mm		vsd = 0.29 tf/N vrd1 = 1.12 tf/N Modelo I vrd2 = 8.71 tf/N vsw = 0.00 tf/N asw = 0.00 cm ² /m
LB3 0	X	bw = 10.0 cm h = 17.0 cm bf = 40.0 cm hf = 5.0 cm	Md = 377 kgf.m/N As = 0.47 cm ² /N A's = 0.00 cm ² /N	Fd = 0.04 tf/N Situação : GE As = 0.47 cm ² /N A's = 0.00 cm ² /N	Fd = 0.03 tf/N Situação : GE As = 0.47 cm ² /N A's = 0.00 cm ² /N	bw = 10.0 cm h = 17.0 cm				As = 0.48 cm ² /N (TR 12645 - 0.39 cm ² /N) 1ø5.0 c/N (0.20 cm ² /N) M = 251.15 kgf.m/N F = 0.02 tf/N fiss = 0.06 mm		vsd = 0.50 tf/N vrd1 = 1.12 tf/N Modelo I vrd2 = 8.71 tf/N vsw = 0.00 tf/N asw = 0.00 cm ² /m
LB3 1	X	bw = 10.0 cm h = 17.0 cm bf = 40.0 cm	Md = 377 kgf.m/N As = 0.47 cm ² /N A's = 0.00 cm ² /N	Fd = 0.01 tf/N Situação : GE As = 0.47 cm ² /N A's = 0.00 cm ² /N	Fd = 0.04 tf/N Situação : GE As = 0.47 cm ² /N A's = 0.00 cm ² /N	bw = 10.0 cm h = 17.0 cm				As = 0.48 cm ² /N (TR 12645 - 0.39 cm ² /N) 1ø5.0 c/N (0.20 cm ² /N)		vsd = 0.50 tf/N vrd1 = 1.12 tf/N Modelo I vrd2 = 8.71 tf/N vsw = 0.00 tf/N

		40.0 cm hf = 5.0 cm	cm ² /N							M = 251.16 kgf.m/N F = 0.02 tf/N fiss = 0.06 mm		asw = 0.00 cm ² /m
LB3 2	X	bw = 10.0 cm h = 17.0 cm bf = 40.0 cm hf = 5.0 cm	Md = 473 kgf.m/N As = 0.59 cm ² /N A's = 0.00 cm ² /N	Fd = 0.09 tf/N Situação : GE As = 0.58 cm ² /N A's = 0.00 cm ² /N	Fd = 0.05 tf/N Situaã o: GE As = 0.60 cm ² /N A's = 0.00 cm ² /N	bw = 10.0 cm h = 17.0 cm				As = 0.60 cm ² /N (TR 12645 - 0.39 cm ² /N) 1ø5.0 c/N (0.20 cm ² /N) M = 315.25 kgf.m/N F = 0.02 tf/N fiss = 0.09 mm		vsd = 0.56 tf/N vrd1 = 1.12 tf/N Modelo I vrd2 = 8.71 tf/N vsw = 0.00 tf/N asw = 0.00 cm ² /m
LB3 3	X	bw = 10.0 cm h = 17.0 cm bf = 40.0 cm hf = 5.0 cm	Md = 215 kgf.m/N As = 0.27 cm ² /N A's = 0.00 cm ² /N	Fd = 0.08 tf/N Situação : GE As = 0.17 cm ² /N A's = 0.00 cm ² /N	Fd = 0.07 tf/N Situaã o: GE As = 0.18 cm ² /N A's = 0.00 cm ² /N	bw = 10.0 cm h = 17.0 cm				As = 0.48 cm ² /N (TR 12645 - 0.39 cm ² /N) 1ø5.0 c/N (0.20 cm ² /N) M = 94.30 kgf.m/N F = 0.04 tf/N fiss = 0.01 mm		vsd = 0.31 tf/N vrd1 = 1.12 tf/N Modelo I vrd2 = 8.71 tf/N vsw = 0.00 tf/N asw = 0.00 cm ² /m

LB3 4	X	bw = 10.0 cm h = 17.0 cm bf = 40.0 cm hf = 5.0 cm	Md = 215 kgf. m/N As = 0.27 cm²/ N A's = 0.00 cm²/ N	Fd = 0.07 tf/N Situação : GE As = 0.18 cm²/N A's = 0.00 cm²/N	Fd = 0.02 tf/N Situação : GE As = 0.19 cm²/N A's = 0.00 cm²/N	bw = 10.0 cm h = 17.0 cm				As = 0.48 cm²/N (TR 12645 - 0.39 cm²/N) 1ø5.0 c/N (0.20 cm²/N) M = 101.28 kgf.m/ N F = 0.01 tf/N fiss = 0.01 mm		vsd = 0.33 tf/N vrd1 = 1.12 tf/N Modelo I vrd2 = 8.71 tf/N vsw = 0.00 tf/N asw = 0.00 cm²/m
LB3 5	X	bw = 10.0 cm h = 17.0 cm bf = 40.0 cm hf = 5.0 cm	Md = 215 kgf. m/N As = 0.27 cm²/ N A's = 0.00 cm²/ N	Fd = 0.10 tf/N Situação : GE As = 0.22 cm²/N A's = 0.00 cm²/N	Fd = 0.27 tf/N Situação : GE As = 0.26 cm²/N A's = 0.00 cm²/N	bw = 10.0 cm h = 17.0 cm				As = 0.48 cm²/N (TR 12645 - 0.39 cm²/N) 1ø5.0 c/N (0.20 cm²/N) M = 123.12 kgf.m/ N F = 0.15 tf/N fiss = 0.02 mm		vsd = 0.35 tf/N vrd1 = 1.12 tf/N Modelo I vrd2 = 8.71 tf/N vsw = 0.00 tf/N asw = 0.00 cm²/m
LB3 6	X	bw = 10.0 cm h = 17.0 cm bf = 40.0 cm	Md = 215 kgf. m/N As = 0.27 cm²/ N A's = 0.00 cm²/ N	Fd = 0.12 tf/N Situação : GE As = 0.17 cm²/N A's = 0.00 cm²/N		bw = 10.0 cm h = 17.0 cm				As = 0.48 cm²/N (TR 12645 - 0.39 cm²/N) 1ø5.0 c/N (0.20 cm²/N)		vsd = 0.30 tf/N vrd1 = 1.12 tf/N Modelo I vrd2 = 8.71 tf/N vsw = 0.00 tf/N

		40.0 cm hf = 5.0 cm	cm²/ N							M = 99.28 kgf.m/ N F = 0.01 tf/N fiss = 0.01 mm		asw = 0.00 cm²/m
LB3 7	X	bw = 10.0 cm h = 17.0 cm bf = 40.0 cm hf = 5.0 cm	Md = 215 kgf. m/N As = 0.27 cm²/ N A's = 0.00 cm²/ N	Fd = 0.11 tf/N Situação : GE As = 0.16 cm²/N A's = 0.00 cm²/N	Fd = 0.03 tf/N Situaçã o: GE As = 0.17 cm²/N A's = 0.00 cm²/N	bw = 10.0 cm h = 17.0 cm				As = 0.48 cm²/N (TR 12645 - 0.39 cm²/N) 1ø5.0 c/N (0.20 cm²/N) M = 90.11 kgf.m/ N F = 0.02 tf/N fiss = 0.01 mm		vsd = 0.35 tf/N vrd1 = 1.12 tf/N Modelo I vrd2 = 8.71 tf/N vsw = 0.00 tf/N asw = 0.00 cm²/m
LB3 8	X	bw = 100.0 cm h = 10.0 cm	Md = 373 kgf. m/m As = 0.94 cm²/ m A's = 0.00 cm²/ m	Fd = 0.12 tf Situação : GE As = 0.24 cm²/m A's = 0.00 cm²/m	Fd = 0.15 tf Situaçã o: GE As = 0.27 cm²/m A's = 0.00 cm²/m	bw = 100.0 cm h = 10.0 cm				As = 1.01 cm²/m ø5.0 c/19 (1.03 cm²/m) M = 62.93 kgf.m/ m F = 0.08 tf fiss = 0.01 mm		vsd = 0.68 tf/m vrd1 = 5.93 tf/m Modelo I vrd2 = 42.09 tf/m vsw = 0.00 tf/m asw = 0.00 cm²/m
	Y	bw = 100.0 cm	Md = 373 kgf. m/m			bw = 100.0 cm				As = 1.01 cm²/m ø5.0 c/19		vsd = 0.69 tf/m vrd1 = 5.59 tf/m

		h = 10. 0 cm	As = 1.00 cm ² / m A's = 0.00 cm ² / m			h = 10. 0 cm				(1.03 cm ² /m) M = 43.14 kgf.m/ m F = 0.00 tf fiss = 0.00 mm		vr2 = 39.18 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² /m
LB3 9	X	bw = 100. 0 cm h = 10. 0 cm	Md = 492 kgf. m/m As = 1.50 cm ² / m A's = 0.00 cm ² / m	Fd = 0.81 tf Situação : GE As = 1.38 cm ² /m A's = 0.00 cm ² /m	Fd = 0.05 tf Situaã o: GE As = 1.51 cm ² /m A's = 0.00 cm ² /m	bw = 100. 0 cm h = 10. 0 cm				As = 1.51 cm ² /m ø6.3 c/20 (1.56 cm ² /m) M = 303.43 kgf.m/ m F = 0.02 tf fiss = 0.07 mm		vsd = 1.60 tf/m vr1 = 6.02 tf/m Modelo I vr2 = 41.71 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² /m
	Y	bw = 100. 0 cm h = 10. 0 cm	Md = 373 kgf. m/m As = 1.02 cm ² / m A's = 0.00 cm ² / m	Fd = 0.39 tf Situação : GE As = 0.85 cm ² /m A's = 0.00 cm ² /m	Fd = 0.89 tf Situaã o: GE As = 1.02 cm ² /m A's = 0.00 cm ² /m	bw = 100. 0 cm h = 10. 0 cm				As = 1.02 cm ² /m ø5.0 c/19 (1.03 cm ² /m) M = 169.47 kgf.m/ m F = 0.47 tf fiss = 0.09 mm		vsd = 1.98 tf/m vr1 = 5.49 tf/m vr2 = 38.43 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² /m
LB4 0	X	bw = 100. 0 cm h = 10. 0 cm	Md = 917 kgf. m/m As = 2.87 cm ² /m A's = 2.89 cm ² / m	Fd = 0.11 tf Situação : GE As = 2.87 cm ² /m A's = 0.00 cm ² /m	Fd = 0.44 tf Situaã o: GE As = 2.95 cm ² /m A's = 0.00 cm ² /m	bw = 100. 0 cm h = 10. 0 cm	Md = 462 kgf. m/m As = 1.41 cm ² / m	Fd = 0.11 tf Situação : GE As = 1.39 cm ² /m A's = 0.00 cm ² /m	Fd = 0.44 tf Situaã o: GE As = 1.47 cm ² /m A's = 0.00 cm ² /m	As = 2.95 cm ² /m ø8.0 c/17 (2.96 cm ² /m) M = 346.53	A's = 1.24 cm ² /m ø6.3 c/20 (1.56 cm ² /m) M = 0.00	vsd = 2.27 tf/m vr1 = 6.30 tf/m Modelo I vr2 = 41.22 tf/m vsw = 0.00 tf/m

			A's = 0.00 cm ² / m				A's = 0.00 cm ² / m			kgf.m/ m F = 0.23 tf fiss = 0.04 mm	kgf.m/ m F = 0.23 tf fiss = 0.00 mm	asw = 0.00 cm ² /m
	Y	bw = 100 .0 cm h = 10. 0 cm	Md = 892 kgf. m/m As = 3.22 cm ² / m A's = 0.00 cm ² / m	Fd = 0.40 tf Situação : GE As = 3.15 cm ² /m A's = 0.00 cm ² /m	Fd = 0.08 tf Situaçã o: GE As = 3.23 cm ² /m A's = 0.00 cm ² /m	bw = 100 .0 cm h = 10. 0 cm	Md = 450 kgf. m/m As = 1.50 cm ² / m A's = 0.00 cm ² / m	Fd = 0.40 tf Situação : GE As = 1.43 cm ² /m A's = 0.00 cm ² /m	Fd = 0.08 tf Situaçã o: GE As = 1.51 cm ² /m A's = 0.00 cm ² /m	As = 3.23 cm ² /m ø10.0 c/20 (3.93 cm ² /m) M = 306.14 kgf.m/ m F = 0.04 tf fiss = 0.03 mm	A's = 1.42 cm ² /m ø6.3 c/20 (1.56 cm ² /m) M = 0.00 kgf.m/ m F = 0.04 tf fiss = 0.00 mm	vsd = 2.29 tf/m vrd1 = 5.91 tf/m vrd2 = 35.99 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² /m
LB4 1	X	bw = 100 .0 cm h = 10. 0 cm	Md = 421 kgf. m/m As = 1.28 cm ² / m A's = 0.00 cm ² / m	Fd = 0.17 tf Situação : GE As = 1.26 cm ² /m A's = 0.00 cm ² /m		bw = 100 .0 cm h = 10. 0 cm				As = 1.28 cm ² /m ø6.3 c/20 (1.56 cm ² /m) M = 259.86 kgf.m/ m F = 0.00 tf fiss = 0.05 mm		vsd = 1.33 tf/m vrd1 = 6.02 tf/m Modelo I vrd2 = 41.71 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² /m
	Y	bw = 100 .0 cm h = 10. 0 cm	Md = 373 kgf. m/m As = 1.02 cm ² / m A's = 0.00 cm ² / m	Fd = 0.13 tf Situação : GE As = 0.67 cm ² /m A's = 0.00 cm ² /m	Fd = 0.02 tf Situaçã o: GE As = 0.69 cm ² /m A's = 0.00 cm ² /m	bw = 100 .0 cm h = 10. 0 cm				As = 1.02 cm ² /m ø5.0 c/19 (1.03 cm ² /m) M = 156.94 kgf.m/ m F = 0.01 tf		vsd = 1.74 tf/m vrd1 = 5.49 tf/m vrd2 = 38.43 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² /m

										fiss = 0.06 mm		
LB4 2	X	bw = 100 .0 cm h = 10. 0 cm	Md = 698 kgf. m/m As = 2.18 cm ² / m A's = 0.00 cm ² / m	Fd = 0.14 tf Situação : GE As = 2.16 cm ² /m A's = 0.00 cm ² /m		bw = 100 .0 cm h = 10. 0 cm				As = 2.18 cm ² /m ø8.0 c/20 (2.51 cm ² /m) M = 313.44 kgf.m/ m F = 0.00 tf fiss = 0.04 mm		vsd = 2.05 tf/m vrd1 = 6.19 tf/m Modelo I vrd2 = 41.22 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² /m
	Y	bw = 100 .0 cm h = 10. 0 cm	Md = 718 kgf. m/m As = 2.52 cm ² / m A's = 0.00 cm ² / m	Fd = 0.14 tf Situação : GE As = 2.50 cm ² /m A's = 0.00 cm ² /m	Fd = 0.01 tf Situaçã o: GE As = 2.53 cm ² /m A's = 0.00 cm ² /m	bw = 100 .0 cm h = 10. 0 cm				As = 2.53 cm ² /m ø8.0 c/19 (2.65 cm ² /m) M = 285.26 kgf.m/ m F = 0.01 tf fiss = 0.04 mm		vsd = 2.22 tf/m vrd1 = 5.67 tf/m vrd2 = 36.57 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² /m
LB4 3	X	bw = 100 .0 cm h = 10. 0 cm	Md = 695 kgf. m/m As = 2.17 cm ² / m A's = 0.00 cm ² / m	Fd = 0.11 tf Situação : GE As = 2.15 cm ² /m A's = 0.00 cm ² /m	Fd = 0.05 tf Situaçã o: GE As = 2.17 cm ² /m A's = 0.00 cm ² /m	bw = 100 .0 cm h = 10. 0 cm				As = 2.17 cm ² /m ø8.0 c/20 (2.51 cm ² /m) M = 304.65 kgf.m/ m F = 0.03 tf fiss = 0.04 mm		vsd = 2.03 tf/m vrd1 = 6.19 tf/m Modelo I vrd2 = 41.22 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² /m

	Y	bw = 100.0 cm h = 10.0 cm	Md = 724 kgf.m/m As = 2.55 cm ² /m A's = 0.00 cm ² /m	Fd = 0.14 tf Situação : GE As = 2.52 cm ² /m A's = 0.00 cm ² /m	Fd = 0.02 tf Situaçã o: GE As = 2.55 cm ² /m A's = 0.00 cm ² /m	bw = 100.0 cm h = 10.0 cm				As = 2.55 cm ² /m ø8.0 c/19 (2.65 cm ² /m) M = 289.50 kgf.m/m F = 0.01 tf fiss = 0.04 mm		vsd = 2.21 tf/m vrd1 = 5.67 tf/m vrd2 = 36.57 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² /m
LB4 4	X	bw = 100.0 cm h = 10.0 cm	Md = 743 kgf.m/m As = 2.32 cm ² /m A's = 0.00 cm ² /m	Fd = 0.13 tf Situação : GE As = 2.30 cm ² /m A's = 0.00 cm ² /m	Fd = 0.17 tf Situaçã o: GE As = 2.35 cm ² /m A's = 0.00 cm ² /m	bw = 100.0 cm h = 10.0 cm	Md = 329 kgf.m/m As = 0.82 cm ² /m A's = 0.00 cm ² /m	Fd = 0.13 tf Situação : GE As = 0.81 cm ² /m A's = 0.00 cm ² /m	Fd = 0.17 tf Situaçã o: GE As = 0.84 cm ² /m A's = 0.00 cm ² /m	As = 2.35 cm ² /m ø8.0 c/20 (2.51 cm ² /m) M = 315.95 kgf.m/m F = 0.09 tf fiss = 0.04 mm	A's = 0.25 cm ² /m ø5.0 c/20 (0.98 cm ² /m) M = 0.00 kgf.m/m F = 0.09 tf fiss = 0.00 mm	vsd = 2.12 tf/m vrd1 = 6.19 tf/m Modelo I vrd2 = 41.22 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² /m
	Y	bw = 100.0 cm h = 10.0 cm	Md = 751 kgf.m/m As = 2.65 cm ² /m A's = 0.00 cm ² /m	Fd = 0.13 tf Situação : GE As = 2.63 cm ² /m A's = 0.00 cm ² /m	Fd = 0.12 tf Situaçã o: GE As = 2.67 cm ² /m A's = 0.00 cm ² /m	bw = 100.0 cm h = 10.0 cm	Md = 327 kgf.m/m As = 1.06 cm ² /m A's = 0.00 cm ² /m	Fd = 0.13 tf Situação : GE As = 1.04 cm ² /m A's = 0.00 cm ² /m	Fd = 0.12 tf Situaçã o: GE As = 1.08 cm ² /m A's = 0.00 cm ² /m	As = 2.67 cm ² /m ø8.0 c/18 (2.79 cm ² /m) M = 275.52 kgf.m/m F = 0.06 tf fiss = 0.03 mm	A's = 0.47 cm ² /m ø5.0 c/20 (0.98 cm ² /m) M = 0.00 kgf.m/m F = 0.06 tf fiss = 0.00 mm	vsd = 2.21 tf/m vrd1 = 5.70 tf/m vrd2 = 36.57 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² /m
LB4 5	X	bw = 10.0 cm	Md = 215 kgf.m/N	Fd = 0.16 tf/N Situação : GE	Fd = 0.05 tf/N Situaçã o: GE	bw = 10.0 cm				As = 0.48 cm ² /N (TR 12645)		vsd = 0.32 tf/N vrd1 = 1.12 tf/N Modelo I

		h = 17. 0 cm bf = 40. 0 cm hf = 5.0 cm	As = 0.27 cm ² / N A's = 0.00 cm ² / N	As = 0.16 cm ² /N A's = 0.00 cm ² /N	As = 0.18 cm ² /N A's = 0.00 cm ² /N	h = 17. 0 cm				- 0.39 cm ² /N 1ø5.0 c/N (0.20 cm ² /N) M = 95.81 kgf.m/ N F = 0.03 tf/N fiss = 0.01 mm		vr2 = 8.71 tf/N vsw = 0.00 tf/N asw = 0.00 cm ² /m
LB4 6	X	bw = 10. 0 cm h = 17. 0 cm bf = 40. 0 cm hf = 5.0 cm	Md = 215 kgf. m/N As = 0.27 cm ² / N A's = 0.00 cm ² / N	Fd = 0.14 tf/N Situação : GE As = 0.11 cm ² /N A's = 0.00 cm ² /N	Fd = 0.02 tf/N Situaçã o: GE As = 0.12 cm ² /N A's = 0.00 cm ² /N	bw = 10. 0 cm h = 17. 0 cm				As = 0.48 cm ² /N (TR 12645 - 0.39 cm ² /N) 1ø5.0 c/N (0.20 cm ² /N) M = 65.82 kgf.m/ N F = 0.01 tf/N fiss = 0.00 mm		vsd = 0.24 tf/N vr1 = 1.12 tf/N Modelo I vr2 = 8.71 tf/N vsw = 0.00 tf/N asw = 0.00 cm ² /m
LB4 7	X	bw = 10. 0 cm h = 17. 0 cm bf = 40. 0 cm hf = 5.0 cm	Md = 215 kgf. m/N As = 0.27 cm ² / N A's = 0.00 cm ² / N	Fd = 0.15 tf/N Situação : GE As = 0.12 cm ² /N A's = 0.00 cm ² /N	Fd = 0.13 tf/N Situaçã o: GE As = 0.15 cm ² /N A's = 0.00 cm ² /N	bw = 10. 0 cm h = 17. 0 cm				As = 0.48 cm ² /N (TR 12645 - 0.39 cm ² /N) 1ø5.0 c/N (0.20 cm ² /N) M = 74.32 kgf.m/ N		vsd = 0.28 tf/N vr1 = 1.12 tf/N Modelo I vr2 = 8.71 tf/N vsw = 0.00 tf/N asw = 0.00 cm ² /m

		5.0 cm								F = 0.07 tf/N fiss = 0.01 mm		
LB4 8	X	bw = 100.0 cm h = 10.0 cm	Md = 373 kgf. m/m As = 0.94 cm ² / m A's = 0.00 cm ² / m	Fd = 0.78 tf Situação : GE As = 0.22 cm ² / m A's = 0.00 cm ² / m	Fd = 0.24 tf Situaçã o: GE As = 0.35 cm ² / m A's = 0.00 cm ² / m	bw = 100.0 cm h = 10.0 cm				As = 1.01 cm ² / m ø5.0 c/19 (1.03 cm ² / m) M = 78.88 kgf.m/ m F = 0.14 tf fiss = 0.02 mm		vsd = 0.70 tf/m vrd1 = 5.93 tf/m Modelo I vrd2 = 42.09 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² / m
	Y	bw = 100.0 cm h = 10.0 cm	Md = 373 kgf. m/m As = 1.00 cm ² / m A's = 0.00 cm ² / m		Fd = 0.17 tf Situaçã o: GE As = 0.22 cm ² / m A's = 0.00 cm ² / m	bw = 100.0 cm h = 10.0 cm				As = 1.01 cm ² / m ø5.0 c/19 (1.03 cm ² / m) M = 45.44 kgf.m/ m F = 0.05 tf fiss = 0.01 mm		vsd = 0.59 tf/m vrd1 = 5.59 tf/m vrd2 = 39.18 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² / m
LB4 9	X	bw = 10.0 cm h = 17.0 cm bf = 40.0 cm	Md = 215 kgf. m/N As = 0.27 cm ² / N A's = 0.00 cm ² / N	Fd = 0.01 tf/N Situação : GE As = 0.04 cm ² / N A's = 0.00 cm ² / N	Fd = 0.07 tf/N Situaçã o: GE As = 0.05 cm ² / N A's = 0.00 cm ² / N	bw = 10.0 cm h = 17.0 cm				As = 0.48 cm ² / N (TR 12645 - 0.39 cm ² / N) 1ø5.0 c/N (0.20 cm ² / N) M = 21.68 kgf.m/ N		vsd = 0.15 tf/N vrd1 = 1.12 tf/N Modelo I vrd2 = 8.71 tf/N vsw = 0.00 tf/N asw = 0.00 cm ² / m

		hf = 5.0 cm								F = 0.04 tf/N fiss = 0.00 mm		
LB5 0	X	bw = 10.0 cm h = 17.0 cm bf = 40.0 cm hf = 5.0 cm	Md = 215 kgf.m/N As = 0.27 cm ² /N A's = 0.00 cm ² /N	Fd = 0.02 tf/N Situação : GE As = 0.04 cm ² /N A's = 0.00 cm ² /N	Fd = 0.02 tf/N Situaã o: GE As = 0.04 cm ² /N A's = 0.00 cm ² /N	bw = 10.0 cm h = 17.0 cm				As = 0.48 cm ² /N (TR 12645 - 0.39 cm ² /N) 1ø5.0 c/N (0.20 cm ² /N) M = 22.33 kgf.m/N F = 0.01 tf/N fiss = 0.00 mm		vsd = 0.15 tf/N vrd1 = 1.12 tf/N Modelo I vrd2 = 8.71 tf/N vsw = 0.00 tf/N asw = 0.00 cm ² /m
LB5 1	X	bw = 10.0 cm h = 17.0 cm bf = 40.0 cm hf = 5.0 cm	Md = 215 kgf.m/N As = 0.27 cm ² /N A's = 0.00 cm ² /N	Fd = 0.12 tf/N Situação : GE As = 0.02 cm ² /N A's = 0.00 cm ² /N	Fd = 0.06 tf/N Situaã o: GE As = 0.04 cm ² /N A's = 0.00 cm ² /N	bw = 10.0 cm h = 17.0 cm				As = 0.48 cm ² /N (TR 12645 - 0.39 cm ² /N) 1ø5.0 c/N (0.20 cm ² /N) M = 19.24 kgf.m/N F = 0.03 tf/N fiss = 0.00 mm		vsd = 0.13 tf/N vrd1 = 1.12 tf/N Modelo I vrd2 = 8.71 tf/N vsw = 0.00 tf/N asw = 0.00 cm ² /m
LB5 2	X	bw = 100.0 cm	Md = 801 kgf.m/m	Fd = 0.45 tf Situação : GE	Fd = 0.23 tf Situaã o: GE	bw = 100.0 cm				As = 2.54 cm ² /m ø8.0 c/19		vsd = 2.01 tf/m vrd1 = 6.22 tf/m Modelo I

		h = 10. 0 cm	As = 2.51 cm ² / m A's = 0.00 cm ² / m	As = 2.44 cm ² /m A's = 0.00 cm ² /m	As = 2.54 cm ² /m A's = 0.00 cm ² /m	h = 10. 0 cm				(2.65 cm ² /m) M = 497.08 kgf.m/ m F = 0.13 tf fiss = 0.09 mm		vr2 = 41.22 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² /m
	Y	bw = 100. 0 cm h = 10. 0 cm	Md = 497 kgf. m/m As = 1.73 cm ² / m A's = 0.00 cm ² / m		Fd = 0.04 tf Situaçã o: GE As = 1.73 cm ² /m A's = 0.00 cm ² /m	bw = 100. 0 cm h = 10. 0 cm				As = 1.73 cm ² /m ø8.0 c/20 (2.51 cm ² /m) M = 189.77 kgf.m/ m F = 0.02 tf fiss = 0.02 mm		vsd = 2.31 tf/m vr1 = 5.63 tf/m vr2 = 36.57 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² /m
LB5 3	X	bw = 100. 0 cm h = 10. 0 cm	Md = 700 kgf. m/m As = 2.18 cm ² / m A's = 0.00 cm ² / m	Fd = 0.35 tf Situação : GE As = 2.13 cm ² /m A's = 0.00 cm ² /m	Fd = 0.26 tf Situaçã o: GE As = 2.22 cm ² /m A's = 0.00 cm ² /m	bw = 100. 0 cm h = 10. 0 cm				As = 2.22 cm ² /m ø8.0 c/20 (2.51 cm ² /m) M = 433.58 kgf.m/ m F = 0.15 tf fiss = 0.08 mm		vsd = 1.86 tf/m vr1 = 6.19 tf/m Modelo I vr2 = 41.22 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² /m
	Y	bw = 100. 0 cm h = 10. 0 cm	Md = 457 kgf. m/m As = 1.56 cm ² / m	Fd = 0.25 tf Situação : GE As = 1.52 cm ² /m A's = 0.00 cm ² /m	Fd = 0.18 tf Situaçã o: GE As = 1.59 cm ² /m A's = 0.00 cm ² /m	bw = 100. 0 cm h = 10. 0 cm				As = 1.59 cm ² /m ø6.3 c/19 (1.64 cm ² /m) M = 188.87		vsd = 2.27 tf/m vr1 = 5.48 tf/m vr2 = 37.06 tf/m vsw = 0.00 tf/m

			A's = 0.00 cm ² / m							kgf.m/ m F = 0.08 tf fiss = 0.03 mm		asw = 0.00 cm ² /m
LB5 4	X	bw = 100 .0 cm h = 10. 0 cm	Md = 676 kgf. m/m As = 2.11 cm ² / m A's = 0.00 cm ² / m	Fd = 0.23 tf Situação : GE As = 2.07 cm ² /m A's = 0.00 cm ² /m	Fd = 0.51 tf Situaçã o: GE As = 2.18 cm ² /m A's = 0.00 cm ² /m	bw = 100 .0 cm h = 10. 0 cm	Md = 447 kgf. m/m As = 1.36 cm ² / m A's = 0.00 cm ² / m	Fd = 0.23 tf Situação : GE As = 1.33 cm ² /m A's = 0.00 cm ² /m	Fd = 0.51 tf Situaçã o: GE As = 1.44 cm ² /m A's = 0.00 cm ² /m	As = 2.18 cm ² /m ø8.0 c/20 (2.51 cm ² /m) M = 399.16 kgf.m/ m F = 0.29 tf fiss = 0.07 mm	A's = 1.38 cm ² /m ø6.3 c/20 (1.56 cm ² /m) M = 29.39 kgf.m/ m F = 0.29 tf fiss = 0.00 mm	vsd = 2.55 tf/m vrd1 = 6.19 tf/m Modelo I vrd2 = 41.22 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² /m
	Y	bw = 100 .0 cm h = 10. 0 cm	Md = 636 kgf. m/m As = 2.23 cm ² / m A's = 0.00 cm ² / m	Fd = 0.11 tf Situação : GE As = 2.21 cm ² /m A's = 0.00 cm ² /m	Fd = 0.68 tf Situaçã o: GE As = 2.34 cm ² /m A's = 0.00 cm ² /m	bw = 100 .0 cm h = 10. 0 cm	Md = 379 kgf. m/m As = 1.26 cm ² / m A's = 0.00 cm ² / m	Fd = 0.11 tf Situação : GE As = 1.24 cm ² /m A's = 0.00 cm ² /m	Fd = 0.68 tf Situaçã o: GE As = 1.37 cm ² /m A's = 0.00 cm ² /m	As = 2.34 cm ² /m ø8.0 c/20 (2.51 cm ² /m) M = 176.38 kgf.m/ m F = 0.36 tf fiss = 0.02 mm	A's = 1.33 cm ² /m ø6.3 c/20 (1.56 cm ² /m) M = 11.86 kgf.m/ m F = 0.36 tf fiss = 0.00 mm	vsd = 2.53 tf/m vrd1 = 5.63 tf/m vrd2 = 36.57 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² /m
LB5 5	X	bw = 100 .0 cm h = 10. 0 cm	Md = 436 kgf. m/m As = 1.33 cm ² / m A's = 0.00 cm ² / m	Fd = 1.29 tf Situação : GE As = 1.14 cm ² /m A's = 0.00 cm ² /m	Fd = 1.02 tf Situaçã o: GE As = 1.48 cm ² /m A's = 0.00 cm ² /m	bw = 100 .0 cm h = 10. 0 cm				As = 1.48 cm ² /m ø6.3 c/20 (1.56 cm ² /m) M = 268.71 kgf.m/ m F = 0.58 tf		vsd = 1.87 tf/m vrd1 = 6.02 tf/m Modelo I vrd2 = 41.71 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² /m

										fiss = 0.07 mm		
	Y	bw = 100.0 cm h = 10.0 cm	Md = 373 kgf. m/m As = 1.24 cm ² / m A's = 0.00 cm ² / m	Fd = 0.14 tf Situação : GE As = 1.19 cm ² / m A's = 0.00 cm ² / m	Fd = 1.69 tf Situaçã o: GE As = 1.48 cm ² / m A's = 0.00 cm ² / m	bw = 100.0 cm h = 10.0 cm				As = 1.48 cm ² / m ø6.3 c/20 (1.56 cm ² / m) M = 167.89 kgf.m/ m F = 0.95 tf fiss = 0.04 mm		vsd = 1.99 tf/m vrd1 = 5.58 tf/m vrd2 = 38.05 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² / m
	X	bw = 100.0 cm h = 10.0 cm	Md = 373 kgf. m/m As = 0.94 cm ² / m A's = 0.00 cm ² / m	Fd = 1.23 tf Situação : GE As = 0.73 cm ² / m A's = 0.00 cm ² / m	Fd = 0.19 tf Situaçã o: GE As = 0.90 cm ² / m A's = 0.00 cm ² / m	bw = 100.0 cm h = 10.0 cm				As = 1.01 cm ² / m ø5.0 c/19 (1.03 cm ² / m) M = 214.02 kgf.m/ m F = 0.11 tf fiss = 0.10 mm		vsd = 1.92 tf/m vrd1 = 5.93 tf/m Modelo I vrd2 = 42.09 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² / m
LB5 6	Y	bw = 100.0 cm h = 10.0 cm	Md = 373 kgf. m/m As = 1.00 cm ² / m A's = 0.00 cm ² / m	Fd = 0.17 tf Situação : GE As = 0.71 cm ² / m A's = 0.00 cm ² / m	Fd = 1.67 tf Situaçã o: GE As = 0.95 cm ² / m A's = 0.00 cm ² / m	bw = 100.0 cm h = 10.0 cm				As = 1.01 cm ² / m ø5.0 c/19 (1.03 cm ² / m) M = 170.86 kgf.m/ m F = 0.94 tf fiss = 0.10 mm		vsd = 1.82 tf/m vrd1 = 5.59 tf/m vrd2 = 39.18 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² / m

LB5 7	X	bw = 100.0 cm h = 10.0 cm	Md = 373 kgf. m/m As = 0.94 cm ² / m A's = 0.00 cm ² / m	Fd = 0.54 tf Situação : GE As = 0.70 cm ² / m A's = 0.00 cm ² / m	Fd = 1.32 tf Situação : GE As = 0.92 cm ² / m A's = 0.00 cm ² / m	bw = 100.0 cm h = 10.0 cm				As = 1.01 cm ² / m ø5.0 c/19 (1.03 cm ² / m) M = 190.55 kgf.m/ m F = 0.71 tf fiss = 0.10 mm	vsd = 1.60 tf/m vrd1 = 5.93 tf/m Modelo I vrd2 = 42.09 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² / m
	Y	bw = 100.0 cm h = 10.0 cm	Md = 373 kgf. m/m As = 1.00 cm ² / m A's = 0.00 cm ² / m	Fd = 1.55 tf Situação : GE As = 0.51 cm ² / m A's = 0.00 cm ² / m	Fd = 0.65 tf Situação : GE As = 0.80 cm ² / m A's = 0.00 cm ² / m	bw = 100.0 cm h = 10.0 cm				As = 1.01 cm ² / m ø5.0 c/19 (1.03 cm ² / m) M = 169.29 kgf.m/ m F = 0.37 tf fiss = 0.08 mm	vsd = 1.87 tf/m vrd1 = 5.59 tf/m vrd2 = 39.18 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² / m
LB5 8	X	bw = 100.0 cm h = 10.0 cm	Md = 373 kgf. m/m As = 0.94 cm ² / m A's = 0.00 cm ² / m	Fd = 0.44 tf Situação : GE As = 0.30 cm ² / m A's = 0.00 cm ² / m	Fd = 0.27 tf Situação : GE As = 0.39 cm ² / m A's = 0.00 cm ² / m	bw = 100.0 cm h = 10.0 cm				As = 1.01 cm ² / m ø5.0 c/19 (1.03 cm ² / m) M = 88.22 kgf.m/ m F = 0.13 tf fiss = 0.02 mm	vsd = 0.75 tf/m vrd1 = 5.93 tf/m Modelo I vrd2 = 42.09 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² / m
	Y	bw = 100.0 cm	Md = 373 kgf. m/m	Fd = 0.97 tf Situação : GE	Fd = 0.94 tf Situação : GE	bw = 100.0 cm				As = 1.01 cm ² / m ø5.0 c/19	vsd = 0.74 tf/m vrd1 = 5.59 tf/m

		h = 10. 0 cm	As = 1.00 cm ² / m A's = 0.00 cm ² / m	As = 0.06 cm ² / m A's = 0.00 cm ² / m	As = 0.31 cm ² / m A's = 0.00 cm ² / m	h = 10. 0 cm				(1.03 cm ² / m) M = 44.56 kgf.m/ m F = 0.54 tf fiss = 0.01 mm		vr2 = 39.18 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² / m
LB5 9	X	bw = 100. 0 cm h = 10. 0 cm	Md = 373 kgf. m/m As = 0.94 cm ² / m A's = 0.00 cm ² / m	Fd = 0.46 tf Situação : GE As = 0.70 cm ² / m A's = 0.00 cm ² / m	Fd = 0.55 tf Situaçã o: GE As = 0.83 cm ² / m A's = 0.00 cm ² / m	bw = 100. 0 cm h = 10. 0 cm				As = 1.01 cm ² / m ø5.0 c/19 (1.03 cm ² / m) M = 187.00 kgf.m/ m F = 0.30 tf fiss = 0.08 mm		vsd = 1.61 tf/m vr1 = 5.93 tf/m Modelo I vr2 = 42.09 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² / m
	Y	bw = 100. 0 cm h = 10. 0 cm	Md = 373 kgf. m/m As = 1.00 cm ² / m A's = 0.00 cm ² / m	Fd = 0.08 tf Situação : GE As = 0.65 cm ² / m A's = 0.00 cm ² / m	Fd = 0.48 tf Situaçã o: GE As = 0.72 cm ² / m A's = 0.00 cm ² / m	bw = 100. 0 cm h = 10. 0 cm				As = 1.01 cm ² / m ø5.0 c/19 (1.03 cm ² / m) M = 151.90 kgf.m/ m F = 0.27 tf fiss = 0.06 mm		vsd = 1.55 tf/m vr1 = 5.59 tf/m vr2 = 39.18 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² / m
LB6 0	X	bw = 100. 0 cm h = 10. 0 cm	Md = 636 kgf. m/m As = 1.98 cm ² / m	Fd = 0.04 tf Situação : GE As = 1.97 cm ² / m A's = 0.00 cm ² / m	Fd = 0.44 tf Situaçã o: GE As = 2.04 cm ² / m A's = 0.00 cm ² / m	bw = 100. 0 cm h = 10. 0 cm				As = 2.04 cm ² / m ø8.0 c/20 (2.51 cm ² / m) M = 392.98		vsd = 1.80 tf/m vr1 = 6.19 tf/m Modelo I vr2 = 41.22 tf/m vsw = 0.00 tf/m

			A's = 0.00 cm ² / m							kgf.m/ m F = 0.25 tf fiss = 0.06 mm		asw = 0.00 cm ² /m
	Y	bw = 100.0 cm h = 10.0 cm	Md = 414 kgf. m/m As = 1.41 cm ² / m A's = 0.00 cm ² / m		Fd = 0.30 tf Situação: o: GE As = 1.46 cm ² /m A's = 0.00 cm ² /m	bw = 100.0 cm h = 10.0 cm				As = 1.46 cm ² /m ø6.3 c/20 (1.56 cm ² /m) M = 170.87 kgf.m/ m F = 0.16 tf fiss = 0.03 mm		vsd = 2.20 tf/m vrd1 = 5.46 tf/m vrd2 = 37.06 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² /m
LB6 1	X	bw = 100.0 cm h = 10.0 cm	Md = 741 kgf. m/m As = 2.31 cm ² / m A's = 0.00 cm ² / m	Fd = 0.06 tf Situação: o: GE As = 2.31 cm ² /m A's = 0.00 cm ² /m	Fd = 0.19 tf Situação: o: GE As = 2.34 cm ² /m A's = 0.00 cm ² /m	bw = 100.0 cm h = 10.0 cm				As = 2.34 cm ² /m ø8.0 c/20 (2.51 cm ² /m) M = 457.40 kgf.m/ m F = 0.10 tf fiss = 0.08 mm		vsd = 1.84 tf/m vrd1 = 6.19 tf/m Modelo I vrd2 = 41.22 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² /m
	Y	bw = 100.0 cm h = 10.0 cm	Md = 431 kgf. m/m As = 1.47 cm ² / m A's = 0.00 cm ² / m	Fd = 0.15 tf Situação: o: GE As = 1.45 cm ² /m A's = 0.00 cm ² /m	Fd = 0.06 tf Situação: o: GE As = 1.48 cm ² /m A's = 0.00 cm ² /m	bw = 100.0 cm h = 10.0 cm				As = 1.48 cm ² /m ø6.3 c/20 (1.56 cm ² /m) M = 167.14 kgf.m/ m F = 0.02 tf		vsd = 2.16 tf/m vrd1 = 5.46 tf/m vrd2 = 37.06 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² /m

										fiss = 0.03 mm		
LB6 2	X	bw = 100.0 cm h = 10.0 cm	Md = 647 kgf. m/m As = 2.01 cm ² /m A's = 0.00 cm ² /m	Fd = 0.29 tf Situação : GE As = 1.97 cm ² /m A's = 0.00 cm ² /m	Fd = 0.19 tf Situação : GE As = 2.04 cm ² /m A's = 0.00 cm ² /m	bw = 100.0 cm h = 10.0 cm				As = 2.04 cm ² /m ø8.0 c/20 (2.51 cm ² /m) M = 399.49 kgf.m/m F = 0.10 tf fiss = 0.06 mm		vsd = 1.83 tf/m vrd1 = 6.19 tf/m Modelo I vrd2 = 41.22 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² /m
	Y	bw = 100.0 cm h = 10.0 cm	Md = 429 kgf. m/m As = 1.46 cm ² /m A's = 0.00 cm ² /m	Fd = 0.22 tf Situação : GE As = 1.43 cm ² /m A's = 0.00 cm ² /m	Fd = 0.04 tf Situação : GE As = 1.47 cm ² /m A's = 0.00 cm ² /m	bw = 100.0 cm h = 10.0 cm				As = 1.47 cm ² /m ø6.3 c/20 (1.56 cm ² /m) M = 171.67 kgf.m/m F = 0.02 tf fiss = 0.03 mm		vsd = 2.16 tf/m vrd1 = 5.46 tf/m vrd2 = 37.06 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² /m
LB6 3	X	bw = 100.0 cm h = 10.0 cm	Md = 373 kgf. m/m As = 0.94 cm ² /m A's = 0.00 cm ² /m	Fd = 0.11 tf Situação : GE As = 0.36 cm ² /m A's = 0.00 cm ² /m	Fd = 0.19 tf Situação : GE As = 0.40 cm ² /m A's = 0.00 cm ² /m	bw = 100.0 cm h = 10.0 cm				As = 1.01 cm ² /m ø5.0 c/19 (1.03 cm ² /m) M = 93.45 kgf.m/m F = 0.11 tf fiss = 0.02 mm		vsd = 0.92 tf/m vrd1 = 5.93 tf/m Modelo I vrd2 = 42.09 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² /m

	Y	bw = 100.0 cm h = 10.0 cm	Md = 373 kgf.m/m As = 1.00 cm ² /m A's = 0.00 cm ² /m	Fd = 0.17 tf Situação : GE As = 0.27 cm ² /m A's = 0.00 cm ² /m	Fd = 0.09 tf Situação : GE As = 0.30 cm ² /m A's = 0.00 cm ² /m	bw = 100.0 cm h = 10.0 cm				As = 1.01 cm ² /m ø5.0 c/19 (1.03 cm ² /m) M = 68.87 kgf.m/m F = 0.05 tf fiss = 0.01 mm		vsd = 0.93 tf/m vrd1 = 5.59 tf/m vrd2 = 39.18 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² /m
LB6 4	X	bw = 100.0 cm h = 10.0 cm	Md = 373 kgf.m/m As = 0.94 cm ² /m A's = 0.00 cm ² /m	Fd = 0.27 tf Situação : GE As = 0.45 cm ² /m A's = 0.00 cm ² /m		bw = 100.0 cm h = 10.0 cm				As = 1.01 cm ² /m ø5.0 c/19 (1.03 cm ² /m) M = 118.93 kgf.m/m F = 0.00 tf fiss = 0.03 mm		vsd = 0.98 tf/m vrd1 = 5.93 tf/m Modelo I vrd2 = 42.09 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² /m
	Y	bw = 100.0 cm h = 10.0 cm	Md = 373 kgf.m/m As = 1.00 cm ² /m A's = 0.00 cm ² /m	Fd = 0.08 tf Situação : GE As = 0.34 cm ² /m A's = 0.00 cm ² /m	Fd = 0.40 tf Situação : GE As = 0.41 cm ² /m A's = 0.00 cm ² /m	bw = 100.0 cm h = 10.0 cm				As = 1.01 cm ² /m ø5.0 c/19 (1.03 cm ² /m) M = 84.32 kgf.m/m F = 0.22 tf fiss = 0.02 mm		vsd = 1.04 tf/m vrd1 = 5.59 tf/m vrd2 = 39.18 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² /m
LB6 5	X	bw = 100.0 cm	Md = 373 kgf.m/m	Fd = 0.26 tf Situação : GE	Fd = 0.11 tf Situação : GE	bw = 100.0 cm				As = 1.01 cm ² /m ø5.0 c/19		vsd = 1.07 tf/m vrd1 = 5.93 tf/m Modelo I

		h = 10. 0 cm	As = 0.94 cm ² / m A's = 0.00 cm ² / m	As = 0.33 cm ² /m A's = 0.00 cm ² /m	As = 0.38 cm ² /m A's = 0.00 cm ² /m	h = 10. 0 cm				(1.03 cm ² /m) M = 90.56 kgf.m/ m F = 0.05 tf fiss = 0.02 mm		vr2 = 42.09 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² /m
	Y	bw = 100. 0 cm h = 10. 0 cm	Md = 373 kgf. m/m As = 1.00 cm ² / m A's = 0.00 cm ² / m		Fd = 0.41 tf Situaã o: GE As = 0.41 cm ² /m A's = 0.00 cm ² /m	bw = 100. 0 cm h = 10. 0 cm				As = 1.01 cm ² /m ø5.0 c/19 (1.03 cm ² /m) M = 85.01 kgf.m/ m F = 0.22 tf fiss = 0.02 mm		vsd = 1.22 tf/m vr1 = 5.59 tf/m vr2 = 39.18 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² /m
LB6 6	X	bw = 100. 0 cm h = 10. 0 cm	Md = 373 kgf. m/m As = 0.94 cm ² / m A's = 0.00 cm ² / m	Fd = 0.15 tf Situação : GE As = 0.42 cm ² /m A's = 0.00 cm ² /m	Fd = 0.02 tf Situaã o: GE As = 0.44 cm ² /m A's = 0.00 cm ² /m	bw = 100. 0 cm h = 10. 0 cm				As = 1.01 cm ² /m ø5.0 c/19 (1.03 cm ² /m) M = 108.86 kgf.m/ m F = 0.01 tf fiss = 0.03 mm		vsd = 0.85 tf/m vr1 = 5.93 tf/m Modelo I vr2 = 42.09 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² /m
	Y	bw = 100. 0 cm h = 10. 0 cm	Md = 373 kgf. m/m As = 1.00 cm ² / m	Fd = 0.07 tf Situação : GE As = 0.26 cm ² /m A's = 0.00 cm ² /m	Fd = 0.29 tf Situaã o: GE As = 0.31 cm ² /m A's = 0.00 cm ² /m	bw = 100. 0 cm h = 10. 0 cm				As = 1.01 cm ² /m ø5.0 c/19 (1.03 cm ² /m) M = 62.94		vsd = 0.80 tf/m vr1 = 5.59 tf/m vr2 = 39.18 tf/m vsw = 0.00 tf/m

			A's = 0.00 cm ² / m							kgf.m/ m F = 0.16 tf fiss = 0.01 mm		asw = 0.00 cm ² /m
LB6 7	X	bw = 100 .0 cm h = 10. 0 cm	Md = 373 kgf. m/m As = 0.94 cm ² / m A's = 0.00 cm ² / m	Fd = 0.13 tf Situação : GE As = 0.10 cm ² /m A's = 0.00 cm ² /m	Fd = 0.41 tf Situaçã o: GE As = 0.17 cm ² /m A's = 0.00 cm ² /m	bw = 100 .0 cm h = 10. 0 cm				As = 1.01 cm ² /m ø5.0 c/19 (1.03 cm ² /m) M = 30.61 kgf.m/ m F = 0.23 tf fiss = 0.00 mm		vsd = 0.74 tf/m vrd1 = 5.93 tf/m Modelo I vrd2 = 42.09 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² /m
	Y	bw = 100 .0 cm h = 10. 0 cm	Md = 373 kgf. m/m As = 1.00 cm ² / m A's = 0.00 cm ² / m	Fd = 0.72 tf Situação : GE As = 0.18 cm ² /m A's = 0.00 cm ² /m	Fd = 0.05 tf Situaçã o: GE As = 0.28 cm ² /m A's = 0.00 cm ² /m	bw = 100 .0 cm h = 10. 0 cm				As = 1.01 cm ² /m ø5.0 c/19 (1.03 cm ² /m) M = 65.54 kgf.m/ m F = 0.01 tf fiss = 0.01 mm		vsd = 1.26 tf/m vrd1 = 5.59 tf/m vrd2 = 39.18 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² /m
LB6 8	X	bw = 100 .0 cm h = 10. 0 cm	Md = 373 kgf. m/m As = 0.94 cm ² / m A's = 0.00 cm ² / m	Fd = 0.23 tf Situação : GE As = 0.45 cm ² /m A's = 0.00 cm ² /m	Fd = 0.43 tf Situaçã o: GE As = 0.53 cm ² /m A's = 0.00 cm ² /m	bw = 100 .0 cm h = 10. 0 cm				As = 1.01 cm ² /m ø5.0 c/19 (1.03 cm ² /m) M = 118.13 kgf.m/ m F = 0.24 tf		vsd = 0.96 tf/m vrd1 = 5.93 tf/m Modelo I vrd2 = 42.09 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² /m

										fiss = 0.03 mm		
	Y	bw = 100.0 cm h = 10.0 cm	Md = 373 kgf. m/m As = 1.00 cm ² / m A's = 0.00 cm ² / m	Fd = 0.36 tf Situação : GE As = 0.32 cm ² / m A's = 0.00 cm ² / m	Fd = 0.10 tf Situaçã o: GE As = 0.38 cm ² / m A's = 0.00 cm ² / m	bw = 100.0 cm h = 10.0 cm				As = 1.01 cm ² / m ø5.0 c/19 (1.03 cm ² / m) M = 88.34 kgf.m/ m F = 0.04 tf fiss = 0.02 mm		vsd = 1.07 tf/m vrd1 = 5.59 tf/m vrd2 = 39.18 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² / m
	X	bw = 100.0 cm h = 10.0 cm	Md = 373 kgf. m/m As = 0.94 cm ² / m A's = 0.00 cm ² / m	Fd = 1.16 tf Situação : GE As = 0.31 cm ² / m A's = 0.00 cm ² / m	Fd = 0.38 tf Situaçã o: GE As = 0.50 cm ² / m A's = 0.00 cm ² / m	bw = 100.0 cm h = 10.0 cm				As = 1.01 cm ² / m ø5.0 c/19 (1.03 cm ² / m) M = 112.15 kgf.m/ m F = 0.22 tf fiss = 0.03 mm		vsd = 0.98 tf/m vrd1 = 5.93 tf/m Modelo I vrd2 = 42.09 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² / m
LB6 9	Y	bw = 100.0 cm h = 10.0 cm	Md = 373 kgf. m/m As = 1.00 cm ² / m A's = 0.00 cm ² / m	Fd = 1.15 tf Situação : GE As = 0.24 cm ² / m A's = 0.00 cm ² / m		bw = 100.0 cm h = 10.0 cm				As = 1.01 cm ² / m ø5.0 c/19 (1.03 cm ² / m) M = 93.29 kgf.m/ m F = 0.00 tf fiss = 0.02 mm		vsd = 1.15 tf/m vrd1 = 5.59 tf/m vrd2 = 39.18 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² / m

LB7 0	X	bw = 100.0 cm h = 10.0 cm	Md = 373 kgf. m/m As = 0.94 cm ² / m A's = 0.00 cm ² / m	Fd = 1.16 tf Situação : GE As = 0.28 cm ² / m A's = 0.00 cm ² / m	Fd = 0.12 tf Situaã o: GE As = 0.43 cm ² / m A's = 0.00 cm ² / m	bw = 100.0 cm h = 10.0 cm				As = 1.01 cm ² / m ø5.0 c/19 (1.03 cm ² / m) M = 103.35 kgf.m/ m F = 0.07 tf fiss = 0.02 mm		vsd = 0.94 tf/m vrd1 = 5.93 tf/m Modelo I vrd2 = 42.09 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² / m
	Y	bw = 100.0 cm h = 10.0 cm	Md = 373 kgf. m/m As = 1.00 cm ² / m A's = 0.00 cm ² / m	Fd = 1.10 tf Situação : GE As = 0.25 cm ² / m A's = 0.00 cm ² / m		bw = 100.0 cm h = 10.0 cm				As = 1.01 cm ² / m ø5.0 c/19 (1.03 cm ² / m) M = 94.02 kgf.m/ m F = 0.00 tf fiss = 0.02 mm		vsd = 1.14 tf/m vrd1 = 5.59 tf/m vrd2 = 39.18 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² / m
LB7 1	X	bw = 100.0 cm h = 10.0 cm	Md = 373 kgf. m/m As = 0.94 cm ² / m A's = 0.00 cm ² / m	Fd = 1.39 tf Situação : GE As = 0.22 cm ² / m A's = 0.00 cm ² / m	Fd = 1.00 tf Situaã o: GE As = 0.51 cm ² / m A's = 0.00 cm ² / m	bw = 100.0 cm h = 10.0 cm				As = 1.01 cm ² / m ø5.0 c/19 (1.03 cm ² / m) M = 95.72 kgf.m/ m F = 0.56 tf fiss = 0.03 mm		vsd = 0.92 tf/m vrd1 = 5.93 tf/m Modelo I vrd2 = 42.09 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² / m
	Y	bw = 100.0 cm	Md = 373 kgf. m/m	Fd = 0.78 tf Situação : GE	Fd = 1.02 tf Situaã o: GE	bw = 100.0 cm				As = 1.01 cm ² / m ø5.0 c/19		vsd = 1.18 tf/m vrd1 = 5.59 tf/m

		h = 10. 0 cm	As = 1.00 cm ² / m A's = 0.00 cm ² / m	As = 0.28 cm ² / m A's = 0.00 cm ² / m	As = 0.51 cm ² / m A's = 0.00 cm ² / m	h = 10. 0 cm				(1.03 cm ² / m) M = 90.24 kgf.m/ m F = 0.56 tf fiss = 0.03 mm		vr2 = 39.18 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² / m
LB7 2	X	bw = 100 .0 cm h = 10. 0 cm	Md = 373 kgf. m/m As = 0.94 cm ² / m A's = 0.00 cm ² / m	Fd = 0.09 tf Situação : GE As = 0.35 cm ² / m A's = 0.00 cm ² / m	Fd = 1.91 tf Situaã o: GE As = 0.60 cm ² / m A's = 0.00 cm ² / m	bw = 100 .0 cm h = 10. 0 cm				As = 1.01 cm ² / m ø5.0 c/19 (1.03 cm ² / m) M = 90.94 kgf.m/ m F = 1.06 tf fiss = 0.04 mm		vsd = 0.82 tf/m vr1 = 5.93 tf/m Modelo I vr2 = 42.09 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² / m
	Y	bw = 100 .0 cm h = 10. 0 cm	Md = 373 kgf. m/m As = 1.00 cm ² / m A's = 0.00 cm ² / m	Fd = 0.50 tf Situação : GE As = 0.15 cm ² / m A's = 0.00 cm ² / m	Fd = 1.85 tf Situaã o: GE As = 0.46 cm ² / m A's = 0.00 cm ² / m	bw = 100 .0 cm h = 10. 0 cm				As = 1.01 cm ² / m ø5.0 c/19 (1.03 cm ² / m) M = 54.59 kgf.m/ m F = 1.04 tf fiss = 0.02 mm		vsd = 0.96 tf/m vr1 = 5.59 tf/m vr2 = 39.18 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² / m
LB7 3	X	bw = 100 .0 cm h = 10. 0 cm	Md = 656 kgf. m/m As = 2.04 cm ² / m	Fd = 0.11 tf Situação : GE As = 2.02 cm ² / m A's = 0.00 cm ² / m	Fd = 1.32 tf Situaã o: GE As = 2.23 cm ² / m A's = 0.00 cm ² / m	bw = 100 .0 cm h = 10. 0 cm				As = 2.23 cm ² / m ø8.0 c/20 (2.51 cm ² / m) M = 404.54		vsd = 1.71 tf/m vr1 = 6.19 tf/m Modelo I vr2 = 41.22 tf/m vsw = 0.00 tf/m

			A's = 0.00 cm ² / m							kgf.m/ m F = 0.73 tf fiss = 0.07 mm		asw = 0.00 cm ² /m
	Y	bw = 100 .0 cm h = 10. 0 cm	Md = 444 kgf. m/m As = 1.54 cm ² / m A's = 0.00 cm ² / m		Fd = 1.18 tf Situaçã o: GE As = 1.73 cm ² /m A's = 0.00 cm ² /m	bw = 100 .0 cm h = 10. 0 cm	Md = 322 kgf. m/m As = 0.97 cm ² / m A's = 0.00 cm ² / m		Fd = 1.18 tf Situaçã o: GE As = 1.15 cm ² /m A's = 0.00 cm ² /m	As = 1.73 cm ² /m ø8.0 c/20 (2.51 cm ² /m) M = 178.83 kgf.m/ m F = 0.67 tf fiss = 0.02 mm	A's = 1.13 cm ² /m ø6.3 c/20 (1.56 cm ² /m) M = 4.89 kgf.m/ m F = 0.67 tf fiss = 0.00 mm	vsd = 2.22 tf/m vrd1 = 5.63 tf/m vrd2 = 36.57 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² /m
LB7 4	X	bw = 100 .0 cm h = 10. 0 cm	Md = 684 kgf. m/m As = 2.13 cm ² / m A's = 0.00 cm ² / m	Fd = 0.09 tf Situação : GE As = 2.12 cm ² /m A's = 0.00 cm ² /m	Fd = 0.16 tf Situaçã o: GE As = 2.15 cm ² /m A's = 0.00 cm ² /m	bw = 100 .0 cm h = 10. 0 cm				As = 2.15 cm ² /m ø8.0 c/20 (2.51 cm ² /m) M = 422.44 kgf.m/ m F = 0.08 tf fiss = 0.07 mm		vsd = 1.85 tf/m vrd1 = 6.19 tf/m Modelo I vrd2 = 41.22 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² /m
	Y	bw = 100 .0 cm h = 10. 0 cm	Md = 507 kgf. m/m As = 1.76 cm ² / m A's = 0.00 cm ² / m		Fd = 0.49 tf Situaçã o: GE As = 1.84 cm ² /m A's = 0.00 cm ² /m	bw = 100 .0 cm h = 10. 0 cm				As = 1.84 cm ² /m ø8.0 c/20 (2.51 cm ² /m) M = 185.43 kgf.m/ m F = 0.27 tf		vsd = 2.26 tf/m vrd1 = 5.63 tf/m vrd2 = 36.57 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² /m

										fiss = 0.02 mm		
LB7 5	X	bw = 100.0 cm h = 10.0 cm	Md = 798 kgf. m/m As = 2.50 cm ² /m A's = 0.00 cm ² /m	Fd = 0.06 tf Situação : GE As = 2.49 cm ² /m A's = 0.00 cm ² /m	Fd = 0.04 tf Situação : GE As = 2.50 cm ² /m A's = 0.00 cm ² /m	bw = 100.0 cm h = 10.0 cm				As = 2.50 cm ² /m ø8.0 c/20 (2.51 cm ² /m) M = 492.58 kgf.m/m F = 0.02 tf fiss = 0.10 mm		vsd = 1.85 tf/m vrd1 = 6.19 tf/m Modelo I vrd2 = 41.22 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² /m
	Y	bw = 100.0 cm h = 10.0 cm	Md = 517 kgf. m/m As = 1.80 cm ² /m A's = 0.00 cm ² /m		Fd = 0.10 tf Situação : GE As = 1.81 cm ² /m A's = 0.00 cm ² /m	bw = 100.0 cm h = 10.0 cm				As = 1.81 cm ² /m ø8.0 c/20 (2.51 cm ² /m) M = 181.75 kgf.m/m F = 0.05 tf fiss = 0.02 mm		vsd = 2.35 tf/m vrd1 = 5.63 tf/m vrd2 = 36.57 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² /m
LB7 6	X	bw = 100.0 cm h = 10.0 cm	Md = 684 kgf. m/m As = 2.13 cm ² /m A's = 0.00 cm ² /m	Fd = 0.04 tf Situação : GE As = 2.13 cm ² /m A's = 0.00 cm ² /m	Fd = 0.70 tf Situação : GE As = 2.24 cm ² /m A's = 0.00 cm ² /m	bw = 100.0 cm h = 10.0 cm				As = 2.24 cm ² /m ø8.0 c/20 (2.51 cm ² /m) M = 422.58 kgf.m/m F = 0.38 tf fiss = 0.08 mm		vsd = 1.83 tf/m vrd1 = 6.19 tf/m Modelo I vrd2 = 41.22 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² /m

	Y	bw = 100.0 cm h = 10.0 cm	Md = 492 kgf.m/m As = 1.71 cm ² /m A's = 0.00 cm ² /m		Fd = 0.07 tf Situação: GE As = 1.72 cm ² /m A's = 0.00 cm ² /m	bw = 100.0 cm h = 10.0 cm				As = 1.72 cm ² /m ø8.0 c/20 (2.51 cm ² /m) M = 194.57 kgf.m/m F = 0.03 tf fiss = 0.02 mm		vsd = 2.27 tf/m vrd1 = 5.63 tf/m vrd2 = 36.57 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² /m
LB7 7	X	bw = 10.0 cm h = 17.0 cm bf = 40.0 cm hf = 5.0 cm	Md = 215 kgf.m/N As = 0.27 cm ² /N A's = 0.00 cm ² /N		Fd = 0.17 tf/N Situação: GE As = 0.17 cm ² /N A's = 0.00 cm ² /N	bw = 10.0 cm h = 17.0 cm				As = 0.48 cm ² /N (TR 12645 - 0.39 cm ² /N) 1ø5.0 c/N (0.20 cm ² /N) M = 80.66 kgf.m/N F = 0.10 tf/N fiss = 0.01 mm		vsd = 0.28 tf/N vrd1 = 1.12 tf/N Modelo I vrd2 = 8.71 tf/N vsw = 0.00 tf/N asw = 0.00 cm ² /m
LB7 8	X	bw = 10.0 cm h = 17.0 cm bf = 50.0 cm hf =	Md = 587 kgf.m/N As = 0.88 cm ² /N A's = 0.00 cm ² /N	Fd = 0.27 tf/N Situação: GE As = 0.85 cm ² /N A's = 0.00 cm ² /N	Fd = 0.02 tf/N Situação: GE As = 0.88 cm ² /N A's = 0.00 cm ² /N	bw = 10.0 cm h = 17.0 cm				As = 0.88 cm ² /N (TR 12645 - 0.39 cm ² /N) 1ø10.0 c/N (0.79 cm ² /N) M = 392.77 kgf.m/N		vsd = 0.84 tf/N vrd1 = 1.26 tf/N Modelo I vrd2 = 8.71 tf/N vsw = 0.00 tf/N asw = 0.00 cm ² /m

		5.0 cm								F = 0.01 tf/N fiss = 0.06 mm		
	Y	bw = 9.0 cm h = 17.0 cm bf = 49.0 cm hf = 5.0 cm	Md = 310 kgf. m/N As = 0.52 cm ² / N A's = 0.00 cm ² / N	Fd = 0.08 tf/N Situação : GE As = 0.51 cm ² / N A's = 0.00 cm ² / N	Fd = 0.25 tf/N Situaçã o: GE As = 0.56 cm ² / N A's = 0.00 cm ² / N	bw = 9.0 cm h = 17.0 cm	Md = 166 kgf. m/N As = 0.22 cm ² / N A's = 0.00 cm ² / N	Fd = 0.08 tf/N Situação : GE As = 0.21 cm ² / N A's = 0.00 cm ² / N	Fd = 0.25 tf/N Situaçã o: GE As = 0.25 cm ² / N A's = 0.00 cm ² / N	As = 0.56 cm ² / N 2ø6.3 c/N (0.62 cm ² / N) M = 206.77 kgf.m/ N F = 0.14 tf/N fiss = 0.03 mm	A's = 0.28 cm ² / m ø5.0 c/20 (0.98 cm ² / m) M = 44.19 kgf.m/ N F = 0.14 tf/N fiss = 0.00 mm	vsd = 0.85 tf/N vrd1 = 1.01 tf/N vrd2 = 6.89 tf/N vsw = 0.00 tf/N asw = 0.00 cm ² / m
LB7 9	X	bw = 10.0 cm h = 17.0 cm bf = 40.0 cm hf = 5.0 cm	Md = 215 kgf. m/N As = 0.27 cm ² / N A's = 0.00 cm ² / N	Fd = 0.14 tf/N Situação : GE As = 0.03 cm ² / N A's = 0.00 cm ² / N	Fd = 0.02 tf/N Situaçã o: GE As = 0.04 cm ² / N A's = 0.00 cm ² / N	bw = 10.0 cm h = 17.0 cm				As = 0.48 cm ² / N (TR 12645 - 0.39 cm ² / N) 1ø5.0 c/N (0.20 cm ² / N) M = 22.81 kgf.m/ N F = 0.01 tf/N fiss = 0.00 mm		vsd = 0.14 tf/N vrd1 = 1.12 tf/N Modelo I vrd2 = 8.71 tf/N vsw = 0.00 tf/N asw = 0.00 cm ² / m
LB8 0	X	bw = 10.0 cm h = 17.0 cm	Md = 268 kgf. m/N As = 0.33 cm ² / N	Fd = 0.06 tf/N Situação : GE As = 0.33 cm ² / N	Fd = 0.13 tf/N Situaçã o: GE As = 0.35 cm ² / N	bw = 10.0 cm h = 17.0 cm				As = 0.48 cm ² / N (TR 12645 - 0.39 cm ² / N) 1ø5.0 c/N		vsd = 0.42 tf/N vrd1 = 1.12 tf/N Modelo I vrd2 = 8.71 tf/N vsw = 0.00 tf/N

		bf = 40.0 cm hf = 5.0 cm	A's = 0.00 cm ² /N	A's = 0.00 cm ² /N	A's = 0.00 cm ² /N					(0.20 cm ² /N) M = 178.67 kgf.m/N F = 0.07 tf/N fiss = 0.03 mm		asw = 0.00 cm ² /m
LB8 1	X	bw = 10.0 cm h = 17.0 cm bf = 40.0 cm hf = 5.0 cm	Md = 215 kgf.m/N As = 0.27 cm ² /N A's = 0.00 cm ² /N	Fd = 0.06 tf/N Situação : GE As = 0.04 cm ² /N A's = 0.00 cm ² /N	Fd = 0.09 tf/N Situaçã o: GE As = 0.06 cm ² /N A's = 0.00 cm ² /N	bw = 10.0 cm h = 17.0 cm				As = 0.48 cm ² /N (TR 12645 - 0.39 cm ² /N) 1ø5.0 c/N (0.20 cm ² /N) M = 24.68 kgf.m/N F = 0.05 tf/N fiss = 0.00 mm		vsd = 0.16 tf/N vrd1 = 1.12 tf/N Modelo I vrd2 = 8.71 tf/N vsw = 0.00 tf/N asw = 0.00 cm ² /m
LB8 2	X	bw = 10.0 cm h = 17.0 cm bf = 40.0 cm hf = 5.0 cm	Md = 560 kgf.m/N As = 0.70 cm ² /N A's = 0.00 cm ² /N	Fd = 0.17 tf/N Situação : GE As = 0.69 cm ² /N A's = 0.00 cm ² /N	Fd = 0.22 tf/N Situaçã o: GE As = 0.72 cm ² /N A's = 0.00 cm ² /N	bw = 10.0 cm h = 17.0 cm				As = 0.72 cm ² /N (TR 12645 - 0.39 cm ² /N) 2ø5.0 c/N (0.39 cm ² /N) M = 374.13 kgf.m/N F = 0.12 tf/N		vsd = 0.60 tf/N vrd1 = 1.17 tf/N Modelo I vrd2 = 8.71 tf/N vsw = 0.00 tf/N asw = 0.00 cm ² /m

										fiss = 0.09 mm		
	Y	bw = 9.0 cm h = 17.0 cm bf = 113.2 cm hf = 5.0 cm	Md = 831 kgf. m/N As = 1.43 cm²/ N A's = 0.00 cm²/ N	Fd = 0.19 tf/N Situação : GE As = 1.40 cm²/N A's = 0.00 cm²/N	Fd = 0.18 tf/N Situação : GE As = 1.46 cm²/N A's = 0.00 cm²/N	bw = 9.0 cm h = 17.0 cm	Md = 739 kgf. m/N As = 1.28 cm²/ N A's = 0.00 cm²/ N	Fd = 0.19 tf/N Situação : GE As = 1.26 cm²/N A's = 0.00 cm²/N	Fd = 0.18 tf/N Situação : GE As = 1.30 cm²/N A's = 0.00 cm²/N	As = 1.46 cm²/N 2ø10.0 c/N (1.57 cm²/N) M = 216.67 kgf.m/ N F = 0.10 tf/N fiss = 0.01 mm	A's = 0.96 cm²/m ø5.0 c/20 (0.98 cm²/m) M = 23.17 kgf.m/ N F = 0.10 tf/N fiss = 0.00 mm	vsd = 1.48 tf/N vrd1 = 1.23 tf/N vrd2 = 6.79 tf/N vsw = 0.12 tf/N asw = 0.35 cm²/m
LB8 3	X	bw = 10.0 cm h = 17.0 cm bf = 40.0 cm hf = 5.0 cm	Md = 456 kgf. m/N As = 0.57 cm²/ N A's = 0.00 cm²/ N	Fd = 0.15 tf/N Situação : GE As = 0.55 cm²/N A's = 0.00 cm²/N	Fd = 0.05 tf/N Situação : GE As = 0.58 cm²/N A's = 0.00 cm²/N	bw = 10.0 cm h = 17.0 cm				As = 0.58 cm²/N (TR 12645 - 0.39 cm²/N) 1ø5.0 c/N (0.20 cm²/N) M = 303.96 kgf.m/ N F = 0.03 tf/N fiss = 0.09 mm		vsd = 0.55 tf/N vrd1 = 1.12 tf/N Modelo I vrd2 = 8.71 tf/N vsw = 0.00 tf/N asw = 0.00 cm²/m
LB8 4	X	bw = 10.0 cm h = 17.0 cm bf = 40.0 cm	Md = 327 kgf. m/N As = 0.41 cm²/ N A's = 0.00	Fd = 0.19 tf/N Situação : GE As = 0.39 cm²/N A's = 0.00 cm²/N	Fd = 0.16 tf/N Situação : GE As = 0.42 cm²/N A's = 0.00 cm²/N	bw = 10.0 cm h = 17.0 cm				As = 0.48 cm²/N (TR 12645 - 0.39 cm²/N) 1ø5.0 c/N (0.20 cm²/N)		vsd = 0.47 tf/N vrd1 = 1.12 tf/N Modelo I vrd2 = 8.71 tf/N vsw = 0.00 tf/N asw = 0.00 cm²/m

		0 cm hf = 5.0 cm	cm ² / N							M = 217.91 kgf.m/ N F = 0.09 tf/N fiss = 0.05 mm		
LB8 5	X	bw = 10. 0 cm h = 17. 0 cm bf = 40. 0 cm hf = 5.0 cm	Md = 215 kgf. m/N As = 0.27 cm ² / N A's = 0.00 cm ² / N	Fd = 0.04 tf/N Situação : GE As = 0.26 cm ² /N A's = 0.00 cm ² /N	Fd = 0.29 tf/N Situaçã o: GE As = 0.30 cm ² /N A's = 0.00 cm ² /N	bw = 10. 0 cm h = 17. 0 cm				As = 0.48 cm ² /N (TR 12645 - 0.39 cm ² /N) 1ø5.0 c/N (0.20 cm ² /N) M = 143.20 kgf.m/ N F = 0.16 tf/N fiss = 0.02 mm		vsd = 0.38 tf/N vrd1 = 1.12 tf/N Modelo I vrd2 = 8.71 tf/N vsw = 0.00 tf/N asw = 0.00 cm ² /m
LB8 6	X	bw = 10. 0 cm h = 17. 0 cm bf = 40. 0 cm hf = 5.0 cm	Md = 215 kgf. m/N As = 0.27 cm ² / N A's = 0.00 cm ² / N	Fd = 0.10 tf/N Situação : GE As = 0.16 cm ² /N A's = 0.00 cm ² /N	Fd = 0.04 tf/N Situaçã o: GE As = 0.17 cm ² /N A's = 0.00 cm ² /N	bw = 10. 0 cm h = 17. 0 cm				As = 0.48 cm ² /N (TR 12645 - 0.39 cm ² /N) 1ø5.0 c/N (0.20 cm ² /N) M = 91.52 kgf.m/ N F = 0.02 tf/N fiss = 0.01 mm		vsd = 0.31 tf/N vrd1 = 1.12 tf/N Modelo I vrd2 = 8.71 tf/N vsw = 0.00 tf/N asw = 0.00 cm ² /m

LB8 7	X	bw = 100.0 cm h = 10.0 cm	Md = 690 kgf. m/m As = 2.15 cm ² /m A's = 0.00 cm ² /m	Fd = 0.38 tf Situação : GE As = 2.09 cm ² /m A's = 0.00 cm ² /m	Fd = 0.28 tf Situação : GE As = 2.19 cm ² /m A's = 0.00 cm ² /m	bw = 100.0 cm h = 10.0 cm				As = 2.19 cm ² /m ø8.0 c/20 (2.51 cm ² /m) M = 425.97 kgf.m/m F = 0.15 tf fiss = 0.07 mm		vsd = 1.85 tf/m vrd1 = 6.19 tf/m Modelo I vrd2 = 41.22 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² /m
	Y	bw = 100.0 cm h = 10.0 cm	Md = 491 kgf. m/m As = 1.70 cm ² /m A's = 0.00 cm ² /m		Fd = 0.11 tf Situação : GE As = 1.72 cm ² /m A's = 0.00 cm ² /m	bw = 100.0 cm h = 10.0 cm				As = 1.72 cm ² /m ø8.0 c/20 (2.51 cm ² /m) M = 182.50 kgf.m/m F = 0.06 tf fiss = 0.02 mm		vsd = 2.21 tf/m vrd1 = 5.63 tf/m vrd2 = 36.57 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² /m
LB8 8	X	bw = 100.0 cm h = 10.0 cm	Md = 803 kgf. m/m As = 2.52 cm ² /m A's = 0.00 cm ² /m	Fd = 0.10 tf Situação : GE As = 2.50 cm ² /m A's = 0.00 cm ² /m	Fd = 0.03 tf Situação : GE As = 2.52 cm ² /m A's = 0.00 cm ² /m	bw = 100.0 cm h = 10.0 cm				As = 2.52 cm ² /m ø8.0 c/19 (2.65 cm ² /m) M = 495.89 kgf.m/m F = 0.02 tf fiss = 0.09 mm		vsd = 1.85 tf/m vrd1 = 6.22 tf/m Modelo I vrd2 = 41.22 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² /m
	Y	bw = 100.0 cm	Md = 506 kgf. m/m		Fd = 0.22 tf Situação : GE	bw = 100.0 cm				As = 1.79 cm ² /m ø8.0 c/20		vsd = 2.30 tf/m vrd1 = 5.63 tf/m

		h = 10. 0 cm	As = 1.76 cm ² /m A's = 0.00 cm ² /m		As = 1.79 cm ² /m A's = 0.00 cm ² /m	h = 10. 0 cm				(2.51 cm ² /m) M = 178.73 kgf.m/ m F = 0.11 tf fiss = 0.02 mm		vr2 = 36.57 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² /m
LB8 9	X	bw = 100 .0 cm h = 10. 0 cm	Md = 691 kgf. m/m As = 2.15 cm ² /m A's = 0.00 cm ² /m	Fd = 0.06 tf Situação : GE As = 2.14 cm ² /m A's = 0.00 cm ² /m	Fd = 0.70 tf Situaçã o: GE As = 2.26 cm ² /m A's = 0.00 cm ² /m	bw = 100 .0 cm h = 10. 0 cm				As = 2.26 cm ² /m ø8.0 c/20 (2.51 cm ² /m) M = 426.46 kgf.m/ m F = 0.37 tf fiss = 0.08 mm		vsd = 1.83 tf/m vr1 = 6.19 tf/m Modelo I vr2 = 41.22 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² /m
	Y	bw = 100 .0 cm h = 10. 0 cm	Md = 487 kgf. m/m As = 1.69 cm ² /m A's = 0.00 cm ² /m		Fd = 0.27 tf Situaçã o: GE As = 1.73 cm ² /m A's = 0.00 cm ² /m	bw = 100 .0 cm h = 10. 0 cm				As = 1.73 cm ² /m ø8.0 c/20 (2.51 cm ² /m) M = 185.12 kgf.m/ m F = 0.14 tf fiss = 0.02 mm		vsd = 2.21 tf/m vr1 = 5.63 tf/m vr2 = 36.57 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² /m
LB9 0	X	bw = 10. 0 cm h = 17. 0 cm	Md = 215 kgf. m/N As = 0.27 cm ² /N	Fd = 0.21 tf/N Situação : GE As = 0.04 cm ² /N A's = 0.00 cm ² /N	Fd = 0.05 tf/N Situaçã o: GE As = 0.06 cm ² /N	bw = 10. 0 cm h = 17. 0 cm				As = 0.48 cm ² /N (TR 12645 - 0.39 cm ² /N) 1ø5.0 c/N		vsd = 0.18 tf/N vr1 = 1.12 tf/N Modelo I vr2 = 8.71 tf/N vsw = 0.00 tf/N

		bf = 40.0 cm hf = 5.0 cm	A's = 0.00 cm ² /N		A's = 0.00 cm ² /N					(0.20 cm ² /N) M = 31.31 kgf.m/N F = 0.03 tf/N fiss = 0.00 mm		asw = 0.00 cm ² /m
LB9 1	X	bw = 10.0 cm h = 17.0 cm bf = 40.0 cm hf = 5.0 cm	Md = 215 kgf.m/N As = 0.27 cm ² /N A's = 0.00 cm ² /N	Fd = 0.18 tf/N Situação : GE As = 0.21 cm ² /N A's = 0.00 cm ² /N	Fd = 0.24 tf/N Situaçã o: GE As = 0.26 cm ² /N A's = 0.00 cm ² /N	bw = 10.0 cm h = 17.0 cm				As = 0.48 cm ² /N (TR 12645 - 0.39 cm ² /N) 1ø5.0 c/N (0.20 cm ² /N) M = 124.96 kgf.m/N F = 0.14 tf/N fiss = 0.02 mm		vsd = 0.36 tf/N vrd1 = 1.12 tf/N Modelo I vrd2 = 8.71 tf/N vsw = 0.00 tf/N asw = 0.00 cm ² /m
LB9 2	X	bw = 100.0 cm h = 10.0 cm	Md = 438 kgf.m/m As = 1.34 cm ² /m A's = 0.00 cm ² /m	Fd = 0.85 tf Situação : GE As = 1.21 cm ² /m A's = 0.00 cm ² /m	Fd = 0.43 tf Situaçã o: GE As = 1.40 cm ² /m A's = 0.00 cm ² /m	bw = 100.0 cm h = 10.0 cm				As = 1.40 cm ² /m ø6.3 c/20 (1.56 cm ² /m) M = 270.57 kgf.m/m F = 0.24 tf fiss = 0.06 mm		vsd = 1.66 tf/m vrd1 = 6.02 tf/m Modelo I vrd2 = 41.71 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² /m
	Y	bw = 100	Md = 373 kgf.m/m		Fd = 1.19 tf Situaçã o: GE	bw = 100				As = 1.02 cm ² /m		vsd = 1.89 tf/m vrd1 = 5.49 tf/m

		.0 cm h = 10. 0 cm	As = 1.02 cm ² / m A's = 0.00 cm ² / m		As = 1.02 cm ² / m A's = 0.00 cm ² / m	.0 cm h = 10. 0 cm				ø5.0 c/19 (1.03 cm ² / m) M = 164.87 kgf.m/ m F = 0.68 tf fiss = 0.09 mm		vr2 = 38.43 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² / m
LB9 3	X	bw = 100 .0 cm h = 10. 0 cm	Md = 373 kgf. m/m As = 0.94 cm ² / m A's = 0.00 cm ² / m	Fd = 0.34 tf Situação : GE As = 0.33 cm ² / m A's = 0.00 cm ² / m	Fd = 0.06 tf Situaã o: GE As = 0.37 cm ² / m A's = 0.00 cm ² / m	bw = 100 .0 cm h = 10. 0 cm				As = 1.01 cm ² / m ø5.0 c/19 (1.03 cm ² / m) M = 91.04 kgf.m/ m F = 0.03 tf fiss = 0.02 mm		vsd = 0.80 tf/m vr1 = 5.93 tf/m Modelo I vr2 = 42.09 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² / m
	Y	bw = 100 .0 cm h = 10. 0 cm	Md = 373 kgf. m/m As = 1.00 cm ² / m A's = 0.00 cm ² / m	Fd = 0.36 tf Situação : GE As = 0.14 cm ² / m A's = 0.00 cm ² / m	Fd = 1.34 tf Situaã o: GE As = 0.36 cm ² / m A's = 0.00 cm ² / m	bw = 100 .0 cm h = 10. 0 cm				As = 1.01 cm ² / m ø5.0 c/19 (1.03 cm ² / m) M = 43.12 kgf.m/ m F = 0.72 tf fiss = 0.01 mm		vsd = 0.69 tf/m vr1 = 5.59 tf/m vr2 = 39.18 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² / m
LB9 4	X	bw = 10. 0 cm h = 17.	Md = 215 kgf. m/N As = 0.27	Fd = 0.04 tf/N Situação : GE As = 0.05 cm ² / N	Fd = 0.29 tf/N Situaã o: GE As = 0.08 cm ² / N	bw = 10. 0 cm h = 17.				As = 0.48 cm ² / N (TR 12645 - 0.39 cm ² / N)		vsd = 0.16 tf/N vr1 = 1.12 tf/N Modelo I vr2 = 8.71 tf/N

		0 cm bf = 40. 0 cm hf = 5.0 cm	cm ² / N A's = 0.00 cm ² / N	A's = 0.00 cm ² /N	A's = 0.00 cm ² /N	0 cm				1ø5.0 c/N (0.20 cm ² /N) M = 28.11 kgf.m/ N F = 0.17 tf/N fiss = 0.00 mm		vsw = 0.00 tf/N asw = 0.00 cm ² /m
LB9 5	X	bw = 10. 0 cm h = 17. 0 cm bf = 50. 0 cm hf = 5.0 cm	Md = 586 kgf. m/N As = 0.88 cm ² / N A's = 0.00 cm ² / N	Fd = 0.65 tf/N Situação : GE As = 0.80 cm ² /N A's = 0.00 cm ² /N	Fd = 1.42 tf/N Situaçã o: GE As = 1.06 cm ² /N A's = 0.00 cm ² /N	bw = 10. 0 cm h = 17. 0 cm	Md = 134 kgf. m/N As = 0.18 cm ² / N A's = 0.00 cm ² / N	Fd = 0.65 tf/N Situação : GE As = 0.11 cm ² /N A's = 0.00 cm ² /N	Fd = 1.42 tf/N Situaçã o: GE As = 0.33 cm ² /N A's = 0.00 cm ² /N	As = 1.06 cm ² /N (TR 12645 - 0.39 cm ² /N) 1ø10.0 c/N (0.79 cm ² /N) M = 392.26 kgf.m/ N F = 0.80 tf/N fiss = 0.08 mm	A's = 0.47 cm ² /m ø5.0 c/20 (0.98 cm ² /m) M = 0.00 kgf.m/ N F = 0.80 tf/N fiss = 0.00 mm	vsw = 0.88 tf/N vrd1 = 1.26 tf/N Modelo I vrd2 = 8.71 tf/N vsw = 0.00 tf/N asw = 0.00 cm ² /m
	Y	bw = 9.0 cm h = 17. 0 cm bf = 49. 0 cm hf = 5.0 cm	Md = 381 kgf. m/N As = 0.65 cm ² / N A's = 0.00 cm ² / N	Fd = 2.35 tf/N Situação : GE As = 0.32 cm ² /N A's = 0.00 cm ² /N	Fd = 0.56 tf/N Situaçã o: GE As = 0.73 cm ² /N A's = 0.00 cm ² /N	bw = 9.0 cm h = 17. 0 cm	Md = 193 kgf. m/N As = 0.27 cm ² / N A's = 0.00 cm ² / N	Fd = 2.35 tf/N Situação : GE As = 0.01 cm ² /N A's = 0.00 cm ² /N	Fd = 0.56 tf/N Situaçã o: GE As = 0.33 cm ² /N A's = 0.00 cm ² /N	As = 0.73 cm ² /N 2ø8.0 c/N (1.01 cm ² /N) M = 251.31 kgf.m/ N F = 0.32 tf/N fiss = 0.03 mm	A's = 0.54 cm ² /m ø5.0 c/20 (0.98 cm ² /m) M = 58.09 kgf.m/ N F = 0.32 tf/N fiss = 0.00 mm	vsw = 0.85 tf/N vrd1 = 1.10 tf/N vrd2 = 6.84 tf/N vsw = 0.00 tf/N asw = 0.00 cm ² /m

LB9 6	X	bw = 100 .0 cm h = 10. 0 cm	Md = 603 kgf. m/m As = 1.87 cm ² / m A's = 0.00 cm ² / m	Fd = 3.64 tf Situação : GE As = 1.34 cm ² / m A's = 0.00 cm ² / m	Fd = 1.65 tf Situaçã o: GE As = 2.11 cm ² / m A's = 0.00 cm ² / m	bw = 100 .0 cm h = 10. 0 cm	Md = 342 kgf. m/m As = 1.04 cm ² / m A's = 0.00 cm ² / m	Fd = 3.64 tf Situação : GE As = 0.50 cm ² / m A's = 0.00 cm ² / m	Fd = 1.65 tf Situaçã o: GE As = 1.28 cm ² / m A's = 0.00 cm ² / m	As = 2.11 cm ² / m ø8.0 c/20 (2.51 cm ² / m) M = 372.00 kgf.m/ m F = 0.94 tf fiss = 0.07 mm	A's = 1.10 cm ² / m ø6.3 c/20 (1.56 cm ² / m) M = 0.00 kgf.m/ m F = 0.94 tf fiss = 0.00 mm	vsd = 2.23 tf/m vr1 = 6.19 tf/m Modelo I vr2 = 41.22 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² / m
	Y	bw = 100 .0 cm h = 10. 0 cm	Md = 529 kgf. m/m As = 1.84 cm ² / m A's = 0.00 cm ² / m		Fd = 1.98 tf Situaçã o: GE As = 2.17 cm ² / m A's = 0.00 cm ² / m	bw = 100 .0 cm h = 10. 0 cm	Md = 330 kgf. m/m As = 1.09 cm ² / m A's = 0.00 cm ² / m		Fd = 1.98 tf Situaçã o: GE As = 1.41 cm ² / m A's = 0.00 cm ² / m	As = 2.17 cm ² / m ø8.0 c/20 (2.51 cm ² / m) M = 123.25 kgf.m/ m F = 1.12 tf fiss = 0.01 mm	A's = 1.28 cm ² / m ø6.3 c/20 (1.56 cm ² / m) M = 43.29 kgf.m/ m F = 1.12 tf fiss = 0.01 mm	vsd = 2.61 tf/m vr1 = 5.63 tf/m vr2 = 36.57 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² / m
LB9 7	X	bw = 100 .0 cm h = 10. 0 cm	Md = 1561 kgf. m/m As = 5.25 cm ² / m A's = 0.00 cm ² / m	Fd = 0.75 tf Situação : GE As = 5.14 cm ² / m A's = 0.00 cm ² / m	Fd = 0.49 tf Situaçã o: GE As = 5.32 cm ² / m A's = 0.00 cm ² / m	bw = 100 .0 cm h = 10. 0 cm	Md = 985 kgf. m/m As = 3.16 cm ² / m A's = 0.00 cm ² / m	Fd = 0.75 tf Situação : GE As = 3.05 cm ² / m A's = 0.00 cm ² / m	Fd = 0.49 tf Situaçã o: GE As = 3.23 cm ² / m A's = 0.00 cm ² / m	As = 5.32 cm ² / m ø12.5 c/20 (6.14 cm ² / m) M = 567.16 kgf.m/ m F = 0.28 tf fiss = 0.04 mm	A's = 3.14 cm ² / m ø10.0 c/20 (3.93 cm ² / m) M = 0.00 kgf.m/ m F = 0.28 tf fiss = 0.00 mm	vsd = 2.66 tf/m vr1 = 6.92 tf/m Modelo I vr2 = 39.91 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² / m
	Y	bw = 100 .0 cm	Md = 1532 kgf. m/m	Fd = 0.40 tf Situação : GE	Fd = 1.34 tf Situaçã o: GE	bw = 100 .0 cm	Md = 999 kgf. m/m		Fd = 1.34 tf Situaçã o: GE	As = 6.68 cm ² / m ø12.5 c/18	A's = 4.00 cm ² / m ø10.0 c/19	vsd = 2.99 tf/m vr1 = 6.22 tf/m

		h = 10. 0 cm	As = 6.45 cm ² / m A's = 0.00 cm ² / m	As = 6.37 cm ² / m A's = 0.00 cm ² / m	As = 6.68 cm ² / m A's = 0.00 cm ² / m	h = 10. 0 cm	As = 3.76 cm ² / m A's = 0.00 cm ² / m		As = 3.99 cm ² / m A's = 0.00 cm ² / m	(6.82 cm ² / m) M = 397.48 kgf.m/ m F = 0.76 tf fiss = 0.02 mm	(4.13 cm ² / m) M = 0.00 kgf.m/ m F = 0.76 tf fiss = 0.00 mm	vr2 = 32.65 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² / m
LB9 8	X	bw = 100 .0 cm h = 10. 0 cm	Md = 1394 kgf. m/m As = 4.56 cm ² / m A's = 0.00 cm ² / m	Fd = 0.33 tf Situação : GE As = 4.51 cm ² / m A's = 0.00 cm ² / m	Fd = 0.24 tf Situaçã o: GE As = 4.59 cm ² / m A's = 0.00 cm ² / m	bw = 100 .0 cm h = 10. 0 cm	Md = 847 kgf. m/m As = 2.66 cm ² / m A's = 0.00 cm ² / m	Fd = 0.33 tf Situação : GE As = 2.61 cm ² / m A's = 0.00 cm ² / m	Fd = 0.24 tf Situaçã o: GE As = 2.69 cm ² / m A's = 0.00 cm ² / m	As = 4.59 cm ² / m ø10.0 c/17 (4.62 cm ² / m) M = 544.88 kgf.m/ m F = 0.14 tf fiss = 0.05 mm	A's = 2.67 cm ² / m ø8.0 c/18 (2.79 cm ² / m) M = 0.00 kgf.m/ m F = 0.14 tf fiss = 0.00 mm	vsd = 2.45 tf/m vr1 = 6.64 tf/m Modelo I vr2 = 40.64 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² / m
	Y	bw = 100 .0 cm h = 10. 0 cm	Md = 1380 kgf. m/m As = 5.46 cm ² / m A's = 0.00 cm ² / m	Fd = 1.21 tf Situação : GE As = 5.25 cm ² / m A's = 0.00 cm ² / m	Fd = 0.05 tf Situaçã o: GE As = 5.46 cm ² / m A's = 0.00 cm ² / m	bw = 100 .0 cm h = 10. 0 cm	Md = 855 kgf. m/m As = 3.08 cm ² / m A's = 0.00 cm ² / m	Fd = 1.21 tf Situação : GE As = 2.88 cm ² / m A's = 0.00 cm ² / m	Fd = 0.05 tf Situaçã o: GE As = 3.09 cm ² / m A's = 0.00 cm ² / m	As = 5.46 cm ² / m ø12.5 c/20 (6.14 cm ² / m) M = 366.79 kgf.m/ m F = 0.03 tf fiss = 0.02 mm	A's = 3.09 cm ² / m ø10.0 c/20 (3.93 cm ² / m) M = 2.30 kgf.m/ m F = 0.03 tf fiss = 0.00 mm	vsd = 2.86 tf/m vr1 = 6.23 tf/m vr2 = 34.10 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² / m
LB9 9	X	bw = 100 .0 cm h = 10. 0 cm	Md = 1460 kgf. m/m As = 4.79 cm ² / m	Fd = 0.22 tf Situação : GE As = 4.76 cm ² / m A's = 0.00 cm ² / m	Fd = 0.37 tf Situaçã o: GE As = 4.84 cm ² / m A's = 0.00 cm ² / m	bw = 100 .0 cm h = 10. 0 cm	Md = 948 kgf. m/m As = 3.03 cm ² / m	Fd = 0.22 tf Situação : GE As = 3.00 cm ² / m A's = 0.00 cm ² / m	Fd = 0.37 tf Situaçã o: GE As = 3.09 cm ² / m A's = 0.00 cm ² / m	As = 4.84 cm ² / m ø10.0 c/16 (4.91 cm ² / m) M = 567.48	A's = 3.04 cm ² / m ø8.0 c/16 (3.14 cm ² / m) M = 0.00	vsd = 2.55 tf/m vr1 = 6.71 tf/m Modelo I vr2 = 40.64 tf/m vsw = 0.00 tf/m

			A's = 0.00 cm²/ m				A's = 0.00 cm²/ m			kgf.m/ m F = 0.19 tf fiss = 0.05 mm	kgf.m/ m F = 0.19 tf fiss = 0.00 mm	asw = 0.00 cm²/m
	Y	bw = 100 .0 cm h = 10. 0 cm	Md = 1425 kgf. m/m As = 5.65 cm²/ m A's = 0.00 cm²/ m	Fd = 0.29 tf Situação : GE As = 5.60 cm²/m A's = 0.00 cm²/m	Fd = 0.68 tf Situaçã o: GE As = 5.77 cm²/m A's = 0.00 cm²/m	bw = 100 .0 cm h = 10. 0 cm	Md = 914 kgf. m/m As = 3.42 cm²/ m A's = 0.00 cm²/ m		Fd = 0.68 tf Situaçã o: GE As = 3.53 cm²/m A's = 0.00 cm²/m	As = 5.77 cm²/m ø12.5 c/20 (6.14 cm²/m) M = 353.58 kgf.m/ m F = 0.35 tf fiss = 0.02 mm	A's = 3.44 cm²/m ø10.0 c/20 (3.93 cm²/m) M = 0.74 kgf.m/ m F = 0.35 tf fiss = 0.00 mm	vsd = 2.86 tf/m vrd1 = 6.23 tf/m vrd2 = 34.10 tf/m vsw = 0.00 tf/m asw = 0.00 cm²/m
LB1 00	X	bw = 10. 0 cm h = 17. 0 cm bf = 40. 0 cm hf = 5.0 cm	Md = 215 kgf. m/N As = 0.27 cm²/ N A's = 0.00 cm²/ N	Fd = 0.27 tf/N Situação : GE As = 0.03 cm²/N A's = 0.00 cm²/N	Fd = 0.39 tf/N Situaçã o: GE As = 0.10 cm²/N A's = 0.00 cm²/N	bw = 10. 0 cm h = 17. 0 cm				As = 0.48 cm²/N (TR 12645 - 0.39 cm²/N) 1ø5.0 c/N (0.20 cm²/N) M = 31.06 kgf.m/ N F = 0.21 tf/N fiss = 0.00 mm		vsd = 0.18 tf/N vrd1 = 1.12 tf/N Modelo I vrd2 = 8.71 tf/N vsw = 0.00 tf/N asw = 0.00 cm²/m
LB1 01	X	bw = 10. 0 cm h = 17. 0 cm	Md = 215 kgf. m/N As = 0.27 cm²/ N	Fd = 0.22 tf/N Situação : GE As = 0.21 cm²/N	Fd = 0.58 tf/N Situaçã o: GE As = 0.29 cm²/N	bw = 10. 0 cm h = 17. 0 cm				As = 0.48 cm²/N (TR 12645 - 0.39 cm²/N) 1ø5.0 c/N		vsd = 0.36 tf/N vrd1 = 1.12 tf/N Modelo I vrd2 = 8.71 tf/N vsw = 0.00 tf/N

		bf = 40.0 cm hf = 5.0 cm	A's = 0.00 cm ² /N	A's = 0.00 cm ² /N	A's = 0.00 cm ² /N					(0.20 cm ² /N) M = 125.09 kgf.m/N F = 0.32 tf/N fiss = 0.02 mm		asw = 0.00 cm ² /m
LB1 02	X	bw = 10.0 cm h = 17.0 cm bf = 40.0 cm hf = 5.0 cm	Md = 233 kgf.m/N As = 0.29 cm ² /N A's = 0.00 cm ² /N	Fd = 0.03 tf/N Situação : GE As = 0.29 cm ² /N A's = 0.00 cm ² /N	Fd = 0.04 tf/N Situaçã o: GE As = 0.29 cm ² /N A's = 0.00 cm ² /N	bw = 10.0 cm h = 17.0 cm				As = 0.48 cm ² /N (TR 12645 - 0.39 cm ² /N) 1ø5.0 c/N (0.20 cm ² /N) M = 155.32 kgf.m/N F = 0.02 tf/N fiss = 0.02 mm		vsd = 0.39 tf/N vrd1 = 1.12 tf/N Modelo I vrd2 = 8.71 tf/N vsw = 0.00 tf/N asw = 0.00 cm ² /m
LB1 03	X	bw = 10.0 cm h = 17.0 cm bf = 40.0 cm hf = 5.0 cm	Md = 221 kgf.m/N As = 0.27 cm ² /N A's = 0.00 cm ² /N	Fd = 0.02 tf/N Situação : GE As = 0.27 cm ² /N A's = 0.00 cm ² /N	Fd = 0.09 tf/N Situaçã o: GE As = 0.28 cm ² /N A's = 0.00 cm ² /N	bw = 10.0 cm h = 17.0 cm				As = 0.48 cm ² /N (TR 12645 - 0.39 cm ² /N) 1ø5.0 c/N (0.20 cm ² /N) M = 146.97 kgf.m/N F = 0.05 tf/N		vsd = 0.37 tf/N vrd1 = 1.12 tf/N Modelo I vrd2 = 8.71 tf/N vsw = 0.00 tf/N asw = 0.00 cm ² /m

										fiss = 0.02 mm		
LB1 04	X	bw = 10.0 cm h = 17.0 cm bf = 40.0 cm hf = 5.0 cm	Md = 234 kgf. m/N As = 0.29 cm ² / N A's = 0.00 cm ² / N	Fd = 0.02 tf/N Situação : GE As = 0.29 cm ² / N A's = 0.00 cm ² / N	Fd = 0.09 tf/N Situaçã o: GE As = 0.30 cm ² / N A's = 0.00 cm ² / N	bw = 10.0 cm h = 17.0 cm				As = 0.48 cm ² / N (TR 12645 - 0.39 cm ² / N) 1ø5.0 c/N (0.20 cm ² / N) M = 155.74 kgf.m/ N F = 0.05 tf/N fiss = 0.02 mm		vsd = 0.39 tf/N vrd1 = 1.12 tf/N Modelo I vrd2 = 8.71 tf/N vsw = 0.00 tf/N asw = 0.00 cm ² /m
LB1 05	X	bw = 10.0 cm h = 17.0 cm bf = 40.0 cm hf = 5.0 cm	Md = 257 kgf. m/N As = 0.32 cm ² / N A's = 0.00 cm ² / N	Fd = 0.03 tf/N Situação : GE As = 0.32 cm ² / N A's = 0.00 cm ² / N	Fd = 0.02 tf/N Situaçã o: GE As = 0.32 cm ² / N A's = 0.00 cm ² / N	bw = 10.0 cm h = 17.0 cm				As = 0.48 cm ² / N (TR 12645 - 0.39 cm ² / N) 1ø5.0 c/N (0.20 cm ² / N) M = 171.53 kgf.m/ N F = 0.01 tf/N fiss = 0.03 mm		vsd = 0.43 tf/N vrd1 = 1.12 tf/N Modelo I vrd2 = 8.71 tf/N vsw = 0.00 tf/N asw = 0.00 cm ² /m
LB1 06	X	bw = 10.0 cm h = 17.0 cm	Md = 228 kgf. m/N As = 0.28 cm ² / N	Fd = 0.01 tf/N Situação : GE As = 0.28 cm ² / N	Fd = 0.12 tf/N Situaçã o: GE As = 0.30 cm ² / N	bw = 10.0 cm h = 17.0 cm				As = 0.48 cm ² / N (TR 12645 - 0.39 cm ² / N)		vsd = 0.38 tf/N vrd1 = 1.12 tf/N Modelo I vrd2 = 8.71 tf/N

		0 cm bf = 40. 0 cm hf = 5.0 cm	cm ² / N A's = 0.00 cm ² / N	A's = 0.00 cm ² /N	A's = 0.00 cm ² /N	0 cm				1ø5.0 c/N (0.20 cm ² /N) M = 152.25 kgf.m/ N F = 0.07 tf/N fiss = 0.02 mm		vsw = 0.00 tf/N asw = 0.00 cm ² /m
LB1 07	X	bw = 10. 0 cm h = 17. 0 cm bf = 40. 0 cm hf = 5.0 cm	Md = 215 kgf. m/N As = 0.27 cm ² / N A's = 0.00 cm ² / N	Fd = 0.08 tf/N Situação : GE As = 0.24 cm ² /N A's = 0.00 cm ² /N	Fd = 0.09 tf/N Situaçã o: GE As = 0.26 cm ² /N A's = 0.00 cm ² /N	bw = 10. 0 cm h = 17. 0 cm				As = 0.48 cm ² /N (TR 12645 - 0.39 cm ² /N) 1ø5.0 c/N (0.20 cm ² /N) M = 134.74 kgf.m/ N F = 0.05 tf/N fiss = 0.02 mm		vsd = 0.37 tf/N vrd1 = 1.12 tf/N Modelo I vrd2 = 8.71 tf/N vsw = 0.00 tf/N asw = 0.00 cm ² /m
LB1 08	X	bw = 10. 0 cm h = 17. 0 cm bf = 40. 0 cm hf = 5.0 cm	Md = 234 kgf. m/N As = 0.29 cm ² / N A's = 0.00 cm ² / N	Fd = 0.56 tf/N Situação : GE As = 0.23 cm ² /N A's = 0.00 cm ² /N	Fd = 1.21 tf/N Situaçã o: GE As = 0.42 cm ² /N A's = 0.00 cm ² /N	bw = 10. 0 cm h = 17. 0 cm				As = 0.48 cm ² /N (TR 12645 - 0.39 cm ² /N) 1ø5.0 c/N (0.20 cm ² /N) M = 155.89 kgf.m/ N F = 0.68 tf/N		vsd = 0.39 tf/N vrd1 = 1.12 tf/N Modelo I vrd2 = 8.71 tf/N vsw = 0.00 tf/N asw = 0.00 cm ² /m

										fiss = 0.05 mm		
LB1 09	X	bw = 10.0 cm h = 17.0 cm bf = 40.0 cm hf = 5.0 cm	Md = 222 kgf. m/N As = 0.28 cm ² / N A's = 0.00 cm ² / N	Fd = 0.79 tf/N Situação : GE As = 0.19 cm ² / N A's = 0.00 cm ² / N	Fd = 0.08 tf/N Situaã o: GE As = 0.28 cm ² / N A's = 0.00 cm ² / N	bw = 10.0 cm h = 17.0 cm				As = 0.48 cm ² / N (TR 12645 - 0.39 cm ² / N) 1ø5.0 c/N (0.20 cm ² / N) M = 148.01 kgf.m/ N F = 0.04 tf/N fiss = 0.02 mm		vsd = 0.37 tf/N vrd1 = 1.12 tf/N Modelo I vrd2 = 8.71 tf/N vsw = 0.00 tf/N asw = 0.00 cm ² /m
LB1 10	X	bw = 10.0 cm h = 17.0 cm bf = 40.0 cm hf = 5.0 cm	Md = 225 kgf. m/N As = 0.28 cm ² / N A's = 0.00 cm ² / N	Fd = 1.17 tf/N Situação : GE As = 0.16 cm ² / N A's = 0.00 cm ² / N	Fd = 0.31 tf/N Situaã o: GE As = 0.31 cm ² / N A's = 0.00 cm ² / N	bw = 10.0 cm h = 17.0 cm				As = 0.48 cm ² / N (TR 12645 - 0.39 cm ² / N) 1ø5.0 c/N (0.20 cm ² / N) M = 150.21 kgf.m/ N F = 0.17 tf/N fiss = 0.03 mm		vsd = 0.38 tf/N vrd1 = 1.12 tf/N Modelo I vrd2 = 8.71 tf/N vsw = 0.00 tf/N asw = 0.00 cm ² /m
LB1 11	X	bw = 100.0 cm h = 10.0 cm	Md = 373 kgf. m/m As = 0.94		Fd = 1.36 tf Situaã o: GE As = 0.75 cm ² /m	bw = 100.0 cm h = 10.0 cm				As = 1.01 cm ² /m ø5.0 c/19 (1.03 cm ² /m)		vsd = 1.62 tf/m vrd1 = 5.93 tf/m Modelo I vrd2 = 42.09 tf/m

		0 cm	cm ² / m A's = 0.00 cm ² / m		A's = 0.00 cm ² /m	0 cm				M = 144.42 kgf.m/ m F = 0.77 tf fiss = 0.06 mm		vsw = 0.00 tf/m asw = 0.00 cm ² /m
	Y	bw = 100 .0 cm h = 10. 0 cm	Md = 373 kgf. m/m As = 1.00 cm ² / m A's = 0.00 cm ² / m	Fd = 0.31 tf Situação : GE As = 0.72 cm ² /m A's = 0.00 cm ² /m	Fd = 0.63 tf Situaçã o: GE As = 0.84 cm ² /m A's = 0.00 cm ² /m	bw = 100 .0 cm h = 10. 0 cm				As = 1.01 cm ² /m ø5.0 c/19 (1.03 cm ² /m) M = 175.58 kgf.m/ m F = 0.36 tf fiss = 0.09 mm		vsd = 1.68 tf/m vrd1 = 5.59 tf/m vrd2 = 39.18 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² /m
LB1 12	X	bw = 100 .0 cm h = 10. 0 cm	Md = 517 kgf. m/m As = 1.60 cm ² / m A's = 0.00 cm ² / m	Fd = 0.17 tf Situação : GE As = 1.58 cm ² /m A's = 0.00 cm ² /m	Fd = 0.75 tf Situaçã o: GE As = 1.71 cm ² /m A's = 0.00 cm ² /m	bw = 100 .0 cm h = 10. 0 cm				As = 1.71 cm ² /m ø8.0 c/20 (2.51 cm ² /m) M = 319.30 kgf.m/ m F = 0.42 tf fiss = 0.04 mm		vsd = 1.64 tf/m vrd1 = 6.19 tf/m Modelo I vrd2 = 41.22 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² /m
	Y	bw = 100 .0 cm h = 10. 0 cm	Md = 434 kgf. m/m As = 1.48 cm ² / m A's = 0.00	Fd = 0.06 tf Situação : GE As = 1.47 cm ² /m A's = 0.00 cm ² /m	Fd = 0.31 tf Situaçã o: GE As = 1.53 cm ² /m A's = 0.00 cm ² /m	bw = 100 .0 cm h = 10. 0 cm				As = 1.53 cm ² /m ø6.3 c/20 (1.56 cm ² /m) M = 187.56 kgf.m/ m		vsd = 2.23 tf/m vrd1 = 5.46 tf/m vrd2 = 37.06 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² /m

			cm ² / m							F = 0.18 tf fiss = 0.04 mm		
LB1 13	X	bw = 100.0 cm h = 10.0 cm	Md = 492 kgf. m/m As = 1.50 cm ² / m A's = 0.00 cm ² / m	Fd = 0.22 tf Situação : GE As = 1.47 cm ² / m A's = 0.00 cm ² / m	Fd = 0.16 tf Situaçã o: GE As = 1.52 cm ² / m A's = 0.00 cm ² / m	bw = 100.0 cm h = 10.0 cm				As = 1.52 cm ² / m ø6.3 c/20 (1.56 cm ² / m) M = 299.33 kgf.m/ m F = 0.09 tf fiss = 0.07 mm		vsd = 1.63 tf/m vrd1 = 6.02 tf/m Modelo I vrd2 = 41.71 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² / m
	Y	bw = 100.0 cm h = 10.0 cm	Md = 424 kgf. m/m As = 1.41 cm ² / m A's = 0.00 cm ² / m	Fd = 0.05 tf Situação : GE As = 1.40 cm ² / m A's = 0.00 cm ² / m	Fd = 0.16 tf Situaçã o: GE As = 1.44 cm ² / m A's = 0.00 cm ² / m	bw = 100.0 cm h = 10.0 cm				As = 1.44 cm ² / m ø6.3 c/20 (1.56 cm ² / m) M = 171.93 kgf.m/ m F = 0.09 tf fiss = 0.03 mm		vsd = 2.19 tf/m vrd1 = 5.58 tf/m vrd2 = 38.05 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² / m
LB1 14	X	bw = 100.0 cm h = 10.0 cm	Md = 504 kgf. m/m As = 1.54 cm ² / m A's = 0.00 cm ² / m	Fd = 0.22 tf Situação : GE As = 1.51 cm ² / m A's = 0.00 cm ² / m	Fd = 0.07 tf Situaçã o: GE As = 1.55 cm ² / m A's = 0.00 cm ² / m	bw = 100.0 cm h = 10.0 cm				As = 1.55 cm ² / m ø6.3 c/20 (1.56 cm ² / m) M = 310.94 kgf.m/ m F = 0.03 tf fiss = 0.08 mm		vsd = 1.65 tf/m vrd1 = 6.02 tf/m Modelo I vrd2 = 41.71 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² / m

	Y	bw = 100.0 cm h = 10.0 cm	Md = 398 kgf.m/m As = 1.32 cm ² /m A's = 0.00 cm ² /m	Fd = 0.26 tf Situação : GE As = 1.28 cm ² /m A's = 0.00 cm ² /m	Fd = 0.02 tf Situação : GE As = 1.32 cm ² /m A's = 0.00 cm ² /m	bw = 100.0 cm h = 10.0 cm				As = 1.32 cm ² /m ø6.3 c/20 (1.56 cm ² /m) M = 171.54 kgf.m/m F = 0.01 tf fiss = 0.03 mm		vsd = 2.10 tf/m vrd1 = 5.58 tf/m vrd2 = 38.05 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² /m
LB1 15	X	bw = 10.0 cm h = 17.0 cm bf = 40.0 cm hf = 5.0 cm	Md = 215 kgf.m/N As = 0.27 cm ² /N A's = 0.00 cm ² /N	Fd = 0.05 tf/N Situação : GE As = 0.22 cm ² /N A's = 0.00 cm ² /N	Fd = 0.11 tf/N Situação : GE As = 0.24 cm ² /N A's = 0.00 cm ² /N	bw = 10.0 cm h = 17.0 cm				As = 0.48 cm ² /N (TR 12645 - 0.39 cm ² /N) 1ø5.0 c/N (0.20 cm ² /N) M = 121.55 kgf.m/N F = 0.06 tf/N fiss = 0.02 mm		vsd = 0.35 tf/N vrd1 = 1.12 tf/N Modelo I vrd2 = 8.71 tf/N vsw = 0.00 tf/N asw = 0.00 cm ² /m
LB1 16	X	bw = 10.0 cm h = 17.0 cm bf = 40.0 cm hf =	Md = 215 kgf.m/N As = 0.27 cm ² /N A's = 0.00 cm ² /N	Fd = 0.20 tf/N Situação : GE As = 0.20 cm ² /N A's = 0.00 cm ² /N		bw = 10.0 cm h = 17.0 cm				As = 0.48 cm ² /N (TR 12645 - 0.39 cm ² /N) 1ø5.0 c/N (0.20 cm ² /N) M = 115.82 kgf.m/N		vsd = 0.33 tf/N vrd1 = 1.12 tf/N Modelo I vrd2 = 8.71 tf/N vsw = 0.00 tf/N asw = 0.00 cm ² /m

		5.0 cm								F = 0.00 tf/N fiss = 0.01 mm		
LB1 17	X	bw = 10.0 cm h = 17.0 cm bf = 40.0 cm hf = 5.0 cm	Md = 215 kgf. m/N As = 0.27 cm ² / N A's = 0.00 cm ² / N	Fd = 0.21 tf/N Situação : GE As = 0.21 cm ² /N A's = 0.00 cm ² /N		bw = 10.0 cm h = 17.0 cm				As = 0.48 cm ² /N (TR 12645 - 0.39 cm ² /N) 1ø5.0 c/N (0.20 cm ² /N) M = 122.14 kgf.m/ N F = 0.00 tf/N fiss = 0.01 mm		vsd = 0.35 tf/N vrd1 = 1.12 tf/N Modelo I vrd2 = 8.71 tf/N vsw = 0.00 tf/N asw = 0.00 cm ² /m
LB1 18	X	bw = 10.0 cm h = 17.0 cm bf = 40.0 cm hf = 5.0 cm	Md = 215 kgf. m/N As = 0.27 cm ² / N A's = 0.00 cm ² / N	Fd = 0.16 tf/N Situação : GE As = 0.23 cm ² /N A's = 0.00 cm ² /N		bw = 10.0 cm h = 17.0 cm				As = 0.48 cm ² /N (TR 12645 - 0.39 cm ² /N) 1ø5.0 c/N (0.20 cm ² /N) M = 134.21 kgf.m/ N F = 0.00 tf/N fiss = 0.02 mm		vsd = 0.38 tf/N vrd1 = 1.12 tf/N Modelo I vrd2 = 8.71 tf/N vsw = 0.00 tf/N asw = 0.00 cm ² /m
LB1 19	X	bw = 10.0 cm	Md = 215 kgf. m/N	Fd = 0.23 tf/N Situação : GE	Fd = 0.02 tf/N Situaçã o: GE	bw = 10.0 cm				As = 0.48 cm ² /N (TR 12645		vsd = 0.34 tf/N vrd1 = 1.12 tf/N Modelo I

		h = 17. 0 cm bf = 40. 0 cm hf = 5.0 cm	As = 0.27 cm ² / N A's = 0.00 cm ² / N	As = 0.20 cm ² /N A's = 0.00 cm ² /N	As = 0.22 cm ² /N A's = 0.00 cm ² /N	h = 17. 0 cm				- 0.39 cm ² /N) 1ø5.0 c/N (0.20 cm ² /N) M = 119.32 kgf.m/ N F = 0.01 tf/N fiss = 0.01 mm		vr2 = 8.71 tf/N vsw = 0.00 tf/N asw = 0.00 cm ² /m
LB1 20	X	bw = 10. 0 cm h = 17. 0 cm bf = 40. 0 cm hf = 5.0 cm	Md = 215 kgf. m/N As = 0.27 cm ² / N A's = 0.00 cm ² / N	Fd = 0.14 tf/N Situação : GE As = 0.24 cm ² /N A's = 0.00 cm ² /N	Fd = 0.02 tf/N Situaçã o: GE As = 0.26 cm ² /N A's = 0.00 cm ² /N	bw = 10. 0 cm h = 17. 0 cm				As = 0.48 cm ² /N (TR 12645 - 0.39 cm ² /N) 1ø5.0 c/N (0.20 cm ² /N) M = 136.89 kgf.m/ N F = 0.01 tf/N fiss = 0.02 mm		vsd = 0.39 tf/N vr1 = 1.12 tf/N Modelo I vr2 = 8.71 tf/N vsw = 0.00 tf/N asw = 0.00 cm ² /m
LB1 21	X	bw = 10. 0 cm h = 17. 0 cm bf = 40. 0 cm hf = 5.0 cm	Md = 215 kgf. m/N As = 0.27 cm ² / N A's = 0.00 cm ² / N	Fd = 0.05 tf/N Situação : GE As = 0.20 cm ² /N A's = 0.00 cm ² /N	Fd = 0.03 tf/N Situaçã o: GE As = 0.21 cm ² /N A's = 0.00 cm ² /N	bw = 10. 0 cm h = 17. 0 cm				As = 0.48 cm ² /N (TR 12645 - 0.39 cm ² /N) 1ø5.0 c/N (0.20 cm ² /N) M = 109.77 kgf.m/ N		vsd = 0.34 tf/N vr1 = 1.12 tf/N Modelo I vr2 = 8.71 tf/N vsw = 0.00 tf/N asw = 0.00 cm ² /m

		5.0 cm								F = 0.02 tf/N fiss = 0.01 mm		
LB1 22	X	bw = 10.0 cm h = 17.0 cm bf = 40.0 cm hf = 5.0 cm	Md = 215 kgf. m/N As = 0.27 cm ² / N A's = 0.00 cm ² / N	Fd = 0.10 tf/N Situação : GE As = 0.16 cm ² / N A's = 0.00 cm ² / N	Fd = 0.41 tf/N Situaçã o: GE As = 0.21 cm ² / N A's = 0.00 cm ² / N	bw = 10.0 cm h = 17.0 cm				As = 0.48 cm ² / N (TR 12645 - 0.39 cm ² / N) 1ø5.0 c/N (0.20 cm ² / N) M = 89.83 kgf.m/ N F = 0.23 tf/N fiss = 0.01 mm		vsd = 0.31 tf/N vrd1 = 1.12 tf/N Modelo I vrd2 = 8.71 tf/N vsw = 0.00 tf/N asw = 0.00 cm ² /m
LB1 23	X	bw = 10.0 cm h = 17.0 cm bf = 40.0 cm hf = 5.0 cm	Md = 215 kgf. m/N As = 0.27 cm ² / N A's = 0.00 cm ² / N		Fd = 0.60 tf/N Situaçã o: PE As = 0.07 cm ² / N A's = 0.05 cm ² / N	bw = 10.0 cm h = 17.0 cm				As = 0.48 cm ² / N (TR 12645 - 0.39 cm ² / N) 1ø5.0 c/N (0.20 cm ² / N) M = 3.98 kgf.m/ N F = 0.33 tf/N fiss = 0.00 mm		vsd = 0.06 tf/N vrd1 = 1.12 tf/N Modelo I vrd2 = 8.71 tf/N vsw = 0.00 tf/N asw = 0.00 cm ² /m
LB1 24	X	bw = 10.0 cm	Md = 215 kgf. m/N	Fd = 0.09 tf/N Situação : GE	Fd = 0.25 tf/N Situaçã o: GE	bw = 10.0 cm				As = 0.48 cm ² / N (TR 12645		vsd = 0.19 tf/N vrd1 = 1.12 tf/N Modelo I

		h = 17. 0 cm bf = 40. 0 cm hf = 5.0 cm	As = 0.27 cm ² / N A's = 0.00 cm ² / N	As = 0.06 cm ² /N A's = 0.00 cm ² /N	As = 0.10 cm ² /N A's = 0.00 cm ² /N	h = 17. 0 cm				- 0.39 cm ² /N) 1ø5.0 c/N (0.20 cm ² /N) M = 38.91 kgf.m/ N F = 0.14 tf/N fiss = 0.00 mm		vr2 = 8.71 tf/N vsw = 0.00 tf/N asw = 0.00 cm ² /m
LB1 25	X	bw = 10. 0 cm h = 17. 0 cm bf = 40. 0 cm hf = 5.0 cm	Md = 215 kgf. m/N As = 0.27 cm ² / N A's = 0.00 cm ² / N	Fd = 0.08 tf/N Situação : GE As = 0.02 cm ² /N A's = 0.00 cm ² /N	Fd = 0.37 tf/N Situaçã o: PE As = 0.06 cm ² /N A's = 0.01 cm ² /N	bw = 10. 0 cm h = 17. 0 cm				As = 0.48 cm ² /N (TR 12645 - 0.39 cm ² /N) 1ø5.0 c/N (0.20 cm ² /N) M = 14.22 kgf.m/ N F = 0.21 tf/N fiss = 0.00 mm		vsd = 0.12 tf/N vr1 = 1.12 tf/N Modelo I vr2 = 8.71 tf/N vsw = 0.00 tf/N asw = 0.00 cm ² /m
LB1 26	X	bw = 10. 0 cm h = 17. 0 cm bf = 40. 0 cm hf = 5.0 cm	Md = 215 kgf. m/N As = 0.27 cm ² / N A's = 0.00 cm ² / N	Fd = 0.74 tf/N Situação : GE As = 0.14 cm ² /N A's = 0.00 cm ² /N	Fd = 0.10 tf/N Situaçã o: GE As = 0.23 cm ² /N A's = 0.00 cm ² /N	bw = 10. 0 cm h = 17. 0 cm				As = 0.48 cm ² /N (TR 12645 - 0.39 cm ² /N) 1ø5.0 c/N (0.20 cm ² /N) M = 115.30 kgf.m/ N		vsd = 0.33 tf/N vr1 = 1.12 tf/N Modelo I vr2 = 8.71 tf/N vsw = 0.00 tf/N asw = 0.00 cm ² /m

		5.0 cm								F = 0.06 tf/N fiss = 0.01 mm		
LB1 27	X	bw = 10.0 cm h = 17.0 cm bf = 40.0 cm hf = 5.0 cm	Md = 215 kgf. m/N As = 0.27 cm ² / N A's = 0.00 cm ² / N	Fd = 0.93 tf/N Situação : GE As = 0.12 cm ² / N A's = 0.00 cm ² / N	Fd = 0.29 tf/N Situaçã o: GE As = 0.25 cm ² / N A's = 0.00 cm ² / N	bw = 10.0 cm h = 17.0 cm				As = 0.48 cm ² / N (TR 12645 - 0.39 cm ² / N) 1ø5.0 c/N (0.20 cm ² / N) M = 117.66 kgf.m/ N F = 0.16 tf/N fiss = 0.02 mm		vsd = 0.33 tf/N vrd1 = 1.12 tf/N Modelo I vrd2 = 8.71 tf/N vsw = 0.00 tf/N asw = 0.00 cm ² / m
LB1 28	X	bw = 100.0 cm h = 10.0 cm	Md = 649 kgf. m/m As = 2.02 cm ² / m A's = 0.00 cm ² / m	Fd = 0.72 tf Situação : GE As = 1.91 cm ² / m A's = 0.00 cm ² / m	Fd = 0.19 tf Situaçã o: GE As = 2.05 cm ² / m A's = 0.00 cm ² / m	bw = 100.0 cm h = 10.0 cm				As = 2.05 cm ² / m ø8.0 c/20 (2.51 cm ² / m) M = 400.33 kgf.m/ m F = 0.07 tf fiss = 0.06 mm		vsd = 1.81 tf/m vrd1 = 6.19 tf/m Modelo I vrd2 = 41.22 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² / m
	Y	bw = 100.0 cm h = 10.0 cm	Md = 488 kgf. m/m As = 1.69 cm ² / m		Fd = 1.04 tf Situaçã o: GE As = 1.87 cm ² / m A's = 0.00 cm ² / m	bw = 100.0 cm h = 10.0 cm				As = 1.87 cm ² / m ø8.0 c/20 (2.51 cm ² / m) M = 185.01		vsd = 2.24 tf/m vrd1 = 5.63 tf/m vrd2 = 36.57 tf/m vsw = 0.00 tf/m

			A's = 0.00 cm ² / m							kgf.m/ m F = 0.58 tf fiss = 0.02 mm		asw = 0.00 cm ² /m
LB1 29	X	bw = 100 .0 cm h = 10. 0 cm	Md = 373 kgf. m/m As = 0.94 cm ² / m A's = 0.00 cm ² / m	Fd = 0.93 tf Situação : GE As = 0.57 cm ² /m A's = 0.00 cm ² /m	Fd = 0.05 tf Situaçã o: GE As = 0.69 cm ² /m A's = 0.00 cm ² /m	bw = 100 .0 cm h = 10. 0 cm				As = 1.01 cm ² /m ø5.0 c/19 (1.03 cm ² /m) M = 167.83 kgf.m/ m F = 0.01 tf fiss = 0.06 mm		vsd = 1.29 tf/m vrd1 = 5.93 tf/m Modelo I vrd2 = 42.09 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² /m
	Y	bw = 100 .0 cm h = 10. 0 cm	Md = 373 kgf. m/m As = 1.00 cm ² / m A's = 0.00 cm ² / m	Fd = 0.15 tf Situação : GE As = 0.38 cm ² /m A's = 0.00 cm ² /m	Fd = 0.27 tf Situaçã o: GE As = 0.44 cm ² /m A's = 0.00 cm ² /m	bw = 100 .0 cm h = 10. 0 cm				As = 1.01 cm ² /m ø5.0 c/19 (1.03 cm ² /m) M = 93.31 kgf.m/ m F = 0.16 tf fiss = 0.02 mm		vsd = 1.13 tf/m vrd1 = 5.59 tf/m vrd2 = 39.18 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² /m
LB1 30	X	bw = 100 .0 cm h = 10. 0 cm	Md = 725 kgf. m/m As = 2.26 cm ² / m A's = 0.00 cm ² / m	Fd = 0.65 tf Situação : GE As = 2.17 cm ² /m A's = 0.00 cm ² /m	Fd = 0.09 tf Situaçã o: GE As = 2.28 cm ² /m A's = 0.00 cm ² /m	bw = 100 .0 cm h = 10. 0 cm				As = 2.28 cm ² /m ø8.0 c/20 (2.51 cm ² /m) M = 447.78 kgf.m/ m F = 0.04 tf		vsd = 1.93 tf/m vrd1 = 6.19 tf/m Modelo I vrd2 = 41.22 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² /m

										fiss = 0.08 mm		
	Y	bw = 100.0 cm h = 10.0 cm	Md = 640 kgf. m/m As = 2.24 cm ² /m A's = 0.00 cm ² /m	Fd = 0.41 tf Situação : GE As = 2.17 cm ² /m A's = 0.00 cm ² /m	Fd = 0.03 tf Situação : GE As = 2.24 cm ² /m A's = 0.00 cm ² /m	bw = 100.0 cm h = 10.0 cm				As = 2.24 cm ² /m ø8.0 c/20 (2.51 cm ² /m) M = 206.85 kgf.m/m F = 0.02 tf fiss = 0.02 mm		vsd = 2.40 tf/m vrd1 = 5.63 tf/m vrd2 = 36.57 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² /m
LB1 31	X	bw = 100.0 cm h = 10.0 cm	Md = 1601 kgf. m/m As = 5.40 cm ² /m A's = 0.00 cm ² /m	Fd = 0.27 tf Situação : GE As = 5.36 cm ² /m A's = 0.00 cm ² /m	Fd = 0.38 tf Situação : GE As = 5.45 cm ² /m A's = 0.00 cm ² /m	bw = 100.0 cm h = 10.0 cm	Md = 1441 kgf. m/m As = 4.72 cm ² /m A's = 0.00 cm ² /m	Fd = 0.27 tf Situação : GE As = 4.69 cm ² /m A's = 0.00 cm ² /m	Fd = 0.38 tf Situação : GE As = 4.78 cm ² /m A's = 0.00 cm ² /m	As = 5.45 cm ² /m ø12.5 c/20 (6.14 cm ² /m) M = 566.21 kgf.m/m F = 0.22 tf fiss = 0.04 mm	A's = 4.72 cm ² /m ø10.0 c/16 (4.91 cm ² /m) M = 0.00 kgf.m/m F = 0.22 tf fiss = 0.00 mm	vsd = 2.92 tf/m vrd1 = 6.92 tf/m Modelo I vrd2 = 39.91 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² /m
	Y	bw = 100.0 cm h = 10.0 cm	Md = 1542 kgf. m/m As = 6.49 cm ² /m A's = 0.00 cm ² /m	Fd = 0.53 tf Situação : GE As = 6.40 cm ² /m A's = 0.00 cm ² /m	Fd = 0.07 tf Situação : GE As = 6.51 cm ² /m A's = 0.00 cm ² /m	bw = 100.0 cm h = 10.0 cm	Md = 1010 kgf. m/m As = 3.80 cm ² /m A's = 0.00 cm ² /m	Fd = 0.53 tf Situação : GE As = 3.71 cm ² /m A's = 0.00 cm ² /m	Fd = 0.07 tf Situação : GE As = 3.81 cm ² /m A's = 0.00 cm ² /m	As = 6.51 cm ² /m ø12.5 c/18 (6.82 cm ² /m) M = 382.00 kgf.m/m F = 0.04 tf fiss = 0.02 mm	A's = 3.28 cm ² /m ø10.0 c/20 (3.93 cm ² /m) M = 9.41 kgf.m/m F = 0.04 tf fiss = 0.00 mm	vsd = 2.93 tf/m vrd1 = 6.22 tf/m vrd2 = 32.65 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² /m

LB1 32	X	bw = 100.0 cm h = 10.0 cm	Md = 373 kgf. m/m As = 0.94 cm ² / m A's = 0.00 cm ² / m	Fd = 0.11 tf Situação : GE As = 0.56 cm ² / m A's = 0.00 cm ² / m	Fd = 0.09 tf Situação o: GE As = 0.59 cm ² / m A's = 0.00 cm ² / m	bw = 100.0 cm h = 10.0 cm				As = 1.01 cm ² / m ø5.0 c/19 (1.03 cm ² / m) M = 142.73 kgf.m/ m F = 0.04 tf fiss = 0.05 mm	vsd = 1.36 tf/m vrd1 = 5.93 tf/m Modelo I vrd2 = 42.09 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² / m
	Y	bw = 100.0 cm h = 10.0 cm	Md = 373 kgf. m/m As = 1.00 cm ² / m A's = 0.00 cm ² / m	Fd = 0.09 tf Situação : GE As = 0.51 cm ² / m A's = 0.00 cm ² / m	Fd = 0.02 tf Situação o: GE As = 0.52 cm ² / m A's = 0.00 cm ² / m	bw = 100.0 cm h = 10.0 cm				As = 1.01 cm ² / m ø5.0 c/19 (1.03 cm ² / m) M = 120.32 kgf.m/ m F = 0.01 tf fiss = 0.04 mm	vsd = 1.29 tf/m vrd1 = 5.59 tf/m vrd2 = 39.18 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² / m
LB1 33	X	bw = 100.0 cm h = 10.0 cm	Md = 373 kgf. m/m As = 0.94 cm ² / m A's = 0.00 cm ² / m	Fd = 0.11 tf Situação : GE As = 0.58 cm ² / m A's = 0.00 cm ² / m	Fd = 0.05 tf Situação o: GE As = 0.60 cm ² / m A's = 0.00 cm ² / m	bw = 100.0 cm h = 10.0 cm				As = 1.01 cm ² / m ø5.0 c/19 (1.03 cm ² / m) M = 147.93 kgf.m/ m F = 0.02 tf fiss = 0.05 mm	vsd = 1.34 tf/m vrd1 = 5.93 tf/m Modelo I vrd2 = 42.09 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² / m
	Y	bw = 100.0 cm	Md = 373 kgf. m/m	Fd = 0.14 tf Situação : GE	Fd = 0.54 tf Situação o: GE	bw = 100.0 cm				As = 1.01 cm ² / m ø5.0 c/19	vsd = 1.26 tf/m vrd1 = 5.59 tf/m

		h = 10. 0 cm	As = 1.00 cm ² / m A's = 0.00 cm ² / m	As = 0.47 cm ² /m A's = 0.00 cm ² /m	As = 0.56 cm ² /m A's = 0.00 cm ² /m	h = 10. 0 cm				(1.03 cm ² /m) M = 114.33 kgf.m/ m F = 0.28 tf fiss = 0.04 mm		vr2 = 39.18 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² /m
LB1 34	X	bw = 10. 0 cm h = 17. 0 cm bf = 40. 0 cm hf = 5.0 cm	Md = 215 kgf. m/N As = 0.27 cm ² / N A's = 0.00 cm ² / N	Fd = 0.07 tf/N Situação : GE As = 0.03 cm ² /N A's = 0.00 cm ² /N	Fd = 0.43 tf/N Situaçã o: GE As = 0.09 cm ² /N A's = 0.00 cm ² /N	bw = 10. 0 cm h = 17. 0 cm				As = 0.48 cm ² /N (TR 12645 - 0.39 cm ² /N) 1ø5.0 c/N (0.20 cm ² /N) M = 22.21 kgf.m/ N F = 0.24 tf/N fiss = 0.00 mm		vsd = 0.15 tf/N vr1 = 1.12 tf/N Modelo I vr2 = 8.71 tf/N vsw = 0.00 tf/N asw = 0.00 cm ² /m
LB1 35	X	bw = 10. 0 cm h = 17. 0 cm bf = 40. 0 cm hf = 5.0 cm	Md = 215 kgf. m/N As = 0.27 cm ² / N A's = 0.00 cm ² / N			bw = 10. 0 cm h = 17. 0 cm				As = 0.48 cm ² /N (TR 12645 - 0.39 cm ² /N) 1ø5.0 c/N (0.20 cm ² /N) M = 21.04 kgf.m/ N F = 0.00 tf/N fiss = 0.00 mm		vsd = 0.15 tf/N vr1 = 1.12 tf/N Modelo I vr2 = 8.71 tf/N vsw = 0.00 tf/N asw = 0.00 cm ² /m

LB1 36	X	bw = 100.0 cm h = 10.0 cm	Md = 373 kgf. m/m As = 0.94 cm ² / m A's = 0.00 cm ² / m	Fd = 0.12 tf Situação : GE As = 0.56 cm ² / m A's = 0.00 cm ² / m	Fd = 0.30 tf Situaçã o: GE As = 0.61 cm ² / m A's = 0.00 cm ² / m	bw = 100.0 cm h = 10.0 cm				As = 1.01 cm ² / m ø5.0 c/19 (1.03 cm ² / m) M = 142.63 kgf.m/ m F = 0.16 tf fiss = 0.05 mm	vsd = 0.96 tf/m vrd1 = 5.93 tf/m Modelo I vrd2 = 42.09 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² / m
	Y	bw = 100.0 cm h = 10.0 cm	Md = 373 kgf. m/m As = 1.00 cm ² / m A's = 0.00 cm ² / m	Fd = 0.08 tf Situação : GE As = 0.22 cm ² / m A's = 0.00 cm ² / m	Fd = 0.14 tf Situaçã o: GE As = 0.25 cm ² / m A's = 0.00 cm ² / m	bw = 100.0 cm h = 10.0 cm				As = 1.01 cm ² / m ø5.0 c/19 (1.03 cm ² / m) M = 52.79 kgf.m/ m F = 0.07 tf fiss = 0.01 mm	vsd = 0.73 tf/m vrd1 = 5.59 tf/m vrd2 = 39.18 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² / m
LB1 37	X	bw = 100.0 cm h = 10.0 cm	Md = 373 kgf. m/m As = 0.94 cm ² / m A's = 0.00 cm ² / m	Fd = 0.34 tf Situação : GE As = 0.55 cm ² / m A's = 0.00 cm ² / m	Fd = 0.03 tf Situaçã o: GE As = 0.60 cm ² / m A's = 0.00 cm ² / m	bw = 100.0 cm h = 10.0 cm				As = 1.01 cm ² / m ø5.0 c/19 (1.03 cm ² / m) M = 148.45 kgf.m/ m F = 0.01 tf fiss = 0.05 mm	vsd = 1.15 tf/m vrd1 = 5.93 tf/m Modelo I vrd2 = 42.09 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² / m
	Y	bw = 100.0 cm	Md = 373 kgf. m/m	Fd = 0.07 tf Situação : GE	Fd = 0.59 tf Situaçã o: GE	bw = 100.0 cm				As = 1.01 cm ² / m ø5.0 c/19	vsd = 0.61 tf/m vrd1 = 5.59 tf/m

		h = 10. 0 cm	As = 1.00 cm ² / m A's = 0.00 cm ² / m	As = 0.15 cm ² / m A's = 0.00 cm ² / m	As = 0.23 cm ² / m A's = 0.00 cm ² / m	h = 10. 0 cm				(1.03 cm ² / m) M = 34.61 kgf.m/ m F = 0.32 tf fiss = 0.01 mm		vr2 = 39.18 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² / m
LB1 38	X	bw = 100 .0 cm h = 10. 0 cm	Md = 922 kgf. m/m As = 2.90 cm ² / m A's = 0.00 cm ² / m	Fd = 0.43 tf Situação : GE As = 2.84 cm ² / m A's = 0.00 cm ² / m	Fd = 0.04 tf Situaçã o: GE As = 2.91 cm ² / m A's = 0.00 cm ² / m	bw = 100 .0 cm h = 10. 0 cm	Md = 435 kgf. m/m As = 1.33 cm ² / m A's = 0.00 cm ² / m	Fd = 0.43 tf Situação : GE As = 1.26 cm ² / m A's = 0.00 cm ² / m	Fd = 0.04 tf Situaçã o: GE As = 1.33 cm ² / m A's = 0.00 cm ² / m	As = 2.91 cm ² / m ø8.0 c/17 (2.96 cm ² / m) M = 509.45 kgf.m/ m F = 0.02 tf fiss = 0.08 mm	A's = 1.33 cm ² / m ø6.3 c/20 (1.56 cm ² / m) M = 0.00 kgf.m/ m F = 0.02 tf fiss = 0.00 mm	vsd = 2.02 tf/m vr1 = 6.30 tf/m Modelo I vr2 = 41.22 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² / m
	Y	bw = 100 .0 cm h = 10. 0 cm	Md = 809 kgf. m/m As = 2.86 cm ² / m A's = 0.00 cm ² / m	Fd = 0.85 tf Situação : GE As = 2.72 cm ² / m A's = 0.00 cm ² / m	Fd = 0.66 tf Situaçã o: GE As = 2.97 cm ² / m A's = 0.00 cm ² / m	bw = 100 .0 cm h = 10. 0 cm	Md = 325 kgf. m/m As = 1.08 cm ² / m A's = 0.00 cm ² / m	Fd = 0.85 tf Situação : GE As = 0.94 cm ² / m A's = 0.00 cm ² / m	Fd = 0.66 tf Situaçã o: GE As = 1.18 cm ² / m A's = 0.00 cm ² / m	As = 2.97 cm ² / m ø8.0 c/16 (3.14 cm ² / m) M = 226.08 kgf.m/ m F = 0.36 tf fiss = 0.02 mm	A's = 1.13 cm ² / m ø6.3 c/20 (1.56 cm ² / m) M = 17.86 kgf.m/ m F = 0.36 tf fiss = 0.00 mm	vsd = 2.53 tf/m vr1 = 5.79 tf/m vr2 = 36.57 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² / m
LB1 39	X	bw = 100 .0 cm h = 10. 0 cm	Md = 712 kgf. m/m As = 2.22 cm ² / m	Fd = 0.35 tf Situação : GE As = 2.17 cm ² / m A's = 0.00 cm ² / m	Fd = 0.52 tf Situaçã o: GE As = 2.30 cm ² / m A's = 0.00 cm ² / m	bw = 100 .0 cm h = 10. 0 cm				As = 2.30 cm ² / m ø8.0 c/20 (2.51 cm ² / m) M = 389.39		vsd = 1.97 tf/m vr1 = 6.19 tf/m Modelo I vr2 = 41.22 tf/m vsw = 0.00 tf/m

			A's = 0.00 cm ² / m							kgf.m/ m F = 0.30 tf fiss = 0.06 mm		asw = 0.00 cm ² /m
	Y	bw = 100 .0 cm h = 10. 0 cm	Md = 617 kgf. m/m As = 2.16 cm ² / m A's = 0.00 cm ² / m	Fd = 0.64 tf Situação : GE As = 2.05 cm ² /m A's = 0.00 cm ² /m	Fd = 0.71 tf Situaçã o: GE As = 2.27 cm ² /m A's = 0.00 cm ² /m	bw = 100 .0 cm h = 10. 0 cm	Md = 304 kgf. m/m As = 0.92 cm ² / m A's = 0.00 cm ² / m	Fd = 0.64 tf Situação : GE As = 0.83 cm ² /m A's = 0.00 cm ² /m	Fd = 0.71 tf Situaçã o: GE As = 1.03 cm ² /m A's = 0.00 cm ² /m	As = 2.27 cm ² /m ø8.0 c/20 (2.51 cm ² /m) M = 209.97 kgf.m/ m F = 0.40 tf fiss = 0.02 mm	A's = 0.02 cm ² /m ø5.0 c/20 (0.98 cm ² /m) M = 31.07 kgf.m/ m F = 0.40 tf fiss = 0.00 mm	vsd = 2.26 tf/m vrd1 = 5.63 tf/m vrd2 = 36.57 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² /m
LB1 40	X	bw = 100 .0 cm h = 10. 0 cm	Md = 960 kgf. m/m As = 3.07 cm ² / m A's = 0.00 cm ² / m	Fd = 1.01 tf Situação : GE As = 2.93 cm ² /m A's = 0.00 cm ² /m	Fd = 0.06 tf Situaçã o: GE As = 3.08 cm ² /m A's = 0.00 cm ² /m	bw = 100 .0 cm h = 10. 0 cm	Md = 475 kgf. m/m As = 1.45 cm ² / m A's = 0.00 cm ² / m	Fd = 1.01 tf Situação : GE As = 1.30 cm ² /m A's = 0.00 cm ² /m	Fd = 0.06 tf Situaçã o: GE As = 1.46 cm ² /m A's = 0.00 cm ² /m	As = 3.08 cm ² /m ø10.0 c/20 (3.93 cm ² /m) M = 564.45 kgf.m/ m F = 0.03 tf fiss = 0.07 mm	A's = 1.35 cm ² /m ø6.3 c/20 (1.56 cm ² /m) M = 0.00 kgf.m/ m F = 0.03 tf fiss = 0.00 mm	vsd = 2.06 tf/m vrd1 = 6.47 tf/m Modelo I vrd2 = 40.64 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² /m
	Y	bw = 100 .0 cm h = 10. 0 cm	Md = 828 kgf. m/m As = 3.08 cm ² / m A's = 0.00 cm ² / m		Fd = 0.89 tf Situaçã o: GE As = 3.23 cm ² /m A's = 0.00 cm ² /m	bw = 100 .0 cm h = 10. 0 cm	Md = 381 kgf. m/m As = 1.26 cm ² / m A's = 0.00 cm ² / m	Fd = 1.14 tf Situação : GE As = 1.08 cm ² /m A's = 0.00 cm ² /m	Fd = 0.89 tf Situaçã o: GE As = 1.41 cm ² /m A's = 0.00 cm ² /m	As = 3.23 cm ² /m ø10.0 c/20 (3.93 cm ² /m) M = 215.93 kgf.m/ m F = 0.49 tf	A's = 1.27 cm ² /m ø6.3 c/20 (1.56 cm ² /m) M = 21.01 kgf.m/ m F = 0.49 tf	vsd = 2.59 tf/m vrd1 = 5.77 tf/m vrd2 = 34.83 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² /m

										fiss = 0.02 mm	fiss = 0.00 mm	
LB1 41	X	bw = 100.0 cm h = 10.0 cm	Md = 373 kgf. m/m As = 0.94 cm ² /m A's = 0.00 cm ² /m	Fd = 0.86 tf Situação : GE As = 0.79 cm ² /m A's = 0.00 cm ² /m	Fd = 0.70 tf Situação : GE As = 0.98 cm ² /m A's = 0.00 cm ² /m	bw = 100.0 cm h = 10.0 cm				As = 1.01 cm ² /m ø5.0 c/19 (1.03 cm ² /m) M = 220.46 kgf.m/m F = 0.39 tf fiss = 0.12 mm		vsd = 1.60 tf/m vrd1 = 5.93 tf/m Modelo I vrd2 = 42.09 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² /m
	Y	bw = 100.0 cm h = 10.0 cm	Md = 373 kgf. m/m As = 1.00 cm ² /m A's = 0.00 cm ² /m	Fd = 0.54 tf Situação : GE As = 0.80 cm ² /m A's = 0.00 cm ² /m	Fd = 0.07 tf Situação : GE As = 0.88 cm ² /m A's = 0.00 cm ² /m	bw = 100.0 cm h = 10.0 cm				As = 1.01 cm ² /m ø5.0 c/19 (1.03 cm ² /m) M = 203.24 kgf.m/m F = 0.04 tf fiss = 0.10 mm		vsd = 1.84 tf/m vrd1 = 5.59 tf/m vrd2 = 39.18 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² /m
LB1 42	X	bw = 100.0 cm h = 10.0 cm	Md = 373 kgf. m/m As = 0.94 cm ² /m A's = 0.00 cm ² /m	Fd = 0.33 tf Situação : GE As = 0.88 cm ² /m A's = 0.00 cm ² /m	Fd = 0.36 tf Situação : GE As = 0.96 cm ² /m A's = 0.00 cm ² /m	bw = 100.0 cm h = 10.0 cm				As = 1.01 cm ² /m ø5.0 c/19 (1.03 cm ² /m) M = 227.44 kgf.m/m F = 0.20 tf fiss = 0.12 mm		vsd = 1.82 tf/m vrd1 = 5.93 tf/m Modelo I vrd2 = 42.09 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² /m

	Y	bw = 100.0 cm h = 10.0 cm	Md = 373 kgf. m/m As = 1.00 cm ² /m A's = 0.00 cm ² /m	Fd = 0.42 tf Situação : GE As = 0.55 cm ² /m A's = 0.00 cm ² /m	Fd = 0.04 tf Situaã o: GE As = 0.61 cm ² /m A's = 0.00 cm ² /m	bw = 100.0 cm h = 10.0 cm				As = 1.01 cm ² /m ø5.0 c/19 (1.03 cm ² /m) M = 140.67 kgf.m/m F = 0.02 tf fiss = 0.05 mm		vsd = 1.59 tf/m vrd1 = 5.59 tf/m vrd2 = 39.18 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² /m
LB1 43	X	bw = 100.0 cm h = 10.0 cm	Md = 397 kgf. m/m As = 1.21 cm ² /m A's = 0.00 cm ² /m	Fd = 0.30 tf Situação : GE As = 1.16 cm ² /m A's = 0.00 cm ² /m	Fd = 0.99 tf Situaã o: GE As = 1.35 cm ² /m A's = 0.00 cm ² /m	bw = 100.0 cm h = 10.0 cm				As = 1.35 cm ² /m ø6.3 c/20 (1.56 cm ² /m) M = 245.06 kgf.m/m F = 0.56 tf fiss = 0.05 mm		vsd = 1.22 tf/m vrd1 = 6.02 tf/m Modelo I vrd2 = 41.71 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² /m
	Y	bw = 100.0 cm h = 10.0 cm	Md = 373 kgf. m/m As = 1.02 cm ² /m A's = 0.00 cm ² /m	Fd = 0.36 tf Situação : GE As = 0.58 cm ² /m A's = 0.00 cm ² /m	Fd = 0.26 tf Situaã o: GE As = 0.66 cm ² /m A's = 0.00 cm ² /m	bw = 100.0 cm h = 10.0 cm				As = 1.02 cm ² /m ø5.0 c/19 (1.03 cm ² /m) M = 143.61 kgf.m/m F = 0.14 tf fiss = 0.06 mm		vsd = 1.73 tf/m vrd1 = 5.49 tf/m vrd2 = 38.43 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² /m
LB1 44	X	bw = 100.0 cm	Md = 373 kgf. m/m	Fd = 1.66 tf Situação : GE	Fd = 1.75 tf Situaã o: GE	bw = 100.0 cm				As = 1.30 cm ² /m ø6.3 c/20		vsd = 1.44 tf/m vrd1 = 6.02 tf/m Modelo I

		h = 10. 0 cm	As = 1.13 cm ² / m A's = 0.00 cm ² / m	As = 0.80 cm ² / m A's = 0.00 cm ² / m	As = 1.30 cm ² / m A's = 0.00 cm ² / m	h = 10. 0 cm				(1.56 cm ² / m) M = 211.42 kgf.m/ m F = 0.98 tf fiss = 0.05 mm		vr _{d2} = 41.71 tf/m v _{sw} = 0.00 tf/m a _{sw} = 0.00 cm ² / m
	Y	bw = 100. 0 cm h = 10. 0 cm	M _d = 373 kgf. m/m As = 1.02 cm ² / m A's = 0.00 cm ² / m	F _d = 1.32 tf Situação : GE As = 0.57 cm ² / m A's = 0.00 cm ² / m	F _d = 1.09 tf Situaçã o: GE As = 0.89 cm ² / m A's = 0.00 cm ² / m	bw = 100. 0 cm h = 10. 0 cm				As = 1.02 cm ² / m ø5.0 c/19 (1.03 cm ² / m) M = 170.74 kgf.m/ m F = 0.61 tf fiss = 0.09 mm		v _{sd} = 1.70 tf/m vr _{d1} = 5.49 tf/m vr _{d2} = 38.43 tf/m v _{sw} = 0.00 tf/m a _{sw} = 0.00 cm ² / m
LB1 45	X	bw = 100. 0 cm h = 10. 0 cm	M _d = 373 kgf. m/m As = 0.94 cm ² / m A's = 0.00 cm ² / m	F _d = 1.96 tf Situação : GE As = 0.34 cm ² / m A's = 0.00 cm ² / m	F _d = 1.80 tf Situaçã o: GE As = 0.80 cm ² / m A's = 0.00 cm ² / m	bw = 100. 0 cm h = 10. 0 cm				As = 1.01 cm ² / m ø5.0 c/19 (1.03 cm ² / m) M = 143.29 kgf.m/ m F = 1.01 tf fiss = 0.07 mm		v _{sd} = 1.27 tf/m vr _{d1} = 5.93 tf/m Modelo I vr _{d2} = 42.09 tf/m v _{sw} = 0.00 tf/m a _{sw} = 0.00 cm ² / m
	Y	bw = 100. 0 cm h = 10. 0 cm	M _d = 373 kgf. m/m As = 1.00 cm ² / m	F _d = 2.95 tf Situação : GE As = 0.13 cm ² / m A's = 0.00 cm ² / m	F _d = 1.93 tf Situaçã o: GE As = 0.77 cm ² / m A's = 0.00 cm ² / m	bw = 100. 0 cm h = 10. 0 cm				As = 1.01 cm ² / m ø5.0 c/19 (1.03 cm ² / m) M = 122.79		v _{sd} = 1.26 tf/m vr _{d1} = 5.59 tf/m vr _{d2} = 39.18 tf/m v _{sw} = 0.00 tf/m

			A's = 0.00 cm ² / m							kgf.m/ m F = 1.09 tf fiss = 0.06 mm		asw = 0.00 cm ² /m
LB1 46	X	bw = 100 .0 cm h = 10. 0 cm	Md = 400 kgf. m/m As = 1.22 cm ² / m A's = 0.00 cm ² / m	Fd = 2.01 tf Situação : GE As = 0.92 cm ² /m A's = 0.00 cm ² /m	Fd = 1.11 tf Situaã o: GE As = 1.38 cm ² /m A's = 0.00 cm ² /m	bw = 100 .0 cm h = 10. 0 cm				As = 1.38 cm ² /m ø6.3 c/20 (1.56 cm ² /m) M = 221.67 kgf.m/ m F = 0.63 tf fiss = 0.05 mm		vsd = 1.85 tf/m vrd1 = 6.02 tf/m Modelo I vrd2 = 41.71 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² /m
	Y	bw = 100 .0 cm h = 10. 0 cm	Md = 377 kgf. m/m As = 1.25 cm ² / m A's = 0.00 cm ² / m	Fd = 1.35 tf Situação : GE As = 1.04 cm ² /m A's = 0.00 cm ² /m	Fd = 0.54 tf Situaã o: GE As = 1.34 cm ² /m A's = 0.00 cm ² /m	bw = 100 .0 cm h = 10. 0 cm				As = 1.34 cm ² /m ø6.3 c/20 (1.56 cm ² /m) M = 229.54 kgf.m/ m F = 0.30 tf fiss = 0.05 mm		vsd = 1.89 tf/m vrd1 = 5.58 tf/m vrd2 = 38.05 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² /m
LB1 47	X	bw = 100 .0 cm h = 10. 0 cm	Md = 723 kgf. m/m As = 2.26 cm ² / m A's = 0.00 cm ² / m	Fd = 2.85 tf Situação : GE As = 1.84 cm ² /m A's = 0.00 cm ² /m	Fd = 1.91 tf Situaã o: GE As = 2.54 cm ² /m A's = 0.00 cm ² /m	bw = 100 .0 cm h = 10. 0 cm	Md = 457 kgf. m/m As = 1.41 cm ² / m A's = 0.00 cm ² / m	Fd = 2.85 tf Situação : GE As = 0.99 cm ² /m A's = 0.00 cm ² /m	Fd = 1.91 tf Situaã o: GE As = 1.69 cm ² /m A's = 0.00 cm ² /m	As = 2.54 cm ² /m ø8.0 c/19 (2.65 cm ² /m) M = 286.28 kgf.m/ m F = 1.06 tf	A's = 1.41 cm ² /m ø6.3 c/20 (1.56 cm ² /m) M = 39.37 kgf.m/ m F = 1.06 tf	vsd = 3.09 tf/m vrd1 = 6.22 tf/m Modelo I vrd2 = 41.22 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² /m

										fiss = 0.04 mm	fiss = 0.00 mm	
	Y	bw = 100.0 cm h = 10.0 cm	Md = 712 kgf. m/m As = 2.50 cm ² / m A's = 0.00 cm ² / m	Fd = 2.18 tf Situação : GE As = 2.14 cm ² / m A's = 0.00 cm ² / m	Fd = 1.45 tf Situação : GE As = 2.74 cm ² / m A's = 0.00 cm ² / m	bw = 100.0 cm h = 10.0 cm	Md = 456 kgf. m/m As = 1.58 cm ² / m A's = 0.00 cm ² / m		Fd = 1.45 tf Situação : GE As = 1.82 cm ² / m A's = 0.00 cm ² / m	As = 2.74 cm ² / m ø8.0 c/18 (2.79 cm ² / m) M = 209.52 kgf.m/ m F = 0.82 tf fiss = 0.02 mm	A's = 1.58 cm ² / m ø6.3 c/19 (1.64 cm ² / m) M = 40.18 kgf.m/ m F = 0.82 tf fiss = 0.00 mm	vsd = 2.96 tf/m vrd1 = 5.70 tf/m vrd2 = 36.57 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² / m
LB1 48	X	bw = 100.0 cm h = 10.0 cm	Md = 373 kgf. m/m As = 0.94 cm ² / m A's = 0.00 cm ² / m	Fd = 0.04 tf Situação : GE As = 0.67 cm ² / m A's = 0.00 cm ² / m	Fd = 0.16 tf Situação : GE As = 0.70 cm ² / m A's = 0.00 cm ² / m	bw = 100.0 cm h = 10.0 cm				As = 1.01 cm ² / m ø5.0 c/19 (1.03 cm ² / m) M = 167.05 kgf.m/ m F = 0.09 tf fiss = 0.06 mm		vsd = 1.16 tf/m vrd1 = 5.93 tf/m Modelo I vrd2 = 42.09 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² / m
	Y	bw = 100.0 cm h = 10.0 cm	Md = 373 kgf. m/m As = 1.00 cm ² / m A's = 0.00 cm ² / m	Fd = 0.16 tf Situação : GE As = 0.45 cm ² / m A's = 0.00 cm ² / m	Fd = 0.02 tf Situação : GE As = 0.47 cm ² / m A's = 0.00 cm ² / m	bw = 100.0 cm h = 10.0 cm				As = 1.01 cm ² / m ø5.0 c/19 (1.03 cm ² / m) M = 108.87 kgf.m/ m F = 0.01 tf fiss = 0.03 mm		vsd = 1.29 tf/m vrd1 = 5.59 tf/m vrd2 = 39.18 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² / m

LB1 49	X	bw = 100.0 cm h = 10.0 cm	Md = 386 kgf. m/m As = 0.97 cm ² / m A's = 0.00 cm ² / m	Fd = 0.15 tf Situação : GE As = 0.95 cm ² / m A's = 0.00 cm ² / m	Fd = 0.18 tf Situaçã o: GE As = 0.99 cm ² / m A's = 0.00 cm ² / m	bw = 100.0 cm h = 10.0 cm				As = 1.01 cm ² / m ø5.0 c/19 (1.03 cm ² / m) M = 238.54 kgf.m/ m F = 0.10 tf fiss = 0.13 mm		vsd = 1.47 tf/m vrd1 = 5.93 tf/m Modelo I vrd2 = 42.09 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² / m
	Y	bw = 100.0 cm h = 10.0 cm	Md = 373 kgf. m/m As = 1.00 cm ² / m A's = 0.00 cm ² / m	Fd = 0.09 tf Situação : GE As = 0.65 cm ² / m A's = 0.00 cm ² / m	Fd = 0.51 tf Situaçã o: GE As = 0.73 cm ² / m A's = 0.00 cm ² / m	bw = 100.0 cm h = 10.0 cm				As = 1.01 cm ² / m ø5.0 c/19 (1.03 cm ² / m) M = 153.33 kgf.m/ m F = 0.26 tf fiss = 0.07 mm		vsd = 1.75 tf/m vrd1 = 5.59 tf/m vrd2 = 39.18 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² / m
LB1 50	X	bw = 100.0 cm h = 10.0 cm	Md = 373 kgf. m/m As = 0.94 cm ² / m A's = 0.00 cm ² / m	Fd = 0.12 tf Situação : GE As = 0.54 cm ² / m A's = 0.00 cm ² / m	Fd = 0.25 tf Situaçã o: GE As = 0.59 cm ² / m A's = 0.00 cm ² / m	bw = 100.0 cm h = 10.0 cm				As = 1.01 cm ² / m ø5.0 c/19 (1.03 cm ² / m) M = 137.67 kgf.m/ m F = 0.14 tf fiss = 0.04 mm		vsd = 1.27 tf/m vrd1 = 5.93 tf/m Modelo I vrd2 = 42.09 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² / m
	Y	bw = 100.0 cm	Md = 373 kgf. m/m	Fd = 0.21 tf Situação : GE		bw = 100.0 cm				As = 1.01 cm ² / m ø5.0 c/19		vsd = 1.30 tf/m vrd1 = 5.59 tf/m

		h = 10. 0 cm	As = 1.00 cm ² / m A's = 0.00 cm ² / m	As = 0.49 cm ² / m A's = 0.00 cm ² / m		h = 10. 0 cm				(1.03 cm ² / m) M = 121.43 kgf.m/ m F = 0.01 tf fiss = 0.04 mm		vr2 = 39.18 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² / m
LB1 51	X	bw = 100 .0 cm h = 10. 0 cm	Md = 373 kgf. m/m As = 0.94 cm ² / m A's = 0.00 cm ² / m	Fd = 0.28 tf Situação : GE As = 0.64 cm ² / m A's = 0.00 cm ² / m	Fd = 0.26 tf Situaçã o: GE As = 0.70 cm ² / m A's = 0.00 cm ² / m	bw = 100 .0 cm h = 10. 0 cm				As = 1.01 cm ² / m ø5.0 c/19 (1.03 cm ² / m) M = 166.82 kgf.m/ m F = 0.13 tf fiss = 0.06 mm		vsd = 1.32 tf/m vr1 = 5.93 tf/m Modelo I vr2 = 42.09 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² / m
	Y	bw = 100 .0 cm h = 10. 0 cm	Md = 373 kgf. m/m As = 1.00 cm ² / m A's = 0.00 cm ² / m	Fd = 0.21 tf Situação : GE As = 0.40 cm ² / m A's = 0.00 cm ² / m		bw = 100 .0 cm h = 10. 0 cm				As = 1.01 cm ² / m ø5.0 c/19 (1.03 cm ² / m) M = 98.81 kgf.m/ m F = 0.00 tf fiss = 0.02 mm		vsd = 1.24 tf/m vr1 = 5.59 tf/m vr2 = 39.18 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² / m
LB1 52	X	bw = 100 .0 cm h = 10. 0 cm	Md = 373 kgf. m/m As = 0.94 cm ² / m	Fd = 0.47 tf Situação : GE As = 0.81 cm ² / m A's = 0.00 cm ² / m	Fd = 0.09 tf Situaçã o: GE As = 0.87 cm ² / m A's = 0.00 cm ² / m	bw = 100 .0 cm h = 10. 0 cm				As = 1.01 cm ² / m ø5.0 c/19 (1.03 cm ² / m) M = 212.51		vsd = 1.46 tf/m vr1 = 5.93 tf/m Modelo I vr2 = 42.09 tf/m vsw = 0.00 tf/m

			A's = 0.00 cm ² / m							kgf.m/ m F = 0.05 tf fiss = 0.10 mm		asw = 0.00 cm ² /m
	Y	bw = 100 .0 cm h = 10. 0 cm	Md = 373 kgf. m/m As = 1.00 cm ² / m A's = 0.00 cm ² / m	Fd = 0.44 tf Situação : GE As = 0.55 cm ² /m A's = 0.00 cm ² /m	Fd = 0.01 tf Situaçã o: GE As = 0.61 cm ² /m A's = 0.00 cm ² /m	bw = 100 .0 cm h = 10. 0 cm				As = 1.01 cm ² /m ø5.0 c/19 (1.03 cm ² /m) M = 142.89 kgf.m/ m F = 0.00 tf fiss = 0.05 mm		vsd = 1.62 tf/m vrd1 = 5.59 tf/m vrd2 = 39.18 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² /m
LB1 53	X	bw = 100 .0 cm h = 10. 0 cm	Md = 373 kgf. m/m As = 0.94 cm ² / m A's = 0.00 cm ² / m	Fd = 0.64 tf Situação : GE As = 0.38 cm ² /m A's = 0.00 cm ² /m	Fd = 0.17 tf Situaçã o: GE As = 0.48 cm ² /m A's = 0.00 cm ² /m	bw = 100 .0 cm h = 10. 0 cm				As = 1.01 cm ² /m ø5.0 c/19 (1.03 cm ² /m) M = 114.54 kgf.m/ m F = 0.10 tf fiss = 0.03 mm		vsd = 0.96 tf/m vrd1 = 5.93 tf/m Modelo I vrd2 = 42.09 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² /m
	Y	bw = 100 .0 cm h = 10. 0 cm	Md = 373 kgf. m/m As = 1.00 cm ² / m A's = 0.00 cm ² / m	Fd = 0.30 tf Situação : GE As = 0.42 cm ² /m A's = 0.00 cm ² /m	Fd = 0.78 tf Situaçã o: GE As = 0.56 cm ² /m A's = 0.00 cm ² /m	bw = 100 .0 cm h = 10. 0 cm				As = 1.01 cm ² /m ø5.0 c/19 (1.03 cm ² /m) M = 109.03 kgf.m/ m F = 0.44 tf		vsd = 1.36 tf/m vrd1 = 5.59 tf/m vrd2 = 39.18 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² /m

										fiss = 0.04 mm		
LB1 54	X	bw = 10.0 cm h = 17.0 cm bf = 40.0 cm hf = 5.0 cm	Md = 215 kgf. m/N As = 0.27 cm ² / N A's = 0.00 cm ² / N	Fd = 0.05 tf/N Situação : GE As = 0.25 cm ² / N A's = 0.00 cm ² / N	Fd = 0.03 tf/N Situaçã o: GE As = 0.26 cm ² / N A's = 0.00 cm ² / N	bw = 10.0 cm h = 17.0 cm				As = 0.48 cm ² / N (TR 12645 - 0.39 cm ² / N) 1ø5.0 c/N (0.20 cm ² / N) M = 137.77 kgf.m/ N F = 0.01 tf/N fiss = 0.02 mm		vsd = 0.38 tf/N vrd1 = 1.12 tf/N Modelo I vrd2 = 8.71 tf/N vsw = 0.00 tf/N asw = 0.00 cm ² /m
LB1 55	X	bw = 10.0 cm h = 17.0 cm bf = 40.0 cm hf = 5.0 cm	Md = 222 kgf. m/N As = 0.28 cm ² / N A's = 0.00 cm ² / N	Fd = 0.04 tf/N Situação : GE As = 0.27 cm ² / N A's = 0.00 cm ² / N	Fd = 0.08 tf/N Situaçã o: GE As = 0.28 cm ² / N A's = 0.00 cm ² / N	bw = 10.0 cm h = 17.0 cm				As = 0.48 cm ² / N (TR 12645 - 0.39 cm ² / N) 1ø5.0 c/N (0.20 cm ² / N) M = 148.13 kgf.m/ N F = 0.05 tf/N fiss = 0.02 mm		vsd = 0.40 tf/N vrd1 = 1.12 tf/N Modelo I vrd2 = 8.71 tf/N vsw = 0.00 tf/N asw = 0.00 cm ² /m
LB1 56	X	bw = 10.0 cm h = 17.0 cm	Md = 215 kgf. m/N As = 0.27 cm ² / N	Fd = 0.18 tf/N Situação : GE As = 0.23 cm ² / N	Fd = 0.02 tf/N Situaçã o: GE As = 0.25 cm ² / N	bw = 10.0 cm h = 17.0 cm				As = 0.48 cm ² / N (TR 12645 - 0.39 cm ² / N)		vsd = 0.36 tf/N vrd1 = 1.12 tf/N Modelo I vrd2 = 8.71 tf/N

		0 cm bf = 40. 0 cm hf = 5.0 cm	cm ² / N A's = 0.00 cm ² / N	A's = 0.00 cm ² /N	A's = 0.00 cm ² /N	0 cm				1ø5.0 c/N (0.20 cm ² /N) M = 133.02 kgf.m/ N F = 0.01 tf/N fiss = 0.02 mm		vsw = 0.00 tf/N asw = 0.00 cm ² /m
LB1 57	X	bw = 10. 0 cm h = 17. 0 cm bf = 40. 0 cm hf = 5.0 cm	Md = 219 kgf. m/N As = 0.27 cm ² / N A's = 0.00 cm ² / N	Fd = 0.01 tf/N Situação : GE As = 0.27 cm ² /N A's = 0.00 cm ² /N	Fd = 0.28 tf/N Situaçã o: GE As = 0.30 cm ² /N A's = 0.00 cm ² /N	bw = 10. 0 cm h = 17. 0 cm				As = 0.48 cm ² /N (TR 12645 - 0.39 cm ² /N) 1ø5.0 c/N (0.20 cm ² /N) M = 146.19 kgf.m/ N F = 0.16 tf/N fiss = 0.02 mm		vsd = 0.40 tf/N vrd1 = 1.12 tf/N Modelo I vrd2 = 8.71 tf/N vsw = 0.00 tf/N asw = 0.00 cm ² /m
LB1 58	X	bw = 10. 0 cm h = 17. 0 cm bf = 40. 0 cm hf = 5.0 cm	Md = 215 kgf. m/N As = 0.27 cm ² / N A's = 0.00 cm ² / N	Fd = 0.13 tf/N Situação : GE As = 0.24 cm ² /N A's = 0.00 cm ² /N		bw = 10. 0 cm h = 17. 0 cm				As = 0.48 cm ² /N (TR 12645 - 0.39 cm ² /N) 1ø5.0 c/N (0.20 cm ² /N) M = 134.53 kgf.m/ N F = 0.00 tf/N		vsd = 0.37 tf/N vrd1 = 1.12 tf/N Modelo I vrd2 = 8.71 tf/N vsw = 0.00 tf/N asw = 0.00 cm ² /m

										fiss = 0.02 mm		
LB1 59	X	bw = 10.0 cm h = 17.0 cm bf = 40.0 cm hf = 5.0 cm	Md = 215 kgf. m/N As = 0.27 cm ² / N A's = 0.00 cm ² / N	Fd = 0.12 tf/N Situação : GE As = 0.24 cm ² / N A's = 0.00 cm ² / N	Fd = 0.02 tf/N Situaçã o: GE As = 0.25 cm ² / N A's = 0.00 cm ² / N	bw = 10.0 cm h = 17.0 cm				As = 0.48 cm ² / N (TR 12645 - 0.39 cm ² / N) 1ø5.0 c/N (0.20 cm ² / N) M = 134.92 kgf.m/ N F = 0.01 tf/N fiss = 0.02 mm		vsd = 0.37 tf/N vrd1 = 1.12 tf/N Modelo I vrd2 = 8.71 tf/N vsw = 0.00 tf/N asw = 0.00 cm ² /m
LB1 60	X	bw = 10.0 cm h = 17.0 cm bf = 40.0 cm hf = 5.0 cm	Md = 215 kgf. m/N As = 0.27 cm ² / N A's = 0.00 cm ² / N	Fd = 0.16 tf/N Situação : GE As = 0.17 cm ² / N A's = 0.00 cm ² / N		bw = 10.0 cm h = 17.0 cm				As = 0.48 cm ² / N (TR 12645 - 0.39 cm ² / N) 1ø5.0 c/N (0.20 cm ² / N) M = 102.83 kgf.m/ N F = 0.00 tf/N fiss = 0.01 mm		vsd = 0.32 tf/N vrd1 = 1.12 tf/N Modelo I vrd2 = 8.71 tf/N vsw = 0.00 tf/N asw = 0.00 cm ² /m
LB1 61	X	bw = 10.0 cm h = 17.0 cm	Md = 223 kgf. m/N As = 0.28 cm ² / N	Fd = 0.34 tf/N Situação : GE As = 0.24 cm ² / N	Fd = 0.11 tf/N Situaçã o: GE As = 0.29 cm ² / N	bw = 10.0 cm h = 17.0 cm				As = 0.48 cm ² / N (TR 12645 - 0.39 cm ² / N)		vsd = 0.40 tf/N vrd1 = 1.12 tf/N Modelo I vrd2 = 8.71 tf/N

		0 cm bf = 40. 0 cm hf = 5.0 cm	cm ² / N A's = 0.00 cm ² / N	A's = 0.00 cm ² /N	A's = 0.00 cm ² /N	0 cm				1ø5.0 c/N (0.20 cm ² /N) M = 148.90 kgf.m/ N F = 0.06 tf/N fiss = 0.02 mm		vsw = 0.00 tf/N asw = 0.00 cm ² /m
LB1 62	X	bw = 10. 0 cm h = 17. 0 cm bf = 40. 0 cm hf = 5.0 cm	Md = 215 kgf. m/N As = 0.27 cm ² / N A's = 0.00 cm ² / N	Fd = 0.18 tf/N Situação : GE As = 0.10 cm ² /N A's = 0.00 cm ² /N	Fd = 0.61 tf/N Situaçã o: GE As = 0.18 cm ² /N A's = 0.00 cm ² /N	bw = 10. 0 cm h = 17. 0 cm				As = 0.48 cm ² /N (TR 12645 - 0.39 cm ² /N) 1ø5.0 c/N (0.20 cm ² /N) M = 63.08 kgf.m/ N F = 0.34 tf/N fiss = 0.01 mm		vsd = 0.25 tf/N vrd1 = 1.12 tf/N Modelo I vrd2 = 8.71 tf/N vsw = 0.00 tf/N asw = 0.00 cm ² /m
LB1 63	X	bw = 10. 0 cm h = 21. 0 cm bf = 50. 0 cm hf = 5.0 cm	Md = 856 kgf. m/N As = 1.02 cm ² / N A's = 0.00 cm ² / N	Fd = 0.64 tf/N Situação : GE As = 0.94 cm ² /N A's = 0.00 cm ² /N	Fd = 0.33 tf/N Situaçã o: GE As = 1.06 cm ² /N A's = 0.00 cm ² /N	bw = 10. 0 cm h = 21. 0 cm				As = 1.06 cm ² /N (TR 16745 - 0.39 cm ² /N) 1ø10.0 c/N (0.79 cm ² /N) M = 575.57 kgf.m/ N F = 0.20 tf/N		vsd = 1.20 tf/N vrd1 = 1.50 tf/N Modelo I vrd2 = 11.03 tf/N vsw = 0.00 tf/N asw = 0.00 cm ² /m

										fiss = 0.09 mm		
	Y	bw = 9.0 cm h = 21.0 cm bf = 49.0 cm hf = 5.0 cm	Md = 404 kgf. m/N As = 0.53 cm ² / N A's = 0.00 cm ² / N	Fd = 0.24 tf/N Situação : GE As = 0.50 cm ² / N A's = 0.00 cm ² / N	Fd = 0.79 tf/N Situaçã o: GE As = 0.64 cm ² / N A's = 0.00 cm ² / N	bw = 9.0 cm h = 21.0 cm	Md = 124 kgf. m/N As = 0.13 cm ² / N A's = 0.00 cm ² / N	Fd = 0.24 tf/N Situação : GE As = 0.10 cm ² / N A's = 0.00 cm ² / N	Fd = 0.79 tf/N Situaçã o: GE As = 0.21 cm ² / N A's = 0.00 cm ² / N	As = 0.64 cm ² / N 2ø6.3 c/N (0.62 cm ² / N) M = 269.78 kgf.m/ N F = 0.44 tf/N fiss = 0.05 mm	A's = 0.27 cm ² / m ø5.0 c/20 (0.98 cm ² / m) M = 10.15 kgf.m/ N F = 0.44 tf/N fiss = 0.00 mm	vsd = 0.76 tf/N vrd1 = 1.23 tf/N vrd2 = 8.98 tf/N vsw = 0.00 tf/N asw = 0.00 cm ² / m
LB1 64	X	bw = 10.0 cm h = 17.0 cm bf = 40.0 cm hf = 5.0 cm	Md = 215 kgf. m/N As = 0.27 cm ² / N A's = 0.00 cm ² / N	Fd = 0.03 tf/N Situação : GE As = 0.12 cm ² / N A's = 0.00 cm ² / N		bw = 10.0 cm h = 17.0 cm				As = 0.48 cm ² / N (TR 12645 - 0.39 cm ² / N) 1ø5.0 c/N (0.20 cm ² / N) M = 64.81 kgf.m/ N F = 0.01 tf/N fiss = 0.00 mm		vsd = 0.27 tf/N vrd1 = 1.12 tf/N Modelo I vrd2 = 8.71 tf/N vsw = 0.00 tf/N asw = 0.00 cm ² / m
LB1 65	X	bw = 10.0 cm h = 17.0 cm bf = 40.0 cm	Md = 246 kgf. m/N As = 0.31 cm ² / N A's = 0.00	Fd = 0.03 tf/N Situação : GE As = 0.30 cm ² / N A's = 0.00 cm ² / N	Fd = 0.02 tf/N Situaçã o: GE As = 0.31 cm ² / N A's = 0.00 cm ² / N	bw = 10.0 cm h = 17.0 cm				As = 0.48 cm ² / N (TR 12645 - 0.39 cm ² / N) 1ø5.0 c/N (0.20 cm ² / N)		vsd = 0.43 tf/N vrd1 = 1.12 tf/N Modelo I vrd2 = 8.71 tf/N vsw = 0.00 tf/N asw = 0.00 cm ² / m

		0 cm hf = 5.0 cm	cm ² / N							M = 163.68 kgf.m/ N F = 0.01 tf/N fiss = 0.03 mm		
LB1 66	X	bw = 10. 0 cm h = 17. 0 cm bf = 40. 0 cm hf = 5.0 cm	Md = 215 kgf. m/N As = 0.27 cm ² / N A's = 0.00 cm ² / N	Fd = 0.11 tf/N Situação : GE As = 0.22 cm ² /N A's = 0.00 cm ² /N	Fd = 0.04 tf/N Situaçã o: GE As = 0.24 cm ² /N A's = 0.00 cm ² /N	bw = 10. 0 cm h = 17. 0 cm				As = 0.48 cm ² /N (TR 12645 - 0.39 cm ² /N) 1ø5.0 c/N (0.20 cm ² /N) M = 125.15 kgf.m/ N F = 0.02 tf/N fiss = 0.02 mm		vsd = 0.36 tf/N vrd1 = 1.12 tf/N Modelo I vrd2 = 8.71 tf/N vsw = 0.00 tf/N asw = 0.00 cm ² /m
LB1 67	X	bw = 10. 0 cm h = 17. 0 cm bf = 40. 0 cm hf = 5.0 cm	Md = 467 kgf. m/N As = 0.58 cm ² / N A's = 0.00 cm ² / N	Fd = 0.11 tf/N Situação : GE As = 0.57 cm ² /N A's = 0.00 cm ² /N	Fd = 0.19 tf/N Situaçã o: GE As = 0.60 cm ² /N A's = 0.00 cm ² /N	bw = 10. 0 cm h = 17. 0 cm				As = 0.60 cm ² /N (TR 12645 - 0.39 cm ² /N) 2ø5.0 c/N (0.39 cm ² /N) M = 311.41 kgf.m/ N F = 0.11 tf/N fiss = 0.06 mm		vsd = 0.53 tf/N vrd1 = 1.17 tf/N Modelo I vrd2 = 8.71 tf/N vsw = 0.00 tf/N asw = 0.00 cm ² /m

	Y	bw = 9.0 cm h = 17.0 cm bf = 113.8 cm hf = 5.0 cm	Md = 652 kgf.m/N As = 1.13 cm²/N A's = 0.00 cm²/N	Fd = 0.19 tf/N Situação : GE As = 1.10 cm²/N A's = 0.00 cm²/N	Fd = 0.01 tf/N Situação o: GE As = 1.13 cm²/N A's = 0.00 cm²/N	bw = 9.0 cm h = 17.0 cm	Md = 724 kgf.m/N As = 1.04 cm²/N A's = 0.00 cm²/N	Fd = 0.19 tf/N Situação : GE As = 1.02 cm²/N A's = 0.00 cm²/N	Fd = 0.01 tf/N Situação o: GE As = 1.04 cm²/N A's = 0.00 cm²/N	As = 1.13 cm²/N 1ø12.5 c/N (1.23 cm²/N) M = 201.96 kgf.m/N F = 0.01 tf/N fiss = 0.01 mm	A's = 0.78 cm²/m ø5.0 c/20 (0.98 cm²/m) M = 36.95 kgf.m/N F = 0.01 tf/N fiss = 0.00 mm	vsd = 1.47 tf/N vrd1 = 1.14 tf/N vrd2 = 6.73 tf/N vsw = 0.11 tf/N asw = 0.31 cm²/m
LB1 68	X	bw = 10.0 cm h = 21.0 cm bf = 50.0 cm hf = 5.0 cm	Md = 874 kgf.m/N As = 1.04 cm²/N A's = 0.00 cm²/N	Fd = 0.40 tf/N Situação : GE As = 0.99 cm²/N A's = 0.00 cm²/N	Fd = 0.06 tf/N Situação o: GE As = 1.05 cm²/N A's = 0.00 cm²/N	bw = 10.0 cm h = 21.0 cm	Md = 316 kgf.m/N As = 0.33 cm²/N A's = 0.00 cm²/N	Fd = 0.40 tf/N Situação : GE As = 0.29 cm²/N A's = 0.00 cm²/N	Fd = 0.06 tf/N Situação o: GE As = 0.34 cm²/N A's = 0.00 cm²/N	As = 1.05 cm²/N (TR 16745 - 0.39 cm²/N) 1ø10.0 c/N (0.79 cm²/N) M = 585.90 kgf.m/N F = 0.03 tf/N fiss = 0.09 mm	A's = 0.21 cm²/m ø5.0 c/20 (0.98 cm²/m) M = 14.37 kgf.m/N F = 0.03 tf/N fiss = 0.00 mm	vsd = 1.01 tf/N vrd1 = 1.50 tf/N Modelo I vrd2 = 11.03 tf/N vsw = 0.00 tf/N asw = 0.00 cm²/m
	Y	bw = 9.0 cm h = 21.0 cm bf = 49.0 cm hf =	Md = 624 kgf.m/N As = 0.82 cm²/N A's = 0.00 cm²/N	Fd = 0.37 tf/N Situação : GE As = 0.77 cm²/N A's = 0.00 cm²/N	Fd = 0.29 tf/N Situação o: GE As = 0.86 cm²/N A's = 0.00 cm²/N	bw = 9.0 cm h = 21.0 cm	Md = 268 kgf.m/N As = 0.29 cm²/N A's = 0.00 cm²/N	Fd = 0.37 tf/N Situação : GE As = 0.25 cm²/N A's = 0.00 cm²/N	Fd = 0.29 tf/N Situação o: GE As = 0.32 cm²/N A's = 0.00 cm²/N	As = 0.86 cm²/N 2ø8.0 c/N (1.01 cm²/N) M = 418.63 kgf.m/N F = 0.16 tf/N	A's = 0.61 cm²/m ø5.0 c/20 (0.98 cm²/m) M = 26.48 kgf.m/N F = 0.16 tf/N	vsd = 0.80 tf/N vrd1 = 1.32 tf/N vrd2 = 8.93 tf/N vsw = 0.00 tf/N asw = 0.00 cm²/m

		5.0 cm								fiss = 0.06 mm	fiss = 0.00 mm	
LB1 69	X	bw = 10.0 cm h = 17.0 cm bf = 40.0 cm hf = 5.0 cm	Md = 342 kgf. m/N As = 0.43 cm²/ N A's = 0.00 cm²/ N	Fd = 0.04 tf/N Situação : GE As = 0.42 cm²/N A's = 0.00 cm²/N	Fd = 0.14 tf/N Situaçã o: GE As = 0.44 cm²/N A's = 0.00 cm²/N	bw = 10.0 cm h = 17.0 cm				As = 0.48 cm²/N (TR 12645 - 0.39 cm²/N) 1ø5.0 c/N (0.20 cm²/N) M = 227.77 kgf.m/ N F = 0.08 tf/N fiss = 0.05 mm		vsd = 0.48 tf/N vrd1 = 1.12 tf/N Modelo I vrd2 = 8.71 tf/N vsw = 0.00 tf/N asw = 0.00 cm²/m
LB1 70	X	bw = 10.0 cm h = 21.0 cm bf = 50.0 cm hf = 5.0 cm	Md = 613 kgf. m/N As = 0.73 cm²/ N A's = 0.00 cm²/ N	Fd = 0.24 tf/N Situação : GE As = 0.70 cm²/N A's = 0.00 cm²/N	Fd = 0.37 tf/N Situaçã o: GE As = 0.77 cm²/N A's = 0.00 cm²/N	bw = 10.0 cm h = 21.0 cm				As = 0.77 cm²/N (TR 16745 - 0.39 cm²/N) 1ø8.0 c/N (0.50 cm²/N) M = 410.99 kgf.m/ N F = 0.21 tf/N fiss = 0.06 mm		vsd = 0.88 tf/N vrd1 = 1.43 tf/N Modelo I vrd2 = 11.03 tf/N vsw = 0.00 tf/N asw = 0.00 cm²/m
	Y	bw = 9.0 cm h = 21.0 cm	Md = 422 kgf. m/N As = 0.48 cm²/ N	Fd = 0.46 tf/N Situação : GE As = 0.43 cm²/N	Fd = 0.03 tf/N Situaçã o: GE As = 0.49 cm²/N	bw = 9.0 cm h = 21.0 cm				As = 0.49 cm²/N 3ø5.0 c/N (0.59 cm²/N)		vsd = 0.67 tf/N vrd1 = 1.18 tf/N vrd2 = 8.58 tf/N vsw = 0.00 tf/N

		bf = 49.0 cm hf = 5.0 cm	cm ² /N A's = 0.00 cm ² /N	A's = 0.00 cm ² /N	A's = 0.00 cm ² /N					M = 283.08 kgf.m/N F = 0.02 tf/N fiss = 0.06 mm		asw = 0.00 cm ² /m
LB1 71	X	bw = 10.0 cm h = 17.0 cm bf = 40.0 cm hf = 5.0 cm	Md = 215 kgf.m/N As = 0.27 cm ² /N A's = 0.00 cm ² /N	Fd = 0.13 tf/N Situação : GE As = 0.10 cm ² /N A's = 0.00 cm ² /N	Fd = 0.09 tf/N Situação: GE As = 0.13 cm ² /N A's = 0.00 cm ² /N	bw = 10.0 cm h = 17.0 cm				As = 0.48 cm ² /N (TR 12645 - 0.39 cm ² /N) 1ø5.0 c/N (0.20 cm ² /N) M = 63.21 kgf.m/N F = 0.05 tf/N fiss = 0.00 mm		vsd = 0.26 tf/N vrd1 = 1.12 tf/N Modelo I vrd2 = 8.71 tf/N vsw = 0.00 tf/N asw = 0.00 cm ² /m
LB1 72	X	bw = 10.0 cm h = 17.0 cm bf = 40.0 cm hf = 5.0 cm	Md = 215 kgf.m/N As = 0.27 cm ² /N A's = 0.00 cm ² /N	Fd = 0.10 tf/N Situação : GE As = 0.08 cm ² /N A's = 0.00 cm ² /N		bw = 10.0 cm h = 17.0 cm				As = 0.48 cm ² /N (TR 12645 - 0.39 cm ² /N) 1ø5.0 c/N (0.20 cm ² /N) M = 50.86 kgf.m/N F = 0.00 tf/N fiss = 0.00 mm		vsd = 0.23 tf/N vrd1 = 1.12 tf/N Modelo I vrd2 = 8.71 tf/N vsw = 0.00 tf/N asw = 0.00 cm ² /m

LB1 73	X	bw = 10.0 cm h = 17.0 cm bf = 40.0 cm hf = 5.0 cm	Md = 215 kgf. m/N As = 0.27 cm ² / N A's = 0.00 cm ² / N	Fd = 0.11 tf/N Situação : GE As = 0.18 cm ² / N A's = 0.00 cm ² / N	Fd = 0.03 tf/N Situaçã o: GE As = 0.20 cm ² / N A's = 0.00 cm ² / N	bw = 10.0 cm h = 17.0 cm				As = 0.48 cm ² / N (TR 12645 - 0.39 cm ² / N) 1ø5.0 c/N (0.20 cm ² / N) M = 103.60 kgf.m/ N F = 0.02 tf/N fiss = 0.01 mm		vsd = 0.33 tf/N vrd1 = 1.12 tf/N Modelo I vrd2 = 8.71 tf/N vsw = 0.00 tf/N asw = 0.00 cm ² /m
LB1 74	X	bw = 10.0 cm h = 17.0 cm bf = 40.0 cm hf = 5.0 cm	Md = 215 kgf. m/N As = 0.27 cm ² / N A's = 0.00 cm ² / N	Fd = 0.08 tf/N Situação : GE As = 0.18 cm ² / N A's = 0.00 cm ² / N		bw = 10.0 cm h = 17.0 cm				As = 0.48 cm ² / N (TR 12645 - 0.39 cm ² / N) 1ø5.0 c/N (0.20 cm ² / N) M = 104.08 kgf.m/ N F = 0.00 tf/N fiss = 0.01 mm		vsd = 0.33 tf/N vrd1 = 1.12 tf/N Modelo I vrd2 = 8.71 tf/N vsw = 0.00 tf/N asw = 0.00 cm ² /m
LB1 75	X	bw = 10.0 cm h = 17.0 cm bf = 40.0 cm	Md = 215 kgf. m/N As = 0.27 cm ² / N A's = 0.00	Fd = 0.05 tf/N Situação : GE As = 0.17 cm ² / N A's = 0.00 cm ² / N	Fd = 0.09 tf/N Situaçã o: GE As = 0.19 cm ² / N A's = 0.00 cm ² / N	bw = 10.0 cm h = 17.0 cm				As = 0.48 cm ² / N (TR 12645 - 0.39 cm ² / N) 1ø5.0 c/N (0.20 cm ² / N)		vsd = 0.32 tf/N vrd1 = 1.12 tf/N Modelo I vrd2 = 8.71 tf/N vsw = 0.00 tf/N

		40.0 cm hf = 5.0 cm	cm ² / N							M = 96.78 kgf.m/ N F = 0.05 tf/N fiss = 0.01 mm	asw = 0.00 cm ² /m
LB1 76	X	bw = 10.0 cm h = 17.0 cm bf = 40.0 cm hf = 5.0 cm	Md = 375 kgf. m/N As = 0.47 cm ² / N A's = 0.00 cm ² / N	Fd = 0.05 tf/N Situação : GE As = 0.46 cm ² /N A's = 0.00 cm ² /N	Fd = 0.02 tf/N Situaçã o: GE As = 0.47 cm ² /N A's = 0.00 cm ² /N	bw = 10.0 cm h = 17.0 cm				As = 0.48 cm ² /N (TR 12645 - 0.39 cm ² /N) 1ø5.0 c/N (0.20 cm ² /N) M = 249.87 kgf.m/ N F = 0.01 tf/N fiss = 0.06 mm	vsd = 0.50 tf/N vrd1 = 1.12 tf/N Modelo I vrd2 = 8.71 tf/N vsw = 0.00 tf/N asw = 0.00 cm ² /m
LB1 77	X	bw = 10.0 cm h = 17.0 cm bf = 40.0 cm hf = 5.0 cm	Md = 215 kgf. m/N As = 0.27 cm ² / N A's = 0.00 cm ² / N		Fd = 0.08 tf/N Situaçã o: GE As = 0.12 cm ² /N A's = 0.00 cm ² /N	bw = 10.0 cm h = 17.0 cm				As = 0.48 cm ² /N (TR 12645 - 0.39 cm ² /N) 1ø5.0 c/N (0.20 cm ² /N) M = 60.08 kgf.m/ N F = 0.05 tf/N fiss = 0.00 mm	vsd = 0.25 tf/N vrd1 = 1.12 tf/N Modelo I vrd2 = 8.71 tf/N vsw = 0.00 tf/N asw = 0.00 cm ² /m

LB1 78	X	bw = 10.0 cm h = 17.0 cm bf = 40.0 cm hf = 5.0 cm	Md = 215 kgf. m/N As = 0.27 cm²/ N A's = 0.00 cm²/ N		Fd = 0.08 tf/N Situação: o: GE As = 0.10 cm²/N A's = 0.00 cm²/N	bw = 10.0 cm h = 17.0 cm				As = 0.48 cm²/N (TR 12645 - 0.39 cm²/N) 1ø5.0 c/N (0.20 cm²/N) M = 48.19 kgf.m/ N F = 0.04 tf/N fiss = 0.00 mm		vsd = 0.22 tf/N vrd1 = 1.12 tf/N Modelo I vrd2 = 8.71 tf/N vsw = 0.00 tf/N asw = 0.00 cm²/m
LB1 79	X	bw = 100.0 cm h = 10.0 cm	Md = 373 kgf. m/m As = 0.94 cm²/ m A's = 0.00 cm²/ m	Fd = 0.09 tf Situação: : GE As = 0.09 cm²/m A's = 0.00 cm²/m	Fd = 0.12 tf Situação: o: GE As = 0.12 cm²/m A's = 0.00 cm²/m	bw = 100.0 cm h = 10.0 cm				As = 1.01 cm²/m ø5.0 c/19 (1.03 cm²/m) M = 27.47 kgf.m/ m F = 0.07 tf fiss = 0.00 mm		vsd = 0.54 tf/m vrd1 = 5.93 tf/m Modelo I vrd2 = 42.09 tf/m vsw = 0.00 tf/m asw = 0.00 cm²/m
	Y	bw = 100.0 cm h = 10.0 cm	Md = 373 kgf. m/m As = 1.00 cm²/ m A's = 0.00 cm²/ m		Fd = 0.79 tf Situação: o: GE As = 0.29 cm²/m A's = 0.00 cm²/m	bw = 100.0 cm h = 10.0 cm				As = 1.01 cm²/m ø5.0 c/19 (1.03 cm²/m) M = 43.84 kgf.m/ m F = 0.44 tf fiss = 0.01 mm		vsd = 1.11 tf/m vrd1 = 5.59 tf/m vrd2 = 39.18 tf/m vsw = 0.00 tf/m asw = 0.00 cm²/m

LB1 80	X	bw = 100.0 cm h = 10.0 cm	Md = 373 kgf. m/m As = 0.94 cm ² / m A's = 0.00 cm ² / m	Fd = 0.09 tf Situação : GE As = 0.09 cm ² / m A's = 0.00 cm ² / m	Fd = 0.12 tf Situaçã o: GE As = 0.12 cm ² / m A's = 0.00 cm ² / m	bw = 100.0 cm h = 10.0 cm				As = 1.01 cm ² / m ø5.0 c/19 (1.03 cm ² / m) M = 27.47 kgf.m/ m F = 0.07 tf fiss = 0.00 mm	vsd = 0.54 tf/m vrd1 = 5.93 tf/m Modelo I vrd2 = 42.09 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² / m
	Y	bw = 100.0 cm h = 10.0 cm	Md = 373 kgf. m/m As = 1.00 cm ² / m A's = 0.00 cm ² / m		Fd = 0.79 tf Situaçã o: GE As = 0.29 cm ² / m A's = 0.00 cm ² / m	bw = 100.0 cm h = 10.0 cm				As = 1.01 cm ² / m ø5.0 c/19 (1.03 cm ² / m) M = 43.85 kgf.m/ m F = 0.44 tf fiss = 0.01 mm	vsd = 1.11 tf/m vrd1 = 5.59 tf/m vrd2 = 39.18 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² / m
LB1 81	X	bw = 100.0 cm h = 10.0 cm	Md = 373 kgf. m/m As = 0.94 cm ² / m A's = 0.00 cm ² / m	Fd = 0.09 tf Situação : GE As = 0.09 cm ² / m A's = 0.00 cm ² / m	Fd = 0.12 tf Situaçã o: GE As = 0.12 cm ² / m A's = 0.00 cm ² / m	bw = 100.0 cm h = 10.0 cm				As = 1.01 cm ² / m ø5.0 c/19 (1.03 cm ² / m) M = 27.47 kgf.m/ m F = 0.07 tf fiss = 0.00 mm	vsd = 0.54 tf/m vrd1 = 5.93 tf/m Modelo I vrd2 = 42.09 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² / m
	Y	bw = 100.0 cm	Md = 373 kgf. m/m		Fd = 0.79 tf Situaçã o: GE	bw = 100.0 cm				As = 1.01 cm ² / m ø5.0 c/19	vsd = 1.11 tf/m vrd1 = 5.59 tf/m

		h = 10. 0 cm	As = 1.00 cm ² / m A's = 0.00 cm ² / m		As = 0.29 cm ² / m A's = 0.00 cm ² / m	h = 10. 0 cm				(1.03 cm ² / m) M = 43.84 kgf.m/ m F = 0.44 tf fiss = 0.01 mm		vr2 = 39.18 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² / m
LB1 82	X	bw = 100 .0 cm h = 10. 0 cm	Md = 373 kgf. m/m As = 0.94 cm ² / m A's = 0.00 cm ² / m	Fd = 0.09 tf Situação : GE As = 0.09 cm ² / m A's = 0.00 cm ² / m	Fd = 0.12 tf Situaçã o: GE As = 0.12 cm ² / m A's = 0.00 cm ² / m	bw = 100 .0 cm h = 10. 0 cm				As = 1.01 cm ² / m ø5.0 c/19 (1.03 cm ² / m) M = 27.47 kgf.m/ m F = 0.07 tf fiss = 0.00 mm		vsd = 0.54 tf/m vr1 = 5.93 tf/m Modelo I vr2 = 42.09 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² / m
	Y	bw = 100 .0 cm h = 10. 0 cm	Md = 373 kgf. m/m As = 1.00 cm ² / m A's = 0.00 cm ² / m		Fd = 0.79 tf Situaçã o: GE As = 0.29 cm ² / m A's = 0.00 cm ² / m	bw = 100 .0 cm h = 10. 0 cm				As = 1.01 cm ² / m ø5.0 c/19 (1.03 cm ² / m) M = 43.84 kgf.m/ m F = 0.44 tf fiss = 0.01 mm		vsd = 1.11 tf/m vr1 = 5.59 tf/m vr2 = 39.18 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² / m
LB1 83	X	bw = 100 .0 cm h = 10. 0 cm	Md = 373 kgf. m/m As = 0.94 cm ² / m	Fd = 0.09 tf Situação : GE As = 0.09 cm ² / m A's = 0.00 cm ² / m	Fd = 0.12 tf Situaçã o: GE As = 0.12 cm ² / m A's = 0.00 cm ² / m	bw = 100 .0 cm h = 10. 0 cm				As = 1.01 cm ² / m ø5.0 c/19 (1.03 cm ² / m) M = 27.45		vsd = 0.54 tf/m vr1 = 5.93 tf/m Modelo I vr2 = 42.09 tf/m vsw = 0.00 tf/m

			A's = 0.00 cm ² / m							kgf.m/ m F = 0.07 tf fiss = 0.00 mm		asw = 0.00 cm ² /m
	Y	bw = 100.0 cm h = 10.0 cm	Md = 373 kgf. m/m As = 1.00 cm ² / m A's = 0.00 cm ² / m		Fd = 0.79 tf Situaçã o: GE As = 0.29 cm ² /m A's = 0.00 cm ² /m	bw = 100.0 cm h = 10.0 cm				As = 1.01 cm ² /m ø5.0 c/19 (1.03 cm ² /m) M = 43.82 kgf.m/ m F = 0.44 tf fiss = 0.01 mm		vsd = 1.11 tf/m vrd1 = 5.59 tf/m vrd2 = 39.18 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² /m
LB1 84	X	bw = 100.0 cm h = 10.0 cm	Md = 373 kgf. m/m As = 0.94 cm ² / m A's = 0.00 cm ² / m	Fd = 0.09 tf Situação : GE As = 0.09 cm ² /m A's = 0.00 cm ² /m	Fd = 0.12 tf Situaçã o: GE As = 0.12 cm ² /m A's = 0.00 cm ² /m	bw = 100.0 cm h = 10.0 cm				As = 1.01 cm ² /m ø5.0 c/19 (1.03 cm ² /m) M = 27.45 kgf.m/ m F = 0.07 tf fiss = 0.00 mm		vsd = 0.54 tf/m vrd1 = 5.93 tf/m Modelo I vrd2 = 42.09 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² /m
	Y	bw = 100.0 cm h = 10.0 cm	Md = 373 kgf. m/m As = 1.00 cm ² / m A's = 0.00 cm ² / m		Fd = 0.79 tf Situaçã o: GE As = 0.29 cm ² /m A's = 0.00 cm ² /m	bw = 100.0 cm h = 10.0 cm				As = 1.01 cm ² /m ø5.0 c/19 (1.03 cm ² /m) M = 43.82 kgf.m/ m F = 0.44 tf		vsd = 1.11 tf/m vrd1 = 5.59 tf/m vrd2 = 39.18 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² /m

										fiss = 0.01 mm		
LB1 85	X	bw = 100.0 cm h = 10.0 cm	Md = 373 kgf. m/m As = 0.94 cm ² / m A's = 0.00 cm ² / m	Fd = 0.09 tf Situação : GE As = 0.09 cm ² / m A's = 0.00 cm ² / m	Fd = 0.12 tf Situaçã o: GE As = 0.12 cm ² / m A's = 0.00 cm ² / m	bw = 100.0 cm h = 10.0 cm				As = 1.01 cm ² / m ø5.0 c/19 (1.03 cm ² / m) M = 27.45 kgf.m/ m F = 0.07 tf fiss = 0.00 mm		vsd = 0.54 tf/m vrd1 = 5.93 tf/m Modelo I vrd2 = 42.09 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² / m
	Y	bw = 100.0 cm h = 10.0 cm	Md = 373 kgf. m/m As = 1.00 cm ² / m A's = 0.00 cm ² / m		Fd = 0.79 tf Situaçã o: GE As = 0.29 cm ² / m A's = 0.00 cm ² / m	bw = 100.0 cm h = 10.0 cm				As = 1.01 cm ² / m ø5.0 c/19 (1.03 cm ² / m) M = 43.82 kgf.m/ m F = 0.44 tf fiss = 0.01 mm		vsd = 1.11 tf/m vrd1 = 5.59 tf/m vrd2 = 39.18 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² / m
LB1 86	X	bw = 100.0 cm h = 10.0 cm	Md = 373 kgf. m/m As = 0.94 cm ² / m A's = 0.00 cm ² / m	Fd = 0.09 tf Situação : GE As = 0.09 cm ² / m A's = 0.00 cm ² / m	Fd = 0.12 tf Situaçã o: GE As = 0.12 cm ² / m A's = 0.00 cm ² / m	bw = 100.0 cm h = 10.0 cm				As = 1.01 cm ² / m ø5.0 c/19 (1.03 cm ² / m) M = 27.45 kgf.m/ m F = 0.07 tf fiss = 0.00 mm		vsd = 0.54 tf/m vrd1 = 5.93 tf/m Modelo I vrd2 = 42.09 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² / m

	Y	bw = 100.0 cm h = 10.0 cm	Md = 373 kgf.m/m As = 1.00 cm ² /m A's = 0.00 cm ² /m		Fd = 0.79 tf Situação: GE As = 0.29 cm ² /m A's = 0.00 cm ² /m	bw = 100.0 cm h = 10.0 cm				As = 1.01 cm ² /m ø5.0 c/19 (1.03 cm ² /m) M = 43.82 kgf.m/m F = 0.44 tf fiss = 0.01 mm		vsd = 1.11 tf/m vrd1 = 5.59 tf/m vrd2 = 39.18 tf/m vsw = 0.00 tf/m asw = 0.00 cm ² /m
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Cálculos das Lajes

CLARABOIA	fck = 350.00 kgf/cm ²	E = 294029 kgf/cm ²	Peso Espec = 2500.00 kgf/m ³
Lance 3		cobr = 2.00 cm	

ARMADURAS POSITIVAS (LAJE)												
Laje	Direção	Momento positivo				Momento negativo				Armadura inferior	Armadura superior	Cisalhamento
		Seção	Flexão	Verificação axial (compressão)	Verificação axial (tração)	Seção	Flexão	Verificação axial (compressão)	Verificação axial (tração)			
LC 1	X	bw = 10.0 cm h = 17.0 cm bf = 50.0 cm hf =	Md = 250 kgf.m/N As = 0.31 cm ² /N A's = 0.00 cm ² /N	Fd = 0.23 tf/N Situação: GE As = 0.29 cm ² /N A's = 0.00 cm ² /N	Fd = 0.13 tf/N Situação: GE As = 0.32 cm ² /N A's = 0.00 cm ² /N	bw = 10.0 cm h = 17.0 cm				As = 0.39 cm ² /N (TR 12645 - 0.39 cm ² /N) M = 166.15 kgf.m/N F = 0.07 tf/N		vsd = 0.60 tf/N vrd1 = 1.12 tf/N Modelo I vrd2 = 8.71 tf/N vsw = 0.00 tf/N asw = 0.00 cm ² /m

		5.0 cm								fiss = 0.04 mm		
	Y	bw = 9.0 cm h = 17.0 cm bf = 49.0 cm hf = 5.0 cm	Md = 230 kgf. m/N As = 0.32 cm ² / N A's = 0.00 cm ² / N	Fd = 0.38 tf/N Situação: GE As = 0.28 cm ² / N A's = 0.00 cm ² / N	Fd = 0.22 tf/N Situaçã o: GE As = 0.35 cm ² / N A's = 0.00 cm ² / N	bw = 9.0 cm h = 17.0 cm				As = 0.35 cm ² / N 2ø5.0 c/N (0.39 cm ² / N) M = 152.84 kgf.m/ N F = 0.12 tf/N fiss = 0.03 mm		vsd = 0.51 tf/N vrd1 = 0.96 tf/N vrd2 = 6.92 tf/N vsw = 0.00 tf/N asw = 0.00 cm ² /m
LC 2	X	bw = 10.0 cm h = 17.0 cm bf = 50.0 cm hf = 5.0 cm	Md = 278 kgf. m/N As = 0.35 cm ² / N A's = 0.00 cm ² / N	Fd = 0.28 tf/N Situação: GE As = 0.32 cm ² / N A's = 0.00 cm ² / N	Fd = 0.10 tf/N Situaçã o: GE As = 0.36 cm ² / N A's = 0.00 cm ² / N	bw = 10.0 cm h = 17.0 cm				As = 0.39 cm ² / N (TR 12645 - 0.39 cm ² / N) M = 184.57 kgf.m/ N F = 0.06 tf/N fiss = 0.05 mm		vsd = 0.56 tf/N vrd1 = 1.12 tf/N Modelo I vrd2 = 8.71 tf/N vsw = 0.00 tf/N asw = 0.00 cm ² /m
	Y	bw = 9.0 cm h = 17.0 cm bf = 49.0 cm hf =	Md = 191 kgf. m/N As = 0.27 cm ² / N A's = 0.00 cm ² / N	Fd = 0.29 tf/N Situação: GE As = 0.23 cm ² / N A's = 0.00 cm ² / N	Fd = 0.05 tf/N Situaçã o: GE As = 0.27 cm ² / N A's = 0.00 cm ² / N	bw = 9.0 cm h = 17.0 cm				As = 0.35 cm ² / N 2ø5.0 c/N (0.39 cm ² / N) M = 127.09 kgf.m/ N F = 0.03 tf/N		vsd = 0.49 tf/N vrd1 = 0.96 tf/N vrd2 = 6.92 tf/N vsw = 0.00 tf/N asw = 0.00 cm ² /m

		5.0 cm								fiss = 0.02 mm		
LC 3	X	bw = 10.0 cm h = 17.0 cm bf = 50.0 cm hf = 5.0 cm	Md = 277 kgf. m/N As = 0.34 cm²/ N A's = 0.00 cm²/ N	Fd = 0.31 tf/N Situação: GE As = 0.31 cm²/N A's = 0.00 cm²/N	Fd = 0.04 tf/N Situação: o: GE As = 0.35 cm²/N A's = 0.00 cm²/N	bw = 10.0 cm h = 17.0 cm				As = 0.39 cm²/N (TR 12645 - 0.39 cm²/N) M = 183.76 kgf.m/ N F = 0.02 tf/N fiss = 0.04 mm		vsd = 0.59 tf/N vrd1 = 1.12 tf/N Modelo I vrd2 = 8.71 tf/N vsw = 0.00 tf/N asw = 0.00 cm²/m
	Y	bw = 9.0 cm h = 17.0 cm bf = 49.0 cm hf = 5.0 cm	Md = 257 kgf. m/N As = 0.36 cm²/ N A's = 0.00 cm²/ N	Fd = 0.30 tf/N Situação: GE As = 0.32 cm²/N A's = 0.00 cm²/N	Fd = 0.05 tf/N Situação: o: GE As = 0.37 cm²/N A's = 0.00 cm²/N	bw = 9.0 cm h = 17.0 cm				As = 0.37 cm²/N 2ø5.0 c/N (0.39 cm²/N) M = 170.40 kgf.m/ N F = 0.03 tf/N fiss = 0.04 mm		vsd = 0.57 tf/N vrd1 = 0.96 tf/N vrd2 = 6.92 tf/N vsw = 0.00 tf/N asw = 0.00 cm²/m
LC 4	X	bw = 10.0 cm h = 17.0 cm bf = 50.0 cm	Md = 411 kgf. m/N As = 0.51 cm²/ N A's = 0.00 cm²/ N	Fd = 0.30 tf/N Situação: GE As = 0.48 cm²/N A's = 0.00 cm²/N	Fd = 0.08 tf/N Situação: o: GE As = 0.52 cm²/N A's = 0.00 cm²/N	bw = 10.0 cm h = 17.0 cm				As = 0.52 cm²/N (TR 12645 - 0.39 cm²/N) 1ø5.0 c/N (0.20 cm²/N) M = 272.22 kgf.m/ N		vsd = 0.67 tf/N vrd1 = 1.12 tf/N Modelo I vrd2 = 8.71 tf/N vsw = 0.00 tf/N asw = 0.00 cm²/m

		hf = 5.0 cm								F = 0.05 tf/N fiss = 0.06 mm		
	Y	bw = 9.0 cm h = 17.0 cm bf = 49.0 cm hf = 5.0 cm	Md = 201 kgf. m/N As = 0.28 cm ² /N A's = 0.00 cm ² /N	Fd = 0.79 tf/N Situação: GE As = 0.19 cm ² /N A's = 0.00 cm ² /N	Fd = 0.04 tf/N Situação: o: GE As = 0.29 cm ² /N A's = 0.00 cm ² /N	bw = 9.0 cm h = 17.0 cm				As = 0.35 cm ² /N 2ø5.0 c/N (0.39 cm ² /N) M = 125.83 kgf.m/ N F = 0.02 tf/N fiss = 0.02 mm		vsd = 0.55 tf/N vrd1 = 0.96 tf/N vrd2 = 6.92 tf/N vsw = 0.00 tf/N asw = 0.00 cm ² /m
LC 5	X	bw = 10.0 cm h = 17.0 cm bf = 50.0 cm hf = 5.0 cm	Md = 380 kgf. m/N As = 0.47 cm ² /N A's = 0.00 cm ² /N	Fd = 0.39 tf/N Situação: GE As = 0.43 cm ² /N A's = 0.00 cm ² /N	Fd = 0.05 tf/N Situação: o: GE As = 0.48 cm ² /N A's = 0.00 cm ² /N	bw = 10.0 cm h = 17.0 cm				As = 0.48 cm ² /N (TR 12645 - 0.39 cm ² /N) 1ø5.0 c/N (0.20 cm ² /N) M = 251.92 kgf.m/ N F = 0.03 tf/N fiss = 0.05 mm		vsd = 0.59 tf/N vrd1 = 1.12 tf/N Modelo I vrd2 = 8.71 tf/N vsw = 0.00 tf/N asw = 0.00 cm ² /m
	Y	bw = 9.0 cm h = 17.0 cm	Md = 160 kgf. m/N As = 0.22 cm ² /N	Fd = 0.37 tf/N Situação: GE As = 0.18 cm ² /N	Fd = 0.06 tf/N Situação: o: GE As = 0.23 cm ² /N	bw = 9.0 cm h = 17.0 cm				As = 0.35 cm ² /N 2ø5.0 c/N (0.39 cm ² /N) M = 106.71		vsd = 0.52 tf/N vrd1 = 0.96 tf/N vrd2 = 6.92 tf/N vsw = 0.00 tf/N

		bf = 49.0 cm hf = 5.0 cm	A's = 0.00 cm ² /N	A's = 0.00 cm ² /N	A's = 0.00 cm ² /N					kgf.m/N F = 0.04 tf/N fiss = 0.02 mm		asw = 0.00 cm ² /m
LC 6	X	bw = 10.0 cm h = 17.0 cm bf = 50.0 cm hf = 5.0 cm	Md = 454 kgf.m/N As = 0.57 cm ² /N A's = 0.00 cm ² /N	Fd = 0.40 tf/N Situação: GE As = 0.53 cm ² /N A's = 0.00 cm ² /N	Fd = 0.08 tf/N Situação: GE As = 0.58 cm ² /N A's = 0.00 cm ² /N	bw = 10.0 cm h = 17.0 cm				As = 0.58 cm ² /N (TR 12645 - 0.39 cm ² /N) 1ø5.0 c/N (0.20 cm ² /N) M = 301.19 kgf.m/N F = 0.04 tf/N fiss = 0.07 mm		vsd = 0.66 tf/N vrd1 = 1.12 tf/N Modelo I vrd2 = 8.71 tf/N vsw = 0.00 tf/N asw = 0.00 cm ² /m
	Y	bw = 9.0 cm h = 17.0 cm bf = 49.0 cm hf = 5.0 cm	Md = 215 kgf.m/N As = 0.30 cm ² /N A's = 0.00 cm ² /N	Fd = 0.61 tf/N Situação: GE As = 0.23 cm ² /N A's = 0.00 cm ² /N	Fd = 0.07 tf/N Situação: GE As = 0.31 cm ² /N A's = 0.00 cm ² /N	bw = 9.0 cm h = 17.0 cm				As = 0.35 cm ² /N 2ø5.0 c/N (0.39 cm ² /N) M = 133.80 kgf.m/N F = 0.04 tf/N fiss = 0.02 mm		vsd = 0.61 tf/N vrd1 = 0.96 tf/N vrd2 = 6.92 tf/N vsw = 0.00 tf/N asw = 0.00 cm ² /m

6. MEMÓRIA DE CÁLCULO (EDÍCULA DE RESÍDUOS)

Resultados dos Pilares

COBERTURA	fck = 350.00 kgf/cm ²	E = 294029 kgf/cm ²	Peso Espec = 2500.00 kgf/m ³
Lance 2		cobr = 2.50 cm	

Dados				Resultados					
Pilar	Seção (cm)	Nível Altura (cm)	leb vínc leh 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	15.00 X 25.00	305.00 280.00	280.00 RR 280.00 RR	1.47 0.54	108 139	120 110	1.57 2 ø 10.0 1.57 2 ø 10.0 0.8 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 60	64.59 38.75
P2 1:20	15.00 X 25.00	305.00 280.00	280.00 RR 280.00 RR	1.45 0.52	88 95	126 118	1.57 2 ø 10.0 1.57 2 ø 10.0 0.8 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 60	64.59 38.75
P3 1:20	14.00 X 30.00	305.00 280.00	280.00 RR 280.00 RR	3.20 1.68	71 79	224 178	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 60	69.20 32.29
P4 1:20	14.00 X 30.00	305.00 280.00	280.00 RR 280.00 RR	3.15 1.64	66 68	236 186	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 60	69.20 32.29
P5 1:20	15.00 X 25.00	305.00 280.00	280.00 RR 280.00 RR	1.69 0.70	145 212	123 110	1.57 2 ø 10.0 1.57 2 ø 10.0 0.8 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 60	64.59 38.75
P6 1:20	15.00 X	305.00 280.00	280.00 RR	1.66 0.68	111 128	123 117	1.57 2 ø 10.0	ø 5.0 c/12 ø 5.0 c/12	64.59 38.75

	25.00		280.00 RR				1.57 2 ø 10.0 0.8 4 ø 10.0	60	
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Vigas do pavimento TÉRREO

Viga	Vãos			Nós			Avisos
	Md (kgf.m)	As	Als	Md (kgf.m)	As	Als	
VA1	99.97	2 ø 10.0		-224.58 -216.92	2 ø 16.0 2 ø 16.0		
VA2	169.04	2 ø 10.0		-6.23 -55.91	2 ø 16.0 2 ø 16.0		
VA3	101.82	2 ø 10.0		-266.47 -237.85	2 ø 16.0 2 ø 16.0		
VA4	175.55	2 ø 10.0		-49.71	2 ø 16.0		
VA5	107.00	2 ø 10.0		-242.56 -206.51	2 ø 16.0 2 ø 16.0		
VA6	393.98 613.43	2 ø 10.0 2 ø 10.0		-335.46 -886.33 -522.13	2 ø 16.0 2 ø 16.0 2 ø 16.0		
VA7	477.67 511.07 503.80	2 ø 10.0 2 ø 10.0 2 ø 10.0		-200.20 -1086.41 -0.04 -273.01	2 ø 16.0 2 ø 16.0 2 ø 16.0 2 ø 16.0		26

Vigas do pavimento COBERTURA

Viga	Vãos			Nós			Avisos
	Md (kgf.m)	As	Als	Md (kgf.m)	As	Als	
VB1	80.18	2 ø 12.5		-155.36 -160.99	2 ø 16.0 2 ø 16.0		
VB2	20.21	2 ø 10.0		-16.32 -14.22	2 ø 16.0 2 ø 16.0		
VB3	66.90	2 ø 10.0		-183.65 -173.36	2 ø 16.0 2 ø 16.0		
VB4	22.07	2 ø 10.0		-14.82 -10.13	2 ø 16.0 2 ø 16.0		
VB5	74.41	2 ø 12.5		-167.68 -168.99	2 ø 16.0 2 ø 16.0		
VB6	306.82 589.65	2 ø 12.5 2 ø 12.5		-107.58 -705.97	2 ø 16.0 2 ø 16.0		98

				-142.87	2 ø 16.0		
VB7	305.79 585.84	2 ø 12.5 2 ø 12.5		-89.19 -700.77 -113.22	2 ø 16.0 2 ø 16.0 2 ø 16.0		

Cálculos das Lajes

COBERTURA	fck = 350.00 kgf/cm²	E = 294029 kgf/cm²	Peso Espec = 2500.00 kgf/m³
Lance 2		cobr = 2.50 cm	

ARMADURAS POSITIVAS (LAJE)												
Laje	Direção	Momento positivo				Momento negativo				Armadura inferior	Armadura superior	Cisalhamento
		Seção	Flexão	Verificação axial (compressão)	Verificação axial (tração)	Seção	Flexão	Verificação axial (compressão)	Verificação axial (tração)			
LB 1	X	bw = 10.0 cm h = 13.0 cm bf = 50.0 cm hf = 5.0 cm	Md = 131 kgf.m/N As = 0.26 cm²/N A's = 0.00 cm²/N			bw = 10.0 cm h = 13.0 cm				As = 0.50 cm²/N (TR 08844 - 0.28 cm²/N) 1ø6.3 c/N (0.31 cm²/N) M = 43.54 kgf.m/N F = 0.00 tf/N fiss = 0.00 mm		vsd = 0.19 tf/N vrd1 = 0.90 tf/N Modelo I vrd2 = 6.39 tf/N vsw = 0.00 tf/N asw = 0.00 cm²/m
LB 2	X	bw = 10.0 cm h = 13.0 cm	Md = 131 kgf.m/N As = 0.26 cm²/N			bw = 10.0 cm h = 13.0 cm				As = 0.50 cm²/N (TR 08844 - 0.28 cm²/N) 1ø6.3 c/N		vsd = 0.18 tf/N vrd1 = 0.90 tf/N Modelo I vrd2 = 6.39 tf/N vsw = 0.00 tf/N

		bf = 50.0 cm hf = 5.0 cm	A's = 0.00 cm ² /N							(0.31 cm ² /N) M = 42.71 kgf.m/N F = 0.00 tf/N fiss = 0.00 mm		asw = 0.00 cm ² /m
LB 3	X	bw = 10.0 cm h = 13.0 cm bf = 50.0 cm hf = 5.0 cm	Md = 131 kgf.m/N As = 0.26 cm ² /N A's = 0.00 cm ² /N			bw = 10.0 cm h = 13.0 cm				As = 0.50 cm ² /N (TR 08844 - 0.28 cm ² /N) 1ø6.3 c/N (0.31 cm ² /N) M = 61.99 kgf.m/N F = 0.00 tf/N fiss = 0.00 mm		vsd = 0.27 tf/N vrd1 = 0.90 tf/N Modelo I vrd2 = 6.39 tf/N vsw = 0.00 tf/N asw = 0.00 cm ² /m
LB 4	X	bw = 10.0 cm h = 13.0 cm bf = 50.0 cm hf = 5.0 cm	Md = 131 kgf.m/N As = 0.26 cm ² /N A's = 0.00 cm ² /N			bw = 10.0 cm h = 13.0 cm				As = 0.50 cm ² /N (TR 08844 - 0.28 cm ² /N) 1ø6.3 c/N (0.31 cm ² /N) M = 44.59 kgf.m/N F = 0.00 tf/N		vsd = 0.19 tf/N vrd1 = 0.90 tf/N Modelo I vrd2 = 6.39 tf/N vsw = 0.00 tf/N asw = 0.00 cm ² /m

										fiss = 0.00 mm		
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7. MEMÓRIA DE CÁLCULO (CASA DE GASES)

Resultados dos Pilares

COBERTURA	fck = 350.00 kgf/cm ²	E = 294029 kgf/cm ²	Peso Espec = 2500.00 kgf/m ³
Lance 2		cobr = 2.50 cm	

Dados				Resultados					
Pilar	Seção (cm)	Nível Altura (cm)	leb vínc leh 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	14.00 X 25.00	239.00 214.00	214.00 RR 214.00 RR	0.88 0.31	60 48	39 39	1.57 2 ø 10.0 1.57 2 ø 10.0 0.9 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 20	52.89 29.62
P2 1:20	14.00 X 25.00	239.00 214.00	214.00 RR 214.00 RR	1.00 0.40	65 50	37 41	1.57 2 ø 10.0 1.57 2 ø 10.0 0.9 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 20	52.89 29.62
P3 1:20	14.00 X 25.00	239.00 214.00	214.00 RR 214.00 RR	0.88 0.31	60 48	39 39	1.57 2 ø 10.0 1.57 2 ø 10.0 0.9 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 20	52.89 29.62
P4 1:20	14.00 X 25.00	239.00 214.00	214.00 RR 214.00 RR	1.00 0.40	65 50	37 41	1.57 2 ø 10.0 1.57 2 ø 10.0 0.9 4 ø 10.0	ø 5.0 c/12 ø 5.0 c/12 20	52.89 29.62

Vigas do pavimento TÉRREO

Viga	Vãos			Nós			Avisos
	Md (kgf.m)	As	Als	Md (kgf.m)	As	Als	
VA1	52.58	2 ø 10.0		-62.47 -62.78	2 ø 10.0 2 ø 10.0		123
VA2	52.58	2 ø 10.0		-62.47 -62.78	2 ø 10.0 2 ø 10.0		123
VA3	42.46	2 ø 10.0		-74.19 -74.19	2 ø 10.0 2 ø 10.0		123
VA4	41.76	2 ø 10.0		-75.28 -75.28	2 ø 10.0 2 ø 10.0		123

Vigas do pavimento COBERTURA

Viga	Vãos			Nós			Avisos
	Md (kgf.m)	As	Als	Md (kgf.m)	As	Als	
VB1	18.40	2 ø 10.0		-41.55 -43.49	2 ø 10.0 2 ø 10.0		123
VB2	18.40	2 ø 10.0		-41.55 -43.49	2 ø 10.0 2 ø 10.0		123
VB3	49.28	2 ø 10.0		-55.71 -55.71	2 ø 10.0 2 ø 10.0		123
VB4	56.10	2 ø 10.0		-61.42 -61.42	2 ø 10.0 2 ø 10.0		123

Resultados da Laje

COBERTURA	fck = 350.00 kgf/cm ²	E = 294029 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
LB1	10	531.50	12	61	As = 1.01 cm ² /m (ø5.0 c/19 - 1.03 cm ² /m)	As = 1.08 cm ² /m (ø5.0 c/18 - 1.09 cm ² /m)

LB2	10	531.50	1	65	As = 1.23 cm ² /m (ø8.0 c/10 - 5.03 cm ² /m)	As = 1.39 cm ² /m (ø8.0 c/10 - 5.03 cm ² /m)
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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)
VB4	1	LB1	LB2	85	337	-144	As = 1.83 cm ² /m (ø6.3 c/17 - 1.83 cm ² /m)
VB1	1	LB1	LB2	166	40	-28	As = 1.85 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)
VB3	1	LB1	LB2	69	246	-9	As = 1.83 cm ² /m (ø6.3 c/17 - 1.83 cm ² /m)
VB2	1	LB1	LB2	166	40	-28	As = 1.85 cm ² /m (ø8.0 c/20 - 2.51 cm ² /m)