

Relação do aço

PILOTE	DIAM (mm)	QUANT (Barra)	UNIT (cm)	C.TOTAL (cm)
P7	2xP8	10	78	780
P10	P11	49	98	4802
P17	P18	10	68	680
P22	3xP35	78	3276	3276
P42	P53	25	1050	1050
7xS14	2xS32	42	118	4956
		84	36	3024
		12	138	1656
		14	83	1162
		68	93	6324
		56	98	5488
		49	108	5292
		13	53	689
		30	VAR	VAR
		28	VAR	VAR
		12	VAR	VAR
		7	VAR	VAR
		17	VAR	VAR
		12	VAR	VAR
		2	VAR	VAR
		4	107	428

Resumo do aço

DIAM (mm)	C.TOTAL (m)	PESO + 10 % (kg)
6.3	182.7	49.2
8.0	50.4	21.9
10.0	56	38
12.5	35	37
16.0	14.4	25
4.6	241.7	34.7

PESO TOTAL (kg)

CA50	171
CA60	34.7

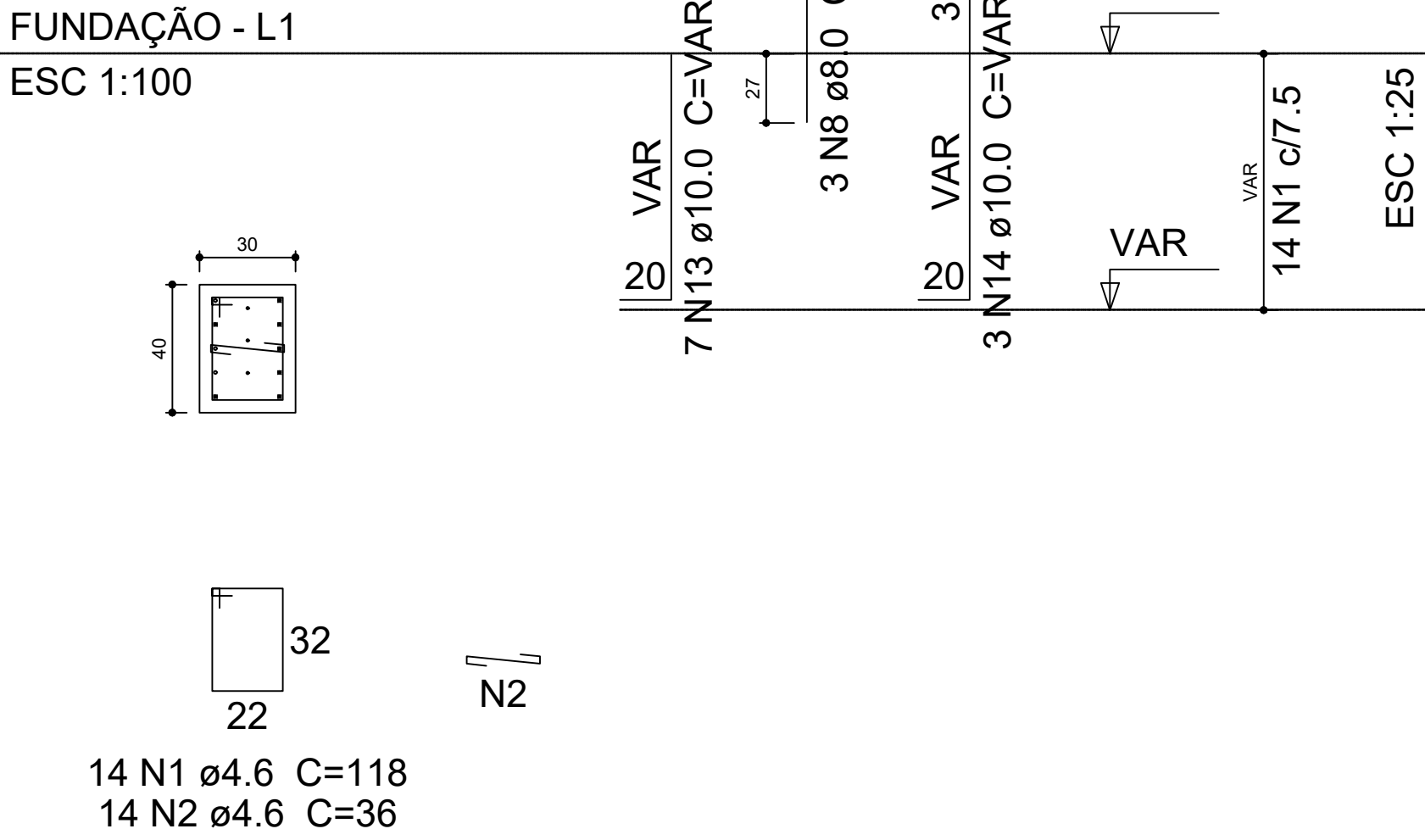
Volume de concreto (C-20) = 1.82 m³  
Volume de concreto (C-30) = 1.57 m³  
Área de forma = 31.6 m²





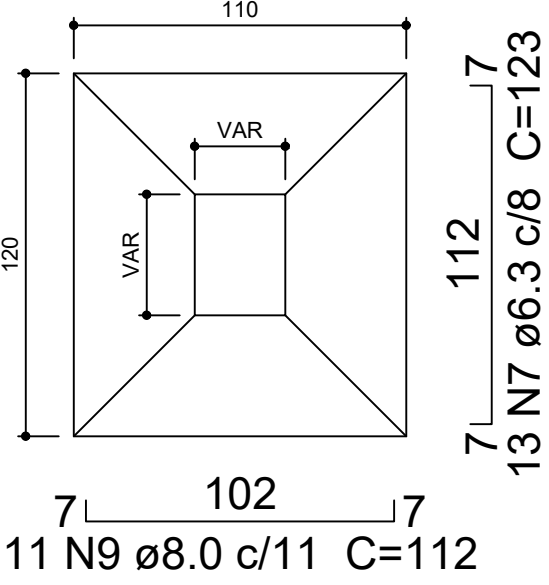


P6



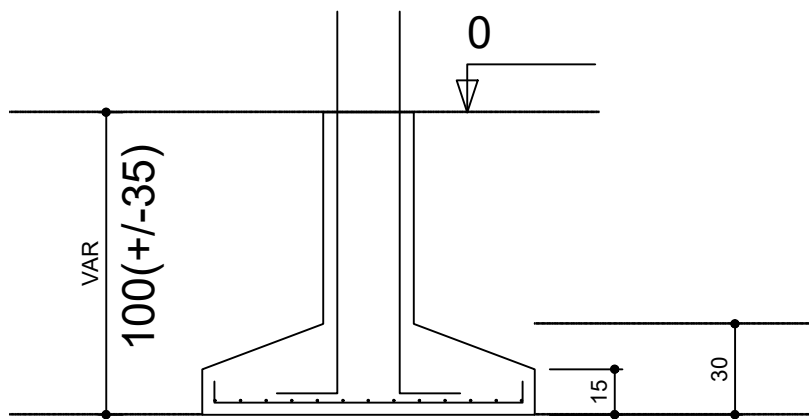
S2=S3=S4=S6

PLANTA  
ESC 1:100

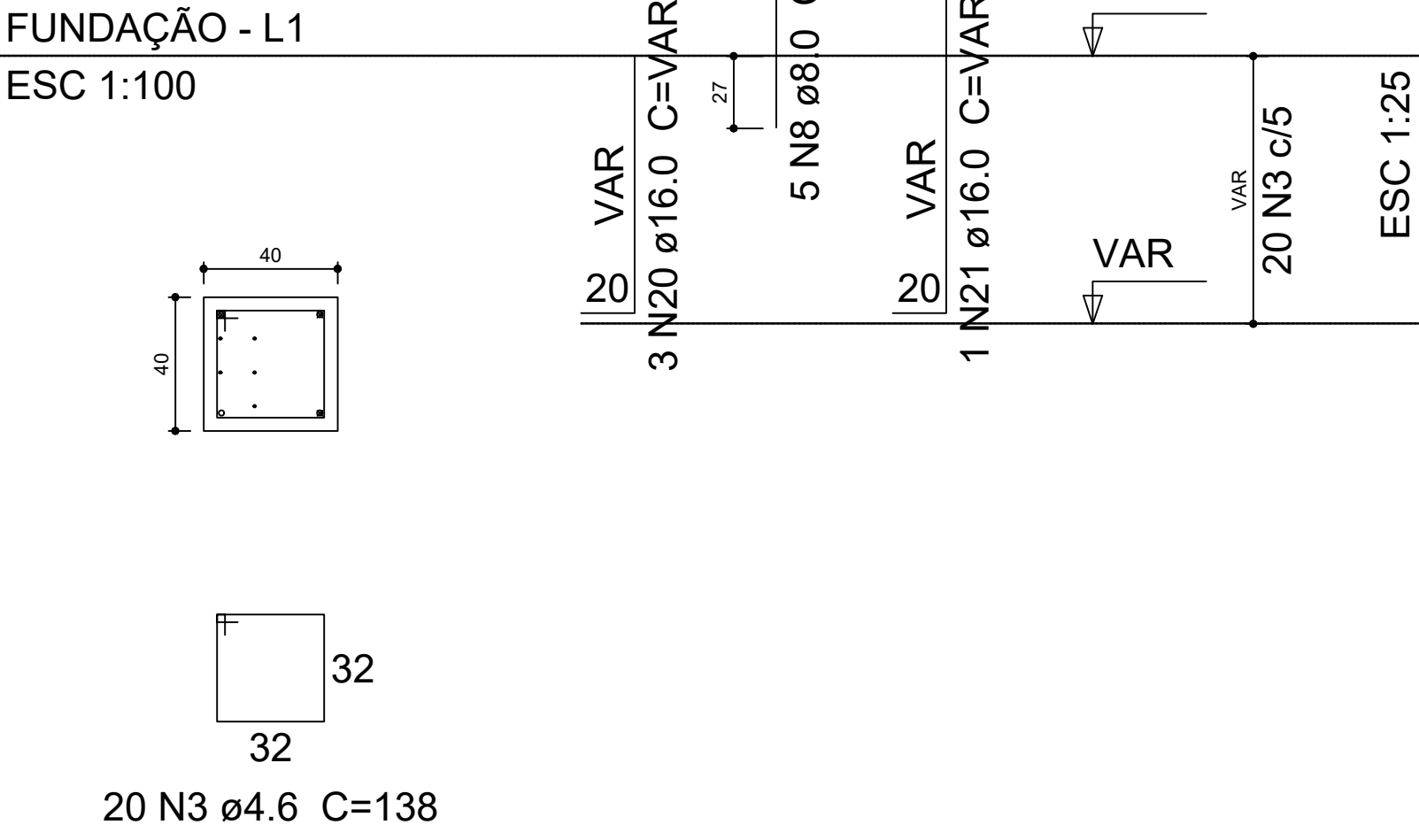


Solo compactado sobre a sapata  
peso específico > 1600.00 kgf/m³

CORTE  
ESC 1:100

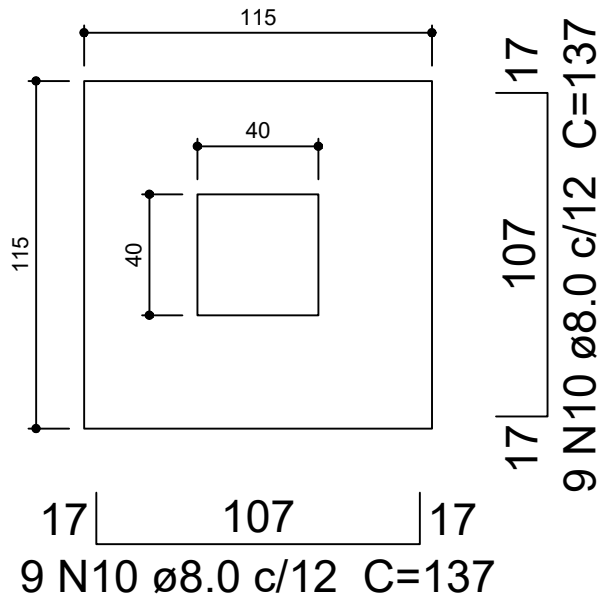


P5



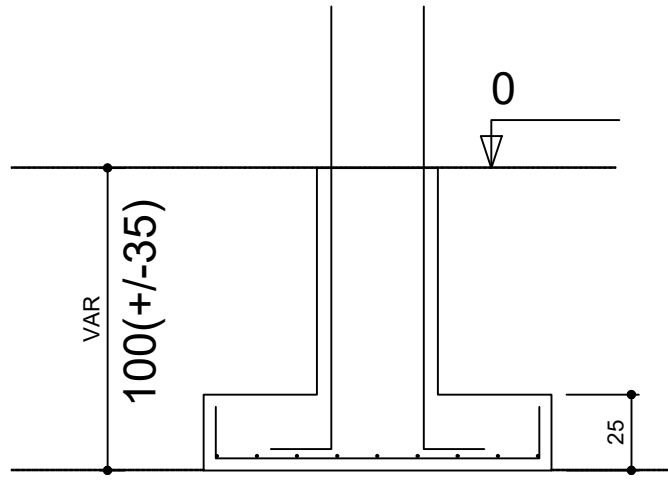
S5

PLANTA  
ESC 1:100



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

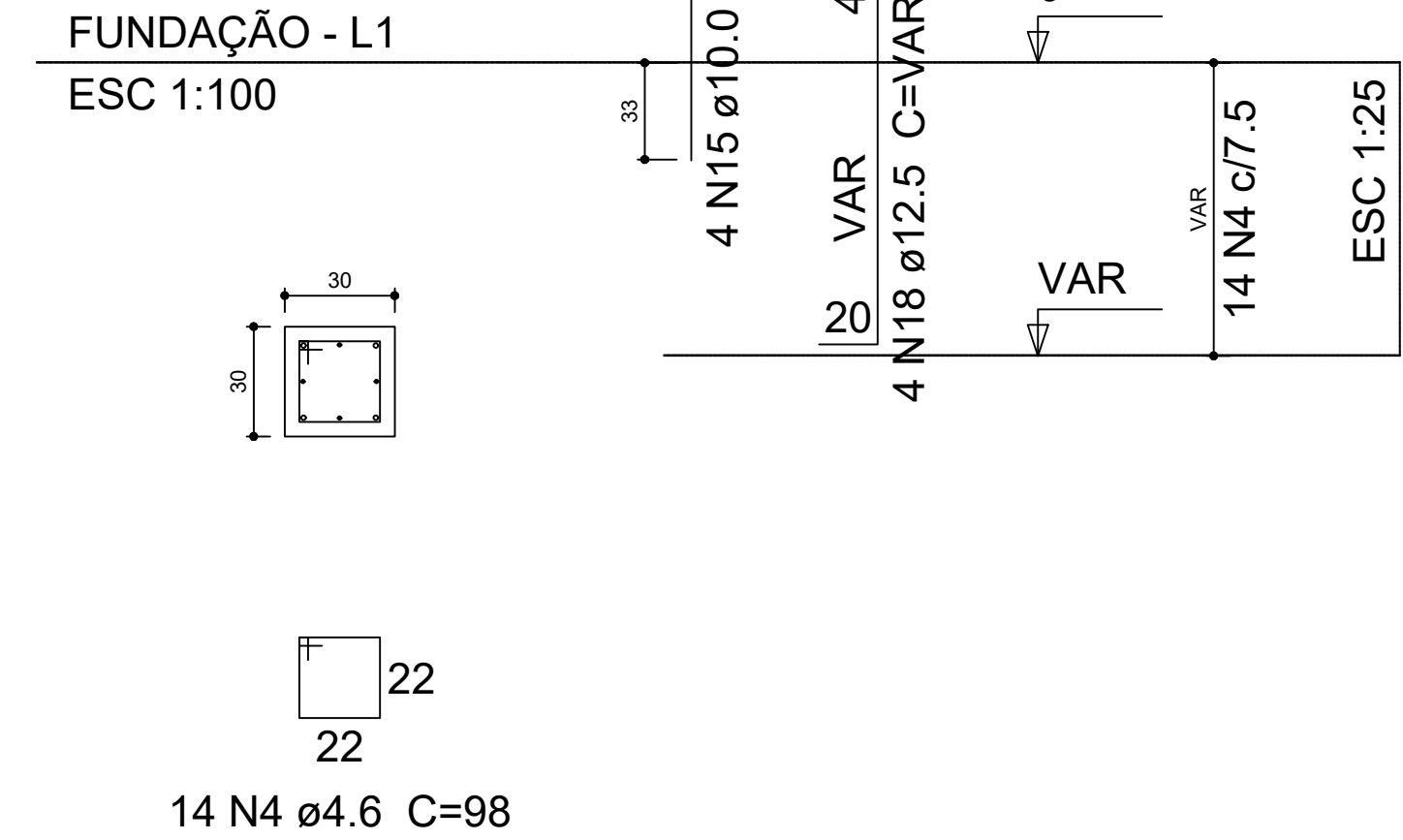
CORTE  
ESC 1:100



Relação do aço

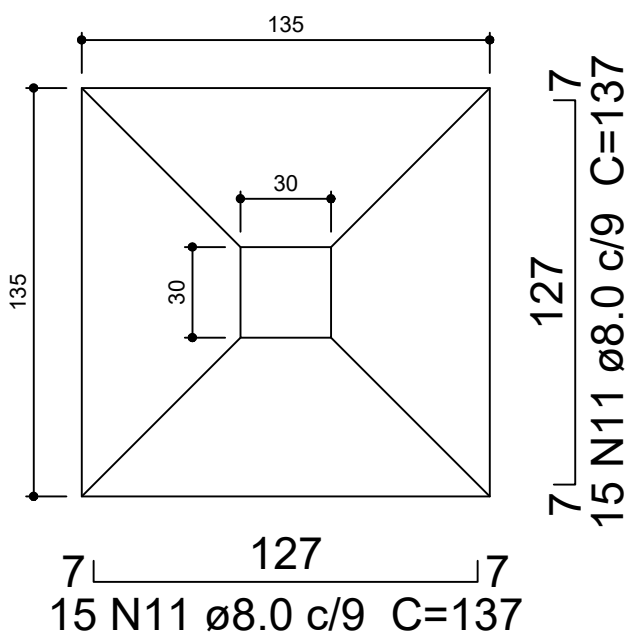
AÇO	N	DIAM (mm)	QUANT (Barra)	UNIT (cm)	C.TOTAL (cm)
P5	1	4.6	14	118	1602
P41	2	4.6	14	36	504
P55	3	4.6	20	138	2760
S41	4	4.6	42	98	4116
S45	5	4.6	8	78	624
	6	5.0	20	100	2000
	7	8.3	52	123	6396
	8	8.0	8	53	424
	9	8.0	44	112	4928
	10	8.0	18	137	2466
	11	8.0	30	137	4110
	12	8.0	72	147	10584
	13	10.0	7	VAR	VAR
	14	10.0	3	VAR	VAR
	15	10.0	4	67	268
	16	10.0	16	151	2416
	17	10.0	13	161	2093
	18	12.5	12	VAR	VAR
	19	12.5	4	VAR	VAR
	20	16.0	3	VAR	VAR
	21	16.0	1	VAR	VAR
	22	16.0	48	264	12672
	23	16.0	56	289	16184
	24	20.0	12	VAR	VAR
	25	20.0	4	VAR	VAR

P41



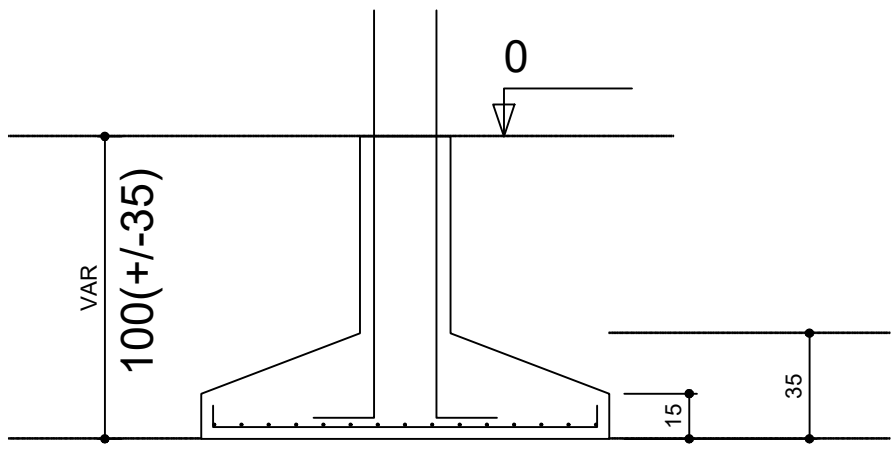
S41

PLANTA  
ESC 1:100

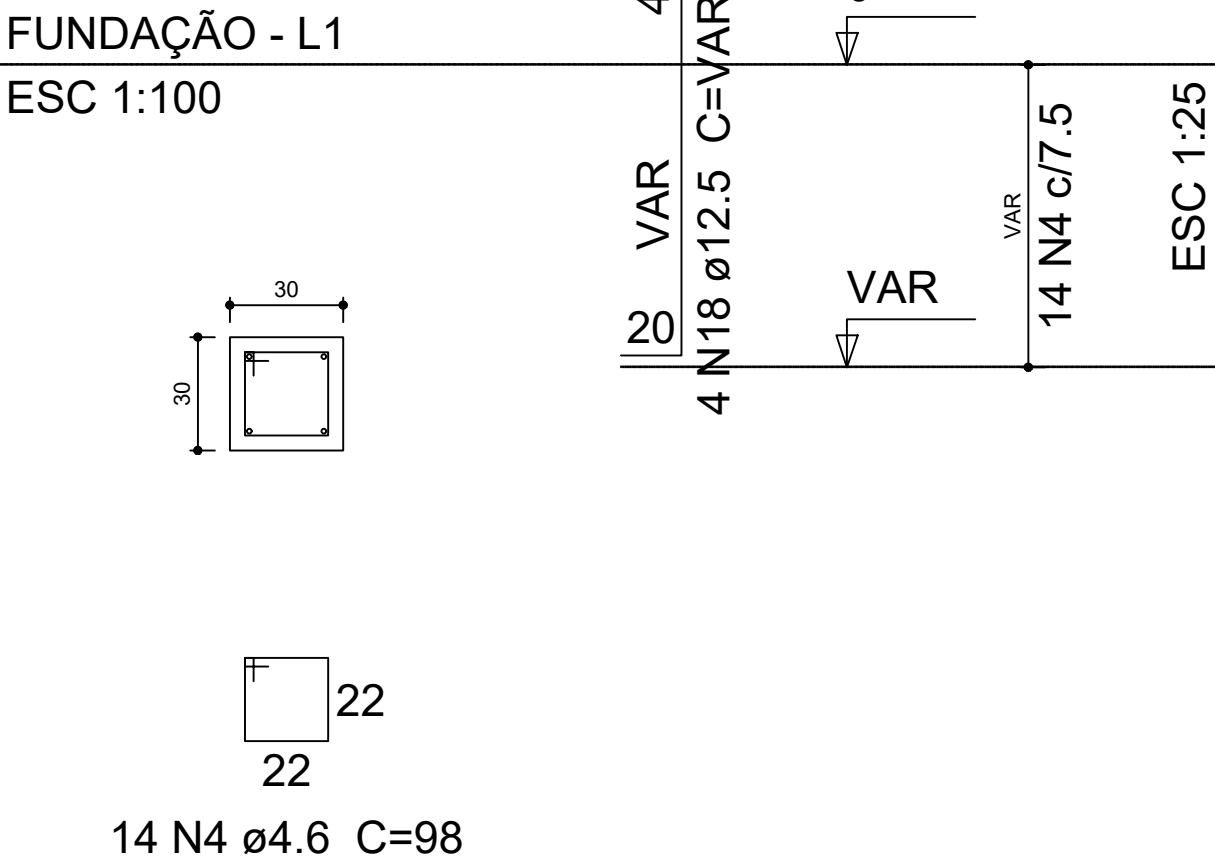


Solo compactado sobre a sapata  
peso específico > 1600.00 kgf/m³

CORTE  
ESC 1:100

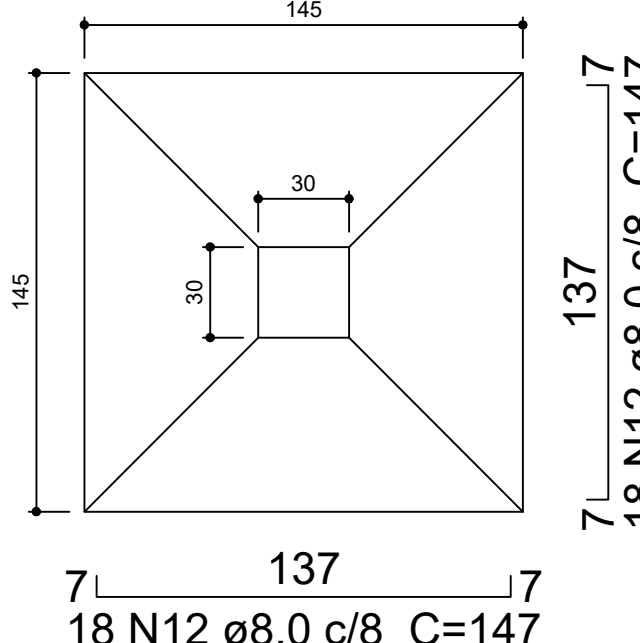


P40=P43



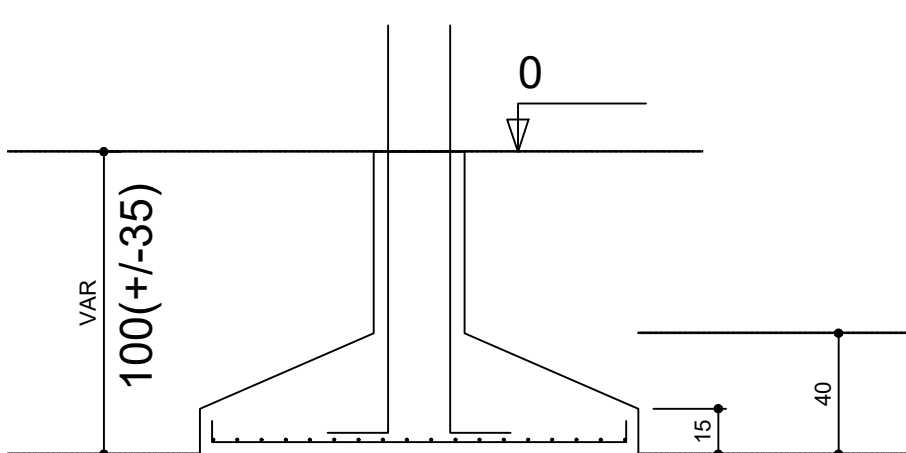
S40=S43

PLANTA  
ESC 1:100



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

CORTE  
ESC 1:100

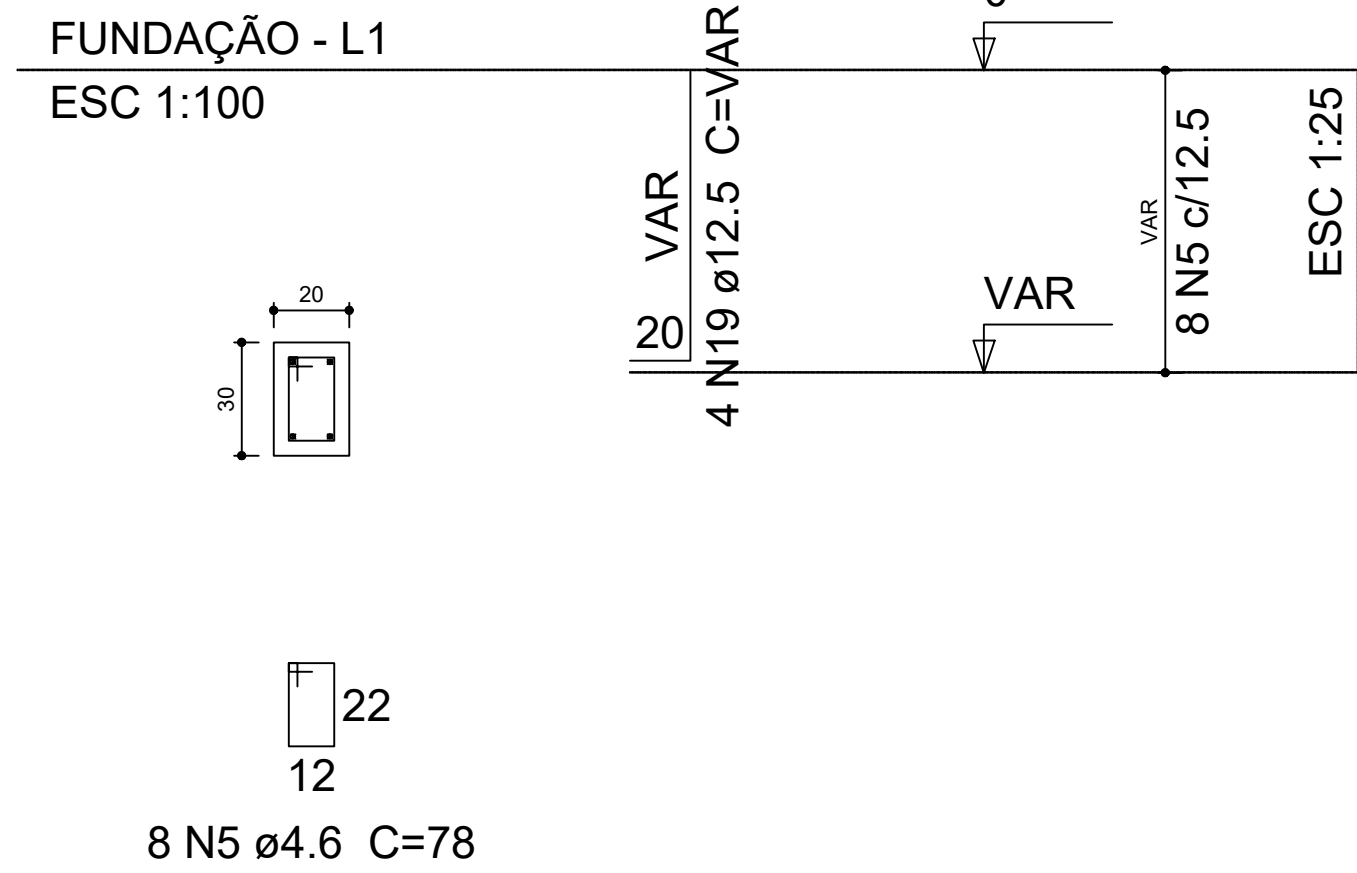


Resumo do aço

AÇO	DIAM (mm)	C.TOTAL (m)	PESO * 10 % (kg)
CA50	6.3	64	17.2
	8.0	225.2	97.7
	10.0	60.3	40.9
	12.5	23.6	25
	16.0	293.7	509.8
	20.0	26.2	70.9
CA60	4.6	96.6	13.9
	5.0	20	3.4
PESO TOTAL (kg)			
CA50		761.4	
CA60		17.2	

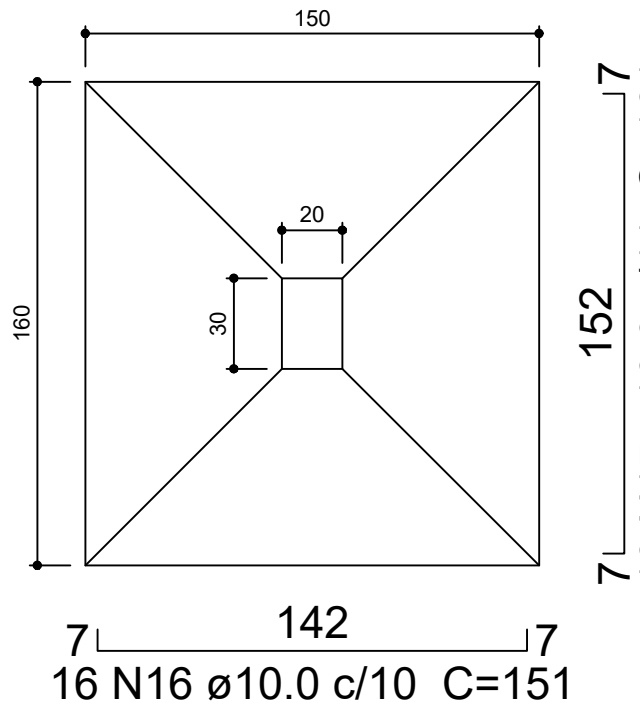
Volume de concreto (C-30) = 0.79 m³  
Volume de concreto (C-20) = 9.57 m³  
Área de forma = 22.96 m²

P55



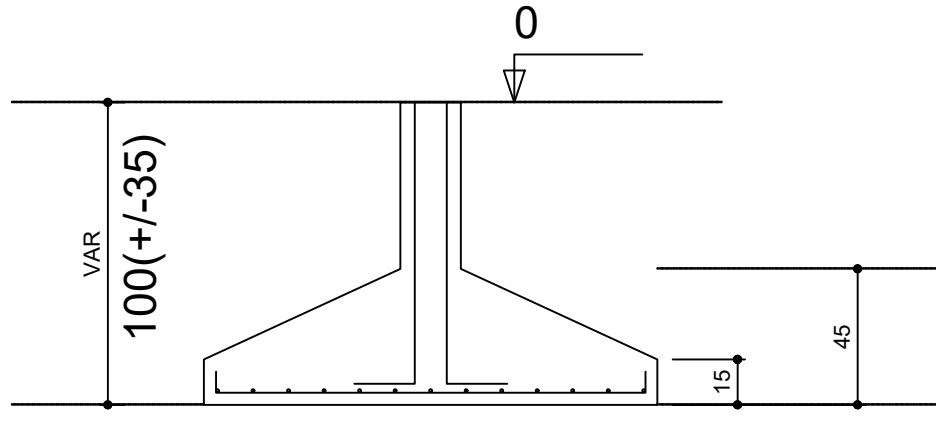
S55

PLANTA  
ESC 1:100

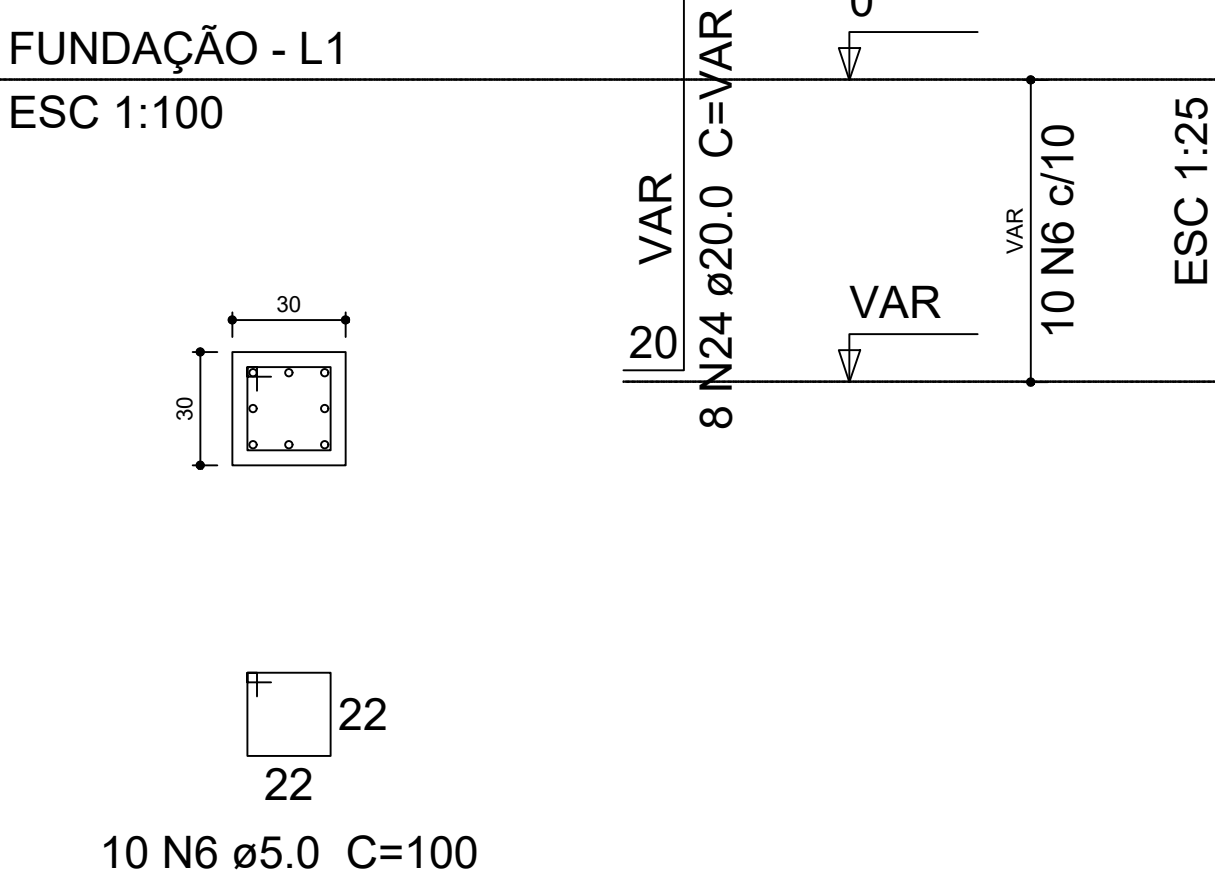


Solo compactado sobre a sapata  
peso específico > 1600.00 kgf/m³

CORTE  
ESC 1:100

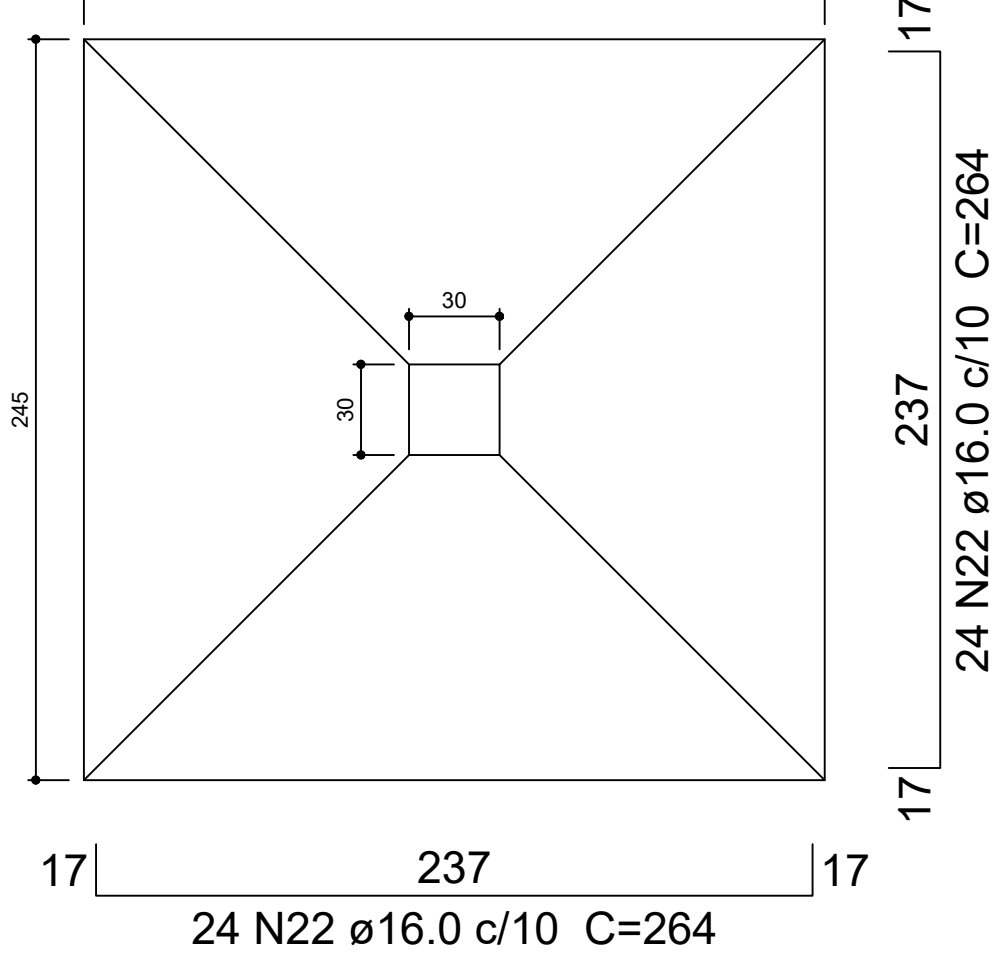


P45



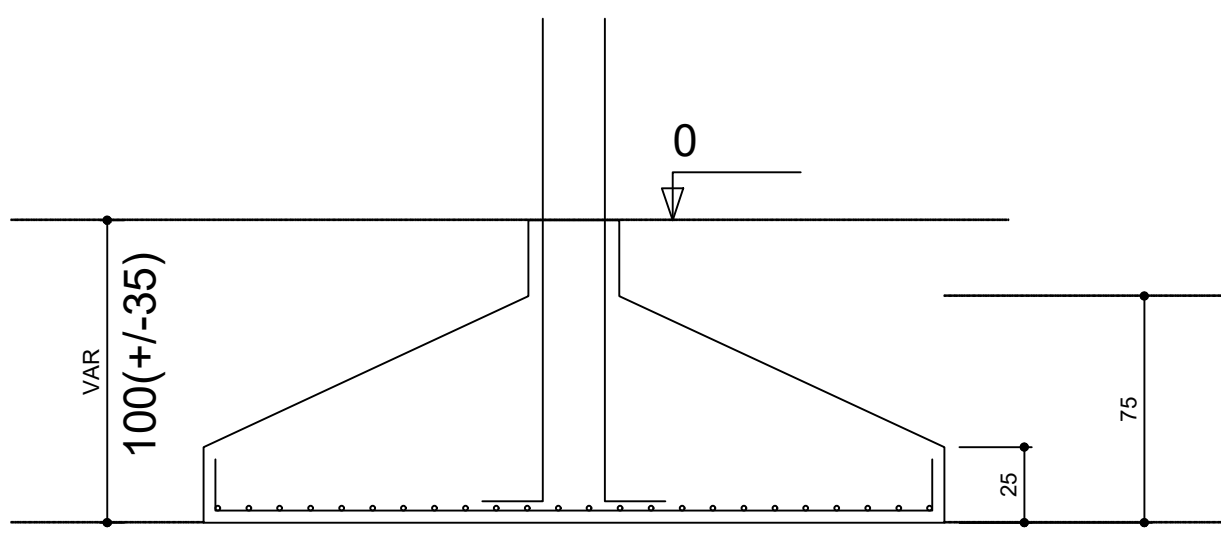
S45

PLANTA  
ESC 1:100

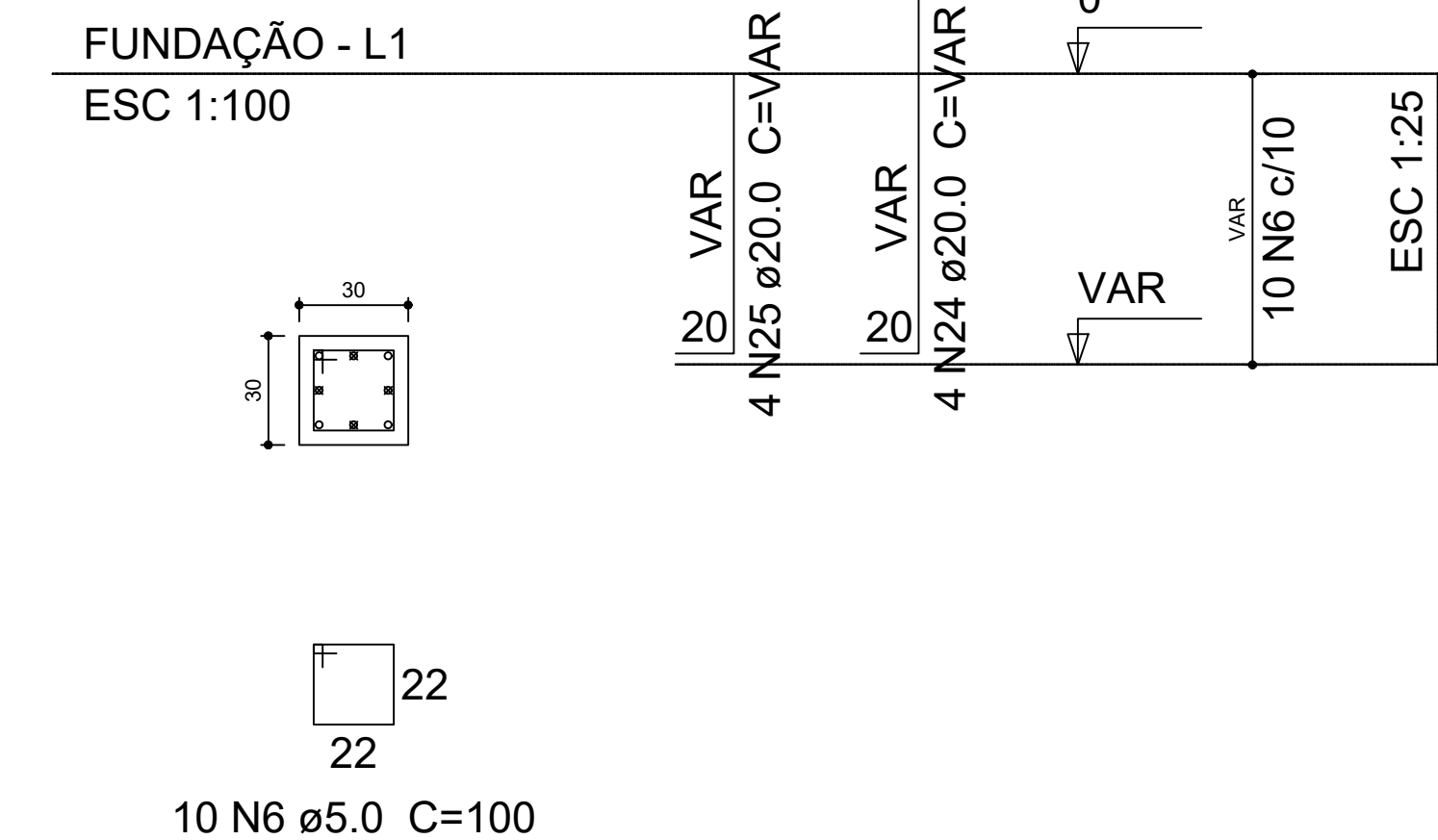


Solo compactado sobre a sapata  
peso específico > 1600.00 kgf/m³

CORTE  
ESC 1:100

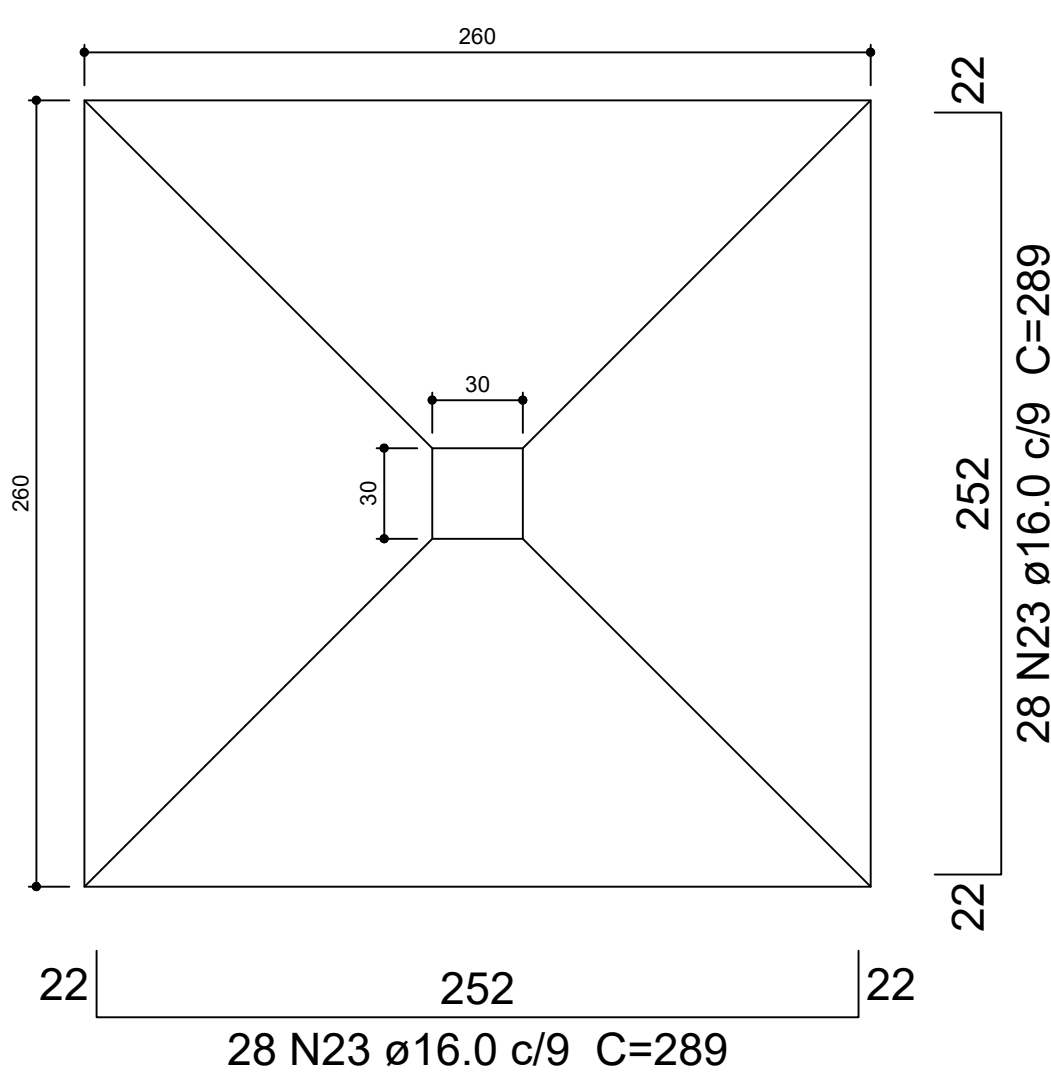


P44



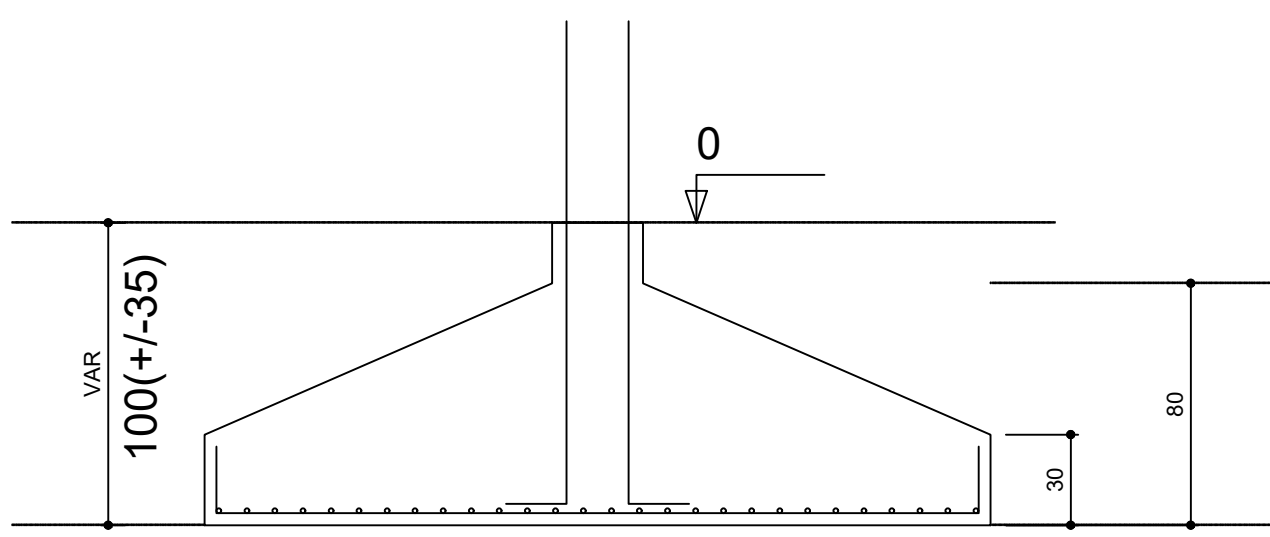
S44


PLANTA  
ESC 1:100



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

CORTE  
ESC 1:100



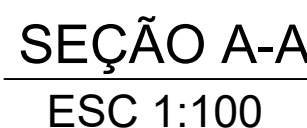
		CORPO DE BOMBEIROS MILITAR DO PARÁ E COORDENADORIA ESTADUAL DE DEFESA CIVIL	
PROJETO: GRUPAMENTO MILITAR DOS BOMBEIROS DE SÃO FELIX DO XINGU			
CONTEÚDO: FUNDAÇÕES E PILARES		ESCALA: INDICADA	DATA: MARÇO / 2023
RESPONSÁVEL TÉCNICO:  CARLOS ROBERTO DE JESUS M. 5.17.1985-4 RG: 3082324 CUIABÁ - FÉLIX DO XINGU - ENG. CIVIL CREA: 11.052-0/PA		PRINCIPAIS: EST-10/15	



ESC 1:100



ESC 1:100



ESC 1:100



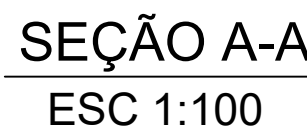
ESC 1:100



ESC 1:100



ESC 1:100



ESC 1:100



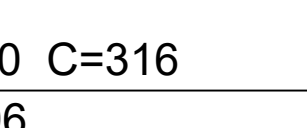
ESC 1:100



ESC 1:100



ESC 1:100



ESC 1:100



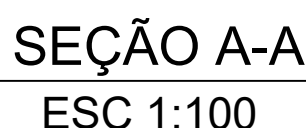
ESC 1:100



ESC 1:100



ESC 1:100



ESC 1:100



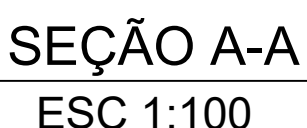
ESC 1:100



ESC 1:100



ESC 1:100

Relação do aço

V2	V3	V4
V5	V6	V11
V12	V13	V14
V15	V17	V18
V19	V20	V22
V24	V25	V37

AÇO	N	DIAM (mm)	QUANT (Barras)	UNIT (cm)	C.TOTAL (cm)	
CA60	1	5.0	1041	50	52050	
	2	5.0		2	334	668
	3	5.0		2	244	488
	4	5.0		2	282	564
	5	5.0		2	234	468
CA50	6	5.0	58	2	466	932
	7	5.0		2	264	528
	8	5.0		70	4060	
	9	6.3		1	66	66
	10	8.0		6	336	336
	11	8.0	2	2	586	1172
	12	8.0		2	728	1456
	13	8.0		2	1064	2128
	14	8.0		2	228	456
	15	8.0		30	780	780
	16	8.0	2	2	649	1298
	17	8.0		2	831	1662
	18	8.0		2	714	1428
	19	8.0		2	863	1726
	20	8.0		2	315	630
	21	8.0	2	362	724	
	22	8.0		2	191	382
	23	8.0		81	162	162
	24	8.0		1	59	59
	25	8.0		2	548	1096
	26	8.0	2	150	300	
	27	8.0		2	187	374
	28	8.0		8	319	2552
	29	8.0		339	2712	2712
	30	8.0		2	153	306
	31	8.0	2	173	346	
	32	8.0		2	225	450
	33	8.0		2	253	506
	34	8.0		2	596	1192
	35	8.0		4	316	1264
	36	8.0	2	304	608	
	37	8.0		2	139	278
	38	8.0		159	318	318
	39	8.0		2	517	1034
	40	8.0		2	530	1060
	41	8.0	2	137	274	
	42	8.0		2	157	314
	43	8.0		30	600	600
	44	8.0	2	321	642	
	45	8.0		2	321	642

### Resumo do aço

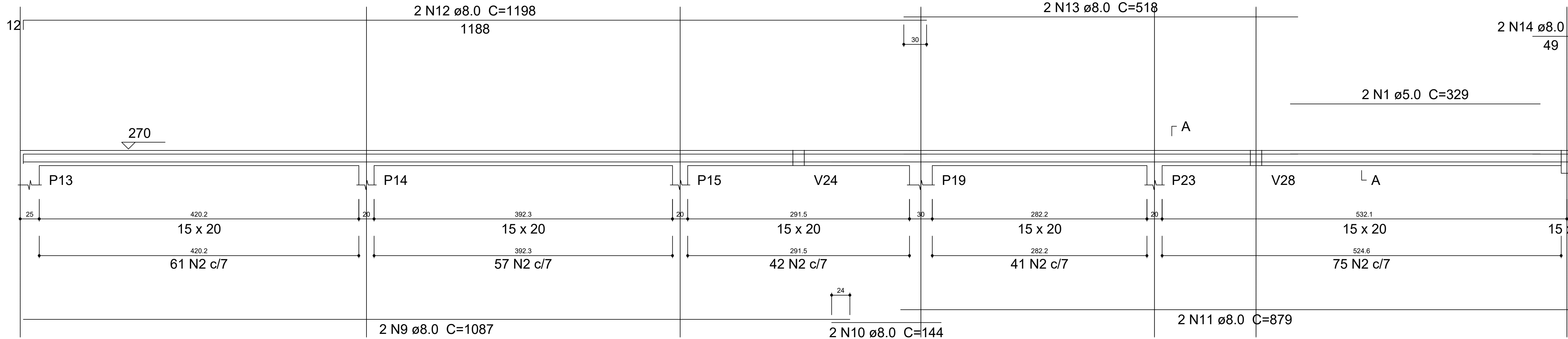
AÇO	DIAM (mm)	C.TOTAL (m)	PESO + 10 % (kg)
CA50	6.3	0.7	0.2
	8.0	330.3	143.3
CA60	5.0	597.6	101.3
PESO TOTAL (kg)			
CA50	143.5		
CA60	101.3		

Volume de concreto (C-30) = 2.84 m<sup>3</sup>  
Área de forma = 51.43 m<sup>2</sup>



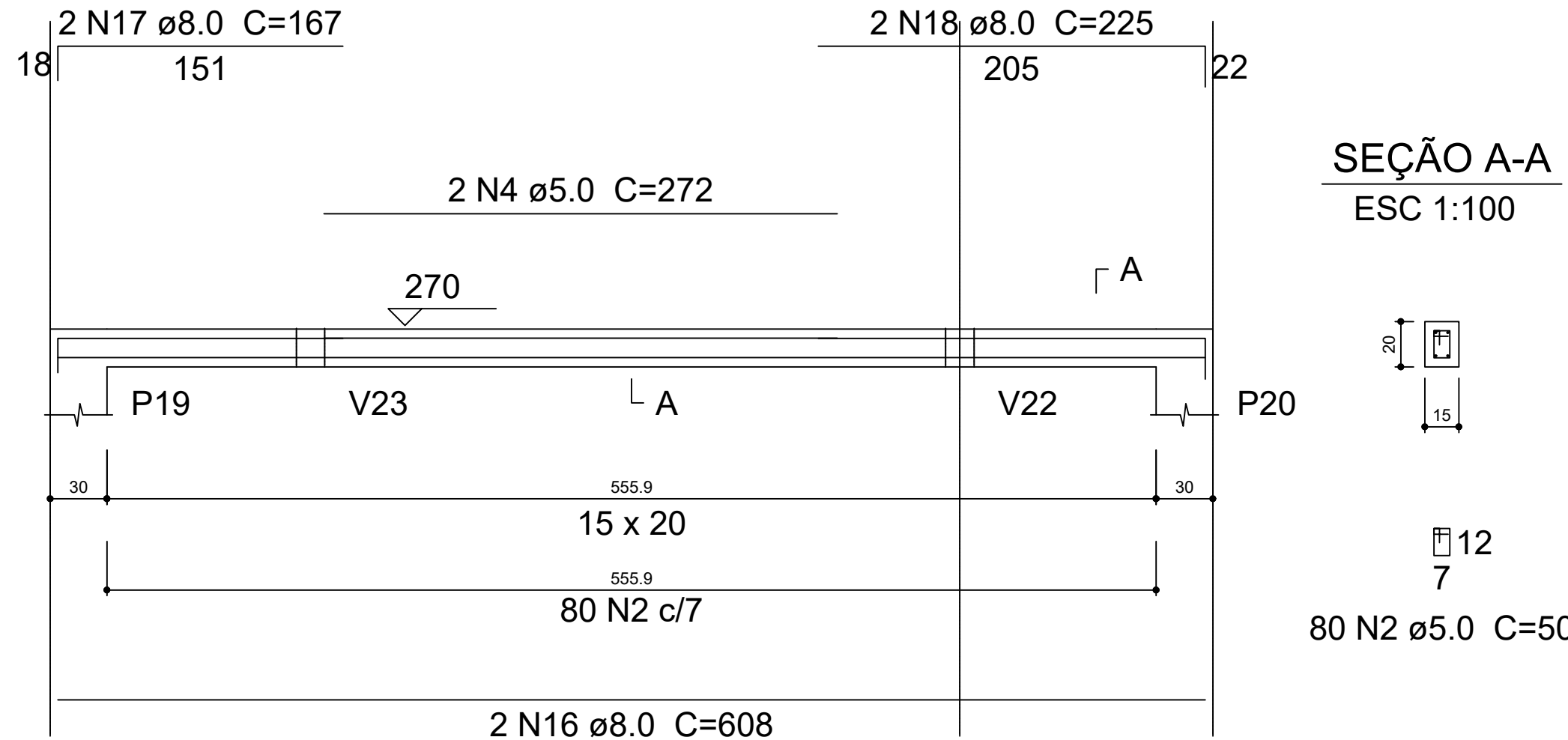
V16

ESC 1:100



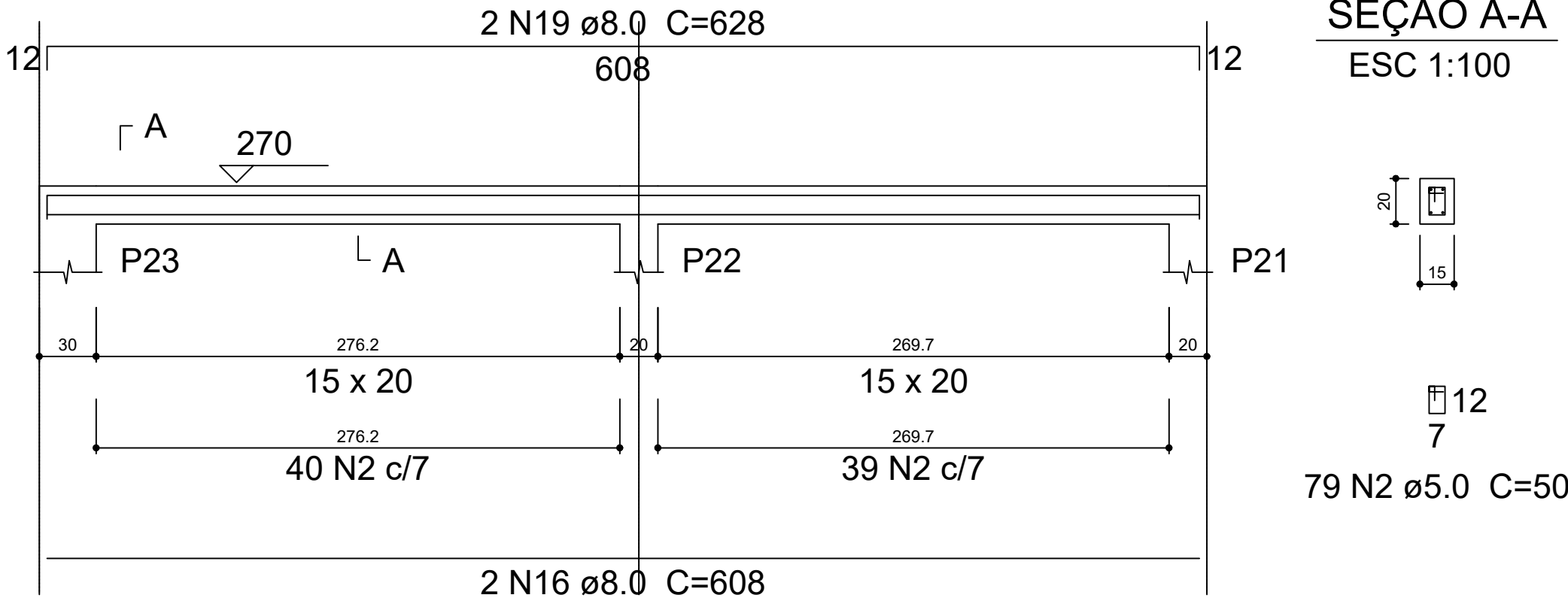
V21

ESC 1:100



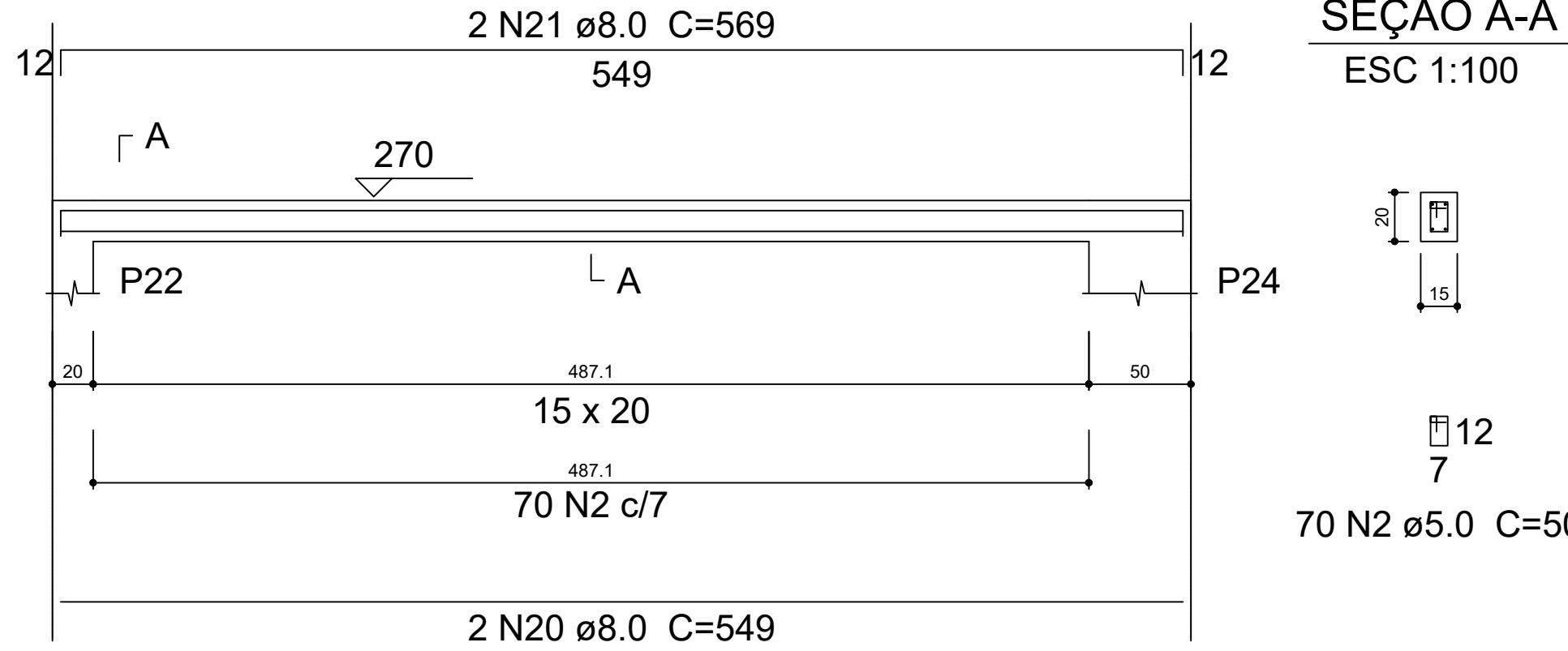
V26

ESC 1:100



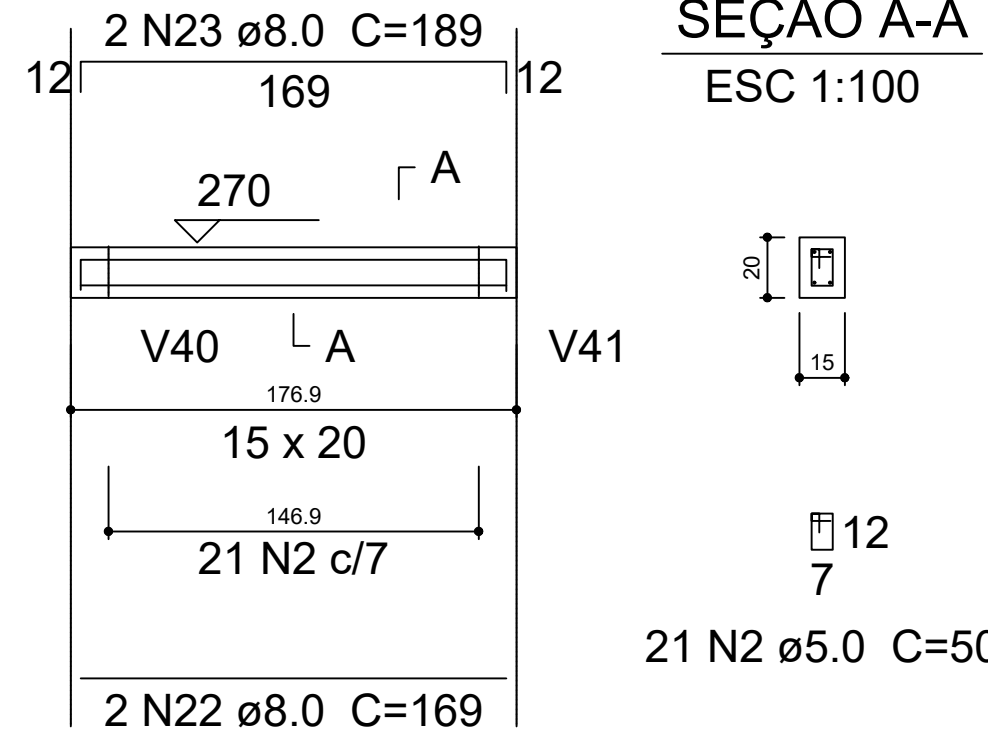
V27

ESC 1:100



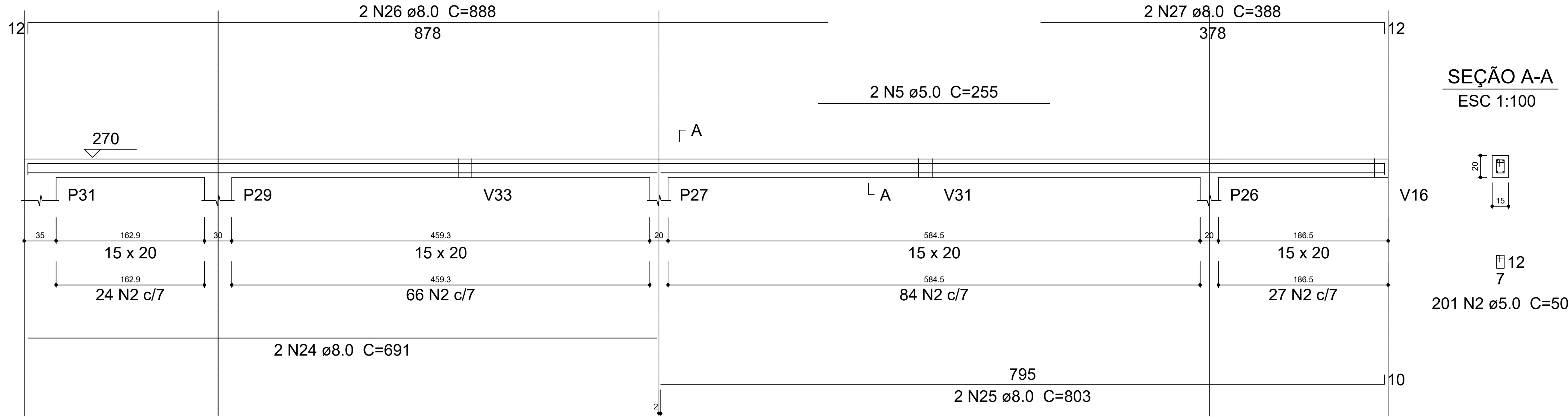
V42

ESC 1:100



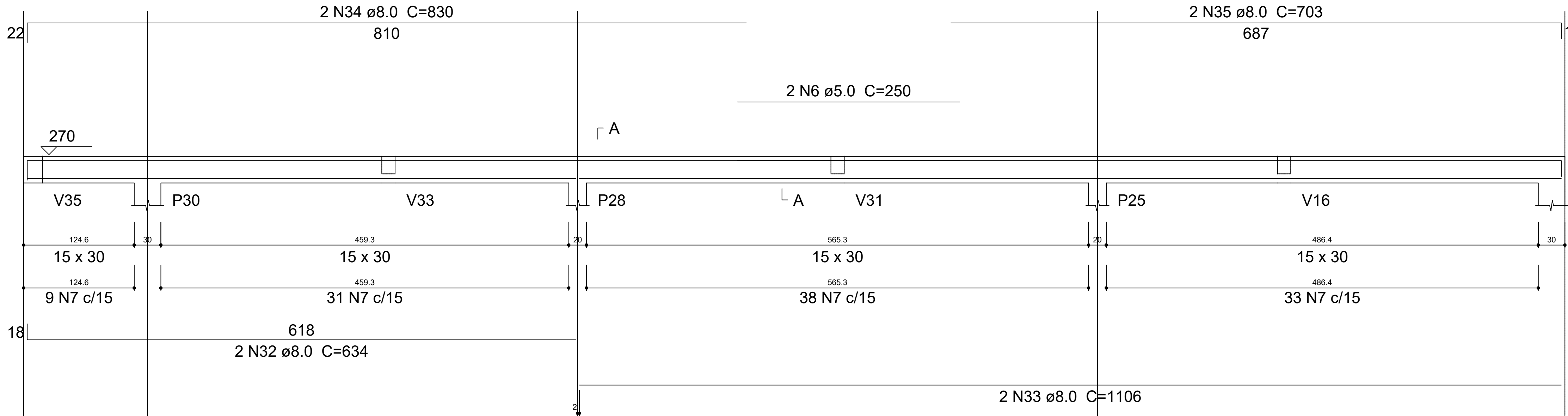
V28

ESC 1:100



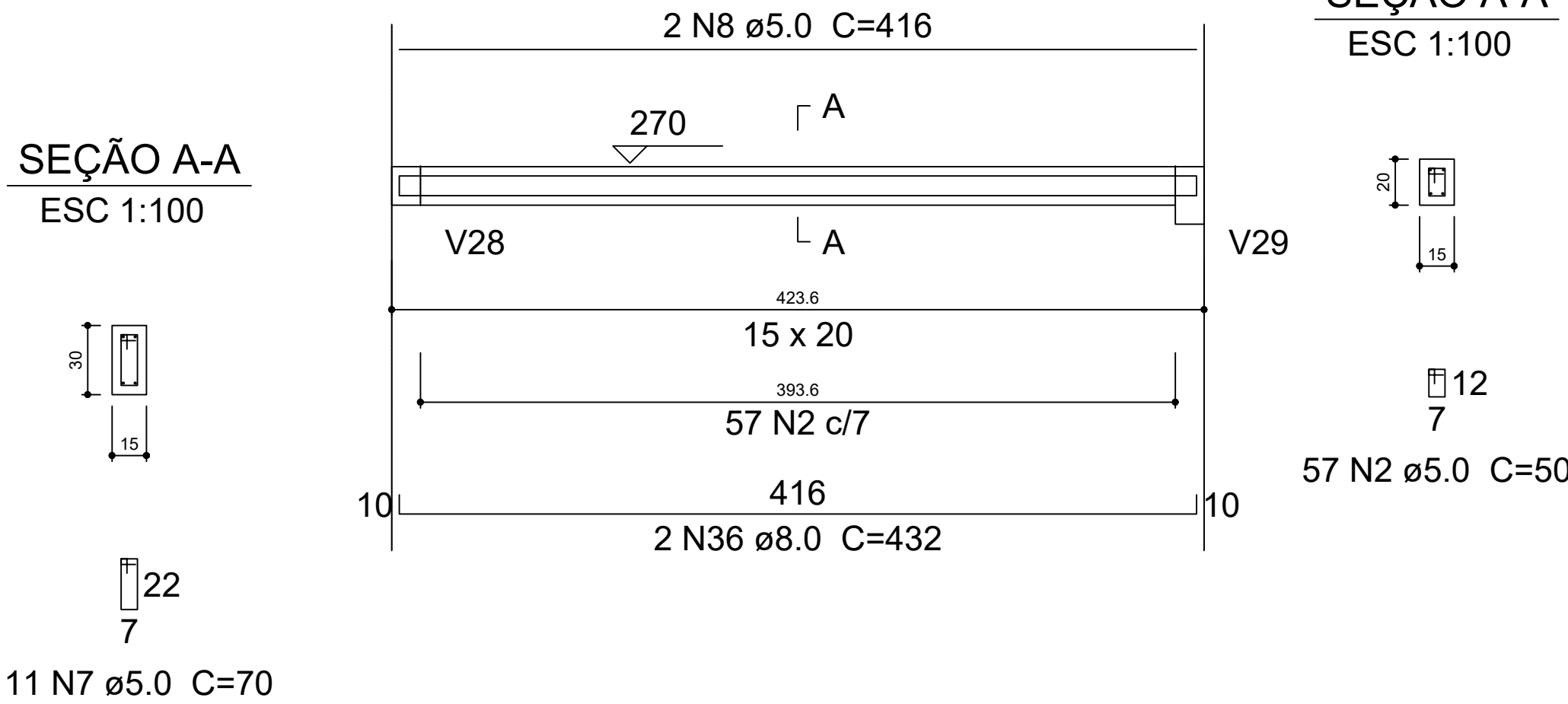
V29

ESC 1:100



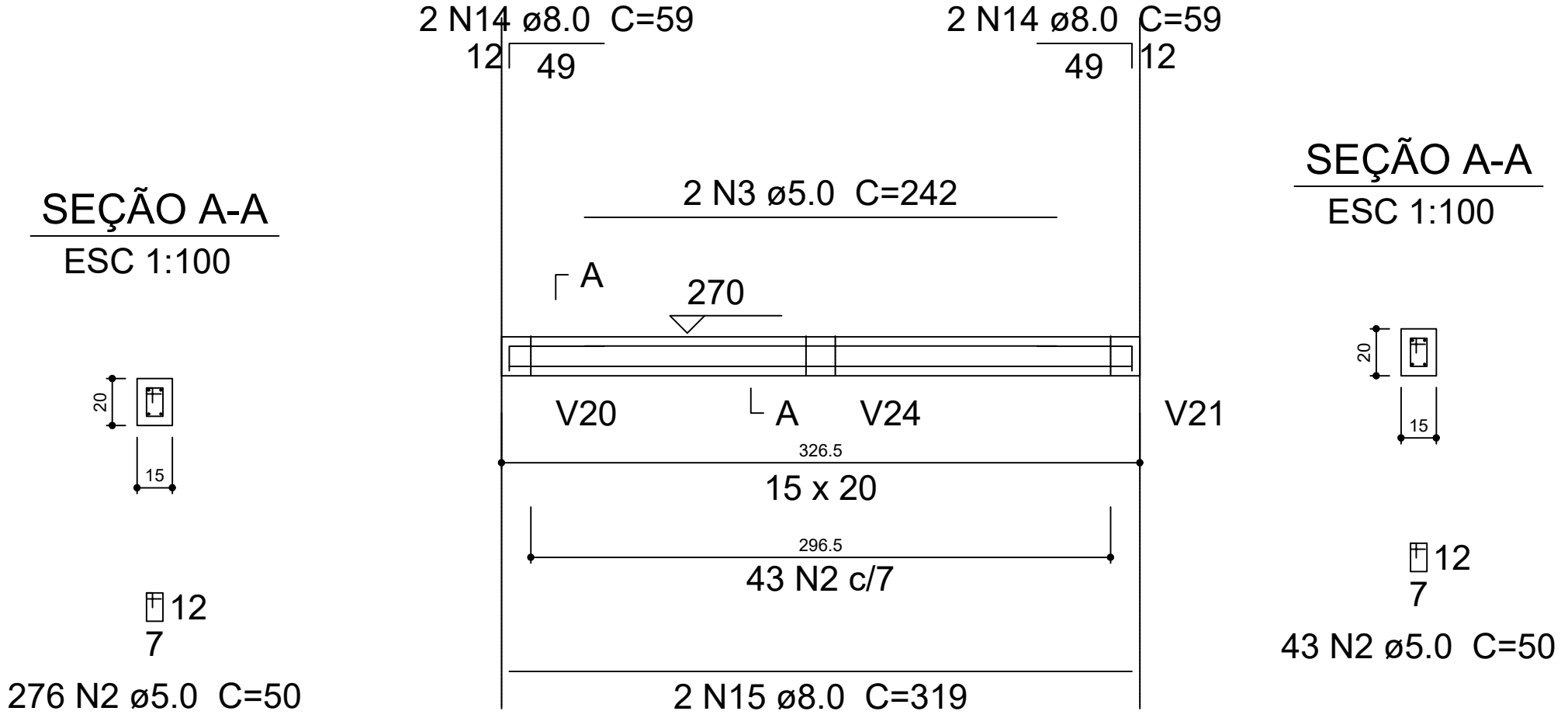
V31

ESC 1:100



V23

ESC 1:100



Relação do aço

ACO	N	DIAM (mm)	QUANT (Barras)	UNIT (cm)	C.TOTAL (cm)
CA60	1	5.0	2	329	658
	2	5.0	917	50	45850
	3	5.0	2	242	484
	4	5.0	2	272	544
	5	5.0	2	255	510
	6	5.0	2	250	500
	7	5.0	111	70	7770
	8	5.0	2	416	832
	9	8.0	2	1087	2174
	10	8.0	2	144	288
	11	8.0	2	879	1758
	12	8.0	2	1198	2396
	13	8.0	2	518	1036
	14	8.0	6	59	354
	15	8.0	2	319	638
	16	8.0	4	608	2432
	17	8.0	2	167	334
	18	8.0	2	225	450
	19	8.0	2	628	1256
	20	8.0	2	549	1098
	21	8.0	2	569	1138
	22	8.0	2	169	338
	23	8.0	2	189	378
	24	8.0	2	691	1382
	25	8.0	2	803	1606
	26	8.0	2	888	1776
	27	8.0	2	388	776
	28	8.0	2	446	892
	29	8.0	2	466	932
	30	8.0	2	242	484
	31	8.0	2	254	508
	32	8.0	2	634	1268
	33	8.0	2	1106	2212
	34	8.0	2	830	1660
	35	8.0	2	703	1406
	36	8.0	2	432	864

Resumo do aço

ACO	DIAM (mm)	C.TOTAL (m)	PESO + 10 % (kg)
CA50	8.0	318.4	138.2
CA60	5.0	571.5	96.9
PESO TOTAL (kg)			
CA50	138.2		
CA60	96.9		

Volume de concreto (C=30) = 2.87 m³  
Área de forma = 51.24 m²

**CORPO DE BOMBEIROS MILITAR DO PARÁ**  
COORDENADORIA ESTADUAL DE DEFESA CIVIL

PROJETO: GRUPAMENTO MILITAR DOS BOMBEIROS DE SÃO FELIX DO XINGU

CONTEÚDO: VIGAS 16, 21, 23, 28 A 31, 42 E 55

RESPONSÁVEL TÉCNICO: **Odilson Faria Moura**  
COT DATA  
M. P. 57.7389-1  
RSC 2002/214  
CORPO DE BOMBEIROS MILITARES - ENG. CIVIL  
CREA Nº 1582-0/PA

ESCALA: INDICADA

DATA: MARÇO / 2023

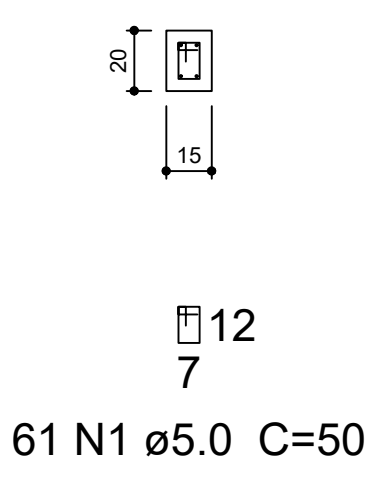
PRINCIPAL: **EST-12/15**



V32  
ESC 1:100



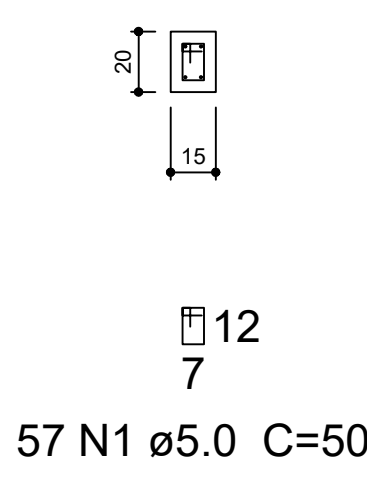
SEÇÃO A-A  
ESC 1:100



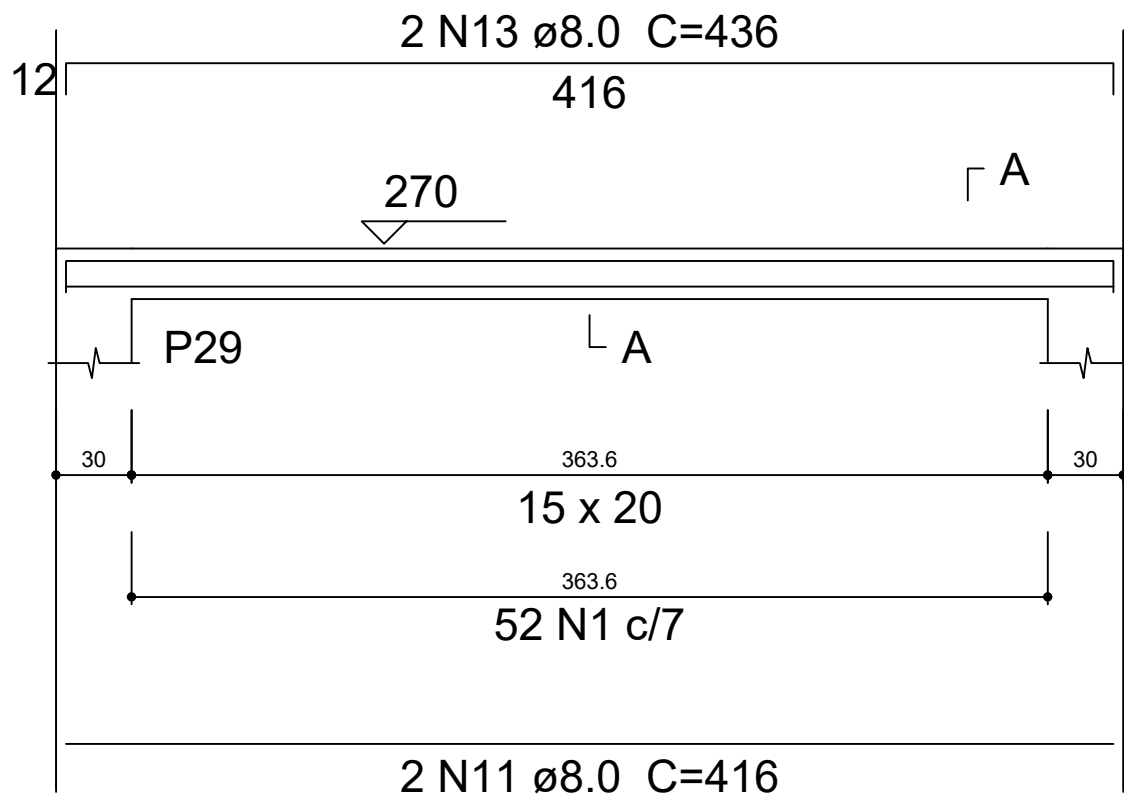
V33  
ESC 1:100



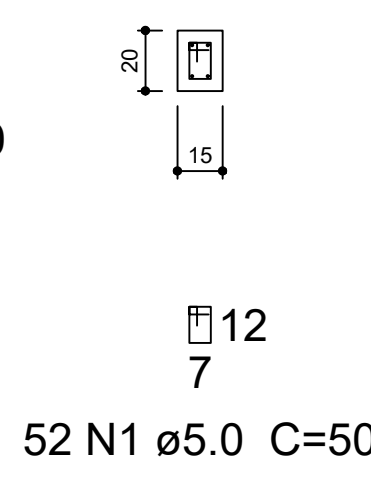
SEÇÃO A-A  
ESC 1:100



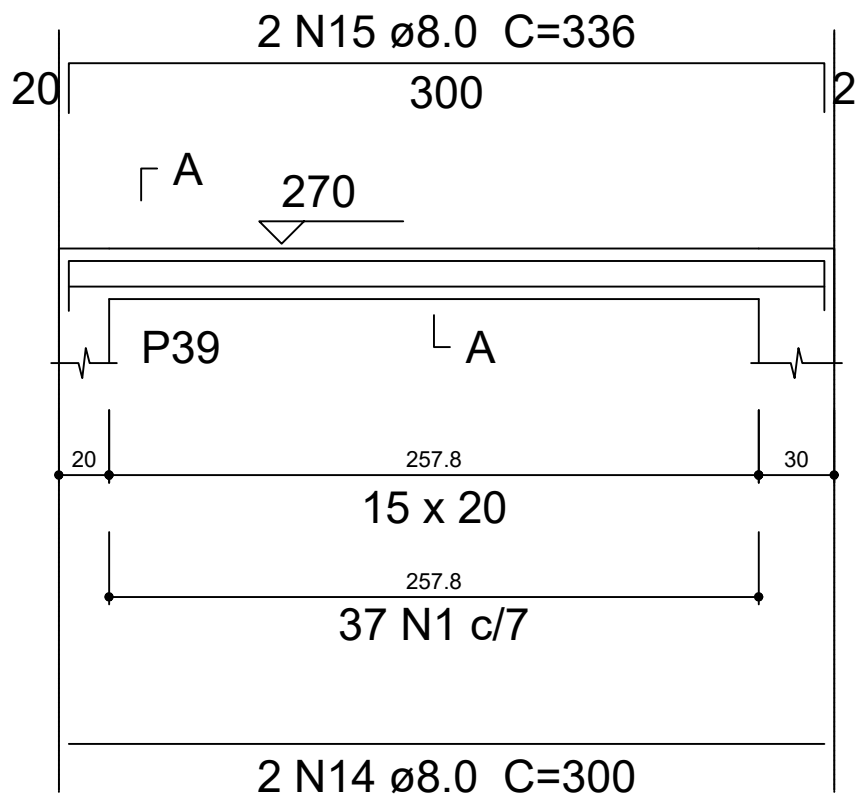
V34  
ESC 1:100



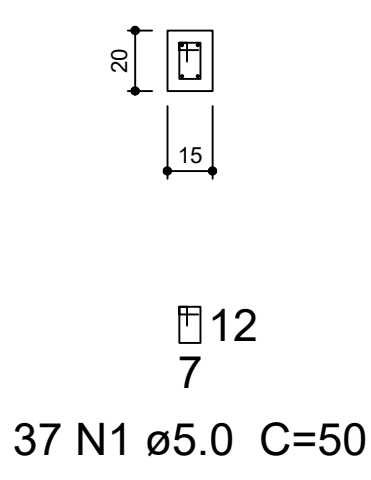
SEÇÃO A-A  
ESC 1:100



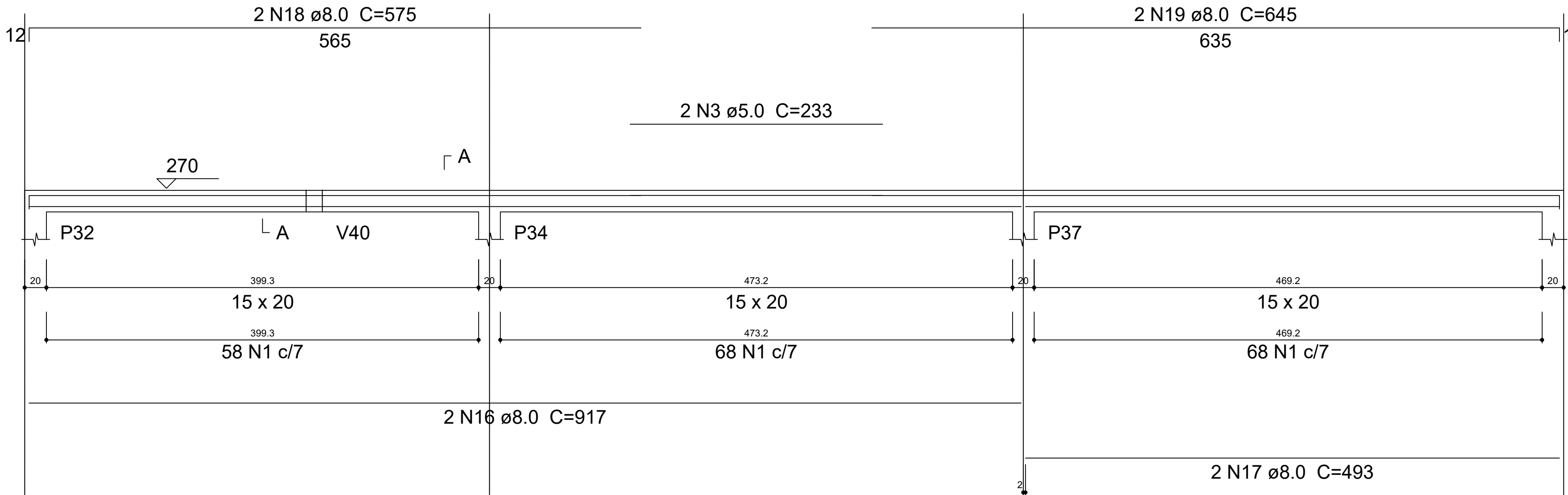
V39  
ESC 1:100



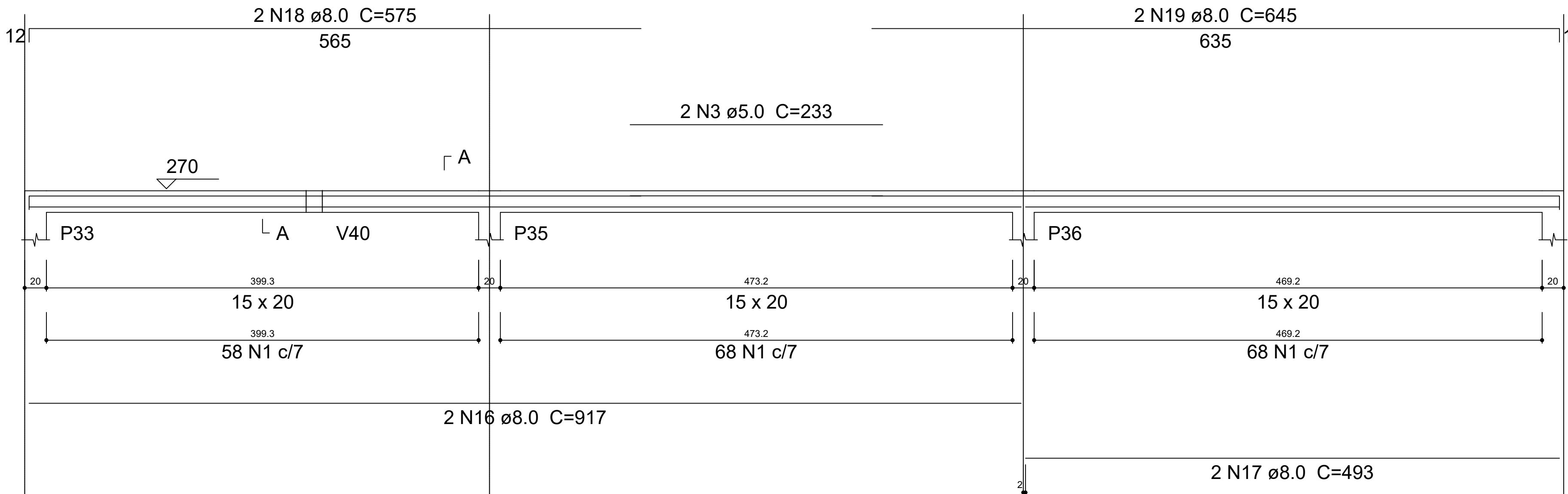
SEÇÃO A-A  
ESC 1:100



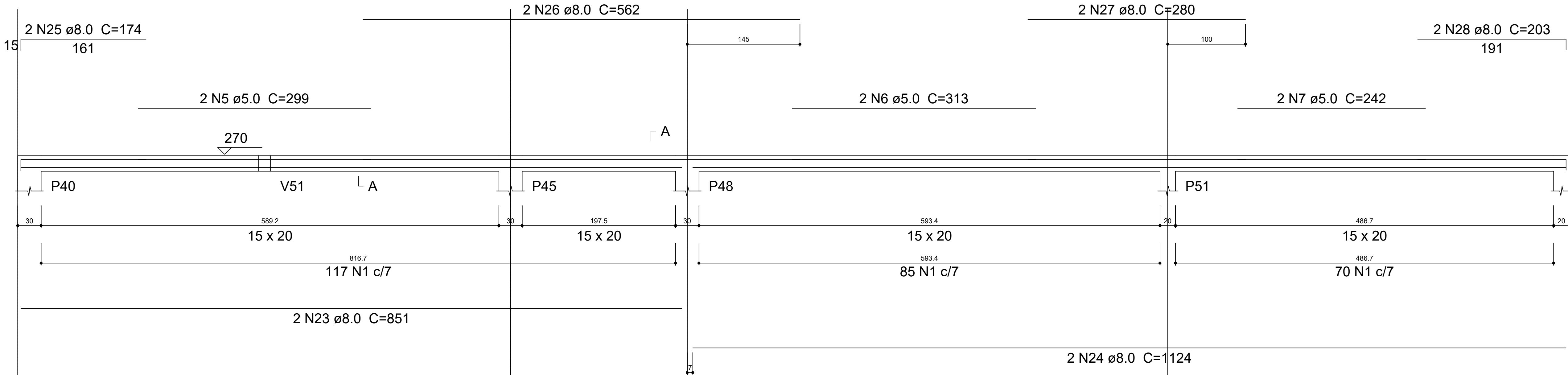
V36  
ESC 1:100



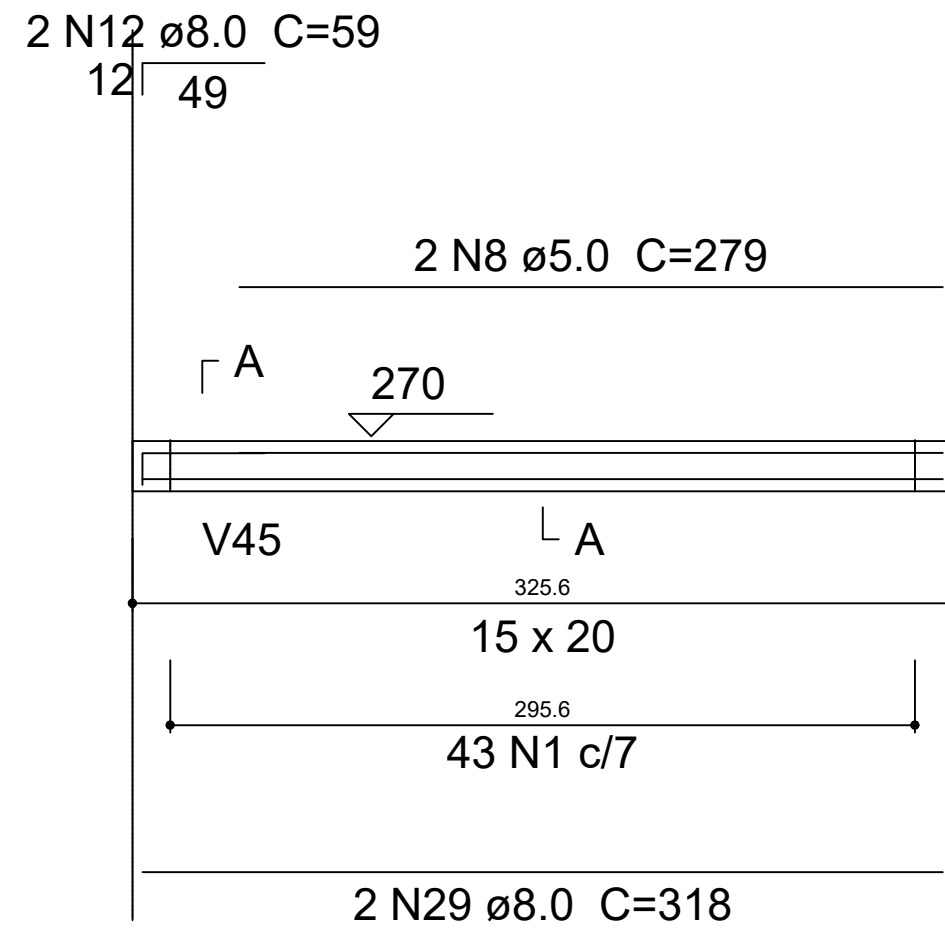
V38  
ESC 1:100



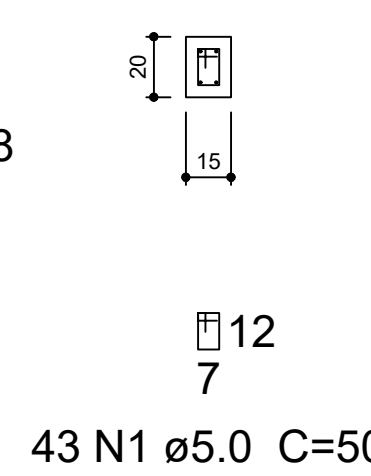
V43  
ESC 1:100



V50  
ESC 1:100



SEÇÃO A-A  
ESC 1:100



Relação do aço

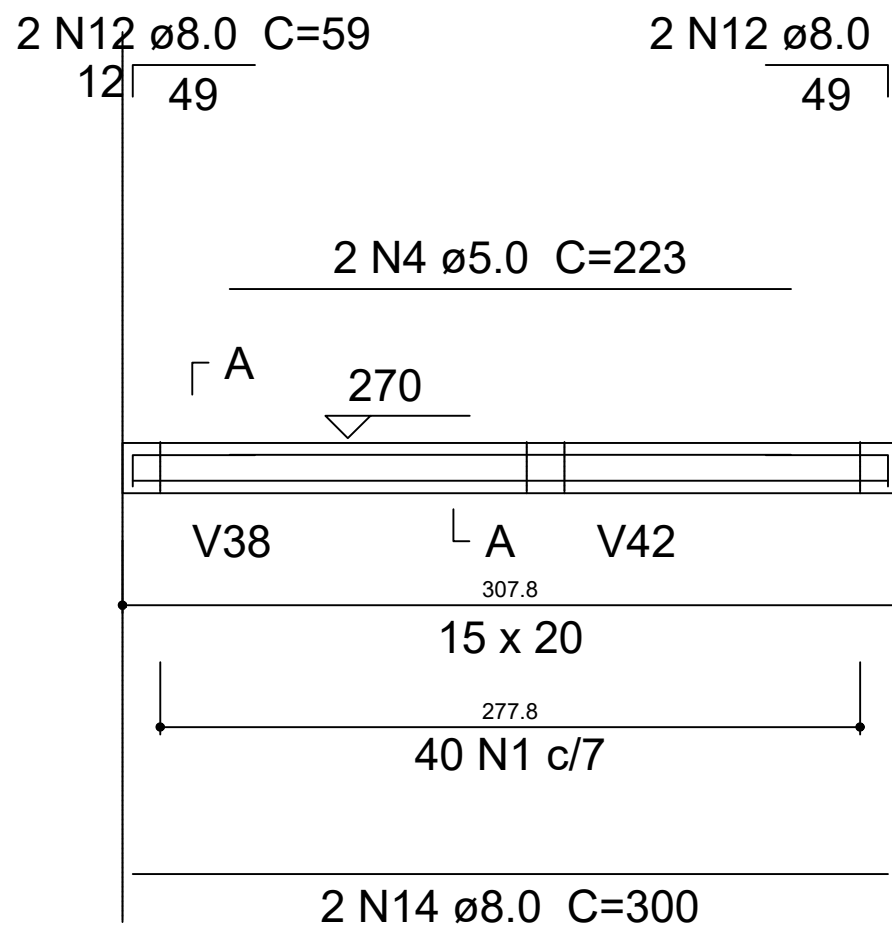
AÇO	N	DIAM (mm)	QUANT (Barras)	UNIT (cm)	C.TOTAL (cm)
V32	1	5.0	1083	50	54150
V36	2	5.0	2	377	754
V40	3	5.0	4	233	932
V44	4	5.0	2	223	446
	5	5.0	2	299	598
	6	5.0	2	313	626
	7	5.0	2	242	484
	8	5.0	2	279	558
	9	8.0	2	476	952
	10	8.0	2	496	992
	11	8.0	4	416	1664
	12	8.0	8	59	472
	13	8.0	2	436	872
	14	8.0	6	300	1800
	15	8.0	2	336	672
	16	8.0	4	917	3668
	17	8.0	4	493	1972
	18	8.0	4	575	2300
	19	8.0	4	645	2580
	20	8.0	2	327	654
	21	8.0	2	760	1520
	22	8.0	2	780	1560
	23	8.0	2	851	1702
	24	8.0	2	1124	2248
	25	8.0	2	174	348
	26	8.0	2	562	1124
	27	8.0	2	280	560
	28	8.0	2	203	406
	29	8.0	2	318	636

Resumo do aço

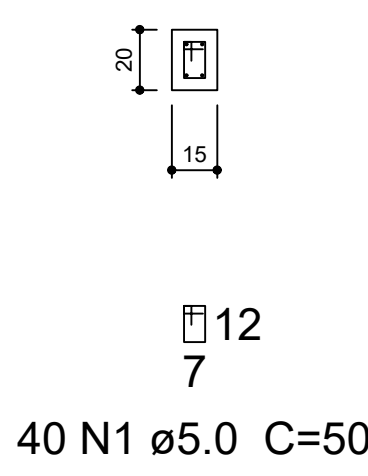
AÇO	DIAM (mm)	C.TOTAL (m)	PESO + 10 % (kg)
CA50	8.0	287.1	124.6
CA60	5.0	585.5	99.3
PESO TOTAL (kg)			
CA50		124.6	
CA60		99.3	

Volume de concreto (C-30) = 2.46 m³  
Área de forma = 45.03 m²

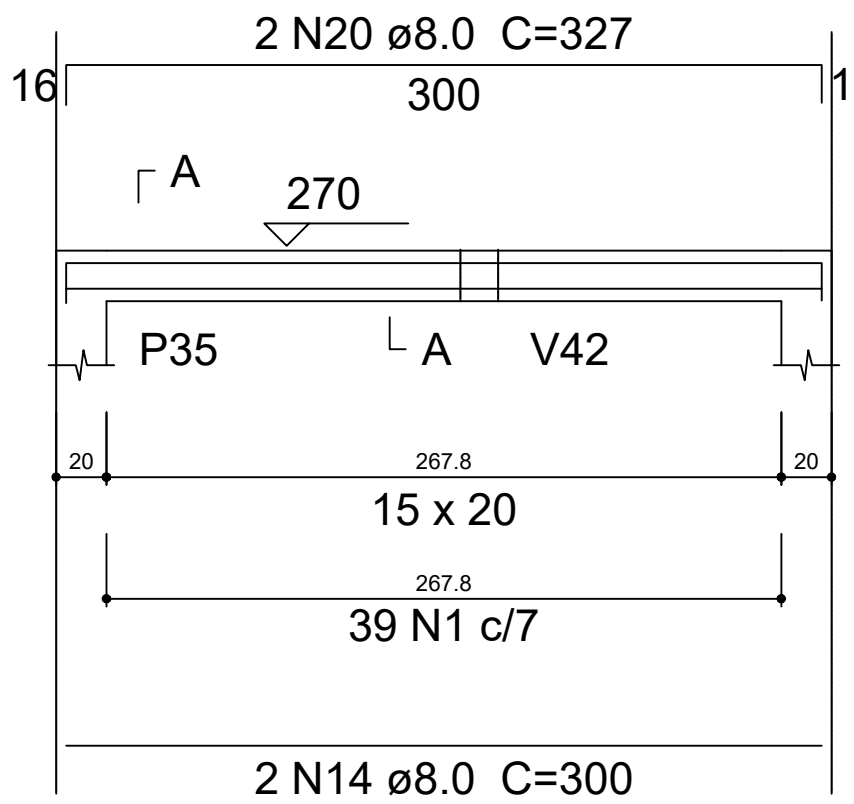
V40  
ESC 1:100



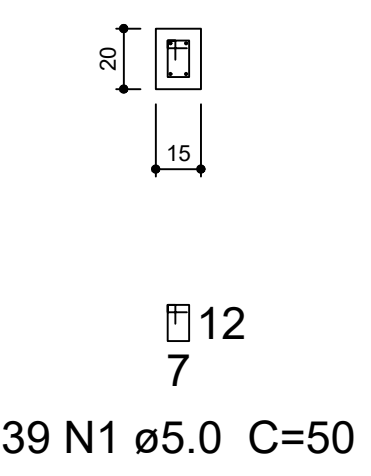
SEÇÃO A-A  
ESC 1:100



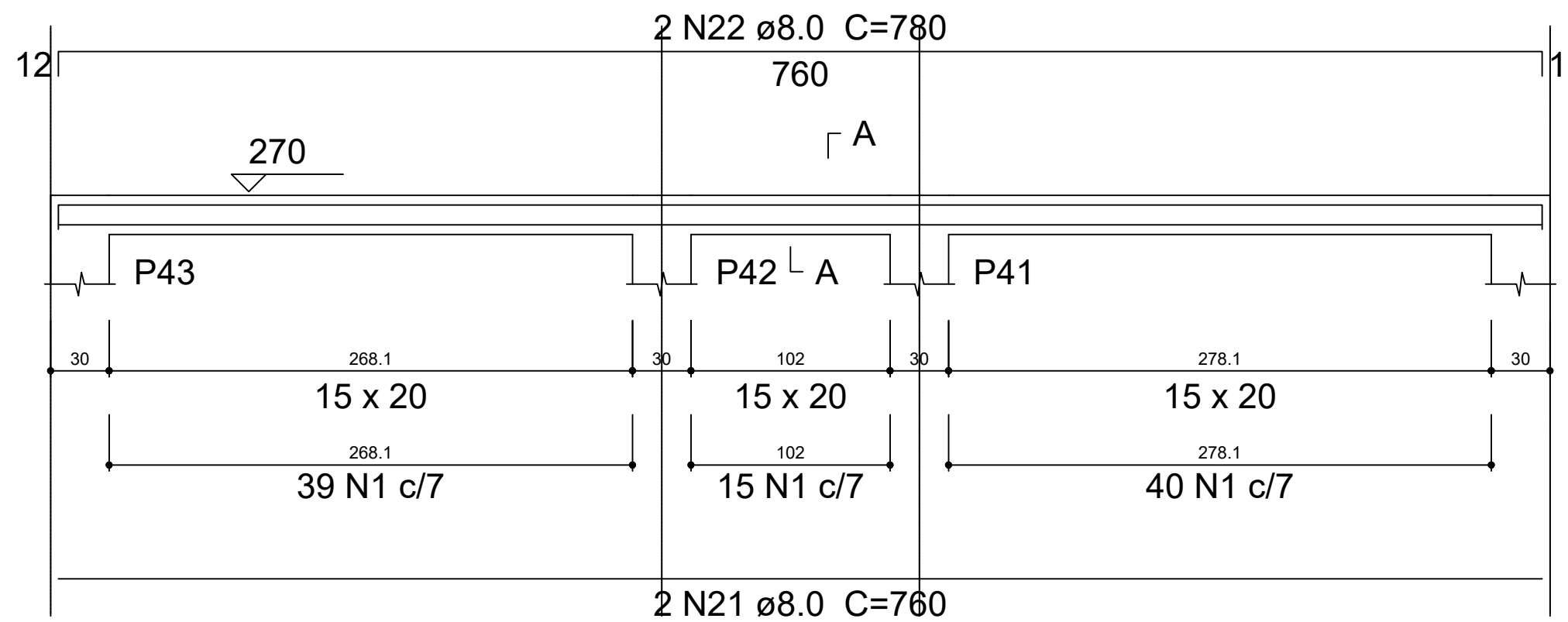
V41  
ESC 1:100



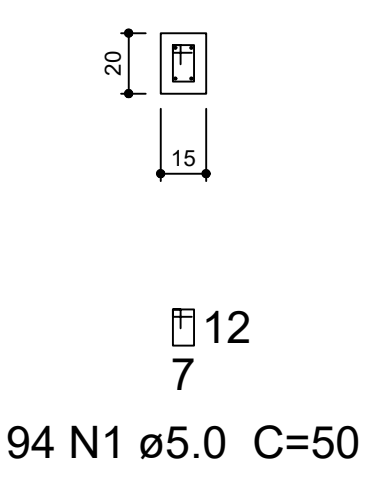
SEÇÃO A-A  
ESC 1:100



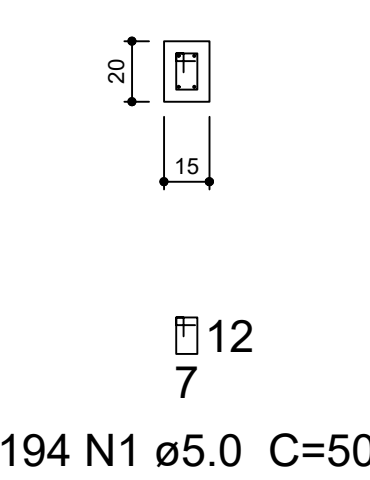
V44  
ESC 1:100



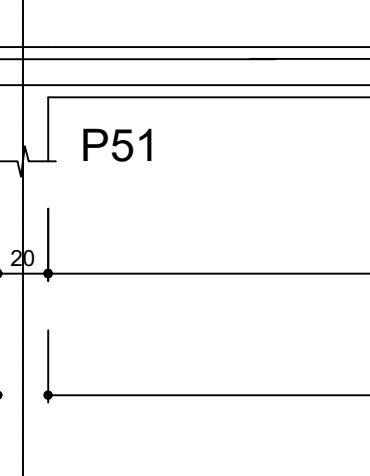
SEÇÃO A-A  
ESC 1:100



SEÇÃO A-A  
ESC 1:100



SEÇÃO A-A  
ESC 1:100

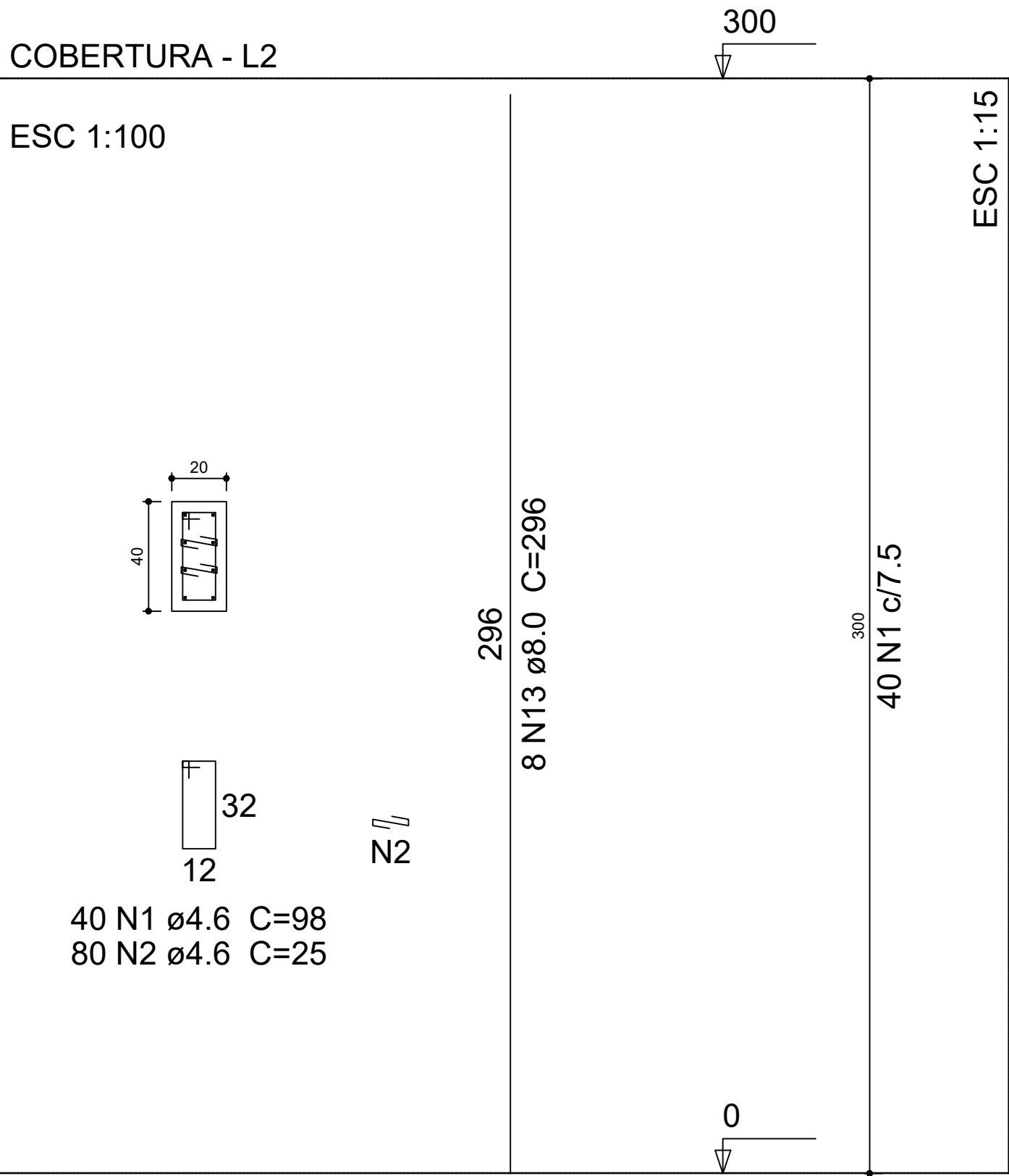




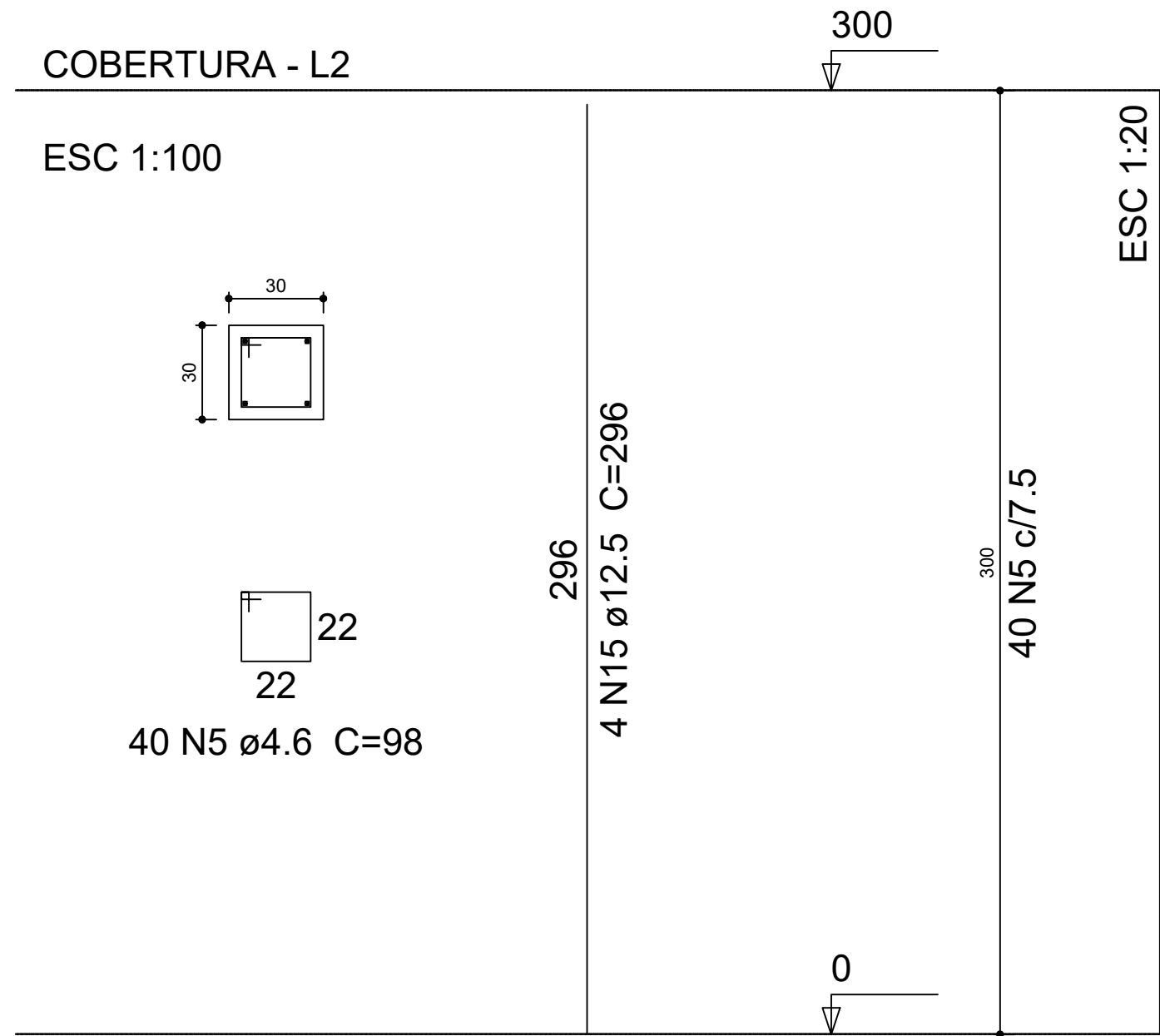




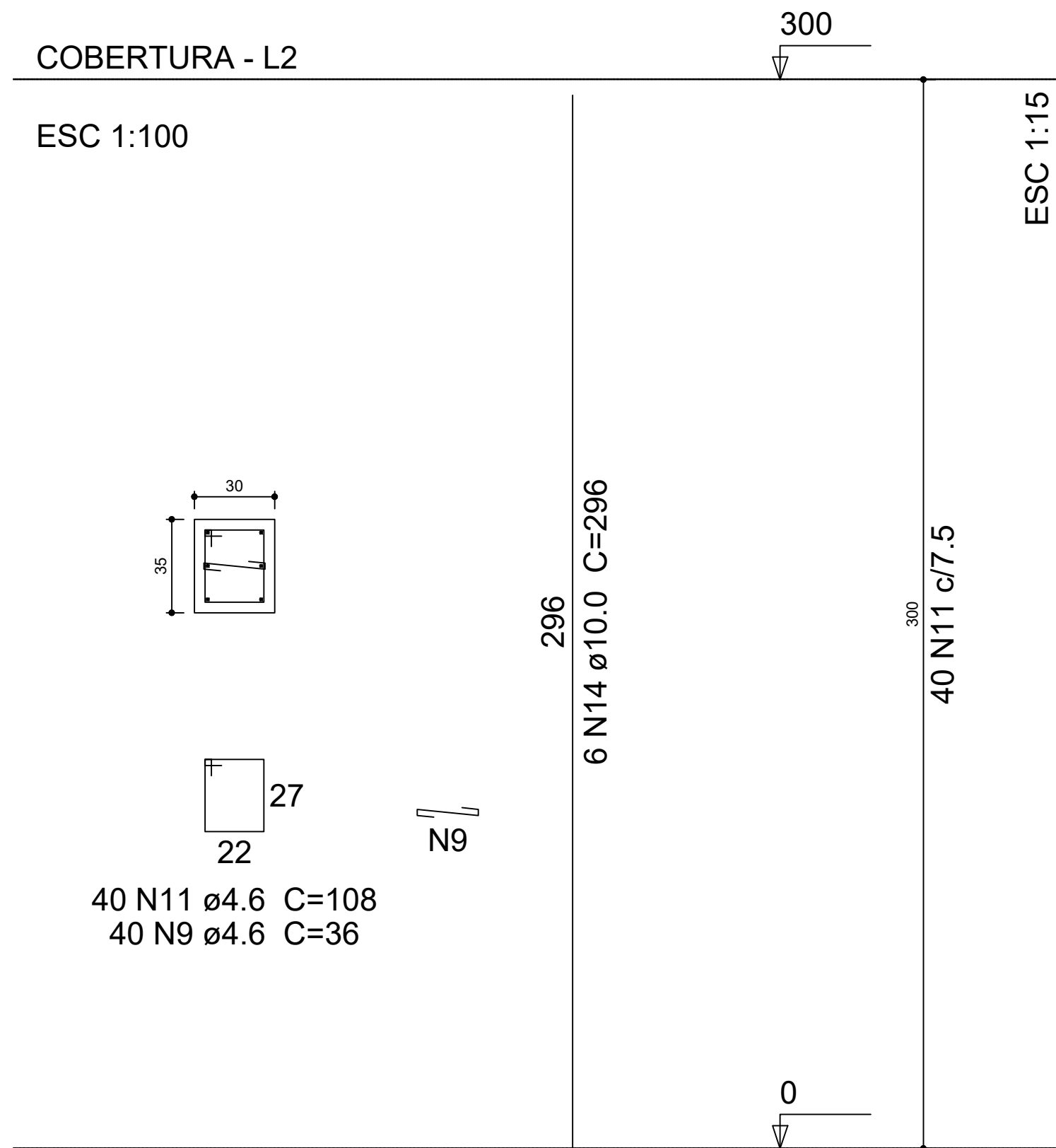
P1



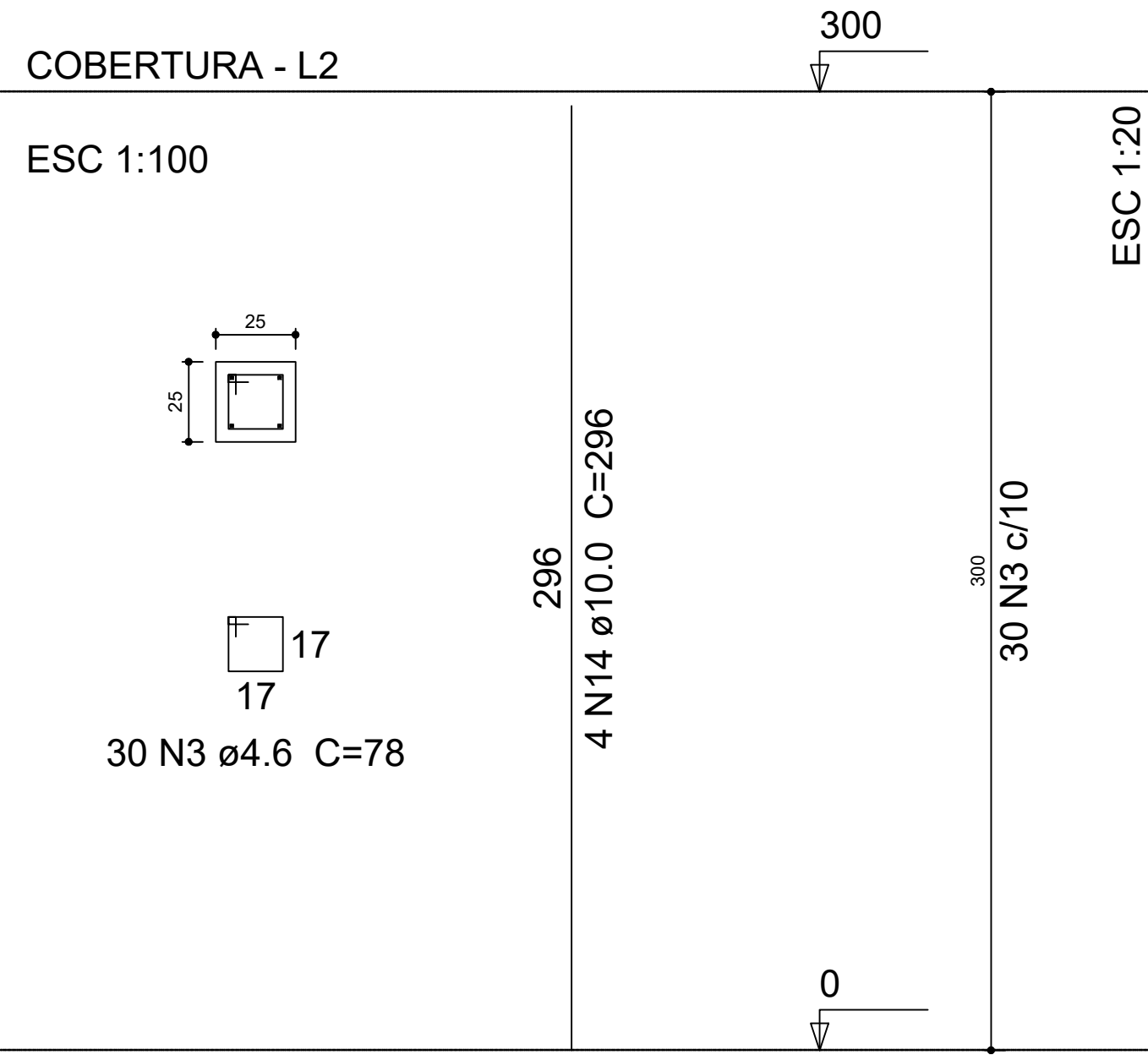
P19=P20=P29=P30=P40=P43



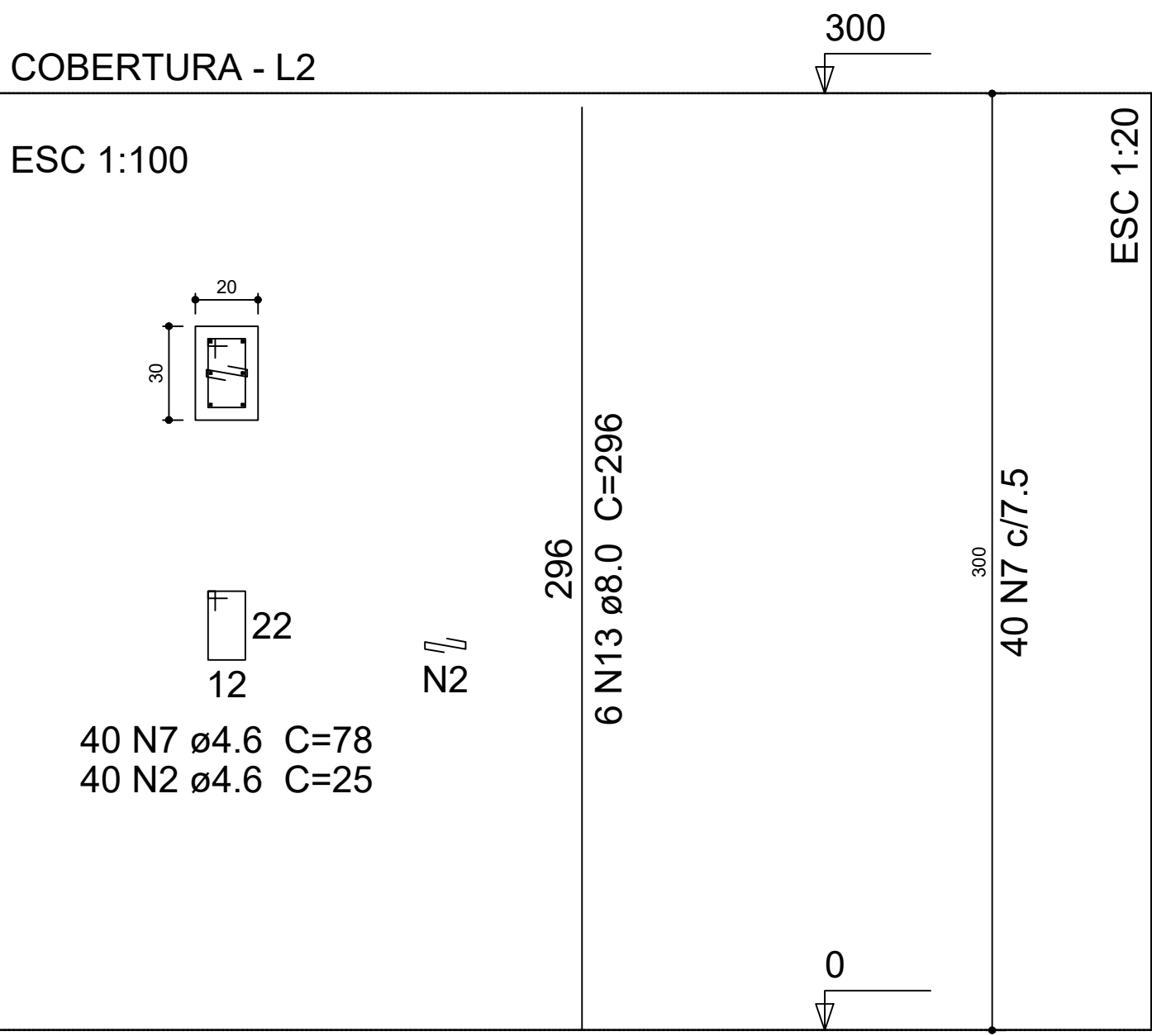
P31



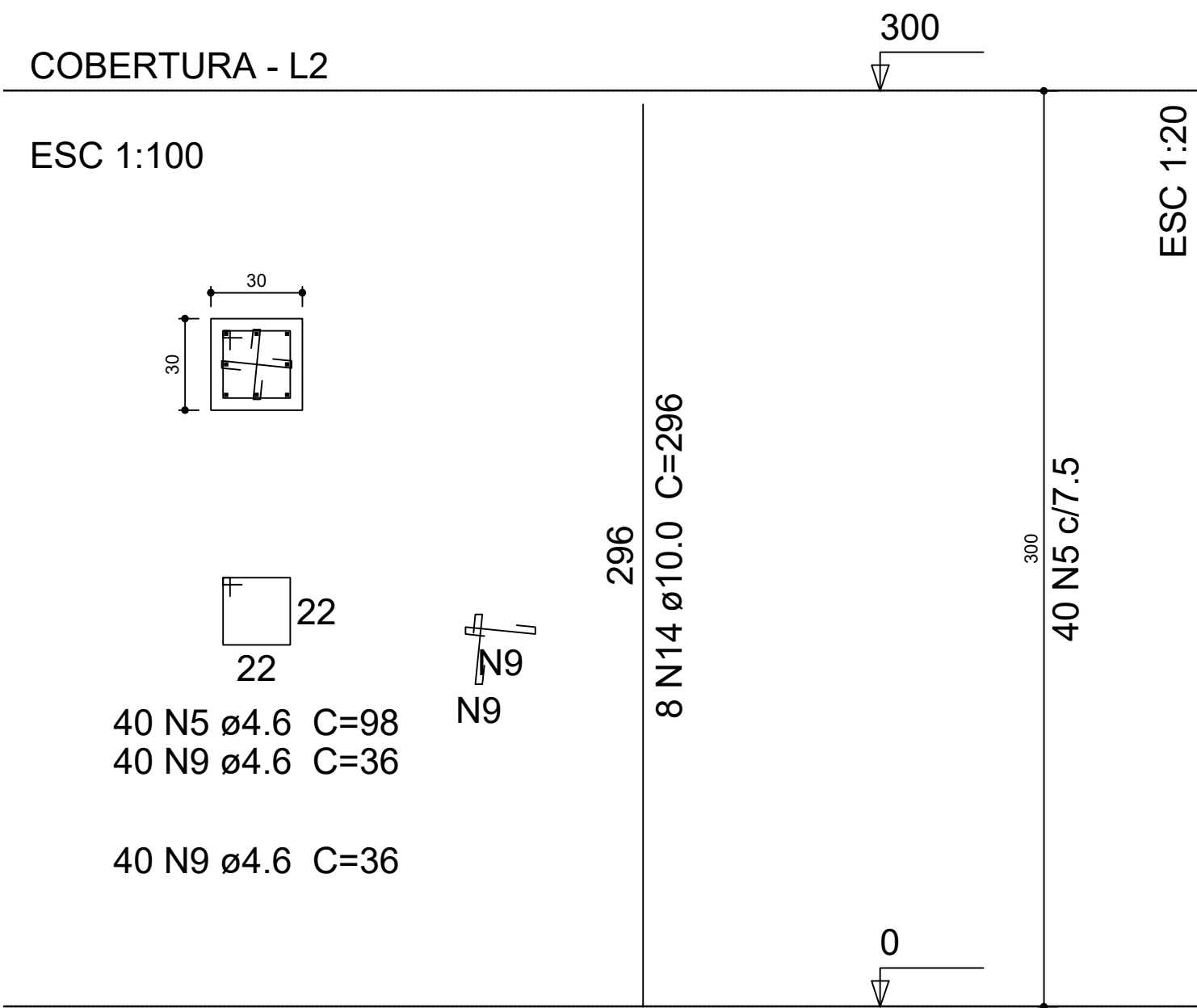
P10=P13



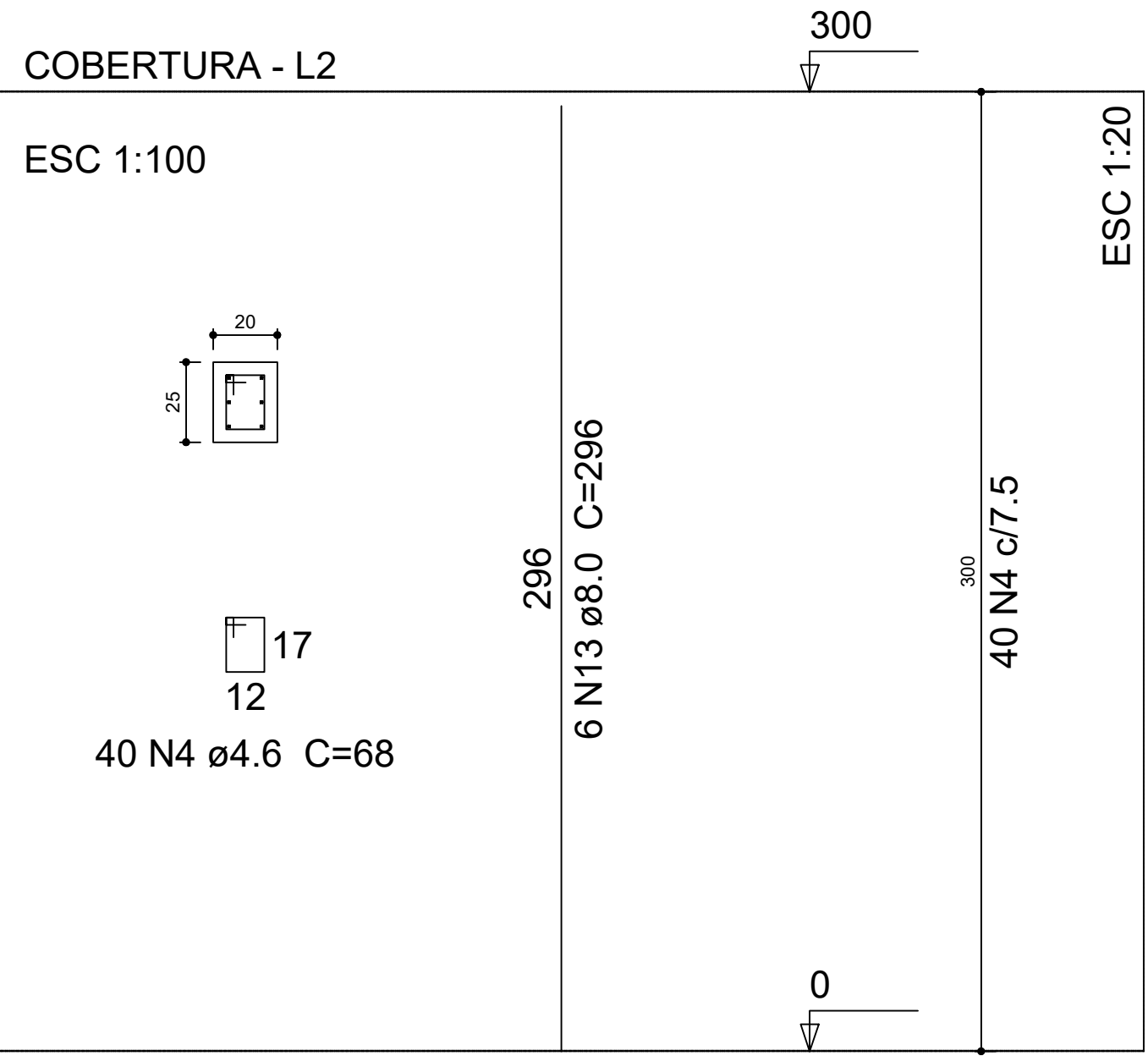
P2=P5=P6=P9=P12=P14=P15=P23=P25=P32=P37P24  
=P38



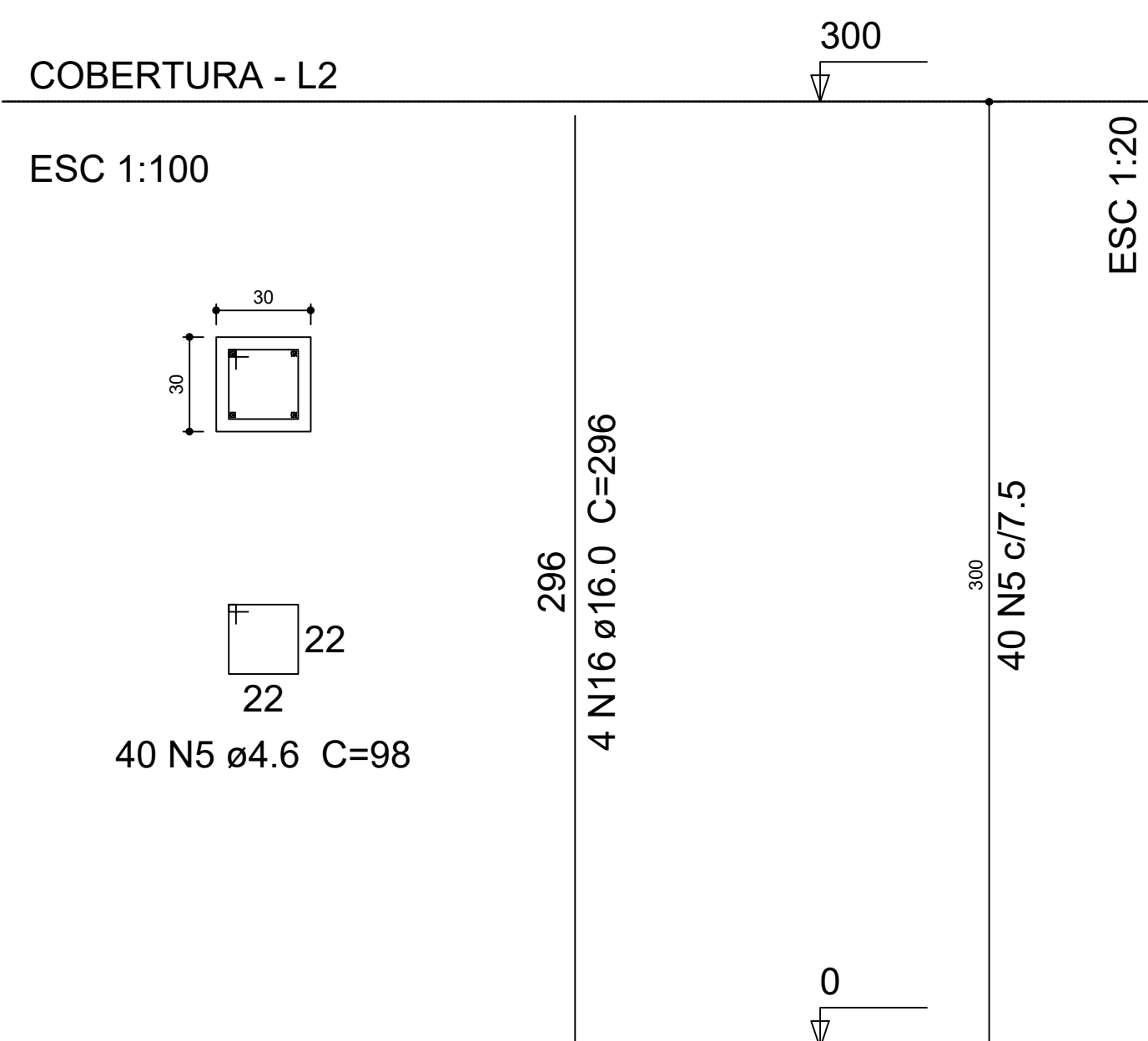
P41



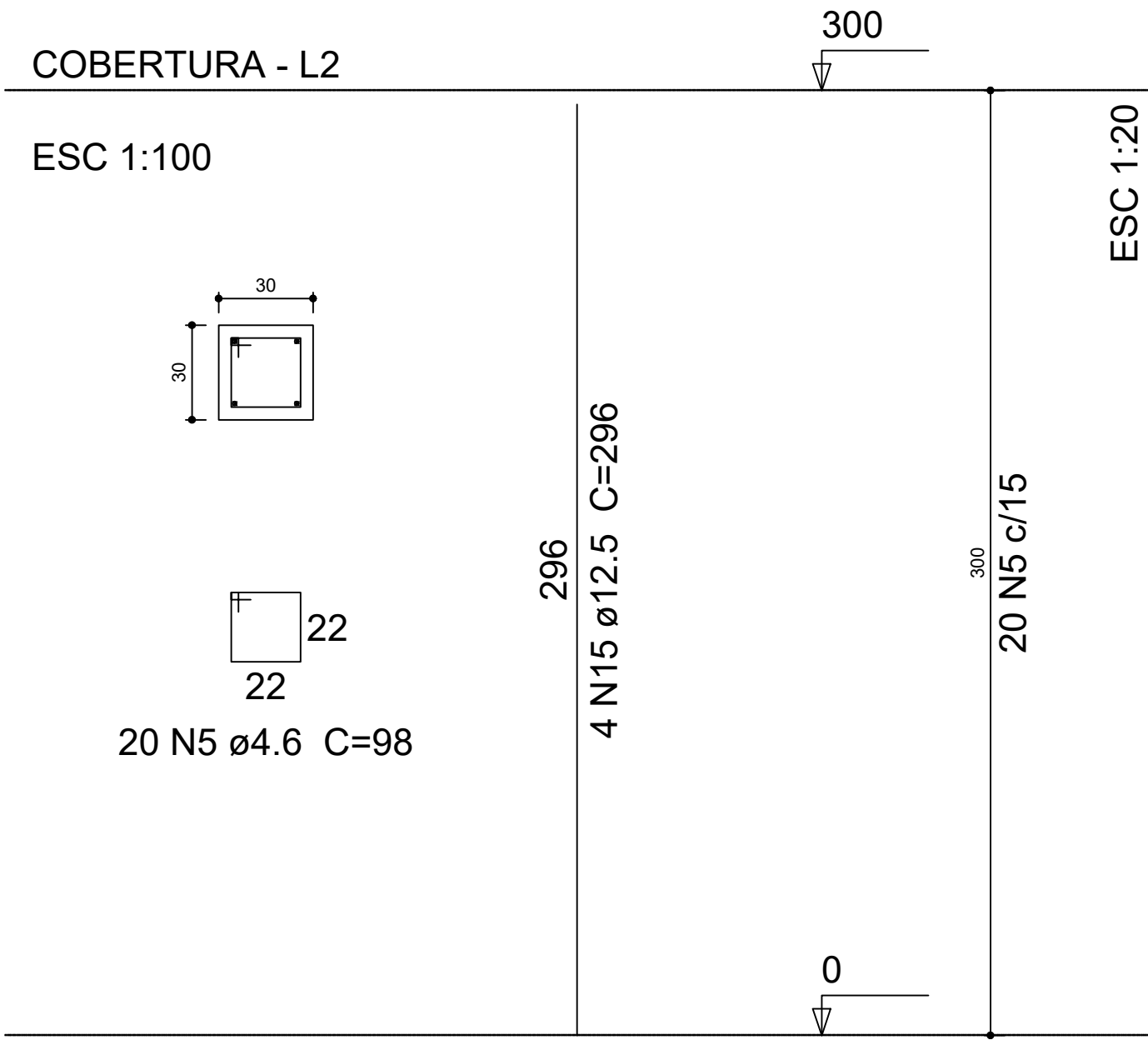
P11



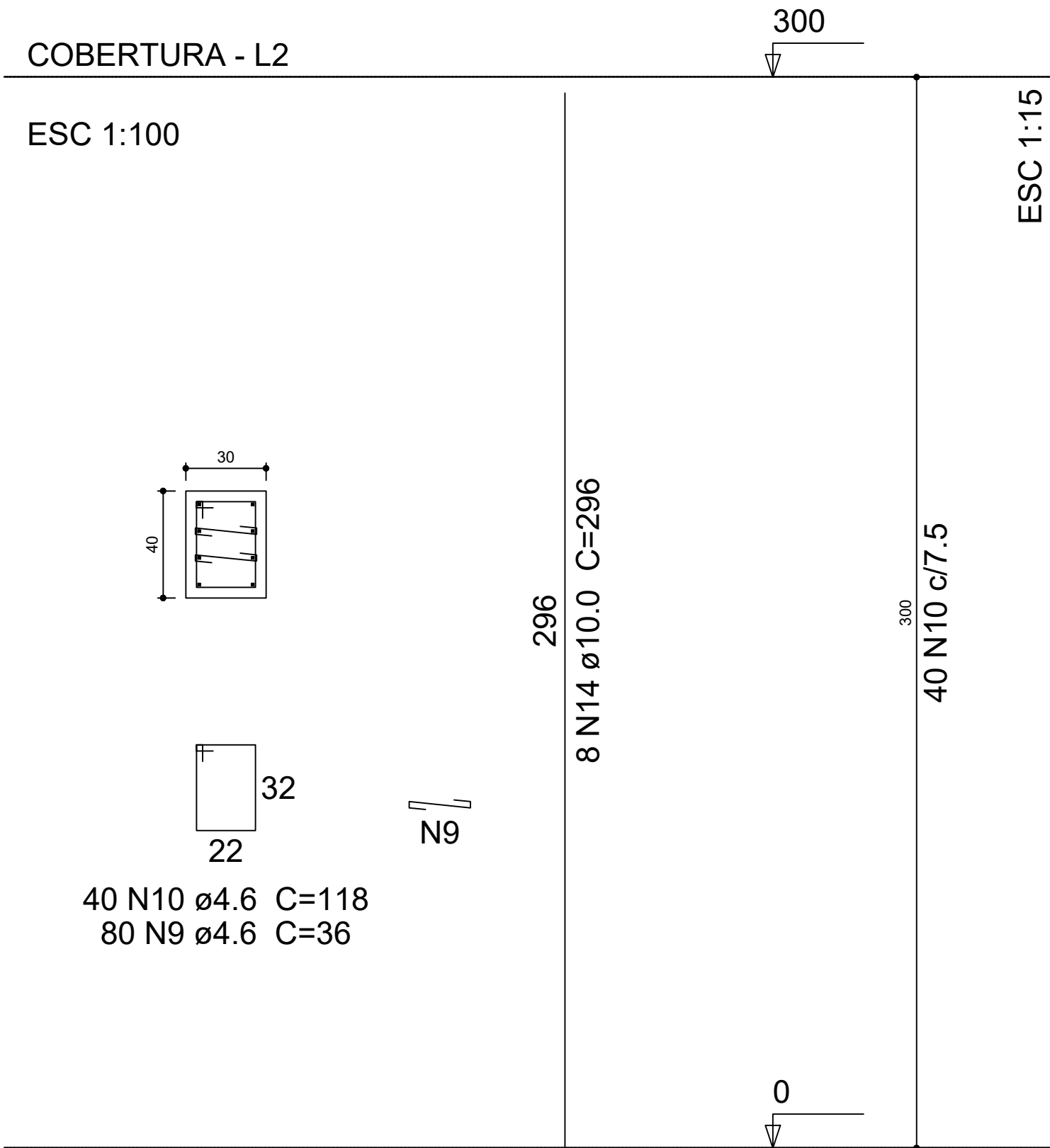
P42=P44



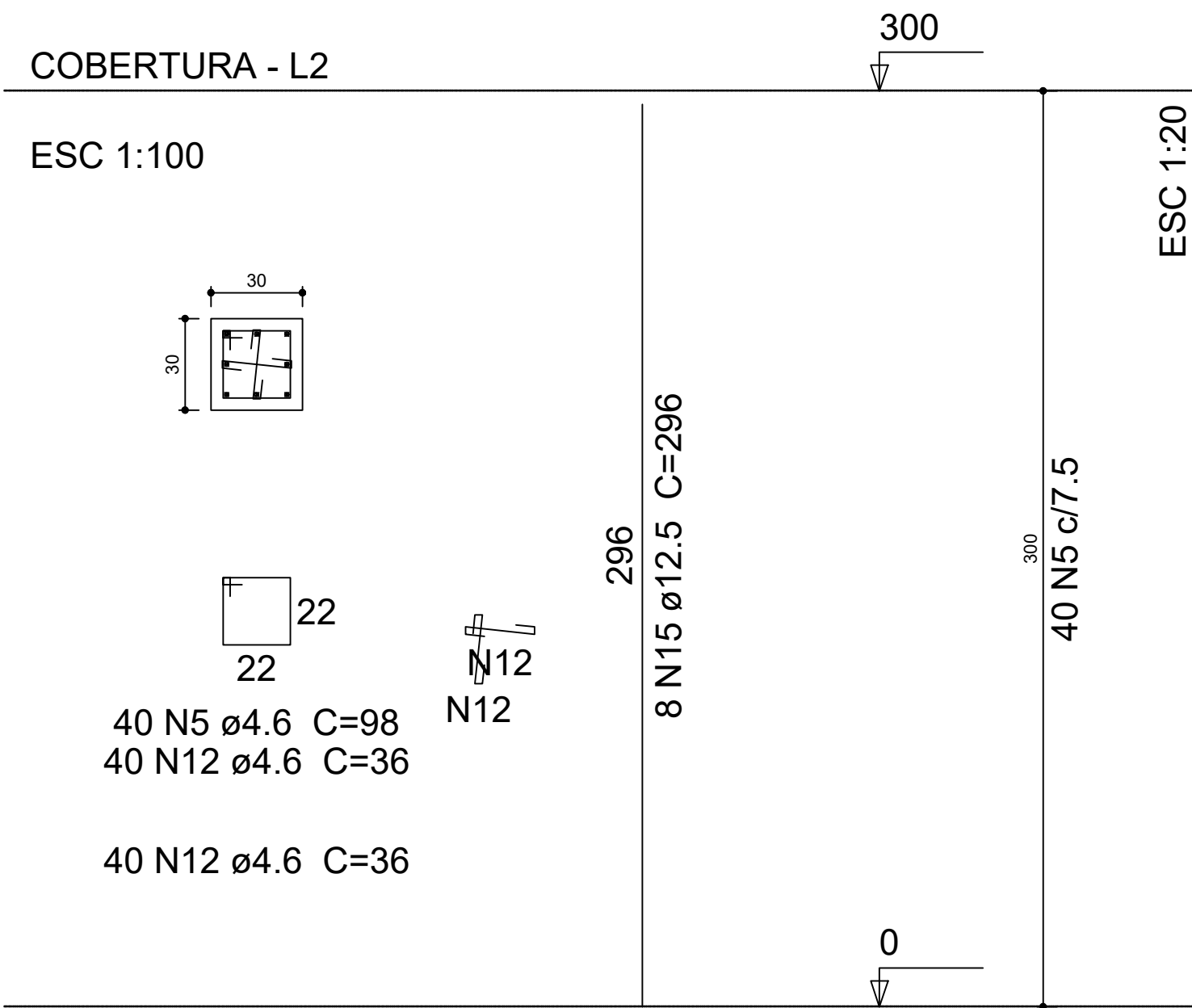
P16



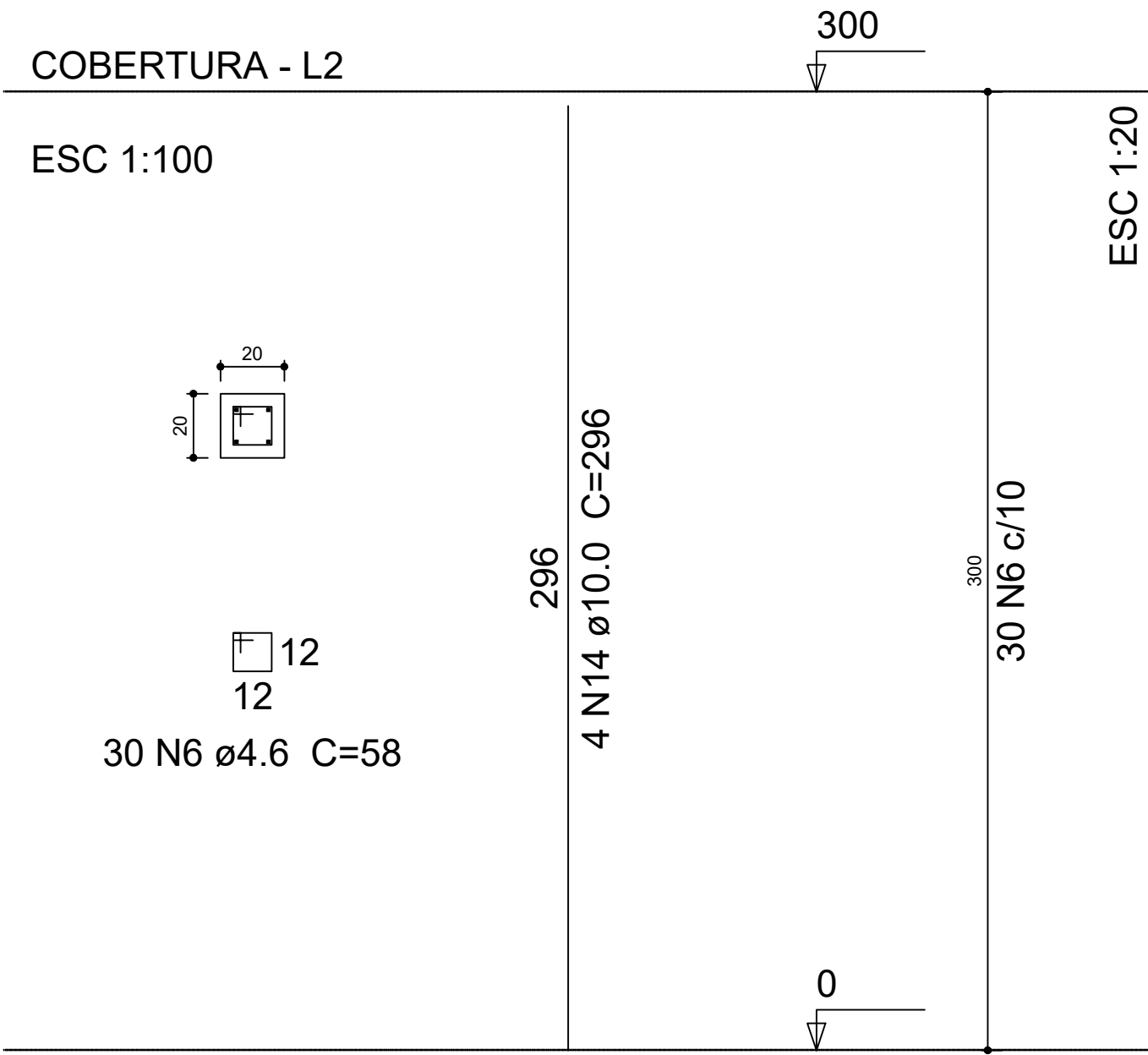
P3=P4=P7



P45



P52



Relação do aço

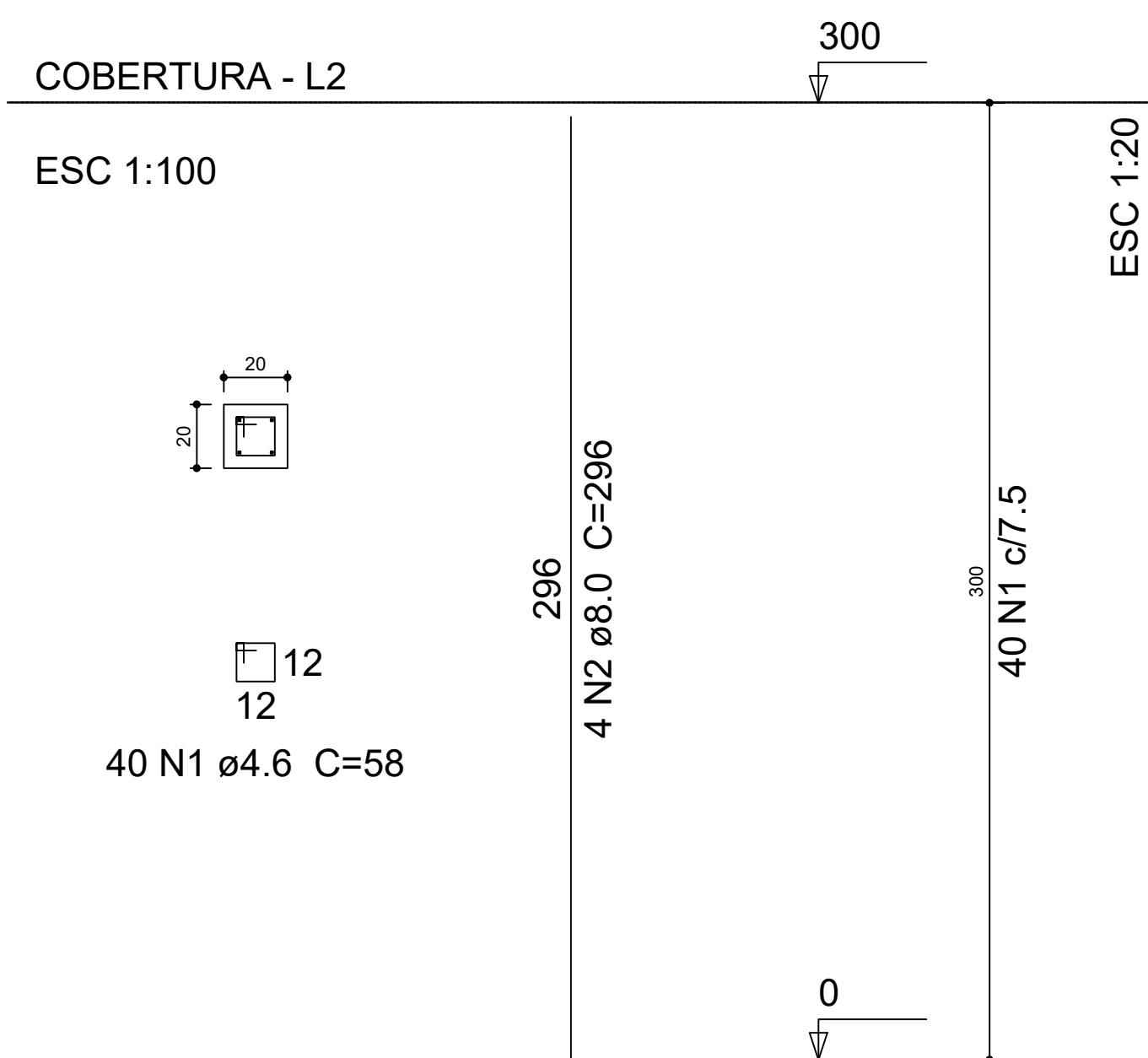
AÇO	N	DIAM (mm)	QUANT (Barras)	UNIT (cm)	C.TOTAL (cm)
CA60	1	4.6	40	98	3920
	2	4.6	560	25	14000
	3	4.6	60	78	4680
	4	4.6	40	68	2720
	5	4.6	420	98	41160
	6	4.6	30	58	1740
	7	4.6	480	78	37440
	8	4.6	40	138	5520
	9	4.6	440	36	15840
	10	4.6	120	118	14160
	11	4.6	40	108	4320
CA50	12	4.6	80	36	2880
	13	8.0	86	296	25456
	14	10.0	58	296	17168
	15	12.5	36	296	10656
P52	16	16.0	8	296	2368

Resumo do aço

AÇO	DIAM (mm)	C.TOTAL (m)	PESO + 10 % (kg)
CA50	8.0	254.6	110.5
	10.0	171.7	116.4
	12.5	106.6	112.9
	16.0	23.7	41.1
CA60	4.6	1483.8	212.9
PESO TOTAL (kg)			
CA50		381	
CA60		212.9	

Volume de concreto (C-30) = 7.86 m³  
Área de forma = 111.6 m²

P8=P17=P18=P21=P22=P33=P34=P35=P36=P39  
=P47=P49=P50=P51=P53=P54



Relação do aço

16xP8

AÇO	N	DIAM (mm)	QUANT (Barras)	UNIT (cm)	C.TOTAL (cm)
CA60	1	4.6	640	58	37120
CA50	2	8.0	64	296	18944

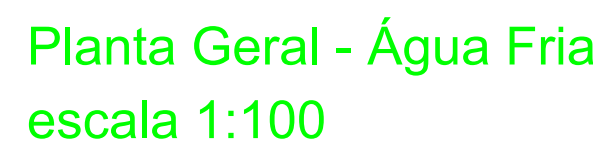
Resumo do aço

AÇO	DIAM (mm)	C.TOTAL (m)	PESO + 10 % (kg)
CA50	8.0	189.5	82.2
CA60	4.6	371.2	53.3
PESO TOTAL (kg)			
CA50		82.2	
CA60		53.3	

Volume de concreto (C-30) = 1.92 m³  
Área de forma = 38.4 m²

		CORPO DE BOMBEIROS MILITAR DO PARÁ E COORDENADORIA ESTADUAL DE DEFESA CIVIL	
PROJETO: GRUPAMENTO MILITAR DOS BOMBEIROS DE SÃO FELIX DO XINGU			
CONTEÚDO:		ESCALA:	INDICADA
PILARES		DATA:	MARÇO / 2023
RESPONSÁVEL TÉCNICO:		PRINCIPAL:	
Cibson Pereira Mourão M. P. 517.7896-4 RG: 3062324 CORPO DE BOMBEIROS MILITARES - ENG. CIVIL CREA Nº 1582-07A		EST-15/15	





	Registo de gaceta bruto ABNT		
1	1 m <sup>3</sup>	2	2 ps
2	2 m <sup>3</sup>	3	3 ps
3	3 m <sup>3</sup>	4	4 ps
4	Registo de prensa e canopia comada	5	11 ps
	<b>PVC Acessórios</b>		
1	Bucha de ligação p/ visto sanitário		
2	Engaxe flexível com comado com canopia	14	14 ps
3	Engaxe flexível plástico	15	15 ps
4	Engaxe flexível plástico	16	16 ps
	<b>PVC misto clauda</b>		
1	Bucha de vedação isolador v rosca	14	14 ps
2	Linha sanitária v rosca	25	25 ps
3	25 m <sup>3</sup> 3/4"	11	11 ps
	<b>PVC rígido isolador</b>		
1	Bucha de ligação p/ c. flange p/ se. c. d. água		
2	25 m <sup>3</sup> 3/4"		
3	Engaxe flexível com tubo chubaca-rosca p. registro	21	21 ps
4	25 m <sup>3</sup> 1"		
5	25 m <sup>3</sup> 1 1/4"		
6	Bucha de vedação selo. curta		
7	25 m <sup>3</sup> 25 mm		
8	Bucha de vedação selo longa	15	15 ps
9	25 m <sup>3</sup> 25 mm		
10	25 m <sup>3</sup> 32 mm		
11	Curva 45° isolador		
12	60 mm	7	7 ps
13	Curva 90° isolador		
14	60 mm	6	6 ps
15	25 m <sup>3</sup> 1"		
16	25 m <sup>3</sup> 1 1/4"		
17	25 m <sup>3</sup> 2"		
18	25 m <sup>3</sup> 2 1/2"		
19	25 m <sup>3</sup> 3"		
20	25 m <sup>3</sup> 3 1/2"		
21	25 m <sup>3</sup> 4"		
22	25 m <sup>3</sup> 4 1/2"		
23	25 m <sup>3</sup> 5"		
24	25 m <sup>3</sup> 5 1/2"		
25	25 m <sup>3</sup> 6"		
26	25 m <sup>3</sup> 6 1/2"		
27	25 m <sup>3</sup> 7"		
28	25 m <sup>3</sup> 7 1/2"		
29	25 m <sup>3</sup> 8"		
30	25 m <sup>3</sup> 8 1/2"		
31	25 m <sup>3</sup> 9"		
32	25 m <sup>3</sup> 9 1/2"		
33	25 m <sup>3</sup> 10"		
34	25 m <sup>3</sup> 10 1/2"		
35	25 m <sup>3</sup> 11"		
36	25 m <sup>3</sup> 11 1/2"		
37	25 m <sup>3</sup> 12"		
38	25 m <sup>3</sup> 12 1/2"		
39	25 m <sup>3</sup> 13"		
40	25 m <sup>3</sup> 13 1/2"		
41	25 m <sup>3</sup> 14"		
42	25 m <sup>3</sup> 14 1/2"		
43	25 m <sup>3</sup> 15"		
44	25 m <sup>3</sup> 15 1/2"		
45	25 m <sup>3</sup> 16"		
46	25 m <sup>3</sup> 16 1/2"		
47	25 m <sup>3</sup> 17"		
48	25 m <sup>3</sup> 17 1/2"		
49	25 m <sup>3</sup> 18"		
50	25 m <sup>3</sup> 18 1/2"		
51	25 m <sup>3</sup> 19"		
52	25 m <sup>3</sup> 19 1/2"		
53	25 m <sup>3</sup> 20"		
54	25 m <sup>3</sup> 20 1/2"		
55	25 m <sup>3</sup> 21"		
56	25 m <sup>3</sup> 21 1/2"		
57	25 m <sup>3</sup> 22"		
58	25 m <sup>3</sup> 22 1/2"		
59	25 m <sup>3</sup> 23"		
60	25 m <sup>3</sup> 23 1/2"		
61	25 m <sup>3</sup> 24"		
62	25 m <sup>3</sup> 24 1/2"		
63	25 m <sup>3</sup> 25"		
64	25 m <sup>3</sup> 25 1/2"		
65	25 m <sup>3</sup> 26"		
66	25 m <sup>3</sup> 26 1/2"		
67	25 m <sup>3</sup> 27"		
68	25 m <sup>3</sup> 27 1/2"		
69	25 m <sup>3</sup> 28"		
70	25 m <sup>3</sup> 28 1/2"		
71	25 m <sup>3</sup> 29"		
72	25 m <sup>3</sup> 29 1/2"		
73	25 m <sup>3</sup> 30"		
74	25 m <sup>3</sup> 30 1/2"		
75	25 m <sup>3</sup> 31"		
76	25 m <sup>3</sup> 31 1/2"		
77	25 m <sup>3</sup> 32"		
78	25 m <sup>3</sup> 32 1/2"		
79	25 m <sup>3</sup> 33"		
80	25 m <sup>3</sup> 33 1/2"		
81	25 m <sup>3</sup> 34"		
82	25 m <sup>3</sup> 34 1/2"		
83	25 m <sup>3</sup> 35"		
84	25 m <sup>3</sup> 35 1/2"		
85	25 m <sup>3</sup> 36"		
86	25 m <sup>3</sup> 36 1/2"		
87	25 m <sup>3</sup> 37"		
88	25 m <sup>3</sup> 37 1/2"		
89	25 m <sup>3</sup> 38"		
90	25 m <sup>3</sup> 38 1/2"		
91	25 m <sup>3</sup> 39"		
92	25 m <sup>3</sup> 39 1/2"		
93	25 m <sup>3</sup> 40"		
94	25 m <sup>3</sup> 40 1/2"		
95	25 m <sup>3</sup> 41"		
96	25 m <sup>3</sup> 41 1/2"		
97	25 m <sup>3</sup> 42"		
98	25 m <sup>3</sup> 42 1/2"		
99	25 m <sup>3</sup> 43"		
100	25 m <sup>3</sup> 43 1/2"		
101	25 m <sup>3</sup> 44"		
102	25 m <sup>3</sup> 44 1/2"		
103	25 m <sup>3</sup> 45"		
104	25 m <sup>3</sup> 45 1/2"		
105	25 m <sup>3</sup> 46"		
106	25 m <sup>3</sup> 46 1/2"		
107	25 m <sup>3</sup> 47"		
108	25 m <sup>3</sup> 47 1/2"		
109	25 m <sup>3</sup> 48"		
110	25 m <sup>3</sup> 48 1/2"		
111	25 m <sup>3</sup> 49"		
112	25 m <sup>3</sup> 49 1/2"		
113	25 m <sup>3</sup> 50"		
114	25 m <sup>3</sup> 50 1/2"		
115	25 m <sup>3</sup> 51"		
116	25 m <sup>3</sup> 51 1/2"		
117	25 m <sup>3</sup> 52"		
118	25 m <sup>3</sup> 52 1/2"		
119	25 m <sup>3</sup> 53"		
120	25 m <sup>3</sup> 53 1/2"		
121	25 m <sup>3</sup> 54"		
122	25 m <sup>3</sup> 54 1/2"		
123	25 m <sup>3</sup> 55"		
124	25 m <sup>3</sup> 55 1/2"		
125	25 m <sup>3</sup> 56"		
126	25 m <sup>3</sup> 56 1/2"		
127	25 m <sup>3</sup> 57"		
128	25 m <sup>3</sup> 57 1/2"		
129	25 m <sup>3</sup> 58"		
130	25 m <sup>3</sup> 58 1/2"		
131	25 m <sup>3</sup> 59"		
132	25 m <sup>3</sup> 59 1/2"		
133	25 m <sup>3</sup> 60"		
134	25 m <sup>3</sup> 60 1/2"		
135	25 m <sup>3</sup> 61"		
136	25 m <sup>3</sup> 61 1/2"		
137	25 m <sup>3</sup> 62"		
138	25 m <sup>3</sup> 62 1/2"		
139	25 m <sup>3</sup> 63"		
140	25 m <sup>3</sup> 63 1/2"		
141	25 m <sup>3</sup> 64"		
142	25 m <sup>3</sup> 64 1/2"		
143	25 m <sup>3</sup> 65"		
144	25 m <sup>3</sup> 65 1/2"		
145	25 m <sup>3</sup> 66"		
146	25 m <sup>3</sup> 66 1/2"		
147	25 m <sup>3</sup> 67"		
148	25 m <sup>3</sup> 67 1/2"		
149	25 m <sup>3</sup> 68"		
150	25 m <sup>3</sup> 68 1/2"		
151	25 m <sup>3</sup> 69"		
152	25 m <sup>3</sup> 69 1/2"		
153	25 m <sup>3</sup> 70"		
154	25 m <sup>3</sup> 70 1/2"		
155	25 m <sup>3</sup> 71"		
156	25 m <sup>3</sup> 71 1/2"		
157	25 m <sup>3</sup> 72"		
158	25 m <sup>3</sup> 72 1/2"		
159	25 m <sup>3</sup> 73"		
160	25 m <sup>3</sup> 73 1/2"		
161	25 m <sup>3</sup> 74"		
162	25 m <sup>3</sup> 74 1/2"		
163	25 m <sup>3</sup> 75"		
164	25 m <sup>3</sup> 75 1/2"		
165	25 m <sup>3</sup> 76"		
166	25 m <sup>3</sup> 76 1/2"		
167	25 m <sup>3</sup> 77"		
168	25 m <sup>3</sup> 77 1/2"		
169	25 m <sup>3</sup> 78"		
170	25 m <sup>3</sup> 78 1/2"		
171	25 m <sup>3</sup> 79"		
172	25 m <sup>3</sup> 79 1/2"		
173	25 m <sup>3</sup> 80"		
174	25 m <sup>3</sup> 80 1/2"		
175	25 m <sup>3</sup> 81"		
176	25 m <sup>3</sup> 81 1/2"		
177	25 m <sup>3</sup> 82"		
178	25 m <sup>3</sup> 82 1/2"		
179	25 m <sup>3</sup> 83"		
180	25 m <sup>3</sup> 83 1/2"		
181	25 m <sup>3</sup> 84"		
182	25 m <sup>3</sup> 84 1/2"		
183	25 m <sup>3</sup> 85"		
184	25 m <sup>3</sup> 85 1/2"		
185	25 m <sup>3</sup> 86"		
186	25 m <sup>3</sup> 86 1/2"		
187	25 m <sup>3</sup> 87"		
188	25 m <sup>3</sup> 87 1/2"		
189	25 m <sup>3</sup> 88"		
190	25 m <sup>3</sup> 88 1/2"		
191	25 m <sup>3</sup> 89"		
192	25 m <sup>3</sup> 89 1/2"		
193	25 m <sup>3</sup> 90"		
194	25 m <sup>3</sup> 90 1/2"		
195	25 m <sup>3</sup> 91"		
196	25 m <sup>3</sup> 91 1/2"		
197	25 m <sup>3</sup> 92"		
198	25 m <sup>3</sup> 92 1/2"		
199	25 m <sup>3</sup> 93"		
200	25 m <sup>3</sup> 93 1/2"		
201	25 m <sup>3</sup> 94"		
202	25 m <sup>3</sup> 94 1/2"		
203	25 m <sup>3</sup> 95"		
204	25 m <sup>3</sup> 95 1/2"		
205	25 m <sup>3</sup> 96"		
206	25 m <sup>3</sup> 96 1/2"		
207	25 m <sup>3</sup> 97"		
208	25 m <sup>3</sup> 97 1/2"		
209	25 m <sup>3</sup> 98"		
210	25 m <sup>3</sup> 98 1/2"		
211	25 m <sup>3</sup> 99"		
212	25 m <sup>3</sup> 99 1/2"		
213	25 m <sup>3</sup> 100"		
214	25 m <sup>3</sup> 100 1/2"		
215	25 m <sup>3</sup> 101"		
216	25 m <sup>3</sup> 101 1/2"		
217	25 m <sup>3</sup> 102"		
218	25 m <sup>3</sup> 102 1/2"		
219	25 m <sup>3</sup> 103"		
220	25 m <sup>3</sup> 103 1/2"		
221	25 m <sup>3</sup> 104"		
222	25 m <sup>3</sup> 104 1/2"		
223	25 m <sup>3</sup> 105"		
224	25 m <sup>3</sup> 105 1/2"		
225	25 m <sup>3</sup> 106"		
226	25 m <sup>3</sup> 106 1/2"		
227	25 m <sup>3</sup> 107"		
228	25 m <sup>3</sup> 107 1/2"		
229	25 m <sup>3</sup> 108"		
230	25 m <sup>3</sup> 108 1/2"		
231	25 m <sup>3</sup> 109"		
232	25 m <sup>3</sup> 109 1/2"		
233	25 m <sup>3</sup> 110"		
234	25 m <sup>3</sup> 110 1/2"		
235	25 m <sup>3</sup> 111"		
236	25 m <sup>3</sup> 111 1/2"		
237	25 m <sup>3</sup> 112"		
238	25 m <sup>3</sup> 112 1/2"		
239	25 m <sup>3</sup> 113"		
240	25 m <sup>3</sup> 113 1/2"		
241	25 m <sup>3</sup> 114"		
242	25 m <sup>3</sup> 114 1/2"		
243	25 m <sup>3</sup> 115"		
244	25 m <sup>3</sup> 115 1/2"		
245	25 m <sup>3</sup> 116"		
246	25 m <sup>3</sup> 116 1/2"		
247	25 m <sup>3</sup> 117"		
248	25 m <sup>3</sup> 117 1/2"		
249	25 m <sup>3</sup> 118"		
250	25 m <sup>3</sup> 118 1/2"		
251	25 m <sup>3</sup> 119"		
252	25 m <sup>3</sup> 119 1/2"		
253	25 m <sup>3</sup> 120"		
254	25 m <sup>3</sup> 120 1/2"		
255	25 m <sup>3</sup> 121"		
256	25 m <sup>3</sup> 121 1/2"		
257	25 m <sup>3</sup> 122"		
258	25 m <sup>3</sup> 122 1/2"		
259	25 m <sup>3</sup> 123"		
260	25 m <sup>3</sup> 123 1/2"		
261	25 m <sup>3</sup> 124"		
262	25 m <sup>3</sup> 124 1/2"		
263	25 m <sup>3</sup> 125"		
264	25 m <sup>3</sup> 125 1/2"		
265	25 m <sup>3</sup> 126"		
266	25 m <sup>3</sup> 126 1/2"		
267	25 m <sup>3</sup> 127"		
268	25 m <sup>3</sup> 127 1/2"		
269	25 m <sup>3</sup> 128"		
270	25 m <sup>3</sup> 128 1/2"		
271	25 m <sup>3</sup> 129"		
272	25 m <sup>3</sup> 129 1/2"		
273	25 m <sup>3</sup> 130"		
274	25 m <sup>3</sup> 130 1/2"		
275	25 m <sup>3</sup> 131"		
276	25 m <sup>3</sup> 131 1/2"		
277	25 m <sup>3</sup> 132"		
278	25 m <sup>3</sup> 132 1/2"		
279	25 m <sup>3</sup> 133"		
280	25 m <sup>3</sup> 133 1/2"		
281	25 m <sup>3</sup> 134"		
282	25 m <sup>3</sup> 134 1/2"		
283	25 m <sup>3</sup> 135"		
284	25 m <sup>3</sup> 135 1/2"		
285	25 m <sup>3</sup> 136"		
286	25 m <sup>3</sup> 136 1/2"		
287	25 m <sup>3</sup> 137"		
288	25 m <sup>3</sup> 137 1/2"		
289	25 m <sup>3</sup> 138"		
290	25 m <sup>3</sup> 138 1/2"		
291	25 m <sup>3</sup> 139"		
292	25 m <sup>3</sup> 139 1/2"		
293	25 m <sup>3</sup> 140"		
294	25 m <sup>3</sup> 140 1/2"		
295	25 m <sup>3</sup> 141"		
296	25 m <sup>3</sup> 141 1/2"		
297	25 m <sup>3</sup> 142"		
298	25 m <sup>3</sup> 142 1/2"		
299</			

[illegible]

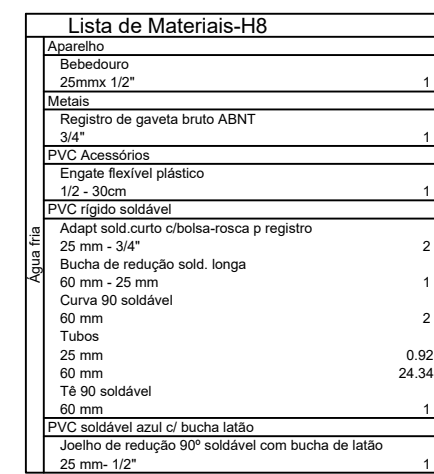
	Legenda das indicações	Altura do ponto (m)
BE	Bebedouro com Joelho de 90° - 25 mm - 1/2"	1,00
CH	Chuveiro - 25mm x 3/4"	2,20
LV	Lavatório com Te de 90° - 25 mm - 1/2"	0,60
MLR	Máquina de lavar roupa com Te de 90° - 25 mm - 3/4"	1,00
PIA	Pia de cozinha com Joelho de 90° - 25 mm - 3/4"	1,20
RG	Registro bruto gaveta ABNT c/PVC soldável - 1"	0,20
RP	Registro de Pressão com PVC soldável - 25 mm - 3/4"	1,20
TLR	Tanque de lavar com Joelho de 90° - 25 mm - 3/4"	1,00
VS	Vaso sanitário com caixa acoplada - 3/4"	0,20

[illegible]

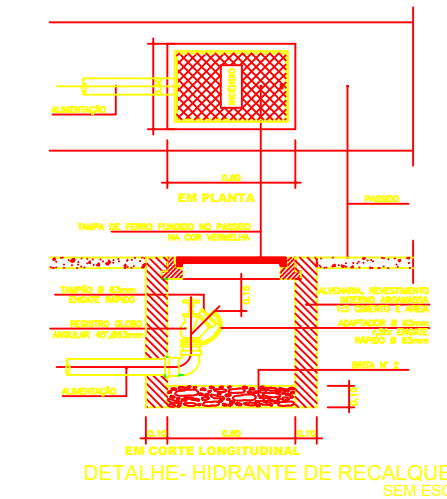




### Detalhe H8 escala 1:25







Detalhe H6  
escala 1:25



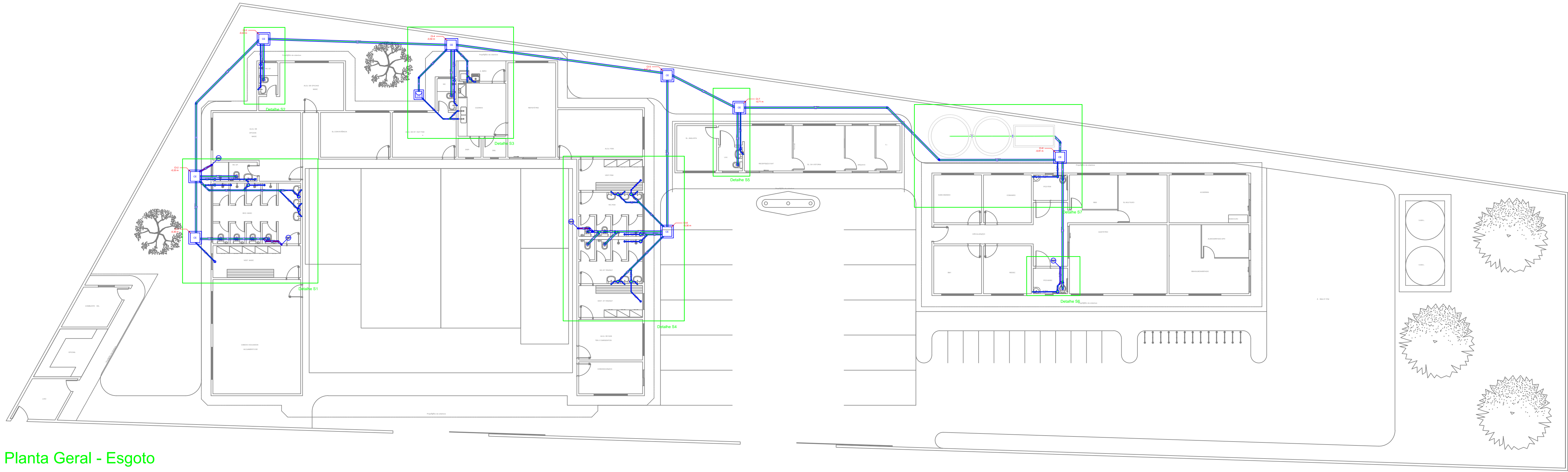
Detalhe H6  
escala 1:25

Lista de Materiais-H6	
	<p>Tomadeira de lavatório 25 mm - 1/2"</p> <p>Vaso Sanitário c/c acoplada 1/2"</p> <p>Moinho 3/4"</p> <p>Registro de gaveta brito ABNT 3/4"</p> <p>P.V.C. Acessórios  <p>Rebra de sapão p/ vaso sanitário 1 1/2"</p> <p>Engate favelado cromo cromado com canopla 1/2 - 30cm</p> <p>Engate favelado plástico 1/2 - 30cm</p> <p>P.V.C. misto soldável  <p>Engate de redução soldável c/ rosca 25 mm - 1/2"</p> <p>P.V.C. rígido soldável  <p>Engate de redução c/ bucha rosca e p registro 25 mm - 3/4"</p> <p>Bucha de redução solda 60 mm - 25 mm</p> <p>Cana 90 soldável 60 mm</p> <p>Joelho 90° soldável 25 mm</p> <p>Tubo 25 mm</p> <p>25 mm 18 90 solda 60 mm</p> <p>Engate de redução 90° soldável com bucha latão 60 mm</p> </p> </p></p>
1	2
1	1
1	2
1	17,04
1	1
1	1



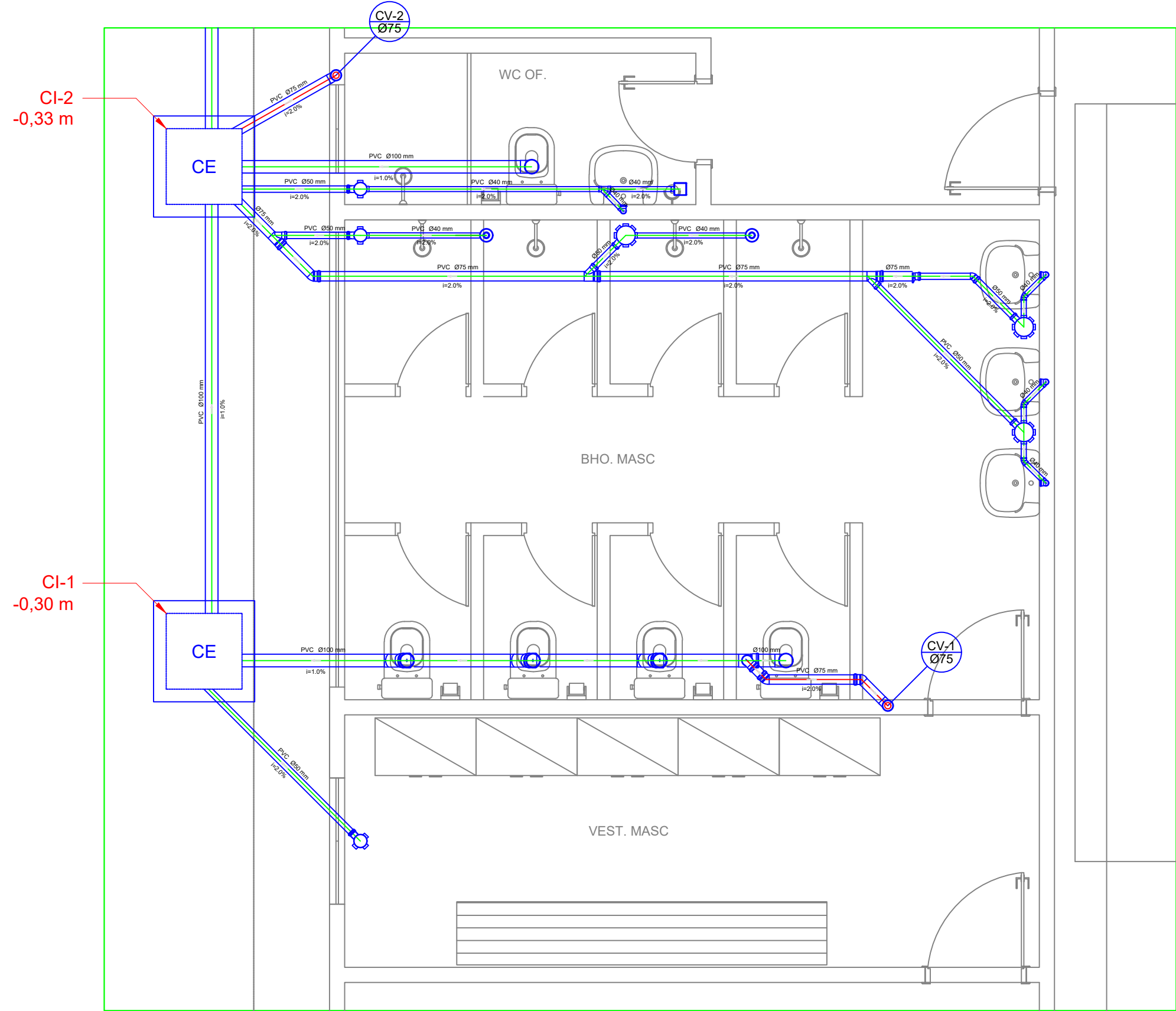
 	<p><b>CORPO DE BOMBEIROS MILITAR DO PARÁ E COORDENADORIA ESTADUAL DE DEFESA CIVIL</b></p>
<p><b>PROJETO</b> GRUPAMENTO MILITAR DOS BOMBEIROS DE SÃO FÉLIX DO XINGU</p>	
<p><b>CONTEÚDO</b> ÁGUA FRIA - DETALHAMENTO</p> <p style="text-align: center;">   <b>ABASTEC. DE VITUALHAMENTO</b> </p>	<p><b>ESCALA</b> INDICADA</p> <p><b>DATA</b> MARÇO / 2023</p>
<p><b>RESPONSÁVEL TÉCNICO</b></p> <p style="text-align: center;">   <b>Cláudio Ferreira Moraes</b>  <small>ENQº CIVIL CB 02M CLÁUDIO FERREIRA MORAES</small>  <small>VP THAIR F. DE ARAÚJO</small> </p>	<p><b>PRONÓCIA</b></p> <p style="text-align: center;"> <b>A1-02/06</b>  <small>M. F. 57.385-11 RG: 3082324</small> </p>





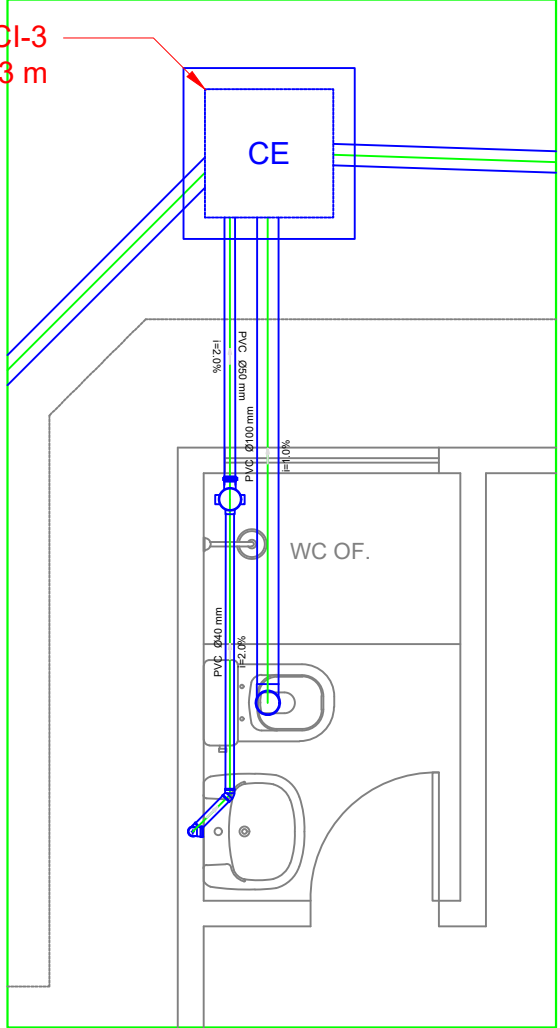
Planta Geral - Esgoto  
escala 1:100

Lista de Materiais-Total	
Caixas de Passagem	
Caixa de gôndola	1 pz
Caixa de inspeção esgoto simples	8 pz
PVC Acessórios	
Caixa alifanada	8 pz
100x100x50	8 pz
100x100x50	8 pz
Raio 90º, quad. saída 40 pr. terrço	1 pz
100x100x50x40	1 pz
Raio alifanado alt. reg. saída 40	6 pz
100 mm - 40 mm	14 pz
Sifão de copo pr. pia e lavatório	1 pz
1" - 1 1/2"	1 pz
Sifão flexível cr. Adaptador	1 pz
1 1/2" - 1 1/2"	14 pz
Válvula pr. lavatório e tanque	1 pz
1"	1 pz
Válvula pr. pia	1 pz
1 1/2"	1 pz
Válvula pr. tanque	1 pz
PVC Esgoto	
Curva 90 curta	9 pz
100 mm	16 pz
Joelho 45	10 pz
40 mm	15 pz
100 mm	4 pz
50 mm	2 pz
75 mm	1 pz
Joelho 90	1 pz
100 mm	7 pz
50 mm	2 pz
Joelho 90 canal pr. esgoto secundário	16 pz
40 mm - 1 1/2"	1 pz
100 mm - 50 mm	7 pz
100 mm - 100 mm	2 pz
50 mm - 50 mm	6 pz
75 mm - 50 mm	4 pz
Redução excêntrica	120.36 m
100 mm - 4"	27.75 m
40 mm	21.13 m
50 mm - 2"	16.52 m
75 mm - 3"	1 pz
18.45	1 pz
40 mm	2 pz
100 mm - 75 mm	1 pz
50 mm - 50 mm	1 pz
Unidades de Instrumento	
Alça	1 pz
Ferro	1.49 m²
Argamassa	4.34 m²
Brita	1.09 m²
m³	2.57 m²
Concreto	1 pz
Concreto	413 pz
PVC Esgoto	
Curva 90 curta	1 pz
50 mm	3 pz
Joelho 45	3 pz
75 mm	4.19 m
Tubo rígido cr. ponta lisa	12.56 m
50 mm - 2"	
75 mm - 3"	



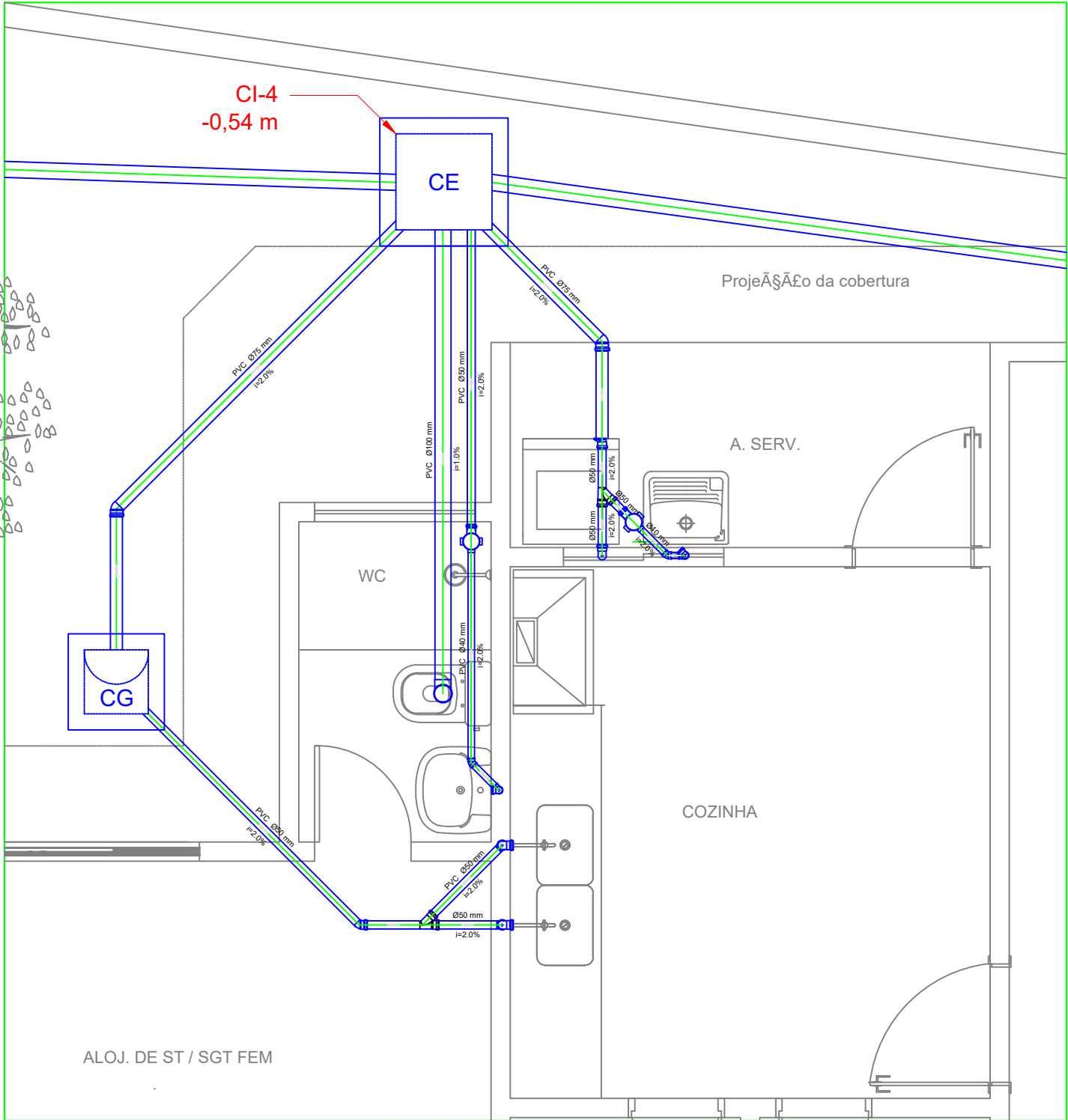
Detalhe S1  
escala 1:25

Lista de Materiais-S1	
Caixas de Passagem	
Caixa de inspeção esgoto simples	2 pz
CE Ø100 cm	1 pz
PVC Acessórios	
Caixa alifanada	3 pz
100x100x50	3 pz
Raio 90º, quad. saída 40 pr. terrço	1 pz
100x100x50x40	2 pz
Raio alifanado alt. reg. saída 40	4 pz
100 mm - 40 mm	4 pz
Sifão de copo pr. pia e lavatório	1 pz
1" - 1 1/2"	1 pz
Válvula pr. lavatório e tanque	1 pz
1"	1 pz
PVC Esgoto	
Curva 90 curta	2 pz
100 mm	4 pz
Joelho 45	3 pz
40 mm	3 pz
50 mm	1 pz
75 mm	1 pz
Joelho 90	1 pz
75 mm	1 pz
Joelho 90 canal pr. esgoto secundário	4 pz
40 mm - 1 1/2"	3 pz
100 mm - 100 mm	3 pz
50 mm - 50 mm	3 pz
Redução excêntrica	1 pz
75 mm - 50 mm	1 pz
100 mm - 4"	12.88 m
40 mm	7.74 m
50 mm - 2"	5.82 m
75 mm - 3"	5.05 m
18.45	1 pz
40 mm	1 pz
18 sanitário	1 pz
100 mm - 75 mm	1 pz
PVC Esgoto	
Curva 90 curta	1 pz
50 mm	1 pz
Joelho 45	1 pz
Joelho 90 canal pr. esgoto secundário	1 pz
40 mm - 1 1/2"	1 pz
100 mm - 50 mm	2 pz
Tubo rígido cr. ponta lisa	18.81 m
100 mm - 4"	2.12 m
40 mm	1.27 m
50 mm - 2"	



Detalhe S2  
escala 1:25

Lista de Materiais-S2	
Caixas de Passagem	
Caixa de gôndola	1 pz
Caixa de inspeção esgoto simples	1 pz
CE Ø100 cm	1 pz
PVC Acessórios	
Caixa alifanada	1 pz
100x100x50	1 pz
PVC Esgoto	
Curva 90 curta	1 pz
100 mm	1 pz
Joelho 45	1 pz
40 mm	1 pz
Joelho 90 canal pr. esgoto secundário	1 pz
40 mm - 1 1/2"	1 pz
100 mm - 50 mm	18.81 m
Tubo rígido cr. ponta lisa	2.12 m
40 mm	1.27 m
50 mm - 2"	



Detalhe S3  
escala 1:25

Lista de Materiais-S3	
Caixas de Passagem	
Caixa de gôndola	1 pz
Caixa de inspeção esgoto simples	1 pz
CE Ø100 cm	1 pz
PVC Acessórios	
Caixa alifanada	2 pz
100x100x50	2 pz
Raio 90º, quad. saída 40 pr. terrço	1 pz
1" - 1 1/2"	1 pz
Sifão de copo pr. pia e lavatório	1 pz
1" - 1 1/2"	1 pz
Sifão flexível cr. Adaptador	1 pz
1 1/2" - 1 1/2"	1 pz
Válvula pr. lavatório e tanque	1 pz
1"	1 pz
Válvula pr. pia	1 pz
1 1/2"	1 pz
Válvula pr. tanque	1 pz
PVC Esgoto	
Curva 90 curta	1 pz
100 mm	1 pz
Joelho 45	2 pz
40 mm	1 pz
Joelho 90	1 pz
50 mm	6 pz
Joelho 90 canal pr. esgoto secundário	2 pz
40 mm - 1 1/2"	2 pz
100 mm - 50 mm	2 pz
100 mm - 100 mm	2 pz
50 mm - 50 mm	2 pz
Redução excêntrica	26.87 m
75 mm - 50 mm	3.02 m
100 mm - 4"	7.21 m
40 mm	4.77 m
50 mm - 2"	
75 mm - 3"	

Detalhe S3  
escala 1:25

		CORPO DE BOMBEIROS MILITAR DO PARÁ E COORDENADORIA ESTADUAL DE DEFESA CIVIL	
PROJETO	GRUPAMENTO MILITAR DOS BOMBEIROS DE SÃO FELIX DO XINGU	ESCALA	INDICADA
CONTEÚDO	ESGOTO - PLANTA E DETALHAMENTO	DATA	MARÇO / 2023
RESPONSÁVEL TÉCNICO	 Celso Ferreira Moraes ENGRº CIVIL CB 0811/2019 M.F. 57.13855-1	REVISÃO	H-03/06
Identificador de autenticação: 3558241.D672.83C.B403021098BD07C141 Confira a autenticidade deste documento em: <a href="https://www.atlasmapa.org.br/validacao/registro07a">https://www.atlasmapa.org.br/validacao/registro07a</a>		VC THAIS R. R. 0023224 BRASIL 2023	

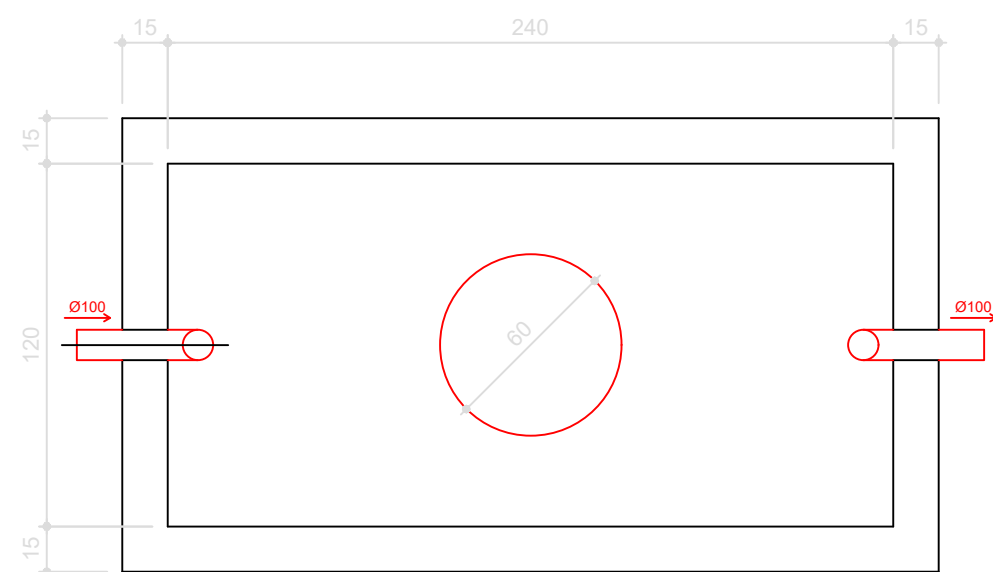




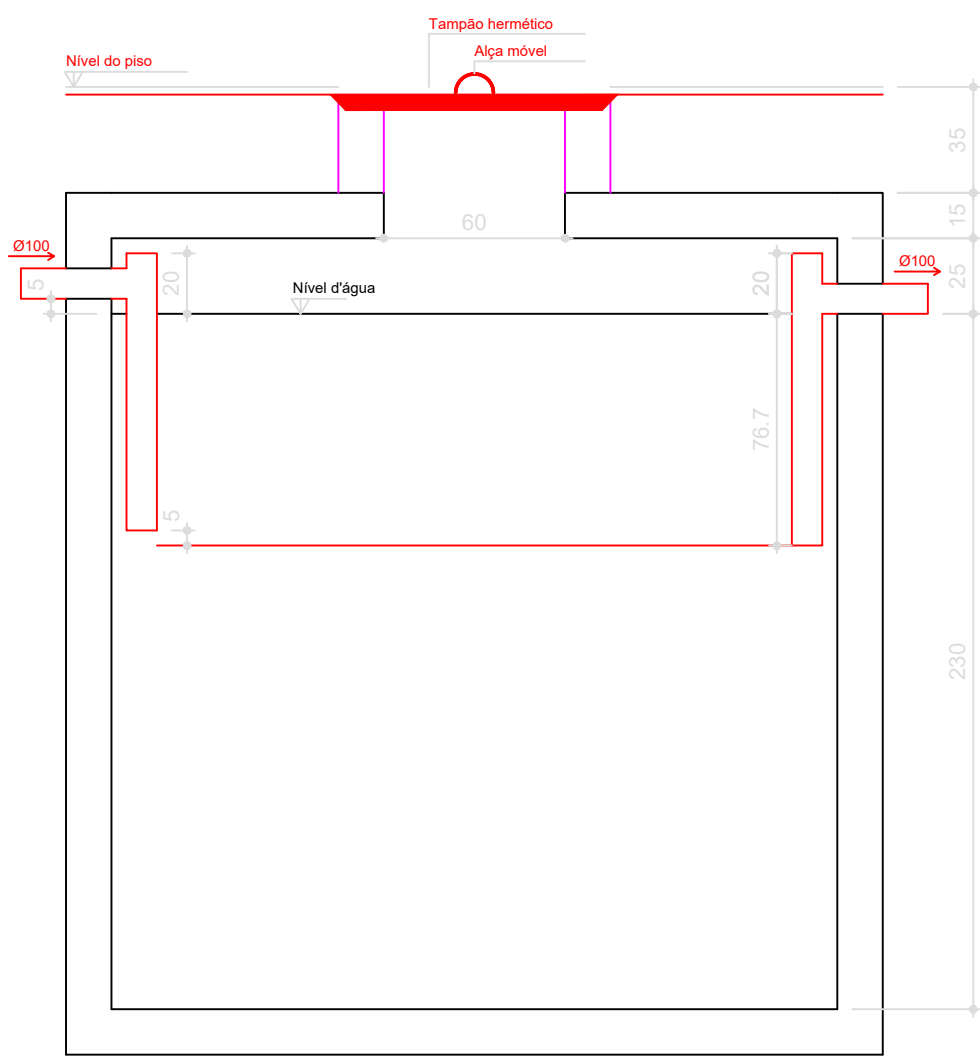


UNIDADES DE TRATAMENTO

Nota: As medidas estão em centímetros



TANQUE SÉPTICO  
PLANTA BAIXA - ESC. 1:25

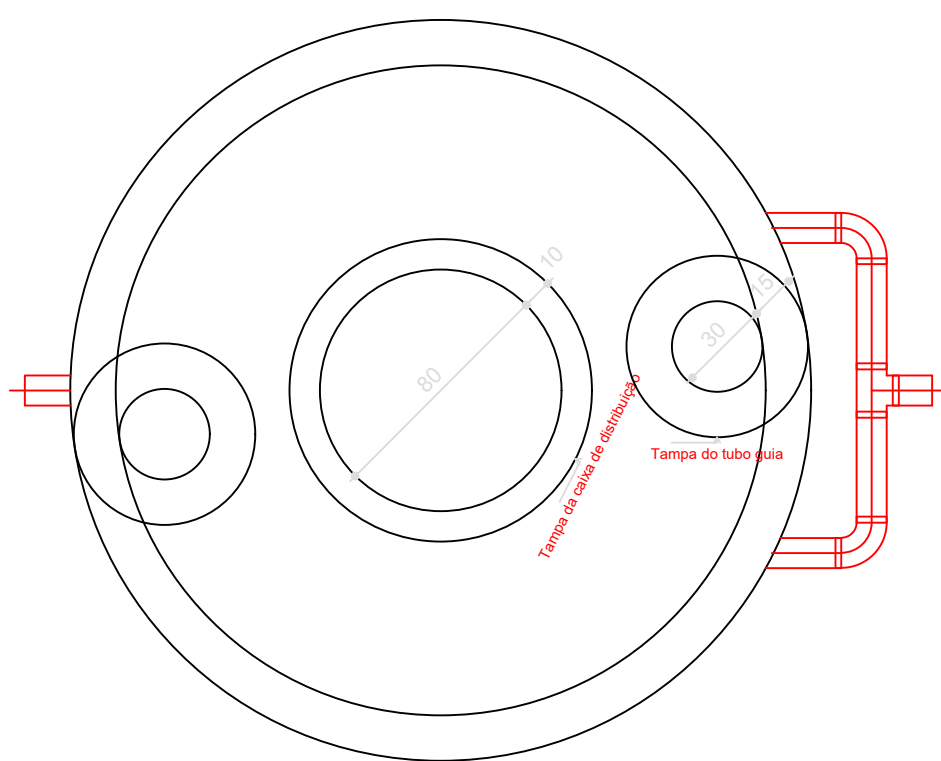


TANQUE SÉPTICO  
CORTE - ESC. 1:25

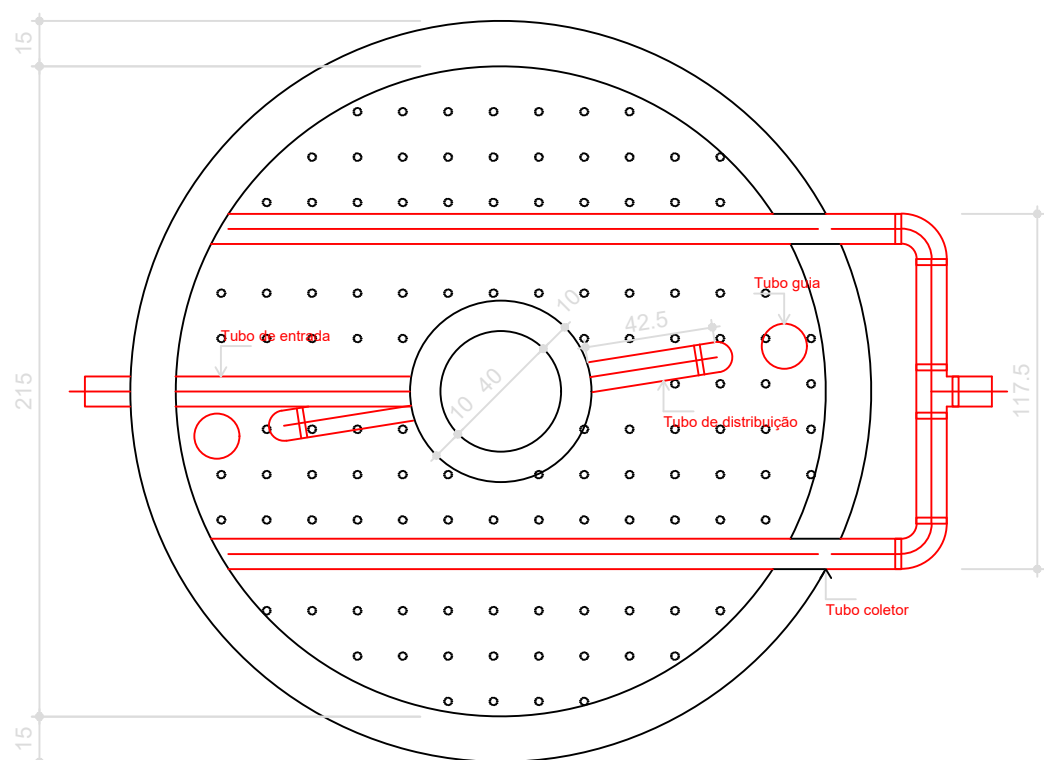
TANQUE SÉPTICO

Notas técnicas:

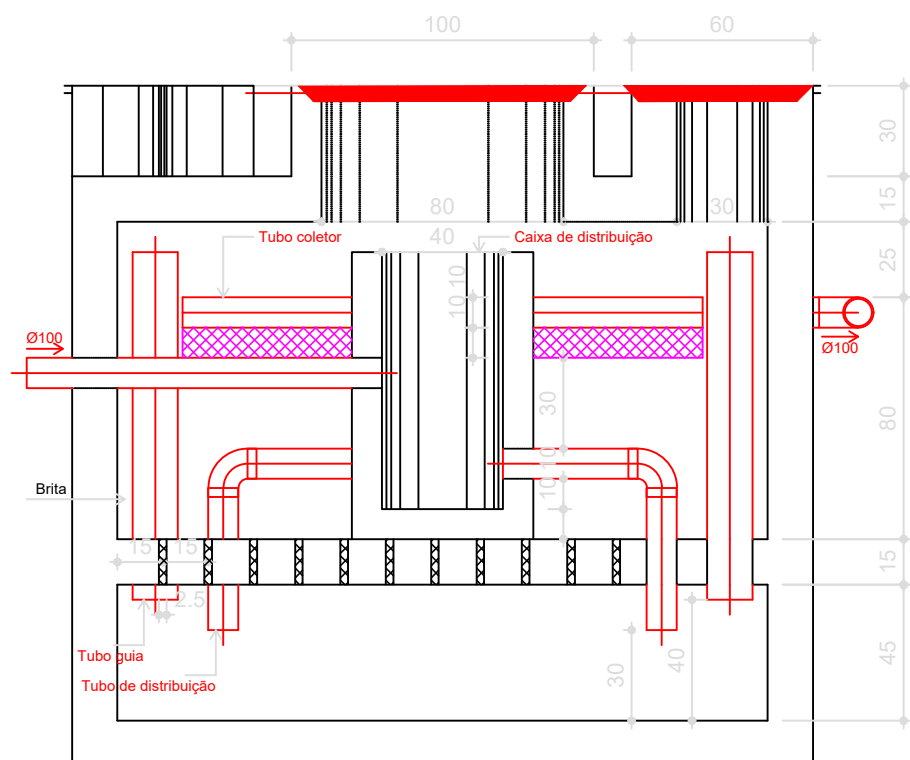
- Comprimento:2.40m
- Largura: 1.20m
- Profundidade útil: 2.30m
- Interv. de limpeza: 1 anos
- Volume útil estimado (NBR 7229:1993): 6.256m³



FILTRO ANAERÓBIO  
PLANTA BAIXA - ESC. 1:25



FILTRO ANAERÓBIO  
PLANTA BAIXA - ESC.1:25

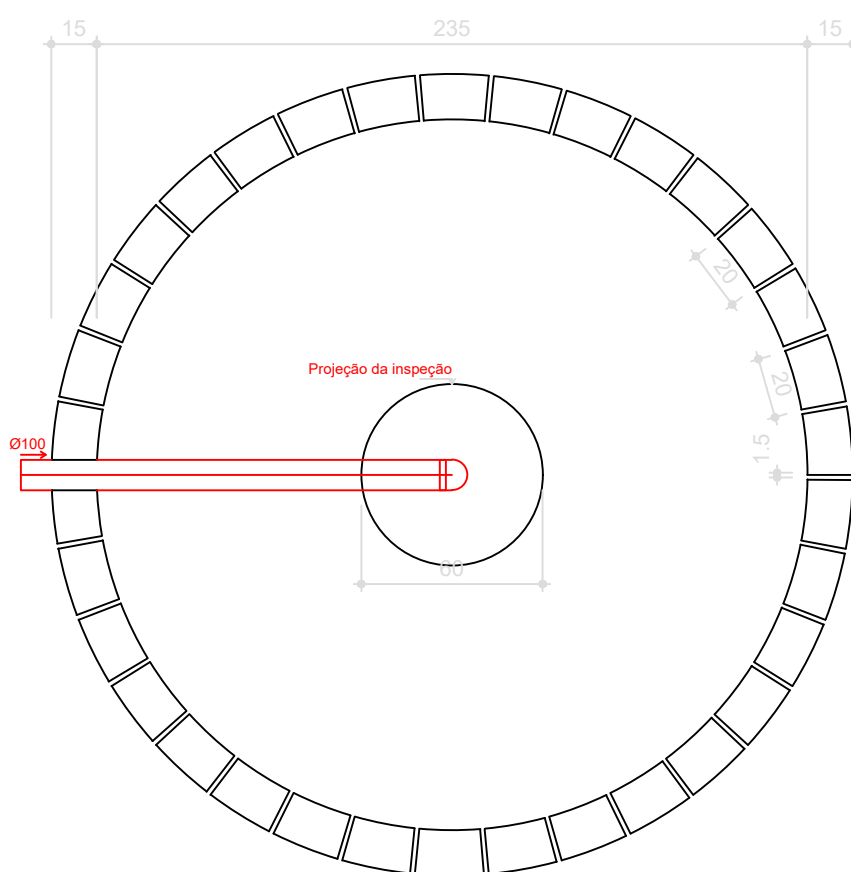


FILTRO ANAERÓBIO  
CORTE - ESC. 1:25

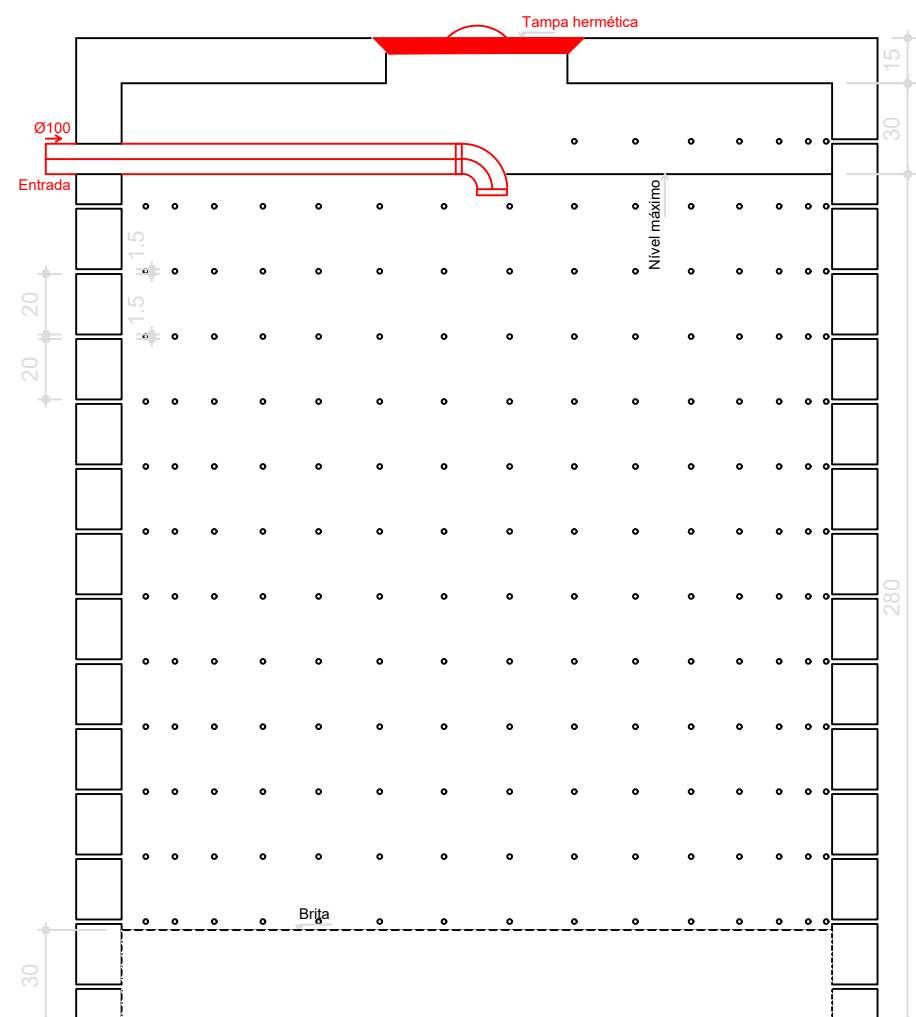
FILTRO ANAERÓBIO

Notas técnicas:

- Diâmetro: 2.15m
- Altura total do leito: 1.20m
- Altura do fundo falso: 0.60m
- Altura do vão livre: 0.3m
- Volume útil estimado (NBR 13969:1997): 4.249m³



SUMIDOURO  
PLANTA BAIXA - ESC. 1:25



SUMIDOURO  
CORTE - ESC. 1:25

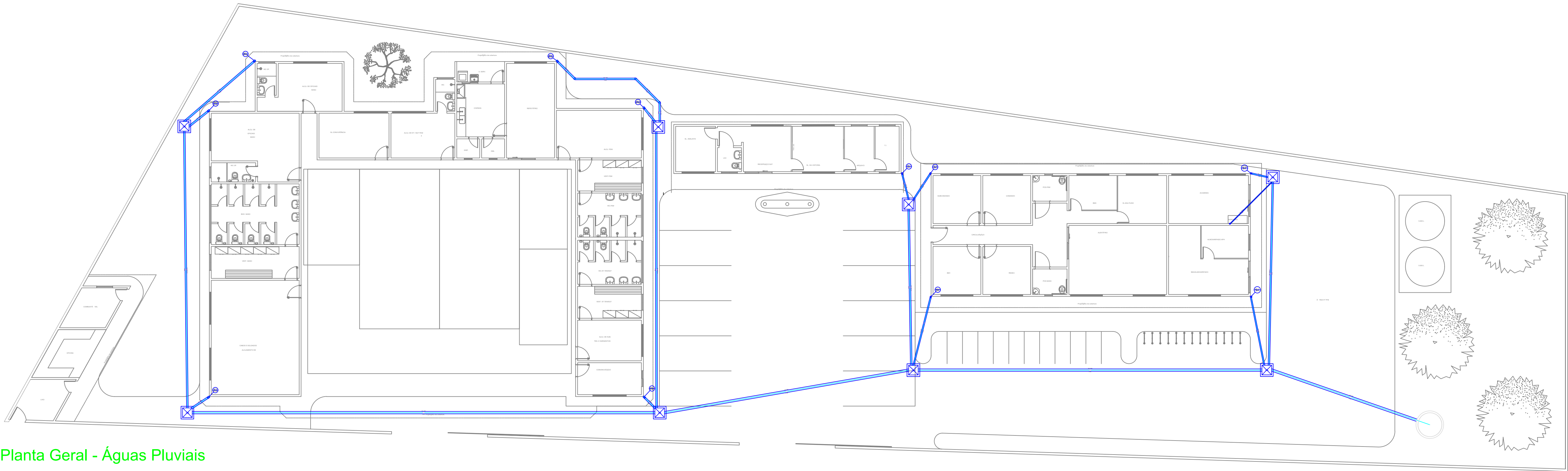
SUMIDOURO

Notas técnicas:

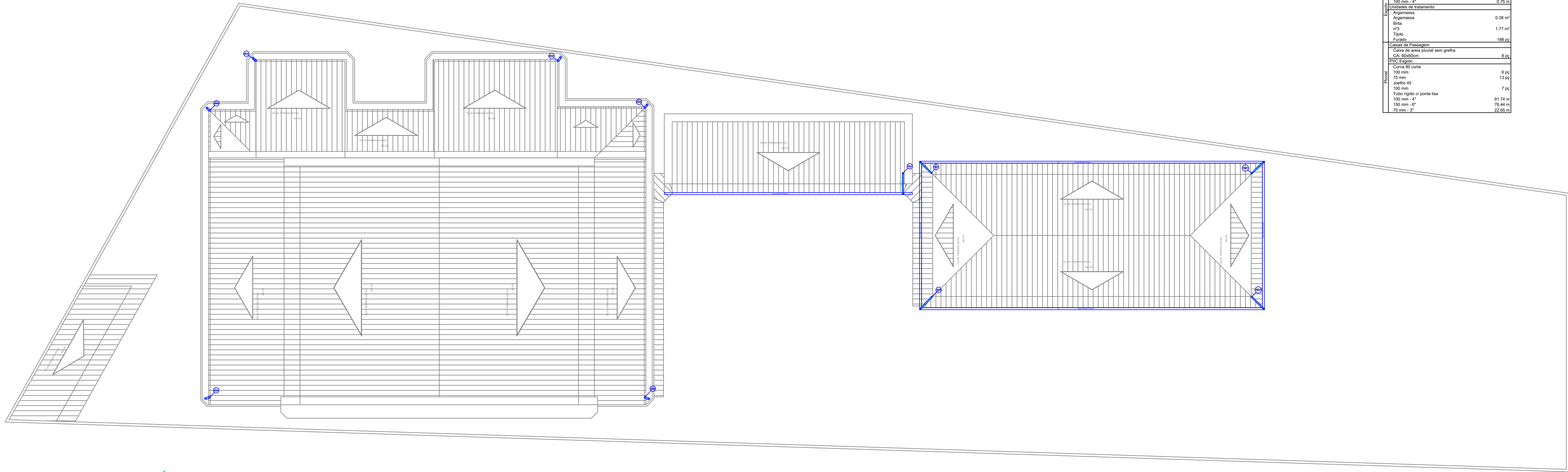
- Diâmetro:2.35m
- Altura do sumidouro: 2.80m
- Altura da camada de brita: 0.30m
- Área de infiltração estimada (NBR 13969:1997): 24.62m³

CORPO DE BOMBEIROS MILITAR DO PARÁ E COORDENADORIA ESTADUAL DE DEFESA CIVIL	
PROJETO: GRUPAMENTO MILITAR DOS BOMBEIROS DE SÃO FÉLIX DO XINGÚ	
CONTEÚDO: ESGOTO - UNIDADES DE TRATAMENTO	ESCALA: INDICADA
RESPONSÁVEL TÉCNICO: Cleison Ferreira Moraes Engº Civil CRM 52.613-8/PA RG: 3082324	DATA: MARÇO / 2023
VC THAIS F. DE ARAÚJO GRADUADA EM ENG. SANITÁRIA E AMBIENTAL - UFPA	PRANCHA: H-05/06



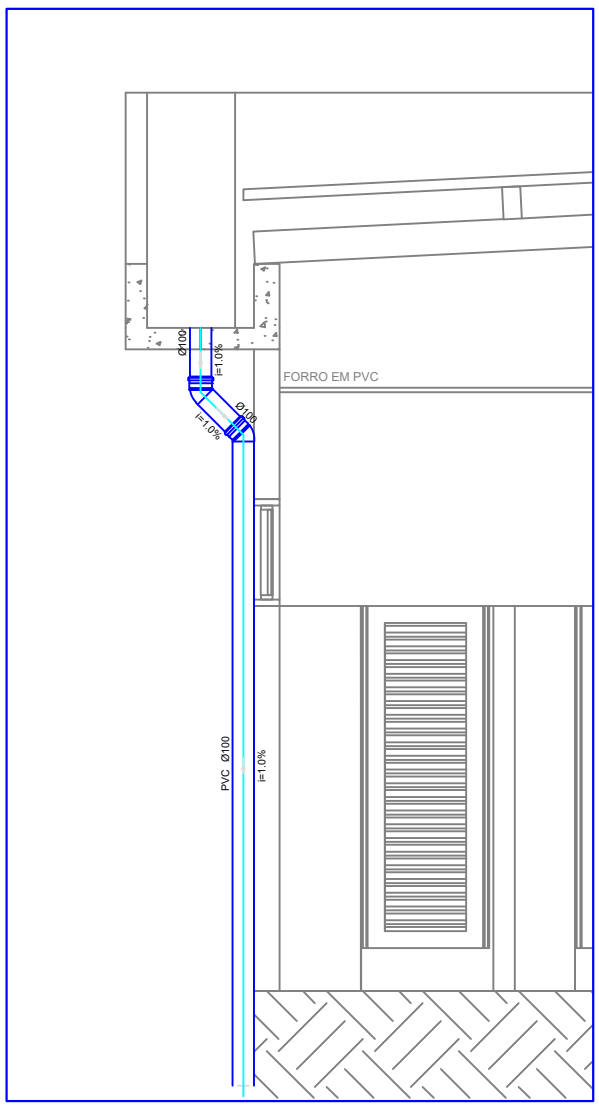


Planta Geral - Águas Pluviais  
escala 1:100

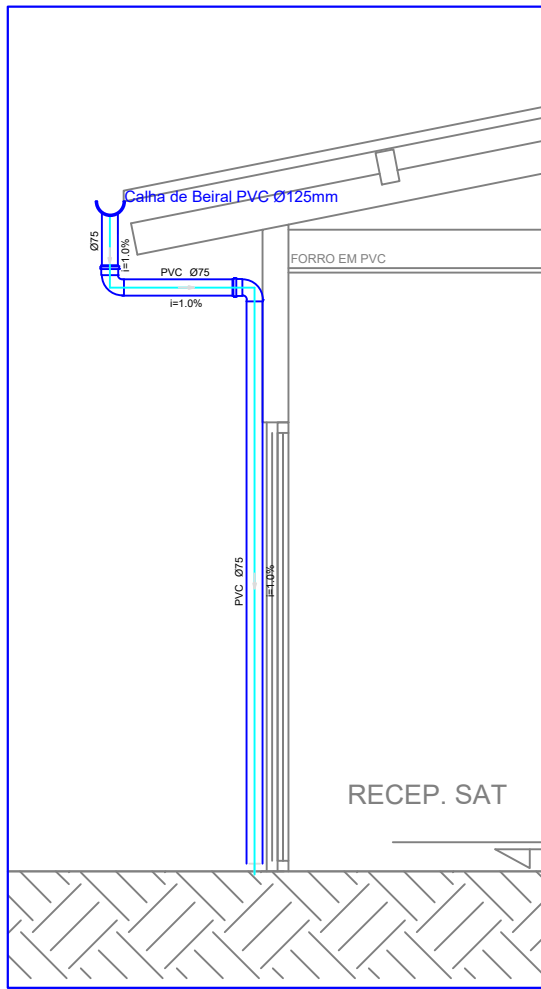


Planta de Cobertura - Águas Pluviais

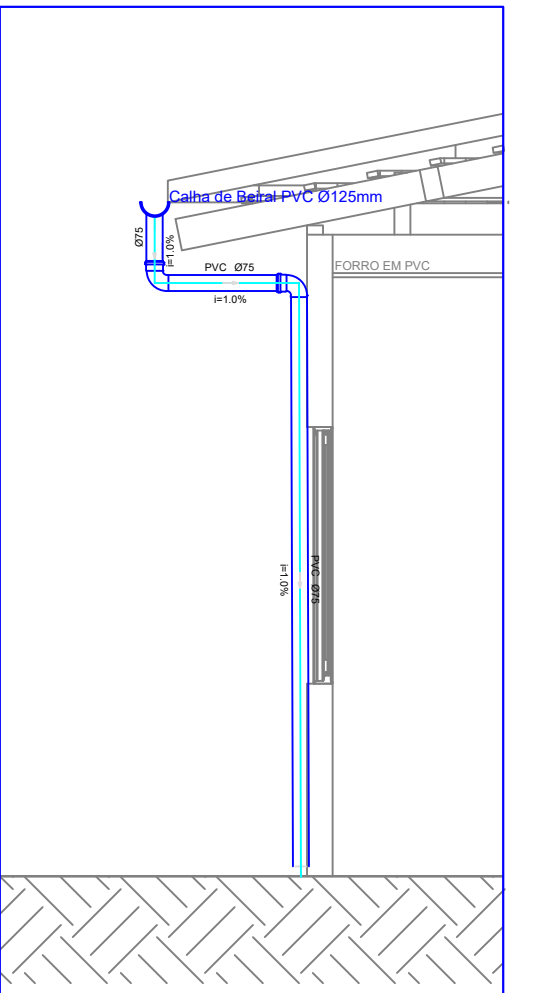
Lista de Materiais-Total	
PVC Espeto	
Joelho 90	1 pz
Tubo rígido Ø 100 mm	0,75 m
Tubo rígido Ø 100 mm - 4"	
Utilização de Isolamento	
Argamassa	0,38 m³
Bita	1,77 m²
Tijolo	188 pz
Furador	
Caixa de Passagem	
Caixa de areia pluvial sem grelha	8 pz
PVC Espeto	
Curva 90 graus	6 pz
Joelho 45	12 pz
Joelho 90	7 pz
Tubo rígido Ø 100 mm	91,74 m
Tubo rígido Ø 100 mm - 4"	76,44 m
Tubo rígido Ø 100 mm - 6"	22,65 m



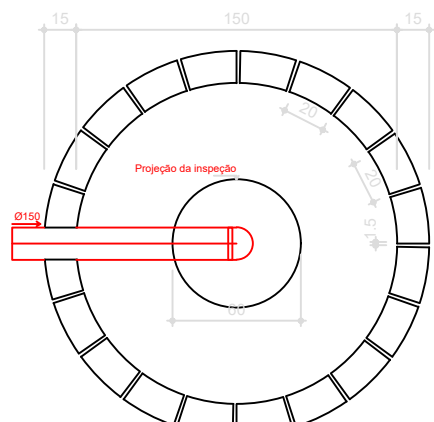
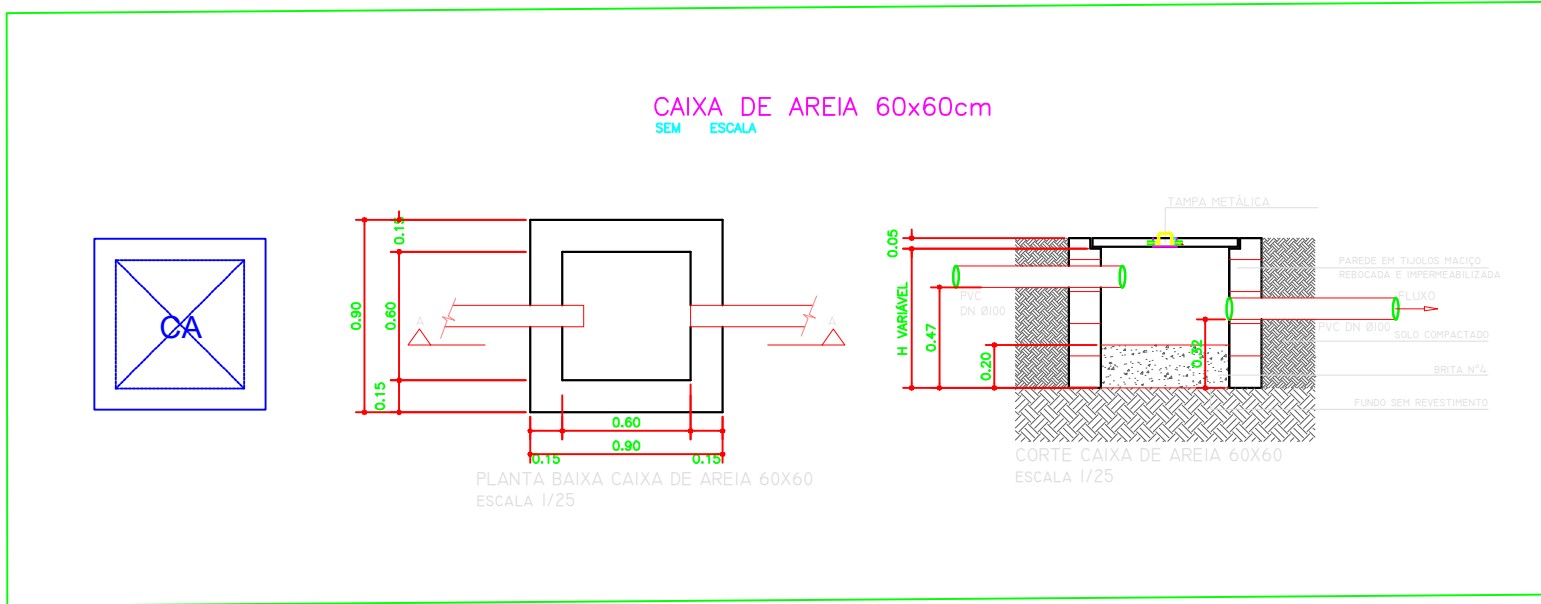
Detalhe AP-3  
escala 1:25



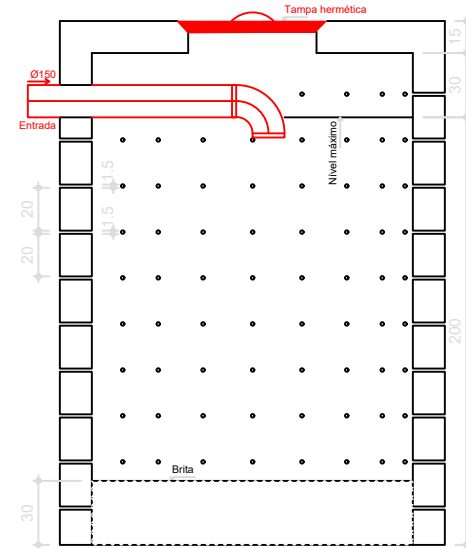
Detalhe AP-7  
escala 1:25



Detalhe AP-9  
escala 1:25



SUMIDOURO  
PLANTA BAIXA - ESC. 1:25



SUMIDOURO  
CORTE - ESC. 1:25

SUMIDOURO  
Notas técnicas:  
- Diâmetro: 1.50m  
- Altura do sumidouro: 2.00m  
- Altura da camada de brita: 0.30m  
- Área de infiltração estimada (NBR 13969:1997): 11.19m³

		CORPO DE BOMBEIROS MILITAR DO PARÁ E COORDENADORIA ESTADUAL DE DEFESA CIVIL	
PROJETO	GRUPAMENTO MILITAR DOS BOMBEIROS DE SÃO FELIX DO XINGU	ESCALA	INDICADA
CONTEÚDO	ÁGUAS PLUVIAIS - PLANTA, COBERTURA E DETALHAMENTO	DATA	MARÇO / 2023
RESPONSÁVEL TÉCNICO	ENGRº CIVIL CB BDM CLESON F. MORAES M. 87473895-1 RG 3082324	ASSINATURA	H-06/06