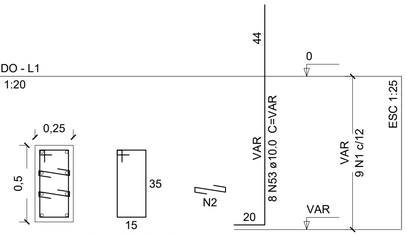
P1=P3=P4=P7

FUNDO - L1
ESC 1:20

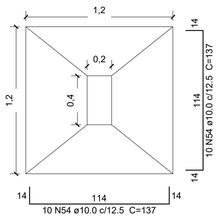


9 N1 ø5.0 C=112

18 N2 ø5.0 C=30

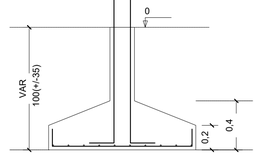
S1=S3=S4=S7

PLANTA
ESC 1:25



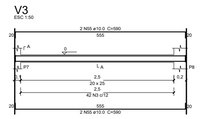
Solo com capacidade de suporte > 22.00 tf/m²
Solo compactado sobre a sapata
peso específico > 16.00 kN/m³

CORTE
ESC 1:25



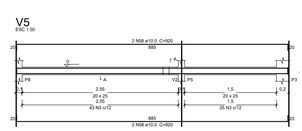
SEÇÃO A-A
ESC 1:25

V3
ESC 1:50



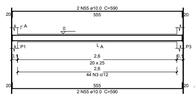
42 N3 ø5.0 C=82

V5
ESC 1:50



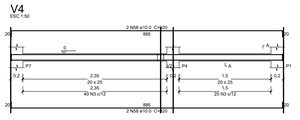
68 N3 ø5.0 C=82

V1
ESC 1:50



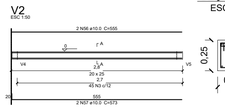
44 N3 ø5.0 C=82

V4
ESC 1:50



65 N3 ø5.0 C=82

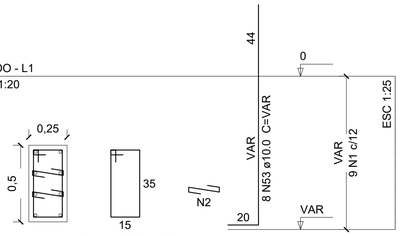
V2
ESC 1:50



45 N3 ø5.0 C=82

P5=P8

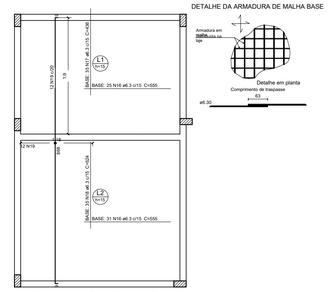
FUNDO - L1
ESC 1:20



9 N1 ø5.0 C=112

18 N2 ø5.0 C=30

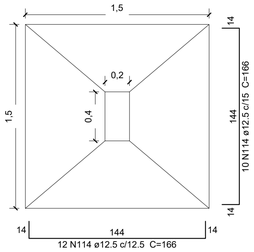
DETALHE DA ARMADURA DE MALHA BASE



Armação superior do radier do pavimento Fundo
escala 1:50

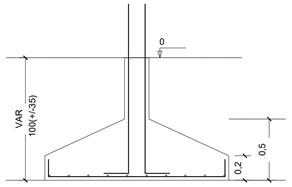
S5=S8

PLANTA
ESC 1:25



Solo com capacidade de suporte > 22.00 tf/m²
Solo compactado sobre a sapata
peso específico > 16.00 kN/m³

CORTE
ESC 1:25



SEÇÃO A-A
ESC 1:25

Relação do aço

Cobertura:	Negativos	3xP1	
	5xP2	Positivos	
	V1	V2	
	V3	V4	
	V5	V6	
Fundo:	Negativos	4xP1	
	2xP5	Positivos	
	4xS1	2xS5	
	V1	V2	
	V3	V4	
	V5		
Laje:	LE6	Negativos	
	4xP1	P3	
	2xP6	P8	
	Positivos	Punção	
	V1	V2	
	V4	V5	
	V6	V7	
	V8		
Tampa:	LE1	5xP1	
	2xP6	P8	
	2xS6	V1	
	V2	V3	
	V4	V5	
	V6	V7	
	V8	V9	

AÇO	N	DIAM	Q	UNIT (cm)	C.TOTAL (cm)
CA60	1	5.0	540	112	60480
	2	5.0	842	30	25260
	3	5.0	264	82	21648
	4	5.0	230	92	21160
	5	5.0	120	132	15840
	6	5.0	19	102	1938
	7	5.0	59	462	27258
	8	5.0	12	163	1956
	9	5.0	6	59	354
	10	5.0	34	131	4454
	11	5.0	42	82	3444
	12	5.0	14	184	2576
	13	5.0	22	78	1716
	14	5.0	2	100	200
	15	5.0	16	121	1936
CA50	16	6.3	191	555	106005
	17	6.3	70	436	30520
	18	6.3	70	524	36680
	19	6.3	12	883	10596
	20	6.3	12	83	996
	21	6.3	8	158	1264
	22	6.3	7	253	1771
	23	6.3	44	462	20328
	24	6.3	1	123	123
	25	6.3	3	140	420
	26	6.3	56	885	49560
	27	6.3	42	132	5544
	28	6.3	3	72	216
	29	6.3	51	425	21675
	30	6.3	89	545	48505
	31	6.3	26	355	9230
	32	6.3	3	79	237
	33	6.3	16	271	4336
	34	6.3	51	675	34425
	35	6.3	7	265	1855
	36	6.3	5	175	875
	37	6.3	6	305	1830
	38	6.3	4	105	420
	39	6.3	2	245	490
	40	6.3	8	191	1528
	41	6.3	9	31	279
	42	6.3	26	131	3406
	43	6.3	10	228	2280
	44	6.3	15	129	1935
	45	6.3	6	VAR	VAR
	46	8.0	7	153	1071
	47	8.0	7	135	945
	48	8.0	4	575	2300
	49	8.0	12	132	1584
	50	8.0	4	545	2180
	51	8.0	34	245	8330
	52	8.0	12	192	2304
	53	10.0	48	VAR	VAR
	54	10.0	80	137	10960
	55	10.0	8	590	4720
	56	10.0	2	555	1110
	57	10.0	2	573	1146
	58	10.0	12	920	11040
	59	10.0	12	VAR	VAR
	60	10.0	24	117	2808
	61	10.0	46	244	11224
	62	10.0	2	197	394
	63	10.0	2	87	174
	64	10.0	6	195	1170
	65	10.0	2	170	340
	66	10.0	2	217	434
	67	10.0	2	298	596
	68	10.0	2	328	656
	69	10.0	2	190	380
	70	10.0	2	218	436
	71	10.0	2	198	396
	72	10.0	2	218	436
	73	10.0	6	580	3480
	74	10.0	2	624	1248
	75	10.0	13	435	5655
	76	10.0	7	451	3157
	77	10.0	66	297	19602
	78	10.0	42	344	14448
	79	10.0	2	634	1268
	80	10.0	6	112	672
	81	10.0	4	295	1180
	82	10.0	1	559	559
	83	10.0	4	562	2248
	84	10.0	3	566	1698
	85	10.0	8	710	5680
	86	10.0	1	349	349
	87	10.0	4	352	1408
	88	10.0	2	356	712
	89	10.0	4	758	3032
	90	10.0	1	542	542
	91	10.0	3	546	1638
	92	10.0	1	362	362
	93	10.0	2	366	732
	94	10.0	1	300	300
	95	10.0	1	646	646
	96	10.0	4	606	2424
	97	10.0	2	390	780
	98	10.0	2	416	832
	99	10.0	2	604	1208
	100	10.0	2	370	740
	101	10.0	2	374	748
	102	10.0	1	315	315
	103	10.0	1	336	336
	104	10.0	4	738	2952
	105	10.0	1	341	341
	106	10.0	1	280	280
	107	10.0	2	627	1254
	108	10.0	2	410	820
	109	10.0	2	408	816
	110	10.0	8	449	3592
	111	10.0	7	194	1358
	112	10.0	6	372	2232
	113	10.0	6	130	780
	114	12.5	44	166	7304
	115	12.5	2	652	1304
	116	12.5	8	659	5272
	117	12.5	1	582	582
	118	12.5	7	589	4123
	119	12.5	1	912	912
	120	12.5	7	919	6433
	121	12.5	2	982	1964
	122	12.5	8	989	7912
	123	12.5	1	551	551
	124	12.5	1	555	555
	125	12.5	1	572	572
	126	12.5	7	579	4053
	127	16.0	1	588	2352

DETALHE DA ARMADURA DE MALHA BASE

Armação inferior do radier do pavimento Fundo
escala 1:50

P6=P9

TAMPA - L2
ESC 1:20

13 N4 ø5.0 C=92

13 N2 ø5.0 C=30

S6=S9

PLANTA
ESC 1:25

Solo com capacidade de suporte > 20.00 tf/m²
Solo compactado sobre a sapata
peso específico > 16.00 kN/m³

CORTE
ESC 1:25

V1
ESC 1:50

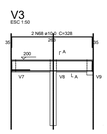
SEÇÃO A-A
ESC 1:40

V2
ESC 1:50

SEÇÃO A-A
ESC 1:25

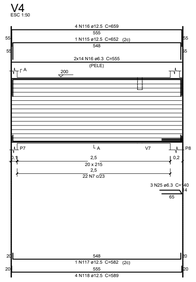
6 N5 ø5.0 C=132

V3
ESC 1:50



11 N6 ø5.0 C=102

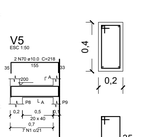
V4
ESC 1:50



SEÇÃO A-A
ESC 1:40

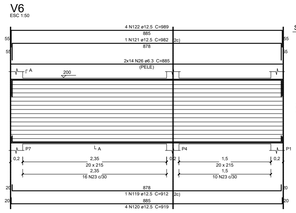
SEÇÃO A-A
ESC 1:25

V5
ESC 1:50



7 N1 ø5.0 C=112

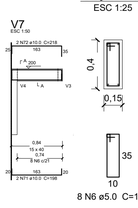
V6
ESC 1:50



SEÇÃO A-A
ESC 1:40

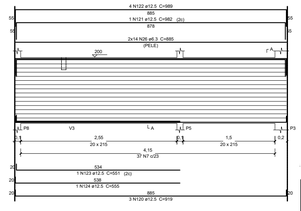
SEÇÃO A-A
ESC 1:25

V7
ESC 1:50

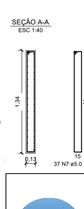


8 N6 ø5.0 C=102

V8
ESC 1:50



SEÇÃO A-A
ESC 1:40



P1=P3=P4=P5=P7

TAMPA - L2

ESC 1:20

17 N1 ø5.0 C=112

34 N2 ø5.0 C=30

P8

TAMPA - L2

ESC 1:20

17 N1 ø5.0 C=112

34 N2 ø5.0 C=30

Resumo do aço

AÇO	DIAM	C.TOTAL (m)	PESO + 10 % (kg)
CA50	6.3	3991.3	1074.3
	8.0	187.2	81.2
	10.0	1511.7	1025.2
	12.5	415.4	440.2
	16.0	23.6	40.8
CA60	5.0	1902.2	322.5
PESO TOTAL			
CA50	2661.7		
CA60	322.5		

Vol. de concreto total (C-20) = 38.21 m³
Vol. de concreto total (C-25) = 10.09 m³
Área de forma total = 444.05 m²

REVISÃO	DATA DA REVISÃO
REVISÃO 4	DATA DA REVISÃO
REVISÃO 3	DATA DA REVISÃO
REVISÃO 2	DATA DA REVISÃO
REVISÃO 1	DATA DA REVISÃO
RESPONSÁVEL	DATA

DEMSUR

Captação do Rio Preto		AP - 468
LOCAL DA OBRA: Captação do Rio Glória - Muriaé - MG PCH Ormeu Junqueira Botelho		MURIAÉ – MG
EXTENSÃO DA OBRA: 210,35 m²	ESCALA: INDICADA	DATA: 04/04/2019

RESPONSÁVEL TÉCNICO: DEMSUR - DEPARTAMENTO MUNICIPAL DE SANEAMENTO URBANO

JORGE CÉLIO FRAGA GODINHO ENG° CIVIL – CREA RJ 2014140456/D	GUSTAVO GORETTI RODRIGUES DIRETOR DE DIVISÃO DE ÁGUAS E ESGOTOS	GERALDO V. DE FREITAS JUNIOR DIRETOR GERAL

FORMATO A1