TOP TEAM ENGENHARIA E TREINAMENTOS LTDA

MUROS DE CONTENÇÃO EM CONCRETO ARMADO

MEMORIA DE CÁLCULO – PROJETO ESTRUTURAL

ÍNDICE

1.- MATERIAIS 2
- **1.1.- Concretos** 2
- **1.2.- Aços por elemento** 2
  - 1.2.1.- Aços em barras 2
  - 1.2.2.- Aços em perfis 2

2.- ARM.PILARES E PILARES PAREDES 2
- **2.1.- Pilares** 2

3.- ESFORÇOS EM PILARES, PILARES-PAREDES E MUROS POR HIPÓTESE 6

4.- ARRANQUES EM PILARES, PILARES-PAREDES E MUROS POR HIPÓTESE 13

5.- DESFAV. PILARES, PILARES-PAREDES E CORTINAS 21
- **5.1.- Pilares** 21
- **5.2.- Cortinas** 29

6.- RELATÓRIO DE ARMADURAS DE CORTINAS 32

7.- RELATÓRIO QUANTITATIVOS PILARES 34

8.- SOMATÓRIO DE ESFORÇOS EM PILARES, PAREDES E MUROS/CORTINAS POR AÇÕES E PISO 34
- **8.1.- Resumido** 34
- **8.2.- Completo** 34

1.- MATERIAIS

1.1.- Concretos

Elemento	Concreto	f_{ck} (MPa)	γ_c	Tamanho máximo do agregado (mm)	E_c (MPa)
Todos	C25, em geral	25	1.40	19	23800

1.2.- Aços por elemento

1.2.1.- Aços em barras

Elemento	Aço	f_{yk} (MPa)	γ_s
Todos	CA-50 e CA-60	500 a 600	1.15

1.2.2.- Aços em perfis

Tipo de aço para perfis	Aço	Limite elástico (MPa)	Módulo de elasticidade (GPa)
Aço dobrado	CF-26	260	200
Aço laminado	A-36	250	200

2.- ARM.PILARES E PILARES PAREDES

2.1.- Pilares

Armadura de pilares											
Concreto: C25, em geral											
Pilar	Geometria			Armaduras						Aprov. (%)	Estado
				Barras				Estribos			
	Planta	Dimensões (cm)	Tramo (m)	Cantos	Face X	Face Y	Taxa (%)	Descrição(1)	Espaçamento (cm)		
P1	TOPO	20x40	-2.00/0.80	4Ø12.5	-	2Ø12.5	0.92	1eØ6.3+X1rØ6.3	15	9.4	Passa
	BASE	-	-	4Ø12.5	-	2Ø12.5	0.92	1eØ6.3	-	3.3	Passa
P2	TOPO	20x40	-2.00/0.80	4Ø12.5	-	2Ø12.5	0.92	1eØ6.3+X1rØ6.3	15	6.7	Passa
	BASE	-	-	4Ø12.5	-	2Ø12.5	0.92	1eØ6.3	-	4.7	Passa
P3	TOPO	20x40	-2.00/0.80	4Ø12.5	-	2Ø12.5	0.92	1eØ6.3+X1rØ6.3	15	9.5	Passa
	BASE	-	-	4Ø12.5	-	2Ø12.5	0.92	1eØ6.3	-	8.9	Passa
P4	TOPO	20x40	-2.00/0.80	4Ø12.5	-	2Ø12.5	0.92	1eØ6.3+X1rØ6.3	15	13.3	Passa
	BASE	-	-	4Ø12.5	-	2Ø12.5	0.92	1eØ6.3	-	13.3	Passa
P5	TOPO	20x40	-2.00/0.80	4Ø12.5	-	2Ø12.5	0.92	1eØ6.3+X1rØ6.3	15	15.8	Passa
	BASE	-	-	4Ø12.5	-	2Ø12.5	0.92	1eØ6.3	-	15.8	Passa
P6	TOPO	20x40	-2.00/0.80	4Ø12.5	-	2Ø12.5	0.92	1eØ6.3+X1rØ6.3	15	16.5	Passa
	BASE	-	-	4Ø12.5	-	2Ø12.5	0.92	1eØ6.3	-	16.5	Passa

Esforços e armaduras de pilares, paredes, cortinas e muros

MURO DE CONTENÇÃO - SESC ALTAMIRA Data: 17/02/21

Armadura de pilares											
Concreto: C25, em geral											
Pilar	Geometria			Armaduras						Aprov. (%)	Estado
	Planta	Dimensões (cm)	Tramo (m)	Barras				Estribos			
				Cantos	Face X	Face Y	Taxa (%)	Descrição(1)	Espaçamento (cm)		
P7	TOPO	20x40	-2.00/0.80	4Ø12.5	-	2Ø12.5	0.92	1eØ6.3+X1rØ6.3	15	15.7	Passa
	BASE	-	-	4Ø12.5	-	2Ø12.5	0.92	1eØ6.3	-	15.7	Passa
P8	TOPO	20x40	-2.00/0.80	4Ø12.5	-	2Ø12.5	0.92	1eØ6.3+X1rØ6.3	15	13.1	Passa
	BASE	-	-	4Ø12.5	-	2Ø12.5	0.92	1eØ6.3	-	13.1	Passa
P9	TOPO	20x40	-2.00/0.80	4Ø12.5	-	2Ø12.5	0.92	1eØ6.3+X1rØ6.3	15	8.2	Passa
	BASE	-	-	4Ø12.5	-	2Ø12.5	0.92	1eØ6.3	-	8.2	Passa
P10	TOPO	20x40	-2.00/0.80	4Ø12.5	-	2Ø12.5	0.92	1eØ6.3+X1rØ6.3	15	4.6	Passa
	BASE	-	-	4Ø12.5	-	2Ø12.5	0.92	1eØ6.3	-	2.9	Passa
P11	TOPO	20x40	-2.00/0.80	4Ø12.5	-	2Ø12.5	0.92	1eØ6.3+X1rØ6.3	15	2.5	Passa
	BASE	-	-	4Ø12.5	-	2Ø12.5	0.92	1eØ6.3	-	1.4	Passa
P12	TOPO	20x40	-2.00/0.80	4Ø12.5	-	2Ø12.5	0.92	1eØ6.3+X1rØ6.3	15	7.1	Passa
	BASE	-	-	4Ø12.5	-	2Ø12.5	0.92	1eØ6.3	-	2.1	Passa
P13	TOPO	20x40	-2.00/0.80	4Ø12.5	-	2Ø12.5	0.92	1eØ6.3+X1rØ6.3	15	8.2	Passa
	BASE	-	-	4Ø12.5	-	2Ø12.5	0.92	1eØ6.3	-	7.9	Passa
P14	TOPO	20x40	-2.00/0.80	4Ø12.5	-	2Ø12.5	0.92	1eØ6.3+X1rØ6.3	15	11.7	Passa
	BASE	-	-	4Ø12.5	-	2Ø12.5	0.92	1eØ6.3	-	11.7	Passa
P15	TOPO	20x40	-2.00/0.80	4Ø12.5	-	2Ø12.5	0.92	1eØ6.3+X1rØ6.3	15	12.7	Passa
	BASE	-	-	4Ø12.5	-	2Ø12.5	0.92	1eØ6.3	-	12.7	Passa
P16	TOPO	20x40	-2.00/0.80	4Ø12.5	-	2Ø12.5	0.92	1eØ6.3+X1rØ6.3	15	11.0	Passa
	BASE	-	-	4Ø12.5	-	2Ø12.5	0.92	1eØ6.3	-	11.0	Passa
P17	TOPO	20x40	-2.00/0.80	4Ø12.5	-	2Ø12.5	0.92	1eØ6.3+X1rØ6.3	15	7.8	Passa
	BASE	-	-	4Ø12.5	-	2Ø12.5	0.92	1eØ6.3	-	7.8	Passa
P18	TOPO	20x40	-2.00/0.80	4Ø12.5	-	2Ø12.5	0.92	1eØ6.3+X1rØ6.3	15	7.1	Passa
	BASE	-	-	4Ø12.5	-	2Ø12.5	0.92	1eØ6.3	-	4.4	Passa
P19	TOPO	20x40	-2.00/0.80	4Ø12.5	-	2Ø12.5	0.92	1eØ6.3+X1rØ6.3	15	1.4	Passa
	BASE	-	-	4Ø12.5	-	2Ø12.5	0.92	1eØ6.3	-	0.8	Passa
P20	TOPO	40x20	-2.00/0.80	4Ø12.5	2Ø12.5	-	0.92	1eØ6.3+Y1rØ6.3	15	7.1	Passa
	BASE	-	-	4Ø12.5	2Ø12.5	-	0.92	1eØ6.3	-	4.2	Passa
P21	TOPO	40x20	-2.00/0.80	4Ø12.5	2Ø12.5	-	0.92	1eØ6.3+Y1rØ6.3	15	9.6	Passa
	BASE	-	-	4Ø12.5	2Ø12.5	-	0.92	1eØ6.3	-	7.8	Passa
P22	TOPO	40x20	-2.00/0.80	4Ø12.5	2Ø12.5	-	0.92	1eØ6.3+Y1rØ6.3	15	11.2	Passa
	BASE	-	-	4Ø12.5	2Ø12.5	-	0.92	1eØ6.3	-	11.2	Passa
P23	TOPO	40x20	-2.00/0.80	4Ø12.5	2Ø12.5	-	0.92	1eØ6.3+Y1rØ6.3	15	12.6	Passa
	BASE	-	-	4Ø12.5	2Ø12.5	-	0.92	1eØ6.3	-	12.6	Passa
P24	TOPO	40x20	-2.00/0.80	4Ø12.5	2Ø12.5	-	0.92	1eØ6.3+Y1rØ6.3	15	11.4	Passa
	BASE	-	-	4Ø12.5	2Ø12.5	-	0.92	1eØ6.3	-	11.4	Passa
P25	TOPO	40x20	-2.00/0.80	4Ø12.5	2Ø12.5	-	0.92	1eØ6.3+Y1rØ6.3	15	7.5	Passa
	BASE	-	-	4Ø12.5	2Ø12.5	-	0.92	1eØ6.3	-	7.2	Passa
P26	TOPO	40x20	-2.00/0.80	4Ø12.5	2Ø12.5	-	0.92	1eØ6.3+Y1rØ6.3	15	5.5	Passa
	BASE	-	-	4Ø12.5	2Ø12.5	-	0.92	1eØ6.3	-	1.8	Passa
P27	TOPO	40x20	-2.00/0.80	4Ø12.5	2Ø12.5	-	0.92	1eØ6.3+Y1rØ6.3	15	2.4	Passa
	BASE	-	-	4Ø12.5	2Ø12.5	-	0.92	1eØ6.3	-	2.0	Passa
P28	TOPO	40x20	-2.00/0.80	4Ø12.5	2Ø12.5	-	0.92	1eØ6.3+Y1rØ6.3	15	7.1	Passa
	BASE	-	-	4Ø12.5	2Ø12.5	-	0.92	1eØ6.3	-	3.5	Passa
P29	TOPO	40x20	-2.00/0.80	4Ø12.5	2Ø12.5	-	0.92	1eØ6.3+Y1rØ6.3	15	9.3	Passa
	BASE	-	-	4Ø12.5	2Ø12.5	-	0.92	1eØ6.3	-	8.7	Passa

Esforços e armaduras de pilares, paredes, cortinas e muros

MURO DE CONTENÇÃO - SESC ALTAMIRA Data: 17/02/21

Armadura de pilares											
Concreto: C25, em geral											
Pilar	Geometria			Armaduras						Aprov. (%)	Estado
				Barras				Estribos			
	Planta	Dimensões (cm)	Tramo (m)	Cantos	Face X	Face Y	Taxa (%)	Descrição(1)	Espaçamento (cm)		
P30	TOPO	40x20	-2.00/0.80	4Ø12.5	2Ø12.5	-	0.92	1eØ6.3+Y1rØ6.3	15	13.6	Passa
	BASE	-	-	4Ø12.5	2Ø12.5	-	0.92	1eØ6.3	-	13.6	Passa
P31	TOPO	40x20	-2.00/0.80	4Ø12.5	2Ø12.5	-	0.92	1eØ6.3+Y1rØ6.3	15	16.5	Passa
	BASE	-	-	4Ø12.5	2Ø12.5	-	0.92	1eØ6.3	-	16.5	Passa
P32	TOPO	40x20	-2.00/0.80	4Ø12.5	2Ø12.5	-	0.92	1eØ6.3+Y1rØ6.3	15	17.8	Passa
	BASE	-	-	4Ø12.5	2Ø12.5	-	0.92	1eØ6.3	-	17.8	Passa
P33	TOPO	40x20	-2.00/0.80	4Ø12.5	2Ø12.5	-	0.92	1eØ6.3+Y1rØ6.3	15	17.7	Passa
	BASE	-	-	4Ø12.5	2Ø12.5	-	0.92	1eØ6.3	-	17.7	Passa
P34	TOPO	40x20	-2.00/0.80	4Ø12.5	2Ø12.5	-	0.92	1eØ6.3+Y1rØ6.3	15	16.2	Passa
	BASE	-	-	4Ø12.5	2Ø12.5	-	0.92	1eØ6.3	-	16.2	Passa
P35	TOPO	40x20	-2.00/0.80	4Ø12.5	2Ø12.5	-	0.92	1eØ6.3+Y1rØ6.3	15	13.2	Passa
	BASE	-	-	4Ø12.5	2Ø12.5	-	0.92	1eØ6.3	-	13.2	Passa
P36	TOPO	40x20	-2.00/0.80	4Ø12.5	2Ø12.5	-	0.92	1eØ6.3+Y1rØ6.3	15	12.8	Passa
	BASE	-	-	4Ø12.5	2Ø12.5	-	0.92	1eØ6.3	-	12.8	Passa
P37	TOPO	40x20	-2.00/0.80	4Ø12.5	2Ø12.5	-	0.92	1eØ6.3+Y1rØ6.3	15	49.8	Passa
	BASE	-	-	4Ø12.5	2Ø12.5	-	0.92	1eØ6.3	-	49.8	Passa
P38	TOPO	40x20	-2.00/0.80	4Ø12.5	2Ø12.5	-	0.92	1eØ6.3+Y1rØ6.3	15	5.3	Passa
	BASE	-	-	4Ø12.5	2Ø12.5	-	0.92	1eØ6.3	-	2.9	Passa
P39	TOPO	40x20	-2.00/0.80	4Ø12.5	2Ø12.5	-	0.92	1eØ6.3+Y1rØ6.3	15	15.3	Passa
	BASE	-	-	4Ø12.5	2Ø12.5	-	0.92	1eØ6.3	-	15.3	Passa
P40	TOPO	40x20	-2.00/0.80	4Ø12.5	2Ø12.5	-	0.92	1eØ6.3+Y1rØ6.3	15	20.9	Passa
	BASE	-	-	4Ø12.5	2Ø12.5	-	0.92	1eØ6.3	-	20.9	Passa
P41	TOPO	40x20	-2.00/0.80	4Ø12.5	2Ø12.5	-	0.92	1eØ6.3+Y1rØ6.3	15	23.2	Passa
	BASE	-	-	4Ø12.5	2Ø12.5	-	0.92	1eØ6.3	-	23.2	Passa
P42	TOPO	40x20	-2.00/0.80	4Ø12.5	2Ø12.5	-	0.92	1eØ6.3+Y1rØ6.3	15	24.4	Passa
	BASE	-	-	4Ø12.5	2Ø12.5	-	0.92	1eØ6.3	-	24.4	Passa
P43	TOPO	40x20	-2.00/0.80	4Ø12.5	2Ø12.5	-	0.92	1eØ6.3+Y1rØ6.3	15	24.9	Passa
	BASE	-	-	4Ø12.5	2Ø12.5	-	0.92	1eØ6.3	-	24.9	Passa
P44	TOPO	40x20	-2.00/0.80	4Ø12.5	2Ø12.5	-	0.92	1eØ6.3+Y1rØ6.3	15	24.8	Passa
	BASE	-	-	4Ø12.5	2Ø12.5	-	0.92	1eØ6.3	-	24.8	Passa
P45	TOPO	40x20	-2.00/0.80	4Ø12.5	2Ø12.5	-	0.92	1eØ6.3+Y1rØ6.3	15	12.6	Passa
	BASE	-	-	4Ø12.5	2Ø12.5	-	0.92	1eØ6.3	-	12.6	Passa
P46	TOPO	20x40	-2.00/0.80	4Ø12.5	-	2Ø12.5	0.92	1eØ6.3+X1rØ6.3	15	9.5	Passa
	BASE	-	-	4Ø12.5	-	2Ø12.5	0.92	1eØ6.3	-	2.7	Passa
P47	TOPO	20x40	-2.00/0.80	4Ø12.5	-	2Ø12.5	0.92	1eØ6.3+X1rØ6.3	15	1.0	Passa
	BASE	-	-	4Ø12.5	-	2Ø12.5	0.92	1eØ6.3	-	0.9	Passa
P48	TOPO	20x40	-2.00/0.80	4Ø12.5	-	2Ø12.5	0.92	1eØ6.3+X1rØ6.3	15	7.3	Passa
	BASE	-	-	4Ø12.5	-	2Ø12.5	0.92	1eØ6.3	-	4.4	Passa
P49	TOPO	20x40	-2.00/0.80	4Ø12.5	-	2Ø12.5	0.92	1eØ6.3+X1rØ6.3	15	4.7	Passa
	BASE	-	-	4Ø12.5	-	2Ø12.5	0.92	1eØ6.3	-	2.8	Passa
P50	TOPO	40x20	-2.00/0.80	4Ø12.5	2Ø12.5	-	0.92	1eØ6.3+Y1rØ6.3	15	2.4	Passa
	BASE	-	-	4Ø12.5	2Ø12.5	-	0.92	1eØ6.3	-	0.7	Passa
P51	TOPO	40x20	-2.00/0.80	4Ø12.5	2Ø12.5	-	0.92	1eØ6.3+Y1rØ6.3	15	2.3	Passa
	BASE	-	-	4Ø12.5	2Ø12.5	-	0.92	1eØ6.3	-	1.1	Passa
P52	TOPO	40x20	-2.00/0.80	4Ø12.5	2Ø12.5	-	0.92	1eØ6.3+Y1rØ6.3	15	3.9	Passa
	BASE	-	-	4Ø12.5	2Ø12.5	-	0.92	1eØ6.3	-	1.7	Passa

Esforços e armaduras de pilares, paredes, cortinas e muros

MURO DE CONTENÇÃO - SESC ALTAMIRA Data: 17/02/21

Armadura de pilares											
Concreto: C25, em geral											
Pilar	Geometria			Armaduras						Aprov. (%)	Estado
	Planta	Dimensões (cm)	Tramo (m)	Barras				Estribos			
				Cantos	Face X	Face Y	Taxa (%)	Descrição(1)	Espaçamento (cm)		
P53	TOPO	40x20	-2.00/0.80	4Ø12.5	2Ø12.5	-	0.92	1eØ6.3+Y1rØ6.3	15	2.3	Passa
	BASE	-	-	4Ø12.5	2Ø12.5	-	0.92	1eØ6.3	-	1.0	Passa
P54	TOPO	40x20	-2.00/0.80	4Ø12.5	2Ø12.5	-	0.92	1eØ6.3+Y1rØ6.3	15	1.1	Passa
	BASE	-	-	4Ø12.5	2Ø12.5	-	0.92	1eØ6.3	-	0.9	Passa
P55	TOPO	40x20	-2.00/0.80	4Ø12.5	2Ø12.5	-	0.92	1eØ6.3+Y1rØ6.3	15	9.7	Passa
	BASE	-	-	4Ø12.5	2Ø12.5	-	0.92	1eØ6.3	-	2.9	Passa
P56	TOPO	20x20	-2.00/0.80	4Ø12.5	-	-	1.23	1eØ6.3	15	0.9	Passa
	BASE	-	-	4Ø12.5	-	-	1.23	1eØ6.3	-	0.8	Passa
P57	TOPO	20x20	-2.00/0.80	4Ø12.5	-	-	1.23	1eØ6.3	15	1.8	Passa
	BASE	-	-	4Ø12.5	-	-	1.23	1eØ6.3	-	1.8	Passa
P58	TOPO	20x20	-2.00/0.80	4Ø12.5	-	-	1.23	1eØ6.3	15	1.8	Passa
	BASE	-	-	4Ø12.5	-	-	1.23	1eØ6.3	-	1.8	Passa
P59	TOPO	20x20	-2.00/0.80	4Ø12.5	-	-	1.23	1eØ6.3	15	1.8	Passa
	BASE	-	-	4Ø12.5	-	-	1.23	1eØ6.3	-	1.8	Passa
P60	TOPO	20x20	-2.00/0.80	4Ø12.5	-	-	1.23	1eØ6.3	15	1.8	Passa
	BASE	-	-	4Ø12.5	-	-	1.23	1eØ6.3	-	1.8	Passa
P61	TOPO	20x20	-2.00/0.80	4Ø12.5	-	-	1.23	1eØ6.3	15	1.8	Passa
	BASE	-	-	4Ø12.5	-	-	1.23	1eØ6.3	-	1.8	Passa
P62	TOPO	20x20	-2.00/0.80	4Ø12.5	-	-	1.23	1eØ6.3	15	1.8	Passa
	BASE	-	-	4Ø12.5	-	-	1.23	1eØ6.3	-	1.8	Passa
P63	TOPO	20x20	-2.00/0.80	4Ø12.5	-	-	1.23	1eØ6.3	15	1.8	Passa
	BASE	-	-	4Ø12.5	-	-	1.23	1eØ6.3	-	1.8	Passa
P64	TOPO	20x20	-2.00/0.80	4Ø12.5	-	-	1.23	1eØ6.3	15	1.8	Passa
	BASE	-	-	4Ø12.5	-	-	1.23	1eØ6.3	-	1.8	Passa
P65	TOPO	20x20	-2.00/0.80	4Ø12.5	-	-	1.23	1eØ6.3	15	1.8	Passa
	BASE	-	-	4Ø12.5	-	-	1.23	1eØ6.3	-	1.8	Passa
P67	TOPO	20x20	-2.00/0.80	4Ø12.5	-	-	1.23	1eØ6.3	15	1.8	Passa
	BASE	-	-	4Ø12.5	-	-	1.23	1eØ6.3	-	1.8	Passa
P68	TOPO	20x20	-2.00/0.80	4Ø12.5	-	-	1.23	1eØ6.3	15	1.8	Passa
	BASE	-	-	4Ø12.5	-	-	1.23	1eØ6.3	-	1.8	Passa
P69	TOPO	20x20	-2.00/0.80	4Ø12.5	-	-	1.23	1eØ6.3	15	1.8	Passa
	BASE	-	-	4Ø12.5	-	-	1.23	1eØ6.3	-	1.8	Passa
P70	TOPO	20x20	-2.00/0.80	4Ø12.5	-	-	1.23	1eØ6.3	15	1.8	Passa
	BASE	-	-	4Ø12.5	-	-	1.23	1eØ6.3	-	1.8	Passa
P71	TOPO	20x20	-2.00/0.80	4Ø12.5	-	-	1.23	1eØ6.3	15	1.8	Passa
	BASE	-	-	4Ø12.5	-	-	1.23	1eØ6.3	-	1.8	Passa
P72	TOPO	20x20	-2.00/0.80	4Ø12.5	-	-	1.23	1eØ6.3	15	1.8	Passa
	BASE	-	-	4Ø12.5	-	-	1.23	1eØ6.3	-	1.8	Passa
P73	TOPO	20x20	-2.00/0.80	4Ø12.5	-	-	1.23	1eØ6.3	15	1.8	Passa
	BASE	-	-	4Ø12.5	-	-	1.23	1eØ6.3	-	1.8	Passa
P74	TOPO	20x20	-2.00/0.80	4Ø12.5	-	-	1.23	1eØ6.3	15	1.8	Passa
	BASE	-	-	4Ø12.5	-	-	1.23	1eØ6.3	-	1.8	Passa
P75	TOPO	20x20	-2.00/0.80	4Ø12.5	-	-	1.23	1eØ6.3	15	0.9	Passa
	BASE	-	-	4Ø12.5	-	-	1.23	1eØ6.3	-	0.9	Passa
P76	TOPO	20x20	-2.00/0.80	4Ø12.5	-	-	1.23	1eØ6.3	15	0.8	Passa
	BASE	-	-	4Ø12.5	-	-	1.23	1eØ6.3	-	0.8	Passa

Armadura de pilares											
Concreto: C25, em geral											
Pilar	Geometria			Armaduras						Aprov. (%)	Estado
				Barras				Estribos			
	Planta	Dimensões (cm)	Tramo (m)	Cantos	Face X	Face Y	Taxa (%)	Descrição[1]	Espaçamento (cm)		
P82	TOPO	20x20	-2.00/0.80	4Ø12.5	-	-	1.23	1eØ6.3	15	0.9	Passa
	BASE	-	-	4Ø12.5	-	-	1.23	1eØ6.3	-	0.9	Passa
P84	TOPO	20x20	-2.00/0.80	4Ø12.5	-	-	1.23	1eØ6.3	15	0.9	Passa
	BASE	-	-	4Ø12.5	-	-	1.23	1eØ6.3	-	0.9	Passa
P85	TOPO	20x20	-2.00/0.80	4Ø12.5	-	-	1.23	1eØ6.3	15	1.8	Passa
	BASE	-	-	4Ø12.5	-	-	1.23	1eØ6.3	-	1.8	Passa
P86	TOPO	20x20	-2.00/0.80	4Ø12.5	-	-	1.23	1eØ6.3	15	1.8	Passa
	BASE	-	-	4Ø12.5	-	-	1.23	1eØ6.3	-	1.8	Passa
P87	TOPO	20x20	-2.00/0.80	4Ø12.5	-	-	1.23	1eØ6.3	15	1.8	Passa
	BASE	-	-	4Ø12.5	-	-	1.23	1eØ6.3	-	1.8	Passa
P88	TOPO	20x20	-2.00/0.80	4Ø12.5	-	-	1.23	1eØ6.3	15	1.8	Passa
	BASE	-	-	4Ø12.5	-	-	1.23	1eØ6.3	-	1.8	Passa
P89	TOPO	20x20	-2.00/0.80	4Ø12.5	-	-	1.23	1eØ6.3	15	1.8	Passa
	BASE	-	-	4Ø12.5	-	-	1.23	1eØ6.3	-	1.8	Passa
P90	TOPO	20x20	-2.00/0.80	4Ø12.5	-	-	1.23	1eØ6.3	15	1.8	Passa
	BASE	-	-	4Ø12.5	-	-	1.23	1eØ6.3	-	1.8	Passa
P91	TOPO	20x20	-2.00/0.80	4Ø12.5	-	-	1.23	1eØ6.3	15	1.8	Passa
	BASE	-	-	4Ø12.5	-	-	1.23	1eØ6.3	-	1.8	Passa
P92	TOPO	20x20	-2.00/0.80	4Ø12.5	-	-	1.23	1eØ6.3	15	1.8	Passa
	BASE	-	-	4Ø12.5	-	-	1.23	1eØ6.3	-	1.8	Passa
P93	TOPO	20x20	-2.00/0.80	4Ø12.5	-	-	1.23	1eØ6.3	15	1.8	Passa
	BASE	-	-	4Ø12.5	-	-	1.23	1eØ6.3	-	1.8	Passa
P94	TOPO	20x20	-2.00/0.80	4Ø12.5	-	-	1.23	1eØ6.3	15	1.8	Passa
	BASE	-	-	4Ø12.5	-	-	1.23	1eØ6.3	-	1.8	Passa
P95	TOPO	20x20	-2.00/0.80	4Ø12.5	-	-	1.23	1eØ6.3	15	1.8	Passa
	BASE	-	-	4Ø12.5	-	-	1.23	1eØ6.3	-	1.8	Passa
P96	TOPO	20x20	-2.00/0.80	4Ø12.5	-	-	1.23	1eØ6.3	15	1.8	Passa
	BASE	-	-	4Ø12.5	-	-	1.23	1eØ6.3	-	1.8	Passa
P97	TOPO	20x20	-2.00/0.80	4Ø12.5	-	-	1.23	1eØ6.3	15	1.8	Passa
	BASE	-	-	4Ø12.5	-	-	1.23	1eØ6.3	-	1.8	Passa
P98	TOPO	20x20	-2.00/0.80	4Ø12.5	-	-	1.23	1eØ6.3	15	1.8	Passa
	BASE	-	-	4Ø12.5	-	-	1.23	1eØ6.3	-	1.8	Passa
P100	TOPO	20x20	-2.00/0.80	4Ø12.5	-	-	1.23	1eØ6.3	15	1.8	Passa
	BASE	-	-	4Ø12.5	-	-	1.23	1eØ6.3	-	1.8	Passa
P101	TOPO	20x20	-2.00/0.80	4Ø12.5	-	-	1.23	1eØ6.3	15	1.9	Passa
	BASE	-	-	4Ø12.5	-	-	1.23	1eØ6.3	-	1.9	Passa
P102	TOPO	20x20	-2.00/0.80	4Ø12.5	-	-	1.23	1eØ6.3	15	2.2	Passa
	BASE	-	-	4Ø12.5	-	-	1.23	1eØ6.3	-	2.2	Passa
P103	TOPO	20x20	-2.00/0.80	4Ø12.5	-	-	1.23	1eØ6.3	15	13.5	Passa
	BASE	-	-	4Ø12.5	-	-	1.23	1eØ6.3	-	13.5	Passa

Notas:
[1] *e = estribo, r = ramo*

3.- ESFORÇOS EM PILARES, PILARES-PAREDES E MUROS POR HIPÓTESE

■ Tramo: Nível inicial / nível final do tramo entre pisos.

■ Nota:

Esforços em relação aos eixos locais do pilar.

Pilar	Planta	Dimensão (cm)	Tramo (m)	Hipótese	Base						Ext.Sup.					
					N (kN)	Mx (kN·m)	My (kN·m)	Qx (kN)	Qy (kN)	T (kN·m)	N (kN)	Mx (kN·m)	My (kN·m)	Qx (kN)	Qy (kN)	T (kN·m)
P1	TOPO	20x40	-2.00/0.80	Peso próprio	12.9	-0.2	0.8	-0.6	1.8	-0.0	1.1	0.0	-0.0	-0.2	0.2	-0.0
				Cargas permanentes	4.0	-0.1	0.3	-0.3	1.1	-0.1	-0.7	0.1	-0.1	-0.4	0.8	-0.1
				Sobrecarga	0.1	-0.0	0.0	-0.0	0.0	-0.0	0.2	0.0	0.0	-0.0	-0.0	-0.0
P2	TOPO	20x40	-2.00/0.80	Peso próprio	8.2	-0.1	0.3	-0.1	0.1	-0.0	0.1	-0.0	-0.0	0.1	0.2	-0.0
				Cargas permanentes	-4.1	-1.0	-0.8	-1.9	-1.2	-0.3	0.7	-0.1	-0.1	0.3	1.2	-0.2
				Sobrecarga	0.1	-0.0	0.0	-0.0	0.0	-0.0	0.0	-0.0	-0.0	0.0	0.0	-0.0
P3	TOPO	20x40	-2.00/0.80	Peso próprio	7.2	-0.1	0.2	-0.1	-0.0	-0.0	0.0	-0.0	-0.0	0.1	0.1	-0.0
				Cargas permanentes	-14.0	-0.7	-2.2	-1.4	-2.6	-0.2	0.5	-0.1	0.0	0.3	0.5	-0.2
				Sobrecarga	0.1	-0.0	0.0	-0.0	0.0	-0.0	0.0	-0.0	-0.0	0.0	-0.0	-0.0
P4	TOPO	20x40	-2.00/0.80	Peso próprio	6.5	-0.0	0.1	-0.1	-0.0	-0.0	-0.1	-0.0	-0.0	0.0	0.1	-0.0
				Cargas permanentes	-20.8	-0.4	-2.8	-0.8	-2.7	-0.1	-0.1	-0.0	0.0	0.2	0.3	-0.1
				Sobrecarga	0.1	-0.0	0.0	-0.0	0.0	-0.0	0.0	-0.0	-0.0	0.0	-0.0	-0.0
P5	TOPO	20x40	-2.00/0.80	Peso próprio	6.1	-0.0	0.1	-0.1	-0.0	-0.0	-0.1	-0.0	0.0	0.0	0.1	-0.0
				Cargas permanentes	-24.4	-0.2	-3.1	-0.4	-2.6	-0.0	-0.5	-0.0	0.1	0.1	0.2	-0.0
				Sobrecarga	0.1	-0.0	0.0	0.0	0.0	-0.0	0.0	-0.0	-0.0	0.0	-0.0	-0.0
P6	TOPO	20x40	-2.00/0.80	Peso próprio	6.0	-0.0	0.1	-0.0	-0.0	0.0	-0.1	0.0	0.0	-0.0	0.0	0.0
				Cargas permanentes	-25.6	-0.1	-3.2	-0.2	-2.5	0.0	-0.5	0.0	0.1	-0.1	0.1	-0.0
				Sobrecarga	0.1	0.0	-0.0	0.0	0.0	0.0	0.0	-0.0	-0.0	0.0	-0.0	0.0
P7	TOPO	20x40	-2.00/0.80	Peso próprio	6.2	0.0	0.1	-0.0	0.0	0.0	-0.1	0.0	0.0	-0.0	0.0	0.0
				Cargas permanentes	-24.9	0.1	-3.0	0.0	-2.4	0.1	-0.4	0.1	0.1	-0.3	0.1	0.0
				Sobrecarga	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0	-0.0	0.0
P8	TOPO	20x40	-2.00/0.80	Peso próprio	6.6	0.0	0.2	0.0	0.0	0.0	-0.0	0.0	0.0	-0.1	0.0	0.0
				Cargas permanentes	-21.9	0.3	-2.7	0.3	-2.1	0.1	0.0	0.1	0.1	-0.4	0.1	0.1
				Sobrecarga	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0	-0.0	0.0
P9	TOPO	20x40	-2.00/0.80	Peso próprio	7.5	0.1	0.3	0.1	0.1	0.0	0.1	0.0	0.0	-0.1	0.1	0.0
				Cargas permanentes	-15.8	0.5	-1.9	0.7	-1.7	0.2	0.9	0.1	0.1	-0.6	0.2	0.2
				Sobrecarga	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0	-0.0	0.0
P10	TOPO	20x40	-2.00/0.80	Peso próprio	8.8	0.1	0.4	0.1	0.3	0.0	0.3	0.0	0.0	-0.1	0.0	0.0
				Cargas permanentes	-5.0	0.6	-0.6	1.0	-0.7	0.2	2.6	0.1	0.1	-0.6	0.2	0.2
				Sobrecarga	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.0	0.0	-0.0	0.0
P11	TOPO	20x40	-2.00/0.80	Peso próprio	7.3	-0.0	0.1	-0.1	0.2	0.0	-0.1	0.0	-0.0	-0.0	0.1	0.0
				Cargas permanentes	2.7	-0.3	0.0	-0.8	0.2	-0.0	0.1	0.0	-0.1	-0.2	0.6	-0.0
				Sobrecarga	0.1	-0.0	0.0	-0.0	0.0	0.0	0.1	-0.0	-0.0	0.0	0.0	0.0
P12	TOPO	20x40	-2.00/0.80	Peso próprio	9.0	-0.1	0.4	-0.1	0.1	-0.0	0.4	-0.0	-0.0	0.1	0.1	-0.0
				Cargas permanentes	-3.8	-0.4	-1.0	-0.2	-1.8	-0.2	3.1	-0.2	-0.0	0.9	0.6	-0.2
				Sobrecarga	0.1	-0.0	0.0	-0.0	0.0	-0.0	0.0	-0.0	-0.0	0.0	-0.0	-0.0
P13	TOPO	20x40	-2.00/0.80	Peso próprio	7.8	-0.0	0.2	-0.0	-0.0	-0.0	0.2	-0.0	-0.0	0.1	0.1	-0.0
				Cargas permanentes	-14.1	-0.2	-2.2	0.1	-2.5	-0.1	1.5	-0.2	-0.0	0.8	0.4	-0.1
				Sobrecarga	0.1	-0.0	0.0	-0.0	0.0	-0.0	0.0	-0.0	-0.0	0.0	-0.0	-0.0
P14	TOPO	20x40	-2.00/0.80	Peso próprio	7.0	-0.0	0.2	0.0	-0.0	-0.0	0.1	-0.0	-0.0	0.1	0.1	-0.0
				Cargas permanentes	-19.5	0.0	-2.6	0.5	-2.5	-0.1	0.7	-0.1	0.0	0.6	0.3	-0.1
				Sobrecarga	0.1	-0.0	0.0	-0.0	0.0	-0.0	0.0	-0.0	-0.0	0.0	-0.0	-0.0
P15	TOPO	20x40	-2.00/0.80	Peso próprio	6.8	0.0	0.2	0.1	0.0	-0.0	0.1	-0.0	-0.0	0.0	0.1	0.0
				Cargas permanentes	-21.0	0.2	-2.7	0.8	-2.4	0.0	0.3	-0.1	0.0	0.3	0.2	0.0
				Sobrecarga	0.1	0.0	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0	0.0	-0.0	0.0
P16	TOPO	20x40	-2.00/0.80	Peso próprio	7.0	0.1	0.2	0.1	0.0	0.0	0.1	0.0	-0.0	-0.0	0.1	0.0
				Cargas permanentes	-19.0	0.5	-2.4	1.2	-2.1	0.1	0.3	-0.0	0.0	0.1	0.2	0.1
				Sobrecarga	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0	-0.0	0.0
P17	TOPO	20x40	-2.00/0.80	Peso próprio	7.8	0.1	0.3	0.2	0.1	0.0	0.1	0.0	-0.0	-0.0	0.1	0.0
				Cargas permanentes	-13.2	0.8	-1.7	1.7	-1.6	0.2	0.8	0.0	0.1	-0.1	0.2	0.2
				Sobrecarga	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0	-0.0	0.0
P18	TOPO	20x40	-2.00/0.80	Peso próprio	8.9	0.1	0.5	0.3	0.3	0.0	0.1	0.0	-0.0	-0.0	0.1	0.0
				Cargas permanentes	-2.8	1.0	-0.3	2.2	-0.4	0.2	0.9	0.0	-0.1	-0.0	0.9	0.2
				Sobrecarga	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0	-0.0	0.0
P19	TOPO	20x40	-2.00/0.80	Peso próprio	5.1	0.0	-0.1	0.0	-0.2	0.0	-0.1	0.0	-0.0	-0.0	0.0	-0.0
				Cargas permanentes	0.3	0.1	-0.2	-0.0	-0.1	0.0	-0.6	0.0	-0.0	-0.2	0.2	-0.0
				Sobrecarga	0.1	0.0	-0.0	0.0	-0.0	0.0	0.0	0.0	-0.0	-0.0	0.0	0.0
P20	TOPO	40x20	-2.00/0.80	Peso próprio	9.1	-0.4	-0.1	-0.2	-0.3	-0.0	0.1	0.0	-0.0	-0.1	0.0	-0.0
				Cargas permanentes	-2.3	0.6	-1.0	1.1	-2.2	-0.2	0.9	0.1	-0.0	-1.1	0.0	-0.2
				Sobrecarga	0.1	-0.0	-0.0	-0.0	-0.0	-0.0	0.0	0.0	0.0	-0.0	-0.0	-0.0
P21	TOPO	40x20	-2.00/0.80	Peso próprio	7.9	-0.3	-0.1	0.0	-0.2	-0.0	0.2	0.0	-0.0	-0.1	0.0	-0.0
				Cargas permanentes	-12.4	2.0	-0.7	2.5	-1.6	-0.2	0.8	-0.0	-0.0	-0.5	0.1	-0.2
				Sobrecarga	0.1	-0.0	-0.0	-0.0	-0.0	-0.0	0.0	0.0	-0.0	0.0	0.0	-0.0

Esforços e armaduras de pilares, paredes, cortinas e muros

MURO DE CONTENÇÃO - SESC ALTAMIRA

Data: 17/02/21

Pilar	Planta	Dimensão (cm)	Tramo (m)	Hipótese	Base						Ext.Sup.					
					N (kN)	Mx (kN·m)	My (kN·m)	Qx (kN)	Qy (kN)	T (kN·m)	N (kN)	Mx (kN·m)	My (kN·m)	Qx (kN)	Qy (kN)	T (kN·m)
P22	TOPO	40x20	-2.00/0.80	Peso próprio	7.1	-0.2	-0.1	0.0	-0.1	-0.0	0.1	0.0	-0.0	-0.1	0.0	-0.0
				Cargas permanentes	-18.6	2.5	-0.4	2.5	-1.0	-0.1	0.4	-0.0	0.0	-0.3	-0.1	-0.1
				Sobrecarga	0.1	-0.0	-0.0	-0.0	-0.0	-0.0	0.0	0.0	-0.0	0.0	0.0	-0.0
P23	TOPO	40x20	-2.00/0.80	Peso próprio	6.8	-0.2	-0.0	-0.0	-0.1	-0.0	0.1	0.0	0.0	-0.1	-0.0	-0.0
				Cargas permanentes	-20.9	2.7	-0.2	2.4	-0.6	0.0	0.3	-0.0	0.1	-0.2	-0.3	-0.0
				Sobrecarga	0.1	-0.0	-0.0	-0.0	-0.0	-0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
P24	TOPO	40x20	-2.00/0.80	Peso próprio	7.0	-0.2	0.0	-0.0	-0.0	0.0	0.1	0.0	0.0	-0.1	-0.1	0.0
				Cargas permanentes	-19.7	2.5	0.0	2.2	-0.3	0.1	0.6	-0.0	0.1	-0.2	-0.5	0.1
				Sobrecarga	0.1	-0.0	0.0	-0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.0	0.0
P25	TOPO	40x20	-2.00/0.80	Peso próprio	7.7	-0.3	0.1	-0.1	0.1	0.0	0.2	0.0	0.0	-0.1	-0.1	0.0
				Cargas permanentes	-14.7	1.8	0.3	1.7	0.2	0.2	1.4	-0.0	0.1	-0.2	-0.7	0.1
				Sobrecarga	0.1	-0.0	0.0	-0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.0	0.0
P26	TOPO	40x20	-2.00/0.80	Peso próprio	9.0	-0.5	0.1	-0.3	0.1	0.0	0.4	-0.0	0.0	-0.0	-0.1	0.0
				Cargas permanentes	-4.3	0.6	0.5	0.8	0.5	0.2	3.2	-0.1	0.1	-0.2	-0.8	0.2
				Sobrecarga	0.1	-0.0	0.0	-0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.0	0.0
P27	TOPO	40x20	-2.00/0.80	Peso próprio	7.1	-0.1	0.0	-0.2	0.0	-0.0	0.0	0.0	0.0	-0.1	-0.0	-0.0
				Cargas permanentes	3.5	-0.1	0.3	-0.4	0.8	0.0	0.7	0.1	-0.0	-0.6	0.2	0.0
				Sobrecarga	0.1	-0.0	0.0	-0.0	0.0	-0.0	0.0	0.0	0.0	-0.0	-0.0	-0.0
P28	TOPO	40x20	-2.00/0.80	Peso próprio	9.0	-0.4	-0.1	-0.1	-0.2	-0.0	0.3	0.0	-0.0	-0.1	0.1	-0.0
				Cargas permanentes	-2.3	0.9	-0.8	1.7	-1.5	-0.2	2.7	0.0	-0.1	-0.7	0.4	-0.2
				Sobrecarga	0.1	-0.0	-0.0	-0.0	-0.0	-0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
P29	TOPO	40x20	-2.00/0.80	Peso próprio	7.6	-0.2	-0.1	0.0	-0.1	-0.0	0.2	0.0	-0.0	-0.1	0.1	-0.0
				Cargas permanentes	-14.0	2.2	-0.6	2.6	-1.1	-0.2	1.3	0.0	-0.1	-0.5	0.4	-0.2
				Sobrecarga	0.1	-0.0	-0.0	-0.0	-0.0	-0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
P30	TOPO	40x20	-2.00/0.80	Peso próprio	6.7	-0.1	-0.0	0.0	-0.1	-0.0	0.1	0.0	-0.0	-0.1	0.1	-0.0
				Cargas permanentes	-21.2	2.9	-0.4	2.7	-0.7	-0.1	0.5	-0.0	-0.1	-0.2	0.3	-0.1
				Sobrecarga	0.1	-0.0	-0.0	-0.0	-0.0	-0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
P31	TOPO	40x20	-2.00/0.80	Peso próprio	6.1	-0.1	-0.0	0.0	-0.0	-0.0	0.0	0.0	-0.0	-0.0	0.0	-0.0
				Cargas permanentes	-25.2	3.3	-0.2	2.7	-0.4	-0.1	0.1	-0.0	-0.0	-0.1	0.2	-0.1
				Sobrecarga	0.1	0.0	-0.0	-0.0	-0.0	-0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
P32	TOPO	40x20	-2.00/0.80	Peso próprio	5.9	-0.1	-0.0	0.0	-0.0	-0.0	-0.0	0.0	-0.0	-0.0	0.0	-0.0
				Cargas permanentes	-27.0	3.4	-0.1	2.6	-0.2	-0.0	-0.0	-0.0	-0.0	-0.0	0.0	-0.0
				Sobrecarga	0.1	0.0	-0.0	-0.0	-0.0	-0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
P33	TOPO	40x20	-2.00/0.80	Peso próprio	5.9	-0.1	-0.0	0.0	-0.0	0.0	-0.0	0.0	0.0	-0.0	-0.0	0.0
				Cargas permanentes	-26.9	3.4	0.0	2.5	-0.0	0.0	-0.0	-0.0	0.0	0.0	-0.1	0.0
				Sobrecarga	0.1	0.0	-0.0	-0.0	-0.0	0.0	0.0	0.0	0.0	0.0	-0.0	0.0
P34	TOPO	40x20	-2.00/0.80	Peso próprio	6.1	-0.1	0.0	-0.0	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0	0.0
				Cargas permanentes	-25.1	3.1	0.2	2.4	0.3	0.1	0.2	-0.0	0.0	-0.0	-0.2	0.0
				Sobrecarga	0.1	-0.0	0.0	-0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.0	0.0
P35	TOPO	40x20	-2.00/0.80	Peso próprio	6.5	-0.1	0.0	-0.0	0.1	0.0	0.1	0.0	0.0	-0.0	-0.1	0.0
				Cargas permanentes	-21.4	2.7	0.5	2.1	1.0	0.1	0.5	-0.0	0.1	-0.0	-0.3	0.1
				Sobrecarga	0.1	-0.0	0.0	-0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.0	0.0
P36	TOPO	40x20	-2.00/0.80	Peso próprio	6.9	-0.2	0.1	-0.2	0.2	0.0	0.0	0.0	0.0	-0.0	-0.1	0.0
				Cargas permanentes	-18.7	2.1	1.1	1.1	2.7	0.2	0.0	-0.0	0.1	0.2	-0.4	0.1
				Sobrecarga	0.1	-0.0	0.0	-0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.0	0.0
P37	TOPO	40x20	-2.00/0.80	Peso próprio	1.3	0.9	0.2	0.1	0.5	0.0	1.7	-0.1	0.0	-0.2	0.1	0.0
				Cargas permanentes	-50.1	10.1	1.1	1.2	3.6	0.3	2.8	-0.0	-0.2	-0.7	1.3	0.2
				Sobrecarga	0.0	0.0	0.0	0.0	0.0	0.0	0.2	-0.0	0.0	-0.0	-0.0	0.0
P38	TOPO	40x20	-2.00/0.80	Peso próprio	5.5	0.1	0.0	0.1	0.0	-0.0	-0.1	0.0	-0.0	-0.0	0.0	-0.0
				Cargas permanentes	-4.1	-0.9	-0.5	-1.3	-1.2	0.1	1.1	-0.1	0.0	0.8	-0.3	0.2
				Sobrecarga	0.1	0.0	-0.0	0.0	-0.0	0.0	0.0	-0.0	0.0	-0.0	-0.0	0.0
P39	TOPO	40x20	-2.00/0.80	Peso próprio	5.3	0.0	-0.0	0.0	-0.1	0.0	-0.1	0.0	0.0	0.0	-0.0	0.0
				Cargas permanentes	-21.5	-3.2	-0.3	-3.1	-0.8	0.1	0.7	0.0	0.0	0.3	-0.1	0.1
				Sobrecarga	0.1	-0.0	-0.0	0.0	-0.0	0.0	0.0	-0.0	0.0	-0.0	-0.0	0.0
P40	TOPO	40x20	-2.00/0.80	Peso próprio	5.2	0.0	-0.0	-0.0	-0.1	0.0	-0.1	0.0	0.0	0.0	-0.1	0.0
				Cargas permanentes	-29.1	-4.1	-0.2	-3.3	-0.5	0.1	0.2	0.0	0.0	0.1	-0.1	0.1
				Sobrecarga	0.1	-0.0	-0.0	0.0	0.0	0.0	0.0	-0.0	-0.0	-0.0	0.0	0.0
P41	TOPO	40x20	-2.00/0.80	Peso próprio	5.2	0.0	-0.0	-0.0	-0.1	0.0	-0.0	0.0	0.0	0.0	-0.1	0.0
				Cargas permanentes	-32.5	-4.4	-0.1	-3.4	-0.2	0.0	0.0	0.0	0.0	-0.1	-0.0	0.0
				Sobrecarga	0.0	-0.0	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0	-0.0	0.0	0.0
P42	TOPO	40x20	-2.00/0.80	Peso próprio	5.3	0.0	-0.0	-0.0	-0.1	-0.0	0.0	-0.0	0.0	0.0	-0.0	-0.0
				Cargas permanentes	-34.2	-4.6	-0.0	-3.4	-0.1	0.0	-0.0	0.0	0.0	-0.1	-0.0	0.0
				Sobrecarga	0.0	-0.0	-0.0	0.0	-0.0	0.0	0.0	-0.0	0.0	-0.0	-0.0	0.0
P43	TOPO	40x20	-2.00/0.80	Peso próprio	5.3	0.0	-0.0	-0.0	-0.1	-0.0	0.0	-0.0	0.0	-0.0	-0.0	-0.0
				Cargas permanentes	-35.0	-4.7	-0.0	-3.4	0.0	0.0	-0.1	0.0	0.0	-0.1	-0.0	0.0
				Sobrecarga	0.0	-0.0	-0.0	0.0	-0.0	0.0	0.0	-0.0	0.0	-0.0	-0.0	0.0
P44	TOPO	40x20	-2.00/0.80	Peso próprio	5.5	0.0	-0.0	-0.0	-0.0	-0.0	0.1	-0.0	-0.0	0.0	0.0	-0.0
				Cargas permanentes	-35.0	-4.7	0.0	-3.5	0.1	-0.0	-0.0	0.0	0.0	-0.1	-0.0	-0.0
				Sobrecarga	0.0	-0.0	-0.0	0.0	-0.0	0.0	0.0	-0.0	0.0	-0.0	-0.0	0.0
P45	TOPO	40x20	-2.00/0.80	Peso próprio	4.0	0.0	0.0	-0.0	0.1	-0.0	-0.0	-0.0	-0.0	0.0	0.0	-0.0
				Cargas permanentes	-14.2	-3.1	0.1	-1.3	0.5	-0.0	-0.7	-0.0	-0.1	-0.0	0.4	-0.0
				Sobrecarga	0.0	-0.0	0.0	0.0	-0.0	0.0	0.0	-0.0	0.0	-0.0	-0.0	-0.0

Esforços e armaduras de pilares, paredes, cortinas e muros

MURO DE CONTENÇÃO - SESC ALTAMIRA

Data: 17/02/21

Pilar	Planta	Dimensão (cm)	Tramo (m)	Hipótese	Base						Ext.Sup.					
					N (kN)	Mx (kN·m)	My (kN·m)	Qx (kN)	Qy (kN)	T (kN·m)	N (kN)	Mx (kN·m)	My (kN·m)	Qx (kN)	Qy (kN)	T (kN·m)
P46	TOPO	20x40	-2.00/0.80	Peso próprio	5.4	-0.0	-0.1	-0.0	-0.2	0.0	-0.0	0.0	0.0	-0.0	-0.0	0.0
				Cargas permanentes	1.2	-0.1	-1.5	-0.7	-2.7	-0.0	-0.3	0.0	0.0	-0.4	-0.1	0.0
				Sobrecarga	0.1	-0.0	0.0	-0.0	-0.0	0.0	0.0	-0.0	-0.0	0.0	0.0	-0.0
P47	TOPO	20x40	-2.00/0.80	Peso próprio	5.3	-0.0	-0.0	-0.0	-0.1	0.0	-0.0	0.0	0.0	-0.0	-0.0	0.0
				Cargas permanentes	2.6	0.0	-0.3	0.1	-0.4	-0.0	-0.4	0.0	-0.1	0.0	0.1	-0.0
				Sobrecarga	0.1	-0.0	0.0	-0.0	0.0	0.0	0.1	0.0	-0.0	-0.0	-0.0	0.0
P48	TOPO	20x40	-2.00/0.80	Peso próprio	5.1	-0.0	-0.0	-0.0	-0.0	0.0	0.0	-0.0	-0.0	-0.0	-0.0	-0.0
				Cargas permanentes	-5.5	0.3	-1.5	1.1	-2.0	-0.0	1.7	-0.1	0.0	0.4	0.3	-0.0
				Sobrecarga	0.1	0.0	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0	0.0	-0.0	0.0
P49	TOPO	20x40	-2.00/0.80	Peso próprio	4.3	0.0	-0.1	0.0	-0.1	-0.0	0.0	-0.0	0.0	0.0	0.0	0.0
				Cargas permanentes	-4.4	0.4	-0.5	1.4	-0.1	0.1	-0.2	-0.1	-0.2	0.7	0.4	0.1
				Sobrecarga	0.1	0.0	-0.0	0.0	-0.0	0.0	0.1	-0.0	-0.0	0.0	0.0	0.0
P50	TOPO	40x20	-2.00/0.80	Peso próprio	4.1	0.1	0.0	0.1	0.0	0.0	0.0	-0.0	-0.0	0.0	0.0	0.0
				Cargas permanentes	1.3	-0.2	0.1	-0.1	0.3	0.0	-0.6	-0.0	-0.1	0.3	0.4	0.0
				Sobrecarga	0.0	0.0	-0.0	0.0	-0.0	0.0	0.0	0.0	0.0	-0.0	-0.0	-0.0
P51	TOPO	40x20	-2.00/0.80	Peso próprio	4.8	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0	0.0	0.0	-0.0	0.0
				Cargas permanentes	3.8	-0.5	-0.1	-0.2	-0.3	0.0	0.1	-0.0	0.0	0.0	-0.2	0.0
				Sobrecarga	0.1	0.0	-0.0	-0.0	-0.0	-0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
P52	TOPO	40x20	-2.00/0.80	Peso próprio	5.1	0.0	-0.0	0.1	-0.0	-0.0	0.0	0.0	-0.0	-0.0	0.0	-0.0
				Cargas permanentes	3.1	-0.5	-0.4	-0.4	-1.2	-0.0	0.1	-0.0	0.0	0.0	-0.3	-0.0
				Sobrecarga	0.1	-0.0	-0.0	-0.0	-0.0	0.0	0.0	0.0	0.0	0.0	-0.0	0.0
P53	TOPO	40x20	-2.00/0.80	Peso próprio	5.2	0.0	-0.0	0.1	-0.0	-0.0	-0.0	-0.0	-0.0	0.0	0.0	-0.0
				Cargas permanentes	0.9	-0.2	-0.2	-0.2	-0.7	-0.0	-0.1	0.0	0.0	-0.0	-0.1	-0.0
				Sobrecarga	0.1	-0.0	0.0	-0.0	-0.0	-0.0	0.0	0.0	-0.0	0.0	-0.0	0.0
P54	TOPO	40x20	-2.00/0.80	Peso próprio	5.4	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	0.0	0.0	-0.0	-0.0	-0.0
				Cargas permanentes	2.6	-0.2	-0.0	0.1	-0.2	-0.0	0.2	0.0	-0.0	0.1	0.0	-0.0
				Sobrecarga	0.1	-0.0	0.0	-0.0	0.0	-0.0	0.1	0.0	-0.0	0.0	-0.0	-0.0
P55	TOPO	40x20	-2.00/0.80	Peso próprio	5.3	0.0	0.0	0.1	0.0	-0.0	-0.0	-0.0	-0.0	0.0	0.0	-0.0
				Cargas permanentes	0.4	1.4	-0.3	2.7	-0.1	-0.0	-0.2	-0.1	-0.1	0.6	0.3	-0.0
				Sobrecarga	0.1	0.0	0.0	0.0	0.0	-0.0	0.1	0.0	-0.0	0.0	0.0	-0.0
P56	TOPO	20x20	-2.00/0.80	Peso próprio	3.9	0.0	0.0	0.1	0.0	0.0	1.2	-0.1	-0.0	0.1	0.0	0.0
				Cargas permanentes	0.1	0.0	0.0	0.0	0.0	0.0	0.1	-0.0	-0.0	0.0	0.0	0.0
				Sobrecarga	0.1	0.0	0.0	0.0	0.0	0.0	0.1	-0.0	-0.0	0.0	0.0	0.0
P57	TOPO	20x20	-2.00/0.80	Peso próprio	4.9	-0.0	0.0	-0.0	0.0	-0.0	2.2	0.0	0.0	-0.0	0.0	-0.0
				Cargas permanentes	0.2	0.0	0.0	0.0	0.0	-0.0	0.2	-0.0	0.0	0.0	0.0	-0.0
				Sobrecarga	0.2	-0.0	0.0	-0.0	0.0	-0.0	0.2	0.0	-0.0	-0.0	0.0	-0.0
P58	TOPO	20x20	-2.00/0.80	Peso próprio	4.9	-0.0	-0.0	-0.0	-0.0	0.0	2.2	0.0	-0.0	-0.0	-0.0	0.0
				Cargas permanentes	0.2	-0.0	-0.0	-0.0	-0.0	0.0	0.2	0.0	-0.0	-0.0	-0.0	0.0
				Sobrecarga	0.2	0.0	-0.0	0.0	-0.0	-0.0	0.2	-0.0	-0.0	0.0	-0.0	-0.0
P59	TOPO	20x20	-2.00/0.80	Peso próprio	4.9	-0.0	0.0	-0.0	0.0	-0.0	2.2	0.0	0.0	-0.0	0.0	-0.0
				Cargas permanentes	0.2	-0.0	0.0	-0.0	0.0	0.0	0.2	0.0	0.0	-0.0	0.0	0.0
				Sobrecarga	0.2	0.0	0.0	0.0	0.0	-0.0	0.2	0.0	-0.0	0.0	0.0	-0.0
P60	TOPO	20x20	-2.00/0.80	Peso próprio	4.9	-0.0	-0.0	-0.0	-0.0	0.0	2.2	0.0	-0.0	-0.0	-0.0	0.0
				Cargas permanentes	0.2	-0.0	-0.0	-0.0	-0.0	0.0	0.2	0.0	0.0	-0.0	-0.0	0.0
				Sobrecarga	0.2	-0.0	0.0	-0.0	0.0	-0.0	0.2	0.0	-0.0	-0.0	0.0	-0.0
P61	TOPO	20x20	-2.00/0.80	Peso próprio	4.9	-0.0	0.0	-0.0	0.0	0.0	2.2	0.0	0.0	-0.0	0.0	0.0
				Cargas permanentes	0.2	-0.0	-0.0	-0.0	-0.0	0.0	0.2	0.0	0.0	-0.0	-0.0	0.0
				Sobrecarga	0.2	-0.0	0.0	-0.0	0.0	-0.0	0.2	0.0	-0.0	-0.0	0.0	-0.0
P62	TOPO	20x20	-2.00/0.80	Peso próprio	4.9	-0.0	-0.0	-0.0	-0.0	0.0	2.2	0.0	0.0	-0.0	-0.0	0.0
				Cargas permanentes	0.2	-0.0	-0.0	-0.0	-0.0	0.0	0.2	0.0	0.0	-0.0	-0.0	0.0
				Sobrecarga	0.2	-0.0	0.0	-0.0	0.0	-0.0	0.2	0.0	-0.0	-0.0	0.0	-0.0
P63	TOPO	20x20	-2.00/0.80	Peso próprio	4.9	-0.0	-0.0	-0.0	-0.0	0.0	2.2	0.0	0.0	-0.0	-0.0	0.0
				Cargas permanentes	0.2	-0.0	-0.0	-0.0	-0.0	0.0	0.2	0.0	0.0	-0.0	-0.0	0.0
				Sobrecarga	0.2	-0.0	0.0	-0.0	0.0	-0.0	0.2	0.0	-0.0	-0.0	0.0	-0.0
P64	TOPO	20x20	-2.00/0.80	Peso próprio	4.9	-0.0	-0.0	-0.0	-0.0	0.0	2.2	0.0	0.0	-0.0	-0.0	0.0
				Cargas permanentes	0.2	-0.0	-0.0	-0.0	-0.0	0.0	0.2	0.0	0.0	-0.0	-0.0	0.0
				Sobrecarga	0.2	-0.0	0.0	-0.0	0.0	-0.0	0.2	0.0	-0.0	-0.0	0.0	-0.0
P65	TOPO	20x20	-2.00/0.80	Peso próprio	4.9	-0.0	0.0	-0.0	0.0	0.0	2.2	0.0	-0.0	-0.0	0.0	0.0
				Cargas permanentes	0.2	-0.0	-0.0	-0.0	-0.0	0.0	0.2	0.0	0.0	-0.0	-0.0	0.0
				Sobrecarga	0.2	-0.0	0.0	-0.0	0.0	-0.0	0.2	0.0	-0.0	-0.0	0.0	-0.0
P67	TOPO	20x20	-2.00/0.80	Peso próprio	4.9	-0.0	0.0	-0.0	0.0	0.0	2.2	0.0	-0.0	-0.0	0.0	0.0
				Cargas permanentes	0.2	-0.0	0.0	-0.0	0.0	0.0	0.2	0.0	-0.0	-0.0	0.0	0.0
				Sobrecarga	0.2	-0.0	0.0	-0.0	0.0	0.0	0.2	0.0	-0.0	-0.0	0.0	0.0
P68	TOPO	20x20	-2.00/0.80	Peso próprio	4.9	-0.0	0.0	-0.0	0.0	0.0	2.2	0.0	-0.0	-0.0	0.0	0.0
				Cargas permanentes	0.2	-0.0	0.0	-0.0	0.0	0.0	0.2	0.0	-0.0	-0.0	0.0	0.0
				Sobrecarga	0.2	-0.0	0.0	-0.0	0.0	0.0	0.2	0.0	-0.0	-0.0	0.0	0.0
P69	TOPO	20x20	-2.00/0.80	Peso próprio	4.9	-0.0	0.0	-0.0	0.0	0.0	2.2	0.0	-0.0	-0.0	0.0	0.0
				Cargas permanentes	0.2	-0.0	0.0	-0.0	0.0	0.0	0.2	0.0	-0.0	-0.0	0.0	0.0
				Sobrecarga	0.2	-0.0	0.0	-0.0	0.0	0.0	0.2	0.0	-0.0	-0.0	0.0	0.0
P70	TOPO	20x20	-2.00/0.80	Peso próprio	4.9	-0.0	0.0	-0.0	0.0	0.0	2.2	0.0	-0.0	-0.0	0.0	0.0
				Cargas permanentes	0.2	-0.0	0.0	-0.0	0.0	0.0	0.2	0.0	-0.0	-0.0	0.0	0.0
				Sobrecarga	0.2	-0.0	0.0	-0.0	0.0	0.0	0.2	0.0	-0.0	-0.0	0.0	0.0

Esforços e armaduras de pilares, paredes, cortinas e muros

MURO DE CONTENÇÃO - SESC ALTAMIRA

Data: 17/02/21

Pilar	Planta	Dimensão (cm)	Tramo (m)	Hipótese	Base						Ext.Sup.					
					N (kN)	Mx (kN·m)	My (kN·m)	Qx (kN)	Qy (kN)	T (kN·m)	N (kN)	Mx (kN·m)	My (kN·m)	Qx (kN)	Qy (kN)	T (kN·m)
P71	TOPO	20x20	-2.00/0.80	Peso próprio	4.9	0.0	0.0	-0.0	0.0	0.0	2.2	0.0	-0.0	-0.0	0.0	0.0
				Cargas permanentes	0.2	-0.0	0.0	-0.0	0.0	0.0	0.2	0.0	-0.0	-0.0	0.0	0.0
				Sobrecarga	0.2	-0.0	0.0	-0.0	0.0	0.0	0.2	0.0	-0.0	-0.0	0.0	0.0
P72	TOPO	20x20	-2.00/0.80	Peso próprio	4.9	0.0	0.0	-0.0	0.0	0.0	2.2	0.0	-0.0	-0.0	0.0	0.0
				Cargas permanentes	0.2	-0.0	-0.0	-0.0	-0.0	0.0	0.2	0.0	-0.0	-0.0	-0.0	0.0
				Sobrecarga	0.2	-0.0	0.0	-0.0	0.0	0.0	0.2	0.0	-0.0	-0.0	0.0	0.0
P73	TOPO	20x20	-2.00/0.80	Peso próprio	4.9	0.0	-0.0	-0.0	-0.0	0.0	2.2	0.0	-0.0	-0.0	-0.0	0.0
				Cargas permanentes	0.2	-0.0	0.0	-0.0	0.0	0.0	0.2	0.0	-0.0	-0.0	0.0	0.0
				Sobrecarga	0.2	-0.0	0.0	-0.0	0.0	0.0	0.2	0.0	-0.0	-0.0	0.0	0.0
P74	TOPO	20x20	-2.00/0.80	Peso próprio	4.9	-0.0	0.0	-0.0	0.0	0.0	2.2	0.0	-0.0	-0.0	0.0	0.0
				Cargas permanentes	0.2	-0.0	-0.0	-0.0	-0.0	-0.0	0.2	0.0	0.0	-0.0	-0.0	-0.0
				Sobrecarga	0.2	-0.0	0.0	-0.0	0.0	0.0	0.2	0.0	-0.0	-0.0	0.0	0.0
P75	TOPO	20x20	-2.00/0.80	Peso próprio	4.7	-0.0	-0.0	-0.0	-0.0	-0.0	1.9	0.0	-0.0	-0.0	-0.0	-0.0
				Cargas permanentes	0.2	-0.0	0.0	0.0	0.0	0.0	0.2	-0.0	-0.0	0.0	0.0	0.0
				Sobrecarga	0.2	-0.0	-0.0	0.0	-0.0	0.0	0.2	-0.0	-0.0	0.0	-0.0	0.0
P76	TOPO	20x20	-2.00/0.80	Peso próprio	4.1	0.0	0.0	-0.0	0.0	0.0	1.4	0.1	-0.1	-0.0	0.0	0.0
				Cargas permanentes	0.2	-0.0	0.0	-0.0	0.0	0.0	0.2	0.0	-0.0	-0.0	0.0	0.0
				Sobrecarga	0.2	-0.0	0.0	-0.0	0.0	0.0	0.2	0.0	-0.0	-0.0	0.0	0.0
P82	TOPO	20x20	-2.00/0.80	Peso próprio	4.7	0.0	-0.0	0.0	-0.0	0.0	2.0	0.0	0.0	0.0	-0.0	0.0
				Cargas permanentes	0.2	-0.0	0.0	-0.0	0.0	-0.0	0.2	0.0	-0.0	-0.0	0.0	-0.0
				Sobrecarga	0.2	0.0	-0.0	0.0	-0.0	0.0	0.2	0.0	0.0	0.0	-0.0	0.0
P84	TOPO	20x20	-2.00/0.80	Peso próprio	4.7	-0.0	0.0	-0.0	0.0	-0.0	2.0	-0.0	-0.0	-0.0	0.0	-0.0
				Cargas permanentes	0.2	-0.0	0.0	-0.0	0.0	-0.0	0.2	0.0	-0.0	-0.0	0.0	-0.0
				Sobrecarga	0.2	-0.0	0.0	-0.0	0.0	-0.0	0.2	-0.0	-0.0	-0.0	0.0	-0.0
P85	TOPO	20x20	-2.00/0.80	Peso próprio	4.9	-0.0	-0.0	-0.0	-0.0	-0.0	2.2	0.0	0.0	-0.0	-0.0	-0.0
				Cargas permanentes	0.2	-0.0	0.0	-0.0	0.0	-0.0	0.2	0.0	-0.0	-0.0	0.0	-0.0
				Sobrecarga	0.2	-0.0	0.0	-0.0	0.0	-0.0	0.2	0.0	-0.0	-0.0	0.0	-0.0
P86	TOPO	20x20	-2.00/0.80	Peso próprio	4.9	-0.0	-0.0	-0.0	-0.0	-0.0	2.2	0.0	0.0	-0.0	-0.0	-0.0
				Cargas permanentes	0.2	-0.0	0.0	-0.0	0.0	-0.0	0.2	0.0	-0.0	-0.0	0.0	-0.0
				Sobrecarga	0.2	-0.0	0.0	-0.0	0.0	-0.0	0.2	0.0	-0.0	-0.0	0.0	-0.0
P87	TOPO	20x20	-2.00/0.80	Peso próprio	4.9	-0.0	-0.0	-0.0	-0.0	-0.0	2.2	0.0	0.0	-0.0	-0.0	-0.0
				Cargas permanentes	0.2	-0.0	0.0	-0.0	0.0	-0.0	0.2	0.0	-0.0	-0.0	0.0	-0.0
				Sobrecarga	0.2	-0.0	0.0	-0.0	0.0	-0.0	0.2	0.0	-0.0	-0.0	0.0	-0.0
P88	TOPO	20x20	-2.00/0.80	Peso próprio	4.9	-0.0	0.0	-0.0	-0.0	-0.0	2.2	0.0	0.0	-0.0	-0.0	-0.0
				Cargas permanentes	0.2	-0.0	0.0	-0.0	0.0	-0.0	0.2	0.0	-0.0	-0.0	0.0	-0.0
				Sobrecarga	0.2	-0.0	0.0	-0.0	0.0	-0.0	0.2	0.0	-0.0	-0.0	0.0	-0.0
P89	TOPO	20x20	-2.00/0.80	Peso próprio	4.9	-0.0	0.0	-0.0	0.0	-0.0	2.2	0.0	0.0	-0.0	0.0	-0.0
				Cargas permanentes	0.2	-0.0	0.0	-0.0	0.0	-0.0	0.2	0.0	-0.0	-0.0	0.0	-0.0
				Sobrecarga	0.2	-0.0	0.0	-0.0	0.0	-0.0	0.2	0.0	-0.0	-0.0	0.0	-0.0
P90	TOPO	20x20	-2.00/0.80	Peso próprio	4.9	-0.0	0.0	-0.0	0.0	-0.0	2.2	0.0	0.0	-0.0	0.0	-0.0
				Cargas permanentes	0.2	0.0	0.0	0.0	0.0	-0.0	0.2	-0.0	-0.0	0.0	0.0	-0.0
				Sobrecarga	0.2	-0.0	0.0	-0.0	0.0	-0.0	0.2	0.0	-0.0	-0.0	0.0	-0.0
P91	TOPO	20x20	-2.00/0.80	Peso próprio	4.9	-0.0	0.0	-0.0	0.0	-0.0	2.2	0.0	0.0	-0.0	0.0	-0.0
				Cargas permanentes	0.2	0.0	0.0	0.0	0.0	-0.0	0.2	-0.0	-0.0	0.0	0.0	-0.0
				Sobrecarga	0.2	-0.0	0.0	-0.0	0.0	-0.0	0.2	0.0	-0.0	-0.0	0.0	-0.0
P92	TOPO	20x20	-2.00/0.80	Peso próprio	4.9	0.0	0.0	0.0	0.0	-0.0	2.2	-0.0	0.0	0.0	0.0	-0.0
				Cargas permanentes	0.2	0.0	0.0	0.0	0.0	-0.0	0.2	-0.0	-0.0	0.0	0.0	-0.0
				Sobrecarga	0.2	-0.0	0.0	-0.0	0.0	-0.0	0.2	0.0	0.0	-0.0	0.0	-0.0
P93	TOPO	20x20	-2.00/0.80	Peso próprio	4.9	0.0	0.0	0.0	0.0	-0.0	2.2	-0.0	0.0	0.0	0.0	-0.0
				Cargas permanentes	0.2	0.0	0.0	0.0	0.0	-0.0	0.2	-0.0	-0.0	0.0	0.0	-0.0
				Sobrecarga	0.2	-0.0	0.0	-0.0	-0.0	0.0	0.2	0.0	0.0	-0.0	-0.0	0.0
P94	TOPO	20x20	-2.00/0.80	Peso próprio	4.9	0.0	0.0	0.0	0.0	-0.0	2.2	-0.0	-0.0	0.0	0.0	-0.0
				Cargas permanentes	0.2	0.0	0.0	0.0	0.0	-0.0	0.2	-0.0	-0.0	0.0	0.0	-0.0
				Sobrecarga	0.2	-0.0	-0.0	-0.0	-0.0	0.0	0.2	0.0	0.0	-0.0	-0.0	0.0
P95	TOPO	20x20	-2.00/0.80	Peso próprio	4.9	0.0	0.0	0.0	0.0	-0.0	2.2	-0.0	-0.0	0.0	0.0	-0.0
				Cargas permanentes	0.2	0.0	0.0	0.0	0.0	-0.0	0.2	-0.0	-0.0	0.0	0.0	-0.0
				Sobrecarga	0.2	-0.0	-0.0	-0.0	-0.0	0.0	0.2	0.0	0.0	-0.0	-0.0	0.0
P96	TOPO	20x20	-2.00/0.80	Peso próprio	4.9	0.0	0.0	0.0	0.0	-0.0	2.2	-0.0	-0.0	0.0	0.0	-0.0
				Cargas permanentes	0.2	0.0	0.0	0.0	0.0	-0.0	0.2	-0.0	-0.0	0.0	0.0	-0.0
				Sobrecarga	0.2	-0.0	-0.0	-0.0	-0.0	0.0	0.2	0.0	0.0	-0.0	-0.0	0.0
P97	TOPO	20x20	-2.00/0.80	Peso próprio	4.9	0.0	0.0	0.0	0.0	-0.0	2.2	-0.0	-0.0	0.0	0.0	-0.0
				Cargas permanentes	0.2	0.0	0.0	0.0	0.0	-0.0	0.2	-0.0	-0.0	0.0	0.0	-0.0
				Sobrecarga	0.2	-0.0	-0.0	-0.0	-0.0	0.0	0.2	0.0	0.0	-0.0	-0.0	0.0
P98	TOPO	20x20	-2.00/0.80	Peso próprio	4.9	-0.0	0.0	-0.0	0.0	-0.0	2.2	0.0	-0.0	-0.0	0.0	-0.0
				Cargas permanentes	0.2	-0.0	0.0	-0.0	0.0	0.0	0.2	0.0	-0.0	-0.0	0.0	0.0
				Sobrecarga	0.2	-0.0	-0.0	-0.0	-0.0	0.0	0.2	0.0	0.0	-0.0	-0.0	0.0
P100	TOPO	20x20	-2.00/0.80	Peso próprio	4.9	0.0	0.0	0.0	0.0	-0.0	2.2	-0.0	-0.0	0.0	0.0	-0.0
				Cargas permanentes	0.2	0.0	0.0	0.0	0.0	-0.0	0.2	-0.0	-0.0	0.0	0.0	-0.0
				Sobrecarga	0.2	0.0	-0.0	0.0	-0.0	0.0	0.2	-0.0	0.0	0.0	-0.0	0.0
P101	TOPO	20x20	-2.00/0.80	Peso próprio	4.9	-0.0	0.0	-0.0	0.0	0.0	2.2	0.0	-0.0	-0.0	0.0	0.0
				Cargas permanentes	0.2	-0.0	0.0	-0.0	0.0	0.0	0.2	0.0	-0.0	-0.0	0.0	0.0
				Sobrecarga	0.2	-0.0	-0.0	-0.0	-0.0	0.0	0.2	0.0	0.0	-0.0	-0.0	0.0

Esforços e armaduras de pilares, paredes, cortinas e muros

MURO DE CONTENÇÃO - SESC ALTAMIRA

Data: 17/02/21

Pilar	Planta	Dimensão (cm)	Tramo (m)	Hipótese	Base						Ext.Sup.					
					N (kN)	Mx (kN·m)	My (kN·m)	Qx (kN)	Qy (kN)	T (kN·m)	N (kN)	Mx (kN·m)	My (kN·m)	Qx (kN)	Qy (kN)	T (kN·m)
P102	TOPO	20x20	-2.00/0.80	Peso próprio	4.9	0.0	-0.0	0.0	-0.0	-0.0	2.2	-0.0	0.0	0.0	-0.0	-0.0
				Cargas permanentes	0.2	0.2	-0.0	0.1	-0.0	-0.0	0.2	-0.0	0.0	0.1	-0.0	-0.0
				Sobrecarga	0.2	0.0	-0.0	0.0	-0.0	-0.0	0.2	0.0	0.0	0.0	-0.0	-0.0
P103	TOPO	20x20	-2.00/0.80	Peso próprio	4.2	0.2	-0.0	0.0	-0.0	-0.0	1.5	0.1	0.1	0.0	-0.0	-0.0
				Cargas permanentes	-1.7	1.5	-0.1	0.6	-0.1	-0.1	-1.7	-0.2	0.0	0.6	-0.1	-0.1
				Sobrecarga	0.2	-0.0	-0.0	-0.0	-0.0	-0.0	0.2	0.0	0.0	-0.0	-0.0	-0.0
C1	TOPO	20.0	-2.00/0.80	Peso próprio	411.8	-83.7	-12.1	-8.8	-10.1	3.1	-1.9	-12.9	-0.2	-2.1	-0.8	-8.6
				Cargas permanentes	190.2	-276.5	86.5	-53.1	159.0	-65.8	-9.8	-61.6	0.8	-13.3	-14.2	-25.9
				Sobrecarga	5.0	-1.7	-0.1	-0.1	-0.1	-0.0	5.9	-0.3	0.0	-0.0	-0.1	-0.5
C2	TOPO	20.0	-2.00/0.80	Peso próprio	422.5	10.4	228.2	7.8	5.7	50.4	-2.4	0.2	7.0	0.7	1.2	11.4
				Cargas permanentes	292.0	-99.8	1948.9	-174.3	57.6	405.8	-8.4	-0.1	89.0	11.8	12.5	75.7
				Sobrecarga	5.2	0.1	3.8	0.1	0.1	0.7	5.9	-0.0	-0.3	0.1	0.0	0.5
C3	TOPO	20.0	-2.00/0.80	Peso próprio	195.4	-0.6	68.9	-0.7	4.4	-3.7	0.0	0.0	0.3	0.0	0.3	0.4
				Cargas permanentes	217.8	50.7	321.2	78.1	18.8	-123.3	2.5	0.3	9.8	-3.3	5.3	-19.8
				Sobrecarga	2.4	0.0	0.3	-0.0	0.0	-0.1	2.6	0.0	0.3	-0.0	-0.0	-0.0
C4	TOPO	20.0	-2.00/0.80	Peso próprio	41.3	0.6	0.5	4.6	4.4	1.2	0.7	-0.6	-0.7	1.3	1.2	0.2
				Cargas permanentes	25.4	19.8	26.0	47.5	61.7	5.4	6.1	-5.1	-5.5	11.7	10.4	2.0
				Sobrecarga	0.5	0.0	0.0	0.1	0.1	0.0	0.5	-0.0	-0.0	0.0	0.0	-0.0
C5	TOPO	20.0	-2.00/0.80	Peso próprio	30.0	0.8	0.5	1.8	1.2	-0.0	0.0	-0.0	-0.0	0.2	0.1	-0.0
				Cargas permanentes	23.3	5.5	5.8	14.4	15.0	-2.1	0.9	-0.1	-0.0	4.8	1.2	-0.1
				Sobrecarga	0.4	0.0	0.0	0.0	0.0	-0.0	0.4	-0.0	-0.0	0.0	0.0	-0.0
C6	TOPO	20.0	-2.00/0.80	Peso próprio	25.9	0.4	-0.0	-0.0	0.1	-0.0	-0.0	-0.0	0.0	0.2	-0.1	-0.0
				Cargas permanentes	14.6	-6.0	2.6	-14.4	7.0	2.0	0.1	-0.5	0.2	-0.8	-1.0	-0.6
				Sobrecarga	0.3	0.0	-0.0	-0.0	-0.0	0.0	0.3	0.0	0.0	-0.0	-0.0	0.0
C7	TOPO	20.0	-2.00/0.80	Peso próprio	26.6	0.1	0.1	0.7	0.1	0.1	0.0	0.0	-0.0	-0.3	0.1	-0.0
				Cargas permanentes	4.3	-14.2	4.9	-21.5	10.6	-0.6	-1.2	0.9	-0.5	-1.7	0.5	0.0
				Sobrecarga	0.3	-0.0	0.0	-0.0	0.0	0.0	0.3	-0.0	0.0	-0.0	-0.0	-0.0
C8	TOPO	20.0	-2.00/0.80	Peso próprio	26.2	-0.1	0.1	-0.4	-0.1	-0.0	-0.1	0.0	-0.0	-0.1	-0.0	-0.0
				Cargas permanentes	-9.5	-2.7	-1.5	-8.5	-3.1	-2.5	0.9	-0.4	-0.3	-0.5	-0.7	-0.8
				Sobrecarga	0.3	-0.0	0.0	-0.0	0.0	-0.0	0.3	0.0	0.0	-0.0	-0.0	-0.0
C9	TOPO	20.0	-2.00/0.80	Peso próprio	26.4	-0.0	-0.4	0.0	-1.1	-0.1	0.0	-0.0	-0.0	-0.0	0.2	0.0
				Cargas permanentes	-9.2	-0.9	3.9	-4.9	8.7	0.8	0.7	0.2	-0.8	0.0	0.1	0.4
				Sobrecarga	0.3	-0.0	-0.0	-0.0	-0.0	-0.0	0.3	-0.0	0.0	0.0	0.0	0.0
C10	TOPO	20.0	-2.00/0.80	Peso próprio	25.8	0.0	-0.3	-0.0	-0.3	0.1	0.0	-0.0	-0.0	0.0	0.0	-0.0
				Cargas permanentes	-7.7	1.9	8.5	6.3	17.9	0.2	0.0	-0.6	-0.8	1.0	1.2	-0.2
				Sobrecarga	0.3	-0.0	0.0	-0.0	0.0	0.0	0.3	-0.0	-0.0	0.0	0.0	0.0
C11	TOPO	20.0	-2.00/0.80	Peso próprio	25.2	-0.1	0.0	-0.1	0.6	0.0	-0.0	0.0	0.0	-0.0	-0.2	-0.0
				Cargas permanentes	-2.1	-0.3	9.2	-3.2	20.8	-0.9	0.8	0.3	-0.6	-0.7	-0.2	-0.7
				Sobrecarga	0.3	0.0	0.0	0.0	0.0	-0.0	0.3	-0.0	0.0	0.0	-0.0	-0.0
C12	TOPO	20.0	-2.00/0.80	Peso próprio	28.6	0.1	0.2	0.1	0.5	-0.1	-0.0	-0.0	-0.0	0.0	0.1	-0.0
				Cargas permanentes	5.4	2.0	6.2	1.2	13.4	-0.6	-0.1	-0.6	-0.7	2.5	2.8	-0.6
				Sobrecarga	0.3	0.0	-0.0	0.0	-0.0	-0.0	0.4	-0.0	0.0	0.0	-0.0	0.0
C13	TOPO	20.0	-2.00/0.80	Peso próprio	39.6	-0.2	-0.1	-0.8	-0.4	-0.0	0.0	0.0	0.0	-0.0	-0.0	-0.0
				Cargas permanentes	17.9	-3.5	1.5	-15.7	-2.0	2.8	1.4	-0.1	-0.2	-0.9	-2.1	-0.9
				Sobrecarga	0.5	-0.0	-0.0	-0.0	-0.0	0.0	0.5	-0.0	-0.0	-0.0	-0.0	0.0
C14	TOPO	20.0	-2.00/0.80	Peso próprio	58.8	0.6	0.1	-4.9	-2.9	-1.1	0.5	1.0	0.5	-1.3	-0.7	-0.1
				Cargas permanentes	27.4	-35.8	-9.7	-80.8	-23.2	-12.3	4.7	7.6	3.5	-12.2	-8.1	-2.5
				Sobrecarga	0.7	0.0	0.0	-0.0	-0.0	-0.0	0.8	0.0	0.0	-0.0	-0.0	0.0
C15	TOPO	20.0	-2.00/0.80	Peso próprio	13.5	-0.4	-0.0	0.0	-0.0	0.0	-1.8	-0.4	0.0	0.0	-0.0	0.0
				Cargas permanentes	0.2	-0.0	-0.0	-0.0	-0.0	0.0	0.2	-0.0	0.0	-0.0	-0.0	0.0
				Sobrecarga	0.2	-0.0	-0.0	0.0	-0.0	0.0	0.2	-0.0	0.0	0.0	-0.0	0.0
C16	TOPO	20.0	-2.00/0.80	Peso próprio	13.2	-0.0	0.0	0.0	0.0	0.0	-2.2	-0.0	-0.0	0.0	0.0	0.0
				Cargas permanentes	0.2	-0.0	0.0	0.0	0.0	-0.0	0.2	-0.0	-0.0	0.0	0.0	-0.0
				Sobrecarga	0.2	-0.0	0.0	-0.0	0.0	0.0	0.2	-0.0	-0.0	-0.0	0.0	0.0
C17	TOPO	20.0	-2.00/0.80	Peso próprio	13.2	-0.0	-0.0	0.0	-0.0	-0.0	-2.2	-0.0	0.0	0.0	-0.0	-0.0
				Cargas permanentes	0.2	-0.0	-0.0	0.0	-0.0	-0.0	0.2	-0.0	0.0	0.0	-0.0	-0.0
				Sobrecarga	0.2	0.0	-0.0	-0.0	-0.0	0.0	0.2	0.0	0.0	-0.0	-0.0	0.0
C18	TOPO	20.0	-2.00/0.80	Peso próprio	13.2	-0.0	0.0	0.0	0.0	-0.0	-2.2	-0.0	-0.0	0.0	0.0	-0.0
				Cargas permanentes	0.2	-0.0	0.0	0.0	0.0	-0.0	0.2	-0.0	-0.0	0.0	0.0	-0.0
				Sobrecarga	0.2	-0.0	-0.0	-0.0	0.0	0.0	0.2	-0.0	-0.0	-0.0	0.0	0.0
C19	TOPO	20.0	-2.00/0.80	Peso próprio	13.2	-0.0	-0.0	0.0	-0.0	-0.0	-2.2	-0.0	0.0	0.0	-0.0	-0.0
				Cargas permanentes	0.2	-0.0	0.0	0.0	-0.0	-0.0	0.2	-0.0	0.0	0.0	-0.0	-0.0
				Sobrecarga	0.2	-0.0	-0.0	0.0	0.0	0.0	0.2	-0.0	-0.0	0.0	0.0	0.0
C20	TOPO	20.0	-2.00/0.80	Peso próprio	13.2	-0.0	0.0	0.0	0.0	-0.0	-2.2	-0.0	0.0	0.0	0.0	-0.0
				Cargas permanentes	0.2	-0.0	0.0	0.0	-0.0	-0.0	0.2	-0.0	0.0	0.0	-0.0	-0.0
				Sobrecarga	0.2	-0.0	-0.0	0.0	0.0	0.0	0.2	-0.0	-0.0	0.0	0.0	0.0
C21	TOPO	20.0	-2.00/0.80	Peso próprio	13.2	-0.0	0.0	0.0	-0.0	-0.0	-2.2	-0.0	0.0	0.0	-0.0	-0.0
				Cargas permanentes	0.2	-0.0	0.0	0.0	-0.0	-0.0	0.2	-0.0	0.0	0.0	-0.0	-0.0
				Sobrecarga	0.2	-0.0	-0.0	0.0	0.0	0.0	0.2	-0.0	-0.0	0.0	0.0	0.0
C22	TOPO	20.0	-2.00/0.80	Peso próprio	13.2	-0.0	0.0	0.0	0.0	-0.0	-2.2	-0.0	0.0	0.0	0.0	-0.0
				Cargas permanentes	0.2	-0.0	0.0	0.0	-0.0	-0.0	0.2	-0.0	0.0	0.0	-0.0	-0.0
				Sobrecarga	0.2	-0.0	-0.0	0.0	0.0	0.0	0.2	-0.0	-0.0	0.0	0.0	0.0

Esforços e armaduras de pilares, paredes, cortinas e muros

MURO DE CONTENÇÃO - SESC ALTAMIRA

Data: 17/02/21

Pilar	Planta	Dimensão (cm)	Tramo (m)	Hipótese	Base						Ext.Sup.					
					N (kN)	Mx (kN·m)	My (kN·m)	Qx (kN)	Qy (kN)	T (kN·m)	N (kN)	Mx (kN·m)	My (kN·m)	Qx (kN)	Qy (kN)	T (kN·m)
C23	TOPO	20.0	-2.00/0.80	Peso próprio	13.2	-0.0	0.0	0.0	0.0	-0.0	-2.2	-0.0	-0.0	0.0	0.0	-0.0
				Cargas permanentes	0.2	-0.0	0.0	0.0	-0.0	-0.0	0.2	-0.0	0.0	0.0	-0.0	-0.0
				Sobrecarga	0.2	-0.0	-0.0	0.0	0.0	0.0	0.2	-0.0	-0.0	0.0	0.0	0.0
C24	TOPO	20.0	-2.00/0.80	Peso próprio	13.2	-0.0	0.0	0.0	0.0	-0.0	-2.2	-0.0	-0.0	0.0	0.0	-0.0
				Cargas permanentes	0.2	-0.0	0.0	0.0	0.0	-0.0	0.2	-0.0	-0.0	0.0	0.0	-0.0
				Sobrecarga	0.2	-0.0	-0.0	0.0	0.0	0.0	0.2	-0.0	-0.0	0.0	0.0	0.0
C25	TOPO	20.0	-2.00/0.80	Peso próprio	13.2	-0.0	0.0	0.0	0.0	-0.0	-2.2	-0.0	-0.0	0.0	0.0	-0.0
				Cargas permanentes	0.2	-0.0	0.0	0.0	0.0	-0.0	0.2	-0.0	-0.0	0.0	0.0	-0.0
				Sobrecarga	0.2	-0.0	0.0	0.0	0.0	-0.0	0.2	-0.0	-0.0	0.0	0.0	-0.0
C26	TOPO	20.0	-2.00/0.80	Peso próprio	13.2	-0.0	0.0	0.0	0.0	-0.0	-2.2	-0.0	-0.0	0.0	0.0	-0.0
				Cargas permanentes	0.2	-0.0	0.0	0.0	0.0	-0.0	0.2	-0.0	-0.0	0.0	0.0	-0.0
				Sobrecarga	0.2	-0.0	0.0	0.0	0.0	-0.0	0.2	-0.0	-0.0	0.0	0.0	-0.0
C27	TOPO	20.0	-2.00/0.80	Peso próprio	13.2	-0.0	0.0	-0.0	0.0	-0.0	-2.2	-0.0	-0.0	-0.0	0.0	-0.0
				Cargas permanentes	0.2	-0.0	0.0	0.0	0.0	-0.0	0.2	-0.0	-0.0	0.0	0.0	-0.0
				Sobrecarga	0.2	-0.0	0.0	0.0	0.0	-0.0	0.2	-0.0	-0.0	0.0	0.0	-0.0
C28	TOPO	20.0	-2.00/0.80	Peso próprio	13.2	-0.0	0.0	-0.0	0.0	-0.0	-2.2	-0.0	-0.0	-0.0	0.0	-0.0
				Cargas permanentes	0.2	-0.0	0.0	0.0	0.0	-0.0	0.2	-0.0	-0.0	0.0	0.0	-0.0
				Sobrecarga	0.2	-0.0	0.0	0.0	0.0	-0.0	0.2	-0.0	-0.0	0.0	0.0	-0.0
C29	TOPO	20.0	-2.00/0.80	Peso próprio	13.2	-0.0	0.0	-0.0	0.0	-0.0	-2.2	-0.0	-0.0	-0.0	0.0	-0.0
				Cargas permanentes	0.2	-0.0	-0.0	0.0	0.0	-0.0	0.2	-0.0	-0.0	0.0	0.0	-0.0
				Sobrecarga	0.2	-0.0	0.0	0.0	0.0	-0.0	0.2	-0.0	-0.0	0.0	0.0	-0.0
C30	TOPO	20.0	-2.00/0.80	Peso próprio	13.2	-0.0	-0.0	-0.0	0.0	-0.0	-2.2	-0.0	-0.0	-0.0	0.0	-0.0
				Cargas permanentes	0.2	-0.0	0.0	0.0	0.0	-0.0	0.2	-0.0	-0.0	0.0	0.0	-0.0
				Sobrecarga	0.2	-0.0	-0.0	0.0	0.0	-0.0	0.2	-0.0	-0.0	0.0	0.0	-0.0
C31	TOPO	20.0	-2.00/0.80	Peso próprio	13.2	-0.0	0.0	-0.0	0.0	-0.0	-2.2	-0.0	-0.0	-0.0	0.0	-0.0
				Cargas permanentes	0.2	-0.0	-0.0	0.0	-0.0	-0.0	0.2	-0.0	0.0	0.0	-0.0	-0.0
				Sobrecarga	0.2	-0.0	0.0	0.0	0.0	-0.0	0.2	-0.0	-0.0	0.0	0.0	-0.0
C32	TOPO	20.0	-2.00/0.80	Peso próprio	13.2	0.0	-0.0	-0.0	-0.0	-0.0	-2.1	0.0	0.0	-0.0	-0.0	-0.0
				Cargas permanentes	0.2	-0.0	0.0	0.0	0.0	-0.0	0.2	-0.0	-0.0	0.0	0.0	-0.0
				Sobrecarga	0.2	-0.0	-0.0	0.0	-0.0	-0.0	0.2	-0.0	0.0	0.0	-0.0	-0.0
C33	TOPO	20.0	-2.00/0.80	Peso próprio	16.8	0.3	-0.0	-0.0	-0.0	-0.0	-1.4	0.3	0.0	-0.0	-0.0	-0.0
				Cargas permanentes	0.2	0.0	-0.0	-0.0	-0.0	-0.0	0.2	0.0	0.0	-0.0	-0.0	-0.0
				Sobrecarga	0.2	0.0	-0.0	-0.0	-0.0	-0.0	0.2	0.0	0.0	-0.0	-0.0	-0.0
C34	TOPO	20.0	-2.00/0.80	Peso próprio	13.5	0.0	-0.2	0.0	0.0	0.0	-1.9	-0.0	-0.2	0.0	0.0	0.0
				Cargas permanentes	0.2	0.0	-0.0	0.0	-0.0	0.0	0.2	-0.0	-0.0	0.0	-0.0	0.0
				Sobrecarga	0.2	0.0	-0.0	0.0	0.0	0.0	0.2	-0.0	-0.0	0.0	0.0	0.0
C35	TOPO	20.0	-2.00/0.80	Peso próprio	10.4	0.0	-0.0	0.0	0.0	0.0	-1.8	-0.0	-0.0	0.0	0.0	0.0
				Cargas permanentes	0.1	-0.0	0.0	-0.0	-0.0	0.0	0.1	0.0	0.0	-0.0	-0.0	0.0
				Sobrecarga	0.1	0.0	0.0	0.0	-0.0	0.0	0.1	-0.0	0.0	0.0	-0.0	0.0
C36	TOPO	20.0	-2.00/0.80	Peso próprio	13.2	0.0	-0.0	-0.0	0.0	0.0	-2.1	0.0	-0.0	-0.0	0.0	0.0
				Cargas permanentes	0.2	0.0	0.0	0.0	-0.0	0.0	0.2	0.0	0.0	0.0	-0.0	0.0
				Sobrecarga	0.2	0.0	-0.0	-0.0	-0.0	0.0	0.2	0.0	-0.0	-0.0	-0.0	0.0
C37	TOPO	20.0	-2.00/0.80	Peso próprio	13.2	0.0	-0.0	0.0	-0.0	0.0	-2.2	0.0	-0.0	0.0	-0.0	0.0
				Cargas permanentes	0.2	0.0	0.0	-0.0	-0.0	0.0	0.2	0.0	0.0	-0.0	-0.0	0.0
				Sobrecarga	0.2	0.0	0.0	-0.0	-0.0	0.0	0.2	0.0	0.0	-0.0	-0.0	0.0
C38	TOPO	20.0	-2.00/0.80	Peso próprio	13.2	0.0	-0.0	-0.0	-0.0	0.0	-2.2	0.0	-0.0	-0.0	-0.0	0.0
				Cargas permanentes	0.2	0.0	0.0	-0.0	-0.0	0.0	0.2	0.0	0.0	-0.0	-0.0	0.0
				Sobrecarga	0.2	0.0	0.0	-0.0	-0.0	0.0	0.2	0.0	0.0	-0.0	-0.0	0.0
C39	TOPO	20.0	-2.00/0.80	Peso próprio	13.2	0.0	-0.0	-0.0	-0.0	0.0	-2.2	0.0	-0.0	-0.0	-0.0	0.0
				Cargas permanentes	0.2	0.0	0.0	-0.0	-0.0	0.0	0.2	0.0	0.0	-0.0	-0.0	0.0
				Sobrecarga	0.2	0.0	0.0	-0.0	-0.0	0.0	0.2	0.0	0.0	-0.0	-0.0	0.0
C40	TOPO	20.0	-2.00/0.80	Peso próprio	13.2	0.0	-0.0	-0.0	-0.0	0.0	-2.2	0.0	-0.0	-0.0	-0.0	0.0
				Cargas permanentes	0.2	0.0	0.0	-0.0	-0.0	0.0	0.2	0.0	0.0	-0.0	-0.0	0.0
				Sobrecarga	0.2	0.0	0.0	-0.0	-0.0	0.0	0.2	0.0	0.0	-0.0	-0.0	0.0
C41	TOPO	20.0	-2.00/0.80	Peso próprio	13.2	0.0	-0.0	-0.0	-0.0	0.0	-2.2	0.0	-0.0	-0.0	-0.0	0.0
				Cargas permanentes	0.2	0.0	0.0	0.0	-0.0	0.0	0.2	-0.0	0.0	0.0	-0.0	0.0
				Sobrecarga	0.2	0.0	0.0	-0.0	-0.0	0.0	0.2	0.0	0.0	-0.0	-0.0	0.0
C42	TOPO	20.0	-2.00/0.80	Peso próprio	13.2	0.0	-0.0	-0.0	-0.0	0.0	-2.2	0.0	-0.0	-0.0	-0.0	0.0
				Cargas permanentes	0.2	0.0	0.0	0.0	-0.0	0.0	0.2	-0.0	0.0	0.0	-0.0	0.0
				Sobrecarga	0.2	0.0	0.0	-0.0	-0.0	0.0	0.2	0.0	0.0	-0.0	-0.0	0.0
C43	TOPO	20.0	-2.00/0.80	Peso próprio	13.2	0.0	-0.0	0.0	-0.0	0.0	-2.2	-0.0	-0.0	0.0	-0.0	0.0
				Cargas permanentes	0.2	0.0	0.0	0.0	-0.0	0.0	0.2	-0.0	0.0	0.0	-0.0	0.0
				Sobrecarga	0.2	0.0	-0.0	-0.0	-0.0	0.0	0.2	0.0	-0.0	-0.0	-0.0	0.0
C44	TOPO	20.0	-2.00/0.80	Peso próprio	13.2	0.0	-0.0	0.0	-0.0	0.0	-2.2	-0.0	-0.0	0.0	-0.0	0.0
				Cargas permanentes	0.2	0.0	0.0	0.0	-0.0	0.0	0.2	-0.0	0.0	0.0	-0.0	0.0
				Sobrecarga	0.2	0.0	-0.0	-0.0	-0.0	-0.0	0.2	0.0	-0.0	-0.0	-0.0	-0.0
C46	TOPO	20.0	-2.00/0.80	Peso próprio	13.2	0.0	-0.0	0.0	-0.0	0.0	-2.2	-0.0	-0.0	0.0	-0.0	0.0
				Cargas permanentes	0.2	0.0	0.0	0.0	-0.0	0.0	0.2	-0.0	0.0	0.0	-0.0	0.0
				Sobrecarga	0.2	-0.0	-0.0	-0.0	-0.0	-0.0	0.2	0.0	-0.0	-0.0	-0.0	-0.0
C47	TOPO	20.0	-2.00/0.80	Peso próprio	13.2	0.0	0.0	0.0	-0.0	0.0	-2.2	-0.0	0.0	0.0	-0.0	0.0
				Cargas permanentes	0.2	0.0	0.0	0.0	-0.0	0.0	0.2	-0.0	0.0	0.0	-0.0	0.0
				Sobrecarga	0.2	-0.0	-0.0	-0.0	0.0	-0.0	0.2	0.0	-0.0	-0.0	0.0	-0.0

Pilar	Planta	Dimensão (cm)	Tramo (m)	Hipótese	Base						Ext.Sup.					
					N (kN)	Mx (kN·m)	My (kN·m)	Qx (kN)	Qy (kN)	T (kN·m)	N (kN)	Mx (kN·m)	My (kN·m)	Qx (kN)	Qy (kN)	T (kN·m)
C48	TOPO	20.0	-2.00/0.80	Peso próprio	13.2	0.0	0.0	0.0	-0.0	0.0	-2.2	-0.0	0.0	0.0	-0.0	0.0
				Cargas permanentes	0.2	-0.0	0.0	0.0	-0.0	0.0	0.2	-0.0	0.0	0.0	-0.0	0.0
				Sobrecarga	0.2	-0.0	-0.0	-0.0	0.0	-0.0	0.2	0.0	-0.0	-0.0	0.0	-0.0
C49	TOPO	20.0	-2.00/0.80	Peso próprio	13.2	0.0	0.0	0.0	-0.0	0.0	-2.2	-0.0	0.0	0.0	-0.0	0.0
				Cargas permanentes	0.2	0.0	0.0	0.0	-0.0	0.0	0.2	-0.0	0.0	0.0	-0.0	0.0
				Sobrecarga	0.2	0.0	-0.0	-0.0	0.0	-0.0	0.2	0.0	-0.0	-0.0	0.0	-0.0
C50	TOPO	20.0	-2.00/0.80	Peso próprio	13.2	-0.0	0.0	0.0	-0.0	0.0	-2.2	-0.0	0.0	0.0	-0.0	0.0
				Cargas permanentes	0.2	-0.0	0.0	-0.0	-0.0	0.0	0.2	0.0	0.0	-0.0	-0.0	0.0
				Sobrecarga	0.2	-0.0	-0.0	-0.0	0.0	-0.0	0.2	0.0	-0.0	-0.0	0.0	-0.0
C51	TOPO	20.0	-2.00/0.80	Peso próprio	13.2	0.0	0.0	0.0	-0.0	0.0	-2.2	-0.0	0.0	0.0	-0.0	0.0
				Cargas permanentes	0.2	0.0	0.0	0.0	-0.0	0.0	0.2	-0.0	0.0	0.0	-0.0	0.0
				Sobrecarga	0.2	0.0	-0.0	-0.0	0.0	-0.0	0.2	0.0	-0.0	-0.0	0.0	-0.0
C52	TOPO	20.0	-2.00/0.80	Peso próprio	13.2	-0.0	0.0	-0.0	-0.0	0.0	-2.2	0.0	0.0	-0.0	-0.0	0.0
				Cargas permanentes	0.2	-0.0	0.0	-0.0	-0.0	-0.0	0.2	0.0	0.0	-0.0	-0.0	-0.0
				Sobrecarga	0.2	-0.0	-0.0	-0.0	0.0	-0.0	0.2	0.0	-0.0	-0.0	0.0	-0.0
C53	TOPO	20.0	-2.00/0.80	Peso próprio	13.2	0.0	-0.0	0.0	-0.0	0.0	-2.2	-0.0	-0.0	0.0	-0.0	0.0
				Cargas permanentes	0.1	0.0	-0.0	0.0	0.0	0.0	0.1	-0.0	-0.0	0.0	0.0	0.0
				Sobrecarga	0.2	0.0	-0.0	0.0	0.0	-0.0	0.2	-0.0	-0.0	0.0	0.0	-0.0
C54	TOPO	20.0	-2.00/0.80	Peso próprio	13.4	-0.0	0.2	0.0	-0.0	0.0	-1.9	-0.0	0.2	0.0	-0.0	0.0
				Cargas permanentes	0.0	-0.0	-0.2	-0.0	0.0	0.0	0.0	-0.0	-0.2	-0.0	0.0	0.0
				Sobrecarga	0.2	0.0	0.0	0.0	-0.0	-0.0	0.2	-0.0	0.0	0.0	-0.0	-0.0
C56	TOPO	20.0	-2.00/0.80	Peso próprio	27.0	0.0	-0.8	-0.0	-0.0	-0.0	-1.5	0.0	-0.8	-0.0	-0.0	-0.0
				Cargas permanentes	0.6	0.0	-0.0	0.0	-0.0	-0.0	0.6	-0.0	-0.0	0.0	-0.0	-0.0
				Sobrecarga	0.5	-0.0	-0.1	-0.0	0.0	-0.0	0.5	0.0	-0.1	-0.0	0.0	-0.0
C57	TOPO	20.0	-2.00/0.80	Peso próprio	15.1	1.1	-0.0	-0.0	0.0	0.0	-2.3	1.1	-0.0	-0.0	0.0	0.0
				Cargas permanentes	-2.7	7.3	-0.0	-0.0	-0.0	0.0	-2.7	7.3	0.0	-0.0	-0.0	0.0
				Sobrecarga	0.2	0.0	0.0	-0.0	0.0	0.0	0.2	0.0	-0.0	-0.0	0.0	0.0

4.- ARRANQUES EM PILARES, PILARES-PAREDES E MUROS POR HIPÓTESE

■ Nota:

Esforços em relação aos eixos locais do pilar.

Os esforços em pilares-paredes e muros são em relação aos eixos globais e referidos ao centro de gravidade do pilar-parede ou muro, no piso.

Pilar	Hipótese	Esforços em elem.fundação					
		N (kN)	Mx (kN·m)	My (kN·m)	Qx (kN)	Qy (kN)	T (kN·m)
P1	Peso próprio	12.9	-0.2	0.8	-0.6	1.8	-0.0
	Cargas permanentes	4.0	-0.1	0.3	-0.3	1.1	-0.1
	Sobrecarga	0.1	-0.0	0.0	-0.0	0.0	-0.0
P2	Peso próprio	8.2	-0.1	0.3	-0.1	0.1	-0.0
	Cargas permanentes	-4.1	-1.0	-0.8	-1.9	-1.2	-0.3
	Sobrecarga	0.1	-0.0	0.0	-0.0	0.0	-0.0
P3	Peso próprio	7.2	-0.1	0.2	-0.1	-0.0	-0.0
	Cargas permanentes	-14.0	-0.7	-2.2	-1.4	-2.6	-0.2
	Sobrecarga	0.1	-0.0	0.0	-0.0	0.0	-0.0
P4	Peso próprio	6.5	-0.0	0.1	-0.1	-0.0	-0.0
	Cargas permanentes	-20.8	-0.4	-2.8	-0.8	-2.7	-0.1
	Sobrecarga	0.1	-0.0	0.0	-0.0	0.0	-0.0
P5	Peso próprio	6.1	-0.0	0.1	-0.1	-0.0	-0.0
	Cargas permanentes	-24.4	-0.2	-3.1	-0.4	-2.6	-0.0
	Sobrecarga	0.1	-0.0	0.0	0.0	0.0	-0.0
P6	Peso próprio	6.0	-0.0	0.1	-0.0	-0.0	0.0
	Cargas permanentes	-25.6	-0.1	-3.2	-0.2	-2.5	0.0
	Sobrecarga	0.1	0.0	-0.0	0.0	0.0	0.0
P7	Peso próprio	6.2	0.0	0.1	-0.0	0.0	0.0
	Cargas permanentes	-24.9	0.1	-3.0	0.0	-2.4	0.1
	Sobrecarga	0.1	0.0	0.0	0.0	0.0	0.0

Pilar	Hipótese	Esforços em elem.fundação					
		N (kN)	Mx (kN·m)	My (kN·m)	Qx (kN)	Qy (kN)	T (kN·m)
P8	Peso próprio	6.6	0.0	0.2	0.0	0.0	0.0
	Cargas permanentes	-21.9	0.3	-2.7	0.3	-2.1	0.1
	Sobrecarga	0.1	0.0	0.0	0.0	0.0	0.0
P9	Peso próprio	7.5	0.1	0.3	0.1	0.1	0.0
	Cargas permanentes	-15.8	0.5	-1.9	0.7	-1.7	0.2
	Sobrecarga	0.1	0.0	0.0	0.0	0.0	0.0
P10	Peso próprio	8.8	0.1	0.4	0.1	0.3	0.0
	Cargas permanentes	-5.0	0.6	-0.6	1.0	-0.7	0.2
	Sobrecarga	0.1	0.0	0.0	0.0	0.0	0.0
P11	Peso próprio	7.3	-0.0	0.1	-0.1	0.2	0.0
	Cargas permanentes	2.7	-0.3	0.0	-0.8	0.2	-0.0
	Sobrecarga	0.1	-0.0	0.0	-0.0	0.0	0.0
P12	Peso próprio	9.0	-0.1	0.4	-0.1	0.1	-0.0
	Cargas permanentes	-3.8	-0.4	-1.0	-0.2	-1.8	-0.2
	Sobrecarga	0.1	-0.0	0.0	-0.0	0.0	-0.0
P13	Peso próprio	7.8	-0.0	0.2	-0.0	-0.0	-0.0
	Cargas permanentes	-14.1	-0.2	-2.2	0.1	-2.5	-0.1
	Sobrecarga	0.1	-0.0	0.0	-0.0	0.0	-0.0
P14	Peso próprio	7.0	-0.0	0.2	0.0	-0.0	-0.0
	Cargas permanentes	-19.5	0.0	-2.6	0.5	-2.5	-0.1
	Sobrecarga	0.1	-0.0	0.0	-0.0	0.0	-0.0
P15	Peso próprio	6.8	0.0	0.2	0.1	0.0	-0.0
	Cargas permanentes	-21.0	0.2	-2.7	0.8	-2.4	0.0
	Sobrecarga	0.1	0.0	0.0	0.0	0.0	0.0
P16	Peso próprio	7.0	0.1	0.2	0.1	0.0	0.0
	Cargas permanentes	-19.0	0.5	-2.4	1.2	-2.1	0.1
	Sobrecarga	0.1	0.0	0.0	0.0	0.0	0.0
P17	Peso próprio	7.8	0.1	0.3	0.2	0.1	0.0
	Cargas permanentes	-13.2	0.8	-1.7	1.7	-1.6	0.2
	Sobrecarga	0.1	0.0	0.0	0.0	0.0	0.0
P18	Peso próprio	8.9	0.1	0.5	0.3	0.3	0.0
	Cargas permanentes	-2.8	1.0	-0.3	2.2	-0.4	0.2
	Sobrecarga	0.1	0.0	0.0	0.0	0.0	0.0
P19	Peso próprio	5.1	0.0	-0.1	0.0	-0.2	0.0
	Cargas permanentes	0.3	0.1	-0.2	-0.0	-0.1	0.0
	Sobrecarga	0.1	0.0	-0.0	0.0	-0.0	0.0
P20	Peso próprio	9.1	-0.4	-0.1	-0.2	-0.3	-0.0
	Cargas permanentes	-2.3	0.6	-1.0	1.1	-2.2	-0.2
	Sobrecarga	0.1	-0.0	-0.0	-0.0	-0.0	-0.0
P21	Peso próprio	7.9	-0.3	-0.1	0.0	-0.2	-0.0
	Cargas permanentes	-12.4	2.0	-0.7	2.5	-1.6	-0.2
	Sobrecarga	0.1	-0.0	-0.0	-0.0	-0.0	-0.0
P22	Peso próprio	7.1	-0.2	-0.1	0.0	-0.1	-0.0
	Cargas permanentes	-18.6	2.5	-0.4	2.5	-1.0	-0.1
	Sobrecarga	0.1	-0.0	-0.0	-0.0	-0.0	-0.0
P23	Peso próprio	6.8	-0.2	-0.0	-0.0	-0.1	-0.0
	Cargas permanentes	-20.9	2.7	-0.2	2.4	-0.6	0.0
	Sobrecarga	0.1	-0.0	-0.0	-0.0	-0.0	-0.0
P24	Peso próprio	7.0	-0.2	0.0	-0.0	-0.0	0.0
	Cargas permanentes	-19.7	2.5	0.0	2.2	-0.3	0.1
	Sobrecarga	0.1	-0.0	0.0	-0.0	0.0	0.0
P25	Peso próprio	7.7	-0.3	0.1	-0.1	0.1	0.0
	Cargas permanentes	-14.7	1.8	0.3	1.7	0.2	0.2
	Sobrecarga	0.1	-0.0	0.0	-0.0	0.0	0.0

Pilar	Hipótese	Esforços em elem.fundação					
		N (kN)	Mx (kN·m)	My (kN·m)	Qx (kN)	Qy (kN)	T (kN·m)
P26	Peso próprio	9.0	-0.5	0.1	-0.3	0.1	0.0
	Cargas permanentes	-4.3	0.6	0.5	0.8	0.5	0.2
	Sobrecarga	0.1	-0.0	0.0	-0.0	0.0	0.0
P27	Peso próprio	7.1	-0.1	0.0	-0.2	0.0	-0.0
	Cargas permanentes	3.5	-0.1	0.3	-0.4	0.8	0.0
	Sobrecarga	0.1	-0.0	0.0	-0.0	0.0	-0.0
P28	Peso próprio	9.0	-0.4	-0.1	-0.1	-0.2	-0.0
	Cargas permanentes	-2.3	0.9	-0.8	1.7	-1.5	-0.2
	Sobrecarga	0.1	-0.0	-0.0	-0.0	-0.0	-0.0
P29	Peso próprio	7.6	-0.2	-0.1	0.0	-0.1	-0.0
	Cargas permanentes	-14.0	2.2	-0.6	2.6	-1.1	-0.2
	Sobrecarga	0.1	-0.0	-0.0	-0.0	-0.0	-0.0
P30	Peso próprio	6.7	-0.1	-0.0	0.0	-0.1	-0.0
	Cargas permanentes	-21.2	2.9	-0.4	2.7	-0.7	-0.1
	Sobrecarga	0.1	-0.0	-0.0	-0.0	-0.0	-0.0
P31	Peso próprio	6.1	-0.1	-0.0	0.0	-0.0	-0.0
	Cargas permanentes	-25.2	3.3	-0.2	2.7	-0.4	-0.1
	Sobrecarga	0.1	0.0	-0.0	-0.0	-0.0	-0.0
P32	Peso próprio	5.9	-0.1	-0.0	0.0	-0.0	-0.0
	Cargas permanentes	-27.0	3.4	-0.1	2.6	-0.2	-0.0
	Sobrecarga	0.1	0.0	-0.0	-0.0	-0.0	-0.0
P33	Peso próprio	5.9	-0.1	-0.0	0.0	-0.0	0.0
	Cargas permanentes	-26.9	3.4	0.0	2.5	-0.0	0.0
	Sobrecarga	0.1	0.0	-0.0	-0.0	-0.0	0.0
P34	Peso próprio	6.1	-0.1	0.0	-0.0	0.0	0.0
	Cargas permanentes	-25.1	3.1	0.2	2.4	0.3	0.1
	Sobrecarga	0.1	-0.0	0.0	-0.0	0.0	0.0
P35	Peso próprio	6.5	-0.1	0.0	-0.0	0.1	0.0
	Cargas permanentes	-21.4	2.7	0.5	2.1	1.0	0.1
	Sobrecarga	0.1	-0.0	0.0	-0.0	0.0	0.0
P36	Peso próprio	6.9	-0.2	0.1	-0.2	0.2	0.0
	Cargas permanentes	-18.7	2.1	1.1	1.1	2.7	0.2
	Sobrecarga	0.1	-0.0	0.0	-0.0	0.0	0.0
P37	Peso próprio	1.3	0.9	0.2	0.1	0.5	0.0
	Cargas permanentes	-50.1	10.1	1.1	1.2	3.6	0.3
	Sobrecarga	0.0	0.0	0.0	0.0	0.0	0.0
P38	Peso próprio	5.5	0.1	0.0	0.1	0.0	-0.0
	Cargas permanentes	-4.1	-0.9	-0.5	-1.3	-1.2	0.1
	Sobrecarga	0.1	0.0	-0.0	0.0	-0.0	0.0
P39	Peso próprio	5.3	0.0	-0.0	0.0	-0.1	0.0
	Cargas permanentes	-21.5	-3.2	-0.3	-3.1	-0.8	0.1
	Sobrecarga	0.1	-0.0	-0.0	0.0	-0.0	0.0
P40	Peso próprio	5.2	0.0	-0.0	-0.0	-0.1	0.0
	Cargas permanentes	-29.1	-4.1	-0.2	-3.3	-0.5	0.1
	Sobrecarga	0.1	-0.0	-0.0	0.0	0.0	0.0
P41	Peso próprio	5.2	0.0	-0.0	-0.0	-0.1	0.0
	Cargas permanentes	-32.5	-4.4	-0.1	-3.4	-0.2	0.0
	Sobrecarga	0.0	-0.0	0.0	0.0	0.0	0.0
P42	Peso próprio	5.3	0.0	-0.0	-0.0	-0.1	-0.0
	Cargas permanentes	-34.2	-4.6	-0.0	-3.4	-0.1	0.0
	Sobrecarga	0.0	-0.0	-0.0	0.0	-0.0	0.0
P43	Peso próprio	5.3	0.0	-0.0	-0.0	-0.1	-0.0
	Cargas permanentes	-35.0	-4.7	-0.0	-3.4	0.0	0.0
	Sobrecarga	0.0	-0.0	-0.0	0.0	-0.0	0.0

Pilar	Hipótese	Esforços em elem.fundação					
		N (kN)	Mx (kN·m)	My (kN·m)	Qx (kN)	Qy (kN)	T (kN·m)
P44	Peso próprio	5.5	0.0	-0.0	-0.0	-0.0	-0.0
	Cargas permanentes	-35.0	-4.7	0.0	-3.5	0.1	-0.0
	Sobrecarga	0.0	-0.0	-0.0	0.0	-0.0	0.0
P45	Peso próprio	4.0	0.0	0.0	-0.0	0.1	-0.0
	Cargas permanentes	-14.2	-3.1	0.1	-1.3	0.5	-0.0
	Sobrecarga	0.0	-0.0	0.0	0.0	-0.0	0.0
P46	Peso próprio	5.4	-0.0	-0.1	-0.0	-0.2	0.0
	Cargas permanentes	1.2	-0.1	-1.5	-0.7	-2.7	-0.0
	Sobrecarga	0.1	-0.0	0.0	-0.0	-0.0	0.0
P47	Peso próprio	5.3	-0.0	-0.0	-0.0	-0.1	0.0
	Cargas permanentes	2.6	0.0	-0.3	0.1	-0.4	-0.0
	Sobrecarga	0.1	-0.0	0.0	-0.0	0.0	0.0
P48	Peso próprio	5.1	-0.0	-0.0	-0.0	-0.0	0.0
	Cargas permanentes	-5.5	0.3	-1.5	1.1	-2.0	-0.0
	Sobrecarga	0.1	0.0	0.0	0.0	0.0	0.0
P49	Peso próprio	4.3	0.0	-0.1	0.0	-0.1	-0.0
	Cargas permanentes	-4.4	0.4	-0.5	1.4	-0.1	0.1
	Sobrecarga	0.1	0.0	-0.0	0.0	-0.0	0.0
P50	Peso próprio	4.1	0.1	0.0	0.1	0.0	0.0
	Cargas permanentes	1.3	-0.2	0.1	-0.1	0.3	0.0
	Sobrecarga	0.0	0.0	-0.0	0.0	-0.0	0.0
P51	Peso próprio	4.8	0.0	0.0	0.0	0.0	0.0
	Cargas permanentes	3.8	-0.5	-0.1	-0.2	-0.3	0.0
	Sobrecarga	0.1	0.0	-0.0	-0.0	-0.0	-0.0
P52	Peso próprio	5.1	0.0	-0.0	0.1	-0.0	-0.0
	Cargas permanentes	3.1	-0.5	-0.4	-0.4	-1.2	-0.0
	Sobrecarga	0.1	-0.0	-0.0	-0.0	-0.0	0.0
P53	Peso próprio	5.2	0.0	-0.0	0.1	-0.0	-0.0
	Cargas permanentes	0.9	-0.2	-0.2	-0.2	-0.7	-0.0
	Sobrecarga	0.1	-0.0	0.0	-0.0	-0.0	-0.0
P54	Peso próprio	5.4	-0.0	-0.0	-0.0	-0.0	-0.0
	Cargas permanentes	2.6	-0.2	-0.0	0.1	-0.2	-0.0
	Sobrecarga	0.1	-0.0	0.0	-0.0	0.0	-0.0
P55	Peso próprio	5.3	0.0	0.0	0.1	0.0	-0.0
	Cargas permanentes	0.4	1.4	-0.3	2.7	-0.1	-0.0
	Sobrecarga	0.1	0.0	0.0	0.0	0.0	-0.0
P56	Peso próprio	3.9	0.0	0.0	0.1	0.0	0.0
	Cargas permanentes	0.1	0.0	0.0	0.0	0.0	0.0
	Sobrecarga	0.1	0.0	0.0	0.0	0.0	0.0
P57	Peso próprio	4.9	-0.0	0.0	-0.0	0.0	-0.0
	Cargas permanentes	0.2	0.0	0.0	0.0	0.0	-0.0
	Sobrecarga	0.2	-0.0	0.0	-0.0	0.0	-0.0
P58	Peso próprio	4.9	-0.0	-0.0	-0.0	-0.0	0.0
	Cargas permanentes	0.2	-0.0	-0.0	-0.0	-0.0	0.0
	Sobrecarga	0.2	0.0	-0.0	0.0	-0.0	-0.0
P59	Peso próprio	4.9	-0.0	0.0	-0.0	0.0	-0.0
	Cargas permanentes	0.2	-0.0	0.0	-0.0	0.0	0.0
	Sobrecarga	0.2	0.0	0.0	0.0	0.0	-0.0
P60	Peso próprio	4.9	-0.0	-0.0	-0.0	-0.0	0.0
	Cargas permanentes	0.2	-0.0	-0.0	-0.0	-0.0	0.0
	Sobrecarga	0.2	-0.0	0.0	-0.0	0.0	-0.0
P61	Peso próprio	4.9	-0.0	0.0	-0.0	0.0	0.0
	Cargas permanentes	0.2	-0.0	-0.0	-0.0	-0.0	0.0
	Sobrecarga	0.2	-0.0	0.0	-0.0	0.0	-0.0

Pilar	Hipótese	Esforços em elem.fundação					
		N (kN)	Mx (kN·m)	My (kN·m)	Qx (kN)	Qy (kN)	T (kN·m)
P62	Peso próprio	4.9	-0.0	-0.0	-0.0	-0.0	0.0
	Cargas permanentes	0.2	-0.0	-0.0	-0.0	-0.0	0.0
	Sobrecarga	0.2	-0.0	0.0	-0.0	0.0	-0.0
P63	Peso próprio	4.9	-0.0	-0.0	-0.0	-0.0	0.0
	Cargas permanentes	0.2	-0.0	-0.0	-0.0	-0.0	0.0
	Sobrecarga	0.2	-0.0	0.0	-0.0	0.0	-0.0
P64	Peso próprio	4.9	-0.0	-0.0	-0.0	-0.0	0.0
	Cargas permanentes	0.2	-0.0	-0.0	-0.0	-0.0	0.0
	Sobrecarga	0.2	-0.0	0.0	-0.0	0.0	-0.0
P65	Peso próprio	4.9	-0.0	0.0	-0.0	0.0	0.0
	Cargas permanentes	0.2	-0.0	-0.0	-0.0	-0.0	0.0
	Sobrecarga	0.2	-0.0	0.0	-0.0	0.0	-0.0
P67	Peso próprio	4.9	-0.0	0.0	-0.0	0.0	0.0
	Cargas permanentes	0.2	-0.0	0.0	-0.0	0.0	0.0
	Sobrecarga	0.2	-0.0	0.0	-0.0	0.0	0.0
P68	Peso próprio	4.9	-0.0	0.0	-0.0	0.0	0.0
	Cargas permanentes	0.2	-0.0	0.0	-0.0	0.0	0.0
	Sobrecarga	0.2	-0.0	0.0	-0.0	0.0	0.0
P69	Peso próprio	4.9	-0.0	0.0	-0.0	0.0	0.0
	Cargas permanentes	0.2	-0.0	0.0	-0.0	0.0	0.0
	Sobrecarga	0.2	-0.0	0.0	-0.0	0.0	0.0
P70	Peso próprio	4.9	-0.0	0.0	-0.0	0.0	0.0
	Cargas permanentes	0.2	-0.0	0.0	-0.0	0.0	0.0
	Sobrecarga	0.2	-0.0	0.0	-0.0	0.0	0.0
P71	Peso próprio	4.9	0.0	0.0	-0.0	0.0	0.0
	Cargas permanentes	0.2	-0.0	0.0	-0.0	0.0	0.0
	Sobrecarga	0.2	-0.0	0.0	-0.0	0.0	0.0
P72	Peso próprio	4.9	0.0	0.0	-0.0	0.0	0.0
	Cargas permanentes	0.2	-0.0	-0.0	-0.0	-0.0	0.0
	Sobrecarga	0.2	-0.0	0.0	-0.0	0.0	0.0
P73	Peso próprio	4.9	0.0	-0.0	-0.0	-0.0	0.0
	Cargas permanentes	0.2	-0.0	0.0	-0.0	0.0	0.0
	Sobrecarga	0.2	-0.0	0.0	-0.0	0.0	0.0
P74	Peso próprio	4.9	-0.0	0.0	-0.0	0.0	0.0
	Cargas permanentes	0.2	-0.0	-0.0	-0.0	-0.0	-0.0
	Sobrecarga	0.2	-0.0	0.0	-0.0	0.0	0.0
P75	Peso próprio	4.7	-0.0	-0.0	-0.0	-0.0	-0.0
	Cargas permanentes	0.2	-0.0	0.0	0.0	0.0	0.0
	Sobrecarga	0.2	-0.0	-0.0	0.0	-0.0	0.0
P76	Peso próprio	4.1	0.0	0.0	-0.0	0.0	0.0
	Cargas permanentes	0.2	-0.0	0.0	-0.0	0.0	0.0
	Sobrecarga	0.2	-0.0	0.0	-0.0	0.0	0.0
P82	Peso próprio	4.7	0.0	-0.0	0.0	-0.0	0.0
	Cargas permanentes	0.2	-0.0	0.0	-0.0	0.0	-0.0
	Sobrecarga	0.2	0.0	-0.0	0.0	-0.0	0.0
P84	Peso próprio	4.7	-0.0	0.0	-0.0	0.0	-0.0
	Cargas permanentes	0.2	-0.0	0.0	-0.0	0.0	-0.0
	Sobrecarga	0.2	-0.0	0.0	-0.0	0.0	-0.0
P85	Peso próprio	4.9	-0.0	-0.0	-0.0	-0.0	-0.0
	Cargas permanentes	0.2	-0.0	0.0	-0.0	0.0	-0.0
	Sobrecarga	0.2	-0.0	0.0	-0.0	0.0	-0.0
P86	Peso próprio	4.9	-0.0	-0.0	-0.0	-0.0	-0.0
	Cargas permanentes	0.2	-0.0	0.0	-0.0	0.0	-0.0
	Sobrecarga	0.2	-0.0	0.0	-0.0	0.0	-0.0

Pilar	Hipótese	Esforços em elem.fundação					
		N (kN)	Mx (kN·m)	My (kN·m)	Qx (kN)	Qy (kN)	T (kN·m)
P87	Peso próprio	4.9	-0.0	-0.0	-0.0	-0.0	-0.0
	Cargas permanentes	0.2	-0.0	0.0	-0.0	0.0	-0.0
	Sobrecarga	0.2	-0.0	0.0	-0.0	0.0	-0.0
P88	Peso próprio	4.9	-0.0	0.0	-0.0	-0.0	-0.0
	Cargas permanentes	0.2	-0.0	0.0	-0.0	0.0	-0.0
	Sobrecarga	0.2	-0.0	0.0	-0.0	0.0	-0.0
P89	Peso próprio	4.9	-0.0	0.0	-0.0	0.0	-0.0
	Cargas permanentes	0.2	-0.0	0.0	-0.0	0.0	-0.0
	Sobrecarga	0.2	-0.0	0.0	-0.0	0.0	-0.0
P90	Peso próprio	4.9	-0.0	0.0	-0.0	0.0	-0.0
	Cargas permanentes	0.2	0.0	0.0	0.0	0.0	-0.0
	Sobrecarga	0.2	-0.0	0.0	-0.0	0.0	-0.0
P91	Peso próprio	4.9	-0.0	0.0	-0.0	0.0	-0.0
	Cargas permanentes	0.2	0.0	0.0	0.0	0.0	-0.0
	Sobrecarga	0.2	-0.0	0.0	-0.0	0.0	-0.0
P92	Peso próprio	4.9	0.0	0.0	0.0	0.0	-0.0
	Cargas permanentes	0.2	0.0	0.0	0.0	0.0	-0.0
	Sobrecarga	0.2	-0.0	0.0	-0.0	0.0	-0.0
P93	Peso próprio	4.9	0.0	0.0	0.0	0.0	-0.0
	Cargas permanentes	0.2	0.0	0.0	0.0	0.0	-0.0
	Sobrecarga	0.2	-0.0	0.0	-0.0	-0.0	0.0
P94	Peso próprio	4.9	0.0	0.0	0.0	0.0	-0.0
	Cargas permanentes	0.2	0.0	0.0	0.0	0.0	-0.0
	Sobrecarga	0.2	-0.0	-0.0	-0.0	-0.0	0.0
P95	Peso próprio	4.9	0.0	0.0	0.0	0.0	-0.0
	Cargas permanentes	0.2	0.0	0.0	0.0	0.0	-0.0
	Sobrecarga	0.2	-0.0	-0.0	-0.0	-0.0	0.0
P96	Peso próprio	4.9	0.0	0.0	0.0	0.0	-0.0
	Cargas permanentes	0.2	0.0	0.0	0.0	0.0	-0.0
	Sobrecarga	0.2	-0.0	-0.0	-0.0	-0.0	0.0
P97	Peso próprio	4.9	0.0	0.0	0.0	0.0	-0.0
	Cargas permanentes	0.2	0.0	0.0	0.0	0.0	-0.0
	Sobrecarga	0.2	-0.0	-0.0	-0.0	-0.0	0.0
P98	Peso próprio	4.9	-0.0	0.0	-0.0	0.0	-0.0
	Cargas permanentes	0.2	-0.0	0.0	-0.0	0.0	0.0
	Sobrecarga	0.2	-0.0	-0.0	-0.0	-0.0	0.0
P100	Peso próprio	4.9	0.0	0.0	0.0	0.0	-0.0
	Cargas permanentes	0.2	0.0	0.0	0.0	0.0	-0.0
	Sobrecarga	0.2	0.0	-0.0	0.0	-0.0	0.0
P101	Peso próprio	4.9	-0.0	0.0	-0.0	0.0	0.0
	Cargas permanentes	0.2	-0.0	0.0	-0.0	0.0	0.0
	Sobrecarga	0.2	-0.0	-0.0	-0.0	-0.0	0.0
P102	Peso próprio	4.9	0.0	-0.0	0.0	-0.0	-0.0
	Cargas permanentes	0.2	0.2	-0.0	0.1	-0.0	-0.0
	Sobrecarga	0.2	0.0	-0.0	0.0	-0.0	-0.0
P103	Peso próprio	4.2	0.2	-0.0	0.0	-0.0	-0.0
	Cargas permanentes	-1.7	1.5	-0.1	0.6	-0.1	-0.1
	Sobrecarga	0.2	-0.0	-0.0	-0.0	-0.0	-0.0
C1	Peso próprio	411.8	-83.7	-12.1	-8.8	-10.1	3.1
	Cargas permanentes	190.2	-276.5	86.5	-53.1	159.0	-65.8
	Sobrecarga	5.0	-1.7	-0.1	-0.1	-0.1	-0.0
C2	Peso próprio	422.5	10.4	228.2	7.8	5.7	50.4
	Cargas permanentes	292.0	-99.8	1948.9	-174.3	57.6	405.8
	Sobrecarga	5.2	0.1	3.8	0.1	0.1	0.7

Pilar	Hipótese	Esforços em elem.fundação					
		N (kN)	Mx (kN·m)	My (kN·m)	Qx (kN)	Qy (kN)	T (kN·m)
C3	Peso próprio	195.4	-0.6	68.9	-0.7	4.4	-3.7
	Cargas permanentes	217.8	50.7	321.2	78.1	18.8	-123.3
	Sobrecarga	2.4	0.0	0.3	-0.0	0.0	-0.1
C4	Peso próprio	41.3	0.6	0.5	4.6	4.4	1.2
	Cargas permanentes	25.4	19.8	26.0	47.5	61.7	5.4
	Sobrecarga	0.5	0.0	0.0	0.1	0.1	0.0
C5	Peso próprio	30.0	0.8	0.5	1.8	1.2	-0.0
	Cargas permanentes	23.3	5.5	5.8	14.4	15.0	-2.1
	Sobrecarga	0.4	0.0	0.0	0.0	0.0	-0.0
C6	Peso próprio	25.9	0.4	-0.0	-0.0	0.1	-0.0
	Cargas permanentes	14.6	-6.0	2.6	-14.4	7.0	2.0
	Sobrecarga	0.3	0.0	-0.0	-0.0	-0.0	0.0
C7	Peso próprio	26.6	0.1	0.1	0.7	0.1	0.1
	Cargas permanentes	4.3	-14.2	4.9	-21.5	10.6	-0.6
	Sobrecarga	0.3	-0.0	0.0	-0.0	0.0	0.0
C8	Peso próprio	26.2	-0.1	0.1	-0.4	-0.1	-0.0
	Cargas permanentes	-9.5	-2.7	-1.5	-8.5	-3.1	-2.5
	Sobrecarga	0.3	-0.0	0.0	-0.0	0.0	-0.0
C9	Peso próprio	26.4	-0.0	-0.4	0.0	-1.1	-0.1
	Cargas permanentes	-9.2	-0.9	3.9	-4.9	8.7	0.8
	Sobrecarga	0.3	-0.0	-0.0	-0.0	-0.0	-0.0
C10	Peso próprio	25.8	0.0	-0.3	-0.0	-0.3	0.1
	Cargas permanentes	-7.7	1.9	8.5	6.3	17.9	0.2
	Sobrecarga	0.3	-0.0	0.0	-0.0	0.0	0.0
C11	Peso próprio	25.2	-0.1	0.0	-0.1	0.6	0.0
	Cargas permanentes	-2.1	-0.3	9.2	-3.2	20.8	-0.9
	Sobrecarga	0.3	0.0	0.0	0.0	0.0	-0.0
C12	Peso próprio	28.6	0.1	0.2	0.1	0.5	-0.1
	Cargas permanentes	5.4	2.0	6.2	1.2	13.4	-0.6
	Sobrecarga	0.3	0.0	-0.0	0.0	-0.0	-0.0
C13	Peso próprio	39.6	-0.2	-0.1	-0.8	-0.4	-0.0
	Cargas permanentes	17.9	-3.5	1.5	-15.7	-2.0	2.8
	Sobrecarga	0.5	-0.0	-0.0	-0.0	-0.0	0.0
C14	Peso próprio	58.8	0.6	0.1	-4.9	-2.9	-1.1
	Cargas permanentes	27.4	-35.8	-9.7	-80.8	-23.2	-12.3
	Sobrecarga	0.7	0.0	0.0	-0.0	-0.0	-0.0
C15	Peso próprio	13.5	-0.4	-0.0	0.0	-0.0	0.0
	Cargas permanentes	0.2	-0.0	-0.0	-0.0	-0.0	0.0
	Sobrecarga	0.2	-0.0	-0.0	0.0	-0.0	0.0
C16	Peso próprio	13.2	-0.0	0.0	0.0	0.0	0.0
	Cargas permanentes	0.2	-0.0	0.0	0.0	0.0	-0.0
	Sobrecarga	0.2	-0.0	0.0	-0.0	0.0	0.0
C17	Peso próprio	13.2	-0.0	-0.0	0.0	-0.0	-0.0
	Cargas permanentes	0.2	-0.0	-0.0	0.0	-0.0	-0.0
	Sobrecarga	0.2	0.0	-0.0	-0.0	-0.0	0.0
C18	Peso próprio	13.2	-0.0	0.0	0.0	0.0	-0.0
	Cargas permanentes	0.2	-0.0	0.0	0.0	0.0	-0.0
	Sobrecarga	0.2	-0.0	-0.0	-0.0	0.0	0.0
C19	Peso próprio	13.2	-0.0	-0.0	0.0	-0.0	-0.0
	Cargas permanentes	0.2	-0.0	0.0	0.0	-0.0	-0.0
	Sobrecarga	0.2	-0.0	-0.0	0.0	0.0	0.0
C20	Peso próprio	13.2	-0.0	0.0	0.0	0.0	-0.0
	Cargas permanentes	0.2	-0.0	0.0	0.0	-0.0	-0.0
	Sobrecarga	0.2	-0.0	-0.0	0.0	0.0	0.0

Pilar	Hipótese	Esforços em elem.fundação					
		N (kN)	Mx (kN·m)	My (kN·m)	Qx (kN)	Qy (kN)	T (kN·m)
C21	Peso próprio	13.2	-0.0	0.0	0.0	-0.0	-0.0
	Cargas permanentes	0.2	-0.0	0.0	0.0	-0.0	-0.0
	Sobrecarga	0.2	-0.0	-0.0	0.0	0.0	0.0
C22	Peso próprio	13.2	-0.0	0.0	0.0	0.0	-0.0
	Cargas permanentes	0.2	-0.0	0.0	0.0	-0.0	-0.0
	Sobrecarga	0.2	-0.0	-0.0	0.0	0.0	0.0
C23	Peso próprio	13.2	-0.0	0.0	0.0	0.0	-0.0
	Cargas permanentes	0.2	-0.0	0.0	0.0	-0.0	-0.0
	Sobrecarga	0.2	-0.0	-0.0	0.0	0.0	0.0
C24	Peso próprio	13.2	-0.0	0.0	0.0	0.0	-0.0
	Cargas permanentes	0.2	-0.0	0.0	0.0	0.0	-0.0
	Sobrecarga	0.2	-0.0	-0.0	0.0	0.0	0.0
C25	Peso próprio	13.2	-0.0	0.0	0.0	0.0	-0.0
	Cargas permanentes	0.2	-0.0	0.0	0.0	0.0	-0.0
	Sobrecarga	0.2	-0.0	0.0	0.0	0.0	-0.0
C26	Peso próprio	13.2	-0.0	0.0	0.0	0.0	-0.0
	Cargas permanentes	0.2	-0.0	0.0	0.0	0.0	-0.0
	Sobrecarga	0.2	-0.0	0.0	0.0	0.0	-0.0
C27	Peso próprio	13.2	-0.0	0.0	-0.0	0.0	-0.0
	Cargas permanentes	0.2	-0.0	0.0	0.0	0.0	-0.0
	Sobrecarga	0.2	-0.0	0.0	0.0	0.0	-0.0
C28	Peso próprio	13.2	-0.0	0.0	-0.0	0.0	-0.0
	Cargas permanentes	0.2	-0.0	0.0	0.0	0.0	-0.0
	Sobrecarga	0.2	-0.0	0.0	0.0	0.0	-0.0
C29	Peso próprio	13.2	-0.0	0.0	-0.0	0.0	-0.0
	Cargas permanentes	0.2	-0.0	-0.0	0.0	0.0	-0.0
	Sobrecarga	0.2	-0.0	0.0	0.0	0.0	-0.0
C30	Peso próprio	13.2	-0.0	-0.0	-0.0	0.0	-0.0
	Cargas permanentes	0.2	-0.0	0.0	0.0	0.0	-0.0
	Sobrecarga	0.2	-0.0	-0.0	0.0	0.0	-0.0
C31	Peso próprio	13.2	-0.0	0.0	-0.0	0.0	-0.0
	Cargas permanentes	0.2	-0.0	-0.0	0.0	-0.0	-0.0
	Sobrecarga	0.2	-0.0	0.0	0.0	0.0	-0.0
C32	Peso próprio	13.2	0.0	-0.0	-0.0	-0.0	-0.0
	Cargas permanentes	0.2	-0.0	0.0	0.0	0.0	-0.0
	Sobrecarga	0.2	-0.0	-0.0	0.0	-0.0	-0.0
C33	Peso próprio	16.8	0.3	-0.0	-0.0	-0.0	-0.0
	Cargas permanentes	0.2	0.0	-0.0	-0.0	-0.0	-0.0
	Sobrecarga	0.2	0.0	-0.0	-0.0	-0.0	-0.0
C34	Peso próprio	13.5	0.0	-0.2	0.0	0.0	0.0
	Cargas permanentes	0.2	0.0	-0.0	0.0	-0.0	0.0
	Sobrecarga	0.2	0.0	-0.0	0.0	0.0	0.0
C35	Peso próprio	10.4	0.0	-0.0	0.0	0.0	0.0
	Cargas permanentes	0.1	-0.0	0.0	-0.0	-0.0	0.0
	Sobrecarga	0.1	0.0	0.0	0.0	-0.0	0.0
C36	Peso próprio	13.2	0.0	-0.0	-0.0	0.0	0.0
	Cargas permanentes	0.2	0.0	0.0	0.0	-0.0	0.0
	Sobrecarga	0.2	0.0	-0.0	-0.0	-0.0	0.0
C37	Peso próprio	13.2	0.0	-0.0	0.0	-0.0	0.0
	Cargas permanentes	0.2	0.0	0.0	-0.0	-0.0	0.0
	Sobrecarga	0.2	0.0	0.0	-0.0	-0.0	0.0
C38	Peso próprio	13.2	0.0	-0.0	-0.0	-0.0	0.0
	Cargas permanentes	0.2	0.0	0.0	-0.0	-0.0	0.0
	Sobrecarga	0.2	0.0	0.0	-0.0	-0.0	0.0

Pilar	Hipótese	Esforços em elem.fundação					
		N (kN)	Mx (kN·m)	My (kN·m)	Qx (kN)	Qy (kN)	T (kN·m)
C39	Peso próprio	13.2	0.0	-0.0	-0.0	-0.0	0.0
	Cargas permanentes	0.2	0.0	0.0	-0.0	-0.0	0.0
	Sobrecarga	0.2	0.0	0.0	-0.0	-0.0	0.0
C40	Peso próprio	13.2	0.0	-0.0	-0.0	-0.0	0.0
	Cargas permanentes	0.2	0.0	0.0	-0.0	-0.0	0.0
	Sobrecarga	0.2	0.0	0.0	-0.0	-0.0	0.0
C41	Peso próprio	13.2	0.0	-0.0	-0.0	-0.0	0.0
	Cargas permanentes	0.2	0.0	0.0	0.0	-0.0	0.0
	Sobrecarga	0.2	0.0	0.0	-0.0	-0.0	0.0
C42	Peso próprio	13.2	0.0	-0.0	-0.0	-0.0	0.0
	Cargas permanentes	0.2	0.0	0.0	0.0	-0.0	0.0
	Sobrecarga	0.2	0.0	0.0	-0.0	-0.0	0.0
C43	Peso próprio	13.2	0.0	-0.0	0.0	-0.0	0.0
	Cargas permanentes	0.2	0.0	0.0	0.0	-0.0	0.0
	Sobrecarga	0.2	0.0	-0.0	-0.0	-0.0	0.0
C44	Peso próprio	13.2	0.0	-0.0	0.0	-0.0	0.0
	Cargas permanentes	0.2	0.0	0.0	0.0	-0.0	0.0
	Sobrecarga	0.2	0.0	-0.0	-0.0	-0.0	-0.0
C46	Peso próprio	13.2	0.0	-0.0	0.0	-0.0	0.0
	Cargas permanentes	0.2	0.0	0.0	0.0	-0.0	0.0
	Sobrecarga	0.2	-0.0	-0.0	-0.0	-0.0	-0.0
C47	Peso próprio	13.2	0.0	0.0	0.0	-0.0	0.0
	Cargas permanentes	0.2	0.0	0.0	0.0	-0.0	0.0
	Sobrecarga	0.2	-0.0	-0.0	-0.0	0.0	-0.0
C48	Peso próprio	13.2	0.0	0.0	0.0	-0.0	0.0
	Cargas permanentes	0.2	-0.0	0.0	0.0	-0.0	0.0
	Sobrecarga	0.2	-0.0	-0.0	-0.0	0.0	-0.0
C49	Peso próprio	13.2	0.0	0.0	0.0	-0.0	0.0
	Cargas permanentes	0.2	0.0	0.0	0.0	-0.0	0.0
	Sobrecarga	0.2	0.0	-0.0	-0.0	0.0	-0.0
C50	Peso próprio	13.2	-0.0	0.0	0.0	-0.0	0.0
	Cargas permanentes	0.2	-0.0	0.0	-0.0	-0.0	0.0
	Sobrecarga	0.2	-0.0	-0.0	-0.0	0.0	-0.0
C51	Peso próprio	13.2	0.0	0.0	0.0	-0.0	0.0
	Cargas permanentes	0.2	0.0	0.0	0.0	-0.0	0.0
	Sobrecarga	0.2	0.0	-0.0	-0.0	0.0	-0.0
C52	Peso próprio	13.2	-0.0	0.0	-0.0	-0.0	0.0
	Cargas permanentes	0.2	-0.0	0.0	-0.0	-0.0	-0.0
	Sobrecarga	0.2	-0.0	-0.0	-0.0	0.0	-0.0
C53	Peso próprio	13.2	0.0	-0.0	0.0	-0.0	0.0
	Cargas permanentes	0.1	0.0	-0.0	0.0	0.0	0.0
	Sobrecarga	0.2	0.0	-0.0	0.0	0.0	-0.0
C54	Peso próprio	13.4	-0.0	0.2	0.0	-0.0	0.0
	Cargas permanentes	0.0	-0.0	-0.2	-0.0	0.0	0.0
	Sobrecarga	0.2	0.0	0.0	0.0	-0.0	-0.0
C56	Peso próprio	27.0	0.0	-0.8	-0.0	-0.0	-0.0
	Cargas permanentes	0.6	0.0	-0.0	0.0	-0.0	-0.0
	Sobrecarga	0.5	-0.0	-0.1	-0.0	0.0	-0.0
C57	Peso próprio	15.1	1.1	-0.0	-0.0	0.0	0.0
	Cargas permanentes	-2.7	7.3	-0.0	-0.0	-0.0	0.0
	Sobrecarga	0.2	0.0	0.0	-0.0	0.0	0.0

5.- DESFAV. PILARES, PILARES-PAREDES E CORTINAS

5.1.- Pilares

Resumo das verificações												
Pilares	Tramo	Dimensão (cm)	Posição	Esforços desfavoráveis						Desfavorável	Aprov. (%)	Estado
				Natureza	N (kN)	Mxx (kN·m)	Myy (kN·m)	Qx (kN)	Qy (kN)			
P1	TOPO (-2 - 0.8 m)	20x40	Ext.Superior	AP	0.5	0.2	-0.2	0.8	1.4	Q	3.6	Passa
			Ext.Inferior	AP, SCU	23.8	-1.6	0.4	1.2	4.1	Q	9.4	Passa
	BASE	20x40	Elemento de Fundação	AP, SCU	23.8	-1.6	0.4	1.2	4.1	N,M	3.3	Passa
P2	TOPO (-2 - 0.8 m)	20x40	Ext.Superior	AP, SCU	1.2	0.2	0.1	-0.6	1.9	Q	4.4	Passa
				AP	1.1	0.2	0.1	-0.6	1.9	N,M	0.4	Passa
			Ext.Inferior	AP, SCU	5.9	0.6	1.5	2.9	-1.4	Q	6.7	Passa
				AP	5.7	0.6	1.5	2.9	-1.5	N,M	4.7	Passa
	BASE	20x40	Elemento de Fundação	AP, SCU	5.9	0.6	1.5	2.9	-1.4	Q	1.2	Passa
				AP	5.7	0.6	1.5	2.9	-1.5	N,M	4.7	Passa
P3	TOPO (-2 - 0.8 m)	20x40	Ext.Superior	AP, SCU	0.8	0.0	0.1	-0.5	0.9	Q	1.4	Passa
				AP	0.7	0.0	0.1	-0.5	0.9	N,M	0.2	Passa
			Ext.Inferior	AP, SCU	-9.4	2.8	1.1	2.1	-3.7	Q	9.5	Passa
				AP	-9.5	2.8	1.1	2.1	-3.7	N,M	8.9	Passa
	BASE	20x40	Elemento de Fundação	AP, SCU	-9.4	2.8	1.1	2.1	-3.7	Q	1.7	Passa
				AP	-9.5	2.8	1.1	2.1	-3.7	N,M	8.9	Passa
P4	TOPO (-2 - 0.8 m)	20x40	Ext.Superior	AP	-0.3	0.0	0.1	-0.3	0.5	Q	1.4	Passa
			Ext.Inferior	AP	-20.0	3.8	0.6	1.2	-3.8	N,M	13.3	Passa
	BASE	20x40	Elemento de Fundação	AP	-20.0	3.8	0.6	1.2	-3.8	N,M	13.3	Passa
P5	TOPO (-2 - 0.8 m)	20x40	Ext.Superior	AP	-0.8	-0.1	0.0	-0.1	0.3	Q	0.7	Passa
			Ext.Inferior	AP	-25.5	4.2	0.3	0.7	-3.7	N,M	15.8	Passa
	BASE	20x40	Elemento de Fundação	AP	-25.5	4.2	0.3	0.7	-3.7	N,M	15.8	Passa
P6	TOPO (-2 - 0.8 m)	20x40	Ext.Superior	AP	-0.9	-0.1	0.0	0.2	0.2	Q	0.6	Passa
			Ext.Inferior	AP	-27.5	4.3	0.1	0.3	-3.6	N,M	16.5	Passa
	BASE	20x40	Elemento de Fundação	AP	-27.5	4.3	0.1	0.3	-3.6	N,M	16.5	Passa
P7	TOPO (-2 - 0.8 m)	20x40	Ext.Superior	AP	-0.6	-0.1	-0.1	0.5	0.2	Q	1.0	Passa
			Ext.Inferior	AP	-26.2	4.1	-0.1	0.0	-3.3	N,M	15.7	Passa
	BASE	20x40	Elemento de Fundação	AP	-26.2	4.1	-0.1	0.0	-3.3	N,M	15.7	Passa
P8	TOPO (-2 - 0.8 m)	20x40	Ext.Superior	AP	0.0	-0.1	-0.1	0.7	0.2	Q	1.5	Passa
			Ext.Inferior	AP	-21.4	3.5	-0.4	-0.4	-2.9	N,M	13.1	Passa
	BASE	20x40	Elemento de Fundação	AP	-21.4	3.5	-0.4	-0.4	-2.9	N,M	13.1	Passa
P9	TOPO (-2 - 0.8 m)	20x40	Ext.Superior	AP	1.4	-0.1	-0.2	0.9	0.3	Q	2.0	Passa
			Ext.Inferior	AP	-11.6	2.3	-0.8	-1.1	-2.2	N,M	8.2	Passa
	BASE	20x40	Elemento de Fundação	AP	-11.6	2.3	-0.8	-1.1	-2.2	N,M	8.2	Passa
P10	TOPO (-2 - 0.8 m)	20x40	Ext.Superior	AP	4.1	-0.1	-0.2	1.0	0.4	Q	2.0	Passa
				AP, SCU	4.2	-0.1	-0.2	1.0	0.4	N,M	0.5	Passa
			-0.133 m	AP	9.7	-0.7	-0.3	2.5	-0.2	Q	4.6	Passa
				AP, SCU	9.7	-0.7	-0.3	2.5	-0.2	N,M	1.2	Passa
			Ext.Inferior	AP	5.3	0.2	-1.0	-1.6	-0.6	Q	3.3	Passa
	BASE	20x40	Elemento de Fundação	AP, SCU	5.5	0.2	-1.0	-1.6	-0.5	Q	0.6	Passa
				AP	5.3	0.2	-1.0	-1.6	-0.6	N,M	2.9	Passa
P11	TOPO (-2 - 0.8 m)	20x40	Ext.Superior	AP, SCU	0.1	0.2	0.0	0.2	0.9	Q	2.1	Passa
				AP	0.1	0.2	0.0	0.2	0.9	N,M	0.4	Passa
			-0.6 m	AP	13.2	-0.5	-0.4	1.3	0.2	Q	2.5	Passa
				AP, SCU	13.3	-0.5	-0.4	1.3	0.2	N,M	1.4	Passa
			Ext.Inferior	AP	14.0	-0.2	0.4	1.2	0.6	Q	2.4	Passa
				AP, SCU	14.2	-0.2	0.4	1.2	0.6	N,M	1.4	Passa
	BASE	20x40	Elemento de Fundação	AP, SCU	14.2	-0.2	0.4	1.2	0.6	N,M	1.4	Passa
P12	TOPO (-2 - 0.8 m)	20x40	Ext.Superior	AP, SCU	4.9	0.1	0.3	-1.4	1.0	Q	3.0	Passa
			-0.133 m	AP, SCU	11.3	-0.5	0.4	-3.4	1.2	Q	7.1	Passa
			Ext.Inferior	AP	7.3	0.9	0.6	0.4	-2.4	Q	5.7	Passa
	BASE	20x40	Elemento de Fundação	AP	7.3	0.9	0.6	0.4	-2.4	N,M	2.1	Passa
P13	TOPO (-2 - 0.8 m)	20x40	Ext.Superior	AP, SCU	2.5	0.0	0.2	-1.2	0.7	Q	2.6	Passa

Esforços e armaduras de pilares, paredes, cortinas e muros

MURO DE CONTENÇÃO - SESC ALTAMIRA

Data: 17/02/21

Resumo das verificações												
Pilares	Tramo	Dimensão (cm)	Posição	Esforços desfavoráveis						Desfavorável	Aprov. (%)	Estado
				Natureza	N (kN)	Mxx (kN·m)	Myy (kN·m)	Qx (kN)	Qy (kN)			
				AP	2.5	0.0	0.2	-1.2	0.7	N,M	0.5	Passa
			Ext.Inferior	AP	-8.9	2.7	0.4	-0.1	-3.6	Q	8.2	Passa
	BASE	20x40	Elemento de Fundação	AP	-8.9	2.7	0.4	-0.1	-3.6	N,M	7.9	Passa
P14	TOPO (-2 - 0.8 m)	20x40	Ext.Superior	AP, SCU	1.2	0.0	0.2	-0.9	0.5	Q	1.8	Passa
				AP	1.1	0.0	0.2	-0.9	0.5	N,M	0.4	Passa
			Ext.Inferior	AP	-17.4	3.4	0.0	-0.7	-3.6	N,M	11.7	Passa
	BASE	20x40	Elemento de Fundação	AP	-17.4	3.4	0.0	-0.7	-3.6	N,M	11.7	Passa
P15	TOPO (-2 - 0.8 m)	20x40	Ext.Superior	AP	0.5	0.0	0.1	-0.5	0.3	Q	1.2	Passa
			Ext.Inferior	AP	-19.9	3.5	-0.3	-1.2	-3.3	N,M	12.7	Passa
	BASE	20x40	Elemento de Fundação	AP	-19.9	3.5	-0.3	-1.2	-3.3	N,M	12.7	Passa
P16	TOPO (-2 - 0.8 m)	20x40	Ext.Superior	AP	0.6	-0.1	0.0	-0.1	0.3	Q	0.8	Passa
			Ext.Inferior	AP	-16.8	3.1	-0.7	-1.8	-2.9	N,M	11.0	Passa
	BASE	20x40	Elemento de Fundação	AP	-16.8	3.1	-0.7	-1.8	-2.9	N,M	11.0	Passa
P17	TOPO (-2 - 0.8 m)	20x40	Ext.Superior	AP	1.3	-0.1	0.0	0.1	0.4	Q	0.9	Passa
				AP, SCU	1.3	-0.1	0.0	0.1	0.4	N,M	0.1	Passa
			Ext.Inferior	AP, SCU	-7.4	2.0	-1.2	-2.7	-2.1	Q	7.3	Passa
				AP	-7.5	2.0	-1.2	-2.7	-2.1	N,M	7.8	Passa
	BASE	20x40	Elemento de Fundação	AP, SCU	-7.4	2.0	-1.2	-2.7	-2.1	Q	1.3	Passa
				AP	-7.5	2.0	-1.2	-2.7	-2.1	N,M	7.8	Passa
P18	TOPO (-2 - 0.8 m)	20x40	Ext.Superior	AP	1.4	0.1	0.0	0.0	1.5	Q	3.5	Passa
				AP, SCU	1.5	0.1	0.0	0.0	1.5	N,M	0.2	Passa
			Ext.Inferior	AP, SCU	8.7	-0.2	-1.6	-3.6	-0.1	Q	7.1	Passa
				AP	8.6	-0.2	-1.6	-3.5	-0.1	N,M	4.4	Passa
	BASE	20x40	Elemento de Fundação	AP, SCU	8.7	-0.2	-1.6	-3.6	-0.1	Q	1.3	Passa
				AP	8.6	-0.2	-1.6	-3.5	-0.1	N,M	4.4	Passa
P19	TOPO (-2 - 0.8 m)	20x40	Ext.Superior	AP, SCU	-1.0	0.0	0.0	0.2	0.3	Q	0.8	Passa
				AP	-1.0	0.0	0.0	0.2	0.3	N,M	0.4	Passa
			-0.133 m	AP, SCU	-1.3	0.2	-0.1	0.3	0.5	Q	1.4	Passa
				AP	-1.4	0.2	-0.1	0.3	0.5	N,M	1.0	Passa
			Ext.Inferior	AP, SCU	7.6	0.5	-0.1	0.0	-0.4	Q	1.0	Passa
	BASE	20x40	Elemento de Fundação	AP, SCU	7.6	0.5	-0.1	0.0	-0.4	N,M	0.8	Passa
P20	TOPO (-2 - 0.8 m)	40x20	Ext.Superior	AP, SCU	1.5	0.0	-0.2	1.8	0.0	Q	4.1	Passa
			Ext.Inferior	AP, SCU	9.7	1.6	-0.2	-1.2	-3.5	Q	7.1	Passa
				AP	9.5	1.6	-0.2	-1.2	-3.5	N,M	4.2	Passa
	BASE	40x20	Elemento de Fundação	AP, SCU	9.7	1.6	-0.2	-1.2	-3.5	Q	1.3	Passa
				AP	9.5	1.6	-0.2	-1.2	-3.5	N,M	4.2	Passa
P21	TOPO (-2 - 0.8 m)	40x20	Ext.Superior	AP	1.4	0.0	0.0	0.9	0.1	Q	1.0	Passa
				AP, SCU	1.4	0.0	0.0	0.9	0.1	N,M	0.1	Passa
			Ext.Inferior	AP, SCU	-6.1	1.2	-2.4	-3.5	-2.6	Q	9.6	Passa
				AP	-6.2	1.2	-2.4	-3.5	-2.6	N,M	7.8	Passa
	BASE	40x20	Elemento de Fundação	AP, SCU	-6.1	1.2	-2.4	-3.5	-2.6	Q	1.7	Passa
				AP	-6.2	1.2	-2.4	-3.5	-2.6	N,M	7.8	Passa
P22	TOPO (-2 - 0.8 m)	40x20	Ext.Superior	AP	0.6	0.0	0.0	0.6	-0.1	Q	0.7	Passa
				AP, SCU	0.7	0.0	0.0	0.6	-0.1	N,M	0.1	Passa
			Ext.Inferior	AP	-16.1	0.7	-3.3	-3.6	-1.6	N,M	11.2	Passa
	BASE	40x20	Elemento de Fundação	AP	-16.1	0.7	-3.3	-3.6	-1.6	N,M	11.2	Passa
P23	TOPO (-2 - 0.8 m)	40x20	Ext.Superior	AP	0.5	-0.1	0.0	0.4	-0.4	Q	1.2	Passa
			Ext.Inferior	AP	-19.8	0.3	-3.5	-3.4	-0.9	N,M	12.6	Passa
	BASE	40x20	Elemento de Fundação	AP	-19.8	0.3	-3.5	-3.4	-0.9	N,M	12.6	Passa
P24	TOPO (-2 - 0.8 m)	40x20	Ext.Superior	AP	1.0	-0.2	0.0	0.3	-0.8	Q	1.6	Passa
			Ext.Inferior	AP	-17.9	-0.1	-3.2	-3.0	-0.4	N,M	11.4	Passa
	BASE	40x20	Elemento de Fundação	AP	-17.9	-0.1	-3.2	-3.0	-0.4	N,M	11.4	Passa
P25	TOPO (-2 - 0.8 m)	40x20	Ext.Superior	AP, SCU	2.3	-0.2	0.0	0.3	-1.1	Q	2.3	Passa
				AP	2.3	-0.2	0.0	0.3	-1.1	N,M	0.5	Passa
			-0.6 m	AP	5.9	-0.9	1.1	-2.4	-2.5	Q	7.5	Passa

Esforços e armaduras de pilares, paredes, cortinas e muros

MURO DE CONTENÇÃO - SESC ALTAMIRA

Data: 17/02/21

Resumo das verificações												
Pilares	Tramo	Dimensão (cm)	Posição	Esforços desfavoráveis						Desfavorável	Aprov. (%)	Estado
				Natureza	N (kN)	Mxx (kN·m)	Myy (kN·m)	Qx (kN)	Qy (kN)			
			Ext.Inferior	AP	-9.8	-0.5	-2.2	-2.2	0.3	N,M	7.2	Passa
	BASE	40x20	Elemento de Fundação	AP	-9.8	-0.5	-2.2	-2.2	0.3	N,M	7.2	Passa
P26	TOPO (-2 - 0.8 m)	40x20	Ext.Superior	AP	5.1	-0.2	0.1	0.4	-1.2	Q	2.4	Passa
				AP, SCU	5.1	-0.2	0.1	0.4	-1.2	N,M	0.6	Passa
			-0.6 m	AP	14.9	-0.9	1.2	-0.9	-2.5	Q	5.5	Passa
				AP, SCU	15.0	-0.9	1.2	-0.9	-2.5	N,M	3.4	Passa
			Ext.Inferior	AP, SCU	6.7	-0.8	-0.2	-0.7	0.8	Q	1.8	Passa
				AP	6.6	-0.8	-0.2	-0.7	0.8	N,M	1.8	Passa
	BASE	40x20	Elemento de Fundação	AP	6.6	-0.8	-0.2	-0.7	0.8	N,M	1.8	Passa
P27	TOPO (-2 - 0.8 m)	40x20	Ext.Superior	AP, SCU	1.1	0.1	-0.2	0.9	0.3	Q	2.2	Passa
				AP	1.1	0.1	-0.2	0.9	0.3	N,M	0.3	Passa
			Ext.Inferior	AP	14.8	-0.5	0.3	0.8	1.2	Q	2.4	Passa
				AP, SCU	14.9	-0.5	0.3	0.8	1.2	N,M	2.0	Passa
	BASE	40x20	Elemento de Fundação	AP, SCU	14.9	-0.5	0.3	0.8	1.2	N,M	2.0	Passa
P28	TOPO (-2 - 0.8 m)	40x20	Ext.Superior	AP	4.3	0.1	0.0	1.1	0.7	Q	1.7	Passa
				AP, SCU	4.3	0.1	0.0	1.1	0.7	N,M	0.4	Passa
			Ext.Inferior	AP, SCU	9.5	1.3	-0.7	-2.3	-2.4	Q	7.1	Passa
				AP	9.3	1.3	-0.7	-2.3	-2.4	N,M	3.5	Passa
	BASE	40x20	Elemento de Fundação	AP, SCU	9.5	1.3	-0.7	-2.3	-2.4	Q	1.3	Passa
				AP	9.3	1.3	-0.7	-2.3	-2.4	N,M	3.5	Passa
P29	TOPO (-2 - 0.8 m)	40x20	Ext.Superior	AP	2.1	0.1	0.0	0.8	0.7	Q	1.7	Passa
				AP, SCU	2.2	0.1	0.0	0.8	0.7	N,M	0.3	Passa
			Ext.Inferior	AP, SCU	-8.9	1.0	-2.8	-3.7	-1.8	Q	9.3	Passa
				AP	-9.0	1.0	-2.8	-3.7	-1.8	N,M	8.7	Passa
	BASE	40x20	Elemento de Fundação	AP, SCU	-8.9	1.0	-2.8	-3.7	-1.8	Q	1.6	Passa
				AP	-9.0	1.0	-2.8	-3.7	-1.8	N,M	8.7	Passa
P30	TOPO (-2 - 0.8 m)	40x20	Ext.Superior	AP	0.9	0.1	0.0	0.4	0.5	Q	1.2	Passa
			Ext.Inferior	AP	-20.4	0.6	-3.9	-3.9	-1.0	N,M	13.6	Passa
	BASE	40x20	Elemento de Fundação	AP, SCU	-20.3	0.6	-3.9	-3.9	-1.0	Q	1.6	Passa
				AP	-20.4	0.6	-3.9	-3.9	-1.0	N,M	13.6	Passa
P31	TOPO (-2 - 0.8 m)	40x20	Ext.Superior	AP	0.2	0.0	0.0	0.2	0.3	Q	0.7	Passa
			Ext.Inferior	AP	-26.7	0.3	-4.4	-3.8	-0.6	N,M	16.5	Passa
	BASE	40x20	Elemento de Fundação	AP	-26.7	0.3	-4.4	-3.8	-0.6	N,M	16.5	Passa
P32	TOPO (-2 - 0.8 m)	40x20	Ext.Superior	AP	-0.1	0.0	0.1	0.1	0.0	Q	0.2	Passa
			Ext.Inferior	AP	-29.5	0.2	-4.7	-3.7	-0.3	N,M	17.8	Passa
	BASE	40x20	Elemento de Fundação	AP	-29.5	0.2	-4.7	-3.7	-0.3	N,M	17.8	Passa
P33	TOPO (-2 - 0.8 m)	40x20	Ext.Superior	AP, SCU	0.0	0.0	0.1	0.0	-0.2	Q	0.4	Passa
				AP	0.0	0.0	0.1	0.0	-0.2	N,M	0.2	Passa
			Ext.Inferior	AP	-29.5	0.0	-4.6	-3.6	-0.1	N,M	17.7	Passa
	BASE	40x20	Elemento de Fundação	AP	-29.5	0.0	-4.6	-3.6	-0.1	N,M	17.7	Passa
P34	TOPO (-2 - 0.8 m)	40x20	Ext.Superior	AP, SCU	0.3	-0.1	0.1	0.0	-0.3	Q	0.7	Passa
				AP	0.3	-0.1	0.1	0.0	-0.3	N,M	0.2	Passa
			Ext.Inferior	AP	-26.7	-0.3	-4.3	-3.3	0.4	N,M	16.2	Passa
	BASE	40x20	Elemento de Fundação	AP	-26.7	-0.3	-4.3	-3.3	0.4	N,M	16.2	Passa
P35	TOPO (-2 - 0.8 m)	40x20	Ext.Superior	AP	0.8	-0.1	0.1	0.1	-0.5	Q	0.9	Passa
			Ext.Inferior	AP	-20.9	-0.7	-3.6	-2.8	1.5	N,M	13.2	Passa
	BASE	40x20	Elemento de Fundação	AP	-20.9	-0.7	-3.6	-2.8	1.5	N,M	13.2	Passa
P36	TOPO (-2 - 0.8 m)	40x20	Ext.Superior	AP, SCU	0.2	-0.1	0.0	-0.3	-0.7	Q	1.5	Passa
				AP	0.1	-0.1	0.1	-0.3	-0.7	N,M	0.5	Passa
			Ext.Inferior	AP, SCU	-16.4	-1.8	-2.7	-1.3	4.2	Q	8.9	Passa
				AP	-16.5	-1.8	-2.7	-1.3	4.2	N,M	12.8	Passa
	BASE	40x20	Elemento de Fundação	AP, SCU	-16.4	-1.8	-2.7	-1.3	4.2	Q	1.6	Passa
				AP	-16.5	-1.8	-2.7	-1.3	4.2	N,M	12.8	Passa
P37	TOPO (-2 - 0.8 m)	40x20	Ext.Superior	AP	6.3	0.3	0.2	1.3	2.0	Q	4.2	Passa
				AP, SCU	6.5	0.3	0.2	1.3	2.0	N,M	0.8	Passa

Esforços e armaduras de pilares, paredes, cortinas e muros

MURO DE CONTENÇÃO - SESC ALTAMIRA

Data: 17/02/21

Resumo das verificações												
Pilares	Tramo	Dimensão (cm)	Posição	Esforços desfavoráveis						Desfavorável	Aprov. (%)	Estado
				Natureza	N (kN)	Mxx (kN·m)	Myy (kN·m)	Qx (kN)	Qy (kN)			
			Ext.Inferior	AP, SCU	-68.3	-1.9	-15.3	-1.8	5.8	N,M	49.8	Passa
	BASE	40x20	Elemento de Fundação	AP, SCU	-68.3	-1.9	-15.3	-1.8	5.8	N,M	49.8	Passa
P38	TOPO (-2 - 0.8 m)	40x20	Ext.Superior	AP	1.4	-0.1	0.1	-1.2	-0.3	Q	2.6	Passa
				AP, SCU	1.4	-0.1	0.1	-1.2	-0.3	N,M	0.2	Passa
			Ext.Inferior	AP	1.8	0.7	1.1	1.7	-1.7	Q	5.3	Passa
	BASE	40x20	Elemento de Fundação	AP	1.8	0.7	1.1	1.7	-1.7	N,M	2.9	Passa
P39	TOPO (-2 - 0.8 m)	40x20	Ext.Superior	AP	0.9	0.0	0.0	-0.4	-0.2	Q	0.7	Passa
				AP, SCU	1.0	0.0	0.0	-0.4	-0.2	N,M	0.1	Passa
			Ext.Inferior	AP	-22.6	0.5	4.5	4.3	-1.3	N,M	15.3	Passa
	BASE	40x20	Elemento de Fundação	AP	-22.6	0.5	4.5	4.3	-1.3	N,M	15.3	Passa
P40	TOPO (-2 - 0.8 m)	40x20	Ext.Superior	AP	0.3	0.0	0.0	-0.1	-0.2	Q	0.4	Passa
			Ext.Inferior	AP	-33.5	0.3	5.7	4.7	-0.8	N,M	20.9	Passa
	BASE	40x20	Elemento de Fundação	AP	-33.5	0.3	5.7	4.7	-0.8	N,M	20.9	Passa
P41	TOPO (-2 - 0.8 m)	40x20	Ext.Superior	AP, SCU	0.1	0.0	-0.1	0.1	-0.1	Q	0.3	Passa
				AP	0.0	0.0	-0.1	0.1	-0.1	N,M	0.1	Passa
			Ext.Inferior	AP	-38.2	0.2	6.2	4.7	-0.5	N,M	23.2	Passa
	BASE	40x20	Elemento de Fundação	AP	-38.2	0.2	6.2	4.7	-0.5	N,M	23.2	Passa
P42	TOPO (-2 - 0.8 m)	40x20	Ext.Superior	AP, SCU	0.0	0.0	-0.1	0.2	-0.1	Q	0.4	Passa
				AP	0.0	0.0	-0.1	0.2	-0.1	N,M	0.1	Passa
			Ext.Inferior	AP	-40.5	0.1	6.4	4.8	-0.3	N,M	24.4	Passa
	BASE	40x20	Elemento de Fundação	AP	-40.5	0.1	6.4	4.8	-0.3	N,M	24.4	Passa
P43	TOPO (-2 - 0.8 m)	40x20	Ext.Superior	AP, SCU	0.0	0.0	-0.1	0.2	0.0	Q	0.5	Passa
				AP	-0.1	0.0	-0.1	0.2	0.0	N,M	0.1	Passa
			Ext.Inferior	AP	-41.5	0.0	6.5	4.8	-0.1	N,M	24.9	Passa
	BASE	40x20	Elemento de Fundação	AP	-41.5	0.0	6.5	4.8	-0.1	N,M	24.9	Passa
P44	TOPO (-2 - 0.8 m)	40x20	Ext.Superior	AP, SCU	0.1	0.0	-0.1	0.2	0.0	Q	0.4	Passa
				AP	0.0	0.0	-0.1	0.2	0.0	N,M	0.1	Passa
			Ext.Inferior	AP	-41.2	0.0	6.5	4.9	0.1	N,M	24.8	Passa
	BASE	40x20	Elemento de Fundação	AP	-41.2	0.0	6.5	4.9	0.1	N,M	24.8	Passa
P45	TOPO (-2 - 0.8 m)	40x20	Ext.Superior	AP	-1.1	0.1	0.0	0.0	0.5	Q	1.1	Passa
			Ext.Inferior	AP	-14.3	-0.2	4.4	1.9	0.9	N,M	12.6	Passa
	BASE	40x20	Elemento de Fundação	AP	-14.3	-0.2	4.4	1.9	0.9	N,M	12.6	Passa
P46	TOPO (-2 - 0.8 m)	20x40	Ext.Superior	AP	-0.5	0.0	0.0	0.6	-0.2	Q	1.2	Passa
			Ext.Inferior	AP, SCU	9.3	2.3	0.1	1.0	-4.1	Q	9.5	Passa
				AP	9.2	2.3	0.1	1.0	-4.1	N,M	2.7	Passa
	BASE	20x40	Elemento de Fundação	AP, SCU	9.3	2.3	0.1	1.0	-4.1	Q	1.7	Passa
				AP	9.2	2.3	0.1	1.0	-4.1	N,M	2.7	Passa
P47	TOPO (-2 - 0.8 m)	20x40	Ext.Superior	AP	-0.5	0.1	0.0	0.0	0.1	N,M	0.4	Passa
			-0.6 m	AP	9.5	-0.7	0.0	0.0	-0.5	Q	1.0	Passa
				AP, SCU	9.6	-0.7	0.0	0.0	-0.5	N,M	1.0	Passa
			Ext.Inferior	AP	11.1	0.4	0.0	0.0	-0.7	Q	1.0	Passa
				AP, SCU	11.3	0.4	0.0	0.0	-0.7	N,M	0.9	Passa
	BASE	20x40	Elemento de Fundação	AP	11.1	0.4	0.0	0.0	-0.7	Q	0.3	Passa
				AP, SCU	11.3	0.4	0.0	0.0	-0.7	N,M	0.9	Passa
P48	TOPO (-2 - 0.8 m)	20x40	Ext.Superior	AP	2.4	0.0	0.1	-0.6	0.5	Q	1.3	Passa
				AP, SCU	2.5	0.0	0.1	-0.6	0.5	N,M	0.3	Passa
			Ext.Inferior	AP	-0.5	2.2	-0.4	-1.5	-2.9	Q	7.3	Passa
	BASE	20x40	Elemento de Fundação	AP	-0.5	2.2	-0.4	-1.5	-2.9	N,M	4.4	Passa
P49	TOPO (-2 - 0.8 m)	20x40	Ext.Superior	AP, SCU	-0.2	0.2	0.2	-0.9	0.6	Q	2.4	Passa
				AP	-0.3	0.2	0.2	-0.9	0.6	N,M	1.0	Passa
			-1.067 m	AP, SCU	4.5	-0.4	-0.3	-2.3	0.4	Q	4.7	Passa
				AP	4.4	-0.4	-0.3	-2.3	0.4	N,M	0.9	Passa
			Ext.Inferior	AP, SCU	-0.1	0.8	-0.6	-2.0	-0.3	Q	4.0	Passa
				AP	-0.2	0.8	-0.6	-2.0	-0.3	N,M	2.8	Passa
	BASE	20x40	Elemento de Fundação	AP, SCU	-0.1	0.8	-0.6	-2.0	-0.3	Q	0.7	Passa

Esforços e armaduras de pilares, paredes, cortinas e muros

MURO DE CONTENÇÃO - SESC ALTAMIRA

Data: 17/02/21

Resumo das verificações												
Pilares	Tramo	Dimensão (cm)	Posição	Esforços desfavoráveis						Desfavorável	Aprov. (%)	Estado
				Natureza	N (kN)	Mxx (kN·m)	Myy (kN·m)	Qx (kN)	Qy (kN)			
				AP	-0.2	0.8	-0.6	-2.0	-0.3	N,M	2.8	Passa
P50	TOPO (-2 - 0.8 m)	40x20	Ext.Superior	AP	-0.9	0.1	0.0	-0.5	0.6	Q	1.2	Passa
			-0.133 m	AP	3.6	0.1	0.2	-0.6	1.1	Q	2.4	Passa
				AP, SCU	3.6	0.1	0.2	-0.6	1.1	N,M	0.5	Passa
			Ext.Inferior	AP	7.6	-0.2	0.1	0.0	0.5	Q	0.6	Passa
				AP, SCU	7.7	-0.2	0.1	0.0	0.5	N,M	0.7	Passa
	BASE	40x20	Elemento de Fundação	AP, SCU	7.7	-0.2	0.1	0.0	0.5	N,M	0.7	Passa
P51	TOPO (-2 - 0.8 m)	40x20	Ext.Superior	AP, SCU	0.1	0.0	0.0	0.0	-0.2	Q	0.5	Passa
				AP	0.1	0.0	0.0	0.0	-0.2	N,M	0.2	Passa
			-0.133 m	AP, SCU	2.6	-0.1	0.0	-0.1	-1.1	Q	2.3	Passa
			Ext.Inferior	AP	11.9	0.1	0.6	0.3	-0.4	Q	0.7	Passa
				AP, SCU	12.0	0.1	0.6	0.3	-0.4	N,M	1.1	Passa
	BASE	40x20	Elemento de Fundação	AP, SCU	12.0	0.1	0.6	0.3	-0.4	N,M	1.1	Passa
P52	TOPO (-2 - 0.8 m)	40x20	Ext.Superior	AP, SCU	0.2	-0.1	0.0	0.0	-0.4	Q	0.7	Passa
				AP	0.1	-0.1	0.0	0.0	-0.4	N,M	0.2	Passa
			-1.067 m	AP, SCU	7.1	0.3	0.2	0.4	-2.0	Q	3.9	Passa
			Ext.Inferior	AP, SCU	11.5	0.5	0.7	0.4	-1.7	Q	3.4	Passa
	BASE	40x20	Elemento de Fundação	AP, SCU	11.5	0.5	0.7	0.4	-1.7	N,M	1.7	Passa
P53	TOPO (-2 - 0.8 m)	40x20	Ext.Superior	AP, SCU	0.0	0.0	0.0	0.0	-0.2	Q	0.3	Passa
				AP	-0.1	0.0	0.0	0.0	-0.2	N,M	0.1	Passa
			-0.6 m	AP, SCU	6.4	-0.4	0.4	0.2	-1.1	Q	2.3	Passa
			Ext.Inferior	AP, SCU	8.6	0.3	0.3	0.2	-1.1	Q	2.2	Passa
	BASE	40x20	Elemento de Fundação	AP, SCU	8.6	0.3	0.3	0.2	-1.1	N,M	1.0	Passa
P54	TOPO (-2 - 0.8 m)	40x20	Ext.Superior	AP	0.3	0.0	0.0	-0.2	0.0	Q	0.3	Passa
				AP, SCU	0.3	0.0	0.0	-0.2	0.0	N,M	0.1	Passa
			-0.6 m	AP	8.1	-0.2	0.7	-0.1	-0.3	Q	0.6	Passa
				AP, SCU	8.2	-0.2	0.7	-0.1	-0.3	N,M	1.1	Passa
			Ext.Inferior	AP	11.2	0.1	0.3	-0.1	-0.3	Q	0.3	Passa
				AP, SCU	11.3	0.1	0.3	-0.1	-0.3	N,M	0.9	Passa
	BASE	40x20	Elemento de Fundação	AP	11.2	0.1	0.3	-0.1	-0.3	Q	0.1	Passa
				AP, SCU	11.3	0.1	0.3	-0.1	-0.3	N,M	0.9	Passa
P55	TOPO (-2 - 0.8 m)	40x20	Ext.Superior	AP, SCU	-0.2	0.1	0.1	-0.9	0.5	Q	2.2	Passa
				AP	-0.3	0.1	0.1	-0.9	0.5	N,M	0.5	Passa
			-0.6 m	AP, SCU	8.7	-0.1	1.9	-4.2	0.4	Q	9.7	Passa
				AP	8.6	-0.1	1.9	-4.2	0.3	N,M	2.5	Passa
			Ext.Inferior	AP, SCU	8.1	0.4	-2.0	-4.0	-0.1	Q	9.3	Passa
				AP	8.0	0.4	-2.0	-4.0	-0.1	N,M	2.9	Passa
	BASE	40x20	Elemento de Fundação	AP, SCU	8.1	0.4	-2.0	-4.0	-0.1	Q	1.6	Passa
				AP	8.0	0.4	-2.0	-4.0	-0.1	N,M	2.9	Passa
P56	TOPO (-2 - 0.8 m)	20x20	Ext.Superior	AP, SCU	2.0	0.1	0.2	-0.1	0.0	N,M	0.9	Passa
			Ext.Inferior	AP, SCU	5.8	0.0	-0.1	-0.1	0.0	N,M	0.8	Passa
	BASE	20x20	Elemento de Fundação	AP, SCU	5.8	0.0	-0.1	-0.1	0.0	N,M	0.8	Passa
P57	TOPO (-2 - 0.8 m)	20x20	Ext.Superior	AP, SCU	3.6	0.0	0.0	0.0	0.0	N,M	0.4	Passa
			Ext.Inferior	AP, SCU	7.4	0.0	0.0	0.0	0.0	N,M	1.8	Passa
	BASE	20x20	Elemento de Fundação	AP, SCU	7.4	0.0	0.0	0.0	0.0	N,M	1.8	Passa
P58	TOPO (-2 - 0.8 m)	20x20	Ext.Superior	AP, SCU	3.6	0.0	0.0	0.0	0.0	N,M	0.4	Passa
			Ext.Inferior	AP, SCU	7.4	0.0	0.0	0.0	0.0	N,M	1.8	Passa
	BASE	20x20	Elemento de Fundação	AP, SCU	7.4	0.0	0.0	0.0	0.0	N,M	1.8	Passa
P59	TOPO (-2 - 0.8 m)	20x20	Ext.Superior	AP, SCU	3.6	0.0	0.0	0.0	0.0	N,M	0.4	Passa
			Ext.Inferior	AP, SCU	7.4	0.0	0.0	0.0	0.0	N,M	1.8	Passa
	BASE	20x20	Elemento de Fundação	AP, SCU	7.4	0.0	0.0	0.0	0.0	N,M	1.8	Passa
P60	TOPO (-2 - 0.8 m)	20x20	Ext.Superior	AP, SCU	3.6	0.0	0.0	0.0	0.0	N,M	0.4	Passa
			Ext.Inferior	AP, SCU	7.4	0.0	0.0	0.0	0.0	N,M	1.8	Passa
	BASE	20x20	Elemento de Fundação	AP, SCU	7.4	0.0	0.0	0.0	0.0	N,M	1.8	Passa
P61	TOPO (-2 - 0.8 m)	20x20	Ext.Superior	AP, SCU	3.6	0.0	0.0	0.0	0.0	N,M	0.4	Passa

Esforços e armaduras de pilares, paredes, cortinas e muros

MURO DE CONTENÇÃO - SESC ALTAMIRA

Data: 17/02/21

Resumo das verificações												
Pilares	Tramo	Dimensão (cm)	Posição	Esforços desfavoráveis						Desfavorável	Aprov. (%)	Estado
				Natureza	N (kN)	Mxx (kN·m)	Myy (kN·m)	Qx (kN)	Qy (kN)			
			Ext.Inferior	AP, SCU	7.4	0.0	0.0	0.0	0.0	N,M	1.8	Passa
	BASE	20x20	Elemento de Fundação	AP, SCU	7.4	0.0	0.0	0.0	0.0	N,M	1.8	Passa
P62	TOPO (-2 - 0.8 m)	20x20	Ext.Superior	AP, SCU	3.6	0.0	0.0	0.0	0.0	N,M	0.4	Passa
			Ext.Inferior	AP, SCU	7.4	0.0	0.0	0.0	0.0	N,M	1.8	Passa
	BASE	20x20	Elemento de Fundação	AP, SCU	7.4	0.0	0.0	0.0	0.0	N,M	1.8	Passa
P63	TOPO (-2 - 0.8 m)	20x20	Ext.Superior	AP, SCU	3.6	0.0	0.0	0.0	0.0	N,M	0.4	Passa
			Ext.Inferior	AP, SCU	7.4	0.0	0.0	0.0	0.0	N,M	1.8	Passa
	BASE	20x20	Elemento de Fundação	AP, SCU	7.4	0.0	0.0	0.0	0.0	N,M	1.8	Passa
P64	TOPO (-2 - 0.8 m)	20x20	Ext.Superior	AP, SCU	3.6	0.0	0.0	0.0	0.0	N,M	0.4	Passa
			Ext.Inferior	AP, SCU	7.4	0.0	0.0	0.0	0.0	N,M	1.8	Passa
	BASE	20x20	Elemento de Fundação	AP, SCU	7.4	0.0	0.0	0.0	0.0	N,M	1.8	Passa
P65	TOPO (-2 - 0.8 m)	20x20	Ext.Superior	AP, SCU	3.6	0.0	0.0	0.0	0.0	N,M	0.4	Passa
			Ext.Inferior	AP, SCU	7.4	0.0	0.0	0.0	0.0	N,M	1.8	Passa
	BASE	20x20	Elemento de Fundação	AP, SCU	7.4	0.0	0.0	0.0	0.0	N,M	1.8	Passa
P67	TOPO (-2 - 0.8 m)	20x20	Ext.Superior	AP, SCU	3.6	0.0	0.0	0.0	0.0	N,M	0.4	Passa
			Ext.Inferior	AP, SCU	7.4	0.0	0.0	0.0	0.0	N,M	1.8	Passa
	BASE	20x20	Elemento de Fundação	AP, SCU	7.4	0.0	0.0	0.0	0.0	N,M	1.8	Passa
P68	TOPO (-2 - 0.8 m)	20x20	Ext.Superior	AP, SCU	3.6	0.0	0.0	0.0	0.0	N,M	0.4	Passa
			Ext.Inferior	AP, SCU	7.4	0.0	0.0	0.0	0.0	N,M	1.8	Passa
	BASE	20x20	Elemento de Fundação	AP, SCU	7.4	0.0	0.0	0.0	0.0	N,M	1.8	Passa
P69	TOPO (-2 - 0.8 m)	20x20	Ext.Superior	AP, SCU	3.6	0.0	0.0	0.0	0.0	N,M	0.4	Passa
			Ext.Inferior	AP, SCU	7.4	0.0	0.0	0.0	0.0	N,M	1.8	Passa
	BASE	20x20	Elemento de Fundação	AP, SCU	7.4	0.0	0.0	0.0	0.0	N,M	1.8	Passa
P70	TOPO (-2 - 0.8 m)	20x20	Ext.Superior	AP, SCU	3.6	0.0	0.0	0.0	0.0	N,M	0.4	Passa
			Ext.Inferior	AP, SCU	7.4	0.0	0.0	0.0	0.0	N,M	1.8	Passa
	BASE	20x20	Elemento de Fundação	AP, SCU	7.4	0.0	0.0	0.0	0.0	N,M	1.8	Passa
P71	TOPO (-2 - 0.8 m)	20x20	Ext.Superior	AP, SCU	3.6	0.0	0.0	0.0	0.0	N,M	0.4	Passa
			Ext.Inferior	AP, SCU	7.4	0.0	0.0	0.0	0.0	N,M	1.8	Passa
	BASE	20x20	Elemento de Fundação	AP, SCU	7.4	0.0	0.0	0.0	0.0	N,M	1.8	Passa
P72	TOPO (-2 - 0.8 m)	20x20	Ext.Superior	AP, SCU	3.6	0.0	0.0	0.0	0.0	N,M	0.4	Passa
			Ext.Inferior	AP, SCU	7.4	0.0	0.0	0.0	0.0	N,M	1.8	Passa
	BASE	20x20	Elemento de Fundação	AP, SCU	7.4	0.0	0.0	0.0	0.0	N,M	1.8	Passa
P73	TOPO (-2 - 0.8 m)	20x20	Ext.Superior	AP, SCU	3.6	0.0	0.0	0.0	0.0	N,M	0.4	Passa
			Ext.Inferior	AP, SCU	7.4	0.0	0.0	0.0	0.0	N,M	1.8	Passa
	BASE	20x20	Elemento de Fundação	AP, SCU	7.4	0.0	0.0	0.0	0.0	N,M	1.8	Passa
P74	TOPO (-2 - 0.8 m)	20x20	Ext.Superior	AP, SCU	3.6	0.0	0.0	0.0	0.0	N,M	0.4	Passa
			Ext.Inferior	AP, SCU	7.4	0.0	0.0	0.0	0.0	N,M	1.8	Passa
	BASE	20x20	Elemento de Fundação	AP, SCU	7.4	0.0	0.0	0.0	0.0	N,M	1.8	Passa
P75	TOPO (-2 - 0.8 m)	20x20	Ext.Superior	AP	3.0	0.0	0.0	0.0	0.0	Q	< 0.1	Passa
				AP, SCU	3.3	0.0	0.0	0.0	0.0	N,M	0.4	Passa
			Ext.Inferior	AP	6.8	0.0	0.0	0.0	0.0	Q	< 0.1	Passa
				AP, SCU	7.1	0.0	0.0	0.0	0.0	N,M	0.9	Passa
	BASE	20x20	Elemento de Fundação	AP	6.8	0.0	0.0	0.0	0.0	Q	< 0.1	Passa
				AP, SCU	7.1	0.0	0.0	0.0	0.0	N,M	0.9	Passa
P76	TOPO (-2 - 0.8 m)	20x20	Ext.Superior	AP, SCU	2.4	0.1	-0.1	0.0	0.1	N,M	0.8	Passa
			Ext.Inferior	AP, SCU	6.2	0.0	0.0	0.0	0.1	N,M	0.8	Passa
	BASE	20x20	Elemento de Fundação	AP, SCU	6.2	0.0	0.0	0.0	0.1	N,M	0.8	Passa
P82	TOPO (-2 - 0.8 m)	20x20	Ext.Superior	AP, SCU	3.2	0.0	0.0	0.0	0.0	N,M	0.4	Passa
			Ext.Inferior	AP, SCU	7.1	0.0	0.0	0.0	0.0	N,M	0.9	Passa
	BASE	20x20	Elemento de Fundação	AP, SCU	7.1	0.0	0.0	0.0	0.0	N,M	0.9	Passa
P84	TOPO (-2 - 0.8 m)	20x20	Ext.Superior	AP, SCU	3.3	0.0	0.0	0.0	0.0	N,M	0.4	Passa
			Ext.Inferior	AP, SCU	7.1	0.0	0.0	0.0	0.0	N,M	0.9	Passa
	BASE	20x20	Elemento de Fundação	AP, SCU	7.1	0.0	0.0	0.0	0.0	N,M	0.9	Passa
P85	TOPO (-2 - 0.8 m)	20x20	Ext.Superior	AP, SCU	3.6	0.0	0.0	0.0	0.0	N,M	0.4	Passa
			Ext.Inferior	AP, SCU	7.4	0.0	0.0	0.0	0.0	N,M	1.8	Passa

Esforços e armaduras de pilares, paredes, cortinas e muros

MURO DE CONTENÇÃO - SESC ALTAMIRA

Data: 17/02/21

Resumo das verificações												
Pilares	Tramo	Dimensão (cm)	Posição	Esforços desfavoráveis						Desfavorável	Aprov. (%)	Estado
				Natureza	N (kN)	Mxx (kN·m)	Myy (kN·m)	Qx (kN)	Qy (kN)			
	BASE	20x20	Elemento de Fundação	AP, SCU	7.4	0.0	0.0	0.0	0.0	N,M	1.8	Passa
P86	TOPO (-2 - 0.8 m)	20x20	Ext.Superior	AP, SCU	3.6	0.0	0.0	0.0	0.0	N,M	0.4	Passa
			Ext.Inferior	AP, SCU	7.4	0.0	0.0	0.0	0.0	N,M	1.8	Passa
	BASE	20x20	Elemento de Fundação	AP, SCU	7.4	0.0	0.0	0.0	0.0	N,M	1.8	Passa
P87	TOPO (-2 - 0.8 m)	20x20	Ext.Superior	AP, SCU	3.6	0.0	0.0	0.0	0.0	N,M	0.4	Passa
			Ext.Inferior	AP, SCU	7.4	0.0	0.0	0.0	0.0	N,M	1.8	Passa
	BASE	20x20	Elemento de Fundação	AP, SCU	7.4	0.0	0.0	0.0	0.0	N,M	1.8	Passa
P88	TOPO (-2 - 0.8 m)	20x20	Ext.Superior	AP, SCU	3.6	0.0	0.0	0.0	0.0	N,M	0.4	Passa
			Ext.Inferior	AP, SCU	7.4	0.0	0.0	0.0	0.0	N,M	1.8	Passa
	BASE	20x20	Elemento de Fundação	AP, SCU	7.4	0.0	0.0	0.0	0.0	N,M	1.8	Passa
P89	TOPO (-2 - 0.8 m)	20x20	Ext.Superior	AP, SCU	3.6	0.0	0.0	0.0	0.0	N,M	0.4	Passa
			Ext.Inferior	AP, SCU	7.4	0.0	0.0	0.0	0.0	N,M	1.8	Passa
	BASE	20x20	Elemento de Fundação	AP, SCU	7.4	0.0	0.0	0.0	0.0	N,M	1.8	Passa
P90	TOPO (-2 - 0.8 m)	20x20	Ext.Superior	AP, SCU	3.6	0.0	0.0	0.0	0.0	N,M	0.4	Passa
			Ext.Inferior	AP, SCU	7.4	0.0	0.0	0.0	0.0	N,M	1.8	Passa
	BASE	20x20	Elemento de Fundação	AP, SCU	7.4	0.0	0.0	0.0	0.0	N,M	1.8	Passa
P91	TOPO (-2 - 0.8 m)	20x20	Ext.Superior	AP, SCU	3.6	0.0	0.0	0.0	0.0	N,M	0.4	Passa
			Ext.Inferior	AP, SCU	7.4	0.0	0.0	0.0	0.0	N,M	1.8	Passa
	BASE	20x20	Elemento de Fundação	AP, SCU	7.4	0.0	0.0	0.0	0.0	N,M	1.8	Passa
P92	TOPO (-2 - 0.8 m)	20x20	Ext.Superior	AP, SCU	3.6	0.0	0.0	0.0	0.0	N,M	0.4	Passa
			Ext.Inferior	AP, SCU	7.4	0.0	0.0	0.0	0.0	N,M	1.8	Passa
	BASE	20x20	Elemento de Fundação	AP, SCU	7.4	0.0	0.0	0.0	0.0	N,M	1.8	Passa
P93	TOPO (-2 - 0.8 m)	20x20	Ext.Superior	AP, SCU	3.6	0.0	0.0	0.0	0.0	N,M	0.4	Passa
			Ext.Inferior	AP, SCU	7.4	0.0	0.0	0.0	0.0	N,M	1.8	Passa
	BASE	20x20	Elemento de Fundação	AP, SCU	7.4	0.0	0.0	0.0	0.0	N,M	1.8	Passa
P94	TOPO (-2 - 0.8 m)	20x20	Ext.Superior	AP, SCU	3.6	0.0	0.0	0.0	0.0	N,M	0.4	Passa
			Ext.Inferior	AP, SCU	7.4	0.0	0.0	0.0	0.0	N,M	1.8	Passa
	BASE	20x20	Elemento de Fundação	AP, SCU	7.4	0.0	0.0	0.0	0.0	N,M	1.8	Passa
P95	TOPO (-2 - 0.8 m)	20x20	Ext.Superior	AP, SCU	3.6	0.0	0.0	0.0	0.0	N,M	0.4	Passa
			Ext.Inferior	AP, SCU	7.4	0.0	0.0	0.0	0.0	N,M	1.8	Passa
	BASE	20x20	Elemento de Fundação	AP, SCU	7.4	0.0	0.0	0.0	0.0	N,M	1.8	Passa
P96	TOPO (-2 - 0.8 m)	20x20	Ext.Superior	AP	3.3	0.0	0.0	0.0	0.0	Q	< 0.1	Passa
				AP, SCU	3.6	0.0	0.0	0.0	0.0	N,M	0.4	Passa
			Ext.Inferior	AP	7.1	0.0	0.0	0.0	0.0	Q	< 0.1	Passa
				AP, SCU	7.4	0.0	0.0	0.0	0.0	N,M	1.8	Passa
	BASE	20x20	Elemento de Fundação	AP	7.1	0.0	0.0	0.0	0.0	Q	< 0.1	Passa
				AP, SCU	7.4	0.0	0.0	0.0	0.0	N,M	1.8	Passa
P97	TOPO (-2 - 0.8 m)	20x20	Ext.Superior	AP	3.3	0.0	0.0	0.0	0.0	Q	< 0.1	Passa
				AP, SCU	3.6	0.0	0.0	0.0	0.0	N,M	0.4	Passa
			Ext.Inferior	AP	7.1	0.0	0.0	0.0	0.0	Q	< 0.1	Passa
				AP, SCU	7.4	0.0	0.0	0.0	0.0	N,M	1.8	Passa
	BASE	20x20	Elemento de Fundação	AP	7.1	0.0	0.0	0.0	0.0	Q	< 0.1	Passa
				AP, SCU	7.4	0.0	0.0	0.0	0.0	N,M	1.8	Passa
P98	TOPO (-2 - 0.8 m)	20x20	Ext.Superior	AP	3.3	0.0	0.0	0.0	0.0	Q	< 0.1	Passa
				AP, SCU	3.6	0.0	0.0	0.0	0.0	N,M	0.4	Passa
			Ext.Inferior	AP	7.1	0.0	0.0	0.0	0.0	Q	< 0.1	Passa
				AP, SCU	7.4	0.0	0.0	0.0	0.0	N,M	1.8	Passa
	BASE	20x20	Elemento de Fundação	AP	7.1	0.0	0.0	0.0	0.0	Q	< 0.1	Passa
				AP, SCU	7.4	0.0	0.0	0.0	0.0	N,M	1.8	Passa
P100	TOPO (-2 - 0.8 m)	20x20	Ext.Superior	AP	3.3	0.0	0.0	0.0	0.0	Q	< 0.1	Passa
				AP, SCU	3.6	0.0	0.0	0.0	0.0	N,M	0.5	Passa
			Ext.Inferior	AP	7.1	0.0	0.0	0.0	0.0	Q	< 0.1	Passa
				AP, SCU	7.4	0.0	0.0	0.0	0.0	N,M	1.8	Passa
	BASE	20x20	Elemento de Fundação	AP	7.1	0.0	0.0	0.0	0.0	Q	< 0.1	Passa
				AP, SCU	7.4	0.0	0.0	0.0	0.0	N,M	1.8	Passa

Resumo das verificações												
Pilares	Tramo	Dimensão (cm)	Posição	Esforços desfavoráveis						Desfavorável	Aprov. (%)	Estado
				Natureza	N (kN)	Mxx (kN·m)	Myy (kN·m)	Qx (kN)	Qy (kN)			
P101	TOPO (-2 - 0.8 m)	20x20	Ext.Superior	AP	3.3	0.0	0.0	0.0	0.0	Q	< 0.1	Passa
				AP, SCU	3.6	0.0	0.0	0.0	0.0	N,M	0.4	Passa
			Ext.Inferior	AP	7.2	0.0	0.1	0.0	0.0	Q	< 0.1	Passa
				AP, SCU	7.4	0.0	0.1	0.0	0.0	N,M	1.9	Passa
	BASE	20x20	Elemento de Fundação	AP	7.2	0.0	0.1	0.0	0.0	Q	< 0.1	Passa
				AP, SCU	7.4	0.0	0.1	0.0	0.0	N,M	1.9	Passa
P102	TOPO (-2 - 0.8 m)	20x20	Ext.Superior	AP, SCU	3.6	0.0	0.0	-0.1	0.0	N,M	0.5	Passa
			Ext.Inferior	AP, SCU	7.4	0.1	-0.3	-0.1	0.0	N,M	2.2	Passa
	BASE	20x20	Elemento de Fundação	AP, SCU	7.4	0.1	-0.3	-0.1	0.0	N,M	2.2	Passa
P103	TOPO (-2 - 0.8 m)	20x20	Ext.Superior	AP	-0.3	-0.2	0.2	-0.9	-0.1	Q	3.6	Passa
			Ext.Inferior	AP	3.6	0.2	-2.3	-0.9	-0.1	N,M	13.5	Passa
	BASE	20x20	Elemento de Fundação	AP	3.6	0.2	-2.3	-0.9	-0.1	N,M	13.5	Passa

Notas:
Q: Estado limite de ruptura relativo ao esforço cortante
N,M: Estado limite de ruptura frente a solicitações normais

5.2.- Cortinas

Referências:

Aproveitamento: Nível de tensões (relação entre a tensão máxima e a admissível). Equivale ao inverso do coeficiente de segurança.

Nx : Axial vertical.

Ny : Axial horizontal.

Nxy: Axial tangencial.

Mx : Momento vertical (em torno do eixo horizontal).

My : Momento horizontal (em torno do eixo vertical).

Mxy: Momento torsor.

Qx : Cortante transversal vertical.

Qy : Cortante transversal horizontal.

Cortina C1: Comprimento: 3625.08 cm [Nó inicial: 0.10;0.10 -> Nó final: 36.35;0.10]										
Planta	Verificação	Aproveitamento (%)	Desfavoráveis							
			Nx (kN/m)	Ny (kN/m)	Nxy (kN/m)	Mx (kN·m/m)	My (kN·m/m)	Mxy (kN·m/m)	Qx (kN/m)	Qy (kN/m)
TOPO (e=20.0 cm)	Arm. vert. dir.	15.46	6.31	63.58	6.05	1.70	10.44	0.16	---	---
	Arm. horz. dir.	101.17	6.15	63.61	6.05	1.70	10.46	0.16	---	---
	Arm. vert. esq.	1.52	-20.48	-3.94	-2.09	6.39	1.02	0.41	---	---
	Arm. horz. esq.	2.28	4.54	-17.81	2.03	0.00	11.59	-0.38	---	---
	Concreto	6.10	4.54	-17.81	2.03	0.00	11.59	-0.38	---	---
	Arm. transv.	2.68	-3.40	-23.12	4.15	---	---	---	-21.68	-1.31

Cortina C2: Comprimento: 3645 cm [Nó inicial: 36.35;0.00 -> Nó final: 36.35;36.45]										
Planta	Verificação	Aproveitamento (%)	Desfavoráveis							
			Nx (kN/m)	Ny (kN/m)	Nxy (kN/m)	Mx (kN·m/m)	My (kN·m/m)	Mxy (kN·m/m)	Qx (kN/m)	Qy (kN/m)
TOPO (e=20.0 cm)	Arm. vert. dir.	15.12	5.30	55.61	-4.72	1.91	10.00	-0.17	---	---
	Arm. horz. dir.	97.88	2.65	32.61	1.36	1.96	12.30	0.29	---	---
	Arm. vert. esq.	3.66	-183.25	-8.79	-36.73	6.89	1.51	2.76	---	---
	Arm. horz. esq.	2.26	0.75	-16.97	-1.60	0.00	11.53	0.37	---	---

Cortina C2: Comprimento: 3645 cm [Nó inicial: 36.35;0.00 -> Nó final: 36.35;36.45]

Planta	Verificação	Aproveitamento (%)	Desfavoráveis							
			Nx (kN/m)	Ny (kN/m)	Nxy (kN/m)	Mx (kN·m/m)	My (kN·m/m)	Mxy (kN·m/m)	Qx (kN/m)	Qy (kN/m)
	Concreto	10.18	-183.25	-8.79	-36.73	6.89	1.51	2.76	---	---
	Arm. transv.	2.55	-15.44	-27.89	-2.52	---	---	---	-20.49	-2.63

Cortina C3: Comprimento: 1620 cm [Nó inicial: 0.10;0.00 -> Nó final: 0.10;16.20]

Planta	Verificação	Aproveitamento (%)	Desfavoráveis							
			Nx (kN/m)	Ny (kN/m)	Nxy (kN/m)	Mx (kN·m/m)	My (kN·m/m)	Mxy (kN·m/m)	Qx (kN/m)	Qy (kN/m)
TOPO (e=20.0 cm)	Arm. vert. dir.	1.55	-27.13	-5.04	0.19	-6.12	-0.99	-0.04	---	---
	Arm. horz. dir.	1.95	2.36	-17.54	-2.20	0.00	-9.71	-0.71	---	---
	Arm. vert. esq.	0.78	-47.42	-3.34	3.28	0.95	-0.89	-0.06	---	---
	Arm. horz. esq.	0.48	-7.20	-11.00	-1.69	-0.14	1.42	2.38	---	---
	Concreto	5.23	2.36	-17.54	-2.20	0.00	-9.71	-0.71	---	---
	Arm. transv.	1.39	-3.77	-16.37	-2.37	---	---	---	11.22	-1.17

Cortina C4: Comprimento: 297.872 cm [Nó inicial: 20.25;0.00 -> Nó final: 22.25;2.21]

Planta	Verificação	Aproveitamento (%)	Desfavoráveis							
			Nx (kN/m)	Ny (kN/m)	Nxy (kN/m)	Mx (kN·m/m)	My (kN·m/m)	Mxy (kN·m/m)	Qx (kN/m)	Qy (kN/m)
TOPO (e=20.0 cm)	Arm. vert. dir.	0.83	-50.17	-4.48	-12.05	-1.00	0.64	0.03	---	---
	Arm. horz. dir.	0.50	-21.97	-11.12	-40.69	0.44	-1.17	-0.44	---	---
	Arm. vert. esq.	0.83	-50.17	-4.48	-12.05	1.00	0.64	0.03	---	---
	Arm. horz. esq.	1.11	-15.52	-38.62	-13.17	0.58	3.45	-0.21	---	---
	Concreto	2.80	-21.97	-11.12	-40.69	-1.10	-1.17	-0.44	---	---
	Arm. transv.	0.62	-27.01	-13.99	-40.86	---	---	---	-5.05	0.22

Cortina C5: Comprimento: 226.243 cm [Nó inicial: 22.28;2.15 -> Nó final: 24.30;3.15]

Planta	Verificação	Aproveitamento (%)	Desfavoráveis							
			Nx (kN/m)	Ny (kN/m)	Nxy (kN/m)	Mx (kN·m/m)	My (kN·m/m)	Mxy (kN·m/m)	Qx (kN/m)	Qy (kN/m)
TOPO (e=20.0 cm)	Arm. vert. dir.	0.72	-43.78	-4.49	-9.32	-0.88	0.47	0.18	---	---
	Arm. horz. dir.	0.13	-26.70	1.43	-17.25	0.53	-0.73	0.13	---	---
	Arm. vert. esq.	0.91	-43.78	-4.49	-9.32	1.81	0.47	0.18	---	---
	Arm. horz. esq.	0.15	-13.45	-5.67	-7.78	0.93	0.41	-0.03	---	---
	Concreto	2.18	-43.78	-4.49	-9.32	1.81	0.47	0.18	---	---
	Arm. transv.	0.20	-24.85	16.08	-9.06	---	---	---	-0.08	-1.61

Cortina C6: Comprimento: 202.709 cm [Nó inicial: 24.30;3.14 -> Nó final: 26.33;3.05]

Planta	Verificação	Aproveitamento (%)	Desfavoráveis							
			Nx (kN/m)	Ny (kN/m)	Nxy (kN/m)	Mx (kN·m/m)	My (kN·m/m)	Mxy (kN·m/m)	Qx (kN/m)	Qy (kN/m)
TOPO (e=20.0 cm)	Arm. vert. dir.	0.48	-35.69	-4.11	7.15	-0.71	0.27	-0.09	---	---
	Arm. horz. dir.	0.03	-13.30	-3.43	5.90	0.84	0.35	0.03	---	---
	Arm. vert. esq.	0.60	-35.69	-4.11	7.15	1.52	0.27	-0.09	---	---
	Arm. horz. esq.	0.11	-0.92	12.79	0.35	-0.02	1.57	0.11	---	---
	Concreto	1.47	-35.69	-4.11	7.15	1.52	0.27	-0.09	---	---
	Arm. transv.	0.09	-20.05	11.63	9.68	---	---	---	0.64	0.35

Cortina C7: Comprimento: 203.847 cm [Nó inicial: 26.33;3.05 -> Nó final: 28.35;2.82]

Planta	Verificação	Aproveitamento (%)	Desfavoráveis							
			Nx (kN/m)	Ny (kN/m)	Nxy (kN/m)	Mx (kN·m/m)	My (kN·m/m)	Mxy (kN·m/m)	Qx (kN/m)	Qy (kN/m)
TOPO (e=20.0 cm)	Arm. vert. dir.	0.62	-37.73	-2.44	6.19	-0.75	0.45	-0.01	---	---
	Arm. horz. dir.	0.32	-11.98	-0.77	17.37	0.24	-1.31	0.70	---	---
	Arm. vert. esq.	0.68	-18.81	-2.90	7.87	2.24	0.47	0.30	---	---
	Arm. horz. esq.	0.12	-18.81	-2.90	7.87	2.24	0.47	0.30	---	---
	Concreto	1.75	-12.23	-0.76	17.38	-0.91	-1.31	0.70	---	---
	Arm. transv.	0.17	-19.26	-1.83	14.99	---	---	---	-1.40	0.07

Cortina C8: Comprimento: 211.174 cm [Nó inicial: 28.35;2.70 -> Nó final: 29.89;4.15]

Planta	Verificação	Aproveitamento (%)	Desfavoráveis							
			Nx (kN/m)	Ny (kN/m)	Nxy (kN/m)	Mx (kN·m/m)	My (kN·m/m)	Mxy (kN·m/m)	Qx (kN/m)	Qy (kN/m)
TOPO (e=20.0 cm)	Arm. vert. dir.	0.24	-8.18	-4.73	6.90	-0.53	-0.28	0.79	---	---
	Arm. horz. dir.	0.22	-7.18	-9.45	2.84	0.14	-0.35	0.90	---	---
	Arm. vert. esq.	0.24	-9.53	-1.40	3.70	0.63	0.23	0.44	---	---
	Arm. horz. esq.	0.63	-6.16	-12.40	-0.07	0.47	2.65	0.43	---	---
	Concreto	1.58	-6.16	-12.40	-0.07	-0.12	2.65	0.43	---	---
	Arm. transv.	0.29	-7.42	-9.42	2.84	---	---	---	1.38	-1.95

Cortina C9: Comprimento: 202.95 cm [Nó inicial: 29.79;4.15 -> Nó final: 29.65;6.18]

Planta	Verificação	Aproveitamento (%)	Desfavoráveis							
			Nx (kN/m)	Ny (kN/m)	Nxy (kN/m)	Mx (kN·m/m)	My (kN·m/m)	Mxy (kN·m/m)	Qx (kN/m)	Qy (kN/m)
TOPO (e=20.0 cm)	Arm. vert. dir.	0.29	-6.86	-7.50	-5.75	-1.02	-1.16	0.35	---	---
	Arm. horz. dir.	0.30	-6.61	-7.51	-5.75	0.13	-1.16	0.35	---	---
	Arm. vert. esq.	0.24	-10.72	-1.43	-3.68	0.51	0.14	0.19	---	---
	Arm. horz. esq.	0.37	-5.80	-11.86	1.10	0.30	1.21	0.31	---	---
	Concreto	0.88	-5.80	-11.86	1.10	-0.12	1.21	0.31	---	---
	Arm. transv.	0.19	-6.61	-7.51	-5.75	---	---	---	1.54	-0.34

Cortina C10: Comprimento: 204.166 cm [Nó inicial: 29.39;8.20 -> Nó final: 29.65;6.18]

Planta	Verificação	Aproveitamento (%)	Desfavoráveis							
			Nx (kN/m)	Ny (kN/m)	Nxy (kN/m)	Mx (kN·m/m)	My (kN·m/m)	Mxy (kN·m/m)	Qx (kN/m)	Qy (kN/m)
TOPO (e=20.0 cm)	Arm. vert. dir.	0.34	-11.87	-1.03	8.89	-0.95	-1.48	0.18	---	---
	Arm. horz. dir.	0.32	-6.18	-2.04	3.32	0.12	-1.68	-0.05	---	---
	Arm. vert. esq.	0.62	-17.63	-1.77	7.23	2.00	0.41	0.03	---	---
	Arm. horz. esq.	0.10	-17.63	-1.77	7.23	-0.35	0.41	0.03	---	---
	Concreto	1.47	-17.63	-1.77	7.23	2.00	0.41	0.03	---	---
	Arm. transv.	0.18	-6.42	-2.04	3.33	---	---	---	1.47	-0.02

Cortina C11: Comprimento: 202.632 cm [Nó inicial: 29.39;8.20 -> Nó final: 29.46;10.23]

Planta	Verificação	Aproveitamento (%)	Desfavoráveis							
			Nx (kN/m)	Ny (kN/m)	Nxy (kN/m)	Mx (kN·m/m)	My (kN·m/m)	Mxy (kN·m/m)	Qx (kN/m)	Qy (kN/m)
TOPO (e=20.0 cm)	Arm. vert. dir.	0.40	-13.86	9.22	-14.44	-0.95	-0.68	-0.61	---	---
	Arm. horz. dir.	0.15	-13.63	9.23	-14.44	0.27	-0.68	-0.61	---	---
	Arm. vert. esq.	0.42	-23.35	-1.79	-10.00	0.64	0.23	-0.17	---	---

Cortina C11: Comprimento: 202.632 cm [Nó inicial: 29.39;8.20 -> Nó final: 29.46;10.23]										
Planta	Verificação	Aproveitamento (%)	Desfavoráveis							
			Nx (kN/m)	Ny (kN/m)	Nxy (kN/m)	Mx (kN·m/m)	My (kN·m/m)	Mxy (kN·m/m)	Qx (kN/m)	Qy (kN/m)
	Arm. horz. esq.	0.06	-23.35	-1.79	-10.00	0.64	0.23	-0.17	---	---
	Concreto	1.44	-13.86	9.22	-14.44	-0.95	-0.68	-0.61	---	---
	Arm. transv.	0.28	-13.63	9.23	-14.44	---	---	---	2.29	0.07

Cortina C12: Comprimento: 225.505 cm [Nó inicial: 29.45;10.23 -> Nó final: 30.44;12.25]										
Planta	Verificação	Aproveitamento (%)	Desfavoráveis							
			Nx (kN/m)	Ny (kN/m)	Nxy (kN/m)	Mx (kN·m/m)	My (kN·m/m)	Mxy (kN·m/m)	Qx (kN/m)	Qy (kN/m)
TOPO (e=20.0 cm)	Arm. vert. dir.	0.51	-31.02	-2.63	-4.82	-0.62	0.23	-0.15	---	---
	Arm. horz. dir.	0.05	-17.81	19.18	-10.08	0.36	-0.44	-0.53	---	---
	Arm. vert. esq.	0.51	-31.02	-2.63	-4.82	0.62	0.23	-0.15	---	---
	Arm. horz. esq.	0.07	-31.02	-2.63	-4.82	-0.62	0.23	-0.15	---	---
	Concreto	1.41	-31.02	-2.63	-4.82	-0.62	0.23	-0.15	---	---
	Arm. transv.	0.27	-18.05	19.19	-10.08	---	---	---	2.02	0.74

Cortina C13: Comprimento: 297.486 cm [Nó inicial: 30.38;12.28 -> Nó final: 32.58;14.28]										
Planta	Verificação	Aproveitamento (%)	Desfavoráveis							
			Nx (kN/m)	Ny (kN/m)	Nxy (kN/m)	Mx (kN·m/m)	My (kN·m/m)	Mxy (kN·m/m)	Qx (kN/m)	Qy (kN/m)
TOPO (e=20.0 cm)	Arm. vert. dir.	0.62	-37.52	-3.24	4.90	-0.75	0.57	-0.36	---	---
	Arm. horz. dir.	0.06	-21.93	7.02	7.98	0.44	-0.83	-0.28	---	---
	Arm. vert. esq.	0.81	-37.52	-3.24	4.90	1.73	0.57	-0.36	---	---
	Arm. horz. esq.	0.16	-14.89	-4.94	4.76	1.11	0.55	-0.05	---	---
	Concreto	1.91	-37.52	-3.24	4.90	1.73	0.57	-0.36	---	---
	Arm. transv.	0.30	-21.93	7.02	7.98	---	---	---	-2.46	-0.21

Cortina C14: Comprimento: 426.916 cm [Nó inicial: 32.60;14.30 -> Nó final: 36.42;16.22]										
Planta	Verificação	Aproveitamento (%)	Desfavoráveis							
			Nx (kN/m)	Ny (kN/m)	Nxy (kN/m)	Mx (kN·m/m)	My (kN·m/m)	Mxy (kN·m/m)	Qx (kN/m)	Qy (kN/m)
TOPO (e=20.0 cm)	Arm. vert. dir.	0.54	-19.57	-5.64	28.70	-1.35	-1.53	0.66	---	---
	Arm. horz. dir.	0.50	-9.44	-12.26	16.44	0.19	-1.79	0.61	---	---
	Arm. vert. esq.	1.08	-30.50	-3.78	15.77	3.53	0.68	0.11	---	---
	Arm. horz. esq.	1.01	-12.24	-31.48	10.03	0.60	3.42	0.30	---	---
	Concreto	2.59	-30.50	-3.78	15.77	3.53	0.68	0.11	---	---
	Arm. transv.	0.48	-15.69	-17.99	32.44	---	---	---	-3.91	-0.31

6.- RELATÓRIO DE ARMADURAS DE CORTINAS

Cortina C1: Comprimento: 3625.08 cm [Nó inicial: 0.10;0.10 -> Nó final: 36.35;0.10]											
Planta	Espessura (cm)	Armadura vertical		Armadura horizontal		Armadura transversal				F.C. (%)	Estado
		Esquerda	Direita	Esquerda	Direita	Ramos	Diam.	Esp.ver (cm)	Esp.hor (cm)		
TOPO	20.0	Ø12.5c/30 cm	Ø12.5c/30 cm	Ø5c/10 cm	Ø5c/10 cm	---	---	---	---	99.6	---

Cortina C2: Comprimento: 3645 cm [Nó inicial: 36.35;0.00 -> Nó final: 36.35;36.45]											
Planta	Espessura (cm)	Armadura vertical		Armadura horizontal		Armadura transversal				F.C. (%)	Estado
		Esquerda	Direita	Esquerda	Direita	Ramos	Diam.	Esp.ver (cm)	Esp.hor (cm)		
TOPO	20.0	Ø12.5c/30 cm	Ø12.5c/30 cm	Ø5c/10 cm	Ø5c/10 cm	---	---	---	---	100.0	---

Cortina C3: Comprimento: 1620 cm [Nó inicial: 0.10;0.00 -> Nó final: 0.10;16.20]

Planta	Espessura (cm)	Armadura vertical		Armadura horizontal		Armadura transversal				F.C. (%)	Estado
		Esquerda	Direita	Esquerda	Direita	Ramos	Diam.	Esp.ver (cm)	Esp.hor (cm)		
TOPO	20.0	Ø12.5c/30 cm	Ø12.5c/30 cm	Ø5c/10 cm	Ø5c/10 cm	---	---	---	---	100.0	---

Cortina C4: Comprimento: 297.872 cm [Nó inicial: 20.25;0.00 -> Nó final: 22.25;2.21]

Planta	Espessura (cm)	Armadura vertical		Armadura horizontal		Armadura transversal				F.C. (%)	Estado
		Esquerda	Direita	Esquerda	Direita	Ramos	Diam.	Esp.ver (cm)	Esp.hor (cm)		
TOPO	20.0	Ø12.5c/30 cm	Ø12.5c/30 cm	Ø5c/10 cm	Ø5c/10 cm	---	---	---	---	100.0	---

Cortina C5: Comprimento: 226.243 cm [Nó inicial: 22.28;2.15 -> Nó final: 24.30;3.15]

Planta	Espessura (cm)	Armadura vertical		Armadura horizontal		Armadura transversal				F.C. (%)	Estado
		Esquerda	Direita	Esquerda	Direita	Ramos	Diam.	Esp.ver (cm)	Esp.hor (cm)		
TOPO	20.0	Ø12.5c/30 cm	Ø12.5c/30 cm	Ø5c/10 cm	Ø5c/10 cm	---	---	---	---	100.0	---

Cortina C6: Comprimento: 202.709 cm [Nó inicial: 24.30;3.14 -> Nó final: 26.33;3.05]

Planta	Espessura (cm)	Armadura vertical		Armadura horizontal		Armadura transversal				F.C. (%)	Estado
		Esquerda	Direita	Esquerda	Direita	Ramos	Diam.	Esp.ver (cm)	Esp.hor (cm)		
TOPO	20.0	Ø12.5c/30 cm	Ø12.5c/30 cm	Ø5c/10 cm	Ø5c/10 cm	---	---	---	---	100.0	---

Cortina C7: Comprimento: 203.847 cm [Nó inicial: 26.33;3.05 -> Nó final: 28.35;2.82]

Planta	Espessura (cm)	Armadura vertical		Armadura horizontal		Armadura transversal				F.C. (%)	Estado
		Esquerda	Direita	Esquerda	Direita	Ramos	Diam.	Esp.ver (cm)	Esp.hor (cm)		
TOPO	20.0	Ø12.5c/30 cm	Ø12.5c/30 cm	Ø5c/10 cm	Ø5c/10 cm	---	---	---	---	100.0	---

Cortina C8: Comprimento: 211.174 cm [Nó inicial: 28.35;2.70 -> Nó final: 29.89;4.15]

Planta	Espessura (cm)	Armadura vertical		Armadura horizontal		Armadura transversal				F.C. (%)	Estado
		Esquerda	Direita	Esquerda	Direita	Ramos	Diam.	Esp.ver (cm)	Esp.hor (cm)		
TOPO	20.0	Ø12.5c/30 cm	Ø12.5c/30 cm	Ø5c/10 cm	Ø5c/10 cm	---	---	---	---	100.0	---

Cortina C9: Comprimento: 202.95 cm [Nó inicial: 29.79;4.15 -> Nó final: 29.65;6.18]

Planta	Espessura (cm)	Armadura vertical		Armadura horizontal		Armadura transversal				F.C. (%)	Estado
		Esquerda	Direita	Esquerda	Direita	Ramos	Diam.	Esp.ver (cm)	Esp.hor (cm)		
TOPO	20.0	Ø12.5c/30 cm	Ø12.5c/30 cm	Ø5c/10 cm	Ø5c/10 cm	---	---	---	---	100.0	---

Cortina C10: Comprimento: 204.166 cm [Nó inicial: 29.39;8.20 -> Nó final: 29.65;6.18]

Planta	Espessura (cm)	Armadura vertical		Armadura horizontal		Armadura transversal				F.C. (%)	Estado
		Esquerda	Direita	Esquerda	Direita	Ramos	Diam.	Esp.ver (cm)	Esp.hor (cm)		
TOPO	20.0	Ø12.5c/30 cm	Ø12.5c/30 cm	Ø5c/10 cm	Ø5c/10 cm	---	---	---	---	100.0	---

Cortina C11: Comprimento: 202.632 cm [Nó inicial: 29.39;8.20 -> Nó final: 29.46;10.23]

Planta	Espessura (cm)	Armadura vertical		Armadura horizontal		Armadura transversal				F.C. (%)	Estado
		Esquerda	Direita	Esquerda	Direita	Ramos	Diam.	Esp.ver (cm)	Esp.hor (cm)		
TOPO	20.0	Ø12.5c/30 cm	Ø12.5c/30 cm	Ø5c/10 cm	Ø5c/10 cm	---	---	---	---	100.0	---

Cortina C12: Comprimento: 225.505 cm [Nó inicial: 29.45;10.23 -> Nó final: 30.44;12.25]

Planta	Espessura (cm)	Armadura vertical		Armadura horizontal		Armadura transversal				F.C. (%)	Estado
		Esquerda	Direita	Esquerda	Direita	Ramos	Diam.	Esp.ver (cm)	Esp.hor (cm)		
TOPO	20.0	Ø12.5c/30 cm	Ø12.5c/30 cm	Ø5c/10 cm	Ø5c/10 cm	---	---	---	---	100.0	---

Cortina C13: Comprimento: 297.486 cm [Nó inicial: 30.38;12.28 -> Nó final: 32.58;14.28]

Planta	Espessura	Armadura vertical	Armadura horizontal	Armadura transversal	F.C.	Estado

	(cm)	Esquerda	Direita	Esquerda	Direita	Ramos	Diam.	Esp.ver (cm)	Esp.hor (cm)	(%)	
TOPO	20.0	Ø12.5c/30 cm	Ø12.5c/30 cm	Ø5c/10 cm	Ø5c/10 cm	---	---	---	---	100.0	---

Cortina C14: Comprimento: 426.916 cm [Nó inicial: 32.60;14.30 -> Nó final: 36.42;16.22]											
Planta	Espessura (cm)	Armadura vertical		Armadura horizontal		Armadura transversal				F.C. (%)	Estado
		Esquerda	Direita	Esquerda	Direita	Ramos	Diam.	Esp.ver (cm)	Esp.hor (cm)		
TOPO	20.0	Ø12.5c/30 cm	Ø12.5c/30 cm	Ø5c/10 cm	Ø5c/10 cm	---	---	---	---	100.0	---

F.C. = O fator de cumprimento indica a porcentagem da área na qual a armadura e a espessura de concreto são suficientes.

7.- RELATÓRIO QUANTITATIVOS PILARES

Tabela resumo - TOPO							
Pilares	Dimensões (cm)	Fôrmas (m²)	Concreto C25, em geral (m³)	Armaduras CA-50 e CA-60			Taxa (kg/m³)
				Longitudinal Ø12.5 (kg)	Estribos Ø6.3 (kg)	Total +10 % (kg)	
P1, P2, P3, P4, P5, P6, P7, P8, P9, P10, P11, P12, P13, P14, P15, P16, P17, P18, P19, P46, P47, P48 e P49	20x40	77.28	5.06	598.0	163.3	837.4	150.45
P20, P21, P22, P23, P24, P25, P26, P27, P28, P29, P30, P31, P32, P33, P34, P35, P36, P37, P38, P39, P40, P41, P42, P43, P44, P45, P50, P51, P52, P53, P54 e P55	40x20	107.52	7.04	832.0	227.2	1165.1	150.45
P56, P57, P58, P59, P60, P61, P62, P63, P64, P65, P67, P68, P69, P70, P71, P72, P73, P74, P75, P76, P82, P84, P85, P86, P87, P88, P89, P90, P91, P92, P93, P94, P95, P96, P97, P98, P100, P101, P102 e P103	20x20	89.60	4.40	708.0	148.0	941.6	194.55
Total		**274.40**	**16.50**	**2138.0**	**538.5**	**2944.1**	**162.21**

8.- SOMATÓRIO DE ESFORÇOS EM PILARES, PAREDES E MUROS/CORTINAS POR AÇÕES E PISO

- Somente são levados em conta os esforços de pilares, muros e paredes. Se a obra tem vigas com vinculação externa, vigas inclinadas, diagonais ou estruturas 3D integradas, os esforços dos referidos elementos não serão mostrados no relatório a seguir.
- Este relatório é útil para se conhecer as cargas atuantes no nível da cota da base dos pilares sobre um piso. Para casos tais como pilares apoiados tracionados, os esforços terão a influência não só das cargas atuantes provenientes dos pisos superiores, mas também das cargas que recebe de pisos inferiores.

8.1.- Resumido

Valores referidos à origem (X=0.00, Y=0.00)								
Planta	Cota (m)	Hipótese	N (kN)	Mx (kN·m)	My (kN·m)	Qx (kN)	Qy (kN)	T (kN·m)
BASE	-2.00	Peso próprio	2492.2	62672	20343	-0.0	0.0	-0.0
		Cargas permanentes	36.2	659.2	731.7	-247.7	403.0	13484
		Sobrecarga	36.2	931.2	287.9	0.0	0.0	-0.0

8.2.- Completo

- Nota:

  Junto à referência de cada pilar indicam-se as coordenadas X e Y do centro geométrico (m) do mesmo e o ângulo (graus) de rotação dos eixos locais em relação aos globais.

  Tramo: Nível inicial / nível final do tramo entre pisos.

Planta: BASE														
Pilar	Tramo (m)	Hipótese	Esforços locais na base do pilar						Esforços locais referidos à origem (X=0.00, Y=0.00, Z=-2.00)					
			N (kN)	Mx (kN·m)	My (kN·m)	Qx (kN)	Qy (kN)	T (kN·m)	N (kN)	Mx (kN·m)	My (kN·m)	Qx (kN)	Qy (kN)	T (kN·m)
P1 [0.100;0.000;0.0 graus] (20x40)	-2.00/0.80	Peso próprio	12.9	-0.2	0.8	-0.6	1.8	-0.0	12.9	1.5	-0.8	0.6	-1.8	-0.1
		Cargas permanentes	4.0	-0.1	0.3	-0.3	1.1	-0.1	4.0	0.5	-0.3	0.3	-1.1	-0.1
		Sobrecarga	0.1	-0.0	0.0	-0.0	0.0	-0.0	0.1	0.0	-0.0	0.0	-0.0	-0.0
P2 [2.025;0.000;0.0 graus] (20x40)	-2.00/0.80	Peso próprio	8.2	-0.1	0.3	-0.1	0.1	-0.0	8.2	16.7	-0.3	0.1	-0.1	-0.2
		Cargas permanentes	-4.1	-1.0	-0.8	-1.9	-1.2	-0.3	-4.1	-7.3	0.8	1.9	1.2	2.6
		Sobrecarga	0.1	-0.0	0.0	-0.0	0.0	-0.0	0.1	0.2	-0.0	0.0	-0.0	-0.0

Esforços e armaduras de pilares, paredes, cortinas e muros

MURO DE CONTENÇÃO - SESC ALTAMIRA

Data: 17/02/21

Planta: BASE														
Pilar	Tramo (m)	Hipótese	Esforços locais na base do pilar						Esforços locais referidos à origem (X=0.00, Y=0.00, Z=-2.00)					
			N (kN)	Mx (kN·m)	My (kN·m)	Qx (kN)	Qy (kN)	T (kN·m)	N (kN)	Mx (kN·m)	My (kN·m)	Qx (kN)	Qy (kN)	T (kN·m)
P3 [4.050;0.000;0.0 graus] (20x40)	-2.00/0.80	Peso próprio	7.2	-0.1	0.2	-0.1	-0.0	-0.0	7.2	29.2	-0.2	0.1	0.0	0.2
		Cargas permanentes	-14.0	-0.7	-2.2	-1.4	-2.6	-0.2	-14.0	-56.0	2.2	1.4	2.6	10.7
		Sobrecarga	0.1	-0.0	0.0	-0.0	0.0	-0.0	0.1	0.4	-0.0	0.0	-0.0	-0.0
P4 [6.075;0.000;0.0 graus] (20x40)	-2.00/0.80	Peso próprio	6.5	-0.0	0.1	-0.1	-0.0	-0.0	6.5	39.4	-0.1	0.1	0.0	0.2
		Cargas permanentes	-20.8	-0.4	-2.8	-0.8	-2.7	-0.1	-20.8	-125.7	2.8	0.8	2.7	16.4
		Sobrecarga	0.1	-0.0	0.0	-0.0	0.0	-0.0	0.1	0.5	-0.0	0.0	-0.0	-0.0
P5 [8.100;0.000;0.0 graus] (20x40)	-2.00/0.80	Peso próprio	6.1	-0.0	0.1	-0.1	-0.0	-0.0	6.1	49.6	-0.1	0.1	0.0	0.2
		Cargas permanentes	-24.4	-0.2	-3.1	-0.4	-2.6	-0.0	-24.4	-197.1	3.1	0.4	2.6	21.3
		Sobrecarga	0.1	-0.0	0.0	0.0	0.0	-0.0	0.1	0.5	-0.0	-0.0	-0.0	-0.0
P6 [10.125;0.000;0.0 graus] (20x40)	-2.00/0.80	Peso próprio	6.0	-0.0	0.1	-0.0	-0.0	0.0	6.0	61.0	-0.1	0.0	0.0	0.1
		Cargas permanentes	-25.6	-0.1	-3.2	-0.2	-2.5	0.0	-25.6	-259.6	3.2	0.2	2.5	25.6
		Sobrecarga	0.1	0.0	-0.0	0.0	0.0	0.0	0.1	0.7	0.0	-0.0	-0.0	-0.0
P7 [12.150;0.000;0.0 graus] (20x40)	-2.00/0.80	Peso próprio	6.2	0.0	0.1	-0.0	0.0	0.0	6.2	75.0	-0.1	0.0	-0.0	-0.1
		Cargas permanentes	-24.9	0.1	-3.0	0.0	-2.4	0.1	-24.9	-302.8	3.0	-0.0	2.4	28.7
		Sobrecarga	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.8	-0.0	-0.0	-0.0	-0.0
P8 [14.175;0.000;0.0 graus] (20x40)	-2.00/0.80	Peso próprio	6.6	0.0	0.2	0.0	0.0	0.0	6.6	93.7	-0.2	-0.0	-0.0	-0.6
		Cargas permanentes	-21.9	0.3	-2.7	0.3	-2.1	0.1	-21.9	-310.8	2.7	-0.3	2.1	29.8
		Sobrecarga	0.1	0.0	0.0	0.0	0.0	0.0	0.1	1.0	-0.0	-0.0	-0.0	-0.0
P9 [16.200;0.000;0.0 graus] (20x40)	-2.00/0.80	Peso próprio	7.5	0.1	0.3	0.1	0.1	0.0	7.5	120.8	-0.3	-0.1	-0.1	-1.8
		Cargas permanentes	-15.8	0.5	-1.9	0.7	-1.7	0.2	-15.8	-255.9	1.9	-0.7	1.7	26.7
		Sobrecarga	0.1	0.0	0.0	0.0	0.0	0.0	0.1	1.4	-0.0	-0.0	-0.0	-0.0
P10 [18.225;0.000;0.0 graus] (20x40)	-2.00/0.80	Peso próprio	8.8	0.1	0.4	0.1	0.3	0.0	8.8	159.7	-0.4	-0.1	-0.3	-4.9
		Cargas permanentes	-5.0	0.6	-0.6	1.0	-0.7	0.2	-5.0	-90.9	0.6	-1.0	0.7	11.8
		Sobrecarga	0.1	0.0	0.0	0.0	0.0	0.0	0.1	2.0	-0.0	-0.0	-0.0	-0.1
P11 [20.250;0.000;0.0 graus] (20x40)	-2.00/0.80	Peso próprio	7.3	-0.0	0.1	-0.1	0.2	0.0	7.3	148.0	-0.1	0.1	-0.2	-4.4
		Cargas permanentes	2.7	-0.3	0.0	-0.8	0.2	-0.0	2.7	55.5	-0.0	0.8	-0.2	-4.4
		Sobrecarga	0.1	-0.0	0.0	-0.0	0.0	0.0	0.1	1.6	-0.0	0.0	-0.0	-0.0
P12 [22.276;0.000;0.0 graus] (20x40)	-2.00/0.80	Peso próprio	9.0	-0.1	0.4	-0.1	0.1	-0.0	9.0	201.0	-0.4	0.1	-0.1	-2.3
		Cargas permanentes	-3.8	-0.4	-1.0	-0.2	-1.8	-0.2	-3.8	-84.8	1.0	0.2	1.8	41.2
		Sobrecarga	0.1	-0.0	0.0	-0.0	0.0	-0.0	0.1	2.5	-0.0	0.0	-0.0	-0.1
P13 [24.301;0.000;0.0 graus] (20x40)	-2.00/0.80	Peso próprio	7.8	-0.0	0.2	-0.0	-0.0	-0.0	7.8	188.4	-0.2	0.0	0.0	0.3
		Cargas permanentes	-14.1	-0.2	-2.2	0.1	-2.5	-0.1	-14.1	-342.8	2.2	-0.1	2.5	61.5
		Sobrecarga	0.1	-0.0	0.0	-0.0	0.0	-0.0	0.1	2.2	-0.0	0.0	-0.0	-0.0
P14 [26.326;0.000;0.0 graus] (20x40)	-2.00/0.80	Peso próprio	7.0	-0.0	0.2	0.0	-0.0	-0.0	7.0	184.4	-0.2	-0.0	0.0	0.4
		Cargas permanentes	-19.5	0.0	-2.6	0.5	-2.5	-0.1	-19.5	-512.2	2.6	-0.5	2.5	67.1
		Sobrecarga	0.1	-0.0	0.0	-0.0	0.0	-0.0	0.1	2.1	-0.0	0.0	-0.0	-0.0
P15 [28.351;0.000;0.0 graus] (20x40)	-2.00/0.80	Peso próprio	6.8	0.0	0.2	0.1	0.0	-0.0	6.8	192.1	-0.2	-0.1	-0.0	-0.1
		Cargas permanentes	-21.0	0.2	-2.7	0.8	-2.4	0.0	-21.0	-594.6	2.7	-0.8	2.4	67.8
		Sobrecarga	0.1	0.0	0.0	0.0	0.0	0.0	0.1	2.1	-0.0	-0.0	-0.0	-0.0
P16 [30.376;0.000;0.0 graus] (20x40)	-2.00/0.80	Peso próprio	7.0	0.1	0.2	0.1	0.0	0.0	7.0	213.5	-0.2	-0.1	-0.0	-1.3
		Cargas permanentes	-19.0	0.5	-2.4	1.2	-2.1	0.1	-19.0	-578.3	2.4	-1.2	2.1	64.2
		Sobrecarga	0.1	0.0	0.0	0.0	0.0	0.0	0.1	2.4	-0.0	-0.0	-0.0	-0.0
P17 [32.401;0.000;0.0 graus] (20x40)	-2.00/0.80	Peso próprio	7.8	0.1	0.3	0.2	0.1	0.0	7.8	252.9	-0.3	-0.2	-0.1	-3.7
		Cargas permanentes	-13.2	0.8	-1.7	1.7	-1.6	0.2	-13.2	-427.5	1.7	-1.7	1.6	52.1
		Sobrecarga	0.1	0.0	0.0	0.0	0.0	0.0	0.1	3.0	-0.0	-0.0	-0.0	-0.1
P18 [34.426;0.000;0.0 graus] (20x40)	-2.00/0.80	Peso próprio	8.9	0.1	0.5	0.3	0.3	0.0	8.9	307.9	-0.5	-0.3	-0.3	-10.6
		Cargas permanentes	-2.8	1.0	-0.3	2.2	-0.4	0.2	-2.8	-97.8	0.3	-2.2	0.4	13.7
		Sobrecarga	0.1	0.0	0.0	0.0	0.0	0.0	0.1	3.8	-0.0	-0.0	-0.0	-0.2
P19 [36.351;0.000;0.0 graus] (20x40)	-2.00/0.80	Peso próprio	5.1	0.0	-0.1	0.0	-0.2	0.0	5.1	183.7	0.1	-0.0	0.2	6.9
		Cargas permanentes	0.3	0.1	-0.2	-0.0	-0.1	0.0	0.3	10.6	0.2	0.0	0.1	4.1
		Sobrecarga	0.1	0.0	-0.0	0.0	-0.0	0.0	0.1	2.2	0.0	-0.0	0.0	0.1
P20 [36.451;2.025;0.0 graus] (40x20)	-2.00/0.80	Peso próprio	9.1	-0.4	-0.1	-0.2	-0.3	-0.0	9.1	332.2	18.6	0.2	0.3	10.7
		Cargas permanentes	-2.3	0.6	-1.0	1.1	-2.2	-0.2	-2.3	-84.4	-3.7	-1.1	2.2	81.4
		Sobrecarga	0.1	-0.0	-0.0	-0.0	-0.0	-0.0	0.1	4.1	0.2	0.0	0.0	0.1
P21 [36.451;4.050;0.0 graus] (40x20)	-2.00/0.80	Peso próprio	7.9	-0.3	-0.1	0.0	-0.2	-0.0	7.9	289.1	32.2	-0.0	0.2	7.8
		Cargas permanentes	-12.4	2.0	-0.7	2.5	-1.6	-0.2	-12.4	-452.2	-49.3	-2.5	1.6	70.1
		Sobrecarga	0.1	-0.0	-0.0	-0.0	-0.0	-0.0	0.1	3.4	0.4	0.0	0.0	0.1
P22 [36.451;6.075;0.0 graus] (40x20)	-2.00/0.80	Peso próprio	7.1	-0.2	-0.1	0.0	-0.1	-0.0	7.1	258.6	43.1	-0.0	0.1	4.5
		Cargas permanentes	-18.6	2.5	-0.4	2.5	-1.0	-0.1	-18.6	-679.7	-112.4	-2.5	1.0	52.3
		Sobrecarga	0.1	-0.0	-0.0	-0.0	-0.0	-0.0	0.1	2.9	0.5	0.0	0.0	0.0
P23 [36.451;8.100;0.0 graus] (40x20)	-2.00/0.80	Peso próprio	6.8	-0.2	-0.0	-0.0	-0.1	-0.0	6.8	247.5	55.0	0.0	0.1	2.1
		Cargas permanentes	-20.9	2.7	-0.2	2.4	-0.6	0.0	-20.9	-764.4	-169.1	-2.4	0.6	41.1
		Sobrecarga	0.1	-0.0	-0.0	-0.0	-0.0	-0.0	0.1	2.8	0.6	0.0	0.0	-0.0
P24 [36.451;10.125;0.0 graus] (40x20)	-2.00/0.80	Peso próprio	7.0	-0.2	0.0	-0.0	-0.0	0.0	7.0	254.0	70.5	0.0	0.0	-0.1
		Cargas permanentes	-19.7	2.5	0.0	2.2	-0.3	0.1	-19.7	-721.8	-199.9	-2.2	0.3	30.9
		Sobrecarga	0.1	-0.0	0.0	-0.0	0.0	0.0	0.1	2.9	0.8	0.0	-0.0	-0.1
P25 [36.451;12.150;0.0 graus] (40x20)	-2.00/0.80	Peso próprio	7.7	-0.3	0.1	-0.1	0.1	0.0	7.7	279.9	93.2	0.1	-0.1	-3.3
		Cargas permanentes	-14.7	1.8	0.3	1.7	0.2	0.2	-14.7	-536.4	-178.5	-1.7	-0.2	14.2
		Sobrecarga	0.1	-0.0	0.0	-0.0	0.0	0.0	0.1	3.3	1.1	0.0	-0.0	-0.1
P26 [36.451;14.175;0.0 graus] (40x20)	-2.00/0.80	Peso próprio	9.0	-0.5	0.1	-0.3	0.1	0.0	9.0	326.9	126.9	0.3	-0.1	-7.8
		Cargas permanentes	-4.3	0.6	0.5	0.8	0.5	0.2	-4.3	-155.9	-60.9	-0.8	-0.5	-5.8
		Sobrecarga	0.1	-0.0	0.0	-0.0	0.0	0.0	0.1	4.1	1.6	0.0	-0.0	-0.2
P27 [36.451;16.200;0.0 graus] (40x20)	-2.00/0.80	Peso próprio	7.1	-0.1	0.0	-0.2	0.0	-0.0	7.1	258.9	115.0	0.2	-0.0	-3.2
		Cargas permanentes	3.5	-0.1	0.3	-0.4	0.8	0.0	3.5	127.6	56.3	0.4	-0.8	-36.3
		Sobrecarga	0.1	-0.0	0.0	-0.0	0.0	-0.0	0.1	2.9	1.3	0.0	-0.0	-0.0
P28 [36.451;18.225;0.0 graus] (40x20)	-2.00/0.80	Peso próprio	9.0	-0.4	-0.1	-0.1	-0.2	-0.0	9.0	327.7	163.8	0.1	0.2	6.2
		Cargas permanentes	-2.3	0.9	-0.8	1.7	-1.5	-0.2	-2.3	-86.2	-41.9	-1.7	1.5	86.3
		Sobrecarga	0.1	-0.0	-0.0	-0.0	-0.0	-0.0	0.1	4.2	2.1	0.0	0.0	0.2

Esforços e armaduras de pilares, paredes, cortinas e muros

MURO DE CONTENÇÃO - SESC ALTAMIRA

Data: 17/02/21

Planta: BASE

Pilar	Tramo (m)	Hipótese	Esforços locais na base do pilar						Esforços locais referidos à origem (X=0.00, Y=0.00, Z=-2.00)					
			N (kN)	Mx (kN·m)	My (kN·m)	Qx (kN)	Qy (kN)	T (kN·m)	N (kN)	Mx (kN·m)	My (kN·m)	Qx (kN)	Qy (kN)	T (kN·m)
P29 [36.451;20.250;0.0 graus] (40x20)	-2.00/0.80	Peso próprio	7.6	-0.2	-0.1	0.0	-0.1	-0.0	7.6	277.7	154.2	-0.0	0.1	5.8
		Cargas permanentes	-14.0	2.2	-0.6	2.6	-1.1	-0.2	-14.0	-513.6	-283.4	-2.6	1.1	94.6
		Sobrecarga	0.1	-0.0	-0.0	-0.0	-0.0	-0.0	0.1	3.3	1.8	0.0	0.0	0.1
P30 [36.451;22.275;0.0 graus] (40x20)	-2.00/0.80	Peso próprio	6.7	-0.1	-0.0	0.0	-0.1	-0.0	6.7	242.9	148.4	-0.0	0.1	3.8
		Cargas permanentes	-21.2	2.9	-0.4	2.7	-0.7	-0.1	-21.2	-777.2	-472.8	-2.7	0.7	84.7
		Sobrecarga	0.1	-0.0	-0.0	-0.0	-0.0	-0.0	0.1	2.8	1.7	0.0	0.0	0.1
P31 [36.451;24.300;0.0 graus] (40x20)	-2.00/0.80	Peso próprio	6.1	-0.1	-0.0	0.0	-0.0	-0.0	6.1	223.3	148.9	-0.0	0.0	2.6
		Cargas permanentes	-25.2	3.3	-0.2	2.7	-0.4	-0.1	-25.2	-922.7	-612.7	-2.7	0.4	79.3
		Sobrecarga	0.1	0.0	-0.0	-0.0	-0.0	-0.0	0.1	2.4	1.6	0.0	0.0	0.1
P32 [36.451;26.325;0.0 graus] (40x20)	-2.00/0.80	Peso próprio	5.9	-0.1	-0.0	0.0	-0.0	-0.0	5.9	214.3	154.8	-0.0	0.0	1.9
		Cargas permanentes	-27.0	3.4	-0.1	2.6	-0.2	-0.0	-27.0	-986.2	-709.7	-2.6	0.2	77.0
		Sobrecarga	0.1	0.0	-0.0	-0.0	-0.0	-0.0	0.1	2.3	1.7	0.0	0.0	0.0
P33 [36.451;28.350;0.0 graus] (40x20)	-2.00/0.80	Peso próprio	5.9	-0.1	-0.0	0.0	-0.0	0.0	5.9	213.6	166.1	-0.0	0.0	1.1
		Cargas permanentes	-26.9	3.4	0.0	2.5	-0.0	0.0	-26.9	-984.8	-763.4	-2.5	0.0	72.8
		Sobrecarga	0.1	0.0	-0.0	-0.0	-0.0	0.0	0.1	2.3	1.8	0.0	0.0	-0.0
P34 [36.451;30.375;0.0 graus] (40x20)	-2.00/0.80	Peso próprio	6.1	-0.1	0.0	-0.0	0.0	0.0	6.1	220.9	184.0	0.0	-0.0	-0.5
		Cargas permanentes	-25.1	3.1	0.2	2.4	0.3	0.1	-25.1	-919.2	-763.5	-2.4	-0.3	60.6
		Sobrecarga	0.1	-0.0	0.0	-0.0	0.0	0.0	0.1	2.5	2.1	0.0	-0.0	-0.0
P35 [36.451;32.400;0.0 graus] (40x20)	-2.00/0.80	Peso próprio	6.5	-0.1	0.0	-0.0	0.1	0.0	6.5	236.9	210.4	0.0	-0.1	-4.1
		Cargas permanentes	-21.4	2.7	0.5	2.1	1.0	0.1	-21.4	-782.7	-693.8	-2.1	-1.0	29.5
		Sobrecarga	0.1	-0.0	0.0	-0.0	0.0	0.0	0.1	2.9	2.6	0.0	-0.0	-0.1
P36 [36.451;34.425;0.0 graus] (40x20)	-2.00/0.80	Peso próprio	6.9	-0.2	0.1	-0.2	0.2	0.0	6.9	251.8	237.5	0.2	-0.2	-13.9
		Cargas permanentes	-18.7	2.1	1.1	1.1	2.7	0.2	-18.7	-682.8	-644.0	-1.1	-2.7	-61.8
		Sobrecarga	0.1	-0.0	0.0	-0.0	0.0	0.0	0.1	3.4	3.2	0.0	-0.0	-0.3
P37 [36.451;36.450;0.0 graus] (40x20)	-2.00/0.80	Peso próprio	1.3	0.9	0.2	0.1	0.5	0.0	1.3	47.2	47.9	-0.1	-0.5	-15.0
		Cargas permanentes	-50.1	10.1	1.1	1.2	3.6	0.3	-50.1	-1838	-1829	-1.2	-3.6	-89.8
		Sobrecarga	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.8	-0.0	-0.0	-0.3
P38 [0.000;2.025;0.0 graus] (40x20)	-2.00/0.80	Peso próprio	5.5	0.1	0.0	0.1	0.0	-0.0	5.5	-0.1	11.0	-0.1	-0.0	0.1
		Cargas permanentes	-4.1	-0.9	-0.5	-1.3	-1.2	0.1	-4.1	0.9	-7.9	1.3	1.2	-2.8
		Sobrecarga	0.1	0.0	-0.0	0.0	-0.0	0.0	0.1	-0.0	0.2	-0.0	0.0	0.0
P39 [0.000;4.050;0.0 graus] (40x20)	-2.00/0.80	Peso próprio	5.3	0.0	-0.0	0.0	-0.1	0.0	5.3	-0.0	21.6	-0.0	0.1	0.0
		Cargas permanentes	-21.5	-3.2	-0.3	-3.1	-0.8	0.1	-21.5	3.2	-86.6	3.1	0.8	-12.5
		Sobrecarga	0.1	-0.0	-0.0	0.0	-0.0	0.0	0.1	0.0	0.2	-0.0	0.0	0.0
P40 [0.000;6.075;0.0 graus] (40x20)	-2.00/0.80	Peso próprio	5.2	0.0	-0.0	-0.0	-0.1	0.0	5.2	-0.0	31.7	0.0	0.1	-0.1
		Cargas permanentes	-29.1	-4.1	-0.2	-3.3	-0.5	0.1	-29.1	4.1	-176.8	3.3	0.5	-20.3
		Sobrecarga	0.1	-0.0	-0.0	0.0	0.0	0.0	0.1	0.0	0.3	-0.0	-0.0	0.0
P41 [0.000;8.100;0.0 graus] (40x20)	-2.00/0.80	Peso próprio	5.2	0.0	-0.0	-0.0	-0.1	0.0	5.2	-0.0	42.3	0.0	0.1	-0.1
		Cargas permanentes	-32.5	-4.4	-0.1	-3.4	-0.2	0.0	-32.5	4.4	-263.2	3.4	0.2	-27.4
		Sobrecarga	0.0	-0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	-0.0	-0.0	0.0
P42 [0.000;10.125;0.0 graus] (40x20)	-2.00/0.80	Peso próprio	5.3	0.0	-0.0	-0.0	-0.1	-0.0	5.3	-0.0	53.3	0.0	0.1	-0.1
		Cargas permanentes	-34.2	-4.6	-0.0	-3.4	-0.1	0.0	-34.2	4.6	-346.0	3.4	0.1	-34.4
		Sobrecarga	0.0	-0.0	-0.0	0.0	-0.0	0.0	0.0	0.0	0.5	-0.0	0.0	0.0
P43 [0.000;12.150;0.0 graus] (40x20)	-2.00/0.80	Peso próprio	5.3	0.0	-0.0	-0.0	-0.1	-0.0	5.3	-0.0	64.9	0.0	0.1	-0.1
		Cargas permanentes	-35.0	-4.7	-0.0	-3.4	0.0	0.0	-35.0	4.7	-425.3	3.4	-0.0	-41.5
		Sobrecarga	0.0	-0.0	-0.0	0.0	-0.0	0.0	0.0	0.0	0.6	-0.0	0.0	0.0
P44 [0.000;14.175;0.0 graus] (40x20)	-2.00/0.80	Peso próprio	5.5	0.0	-0.0	-0.0	-0.0	-0.0	5.5	-0.0	78.7	0.0	0.0	-0.1
		Cargas permanentes	-35.0	-4.7	0.0	-3.5	0.1	-0.0	-35.0	4.7	-495.6	3.5	-0.1	-49.1
		Sobrecarga	0.0	-0.0	-0.0	0.0	-0.0	0.0	0.0	0.0	0.6	-0.0	0.0	0.0
P45 [0.000;16.200;0.0 graus] (40x20)	-2.00/0.80	Peso próprio	4.0	0.0	0.0	-0.0	0.1	-0.0	4.0	-0.0	64.7	0.0	-0.1	-0.2
		Cargas permanentes	-14.2	-3.1	0.1	-1.3	0.5	-0.0	-14.2	3.1	-230.1	1.3	-0.5	-21.8
		Sobrecarga	0.0	-0.0	0.0	0.0	-0.0	0.0	0.0	0.0	0.7	-0.0	0.0	0.0
P46 [22.276;2.090;0.0 graus] (20x40)	-2.00/0.80	Peso próprio	5.4	-0.0	-0.1	-0.0	-0.2	0.0	5.4	120.3	11.4	0.0	0.2	4.5
		Cargas permanentes	1.2	-0.1	-1.5	-0.7	-2.7	-0.0	1.2	25.8	4.0	0.7	2.7	59.1
		Sobrecarga	0.1	-0.0	0.0	-0.0	-0.0	0.0	0.1	1.8	0.2	0.0	0.0	0.0
P47 [24.301;3.043;0.0 graus] (20x40)	-2.00/0.80	Peso próprio	5.3	-0.0	-0.0	-0.0	-0.1	0.0	5.3	129.9	16.3	0.0	0.1	1.8
		Cargas permanentes	2.6	0.0	-0.3	0.1	-0.4	-0.0	2.6	63.6	8.3	-0.1	0.4	10.4
		Sobrecarga	0.1	-0.0	0.0	-0.0	0.0	0.0	0.1	1.9	0.2	0.0	-0.0	-0.0
P48 [26.326;2.952;0.0 graus] (20x40)	-2.00/0.80	Peso próprio	5.1	-0.0	-0.0	-0.0	-0.0	0.0	5.1	133.9	15.1	0.0	0.0	1.2
		Cargas permanentes	-5.5	0.3	-1.5	1.1	-2.0	-0.0	-5.5	-144.1	-14.6	-1.1	2.0	56.0
		Sobrecarga	0.1	0.0	0.0	0.0	0.0	0.0	0.1	1.9	0.2	-0.0	-0.0	-0.0
P49 [28.351;2.770;0.0 graus] (20x40)	-2.00/0.80	Peso próprio	4.3	0.0	-0.1	0.0	-0.1	-0.0	4.3	121.5	12.0	-0.0	0.1	2.6
		Cargas permanentes	-4.4	0.4	-0.5	1.4	-0.1	0.1	-4.4	-125.1	-11.7	-1.4	0.1	8.0
		Sobrecarga	0.1	0.0	-0.0	0.0	-0.0	0.0	0.1	1.4	0.1	-0.0	0.0	0.1
P50 [29.886;4.150;0.0 graus] (40x20)	-2.00/0.80	Peso próprio	4.1	0.1	0.0	0.1	0.0	0.0	4.1	122.5	17.0	-0.1	-0.0	-0.8
		Cargas permanentes	1.3	-0.2	0.1	-0.1	0.3	0.0	1.3	40.5	5.5	0.1	-0.3	-9.0
		Sobrecarga	0.0	0.0	-0.0	0.0	-0.0	0.0	0.0	1.4	0.2	-0.0	0.0	0.0
P51 [29.751;6.175;0.0 graus] (40x20)	-2.00/0.80	Peso próprio	4.8	0.0	0.0	0.0	0.0	0.0	4.8	141.4	29.3	-0.0	-0.0	-0.6
		Cargas permanentes	3.8	-0.5	-0.1	-0.2	-0.3	0.0	3.8	112.4	23.3	0.2	0.3	8.5
		Sobrecarga	0.1	0.0	-0.0	-0.0	-0.0	-0.0	0.1	1.8	0.4	0.0	0.0	0.0
P52 [29.491;8.200;0.0 graus] (40x20)	-2.00/0.80	Peso próprio	5.1	0.0	-0.0	0.1	-0.0	-0.0	5.1	149.7	41.6	-0.1	0.0	0.8
		Cargas permanentes	3.1	-0.5	-0.4	-0.4	-1.2	-0.0	3.1	91.8	25.8	0.4	1.2	31.5
		Sobrecarga	0.1	-0.0	-0.0	-0.0	-0.0	0.0	0.1	2.2	0.6	0.0	0.0	0.0
P53 [29.564;10.225;0.0 graus] (40x20)	-2.00/0.80	Peso próprio	5.2	0.0	-0.0	0.1	-0.0	-0.0	5.2	153.2	53.0	-0.1	0.0	1.4
		Cargas permanentes	0.9	-0.2	-0.2	-0.2	-0.7	-0.0	0.9	25.6	9.0	0.2	0.7	19.9
		Sobrecarga	0.1	-0.0	0.0	-0.0	-0.0	-0.0	0.1	2.3	0.8	0.0	0.0	-0.0
P54 [30.500;12.250;0.0 graus] (40x20)	-2.00/0.80	Peso próprio	5.4	-0.0	-0.0	-0.0	-0.0	-0.0	5.4	164.6	66.1	0.0	0.0	0.8
		Cargas permanentes	2.6	-0.2	-0.0	0.1	-0.2	-0.0	2.6	80.0	32.1	-0.1	0.2	6.6
		Sobrecarga	0.1	-0.0	0.0	-0.0	0.0	-0.0	0.1	2.6	1.0	0.0	-0.0	-0.0

Esforços e armaduras de pilares, paredes, cortinas e muros

MURO DE CONTENÇÃO - SESC ALTAMIRA

Data: 17/02/21

Planta: BASE														
Pilar	Tramo (m)	Hipótese	Esforços locais na base do pilar						Esforços locais referidos à origem (X=0.00, Y=0.00, Z=-2.00)					
			N (kN)	Mx (kN·m)	My (kN·m)	Qx (kN)	Qy (kN)	T (kN·m)	N (kN)	Mx (kN·m)	My (kN·m)	Qx (kN)	Qy (kN)	T (kN·m)
P55 [32.659;14.275;0.0 graus] (40x20)	-2.00/0.80	Peso próprio	5.3	0.0	0.0	0.1	0.0	-0.0	5.3	173.5	75.8	-0.1	-0.0	1.4
		Cargas permanentes	0.4	1.4	-0.3	2.7	-0.1	-0.0	0.4	11.8	6.1	-2.7	0.1	42.3
		Sobrecarga	0.1	0.0	0.0	0.0	0.0	-0.0	0.1	2.5	1.1	-0.0	-0.0	0.0
P56 [0.000;-3.682;0.0 graus] (20x20)	-2.00/0.80	Peso próprio	3.9	0.0	0.0	0.1	0.0	0.0	3.9	-0.0	-14.5	-0.1	-0.0	-0.2
		Cargas permanentes	0.1	0.0	0.0	0.0	0.0	0.0	0.1	-0.0	-0.5	-0.0	-0.0	-0.0
		Sobrecarga	0.1	0.0	0.0	0.0	0.0	0.0	0.1	-0.0	-0.4	-0.0	-0.0	-0.0
P57 [2.025;-3.682;0.0 graus] (20x20)	-2.00/0.80	Peso próprio	4.9	-0.0	0.0	-0.0	0.0	-0.0	4.9	9.9	-18.0	0.0	-0.0	0.0
		Cargas permanentes	0.2	0.0	0.0	0.0	0.0	-0.0	0.2	0.4	-0.7	-0.0	-0.0	-0.0
		Sobrecarga	0.2	-0.0	0.0	-0.0	0.0	-0.0	0.2	0.4	-0.7	0.0	-0.0	0.0
P58 [4.050;-3.682;0.0 graus] (20x20)	-2.00/0.80	Peso próprio	4.9	-0.0	-0.0	-0.0	-0.0	0.0	4.9	19.9	-18.1	0.0	0.0	0.0
		Cargas permanentes	0.2	-0.0	-0.0	-0.0	-0.0	0.0	0.2	0.8	-0.7	0.0	0.0	0.0
		Sobrecarga	0.2	0.0	-0.0	0.0	-0.0	-0.0	0.2	0.8	-0.7	-0.0	0.0	-0.0
P59 [6.075;-3.682;0.0 graus] (20x20)	-2.00/0.80	Peso próprio	4.9	-0.0	0.0	-0.0	0.0	-0.0	4.9	29.8	-18.1	0.0	-0.0	0.0
		Cargas permanentes	0.2	-0.0	0.0	-0.0	0.0	0.0	0.2	1.2	-0.7	0.0	-0.0	0.0
		Sobrecarga	0.2	0.0	0.0	0.0	0.0	-0.0	0.2	1.2	-0.7	-0.0	-0.0	-0.0
P60 [8.100;-3.682;0.0 graus] (20x20)	-2.00/0.80	Peso próprio	4.9	-0.0	-0.0	-0.0	-0.0	0.0	4.9	39.7	-18.1	0.0	0.0	0.0
		Cargas permanentes	0.2	-0.0	-0.0	-0.0	-0.0	0.0	0.2	1.6	-0.7	0.0	0.0	0.0
		Sobrecarga	0.2	-0.0	0.0	-0.0	0.0	-0.0	0.2	1.6	-0.7	0.0	-0.0	0.0
P61 [10.125;-3.682;0.0 graus] (20x20)	-2.00/0.80	Peso próprio	4.9	-0.0	0.0	-0.0	0.0	0.0	4.9	49.7	-18.1	0.0	-0.0	0.0
		Cargas permanentes	0.2	-0.0	-0.0	-0.0	-0.0	0.0	0.2	2.1	-0.7	0.0	0.0	0.0
		Sobrecarga	0.2	-0.0	0.0	-0.0	0.0	-0.0	0.2	2.1	-0.7	0.0	-0.0	0.0
P62 [12.150;-3.682;0.0 graus] (20x20)	-2.00/0.80	Peso próprio	4.9	-0.0	-0.0	-0.0	-0.0	0.0	4.9	59.6	-18.1	0.0	0.0	0.0
		Cargas permanentes	0.2	-0.0	-0.0	-0.0	-0.0	0.0	0.2	2.5	-0.7	0.0	0.0	0.0
		Sobrecarga	0.2	-0.0	0.0	-0.0	0.0	-0.0	0.2	2.5	-0.7	0.0	-0.0	0.0
P63 [14.175;-3.682;0.0 graus] (20x20)	-2.00/0.80	Peso próprio	4.9	-0.0	-0.0	-0.0	-0.0	0.0	4.9	69.5	-18.1	0.0	0.0	0.0
		Cargas permanentes	0.2	-0.0	-0.0	-0.0	-0.0	0.0	0.2	2.9	-0.7	0.0	0.0	0.0
		Sobrecarga	0.2	-0.0	0.0	-0.0	0.0	-0.0	0.2	2.9	-0.7	0.0	-0.0	0.0
P64 [16.200;-3.682;0.0 graus] (20x20)	-2.00/0.80	Peso próprio	4.9	-0.0	-0.0	-0.0	-0.0	0.0	4.9	79.5	-18.1	0.0	0.0	0.0
		Cargas permanentes	0.2	-0.0	-0.0	-0.0	-0.0	0.0	0.2	3.3	-0.7	0.0	0.0	0.0
		Sobrecarga	0.2	-0.0	0.0	-0.0	0.0	-0.0	0.2	3.3	-0.7	0.0	-0.0	0.0
P65 [18.225;-3.682;0.0 graus] (20x20)	-2.00/0.80	Peso próprio	4.9	-0.0	0.0	-0.0	0.0	0.0	4.9	89.4	-18.1	0.0	-0.0	0.0
		Cargas permanentes	0.2	-0.0	-0.0	-0.0	-0.0	0.0	0.2	3.7	-0.7	0.0	0.0	0.0
		Sobrecarga	0.2	-0.0	0.0	-0.0	0.0	-0.0	0.2	3.7	-0.7	0.0	-0.0	0.0
P67 [20.250;-3.682;0.0 graus] (20x20)	-2.00/0.80	Peso próprio	4.9	-0.0	0.0	-0.0	0.0	0.0	4.9	99.3	-18.1	0.0	-0.0	0.0
		Cargas permanentes	0.2	-0.0	0.0	-0.0	0.0	0.0	0.2	4.1	-0.7	0.0	-0.0	0.0
		Sobrecarga	0.2	-0.0	0.0	-0.0	0.0	0.0	0.2	4.1	-0.7	0.0	-0.0	0.0
P68 [22.276;-3.682;0.0 graus] (20x20)	-2.00/0.80	Peso próprio	4.9	-0.0	0.0	-0.0	0.0	0.0	4.9	109.2	-18.1	0.0	-0.0	0.0
		Cargas permanentes	0.2	-0.0	0.0	-0.0	0.0	0.0	0.2	4.5	-0.7	0.0	-0.0	0.0
		Sobrecarga	0.2	-0.0	0.0	-0.0	0.0	0.0	0.2	4.5	-0.7	0.0	-0.0	0.0
P69 [24.301;-3.682;0.0 graus] (20x20)	-2.00/0.80	Peso próprio	4.9	-0.0	0.0	-0.0	0.0	0.0	4.9	119.2	-18.1	0.0	-0.0	0.0
		Cargas permanentes	0.2	-0.0	0.0	-0.0	0.0	0.0	0.2	4.9	-0.7	0.0	-0.0	0.0
		Sobrecarga	0.2	-0.0	0.0	-0.0	0.0	0.0	0.2	4.9	-0.7	0.0	-0.0	0.0
P70 [26.326;-3.682;0.0 graus] (20x20)	-2.00/0.80	Peso próprio	4.9	-0.0	0.0	-0.0	0.0	0.0	4.9	129.1	-18.1	0.0	-0.0	0.0
		Cargas permanentes	0.2	-0.0	0.0	-0.0	0.0	0.0	0.2	5.3	-0.7	0.0	-0.0	0.0
		Sobrecarga	0.2	-0.0	0.0	-0.0	0.0	0.0	0.2	5.3	-0.7	0.0	-0.0	0.0
P71 [28.351;-3.682;0.0 graus] (20x20)	-2.00/0.80	Peso próprio	4.9	0.0	0.0	-0.0	0.0	0.0	4.9	139.0	-18.1	0.0	-0.0	0.0
		Cargas permanentes	0.2	-0.0	0.0	-0.0	0.0	0.0	0.2	5.8	-0.7	0.0	-0.0	0.0
		Sobrecarga	0.2	-0.0	0.0	-0.0	0.0	0.0	0.2	5.8	-0.7	0.0	-0.0	0.0
P72 [30.376;-3.682;0.0 graus] (20x20)	-2.00/0.80	Peso próprio	4.9	0.0	0.0	-0.0	0.0	0.0	4.9	149.0	-18.1	0.0	-0.0	-0.0
		Cargas permanentes	0.2	-0.0	-0.0	-0.0	-0.0	0.0	0.2	6.2	-0.7	0.0	0.0	0.0
		Sobrecarga	0.2	-0.0	0.0	-0.0	0.0	0.0	0.2	6.2	-0.7	0.0	-0.0	0.0
P73 [32.401;-3.682;0.0 graus] (20x20)	-2.00/0.80	Peso próprio	4.9	0.0	-0.0	-0.0	-0.0	0.0	4.9	158.9	-18.1	0.0	0.0	0.0
		Cargas permanentes	0.2	-0.0	0.0	-0.0	0.0	0.0	0.2	6.6	-0.7	0.0	-0.0	0.0
		Sobrecarga	0.2	-0.0	0.0	-0.0	0.0	0.0	0.2	6.6	-0.7	0.0	-0.0	0.0
P74 [34.426;-3.682;0.0 graus] (20x20)	-2.00/0.80	Peso próprio	4.9	-0.0	0.0	-0.0	0.0	0.0	4.9	168.8	-18.1	0.0	-0.0	-0.0
		Cargas permanentes	0.2	-0.0	-0.0	-0.0	-0.0	-0.0	0.2	7.0	-0.7	0.0	0.0	0.0
		Sobrecarga	0.2	-0.0	0.0	-0.0	0.0	0.0	0.2	7.0	-0.7	0.0	-0.0	0.0
P75 [36.451;-3.682;0.0 graus] (20x20)	-2.00/0.80	Peso próprio	4.7	-0.0	-0.0	-0.0	-0.0	-0.0	4.7	169.5	-17.1	0.0	0.0	0.1
		Cargas permanentes	0.2	-0.0	0.0	0.0	0.0	0.0	0.2	7.9	-0.8	-0.0	-0.0	-0.0
		Sobrecarga	0.2	-0.0	-0.0	0.0	-0.0	0.0	0.2	7.9	-0.8	-0.0	0.0	0.0
P76 [38.820;-3.682;0.0 graus] (20x20)	-2.00/0.80	Peso próprio	4.1	0.0	0.0	-0.0	0.0	0.0	4.1	159.2	-15.1	0.0	-0.0	-1.2
		Cargas permanentes	0.2	-0.0	0.0	-0.0	0.0	0.0	0.2	6.6	-0.6	0.0	-0.0	-0.2
		Sobrecarga	0.2	-0.0	0.0	-0.0	0.0	0.0	0.2	6.3	-0.6	0.0	-0.0	-0.1
P82 [38.820;-1.657;0.0 graus] (20x20)	-2.00/0.80	Peso próprio	4.7	0.0	-0.0	0.0	-0.0	0.0	4.7	182.5	-7.8	-0.0	0.0	0.3
		Cargas permanentes	0.2	-0.0	0.0	-0.0	0.0	-0.0	0.2	7.1	-0.3	0.0	-0.0	-0.1
		Sobrecarga	0.2	0.0	-0.0	0.0	-0.0	0.0	0.2	7.1	-0.3	-0.0	0.0	0.0
P84 [38.820;0.000;0.0 graus] (20x20)	-2.00/0.80	Peso próprio	4.7	-0.0	0.0	-0.0	0.0	-0.0	4.7	182.5	-0.0	0.0	-0.0	-0.2
		Cargas permanentes	0.2	-0.0	0.0	-0.0	0.0	-0.0	0.2	7.2	-0.0	0.0	-0.0	-0.1
		Sobrecarga	0.2	-0.0	0.0	-0.0	0.0	-0.0	0.2	7.1	-0.0	0.0	-0.0	-0.0
P85 [38.820;2.025;0.0 graus] (20x20)	-2.00/0.80	Peso próprio	4.9	-0.0	-0.0	-0.0	-0.0	-0.0	4.9	190.4	9.9	0.0	0.0	0.0
		Cargas permanentes	0.2	-0.0	0.0	-0.0	0.0	-0.0	0.2	7.9	0.4	0.0	-0.0	-0.1
		Sobrecarga	0.2	-0.0	0.0	-0.0	0.0	-0.0	0.2	7.9	0.4	0.0	-0.0	-0.0
P86 [38.820;4.050;0.0 graus] (20x20)	-2.00/0.80	Peso próprio	4.9	-0.0	-0.0	-0.0	-0.0	-0.0	4.9	190.4	19.9	0.0	0.0	0.0
		Cargas permanentes	0.2	-0.0	0.0	-0.0	0.0	-0.0	0.2	7.9	0.8	0.0	-0.0	-0.1
		Sobrecarga	0.2	-0.0	0.0	-0.0	0.0	-0.0	0.2	7.9	0.8	0.0	-0.0	-0.0
P87 [38.820;6.075;0.0 graus] (20x20)	-2.00/0.80	Peso próprio	4.9	-0.0	-0.0	-0.0	-0.0	-0.0	4.9	190.4	29.8	0.0	0.0	0.0
		Cargas permanentes	0.2	-0.0	0.0	-0.0	0.0	-0.0	0.2	7.9	1.2	0.0	-0.0	-0.1
		Sobrecarga	0.2	-0.0	0.0	-0.0	0.0	-0.0	0.2	7.9	1.2	0.0	-0.0	-0.0

Esforços e armaduras de pilares, paredes, cortinas e muros

MURO DE CONTENÇÃO - SESC ALTAMIRA

Data: 17/02/21

Planta: BASE

Pilar	Tramo (m)	Hipótese	Esforços locais na base do pilar						Esforços locais referidos à origem (X=0.00, Y=0.00, Z=-2.00)					
			N (kN)	Mx (kN·m)	My (kN·m)	Qx (kN)	Qy (kN)	T (kN·m)	N (kN)	Mx (kN·m)	My (kN·m)	Qx (kN)	Qy (kN)	T (kN·m)
P88 [38.820;8.100;0.0 graus] (20x20)	-2.00/0.80	Peso próprio	4.9	-0.0	0.0	-0.0	-0.0	-0.0	4.9	190.4	39.7	0.0	0.0	0.0
		Cargas permanentes	0.2	-0.0	0.0	-0.0	0.0	-0.0	0.2	7.9	1.6	0.0	-0.0	-0.1
		Sobrecarga	0.2	-0.0	0.0	-0.0	0.0	-0.0	0.2	7.9	1.6	0.0	-0.0	-0.0
P89 [38.820;10.125;0.0 graus] (20x20)	-2.00/0.80	Peso próprio	4.9	-0.0	0.0	-0.0	0.0	-0.0	4.9	190.4	49.7	0.0	-0.0	-0.0
		Cargas permanentes	0.2	-0.0	0.0	-0.0	0.0	-0.0	0.2	7.9	2.0	0.0	-0.0	-0.1
		Sobrecarga	0.2	-0.0	0.0	-0.0	0.0	-0.0	0.2	7.9	2.1	0.0	-0.0	-0.0
P90 [38.820;12.150;0.0 graus] (20x20)	-2.00/0.80	Peso próprio	4.9	-0.0	0.0	-0.0	0.0	-0.0	4.9	190.4	59.6	0.0	-0.0	-0.0
		Cargas permanentes	0.2	0.0	0.0	0.0	0.0	-0.0	0.2	7.9	2.5	-0.0	-0.0	-0.1
		Sobrecarga	0.2	-0.0	0.0	-0.0	0.0	-0.0	0.2	7.9	2.5	0.0	-0.0	-0.0
P91 [38.820;14.175;0.0 graus] (20x20)	-2.00/0.80	Peso próprio	4.9	-0.0	0.0	-0.0	0.0	-0.0	4.9	190.4	69.5	0.0	-0.0	-0.0
		Cargas permanentes	0.2	0.0	0.0	0.0	0.0	-0.0	0.2	7.9	2.9	-0.0	-0.0	-0.1
		Sobrecarga	0.2	-0.0	0.0	-0.0	0.0	-0.0	0.2	7.9	2.9	0.0	-0.0	-0.0
P92 [38.820;16.200;0.0 graus] (20x20)	-2.00/0.80	Peso próprio	4.9	0.0	0.0	0.0	0.0	-0.0	4.9	190.4	79.4	-0.0	-0.0	-0.0
		Cargas permanentes	0.2	0.0	0.0	0.0	0.0	-0.0	0.2	7.9	3.3	-0.0	-0.0	-0.2
		Sobrecarga	0.2	-0.0	0.0	-0.0	0.0	-0.0	0.2	7.9	3.3	0.0	-0.0	-0.0
P93 [38.820;18.225;0.0 graus] (20x20)	-2.00/0.80	Peso próprio	4.9	0.0	0.0	0.0	0.0	-0.0	4.9	190.4	89.4	-0.0	-0.0	-0.0
		Cargas permanentes	0.2	0.0	0.0	0.0	0.0	-0.0	0.2	7.9	3.7	-0.0	-0.0	-0.2
		Sobrecarga	0.2	-0.0	0.0	-0.0	-0.0	0.0	0.2	7.9	3.7	0.0	0.0	0.0
P94 [38.820;20.250;0.0 graus] (20x20)	-2.00/0.80	Peso próprio	4.9	0.0	0.0	0.0	0.0	-0.0	4.9	190.4	99.3	-0.0	-0.0	-0.1
		Cargas permanentes	0.2	0.0	0.0	0.0	0.0	-0.0	0.2	7.9	4.1	-0.0	-0.0	-0.2
		Sobrecarga	0.2	-0.0	-0.0	-0.0	-0.0	0.0	0.2	7.9	4.1	0.0	0.0	0.0
P95 [38.820;22.275;0.0 graus] (20x20)	-2.00/0.80	Peso próprio	4.9	0.0	0.0	0.0	0.0	-0.0	4.9	190.4	109.2	-0.0	-0.0	-0.1
		Cargas permanentes	0.2	0.0	0.0	0.0	0.0	-0.0	0.2	7.9	4.5	-0.0	-0.0	-0.2
		Sobrecarga	0.2	-0.0	-0.0	-0.0	-0.0	0.0	0.2	7.9	4.5	0.0	0.0	0.0
P96 [38.820;24.300;0.0 graus] (20x20)	-2.00/0.80	Peso próprio	4.9	0.0	0.0	0.0	0.0	-0.0	4.9	190.4	119.2	-0.0	-0.0	-0.1
		Cargas permanentes	0.2	0.0	0.0	0.0	0.0	-0.0	0.2	7.9	4.9	-0.0	-0.0	-0.2
		Sobrecarga	0.2	-0.0	-0.0	-0.0	-0.0	0.0	0.2	7.9	4.9	0.0	0.0	0.0
P97 [38.820;26.325;0.0 graus] (20x20)	-2.00/0.80	Peso próprio	4.9	0.0	0.0	0.0	0.0	-0.0	4.9	190.4	129.1	-0.0	-0.0	-0.1
		Cargas permanentes	0.2	0.0	0.0	0.0	0.0	-0.0	0.2	7.9	5.3	-0.0	-0.0	-0.2
		Sobrecarga	0.2	-0.0	-0.0	-0.0	-0.0	0.0	0.2	7.9	5.3	0.0	0.0	0.0
P98 [38.820;28.350;0.0 graus] (20x20)	-2.00/0.80	Peso próprio	4.9	-0.0	0.0	-0.0	0.0	-0.0	4.9	190.4	139.0	0.0	-0.0	-0.1
		Cargas permanentes	0.2	-0.0	0.0	-0.0	0.0	0.0	0.2	7.9	5.7	0.0	-0.0	-0.3
		Sobrecarga	0.2	-0.0	-0.0	-0.0	-0.0	0.0	0.2	7.9	5.8	0.0	0.0	0.0
P100 [38.820;30.375;0.0 graus] (20x20)	-2.00/0.80	Peso próprio	4.9	0.0	0.0	0.0	0.0	-0.0	4.9	190.4	149.0	-0.0	-0.0	-0.1
		Cargas permanentes	0.2	0.0	0.0	0.0	0.0	-0.0	0.2	7.9	6.1	-0.0	-0.0	-0.3
		Sobrecarga	0.2	0.0	-0.0	0.0	-0.0	0.0	0.2	7.9	6.2	-0.0	0.0	0.0
P101 [38.820;32.400;0.0 graus] (20x20)	-2.00/0.80	Peso próprio	4.9	-0.0	0.0	-0.0	0.0	0.0	4.9	190.4	158.9	0.0	-0.0	-0.1
		Cargas permanentes	0.2	-0.0	0.0	-0.0	0.0	0.0	0.2	7.9	6.6	0.0	-0.0	-0.6
		Sobrecarga	0.2	-0.0	-0.0	-0.0	-0.0	0.0	0.2	7.9	6.6	0.0	0.0	0.0
P102 [38.820;34.425;0.0 graus] (20x20)	-2.00/0.80	Peso próprio	4.9	0.0	-0.0	0.0	-0.0	-0.0	4.9	190.3	168.8	-0.0	0.0	0.4
		Cargas permanentes	0.2	0.2	-0.0	0.1	-0.0	-0.0	0.2	7.8	7.1	-0.1	0.0	2.7
		Sobrecarga	0.2	0.0	-0.0	0.0	-0.0	-0.0	0.2	7.9	7.0	-0.0	0.0	0.0
P103 [38.820;36.450;0.0 graus] (20x20)	-2.00/0.80	Peso próprio	4.2	0.2	-0.0	0.0	-0.0	-0.0	4.2	163.6	153.8	-0.0	0.0	3.0
		Cargas permanentes	-1.7	1.5	-0.1	0.6	-0.1	-0.1	-1.7	-66.5	-60.9	-0.6	0.1	23.8
		Sobrecarga	0.2	-0.0	-0.0	-0.0	-0.0	-0.0	0.2	6.1	5.8	0.0	0.0	0.0
C1 [18.225;0.100] (e=20.0 cm)	-2.00/0.80	Peso próprio	411.8	-83.7	-12.1	-8.8	-10.1	3.1	411.8	7421.3	29.1	-8.8	-10.1	-180.8
		Cargas permanentes	190.2	-276.5	86.5	-53.1	159.0	-65.8	190.2	3189.2	105.5	-53.1	159.0	2838.0
		Sobrecarga	5.0	-1.7	-0.1	-0.1	-0.1	-0.0	5.0	89.8	0.4	-0.1	-0.1	-2.1
C2 [36.351;18.275] (e=20.0 cm)	-2.00/0.80	Peso próprio	422.5	10.4	228.2	7.8	5.7	50.4	422.5	15368	7949.0	7.8	5.7	115.4
		Cargas permanentes	292.0	-99.8	1948.9	-174.3	57.6	405.8	292.0	10514	7284.6	-174.3	57.6	5686.0
		Sobrecarga	5.2	0.1	3.8	0.1	0.1	0.7	5.2	188.3	98.5	0.1	0.1	2.2
C3 [0.099;8.150] (e=20.0 cm)	-2.00/0.80	Peso próprio	195.4	-0.6	68.9	-0.7	4.4	-3.7	195.4	18.7	1661.4	-0.7	4.4	2.5
		Cargas permanentes	217.8	50.7	321.2	78.1	18.8	-123.3	217.8	72.2	2096.5	78.1	18.8	-758.0
		Sobrecarga	2.4	0.0	0.3	-0.0	0.0	-0.1	2.4	0.3	20.2	-0.0	0.0	0.0
C4 [21.252;1.107] (e=20.0 cm)	-2.00/0.80	Peso próprio	41.3	0.6	0.5	4.6	4.4	1.2	41.3	878.9	46.2	4.6	4.4	89.5
		Cargas permanentes	25.4	19.8	26.0	47.5	61.7	5.4	25.4	559.5	54.1	47.5	61.7	1265.0
		Sobrecarga	0.5	0.0	0.0	0.1	0.1	0.0	0.5	10.9	0.6	0.1	0.1	1.2
C5 [23.271;2.641] (e=20.0 cm)	-2.00/0.80	Peso próprio	30.0	0.8	0.5	1.8	1.2	-0.0	30.0	699.1	79.8	1.8	1.2	23.4
		Cargas permanentes	23.3	5.5	5.8	14.4	15.0	-2.1	23.3	548.5	67.5	14.4	15.0	308.2
		Sobrecarga	0.4	0.0	0.0	0.0	0.0	-0.0	0.4	8.5	1.0	0.0	0.0	0.3
C6 [25.313;3.098] (e=20.0 cm)	-2.00/0.80	Peso próprio	25.9	0.4	-0.0	-0.0	0.1	-0.0	25.9	657.0	80.3	-0.0	0.1	1.6
		Cargas permanentes	14.6	-6.0	2.6	-14.4	7.0	2.0	14.6	363.2	47.8	-14.4	7.0	224.4
		Sobrecarga	0.3	0.0	-0.0	-0.0	-0.0	0.0	0.3	7.9	1.0	-0.0	-0.0	-0.0
C7 [27.338;2.936] (e=20.0 cm)	-2.00/0.80	Peso próprio	26.6	0.1	0.1	0.7	0.1	0.1	26.6	728.1	78.3	0.7	0.1	-0.4
		Cargas permanentes	4.3	-14.2	4.9	-21.5	10.6	-0.6	4.3	104.2	17.6	-21.5	10.6	353.4
		Sobrecarga	0.3	-0.0	0.0	-0.0	0.0	0.0	0.3	8.6	0.9	-0.0	0.0	0.0
C8 [29.127;3.433] (e=20.0 cm)	-2.00/0.80	Peso próprio	26.2	-0.1	0.1	-0.4	-0.1	-0.0	26.2	763.4	90.1	-0.4	-0.1	-1.9
		Cargas permanentes	-9.5	-2.7	-1.5	-8.5	-3.1	-2.5	-9.5	-280.6	-34.2	-8.5	-3.1	-64.5
		Sobrecarga	0.3	-0.0	0.0	-0.0	0.0	-0.0	0.3	8.7	1.0	-0.0	0.0	0.0
C9 [29.718;5.163] (e=20.0 cm)	-2.00/0.80	Peso próprio	26.4	-0.0	-0.4	0.0	-1.1	-0.1	26.4	784.2	135.8	0.0	-1.1	-33.3
		Cargas permanentes	-9.2	-0.9	3.9	-4.9	8.7	0.8	-9.2	-274.1	-43.6	-4.9	8.7	285.0
		Sobrecarga	0.3	-0.0	-0.0	-0.0	-0.0	-0.0	0.3	9.1	1.6	-0.0	-0.0	-0.0
C10 [29.520;7.188] (e=20.0 cm)	-2.00/0.80	Peso próprio	25.8	0.0	-0.3	-0.0	-0.3	0.1	25.8	762.2	185.3	-0.0	-0.3	-8.2
		Cargas permanentes	-7.7	1.9	8.5	6.3	17.9	0.2	-7.7	-224.8	-46.7	6.3	17.9	483.1
		Sobrecarga	0.3	-0.0	0.0	-0.0	0.0	0.0	0.3	9.0	2.2	-0.0	0.0	0.2
C11 [29.427;9.213] (e=20.0 cm)	-2.00/0.80	Peso próprio	25.2	-0.1	0.0	-0.1	0.6	0.0	25.2	740.6	231.9	-0.1	0.6	19.2
		Cargas permanentes	-2.1	-0.3	9.2	-3.2	20.8	-0.9	-2.1	-61.8	-10.1	-3.2	20.8	639.7
		Sobrecarga	0.3	0.0	0.0	0.0	0.0	-0.0	0.3	8.7	2.7	0.0	0.0	0.4

Esforços e armaduras de pilares, paredes, cortinas e muros

MURO DE CONTENÇÃO - SESC ALTAMIRA

Data: 17/02/21

Planta: BASE														
Pilar	Tramo (m)	Hipótese	Esforços locais na base do pilar						Esforços locais referidos à origem (X=0.00, Y=0.00, Z=-2.00)					
			N (kN)	Mx (kN·m)	My (kN·m)	Qx (kN)	Qy (kN)	T (kN·m)	N (kN)	Mx (kN·m)	My (kN·m)	Qx (kN)	Qy (kN)	T (kN·m)
C12 [29.956;11.254] (e=20.0 cm)	-2.00/0.80	Peso próprio	28.6	0.1	0.2	0.1	0.5	-0.1	28.6	857.0	322.1	0.1	0.5	13.0
		Cargas permanentes	5.4	2.0	6.2	1.2	13.4	-0.6	5.4	163.0	66.7	1.2	13.4	388.3
		Sobrecarga	0.3	0.0	-0.0	0.0	-0.0	-0.0	0.3	10.3	3.9	0.0	-0.0	-0.2
C13 [31.500;13.292] (e=20.0 cm)	-2.00/0.80	Peso próprio	39.6	-0.2	-0.1	-0.8	-0.4	-0.0	39.6	1247.6	526.4	-0.8	-0.4	-2.9
		Cargas permanentes	17.9	-3.5	1.5	-15.7	-2.0	2.8	17.9	561.6	240.0	-15.7	-2.0	147.2
		Sobrecarga	0.5	-0.0	-0.0	-0.0	-0.0	0.0	0.5	15.7	6.6	-0.0	-0.0	-0.5
C14 [34.528;15.268] (e=20.0 cm)	-2.00/0.80	Peso próprio	58.8	0.6	0.1	-4.9	-2.9	-1.1	58.8	2030.4	897.6	-4.9	-2.9	-28.4
		Cargas permanentes	27.4	-35.8	-9.7	-80.8	-23.2	-12.3	27.4	908.7	407.9	-80.8	-23.2	419.4
		Sobrecarga	0.7	0.0	0.0	-0.0	-0.0	-0.0	0.7	25.0	11.1	-0.0	-0.0	-0.4
C15 [1.013;-3.682] (e=20.0 cm)	-2.00/0.80	Peso próprio	13.5	-0.4	-0.0	0.0	-0.0	0.0	13.5	13.4	-49.9	0.0	-0.0	-0.0
		Cargas permanentes	0.2	-0.0	-0.0	-0.0	-0.0	0.0	0.2	0.2	-0.7	-0.0	-0.0	-0.0
		Sobrecarga	0.2	-0.0	-0.0	0.0	-0.0	0.0	0.2	0.2	-0.7	0.0	-0.0	-0.0
C16 [3.038;-3.682] (e=20.0 cm)	-2.00/0.80	Peso próprio	13.2	-0.0	0.0	0.0	0.0	0.0	13.2	40.0	-48.5	0.0	0.0	0.0
		Cargas permanentes	0.2	-0.0	0.0	0.0	0.0	-0.0	0.2	0.5	-0.6	0.0	0.0	0.0
		Sobrecarga	0.2	-0.0	0.0	-0.0	0.0	0.0	0.2	0.5	-0.6	-0.0	0.0	0.0
C17 [5.063;-3.682] (e=20.0 cm)	-2.00/0.80	Peso próprio	13.2	-0.0	-0.0	0.0	-0.0	-0.0	13.2	66.7	-48.5	0.0	-0.0	-0.0
		Cargas permanentes	0.2	-0.0	-0.0	0.0	-0.0	-0.0	0.2	0.8	-0.6	0.0	-0.0	-0.0
		Sobrecarga	0.2	0.0	-0.0	-0.0	-0.0	0.0	0.2	0.8	-0.6	-0.0	-0.0	0.0
C18 [7.088;-3.682] (e=20.0 cm)	-2.00/0.80	Peso próprio	13.2	-0.0	0.0	0.0	0.0	-0.0	13.2	93.3	-48.5	0.0	0.0	0.0
		Cargas permanentes	0.2	-0.0	0.0	0.0	0.0	-0.0	0.2	1.1	-0.6	0.0	0.0	-0.0
		Sobrecarga	0.2	-0.0	-0.0	-0.0	0.0	0.0	0.2	1.1	-0.6	-0.0	0.0	0.0
C19 [9.113;-3.682] (e=20.0 cm)	-2.00/0.80	Peso próprio	13.2	-0.0	-0.0	0.0	-0.0	-0.0	13.2	120.0	-48.5	0.0	-0.0	-0.0
		Cargas permanentes	0.2	-0.0	0.0	0.0	-0.0	-0.0	0.2	1.5	-0.6	0.0	-0.0	-0.0
		Sobrecarga	0.2	-0.0	-0.0	0.0	0.0	0.0	0.2	1.5	-0.6	0.0	0.0	0.0
C20 [11.138;-3.682] (e=20.0 cm)	-2.00/0.80	Peso próprio	13.2	-0.0	0.0	0.0	0.0	-0.0	13.2	146.7	-48.5	0.0	0.0	0.0
		Cargas permanentes	0.2	-0.0	0.0	0.0	-0.0	-0.0	0.2	1.8	-0.6	0.0	-0.0	-0.0
		Sobrecarga	0.2	-0.0	-0.0	0.0	0.0	0.0	0.2	1.8	-0.6	0.0	0.0	0.0
C21 [13.163;-3.682] (e=20.0 cm)	-2.00/0.80	Peso próprio	13.2	-0.0	0.0	0.0	-0.0	-0.0	13.2	173.4	-48.5	0.0	-0.0	0.0
		Cargas permanentes	0.2	-0.0	0.0	0.0	-0.0	-0.0	0.2	2.1	-0.6	0.0	-0.0	-0.0
		Sobrecarga	0.2	-0.0	-0.0	0.0	0.0	0.0	0.2	2.1	-0.6	0.0	0.0	0.0
C22 [15.188;-3.682] (e=20.0 cm)	-2.00/0.80	Peso próprio	13.2	-0.0	0.0	0.0	0.0	-0.0	13.2	200.1	-48.5	0.0	0.0	0.0
		Cargas permanentes	0.2	-0.0	0.0	0.0	-0.0	-0.0	0.2	2.5	-0.6	0.0	-0.0	-0.0
		Sobrecarga	0.2	-0.0	-0.0	0.0	0.0	0.0	0.2	2.5	-0.6	0.0	0.0	0.0
C23 [17.213;-3.682] (e=20.0 cm)	-2.00/0.80	Peso próprio	13.2	-0.0	0.0	0.0	0.0	-0.0	13.2	226.7	-48.5	0.0	0.0	0.0
		Cargas permanentes	0.2	-0.0	0.0	0.0	-0.0	-0.0	0.2	2.8	-0.6	0.0	-0.0	0.0
		Sobrecarga	0.2	-0.0	-0.0	0.0	0.0	0.0	0.2	2.8	-0.6	0.0	0.0	0.0
C24 [19.238;-3.682] (e=20.0 cm)	-2.00/0.80	Peso próprio	13.2	-0.0	0.0	0.0	0.0	-0.0	13.2	253.4	-48.5	0.0	0.0	0.0
		Cargas permanentes	0.2	-0.0	0.0	0.0	0.0	-0.0	0.2	3.1	-0.6	0.0	0.0	0.0
		Sobrecarga	0.2	-0.0	-0.0	0.0	0.0	0.0	0.2	3.1	-0.6	0.0	0.0	0.0
C25 [21.263;-3.682] (e=20.0 cm)	-2.00/0.80	Peso próprio	13.2	-0.0	0.0	0.0	0.0	-0.0	13.2	280.1	-48.5	0.0	0.0	0.0
		Cargas permanentes	0.2	-0.0	0.0	0.0	0.0	-0.0	0.2	3.4	-0.6	0.0	0.0	0.0
		Sobrecarga	0.2	-0.0	0.0	0.0	0.0	-0.0	0.2	3.4	-0.6	0.0	0.0	0.0
C26 [23.288;-3.682] (e=20.0 cm)	-2.00/0.80	Peso próprio	13.2	-0.0	0.0	0.0	0.0	-0.0	13.2	306.8	-48.5	0.0	0.0	0.0
		Cargas permanentes	0.2	-0.0	0.0	0.0	0.0	-0.0	0.2	3.8	-0.6	0.0	0.0	0.0
		Sobrecarga	0.2	-0.0	0.0	0.0	0.0	-0.0	0.2	3.8	-0.6	0.0	0.0	0.0
C27 [25.313;-3.682] (e=20.0 cm)	-2.00/0.80	Peso próprio	13.2	-0.0	0.0	-0.0	0.0	-0.0	13.2	333.5	-48.5	-0.0	0.0	0.0
		Cargas permanentes	0.2	-0.0	0.0	0.0	0.0	-0.0	0.2	4.1	-0.6	0.0	0.0	0.0
		Sobrecarga	0.2	-0.0	0.0	0.0	0.0	-0.0	0.2	4.1	-0.6	0.0	0.0	0.0
C28 [27.338;-3.682] (e=20.0 cm)	-2.00/0.80	Peso próprio	13.2	-0.0	0.0	-0.0	0.0	-0.0	13.2	360.1	-48.5	-0.0	0.0	0.0
		Cargas permanentes	0.2	-0.0	0.0	0.0	0.0	-0.0	0.2	4.4	-0.6	0.0	0.0	0.0
		Sobrecarga	0.2	-0.0	0.0	0.0	0.0	-0.0	0.2	4.4	-0.6	0.0	0.0	0.0
C29 [29.363;-3.682] (e=20.0 cm)	-2.00/0.80	Peso próprio	13.2	-0.0	0.0	-0.0	0.0	-0.0	13.2	386.8	-48.5	-0.0	0.0	0.0
		Cargas permanentes	0.2	-0.0	-0.0	0.0	0.0	-0.0	0.2	4.8	-0.6	0.0	0.0	0.0
		Sobrecarga	0.2	-0.0	0.0	0.0	0.0	-0.0	0.2	4.8	-0.6	0.0	0.0	0.0
C30 [31.388;-3.682] (e=20.0 cm)	-2.00/0.80	Peso próprio	13.2	-0.0	-0.0	-0.0	0.0	-0.0	13.2	413.5	-48.5	-0.0	0.0	-0.0
		Cargas permanentes	0.2	-0.0	0.0	0.0	0.0	-0.0	0.2	5.1	-0.6	0.0	0.0	0.0
		Sobrecarga	0.2	-0.0	-0.0	0.0	0.0	-0.0	0.2	5.1	-0.6	0.0	0.0	0.0
C31 [33.413;-3.682] (e=20.0 cm)	-2.00/0.80	Peso próprio	13.2	-0.0	0.0	-0.0	0.0	-0.0	13.2	440.1	-48.5	-0.0	0.0	0.0
		Cargas permanentes	0.2	-0.0	-0.0	0.0	-0.0	-0.0	0.2	5.4	-0.6	0.0	-0.0	-0.0
		Sobrecarga	0.2	-0.0	0.0	0.0	0.0	-0.0	0.2	5.4	-0.6	0.0	0.0	0.0
C32 [35.438;-3.682] (e=20.0 cm)	-2.00/0.80	Peso próprio	13.2	0.0	-0.0	-0.0	-0.0	-0.0	13.2	468.3	-48.7	-0.0	-0.0	-0.0
		Cargas permanentes	0.2	-0.0	0.0	0.0	0.0	-0.0	0.2	5.7	-0.6	0.0	0.0	0.0
		Sobrecarga	0.2	-0.0	-0.0	0.0	-0.0	-0.0	0.2	5.7	-0.6	0.0	-0.0	-0.0
C33 [37.636;-3.682] (e=20.0 cm)	-2.00/0.80	Peso próprio	16.8	0.3	-0.0	-0.0	-0.0	-0.0	16.8	633.2	-61.9	-0.0	-0.0	-0.0
		Cargas permanentes	0.2	0.0	-0.0	-0.0	-0.0	-0.0	0.2	9.0	-0.9	-0.0	-0.0	-0.0
		Sobrecarga	0.2	0.0	-0.0	-0.0	-0.0	-0.0	0.2	8.9	-0.9	-0.0	-0.0	-0.0
C34 [38.820;-2.669] (e=20.0 cm)	-2.00/0.80	Peso próprio	13.5	0.0	-0.2	0.0	0.0	0.0	13.5	522.7	-36.2	0.0	0.0	0.0
		Cargas permanentes	0.2	0.0	-0.0	0.0	-0.0	0.0	0.2	7.3	-0.5	0.0	-0.0	0.0
		Sobrecarga	0.2	0.0	-0.0	0.0	0.0	0.0	0.2	7.4	-0.5	0.0	0.0	0.0
C35 [38.820;-0.828] (e=20.0 cm)	-2.00/0.80	Peso próprio	10.4	0.0	-0.0	0.0	0.0	0.0	10.4	404.6	-8.6	0.0	0.0	0.0
		Cargas permanentes	0.1	-0.0	0.0	-0.0	-0.0	0.0	0.1	4.7	-0.1	-0.0	-0.0	-0.0
		Sobrecarga	0.1	0.0	0.0	0.0	-0.0	0.0	0.1	4.7	-0.1	0.0	-0.0	0.0
C36 [38.820;1.013] (e=20.0 cm)	-2.00/0.80	Peso próprio	13.2	0.0	-0.0	-0.0	0.0	0.0	13.2	512.7	13.3	-0.0	0.0	0.0
		Cargas permanentes	0.2	0.0	0.0	0.0	-0.0	0.0	0.2	6.4	0.2	0.0	-0.0	-0.0
		Sobrecarga	0.2	0.0	-0.0	-0.0	-0.0	0.0	0.2	6.4	0.2	-0.0	-0.0	0.0
C37 [38.820;3.038] (e=20.0 cm)	-2.00/0.80	Peso próprio	13.2	0.0	-0.0	0.0	-0.0	0.0	13.2	511.4	40.0	0.0	-0.0	0.0
		Cargas permanentes	0.2	0.0	0.0	-0.0	-0.0	0.0	0.2	6.3	0.5	-0.0	-0.0	-0.0
		Sobrecarga	0.2	0.0	0.0	-0.0	-0.0	0.0	0.2	6.3	0.5	-0.0	-0.0	0.0

Esforços e armaduras de pilares, paredes, cortinas e muros

MURO DE CONTENÇÃO - SESC ALTAMIRA

Data: 17/02/21

Planta: BASE

Pilar	Tramo (m)	Hipótese	Esforços locais na base do pilar						Esforços locais referidos à origem (X=0.00, Y=0.00, Z=-2.00)					
			N (kN)	Mx (kN·m)	My (kN·m)	Qx (kN)	Qy (kN)	T (kN·m)	N (kN)	Mx (kN·m)	My (kN·m)	Qx (kN)	Qy (kN)	T (kN·m)
C38 [38.820;5.063]	-2.00/0.80	Peso próprio	13.2	0.0	-0.0	-0.0	-0.0	0.0	13.2	511.4	66.7	-0.0	-0.0	0.0
(e=20.0 cm)		Cargas permanentes	0.2	0.0	0.0	-0.0	-0.0	0.0	0.2	6.3	0.8	-0.0	-0.0	-0.0
		Sobrecarga	0.2	0.0	0.0	-0.0	-0.0	0.0	0.2	6.3	0.8	-0.0	-0.0	0.0
C39 [38.820;7.088]	-2.00/0.80	Peso próprio	13.2	0.0	-0.0	-0.0	-0.0	0.0	13.2	511.4	93.4	-0.0	-0.0	0.0
(e=20.0 cm)		Cargas permanentes	0.2	0.0	0.0	-0.0	-0.0	0.0	0.2	6.3	1.2	-0.0	-0.0	-0.0
		Sobrecarga	0.2	0.0	0.0	-0.0	-0.0	0.0	0.2	6.3	1.1	-0.0	-0.0	-0.0
C40 [38.820;9.113]	-2.00/0.80	Peso próprio	13.2	0.0	-0.0	-0.0	-0.0	0.0	13.2	511.4	120.0	-0.0	-0.0	0.0
(e=20.0 cm)		Cargas permanentes	0.2	0.0	0.0	-0.0	-0.0	0.0	0.2	6.3	1.5	-0.0	-0.0	-0.0
		Sobrecarga	0.2	0.0	0.0	-0.0	-0.0	0.0	0.2	6.3	1.5	-0.0	-0.0	-0.0
C41 [38.820;11.138]	-2.00/0.80	Peso próprio	13.2	0.0	-0.0	-0.0	-0.0	0.0	13.2	511.4	146.7	-0.0	-0.0	-0.0
(e=20.0 cm)		Cargas permanentes	0.2	0.0	0.0	0.0	-0.0	0.0	0.2	6.3	1.8	0.0	-0.0	-0.0
		Sobrecarga	0.2	0.0	0.0	-0.0	-0.0	0.0	0.2	6.3	1.8	-0.0	-0.0	-0.0
C42 [38.820;13.163]	-2.00/0.80	Peso próprio	13.2	0.0	-0.0	-0.0	-0.0	0.0	13.2	511.4	173.4	-0.0	-0.0	-0.0
(e=20.0 cm)		Cargas permanentes	0.2	0.0	0.0	0.0	-0.0	0.0	0.2	6.3	2.2	0.0	-0.0	-0.0
		Sobrecarga	0.2	0.0	0.0	-0.0	-0.0	0.0	0.2	6.3	2.1	-0.0	-0.0	-0.0
C43 [38.820;15.188]	-2.00/0.80	Peso próprio	13.2	0.0	-0.0	0.0	-0.0	0.0	13.2	511.4	200.1	0.0	-0.0	-0.0
(e=20.0 cm)		Cargas permanentes	0.2	0.0	0.0	0.0	-0.0	0.0	0.2	6.3	2.5	0.0	-0.0	-0.0
		Sobrecarga	0.2	0.0	-0.0	-0.0	-0.0	0.0	0.2	6.3	2.5	-0.0	-0.0	-0.0
C44 [38.820;17.213]	-2.00/0.80	Peso próprio	13.2	0.0	-0.0	0.0	-0.0	0.0	13.2	511.4	226.7	0.0	-0.0	-0.0
(e=20.0 cm)		Cargas permanentes	0.2	0.0	0.0	0.0	-0.0	0.0	0.2	6.3	2.8	0.0	-0.0	-0.0
		Sobrecarga	0.2	0.0	-0.0	-0.0	-0.0	-0.0	0.2	6.3	2.8	-0.0	-0.0	-0.0
C46 [38.820;19.238]	-2.00/0.80	Peso próprio	13.2	0.0	-0.0	0.0	-0.0	0.0	13.2	511.4	253.4	0.0	-0.0	-0.0
(e=20.0 cm)		Cargas permanentes	0.2	0.0	0.0	0.0	-0.0	0.0	0.2	6.3	3.2	0.0	-0.0	-0.0
		Sobrecarga	0.2	-0.0	-0.0	-0.0	-0.0	-0.0	0.2	6.3	3.1	-0.0	-0.0	0.0
C47 [38.820;21.263]	-2.00/0.80	Peso próprio	13.2	0.0	0.0	0.0	-0.0	0.0	13.2	511.4	280.1	0.0	-0.0	-0.0
(e=20.0 cm)		Cargas permanentes	0.2	0.0	0.0	0.0	-0.0	0.0	0.2	6.3	3.5	0.0	-0.0	-0.0
		Sobrecarga	0.2	-0.0	-0.0	-0.0	0.0	-0.0	0.2	6.3	3.4	-0.0	0.0	0.0
C48 [38.820;23.288]	-2.00/0.80	Peso próprio	13.2	0.0	0.0	0.0	-0.0	0.0	13.2	511.4	306.8	0.0	-0.0	-0.0
(e=20.0 cm)		Cargas permanentes	0.2	-0.0	0.0	0.0	-0.0	0.0	0.2	6.3	3.8	0.0	-0.0	-0.0
		Sobrecarga	0.2	-0.0	-0.0	-0.0	0.0	-0.0	0.2	6.3	3.8	-0.0	0.0	0.0
C49 [38.820;25.313]	-2.00/0.80	Peso próprio	13.2	0.0	0.0	0.0	-0.0	0.0	13.2	511.4	333.5	0.0	-0.0	-0.0
(e=20.0 cm)		Cargas permanentes	0.2	0.0	0.0	0.0	-0.0	0.0	0.2	6.3	4.2	0.0	-0.0	-0.0
		Sobrecarga	0.2	0.0	-0.0	-0.0	0.0	-0.0	0.2	6.3	4.1	-0.0	0.0	0.0
C50 [38.820;27.338]	-2.00/0.80	Peso próprio	13.2	-0.0	0.0	0.0	-0.0	0.0	13.2	511.4	360.2	0.0	-0.0	-0.0
(e=20.0 cm)		Cargas permanentes	0.2	-0.0	0.0	-0.0	-0.0	0.0	0.2	6.4	4.6	-0.0	-0.0	0.0
		Sobrecarga	0.2	-0.0	-0.0	-0.0	0.0	-0.0	0.2	6.3	4.4	-0.0	0.0	0.0
C51 [38.820;29.363]	-2.00/0.80	Peso próprio	13.2	0.0	0.0	0.0	-0.0	0.0	13.2	511.4	386.8	0.0	-0.0	-0.0
(e=20.0 cm)		Cargas permanentes	0.2	0.0	0.0	0.0	-0.0	0.0	0.2	6.5	4.9	0.0	-0.0	-0.0
		Sobrecarga	0.2	0.0	-0.0	-0.0	0.0	-0.0	0.2	6.3	4.7	-0.0	0.0	-0.0
C52 [38.820;31.388]	-2.00/0.80	Peso próprio	13.2	-0.0	0.0	-0.0	-0.0	0.0	13.2	511.3	413.4	-0.0	-0.0	0.0
(e=20.0 cm)		Cargas permanentes	0.2	-0.0	0.0	-0.0	-0.0	-0.0	0.2	5.9	4.8	-0.0	-0.0	0.0
		Sobrecarga	0.2	-0.0	-0.0	-0.0	0.0	-0.0	0.2	6.3	5.1	-0.0	0.0	0.0
C53 [38.820;33.413]	-2.00/0.80	Peso próprio	13.2	0.0	-0.0	0.0	-0.0	0.0	13.2	511.0	439.8	0.0	-0.0	-0.0
(e=20.0 cm)		Cargas permanentes	0.1	0.0	-0.0	0.0	0.0	0.0	0.1	4.0	3.4	0.0	0.0	-0.0
		Sobrecarga	0.2	0.0	-0.0	0.0	0.0	-0.0	0.2	6.3	5.4	0.0	0.0	-0.0
C54 [38.820;35.438]	-2.00/0.80	Peso próprio	13.4	-0.0	0.2	0.0	-0.0	0.0	13.4	520.8	475.6	0.0	-0.0	-0.0
(e=20.0 cm)		Cargas permanentes	0.0	-0.0	-0.2	-0.0	0.0	0.0	0.0	0.0	-0.2	-0.0	0.0	0.0
		Sobrecarga	0.2	0.0	0.0	0.0	-0.0	-0.0	0.2	7.2	6.6	0.0	-0.0	-0.0
C56 [0.100;-1.891]	-2.00/0.80	Peso próprio	27.0	0.0	-0.8	-0.0	-0.0	-0.0	27.0	2.7	-51.8	-0.0	-0.0	-0.0
(e=20.0 cm)		Cargas permanentes	0.6	0.0	-0.0	0.0	-0.0	-0.0	0.6	0.1	-1.1	0.0	-0.0	0.0
		Sobrecarga	0.5	-0.0	-0.1	-0.0	0.0	-0.0	0.5	0.1	-1.1	-0.0	0.0	-0.0
C57 [37.685;36.450]	-2.00/0.80	Peso próprio	15.1	1.1	-0.0	-0.0	0.0	0.0	15.1	569.3	549.6	-0.0	0.0	0.0
(e=20.0 cm)		Cargas permanentes	-2.7	7.3	-0.0	-0.0	-0.0	0.0	-2.7	-95.4	-99.4	-0.0	-0.0	-0.0
		Sobrecarga	0.2	0.0	0.0	-0.0	0.0	0.0	0.2	8.0	7.7	-0.0	0.0	0.0
Somatório		Peso próprio							2492.2	62672	20343	-0.0	0.0	-0.0
		Cargas permanentes							36.2	659.2	731.7	-247.7	403.0	13484
		Sobrecarga							36.2	931.2	287.9	0.0	0.0	-0.0