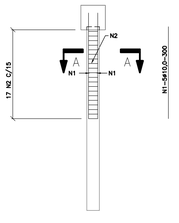
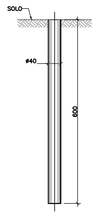
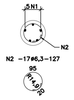
FUNDAÇÃO



ESTACAS
ESC.: 1:50



DETALHE TÍPICO – ESTACA ESCAVADA
ESC.: 1:50



CORTE A-A
ESC.: 1:50

Lista de Barras de Estacas (172 Estacas)

QUANTITATIVO PARA 1 ESTACA

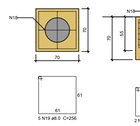
Pos.	Aço	Diam. (mm)	Quant.	C. Unit. (cm)	C. Total (m)
1	CA50	10	5	300	15,00
2	CA50	6,3	17	127	21,59

Resumo material Para as 172 estacas

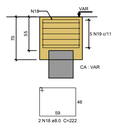
Aço	Diam. (mm)	Comprimento (m)	kg/m	Massa Parcial (kg)
CA50	6,3	37,13	0,245	909,66
CA50	10	25,80	0,617	1591,86
		Massa Total (kg)		2501,66
Volume concreto fck 30 MPa: 129,72 m3				

BLOCOS DE FUNDAÇÃO (EL 000)

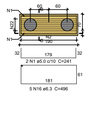
B1=B10=B11=B12=B39=B40=B46=B47=B49=B50=B51=B55=B58=B62
=B63=B66=B69=B71=B76=B77=B80=B81=B83=B84=P91
=B92=B93=B98=B99=B100=B101=B102=B118=BN1=BN2
=BN3=BN4=BN8=BN17
1xC40
PLANTA
ESC 1:25



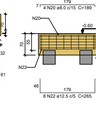
CORTE
ESC 1:25



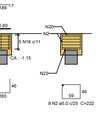
B2=B3=B6=B7=B8=B9=B13=B14=B19=B20=B21=B22=B29
B32=B36=B45=B48=B61=B64=B73=B74=B75=B78=B79=
B85=B86=B87=B96=B106
2xC40
PLANTA
ESC 1:50



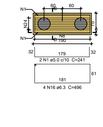
CORTE A-A
ESC 1:50



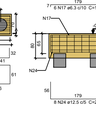
CORTE B-B
ESC 1:50



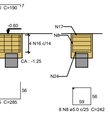
B4=B5=B30=B31=B34=B43=B60=B97=B103=B104=B105
2xC40
PLANTA
ESC 1:50



CORTE A-A
ESC 1:50



CORTE B-B
ESC 1:50



Relação do aço

12x8/16 3x8/89	29x8/20 8/89-1	11x8/33 39x8/N17

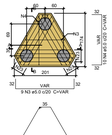
AÇO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
CA50	1	5.0	60	241	15260
	2	5.0	232	222	51504
	3	5.0	108	VAR	VAR
	4	5.0	120	VAR	VAR
	5	5.0	120	VAR	VAR
	6	5.0	108	VAR	VAR
	7	5.0	60	582	34920
	8	5.0	88	242	21296
	9	5.0	54	242	13068
	10	5.0	54	190	10260
	11	5.0	54	190	10260
	12	5.0	12	292	3504
	13	5.0	11	263	2893
	14	5.0	24	240	5760
	15	5.0	10	936	9360
	16	5.0	116	189	21924
	17	6.3	58	190	12540
	18	8.0	76	222	16872
	19	8.0	100	299	46640
	20	8.0	116	189	21924
	21	10.0	10	VAR	VAR
	22	12.5	232	265	61480
	23	12.5	58	299	17342
	24	12.5	58	299	25080
	25	12.5	48	315	15168

Resumo do aço

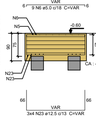
AÇO	DIAM (mm)	C.TOTAL (m)	QUANT + 10 % (Barras)	PESO + 10 % (kg)
CA50	6.3	1002.9	98	286.7
	8.0	874.4	81	379.5
	10.0	143.8	16	29.6
	12.5	1479.9	135	1561.7
CA60	5.0	2439.2	297	414.6
PESO TOTAL (kg)				
CA50	2256.9			
CA60	414.6			

Volume de concreto (C-30) = 89.54 m³
Área de forma = 323.52 m²

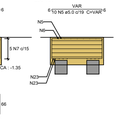
B15=B16=B17=B18=B33=B35=B42=B44=B59=B67=B88=B95
3xC40
PLANTA
ESC 1:50



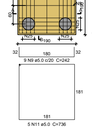
CORTE A-A
ESC 1:50



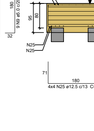
CORTE B-B
ESC 1:50



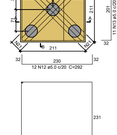
B41=B68=B89
4xC40
PLANTA
ESC 1:50



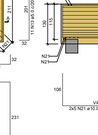
CORTE A-A + CORTE B-B
ESC 1:50



EL 000
B72
5xC40
PLANTA
ESC 1:50

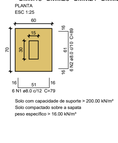


CORTE A-A + CORTE B-B
ESC 1:50



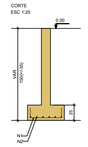
SAPATAS e PILARES DO MURO FRONTAL

SMM1=SMM2=SMM3=SMM4=SMM5=SMM6=SMM7=SMM8=SMM9=SMM10
=SMM11=SMM12=SMM13=SMM14=SMM15=SMM16
=SMM19=SMM20=SMM21=SMM22=SMM23
PLANTA
ESC 1:25

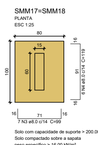


Solo com capacidade de suporte = 200,00 kN/m²
Solo compactado sobre a sapata
peso específico = 16,00 kN/m³

CORTE
ESC 1:25

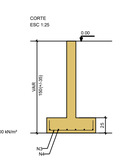


SMM17=SMM18
PLANTA
ESC 1:25



Solo com capacidade de suporte = 200,00 kN/m²
Solo compactado sobre a sapata
peso específico = 16,00 kN/m³

CORTE
ESC 1:25



Relação do aço das sapatas

2145/SM1 2x5/MI18

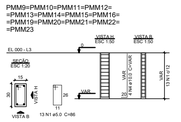
AÇO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
CA50	1	8.0	126	89	11214
	2	8.0	14	89	1246
	3	8.0	12	113	1426

Resumo do aço

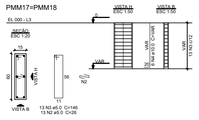
AÇO	DIAM (mm)	C.TOTAL (m)	QUANT + 10 % (Barras)	PESO + 10 % (kg)
CA50	8.0	238.9	27	104.1
PESO TOTAL (kg)				
CA50	104.1			

Volume de concreto (C-20) = 2.61 m³
Área de forma = 15.45 m²

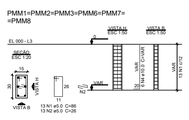
PMM9=PMM10=PMM11=PMM12=
=PMM13=PMM14=PMM15=PMM16=
=PMM18=PMM20=PMM21=PMM22=
=PMM23



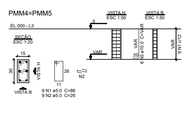
PMM17=PMM18



PMM1=PMM2=PMM3=PMM6=PMM7=
=PMM8



PMM4=PMM5



Relação do aço dos pilares

6xPMM1 2xPMM4 13xPMM9
2xPMM17

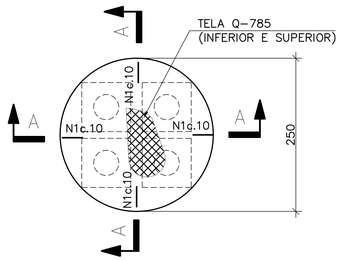
AÇO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
CA50	1	8.0	260	89	23140
	2	5.0	102	26	3172
	3	5.0	20	VAR	3700
	4	10.0	100	VAR	VAR
	5	10.0	12	VAR	VAR

Resumo do aço

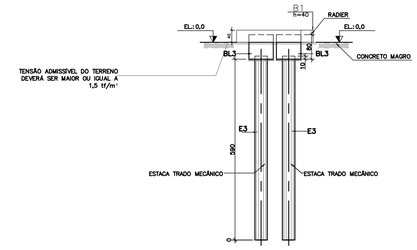
AÇO	DIAM (mm)	C.TOTAL (m)	QUANT + 10 % (Barras)	PESO + 10 % (kg)
CA50	10.0	134.8	16	110.2
	8.0	204.2	24	83.3
PESO TOTAL (kg)				
CA50	118.2			
CA60	83.3			

Volume de concreto (C-30) = 1.36 m³
Área de forma = 31.95 m²

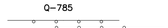
FUNDAÇÃO E BASE DO RESERVATÓRIO DE 15.000IL



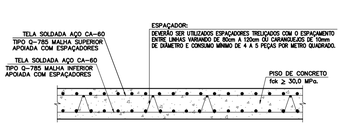
ARMADURA BASE DO RESERVATÓRIO
ESC. 1:25



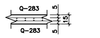
CORTE A-A
ESC.:1:50



EMENDAS
S/ ESC.



DETALHE TÍPICO DO RADIER
S/ ESC.



ARMAÇÃO – DETALHE
ESC. 1:25

DETALHE DE BORDA
S/ ESC.

QUANTITATIVO PARA RADIER

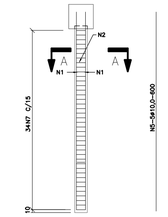
Pos.	Aço	Diam. (mm)	Quant.	C. Unit. (cm)	C. Total (m)
1	CA50	8	79	102	80,58

Resumo material Radier

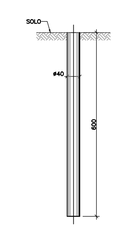
Aço	Diam. (mm)	Comprimento (m)	kg/m	Massa Parcial (kg)
CA50	8	80,58	0,395	31,83
		Massa Total (kg)		31,83
Volume concreto fck 30 MPa: 2,0 m3 Forma : 3,10 m2 Volume concreto fck 10 MPa: 0,20 m3 (espessura contreto 5 cm)				

QUANTITATIVO PARA TELA Q-785

Aço	Diam. (mm)	Area (m²)	kg/m²	Massa Parcial (kg)
CA50	10,0x10,0	4,90	12,46	61,13
		Massa Total (kg)		61,13



ESTACAS E1 A E4 (4x)
ESC.: 1:50



DETALHE TIPICO – ESTACA ESCAVADA
ESC.: 1:50

CORTE A-A
ESC.: 1:50

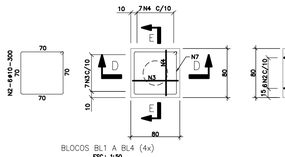
Lista de Barras de Estacas (4 Estacas)

QUANTITATIVO PARA 1 ESTACA

Pos.	Aço	Diam. (mm)	Quant.	C. Unit. (cm)	C. Total (m)
5	CA50	10	6	600	36,00
7	CA50	6,3	34	127	43,18

Resumo material Para as 4 estacas

Aço	Diam. (mm)	Comprimento (m)	kg/m	Massa Parcial (kg)
CA50	6,3	172,70	0,245	42,32
CA50	10	144,00	0,617	88,85
		Massa Total (kg)		131,16
Volume concreto fck 30 MPa: 3 m3				



Lista de Barras dos Blocos(4 Estacas)

QUANTITATIVO PARA 1 BLOCO

Pos.	Aço	Diam. (mm)	Quant.	C. Unit. (cm)	C. Total (m)
2	CA50	10	8	300	18,00
3	CA50	10	7	288	12,44
4	CA50	10	7	284	12,27

Resumo material Para as 4 blocos

Aço	Diam. (mm)	Comprimento (m)	kg/m	Massa Parcial (kg)
CA50	10	232,16	0,617	143,24
		Massa Total (kg)		143,24
Volume concreto fck 30 MPa: 2,05m3 Forma : 8,40m2 Volume concreto fck 10 MPa: 0,04 m3 (espessura contreto 5 cm)				

NOTAS

1 – MEDIDAS EM CENTÍMETRO, ELEVAÇÕES EM METRO, BITOLAS EM MILIMETRO;

2 – CLASSE DE AGRESSIVIDADE AMBIENTAL IV (TABELA 6.1 DA NBR6118);

3 – CONCRETO ESTRUTURAL: C30 (fck ≥ 30 MPa), COM FATOR ÁGUA – CIMENTO (a/c) ≤ 0,55 e

MÓDULO DE ELASTICIDADE (Eci) ≥ 30672 MPa, PARA BRITA DE GRANITO OU GNAISSE,

EXCETO QUANDO INDICADO;

4 – CIMENTO CPIII–RS;

5 – MÓDULO DE ELASTICIDADE SECANTE MÍNIMO DO CONCRETO ANTES DA DESFORMA = 26,07 GPa;

6 – fyk = 500 MPa;

7 – AS MEDIDAS, COORDENADAS E ELEVAÇÕES APRESENTADAS EM PROJETO DEVERÃO SER

CONFERIDAS IN LOCO;

8 – COBRIMENTO DAS ARMADURAS IGUAL A 3 cm.

REV.	T.E.	DESCRIÇÃO	PROJ.	PROJ.	VER.	APR.	AUT.	DATA
02	B	REVISÃO GERAL	MOQ	MOQ	MGW	MGW	AMC	11/03/22
01	B	REVISÃO GERAL	MOQ	MOQ	MGW	MGW	AMC	18/02/22
00	B	EMISSÃO INICIAL	MOQ	MOQ	MGW	MGW	AMC	20/12/21

REVISÕES

T.E. TIPO DE EMISSÃO
(A) PRELIMINAR (D) PARA COTAÇÃO (G) CONFORME CONSTRUÍDO
(B) PARA APROVAÇÃO (E) PARA CONSTRUÇÃO (H) CANCELADO
(C) PARA CONHECIMENTO (F) CONFORME COMPRADO

APROVAÇÃO		ASSINATURA	DATA
RT	ASSINATURA	PABLO HENRIQUE ALVES SILVA Assinado de forma digital por PABLO HENRIQUE ALVES SILVA Dados: 2021.01.12 11:48:13 -03'00'	DEZ/2021
	NOME	PABLO HENRIQUE ALVES SILVA CREA/MG: 312850/D	
PROJETISTA		PABLO HENRIQUE ALVES SILVA CREA/MG: 312850/D	
PROJETISTA			
SUPERVISOR		FABÍOLA BATISTA PIRES CREA/MG: 78.851/D	

CONEPP CONSULTORIA

PREFEITURA MUNICIPAL DE MURIAÉ
SECRETARIA DE EDUCAÇÃO

PROJETO ESTRUTURAL

PROJETO EXECUTIVO
BAIRRO SAFIRA
ESCOLA MUNICIPAL SEBASTIÃO LAVIOLA
ESTACAS DA EDIFICAÇÃO, BLOCOS DE FUNDAÇÃO (EL 000), FUNDAÇÃO/BASE RESERVATÓRIO E SAPATAS MURO FRONTAL (EL 000)

ESCALA: INDICADA

REV.: 02 | Nº: OS–06/2021 | FOLHA: 02