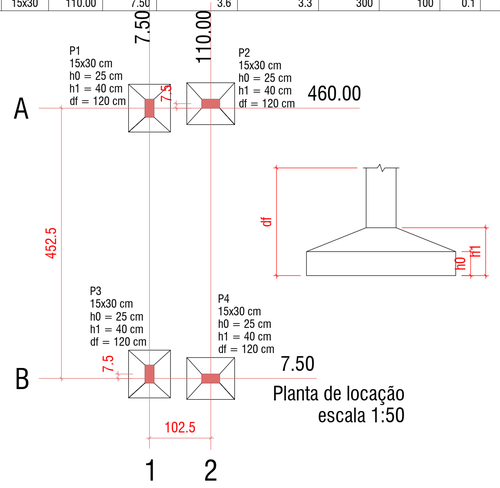
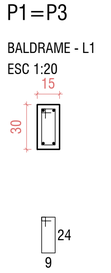
Pilar										Fundação				
Nome	Seção (cm)	X (cm)	Y (cm)	Carga Máx. (tf)	Carga Mín. (tf)	Mx (kgf.m)	My (kgf.m)	Fx (tf)	Fy (tf)	Lado B (cm)	Lado H (cm)	h0 / ha (cm)	h1 / hb (cm)	df (cm)
P1	15x30	7.50	460.00	3.1	2.9	300	100	0.1	0.6	70	80	25	40	120
P2	15x30	110.00	467.50	3.2	3.0	200	100	0.1	0.5	70	80	25	40	120
P3	15x30	7.50	15.00	3.5	3.2	300	100	0.1	0.6	70	80	25	40	120
P4	15x30	110.00	7.50	3.6	3.3	300	100	0.1	0.6	70	80	25	40	120



Planta de locação
escala 1:50

P1=P3

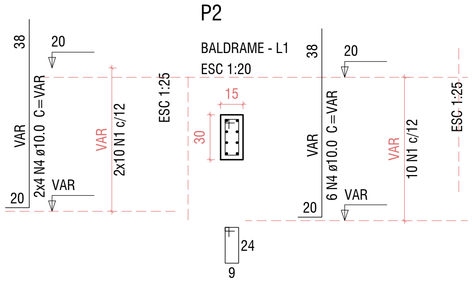
BALDRAME - L1
ESC 1:20



2x10 N1 ø5.0 C=78

P2

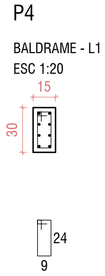
BALDRAME - L1
ESC 1:20



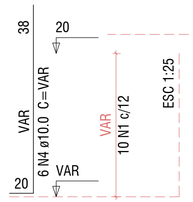
10 N1 ø5.0 C=78

P4

BALDRAME - L1
ESC 1:20

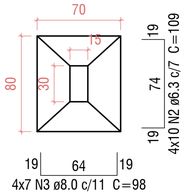


10 N1 ø5.0 C=78

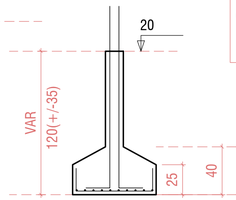


S1=S2=S3=S4

PLANTA
ESC 1:25



CORTE
ESC 1:25



Solo compactado sobre a sapata
peso específico > 1600.00 kgf/m³

S4

Relação do aço

AÇO	N	DIAM (mm)	QUANT (Barras)	UNIT (cm)	C.TOTAL (cm)
CA60	1	5.0	40	78	3120
CA50	2	6.3	40	109	4360
	3	8.0	28	98	2744
	4	10.0	20	VAR	VAR

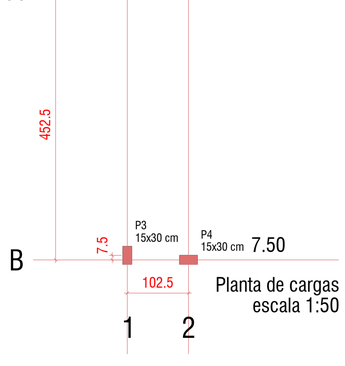
Resumo do aço

AÇO	DIAM (mm)	C.TOTAL (m)	PESO + 15 % (kg)
CA50	6.3	43.6	12.3
	8.0	27.5	12.5
	10.0	35.2	25
CA60	5.0	31.2	5.5

PESO TOTAL (kg)	
CA50	49.7
CA60	5.5

Volume de concreto (C-25) = 0.93 m³
Área de forma = 7.32 m²

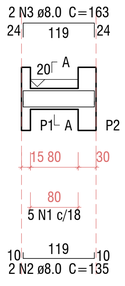
Pilar									
Nome	Seção (cm)	X (cm)	Y (cm)	Carga Máx. (tf)	Carga Mín. (tf)	Mx (kgf.m)	My (kgf.m)	Fx (tf)	Fy (tf)
P1	15x30	7.50	460.00	3.1	2.9	300	100	0.1	0.6
P2	15x30	110.00	467.50	3.2	3.0	200	100	0.1	0.5
P3	15x30	7.50	15.00	3.5	3.2	300	100	0.1	0.6
P4	15x30	110.00	7.50	3.6	3.3	300	100	0.1	0.6



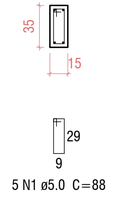
Planta de cargas
escala 1:50

V1

ESC 1:50



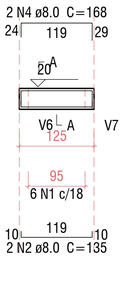
SEÇÃO A-A
ESC 1:25



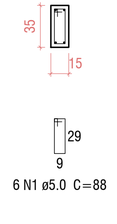
5 N1 ø5.0 C=88

V2

ESC 1:50



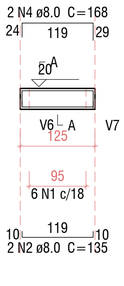
SEÇÃO A-A
ESC 1:25



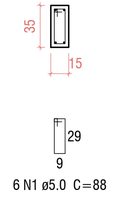
6 N1 ø5.0 C=88

V3

ESC 1:50



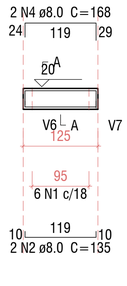
SEÇÃO A-A
ESC 1:25



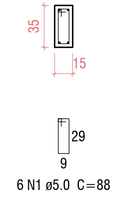
6 N1 ø5.0 C=88

V4

ESC 1:50



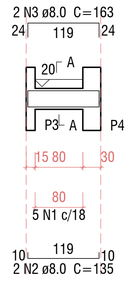
SEÇÃO A-A
ESC 1:25



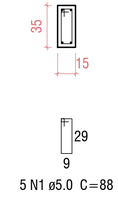
6 N1 ø5.0 C=88

V5

ESC 1:50



SEÇÃO A-A
ESC 1:25

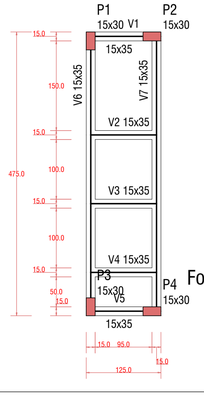


5 N1 ø5.0 C=88

Relação do aço

V1 V2 V3 V4 V5 V6 V7

AÇO	N	DIAM (mm)	QUANT (Barras)	UNIT (cm)	C.TOTAL (cm)
CA60	1	5.0	77	88	6776
CA50	2	8.0	10	135	1350
	3	8.0	4	163	652
	4	8.0	6	168	1008
	5	8.0	4	485	1940
	6	8.0	2	521	1042
	7	10.0	2	517	1034



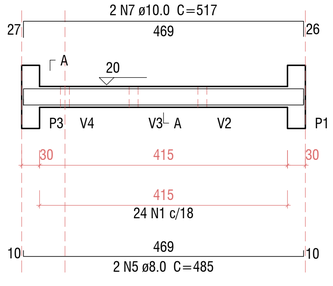
Vigas			
Nome	Seção (cm)	Elevação (cm)	Nível (cm)
V1	15x35	0	20
V2	15x35	0	20
V3	15x35	0	20
V4	15x35	0	20
V5	15x35	0	20
V6	15x35	0	20
V7	15x35	0	20

Características dos materiais	
fck (kgf/cm²)	Ecs (kgf/cm²)
250	238000

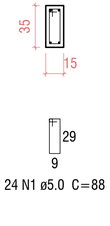
Forma do pavimento BALDRAME
escala 1:50

V6

ESC 1:50



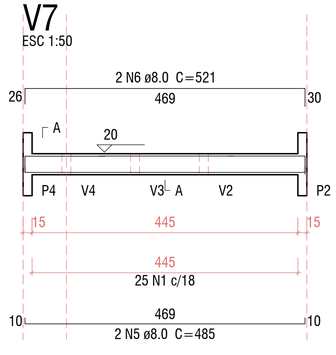
SEÇÃO A-A
ESC 1:25



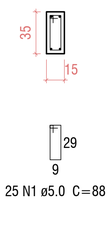
24 N1 ø5.0 C=88

V7

ESC 1:50



SEÇÃO A-A
ESC 1:25



25 N1 ø5.0 C=88

Resumo do aço

AÇO	DIAM (mm)	C.TOTAL (m)	PESO + 15 % (kg)
CA50	8.0	60	27.2
	10.0	10.4	7.3
CA60	5.0	67.8	12

PESO TOTAL (kg)	
CA50	34.5
CA60	12

Volume de concreto (C-25) = 0.83 m³
Área de forma = 13.39 m²

PREFEITURA MUNICIPAL DE PARANAGUÁ

TÍTULO: PROJETO ESTRUTURAL

OBRA: U.B.S. PRAIA DE ENCANTADAS - ILHA DO MEL

CONTEÚDO: DEPOSITO DE LIXO - PLANTA DE LOCAÇÃO DE SAPATAS E PILARES - SAPATAS - FORMA BALDRAME E VIGAS BALDRAME

RESP. TÉCNICO PROJETO: RUY JOSÉ RIBEIRO
CREA: 18.036-D

PROPRIETÁRIO: MUNICÍPIO DE PARANAGUÁ

DATA REVISÃO	ESCALA	DESENHO	ÁREA CONSTRUÍDA	PRANCHA
JULHO/2017	INDICADA	RJR	405,95 m²	10/12