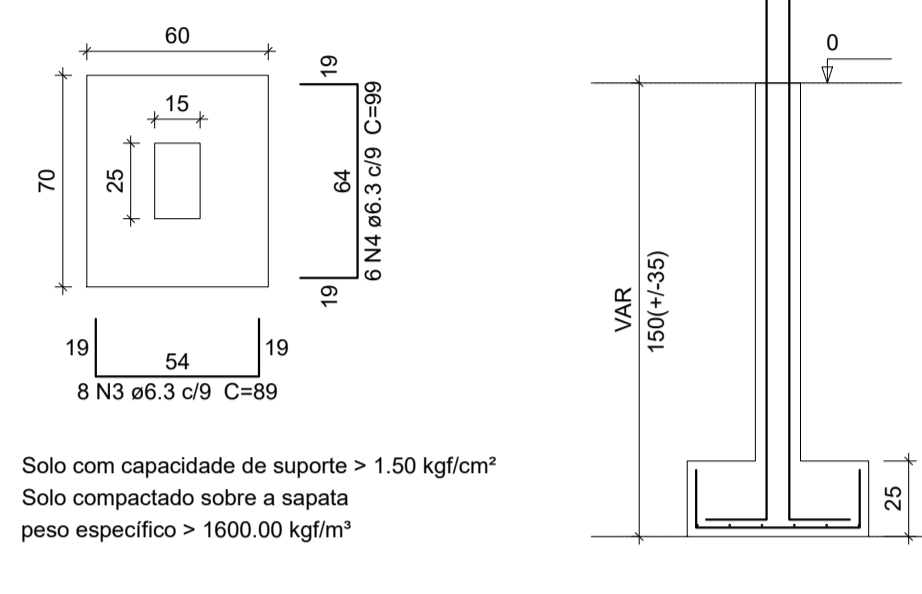
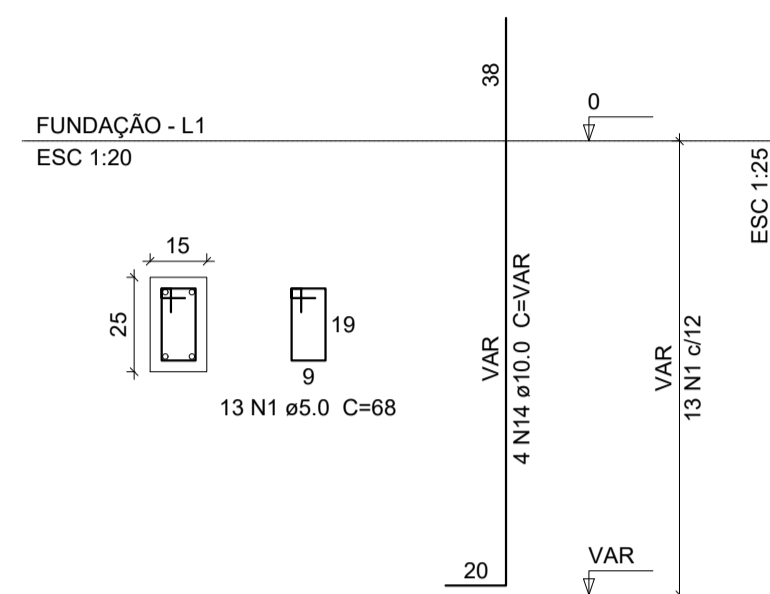


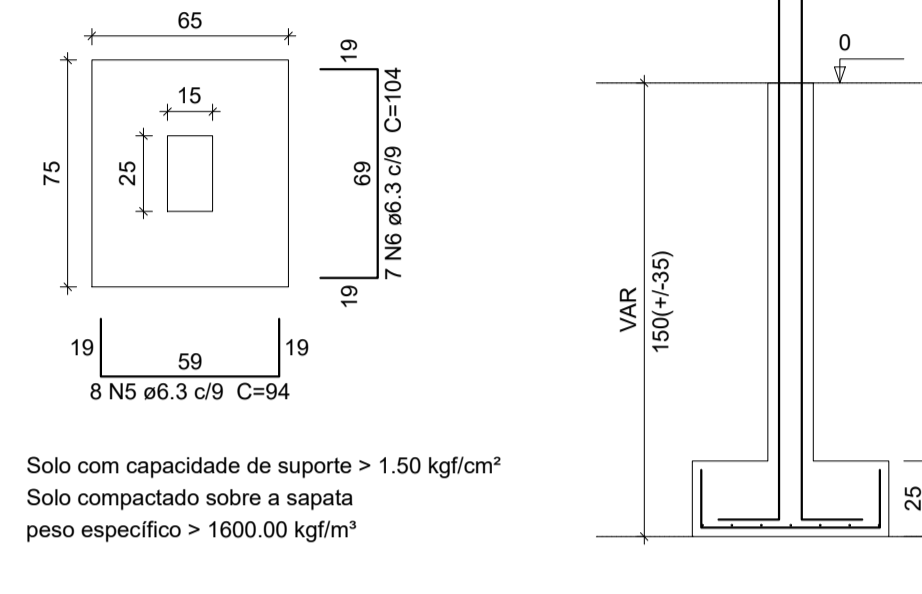
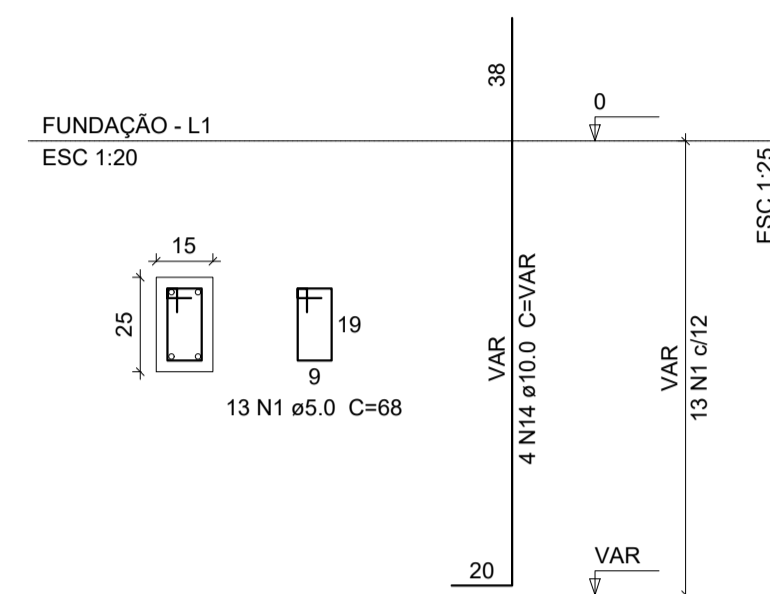
S1=S6=S8=S9=S13=S14=S15=S16=S33=S51
 PLANTA ESC 1:25 CORTE ESC 1:25

S2=S3=S4=S7=S12=S41=S57=S63=S66
 PLANTA ESC 1:25 CORTE ESC 1:25

P1=P6=P8=P9=P13=P14=P15=P16=P33=P51



P2=P3=P4=P7=P12=P41=P57=P63=P66



Solo com capacidade de suporte > 1.50 kgf/cm²
 Solo compactado sobre a sapata
 peso específico > 1600.00 kgf/m³

Solo com capacidade de suporte > 1.50 kgf/cm²
 Solo compactado sobre a sapata
 peso específico > 1600.00 kgf/m³

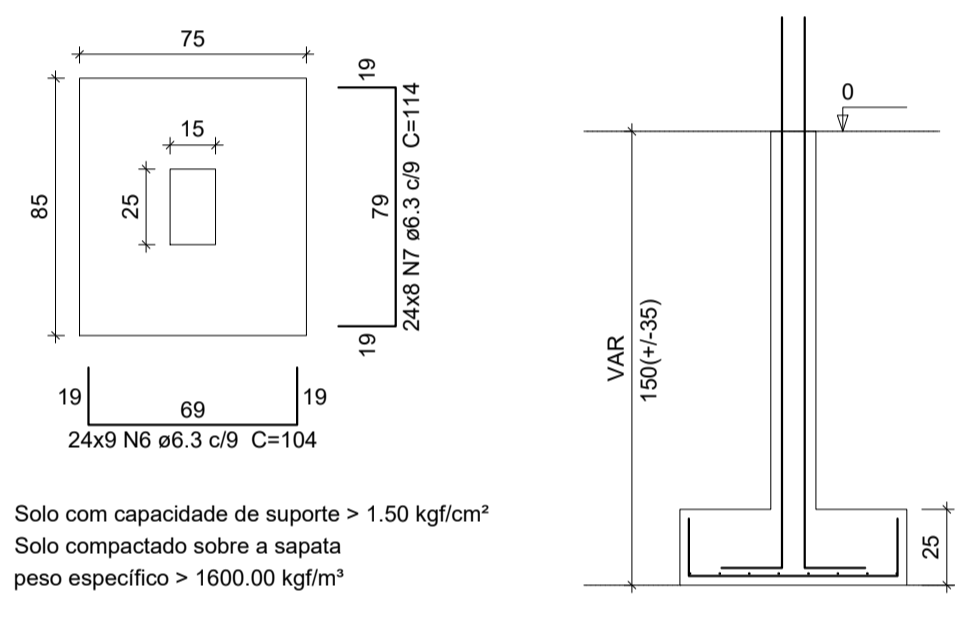
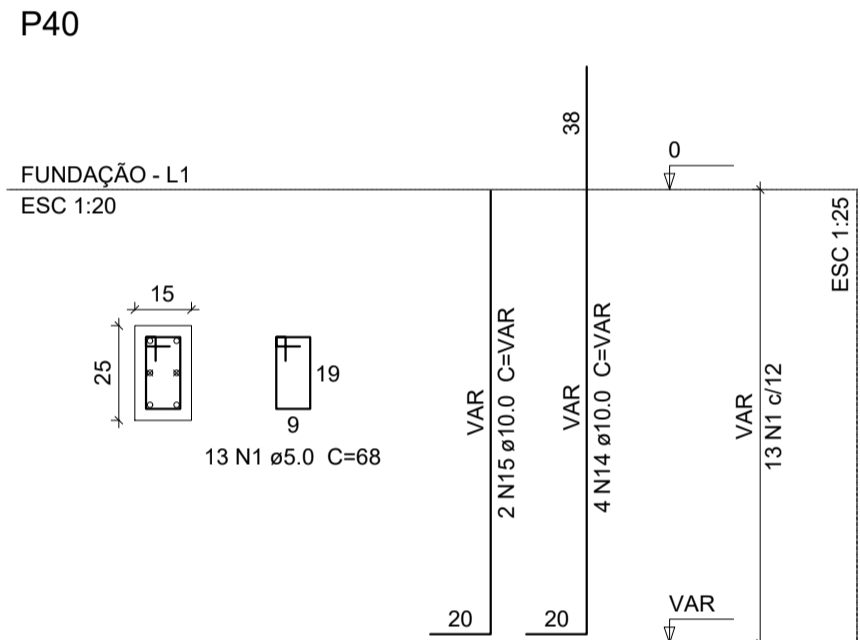
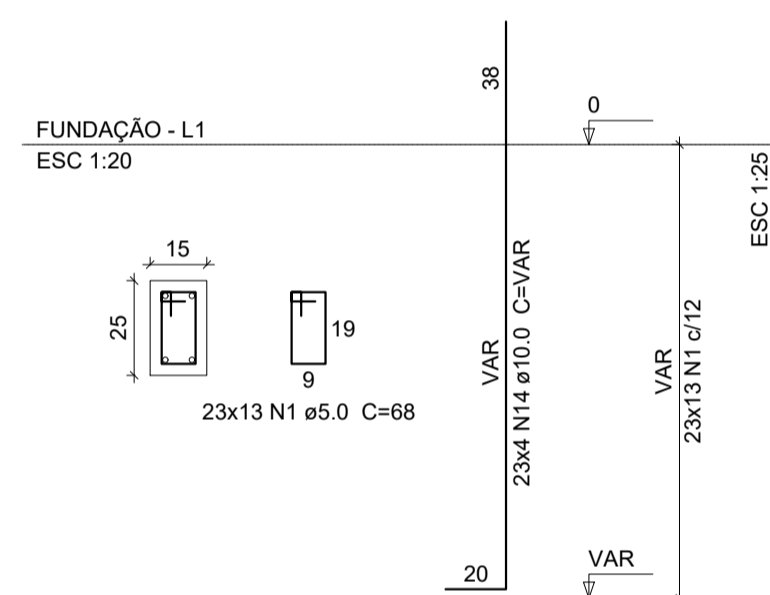
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 =S30=S31=S32=S34=S37=S38=S40=S42=S45
 =S46=S48=S52=S56=S60

PLANTA ESC 1:25 CORTE ESC 1:25

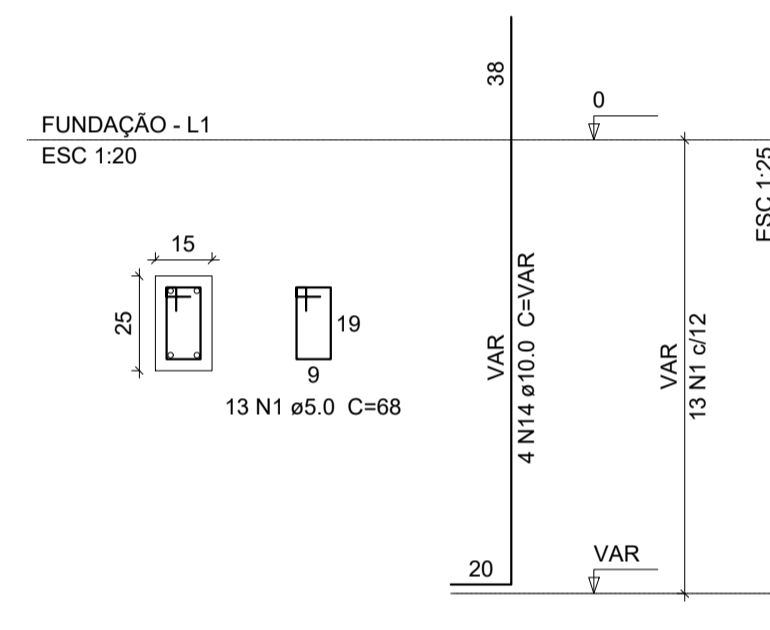
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 =S44=S50=S53=S54=S55=S61=S62=S64=S65

PLANTA ESC 1:25 CORTE ESC 1:25

P5=P10=P11=P17=P18=P19=P20=P21=P26=P27
 =P30=P31=P32=P34=P37=P38=P42=P45=P46
 =P48=P52=P56=P60

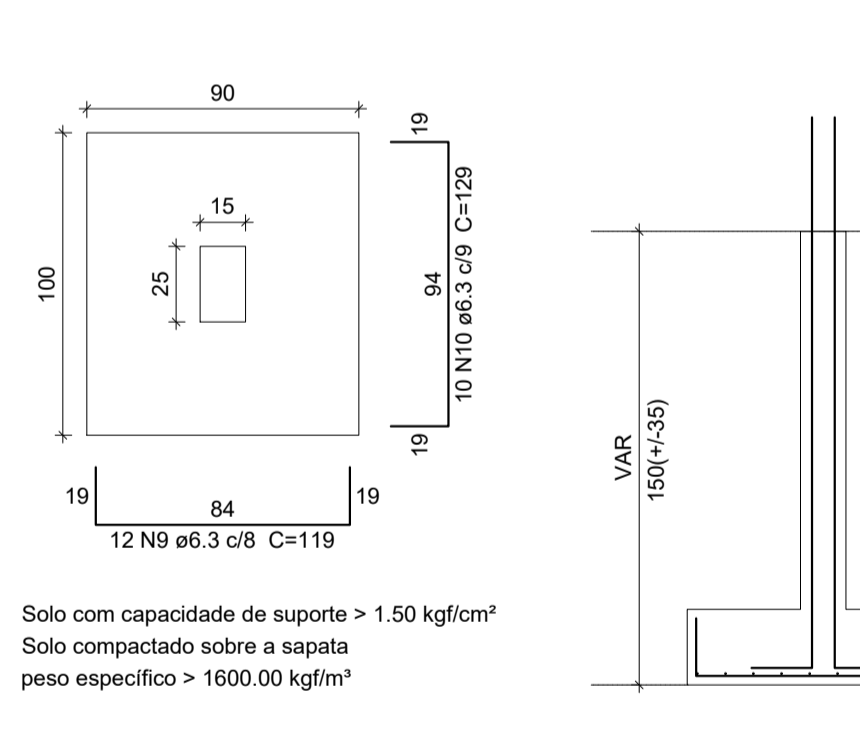


P22=P23=P24=P25=P28=P29=P35=P36=P39=P43
 =P44=P50=P53=P54=P55=P61=P62=P64=P65



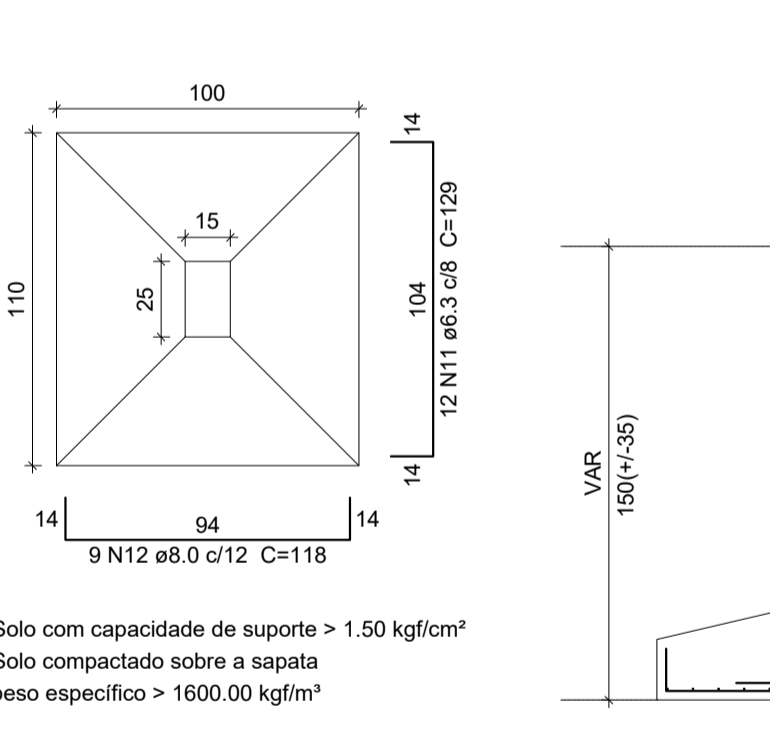
Solo com capacidade de suporte > 1.50 kgf/cm²
 Solo compactado sobre a sapata
 peso específico > 1600.00 kgf/m³

S49
 PLANTA ESC 1:25



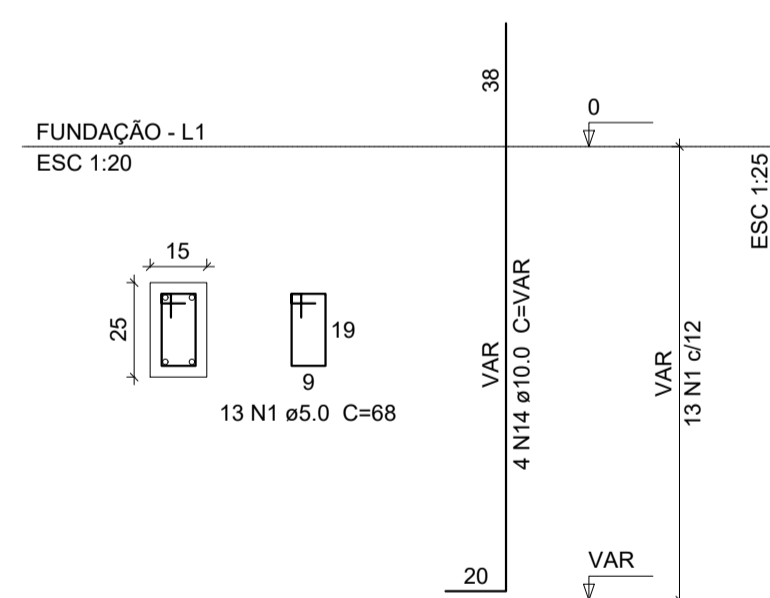
Solo com capacidade de suporte > 1.50 kgf/cm²
 Solo compactado sobre a sapata
 peso específico > 1600.00 kgf/m³

S47=S58=S59
 PLANTA ESC 1:25

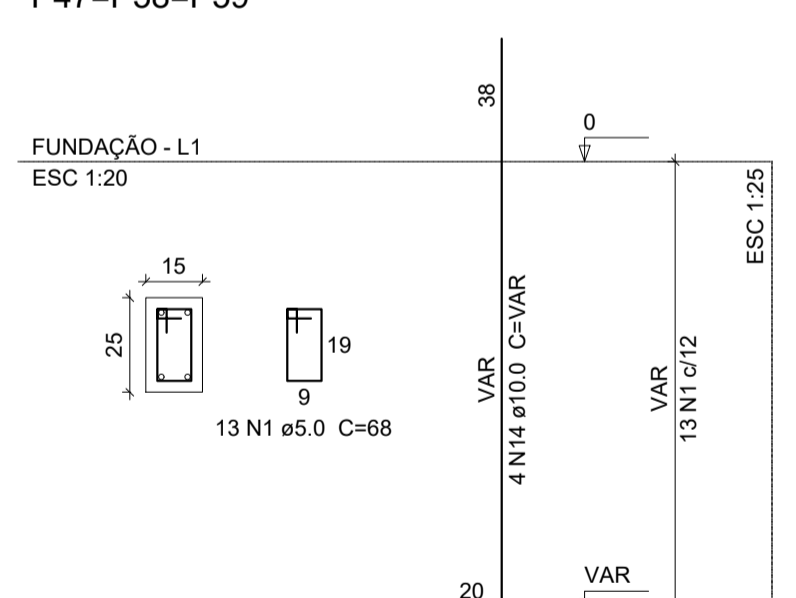


Solo com capacidade de suporte > 1.50 kgf/cm²
 Solo compactado sobre a sapata
 peso específico > 1600.00 kgf/m³

P49



P47=P58=P59



Relação do aço

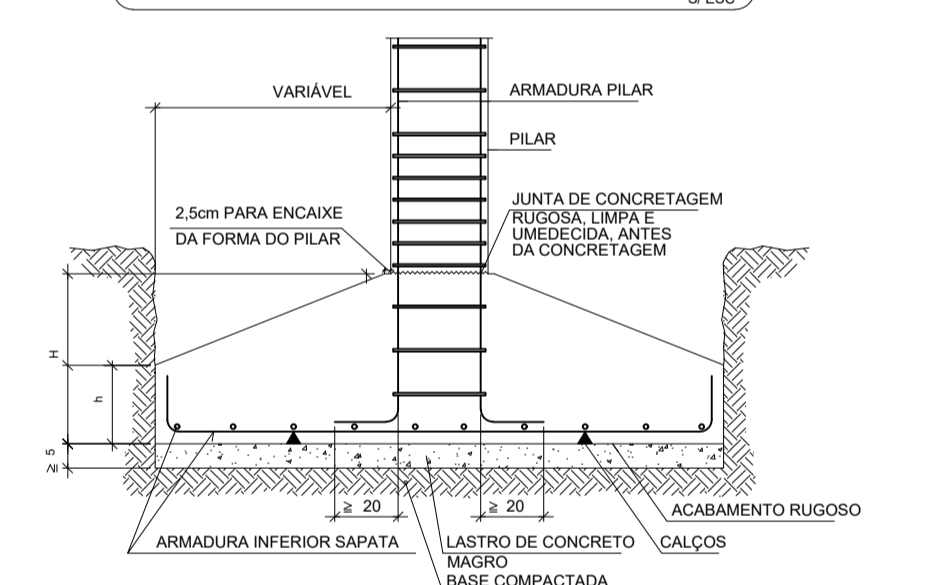
9xS12 19xS24 S59	10xS14 S49	S21 2xS58			
ÁÇO	N	DIAM	Q	UNIT	C.TOTAL
		(cm)		(cm)	(cm)
CA60	1	5.0	845	68	57460
	2	5.0	13	78	1014
CA50	3	6.3	80	89	7120
	4	6.3	60	99	5940
	5	6.3	72	94	6768
	6	6.3	279	104	29016
	7	6.3	382	114	43548
	8	6.3	171	124	21204
	9	6.3	12	119	1428
	10	6.3	10	129	1290
	11	6.3	37	129	4773
	12	8.0	18	118	2124
	13	8.0	9	123	1107
	14	10.0	264	VAR	VAR
	15	10.0	2	VAR	VAR

Resumo do aço

ÁÇO	DIAM	C.TOTAL	PESO + 10 %
	(m)	(kg)	(kg)
CA50	6.3	1210.9	325.9
	8.0	32.4	14
	10.0	547.2	371.1
	5.0	584.8	99.1
PESO TOTAL			
CA50	711		
CA60	99.1		

Vol. de concreto total (C-25) = 14.57 m³
 Área de forma total = 131.94 m²

DETALHE DE SAPATA ISOLADA DE ALTURA VARIÁVEL



Solo com capacidade de suporte > 1.50 kgf/cm²
 Solo compactado sobre a sapata
 peso específico > 1600.00 kgf/m³

Rodolfo Freitas
 Engenheiro Civil - CREA/CE 344558
 RFP 061867529-3

GOVERNO MUNICIPAL DE BARBALHA

MARX2 CONSTRUÇÕES EIRELI-ME
 CNPJ: 07.142.189/0001-01
 RUA EDUARDO PORTILHO DA COSTA, Nº 328
 DISTRITO DO ROSÁRIO - BARBALHA - CE
 TELEFONE: (88) 9 801-4337
 E-MAIL: marx2projeto@gmail.com

PROJETO
 CONSTRUÇÃO DE UNIDADE BÁSICA DE SAÚDE - PORTE 1

PROPRIETÁRIO
 PREFEITURA MUNICIPAL DE BARBALHA

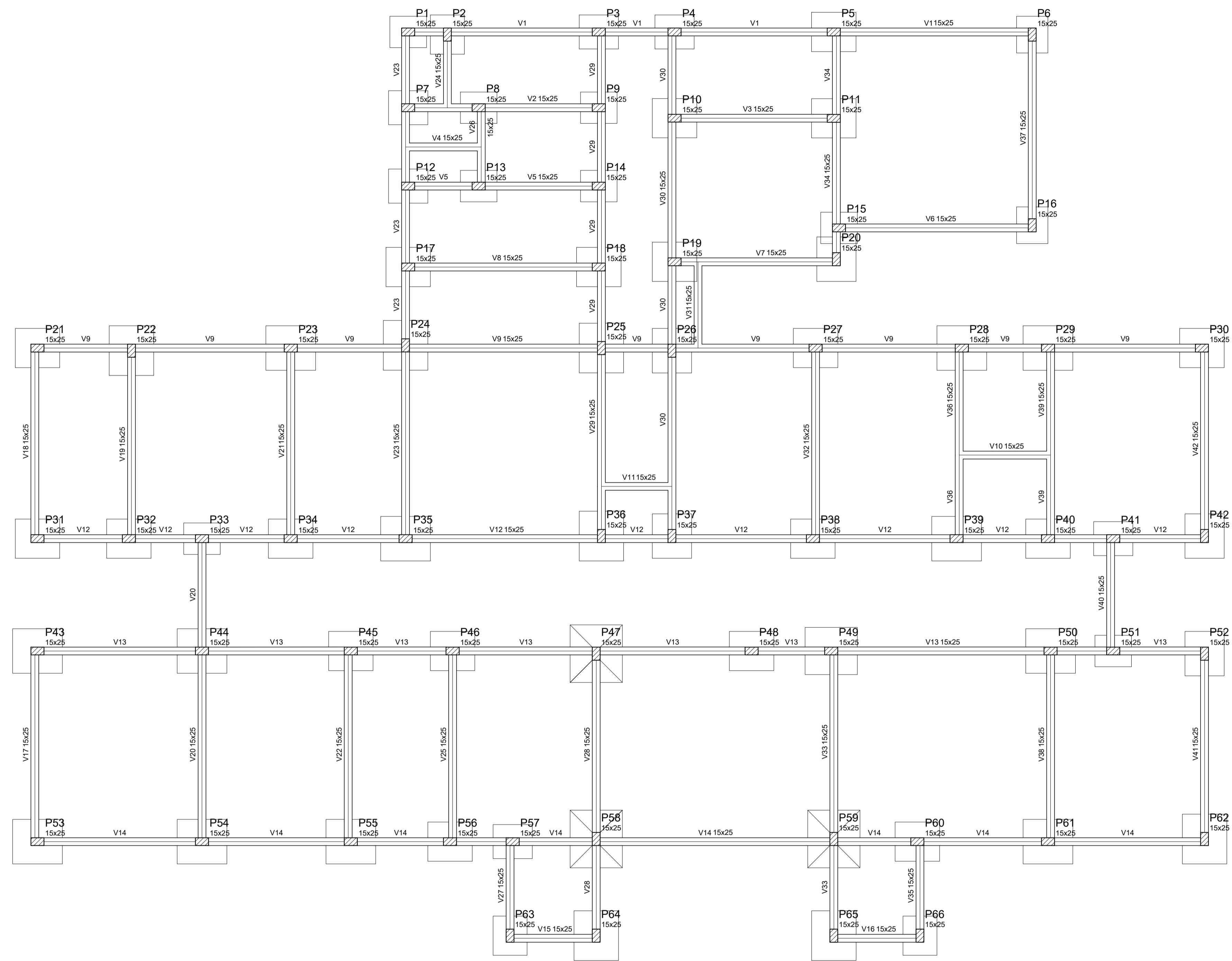
ENDEREÇO/OBRA
 MINHA CASA MINHA VIDA ZONA RURAL DO MUNICÍPIO DE BARBALHA - CE

ASSUNTO **ESTRUTURAL** PRANCHA

- SAPATAS
 - DETALHE DA ESCAVAÇÃO DE UMA SAPATA

02/17

PROJETO MARX2 PROJETOS	DESENHO RODOLFO FREITAS	ESCALA INDICADA	DATA JANEIRO 2022
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Forma do pavimento NÍVEL +000 (Nível 0)
escala 1:50

Vigas			
Nome	Seção (cm)	Elevação (cm)	Nível (cm)
V1	15x25	0	0
V2	15x25	0	0
V3	15x25	0	0
V4	15x25	0	0
V5	15x25	0	0
V6	15x25	0	0
V7	15x25	0	0
V8	15x25	0	0
V9	15x25	0	0
V10	15x25	0	0
V11	15x25	0	0
V12	15x25	0	0
V13	15x25	0	0
V14	15x25	0	0
V15	15x25	0	0
V16	15x25	0	0
V17	15x25	0	0
V18	15x25	0	0
V19	15x25	0	0
V20	15x25	0	0
V21	15x25	0	0
V22	15x25	0	0
V23	15x25	0	0
V24	15x25	0	0
V25	15x25	0	0
V26	15x25	0	0
V27	15x25	0	0
V28	15x25	0	0
V29	15x25	0	0
V30	15x25	0	0
V31	15x25	0	0
V32	15x25	0	0
V33	15x25	0	0
V34	15x25	0	0
V35	15x25	0	0
V36	15x25	0	0
V37	15x25	0	0
V38	15x25	0	0
V39	15x25	0	0
V40	15x25	0	0
V41	15x25	0	0
V42	15x25	0	0

Características dos materiais	
fck (kgf/cm ²)	Ecs (kgf/cm ³)
250	238000

Pilares			
Nome	Seção (cm)	Elevação (cm)	Nível (cm)
P1	15 x 25	0	0
P2	15 x 25	0	0
P3	15 x 25	0	0
P4	15 x 25	0	0
P5	15 x 25	0	0
P6	15 x 25	0	0
P7	15 x 25	0	0
P8	15 x 25	0	0
P9	15 x 25	0	0
P10	15 x 25	0	0
P11	15 x 25	0	0
P12	15 x 25	0	0
P13	15 x 25	0	0
P14	15 x 25	0	0
P15	15 x 25	0	0
P16	15 x 25	0	0
P17	15 x 25	0	0
P18	15 x 25	0	0
P19	15 x 25	0	0
P20	15 x 25	0	0
P21	15 x 25	0	0
P22	15 x 25	0	0
P23	15 x 25	0	0
P24	15 x 25	0	0
P25	15 x 25	0	0
P26	15 x 25	0	0
P27	15 x 25	0	0
P28	15 x 25	0	0
P29	15 x 25	0	0
P30	15 x 25	0	0
P31	15 x 25	0	0
P32	15 x 25	0	0
P33	15 x 25	0	0
P34	15 x 25	0	0
P35	15 x 25	0	0
P36	15 x 25	0	0
P37	15 x 25	0	0
P38	15 x 25	0	0
P39	15 x 25	0	0
P40	15 x 25	0	0
P41	15 x 25	0	0
P42	15 x 25	0	0
P43	15 x 25	0	0
P44	15 x 25	0	0
P45	15 x 25	0	0
P46	15 x 25	0	0
P47	15 x 25	0	0
P48	15 x 25	0	0
P49	15 x 25	0	0
P50	15 x 25	0	0
P51	15 x 25	0	0
P52	15 x 25	0	0
P53	15 x 25	0	0
P54	15 x 25	0	0
P55	15 x 25	0	0
P56	15 x 25	0	0
P57	15 x 25	0	0
P58	15 x 25	0	0
P59	15 x 25	0	0
P60	15 x 25	0	0
P61	15 x 25	0	0
P62	15 x 25	0	0
P63	15 x 25	0	0
P64	15 x 25	0	0
P65	15 x 25	0	0
P66	15 x 25	0	0

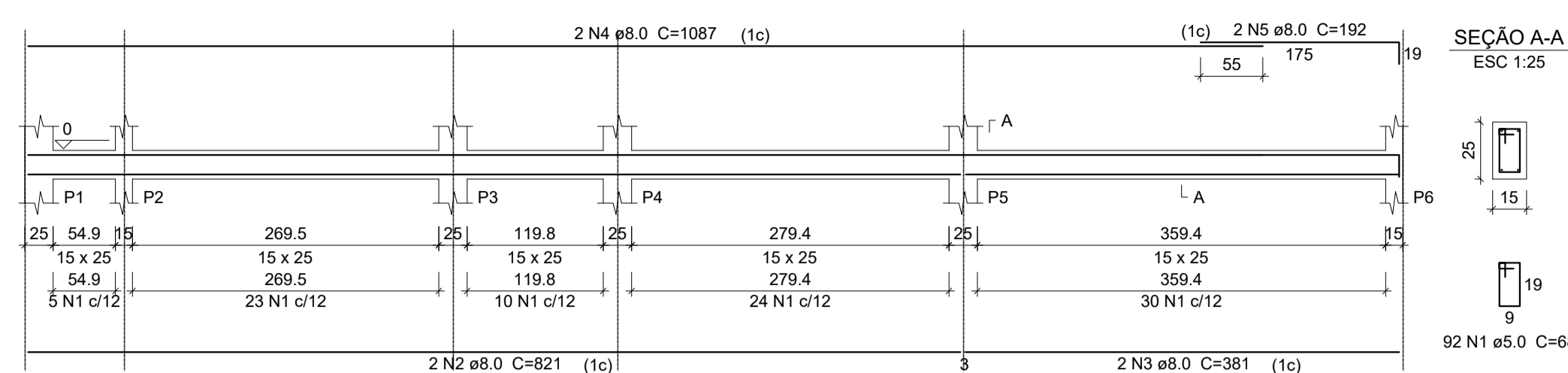
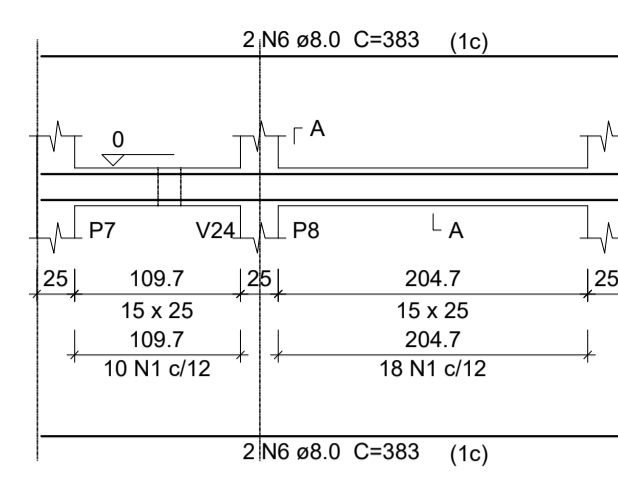
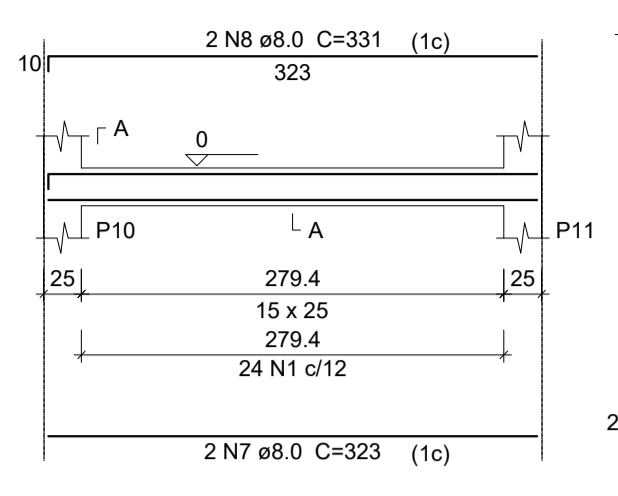
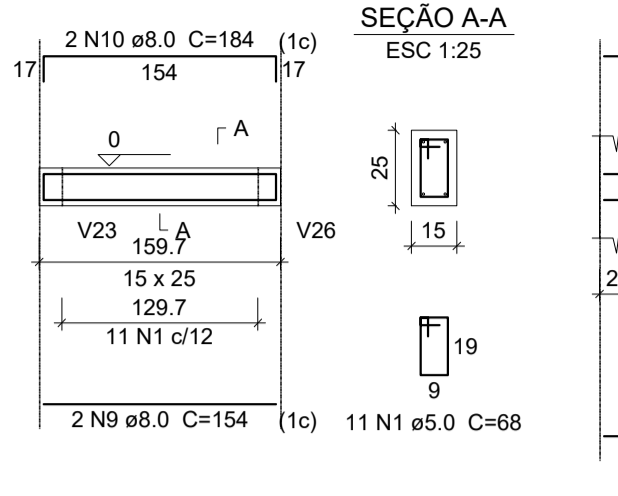
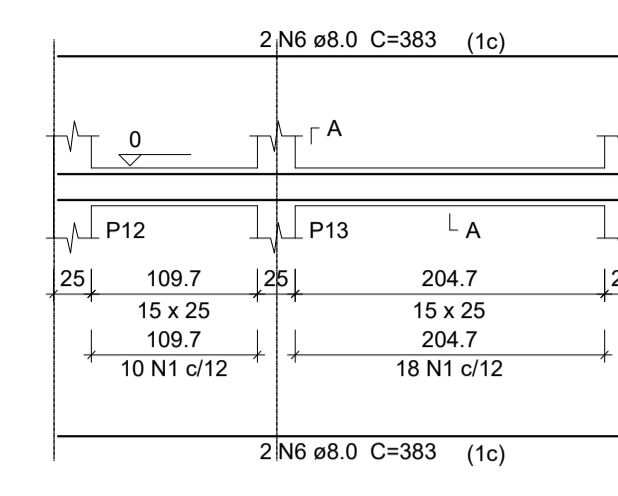
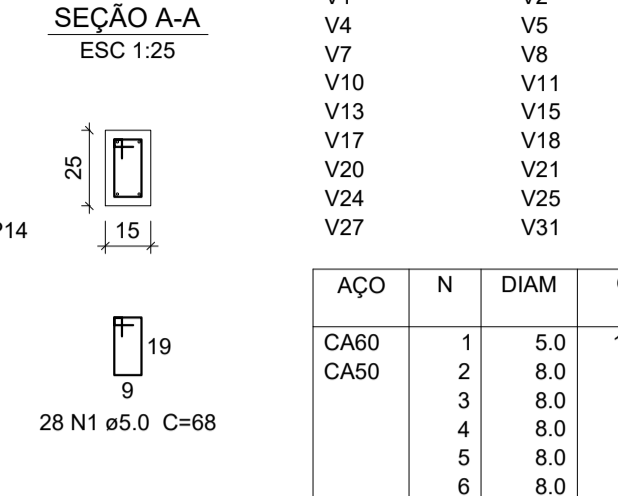
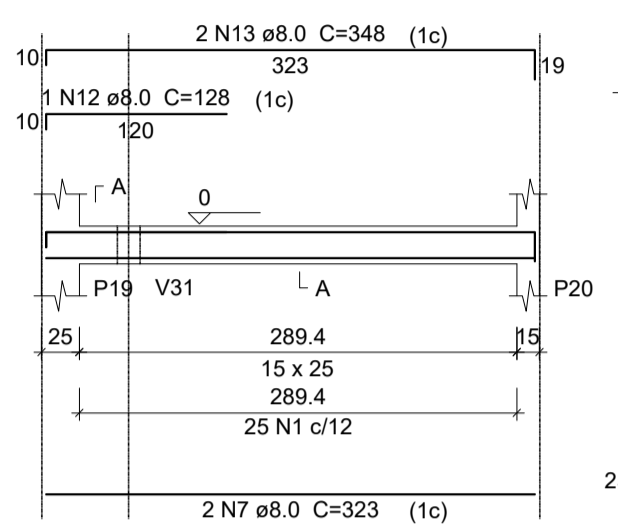
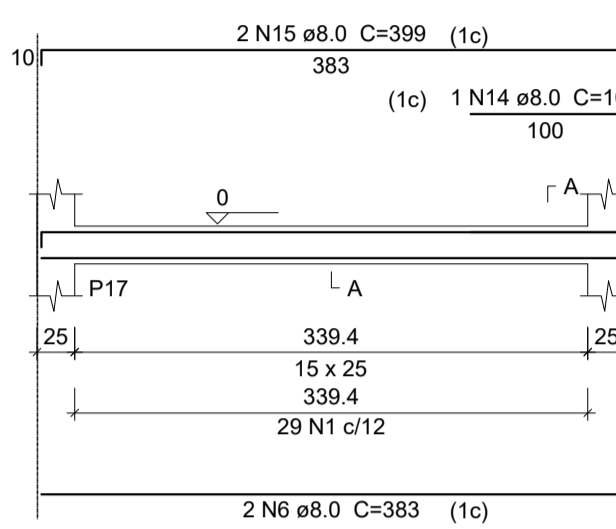
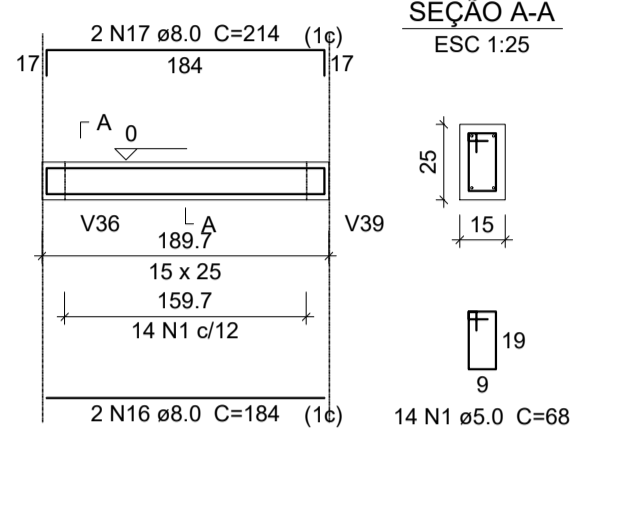
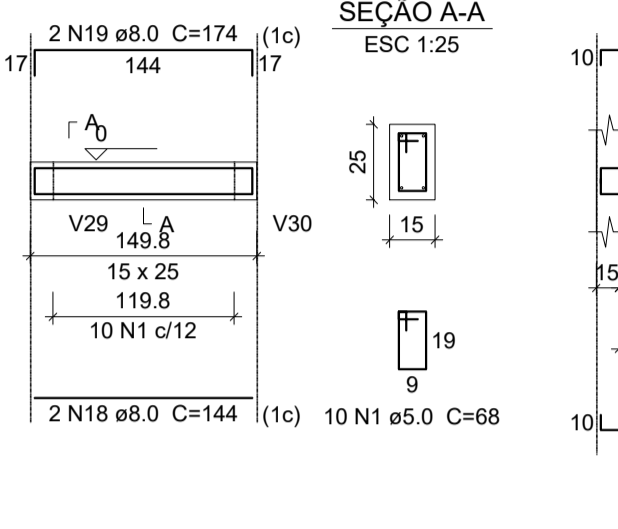
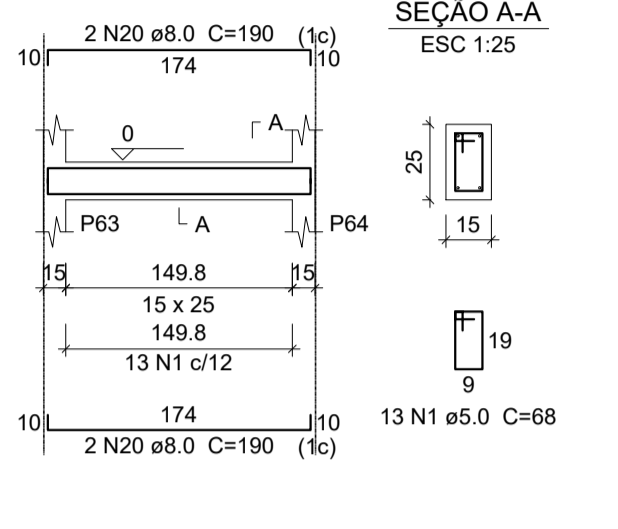
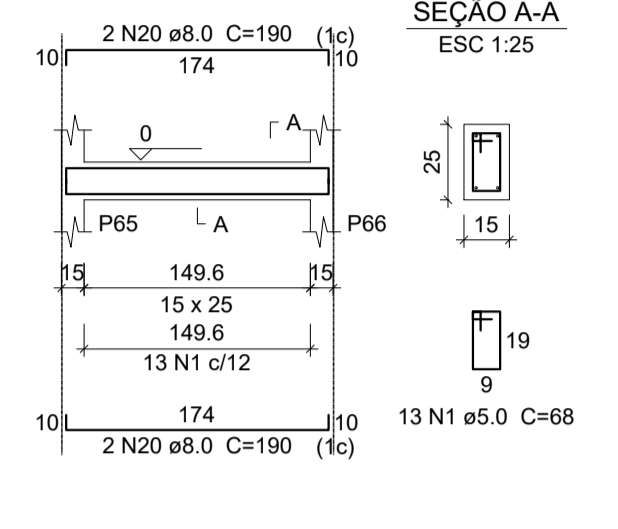
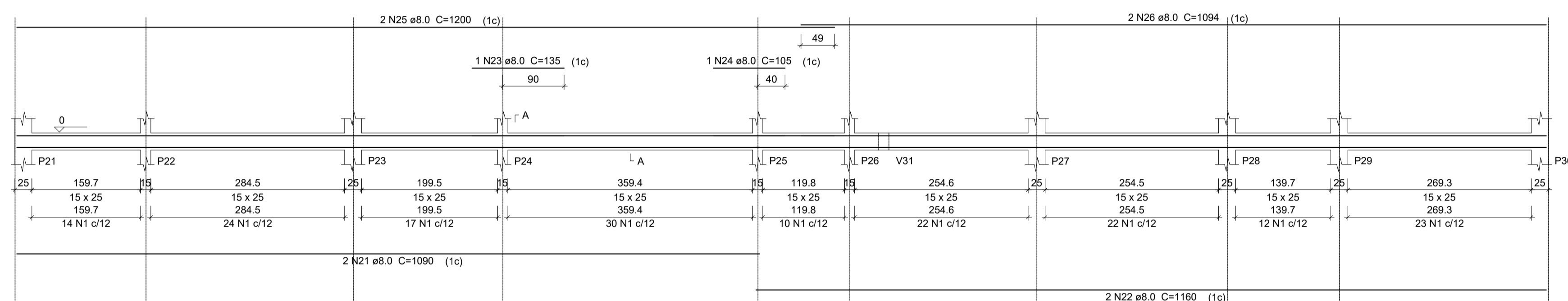
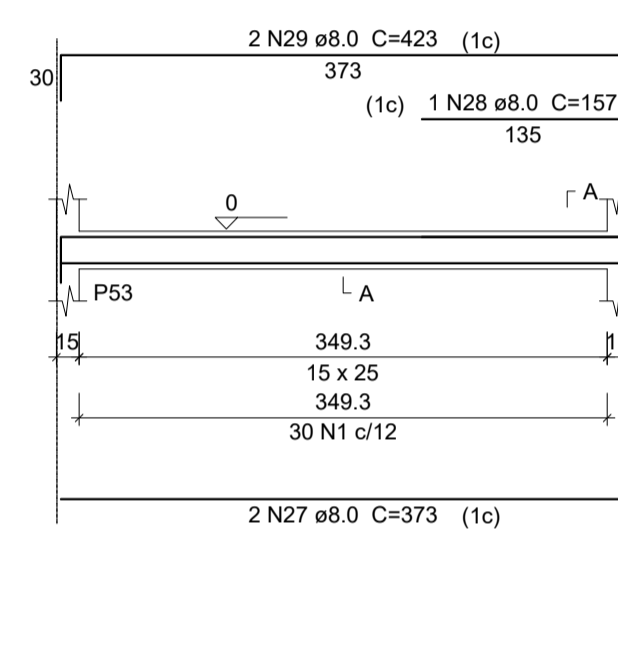
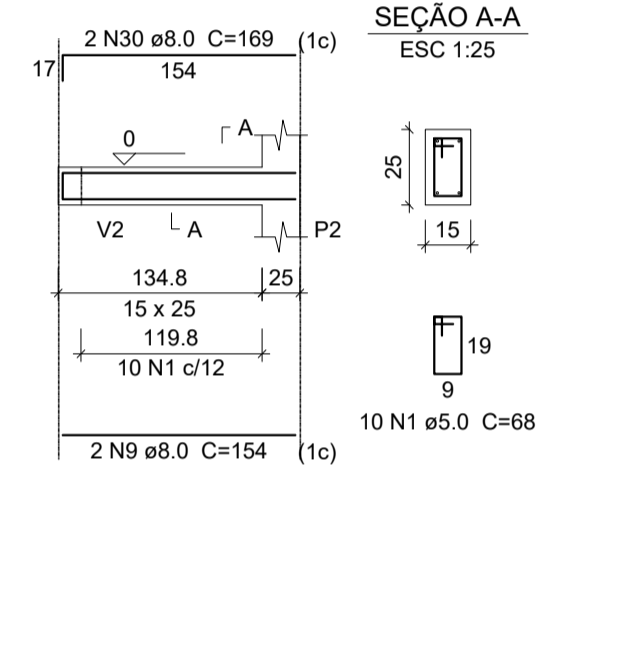
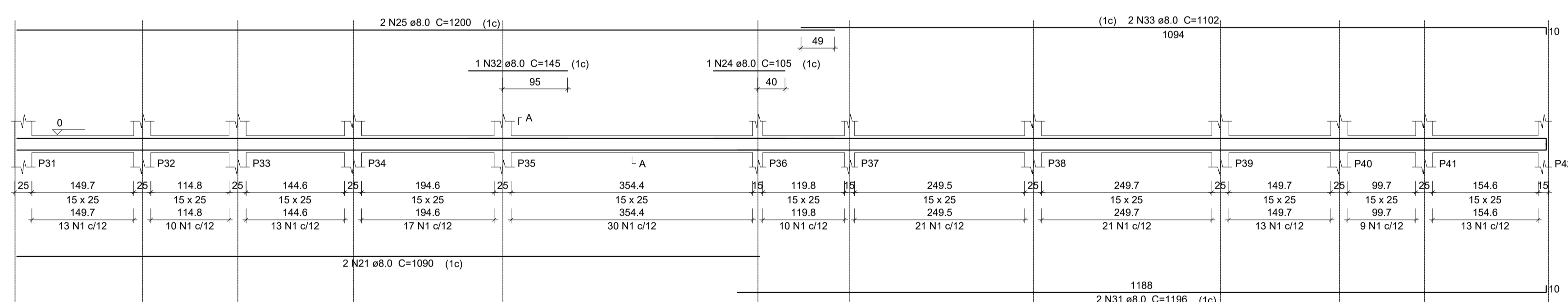
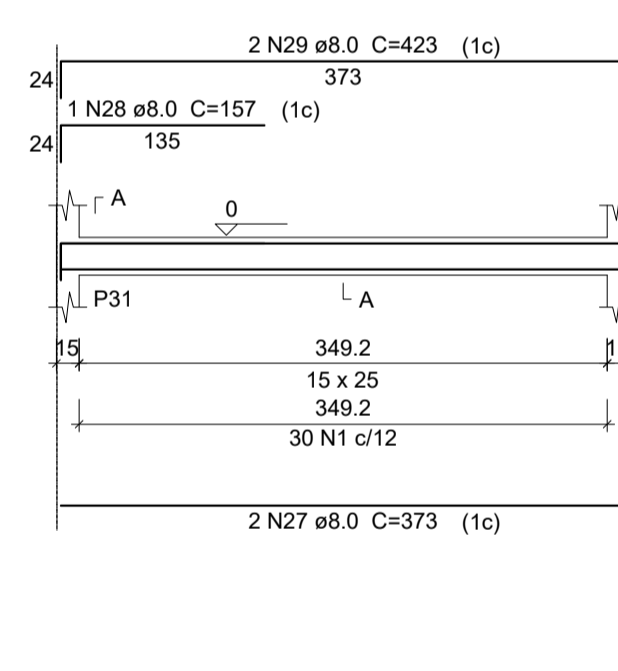
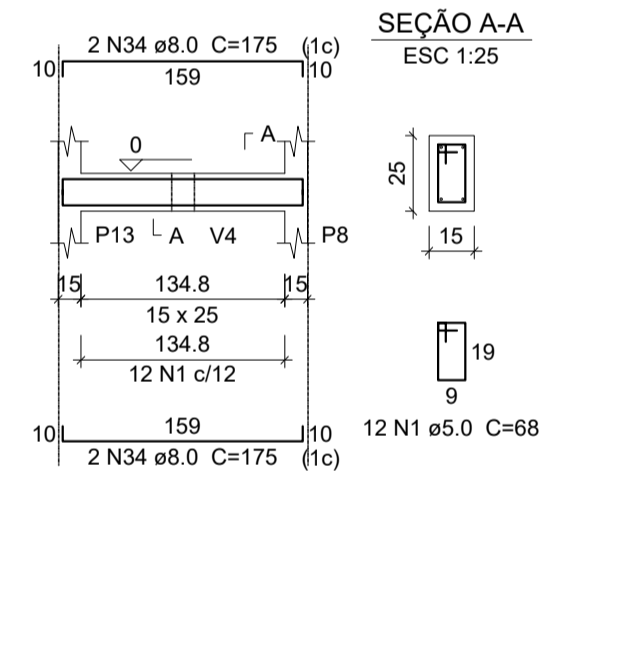
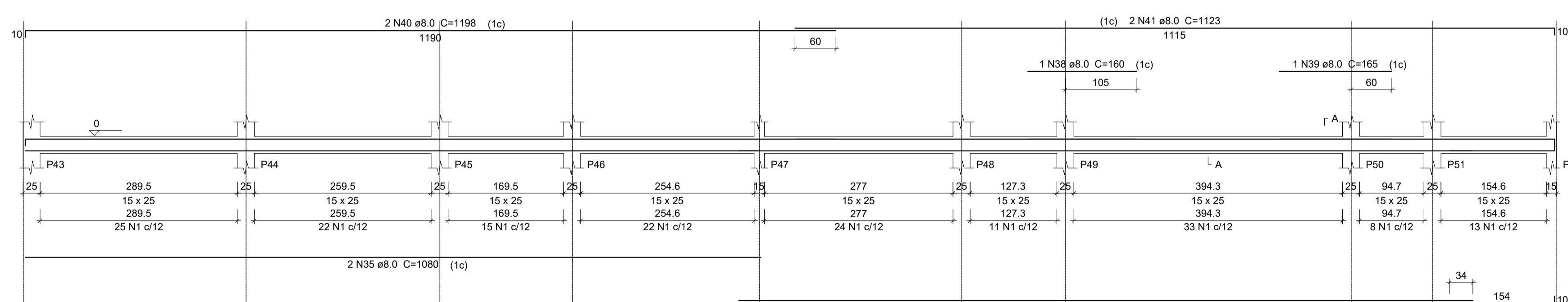
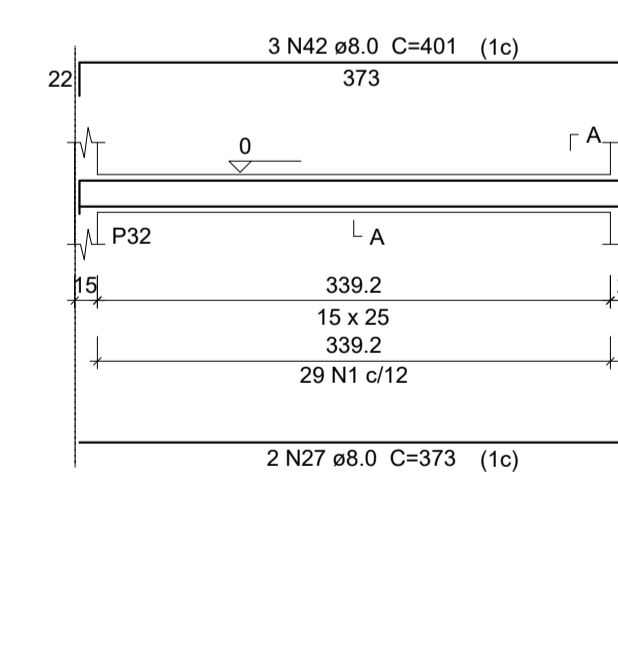
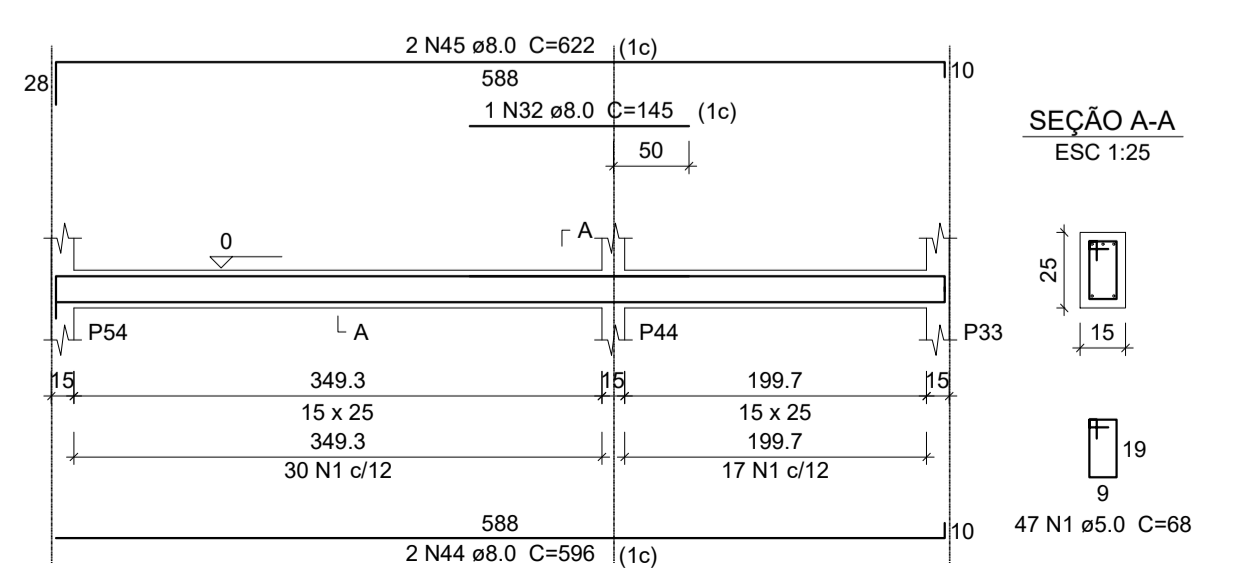
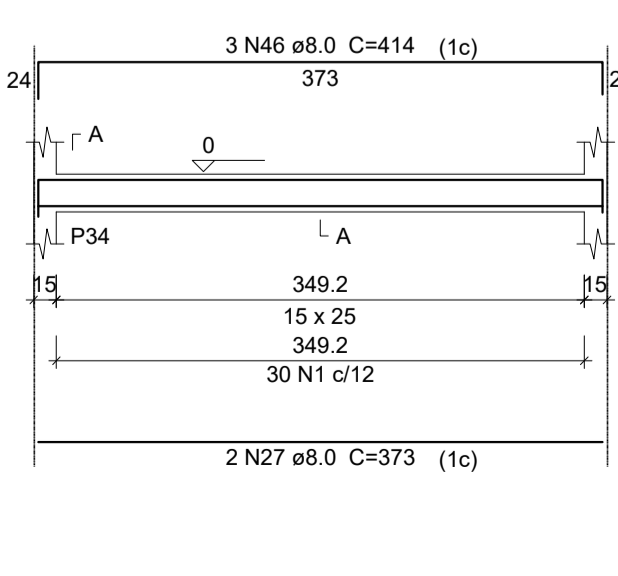
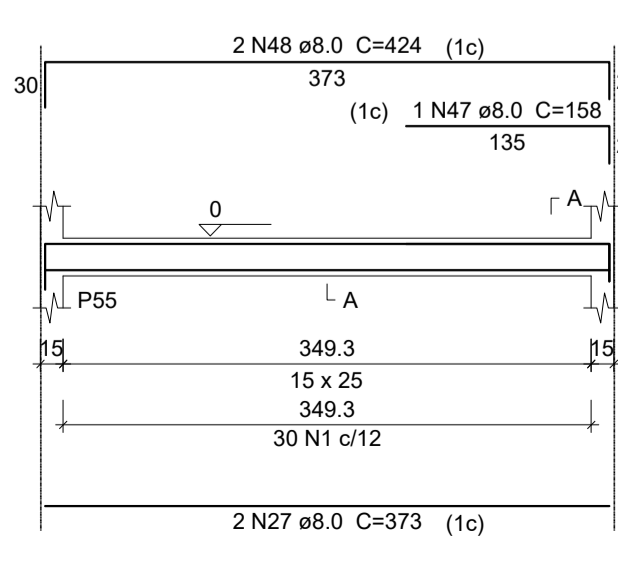
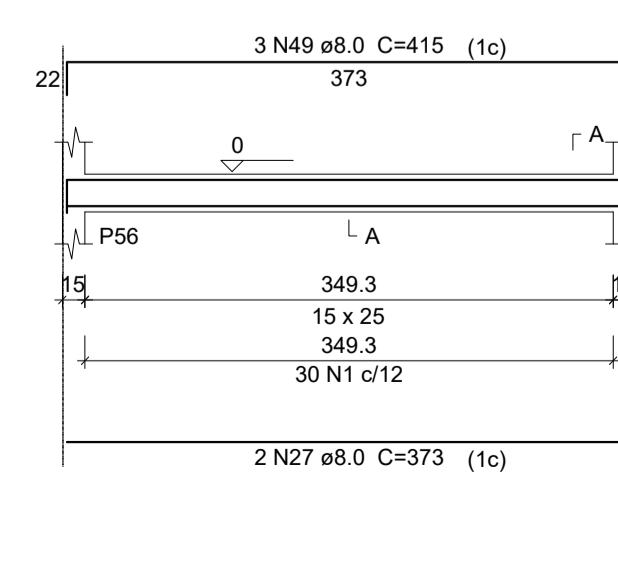
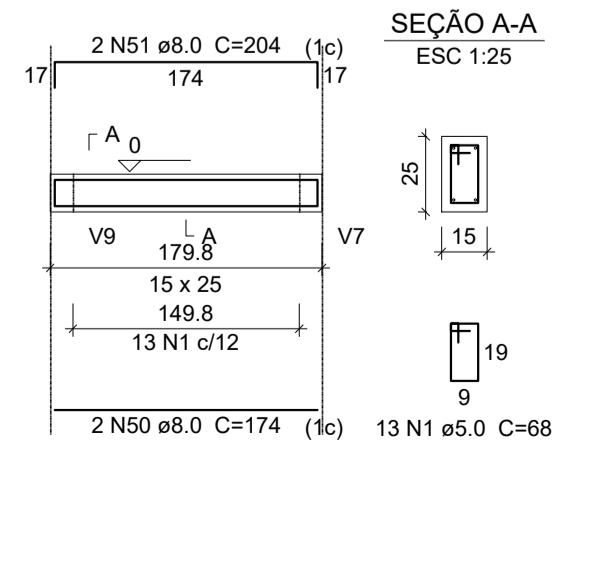
Legenda dos Pilares	
	Pilar que morre
	Pilar que passa
	Pilar que nasce
	Pilar com mudança de seção

Rodolfo Alves de Freitas
Engenheiro Civil - CREA/CE 344558
RNP 061587929-3



PROJETO	CONSTRUÇÃO DE UNIDADE BÁSICA DE SAÚDE - PORTE 1		
PROPRIETÁRIO	PREFEITURA MUNICIPAL DE BARBALHA		
ENDEREÇO/OBRA	MINHA CASA MINHA VIDA ZONA RURAL DO MUNICÍPIO DE BARBALHA - CE		
ASSUNTO	ESTRUTURAL	PRANCHA	
	- PLANTA DE FORMA NÍVEL 000		
	- LEGENDAS		
PROJETO	DESENHO	ESCALA	DATA
MARX2 PROJETOS	RODOLFO FREITAS	INDICADA	JANEIRO 2022

03/17

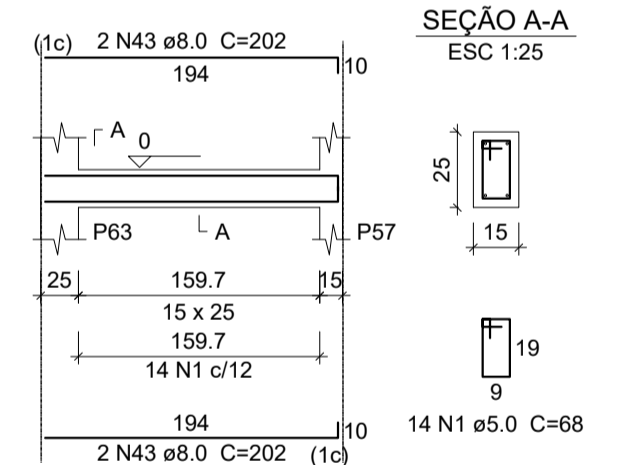
V1**V2****V3****V4****V5****V6****V7****V8****V10****V11****V15****V16****V9****V17****V24****V12****V18****V26****V13****V19****V20****V21****V22****V25****V31****Relação do aço**

ÁÇO	N	DIAM	Q	UNIT (cm)	C.TOTAL (cm)
CA60	1	5.0	1109	68	75412
CA50	2	8.0	2	821	1642
	3	8.0	2	381	762
	4	8.0	2	1087	2174
	5	8.0	2	192	384
	6	8.0	12	383	4596
	7	8.0	4	323	1292
	8	8.0	2	331	662
	9	8.0	4	154	616
	10	8.0	2	184	368
	11	8.0	2	407	814
	12	8.0	1	128	128
	13	8.0	2	348	696
	14	8.0	1	108	108
	15	8.0	2	399	798
	16	8.0	2	184	368
	17	8.0	2	214	428
	18	8.0	2	144	288
	19	8.0	2	174	348
	20	8.0	8	190	1520
	21	8.0	4	1090	4360
	22	8.0	2	1160	2320
	23	8.0	1	135	135
	24	8.0	2	105	210
	25	8.0	4	1200	4800
	26	8.0	2	1094	2188
	27	8.0	12	373	4476
	28	8.0	2	157	314
	29	8.0	4	423	1692
	30	8.0	2	169	338
	31	8.0	2	1196	2392
	32	8.0	2	145	290
	33	8.0	2	1102	2204
	34	8.0	4	175	700
	35	8.0	2	1080	2160
	36	8.0	2	1077	2154
	37	8.0	2	162	324
	38	8.0	1	160	160
	39	8.0	1	165	165
	40	8.0	2	1198	2396
	41	8.0	2	1123	2246
	42	8.0	3	401	1203
	43	8.0	4	202	808
	44	8.0	2	596	1192
	45	8.0	2	622	1244
	46	8.0	3	414	1242
	47	8.0	1	158	158
	48	8.0	2	424	848
	49	8.0	3	415	1245
	50	8.0	2	174	348
	51	8.0	2	204	408

Resumo do aço

ÁÇO	DIAM	C.TOTAL (m)	PESO + 10% (kg)
CA50	8.0	627.2	272.2
CA60	5.0	754.2	127.9
PESO TOTAL			
CA50		272.2	
CA60		127.9	

Vol. de concreto total (C-25) = 5.48 m³
 Área de forma total = 94.99 m²

V27

Rodolfo Alves de Freitas
 Engenheiro CREA - CREA/CE 344558
 RNP 16158729-3



PROJETO
CONSTRUÇÃO DE UNIDADE BÁSICA DE SAÚDE - PORTE 1

PROPRIETÁRIO
 PREFEITURA MUNICIPAL DE BARBALHA
 ENDEREÇO/OBRA
 MINHA CASA MINHA VIDA ZONA RURAL DO MUNICÍPIO DE BARBALHA - CE

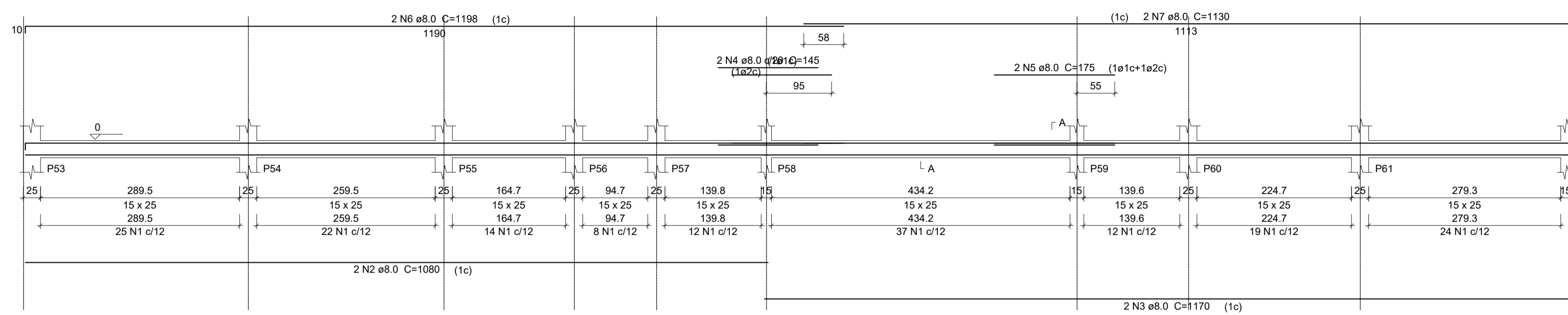
ASSUNTO **ESTRUTURAL** PRANCHA

- VIGAS BALDRAMES: V1 A V13
 - VIGAS BALDRAMES: V15 A V22
 - VIGAS BALDRAMES: V24 A V27
 - VIGAS BALDRAMES: V31

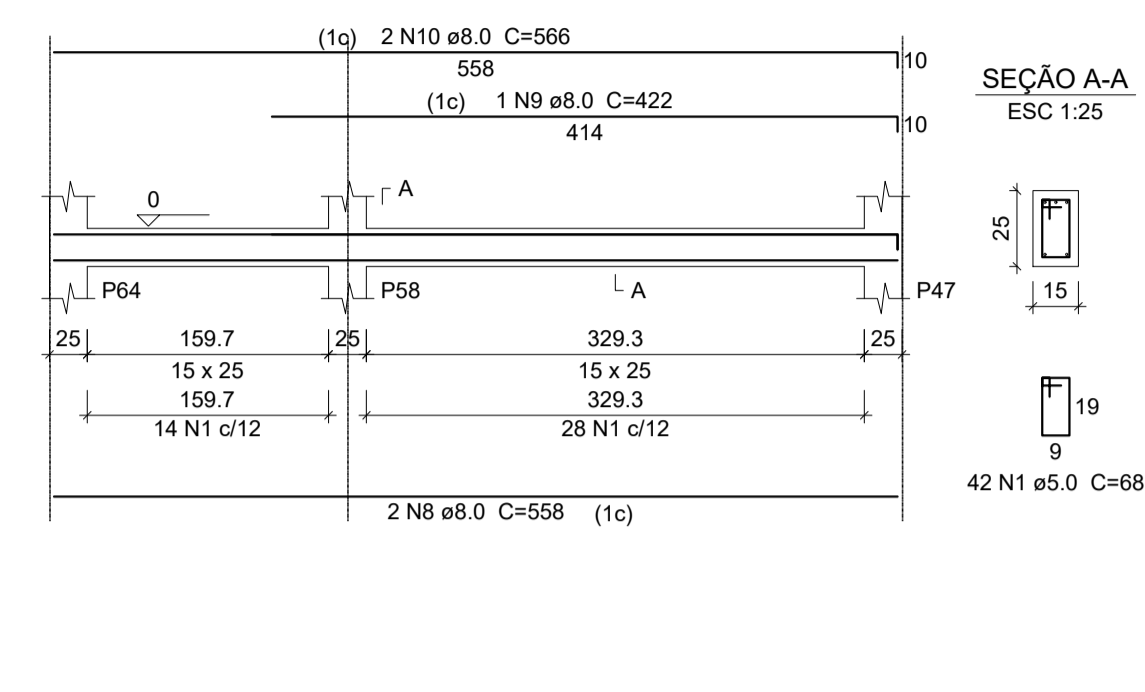
04/17

PROJETO MARX2 PROJETOS	DESENHO RODOLFO FREITAS	ESCALA INDICADA	DATA JANEIRO 2022
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V14
ESC 1:50



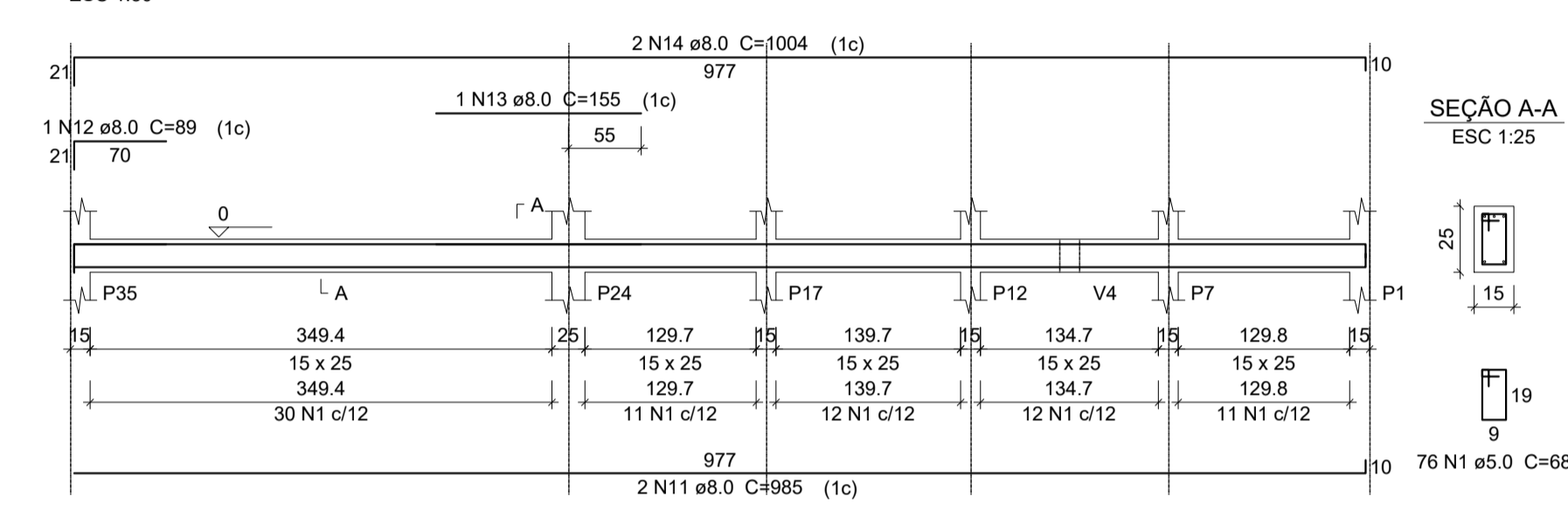
V28
ESC 1:50



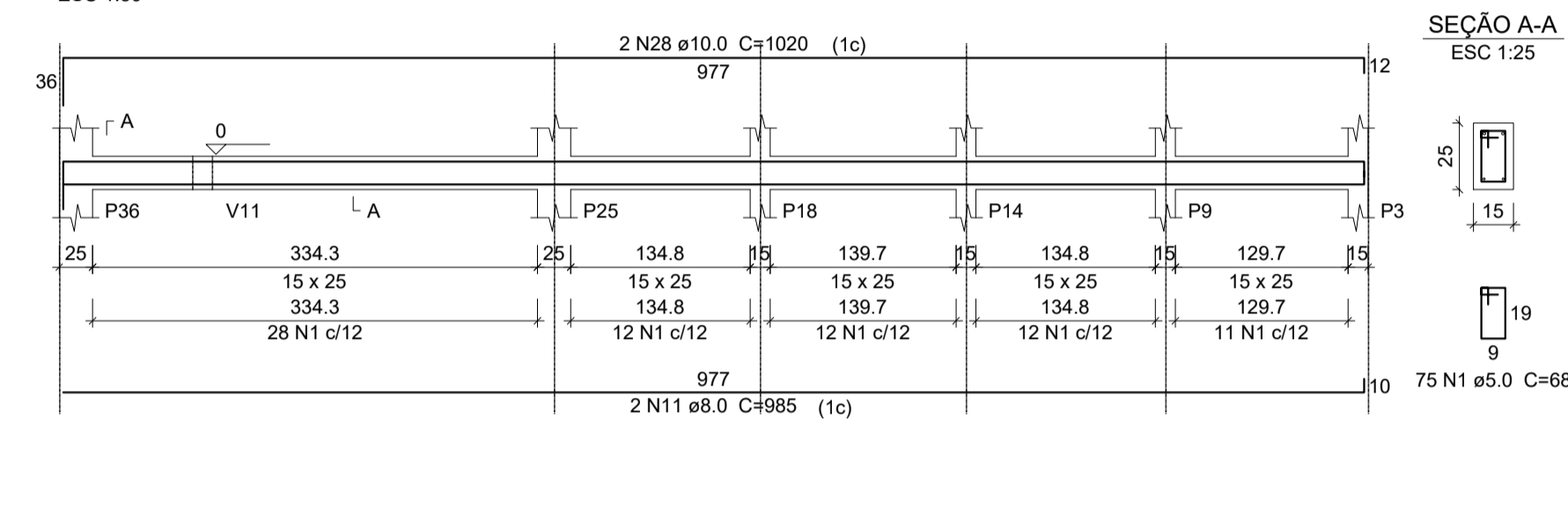
Relação do aço

AÇO	N	DIAM	Q	UNIT (cm)	C.TOTAL (cm)
CA60	1	5.0	756	68	51408
CA50	2	8.0	2	1080	2160
	3	8.0	2	1170	2340
	4	8.0	2	145	290
	5	8.0	2	175	350
	6	8.0	2	1198	2396
	7	8.0	2	1130	2260
	8	8.0	4	558	2232
	9	8.0	1	422	422
	10	8.0	2	566	1132
	11	8.0	6	985	5910
	12	8.0	1	89	89
	13	8.0	2	155	310
	14	8.0	2	1004	2008
	15	8.0	8	373	2984
	16	8.0	3	416	1248
	17	8.0	4	202	808
	18	8.0	2	585	1170
	19	8.0	4	456	1824
	20	8.0	2	179	358
	21	8.0	7	381	2667
	22	8.0	4	383	1532
	23	8.0	1	157	157
	24	8.0	2	423	846
	25	8.0	4	240	960
	26	8.0	1	148	148
	27	8.0	2	408	816
	28	10.0	2	1020	2040
	29	10.0	2	1019	2038
	30	10.0	4	439	1756

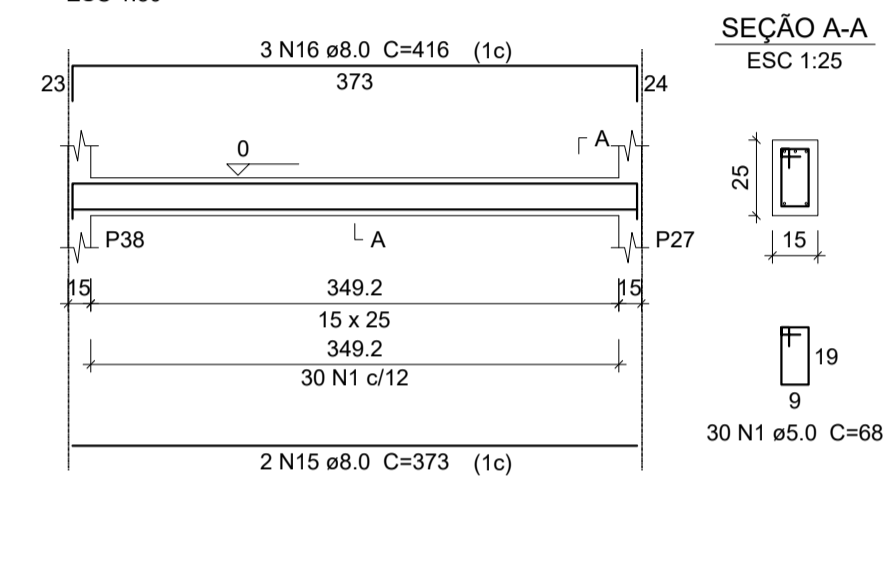
V23
ESC 1:50



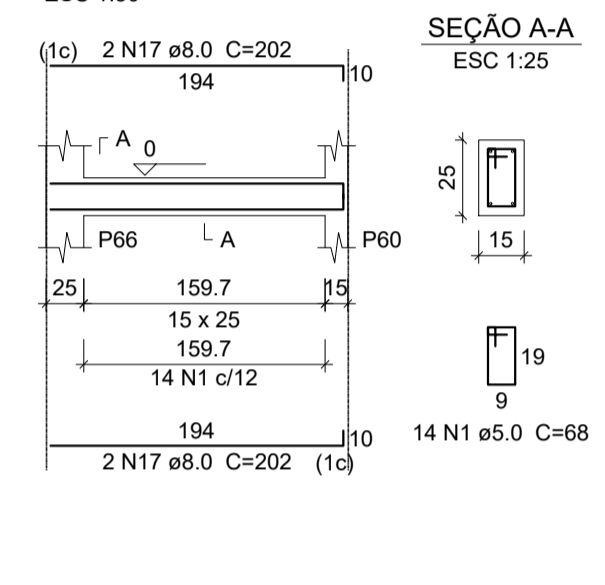
V29
ESC 1:50



V32
ESC 1:50



V35
ESC 1:50

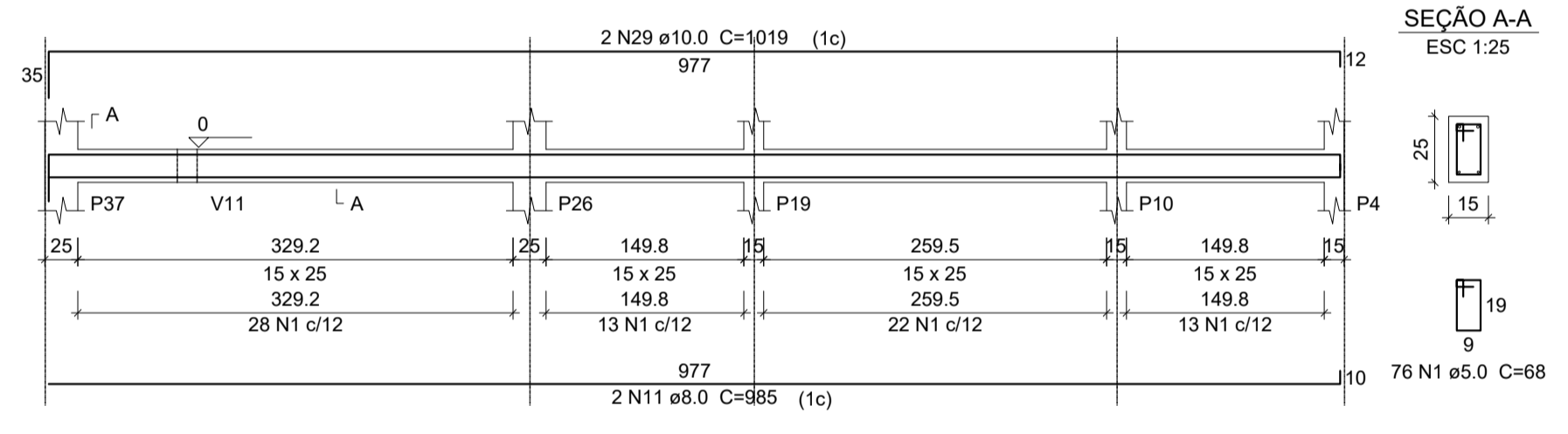


Resumo do aço

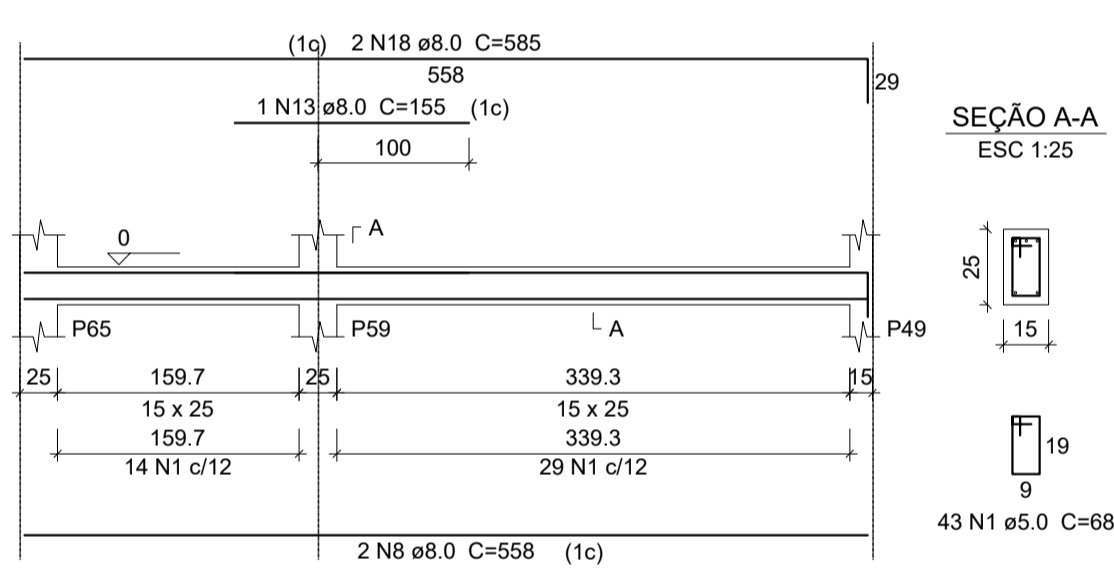
AÇO	DIAM	C.TOTAL (m)	PESO + 10 % (kg)
CA50	8.0	374.2	162.4
CA60	10.0	58.4	39.6
CA60	5.0	514.1	87.2
PESO TOTAL			
CA50		202	
CA60		87.2	

Vol. de concreto total (C-25) = 3.7 m³
Área de forma total = 64.2 m²

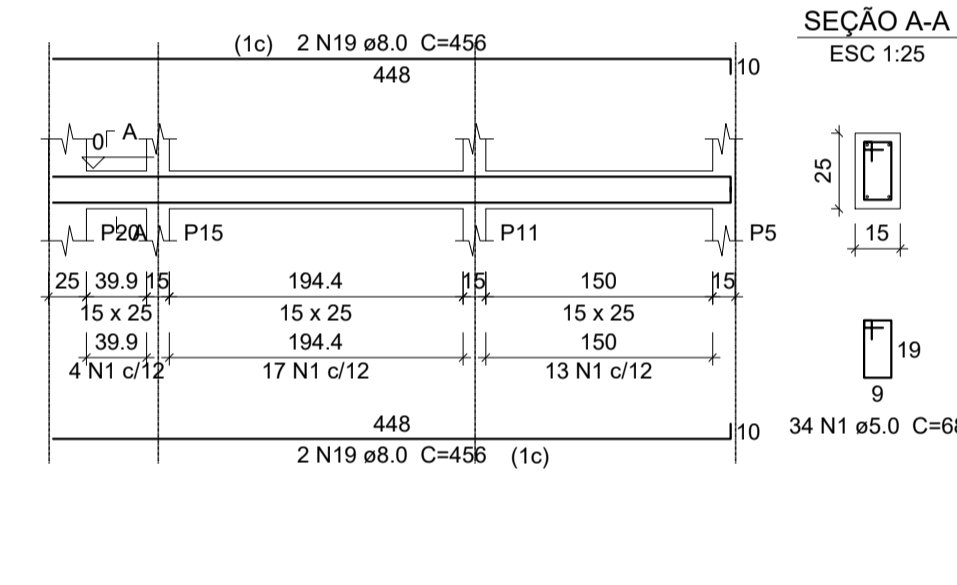
V30
ESC 1:50



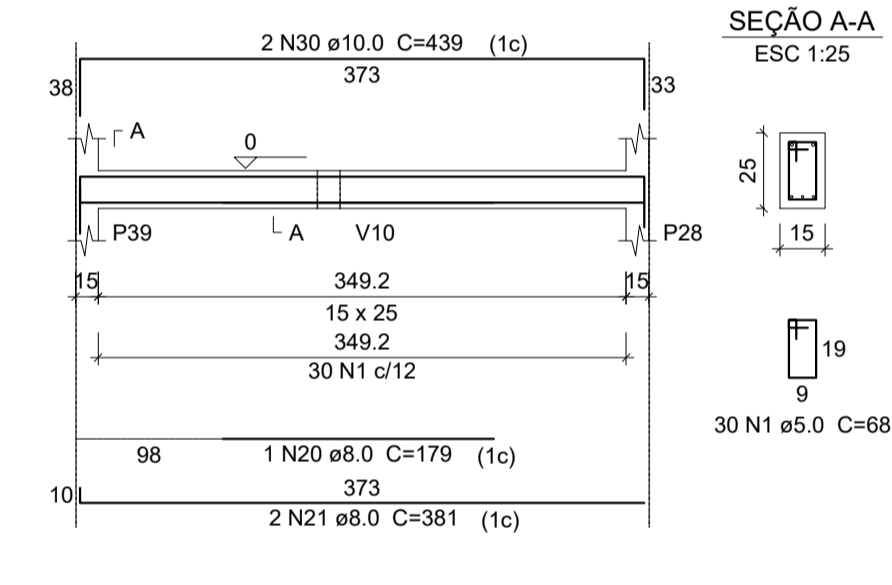
V33
ESC 1:50



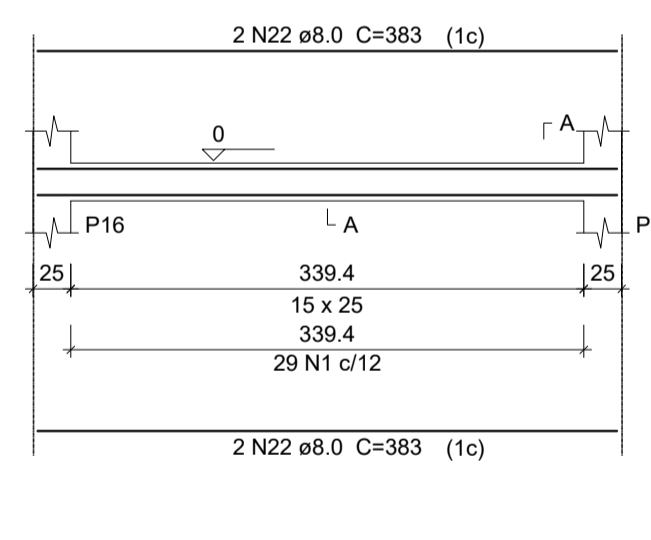
V34
ESC 1:50



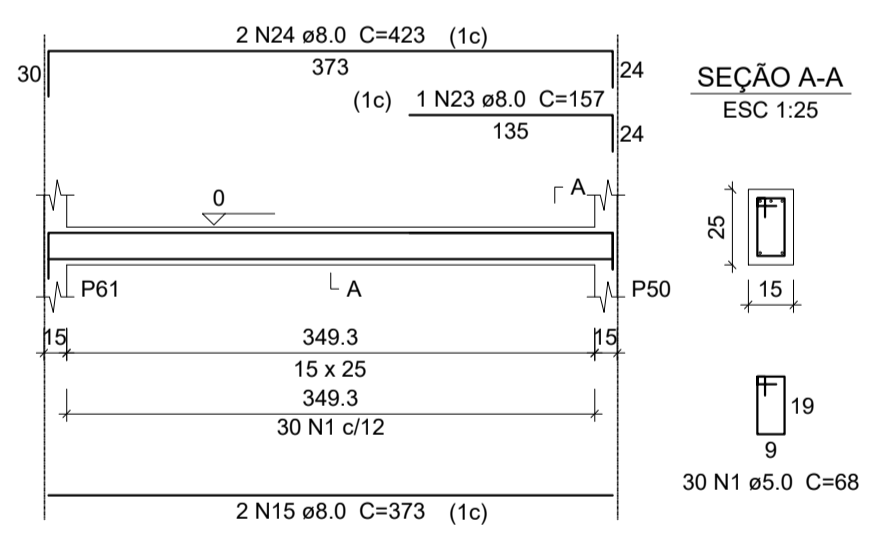
V36
ESC 1:50



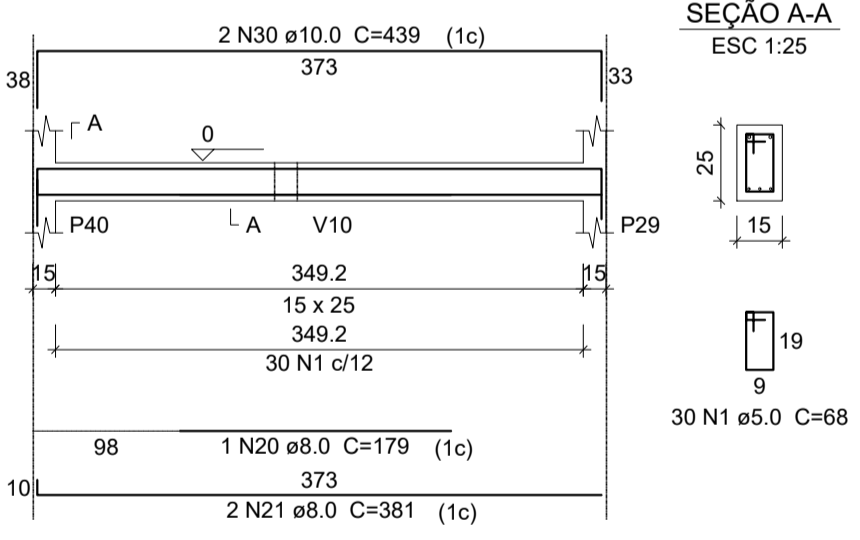
V37
ESC 1:50



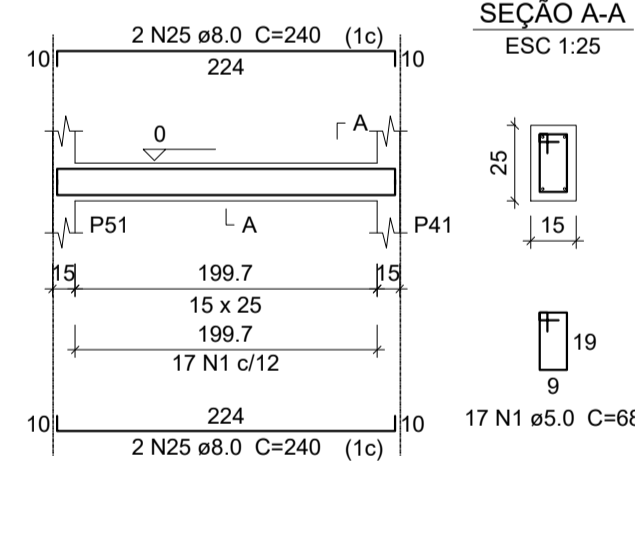
V38
ESC 1:50



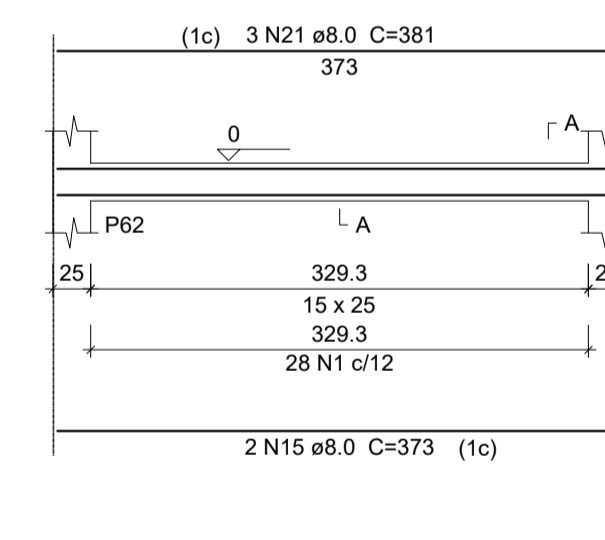
V39
ESC 1:50



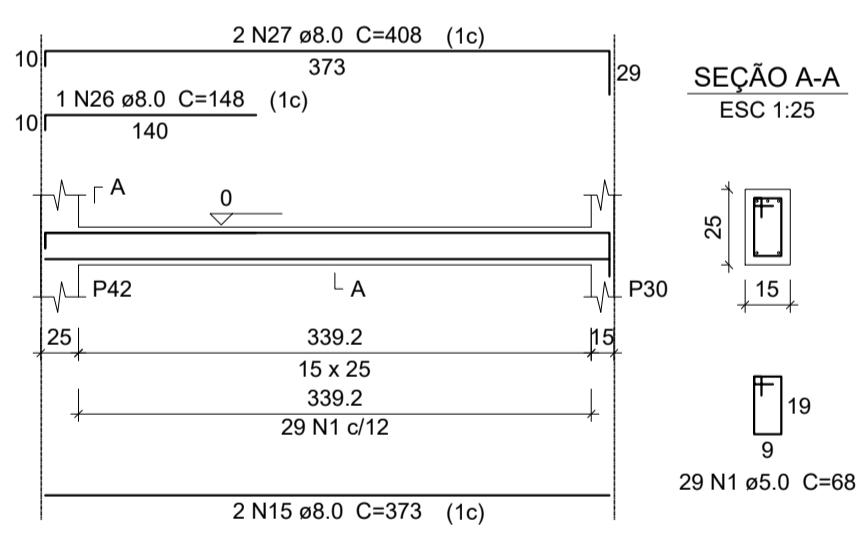
V40
ESC 1:50



V41
ESC 1:50



V42
ESC 1:50



PROJETO			
CONSTRUÇÃO DE UNIDADE BÁSICA DE SAÚDE - PORTE 1			
PROPRIETÁRIO			
PREFEITURA MUNICIPAL DE BARBALHA			
ENDEREÇO/OBRA			
MINHA CASA MINHA VIDA ZONA RURAL DO MUNICÍPIO DE BARBALHA - CE			
ASSUNTO		PRANCHA	
ESTRUTURAL		05/17	
- VIGAS BALDRAMES: V14			
- VIGAS BALDRAMES: V23			
- VIGAS BALDRAMES: V28 A V30			
- VIGAS BALDRAMES: V32 A V42			
PROJETO	DESENHO	ESCALA	DATA
MARX2 PROJETOS	RODOLFO FREITAS	INDICADA	JANEIRO 2022



Vigas			
Nome	Seção (cm)	Elevação (cm)	Nível (cm)
V1	12x20	0	170
V2	12x20	0	170
V3	12x20	0	170

Características dos materiais	
fck (kgf/cm²)	Ecs (kgf/cm³)
250	238000

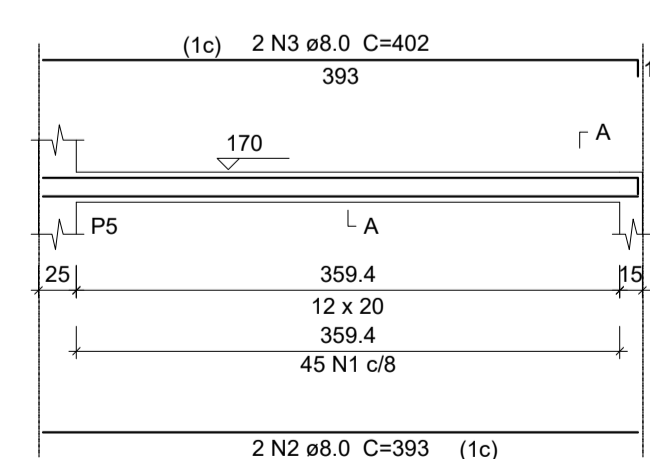
Pilares			
Nome	Seção (cm)	Elevação (cm)	Nível (cm)
P1	15 x 25	0	170
P2	15 x 25	0	170
P3	15 x 25	0	170
P4	15 x 25	0	170
P5	15 x 25	0	170
P6	15 x 25	0	170
P7	15 x 25	0	170
P8	15 x 25	0	170
P9	15 x 25	0	170
P10	15 x 25	0	170
P11	15 x 25	0	170
P12	15 x 25	0	170
P13	15 x 25	0	170
P14	15 x 25	0	170
P15	15 x 25	0	170
P16	15 x 25	0	170
P17	15 x 25	0	170
P18	15 x 25	0	170
P19	15 x 25	0	170
P20	15 x 25	0	170
P21	15 x 25	0	170
P22	15 x 25	0	170
P23	15 x 25	0	170
P24	15 x 25	0	170
P25	15 x 25	0	170
P26	15 x 25	0	170
P27	15 x 25	0	170
P28	15 x 25	0	170
P29	15 x 25	0	170
P30	15 x 25	0	170
P31	15 x 25	0	170
P32	15 x 25	0	170
P33	15 x 25	0	170
P34	15 x 25	0	170
P35	15 x 25	0	170
P36	15 x 25	0	170
P37	15 x 25	0	170
P38	15 x 25	0	170
P39	15 x 25	0	170
P40	15 x 25	0	170
P41	15 x 25	0	170
P42	15 x 25	0	170
P43	15 x 25	0	170
P44	15 x 25	0	170
P45	15 x 25	0	170
P46	15 x 25	0	170
P47	15 x 25	0	170
P48	15 x 25	0	170
P49	15 x 25	0	170
P50	15 x 25	0	170
P51	15 x 25	0	170
P52	15 x 25	0	170
P53	15 x 25	0	170
P54	15 x 25	0	170
P55	15 x 25	0	170
P56	15 x 25	0	170
P57	15 x 25	0	170
P58	15 x 25	0	170
P59	15 x 25	0	170
P60	15 x 25	0	170
P61	15 x 25	0	170
P62	15 x 25	0	170
P63	15 x 25	0	170
P64	15 x 25	0	170
P65	15 x 25	0	170
P66	15 x 25	0	170

Legenda dos Pilares	
	Pilar que morre
	Pilar que passa
	Pilar que nasce
	Pilar com mudança de seção

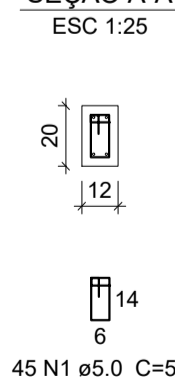
Forma do pavimento NÍVEL +170 (Nível 170)

escala 1:50

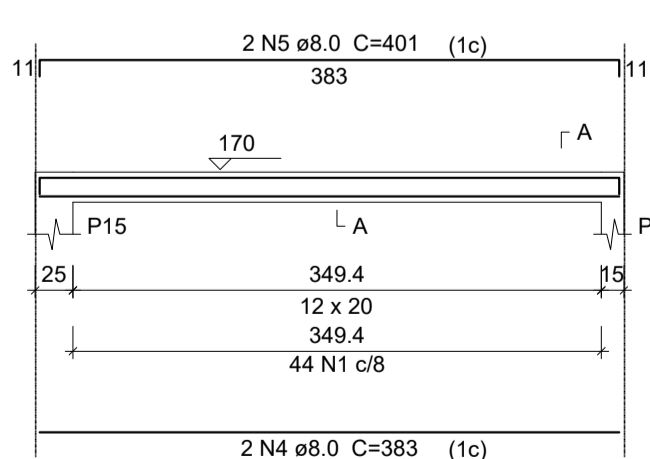
V1
ESC 1:50



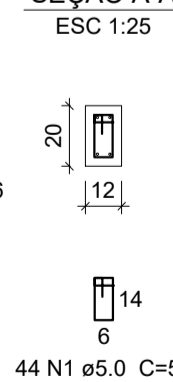
SEÇÃO A-A
ESC 1:25



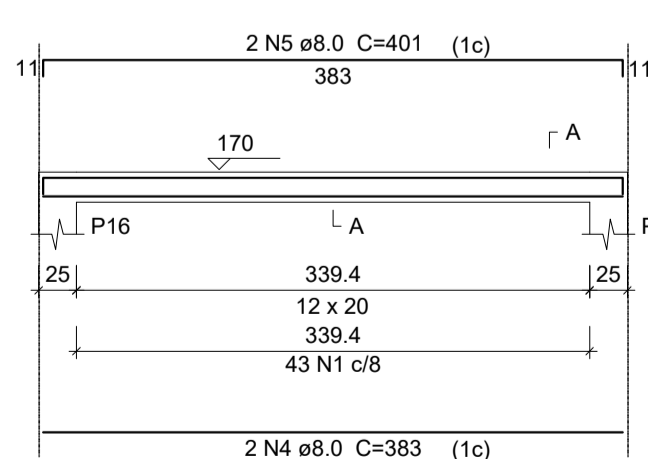
V2
ESC 1:50



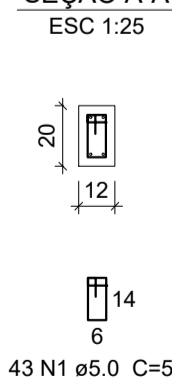
SEÇÃO A-A
ESC 1:25



V3
ESC 1:50



SEÇÃO A-A
ESC 1:25



Relação do aço

AÇO	N	DIAM	Q	UNIT (cm)	C.TOTAL (cm)
CA60	1	5.0	132	52	6864
CA50	2	8.0	2	393	786
	3	8.0	2	402	804
	4	8.0	4	383	1532
	5	8.0	4	401	1604

Resumo do aço

AÇO	DIAM	C.TOTAL (m)	PESO * 10 % (kg)
CA50	8.0	47.3	20.5
CA60	5.0	68.7	11.6
PESO TOTAL			
CA50		20.5	
CA60		11.6	

Vol. de concreto total (C-25) = 0.28 m³
Área de forma total = 6.13 m²

Rodolfo Alves de Freitas
Engenheiro Civil - CREA: 34458
RVP 06/18/2023



PROJETO
CONSTRUÇÃO DE UNIDADE BÁSICA DE SAÚDE - PORTE 1

PROPRIETÁRIO
PREFEITURA MUNICIPAL DE BARBALHA

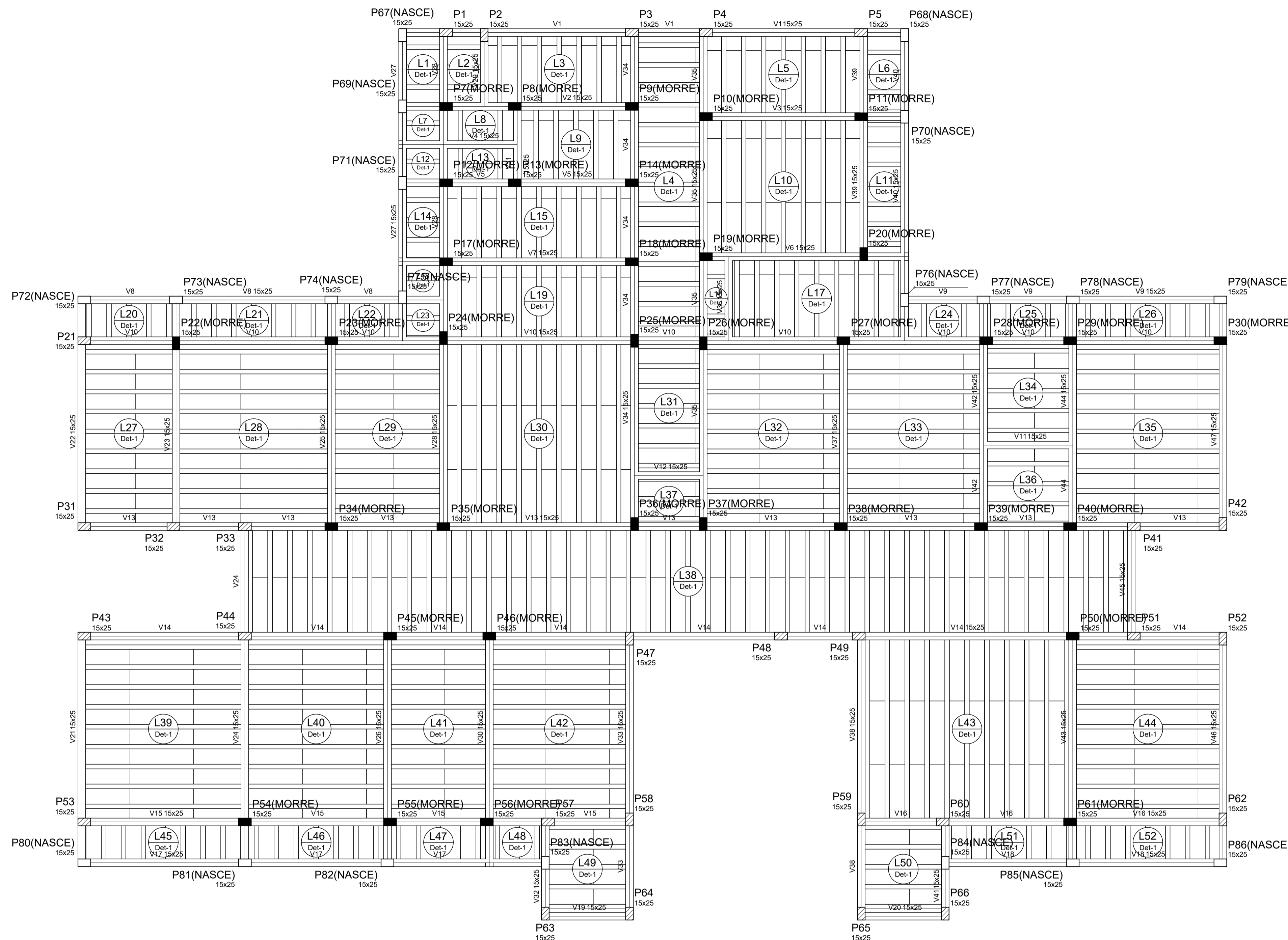
ENDEREÇO/OBRA
MINHA CASA MINHA VIDA ZONA RURAL DO MUNICÍPIO DE BARBALHA - CE

ASSUNTO ESTRUTURAL PRANCHA

- PLANTA DE FORMA NÍVEL +170
- VIGAS DE AMARRAÇÃO DO MURO 1,70m: V1 A V3
- LEGENDAS

06/17

PROJETO MARX2 PROJETOS	DESENHO RODOLFO FREITAS	ESCALA INDICADA	DATA JANEIRO 2022
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Forma do pavimento NÍVEL +295 (Nível 295)
escala 1:50

Vigas			
Nome	Seção (cm)	Elevação (cm)	Nível (cm)
V1	15x25	0	295
V2	15x25	0	295
V3	15x25	0	295
V4	15x25	0	295
V5	15x25	0	295
V6	15x25	0	295
V7	15x25	0	295
V8	15x25	0	295
V9	15x25	0	295
V10	15x25	0	295
V11	15x25	0	295
V12	15x25	0	295
V13	15x25	0	295
V14	15x25	0	295
V15	15x25	0	295
V16	15x25	0	295
V17	15x25	0	295
V18	15x25	0	295
V19	15x25	0	295
V20	15x25	0	295
V21	15x25	0	295
V22	15x25	0	295
V23	15x25	0	295
V24	15x25	0	295
V25	15x25	0	295
V26	15x25	0	295
V27	15x25	0	295
V28	15x25	0	295
V29	15x25	0	295
V30	15x25	0	295
V31	15x25	0	295
V32	15x25	0	295
V33	15x25	0	295
V34	15x25	0	295
V35	15x25	0	295
V36	15x25	0	295
V37	15x25	0	295
V38	15x25	0	295
V39	15x25	0	295
V40	15x25	0	295
V41	15x25	0	295
V42	15x25	0	295
V43	15x25	0	295
V44	15x25	0	295
V45	15x25	0	295
V46	15x25	0	295
V47	15x25	0	295

Blocos de enchimento						
Detalhe	Tipo	Nome	Dimensões (cm)		Quantidade	
1	EPS Unidirecional	B8/30/125	8	30	125	599
Características dos materiais			fck (kgf/cm²)	Ecs (kgf/cm²)		
			250	238000		

Pilares			
Nome	Seção (cm)	Elevação (cm)	Nível (cm)
P1	15 x 25	0	295
P2	15 x 25	0	295
P3	15 x 25	0	295
P4	15 x 25	0	295
P5	15 x 25	0	295
P7	15 x 25	0	295
P8	15 x 25	0	295
P9	15 x 25	0	295
P10	15 x 25	0	295
P11	15 x 25	0	295
P12	15 x 25	0	295
P13	15 x 25	0	295
P14	15 x 25	0	295
P17	15 x 25	0	295
P18	15 x 25	0	295
P19	15 x 25	0	295
P20	15 x 25	0	295
P21	15 x 25	0	295
P22	15 x 25	0	295
P23	15 x 25	0	295
P24	15 x 25	0	295
P25	15 x 25	0	295
P26	15 x 25	0	295
P27	15 x 25	0	295
P28	15 x 25	0	295
P29	15 x 25	0	295
P30	15 x 25	0	295
P31	15 x 25	0	295
P32	15 x 25	0	295
P33	15 x 25	0	295
P34	15 x 25	0	295
P35	15 x 25	0	295
P36	15 x 25	0	295
P37	15 x 25	0	295
P38	15 x 25	0	295
P39	15 x 25	0	295
P40	15 x 25	0	295
P41	15 x 25	0	295
P42	15 x 25	0	295
P43	15 x 25	0	295
P44	15 x 25	0	295
P45	15 x 25	0	295
P46	15 x 25	0	295
P47	15 x 25	0	295
P48	15 x 25	0	295
P49	15 x 25	0	295
P50	15 x 25	0	295
P51	15 x 25	0	295
P52	15 x 25	0	295
P53	15 x 25	0	295
P54	15 x 25	0	295
P55	15 x 25	0	295
P56	15 x 25	0	295
P57	15 x 25	0	295
P58	15 x 25	0	295
P59	15 x 25	0	295
P60	15 x 25	0	295
P61	15 x 25	0	295
P62	15 x 25	0	295
P63	15 x 25	0	295
P64	15 x 25	0	295
P65	15 x 25	0	295
P66	15 x 25	0	295
P67	15 x 25	0	295
P68	15 x 25	0	295
P69	15 x 25	0	295
P70	15 x 25	0	295
P71	15 x 25	0	295
P72	15 x 25	0	295
P73	15 x 25	0	295
P74	15 x 25	0	295
P75	15 x 25	0	295
P76	15 x 25	0	295
P77	15 x 25	0	295
P78	15 x 25	0	295
P79	15 x 25	0	295
P80	15 x 25	0	295
P81	15 x 25	0	295
P82	15 x 25	0	295
P83	15 x 25	0	295
P84	15 x 25	0	295
P85	15 x 25	0	295
P86	15 x 25	0	295

Lajes								
Nome	Tipo	Altura (cm)	Elevação (cm)	Nível (cm)	Peso próprio (kgf/m²)	Sobrecarga (kgf/m²)		
						Adicional	Acidental	Localizada
L1	Trelçada ID	12	0	295	147	100	100	-
L2	Trelçada ID	12	0	295	147	100	100	-
L3	Trelçada ID	12	0	295	147	100	100	-
L4	Trelçada ID	12	0	295	147	100	100	-
L5	Trelçada ID	12	0	295	147	100	100	-
L6	Trelçada ID	12	0	295	147	100	100	-
L7	Trelçada ID	12	0	295	147	100	100	-
L8	Trelçada ID	12	0	295	147	100	100	-
L9	Trelçada ID	12	0	295	147	100	100	-
L10	Trelçada ID	12	0	295	147	100	100	-
L11	Trelçada ID	12	0	295	147	100	100	-
L12	Trelçada ID	12	0	295	147	100	100	-
L13	Trelçada ID	12	0	295	147	100	100	-
L14	Trelçada ID	12	0	295	147	100	100	-
L15	Trelçada ID	12	0	295	147	100	100	-
L16	Trelçada ID	12	0	295	147	100	100	-
L17	Trelçada ID	12	0	295	147	100	100	-
L18	Trelçada ID	12	0	295	147	100	100	-
L19	Trelçada ID	12	0	295	147	100	100	-
L20	Trelçada ID	12	0	295	147	100	100	-
L21	Trelçada ID	12	0	295	147	100	100	-
L22	Trelçada ID	12	0	295	147	100	100	-
L23	Trelçada ID	12	0	295	147	100	100	-
L24	Trelçada ID	12	0	295	147	100	100	-
L25	Trelçada ID	12	0	295	147	100	100	-
L26	Trelçada ID	12	0	295	147	100	100	-
L27	Trelçada ID	12	0	295	147	100	100	-
L28	Trelçada ID	12	0	295	147	100	100	-
L29	Trelçada ID	12	0	295	147	100	100	-
L30	Trelçada ID	12	0	295	147	100	100	-
L31	Trelçada ID	12	0	295	147	100	100	-
L32	Trelçada ID	12	0	295	147	100	100	-
L33	Trelçada ID	12	0	295	147	100	100	-
L34	Trelçada ID	12	0	295	147	100	100	-
L35	Trelçada ID	12	0	295	147	100	100	-
L36	Trelçada ID	12	0	295	147	100	100	-
L37	Trelçada ID	12	0	295	147	100	100	-
L38	Trelçada ID	12	0	295	147	100	100	-
L39	Trelçada ID	12	0	295	147	100	100	-
L40	Trelçada ID	12	0	295	147	100	100	-
L41	Trelçada ID	12	0	295	147	100	100	-
L42	Trelçada ID	12	0	295	147	100	100	-
L43	Trelçada ID	12	0	295	147	100	100	-
L44	Trelçada ID	12	0	295	147	100	100	-
L45	Trelçada ID	12	0	295	147	100	100	-
L46	Trelçada ID	12	0	295	147	100	100	-
L47	Trelçada ID	12	0	295	147	100	100	-
L48	Trelçada ID	12	0	295	147	100	100	-
L49	Trelçada ID	12	0	295	147	100	100	-
L50	Trelçada ID	12	0	295	147	100	100	-
L51	Trelçada ID	12	0	295	147	100	100	-
L52	Trelçada ID	12	0	295	147	100	100	-

Detalhe 1 (esc. 1:30)

GOVERNO MUNICIPAL DE BARBALHA

CPF: 07.142.346/04-1
 RUA EDUARDO POZZILLO DA COSTA, Nº 328
 DISTRITO DO ROSÁRIO, BARBALHA-PE
 TELEFONE: (81) 3821-4237
 E-MAIL: marx2projetos@gmail.com

MARX2
 MARX2 CONSTRUÇÕES EIRELI-ME

PROJETO
CONSTRUÇÃO DE UNIDADE BÁSICA DE SAÚDE - PORTE 1

PROPRIETÁRIO
 PREFEITURA MUNICIPAL DE BARBALHA

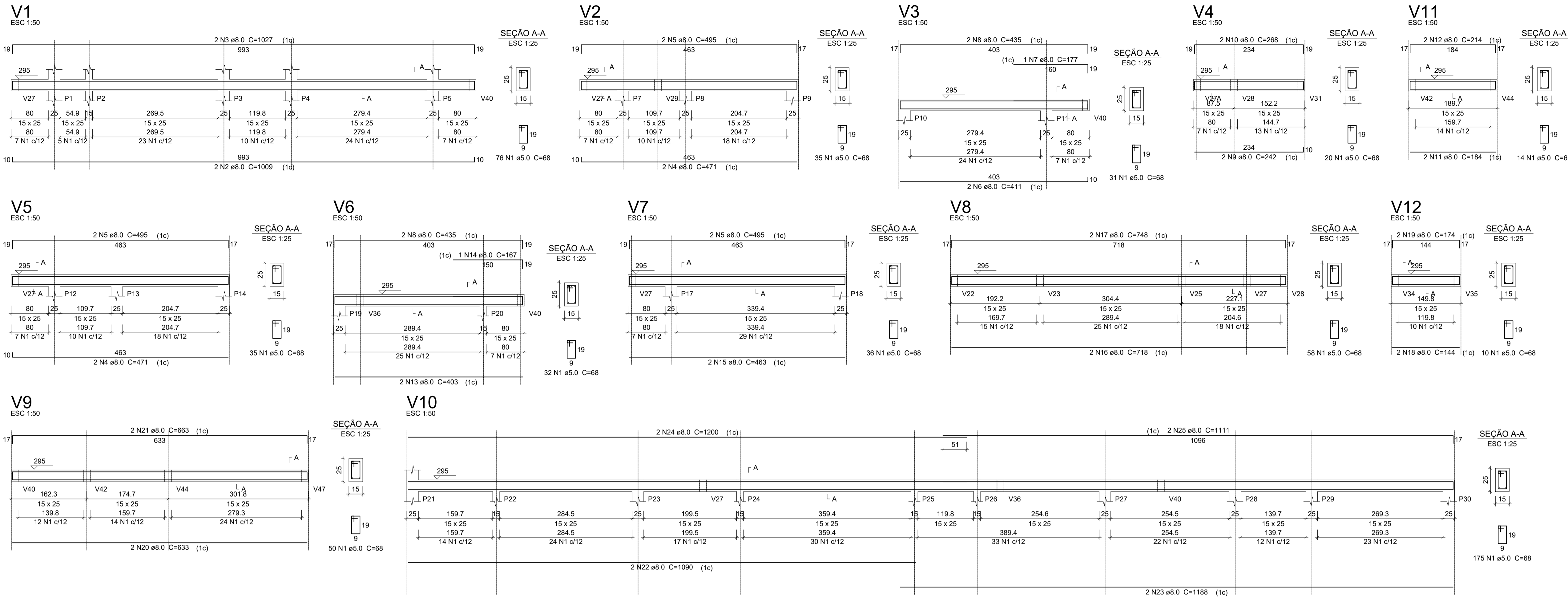
ENDEREÇO/OBRA
 MINHA CASA MINHA VIDA ZONA RURAL DO MUNICÍPIO DE BARBALHA - CE

ASSUNTO **ESTRUTURAL** **PRANCHA**

- PLANTA DE FORMA NÍVEL +295
 - DETALHES
 - LEGENDAS

07/17

PROJETO MARX2 PROJETOS	DESENHO RODOLFO FREITAS	ESCALA INDICADA	DATA JANEIRO 2022
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Relação do aço

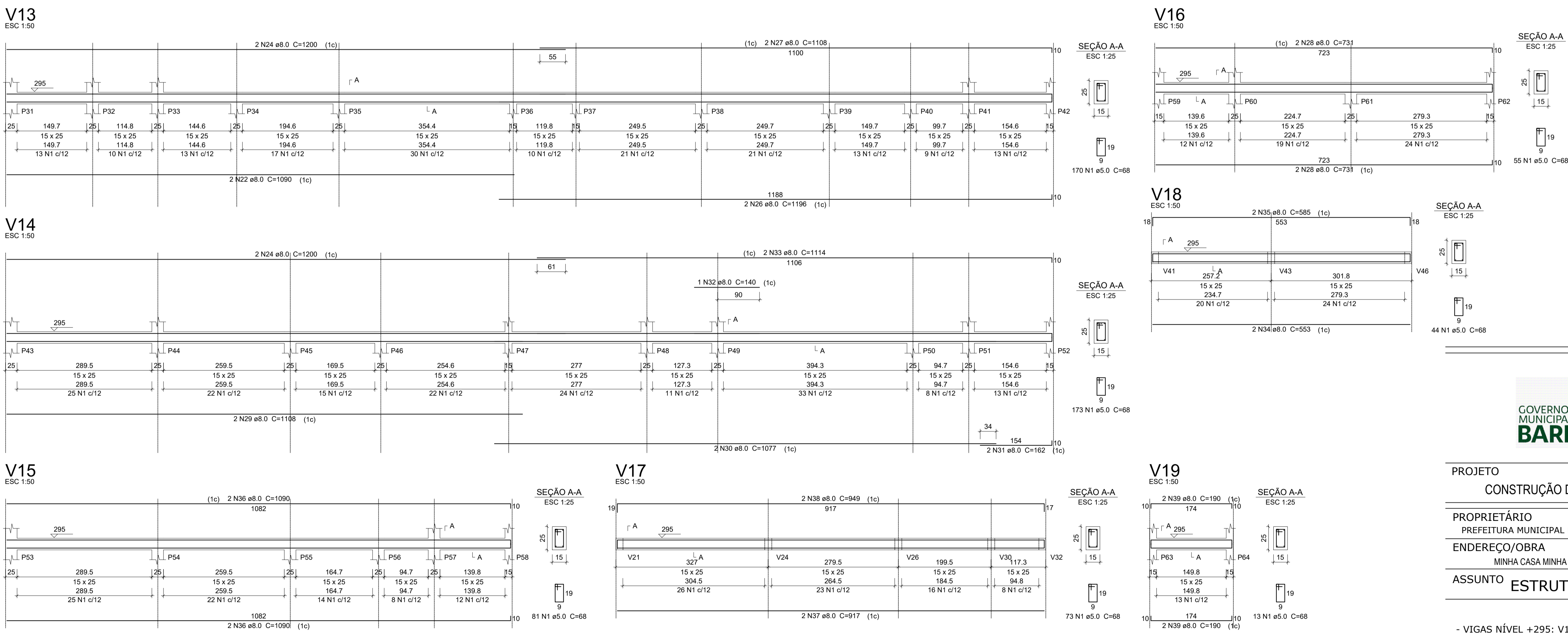
AÇO	N	DIAM	Q	UNIT (cm)	C.TOTAL (cm)
V1					
V2					
V3					
V4					
V5					
V6					
V7					
V8					
V9					
V10					
V11					
V12					
V13					
V14					
V15					
V16					
V17					
V18					
V19					

AÇO	N	DIAM	Q	UNIT (cm)	C.TOTAL (cm)
CA60	1	5.0	1181	68	80308
CA50	2	8.0	2	1009	2018
	3	8.0	2	1027	2054
	4	8.0	4	471	1884
	5	8.0	6	495	2970
	6	8.0	2	417	822
	7	8.0	1	177	177
	8	8.0	4	435	1740
	9	8.0	2	242	484
	10	8.0	2	268	536
	11	8.0	2	184	368
	12	8.0	2	214	428
	13	8.0	2	403	806
	14	8.0	1	167	167
	15	8.0	2	463	926
	16	8.0	2	718	1436
	17	8.0	2	748	1496
	18	8.0	2	144	288
	19	8.0	2	174	348
	20	8.0	2	633	1266
	21	8.0	2	663	1326
	22	8.0	4	1090	4360
	23	8.0	2	1188	2376
	24	8.0	6	1200	7200
	25	8.0	2	1111	2222
	26	8.0	2	1196	2392
	27	8.0	2	1108	2216
	28	8.0	4	731	2924
	29	8.0	2	1108	2216
	30	8.0	2	1077	2154
	31	8.0	2	162	324
	32	8.0	1	140	140
	33	8.0	2	1114	2228
	34	8.0	2	553	1106
	35	8.0	2	585	1170
	36	8.0	4	1090	4360
	37	8.0	2	917	1834
	38	8.0	2	949	1898
	39	8.0	4	190	760

Resumo do aço

AÇO	DIAM	C.TOTAL (m)	PESO + 10% (kg)
CA60	8.0	634.2	275.3
CA60	5.0	803.1	136.2
PESO TOTAL			
CA50		275.3	
CA60		136.2	

Vol. de concreto total (C-25) = 5.77 m³
 Área de forma total = 100.09 m²



Relação do aço

AÇO	N	DIAM	Q	UNIT (cm)	C.TOTAL (cm)
V13					
V14					
V15					
V16					
V17					
V18					
V19					

AÇO	N	DIAM	Q	UNIT (cm)	C.TOTAL (cm)
CA60	1	5.0	1181	68	80308
CA50	2	8.0	2	1009	2018
	3	8.0	2	1027	2054
	4	8.0	4	471	1884
	5	8.0	6	495	2970
	6	8.0	2	417	822
	7	8.0	1	177	177
	8	8.0	4	435	1740
	9	8.0	2	242	484
	10	8.0	2	268	536
	11	8.0	2	184	368
	12	8.0	2	214	428
	13	8.0	2	403	806
	14	8.0	1	167	167
	15	8.0	2	463	926
	16	8.0	2	718	1436
	17	8.0	2	748	1496
	18	8.0	2	144	288
	19	8.0	2	174	348
	20	8.0	2	633	1266
	21	8.0	2	663	1326
	22	8.0	4	1090	4360
	23	8.0	2	1188	2376
	24	8.0	6	1200	7200
	25	8.0	2	1111	2222
	26	8.0	2	1196	2392
	27	8.0	2	1108	2216
	28	8.0	4	731	2924
	29	8.0	2	1108	2216
	30	8.0	2	1077	2154
	31	8.0	2	162	324
	32	8.0	1	140	140
	33	8.0	2	1114	2228
	34	8.0	2	553	1106
	35	8.0	2	585	1170
	36	8.0	4	1090	4360
	37	8.0	2	917	1834
	38	8.0	2	949	1898
	39	8.0	4	190	760

Vol. de concreto total (C-25) = 5.77 m³
 Área de forma total = 100.09 m²

GOVERNO MUNICIPAL DE BARBALHA

MARX2 CONSTRUÇÕES EIRELI-ME
 RUA EDUARDO PORFÍRIO DA COSTA, Nº 326
 DISTRITO DO ROSÁRIO, BARBALHA-CE
 TELEFONE: (85) 9 881-4237
 E-MAIL: marx2projeto@gmail.com

PROJETO
CONSTRUÇÃO DE UNIDADE BÁSICA DE SAÚDE - PORTE 1

PROPRIETÁRIO
 PREFEITURA MUNICIPAL DE BARBALHA

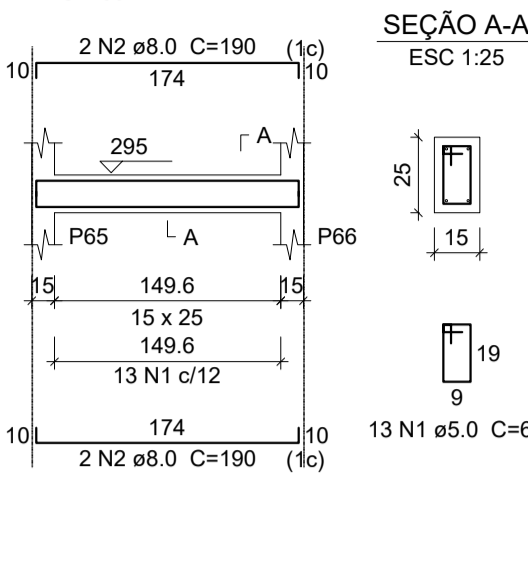
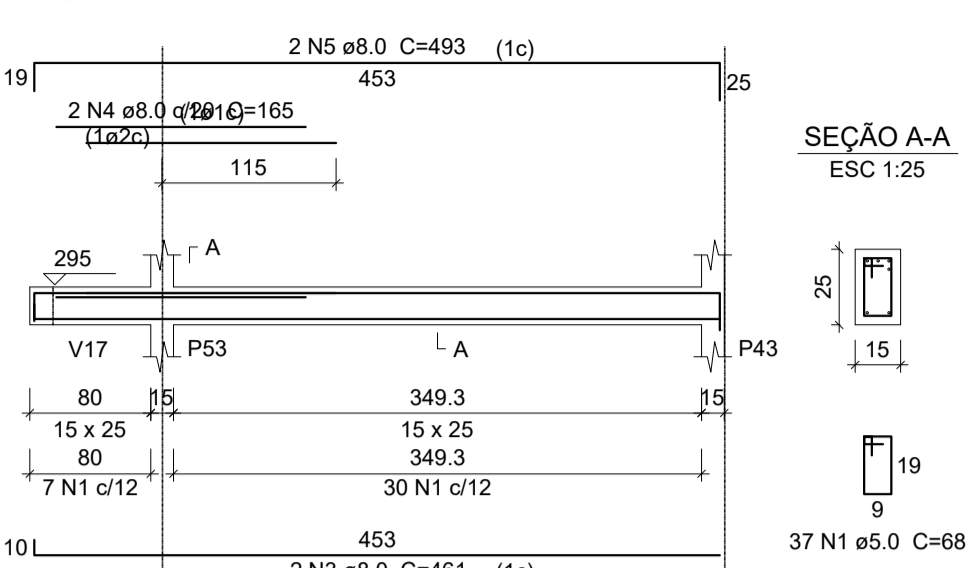
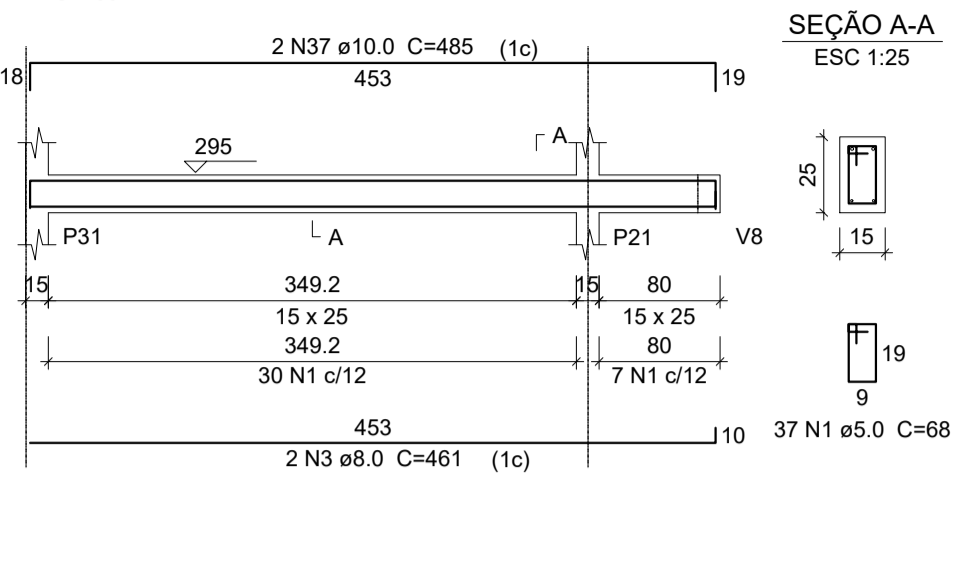
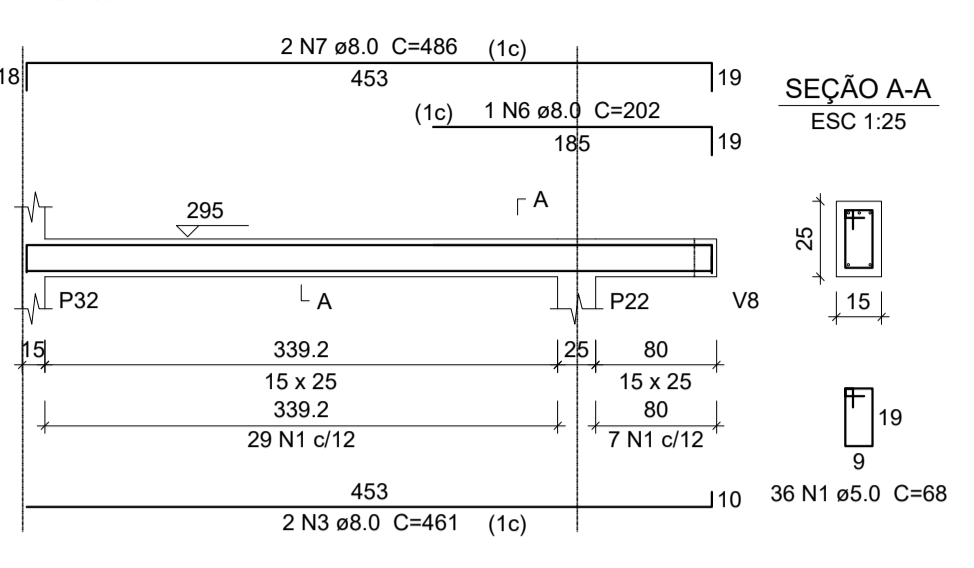
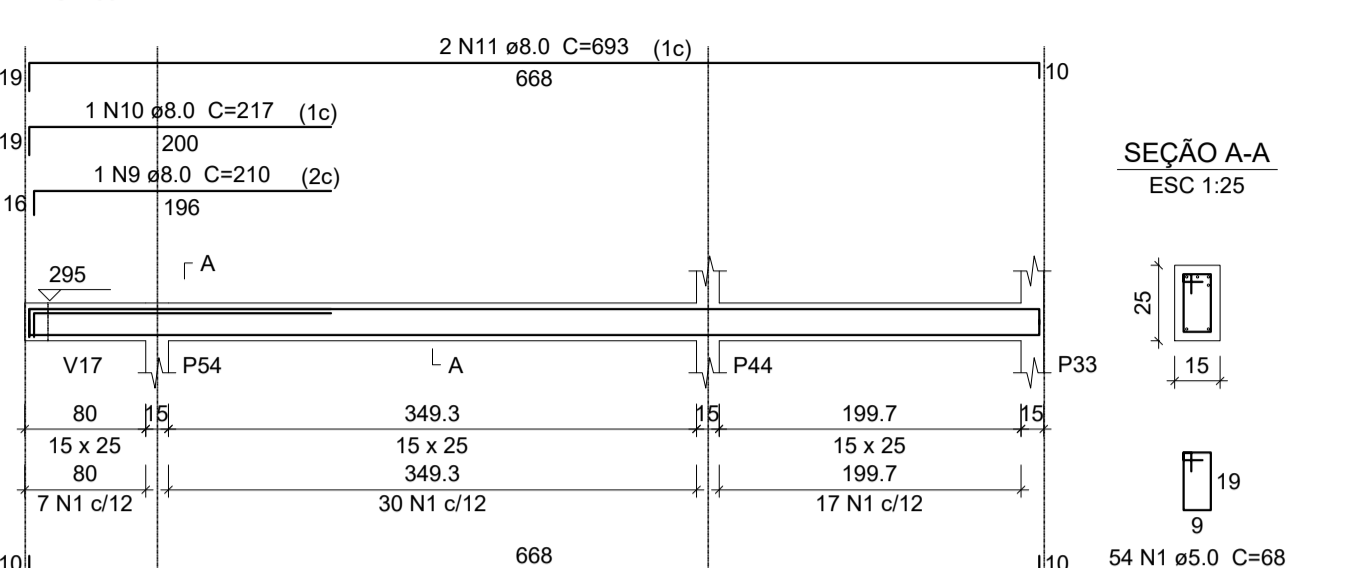
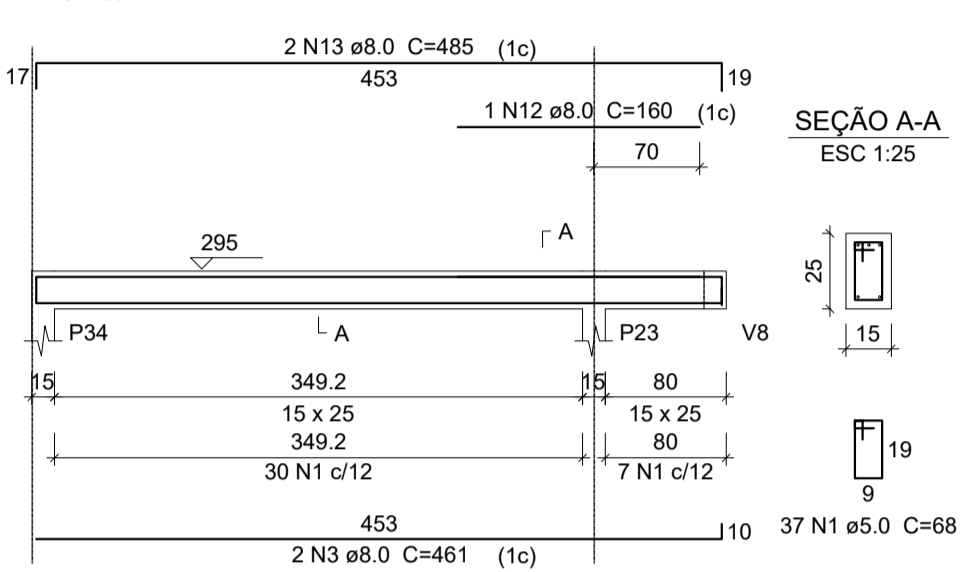
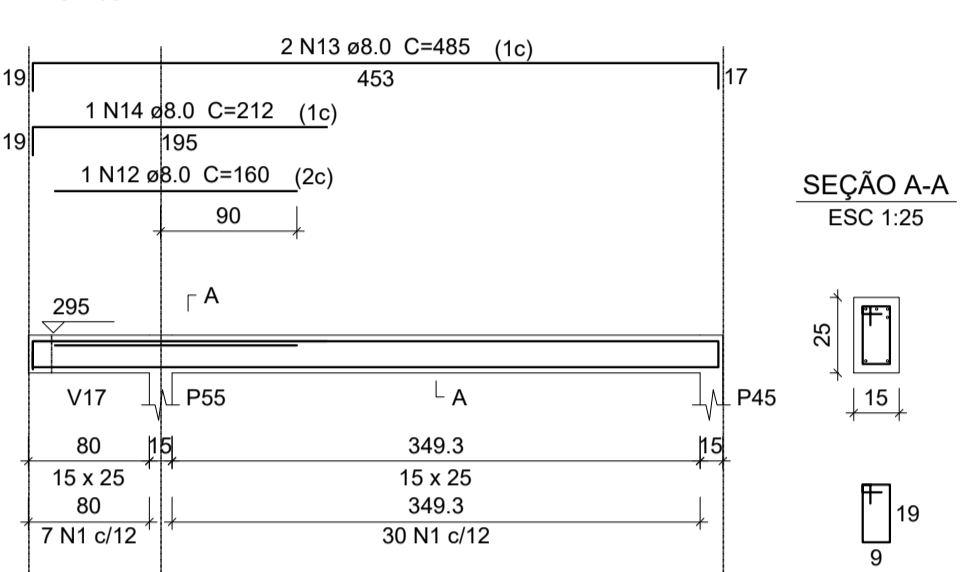
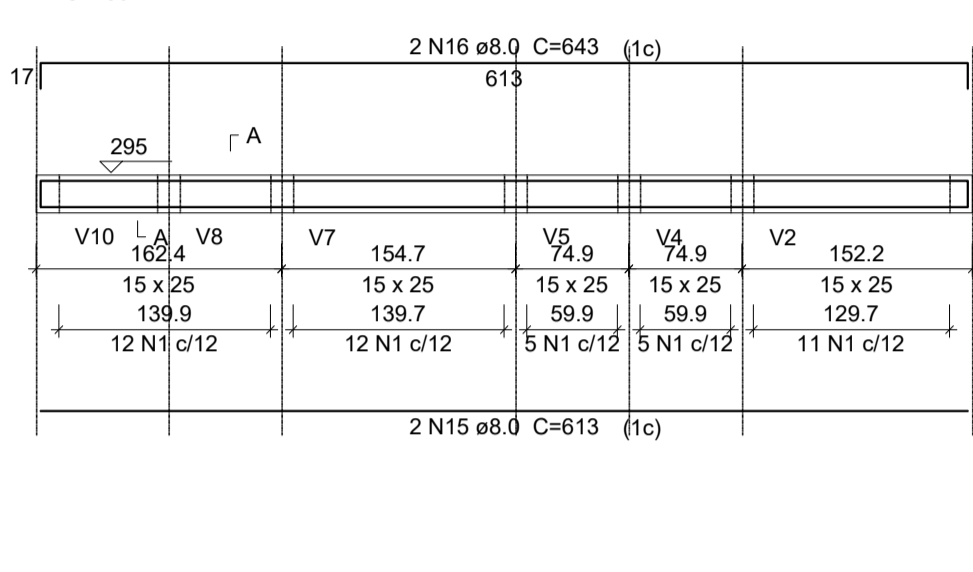
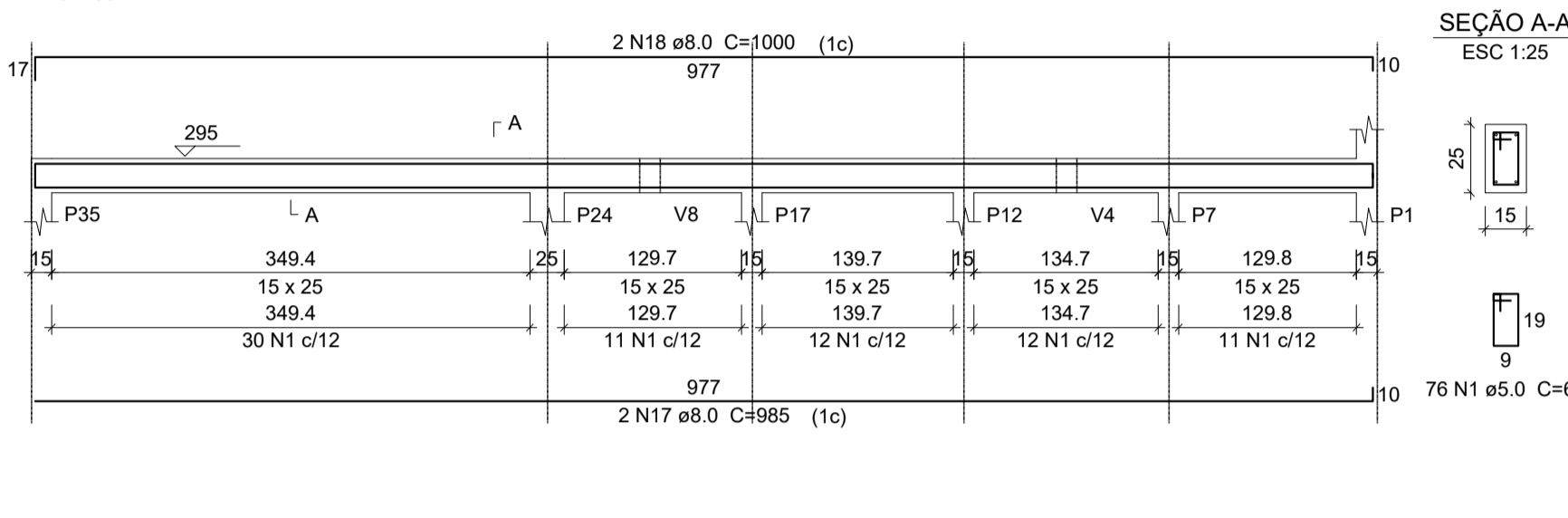
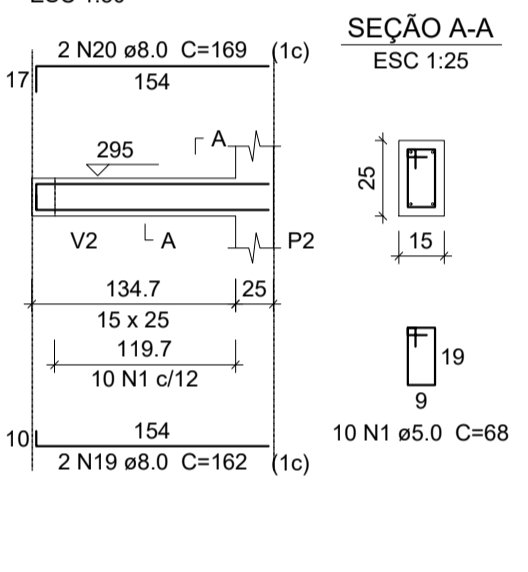
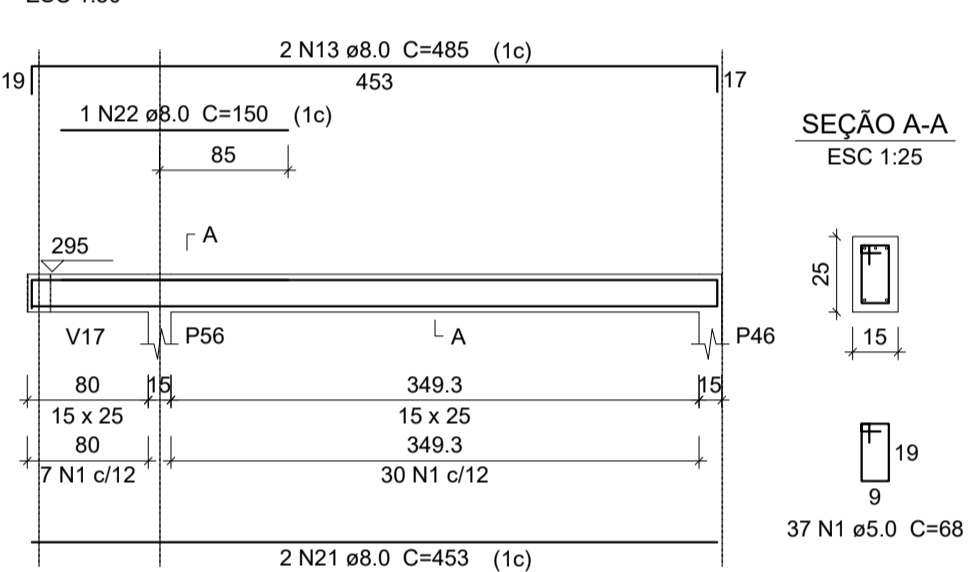
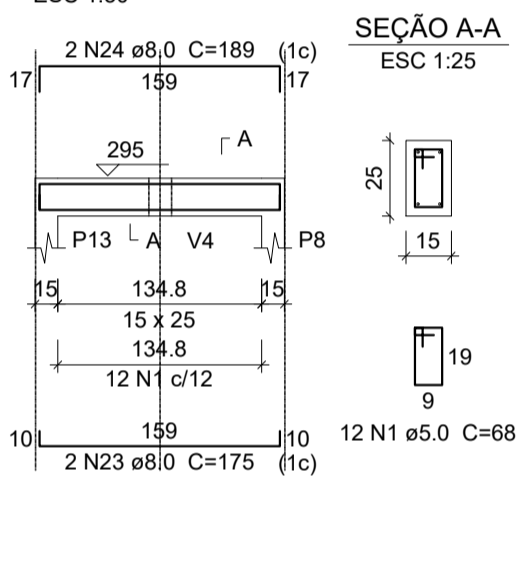
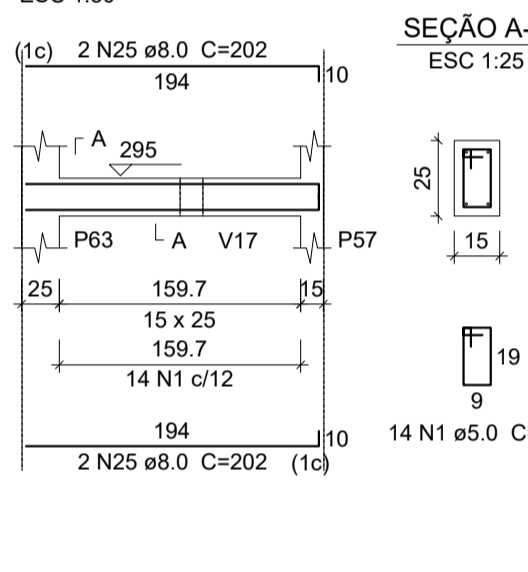
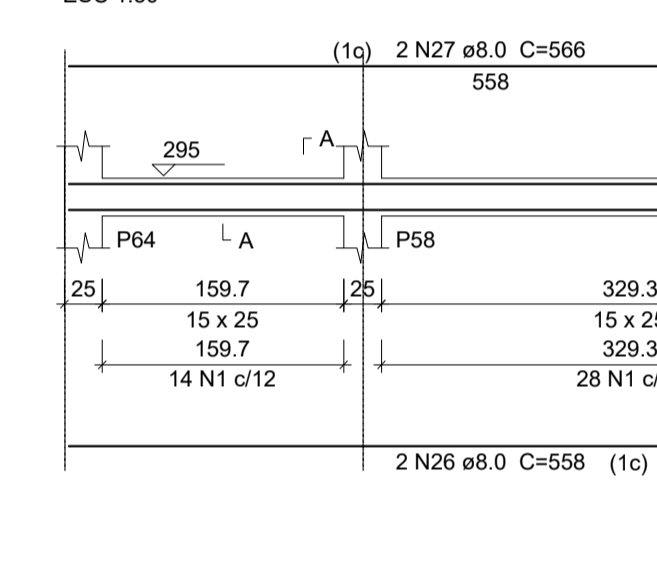
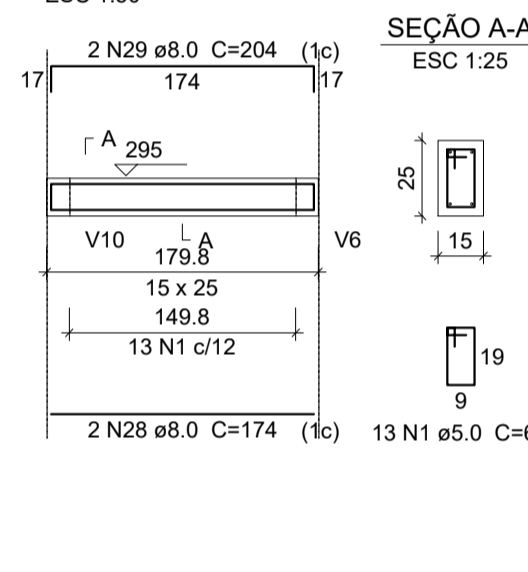
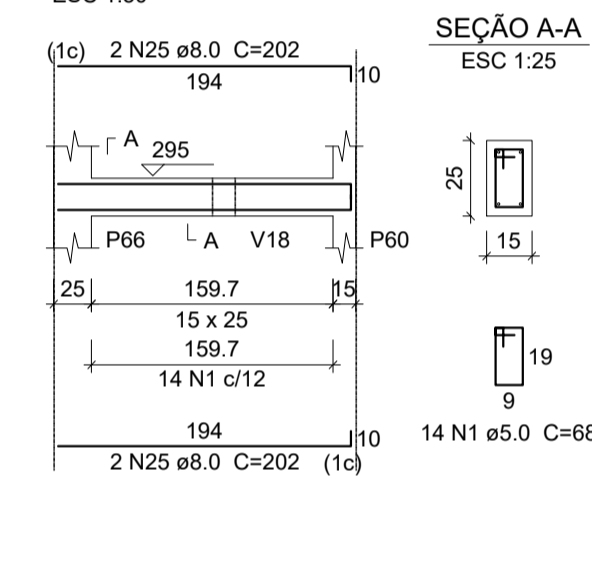
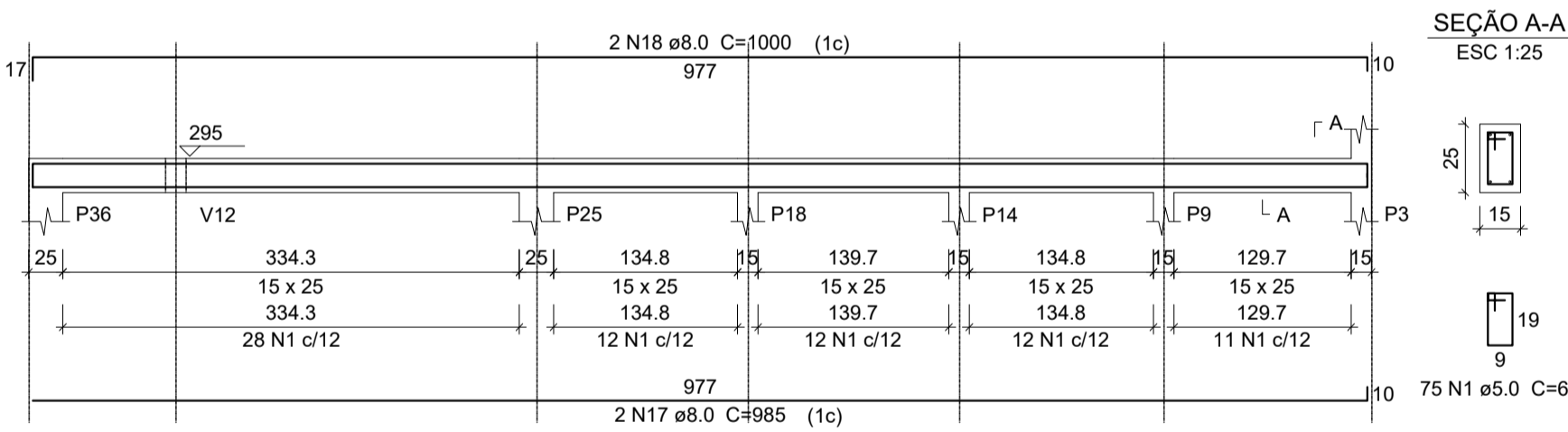
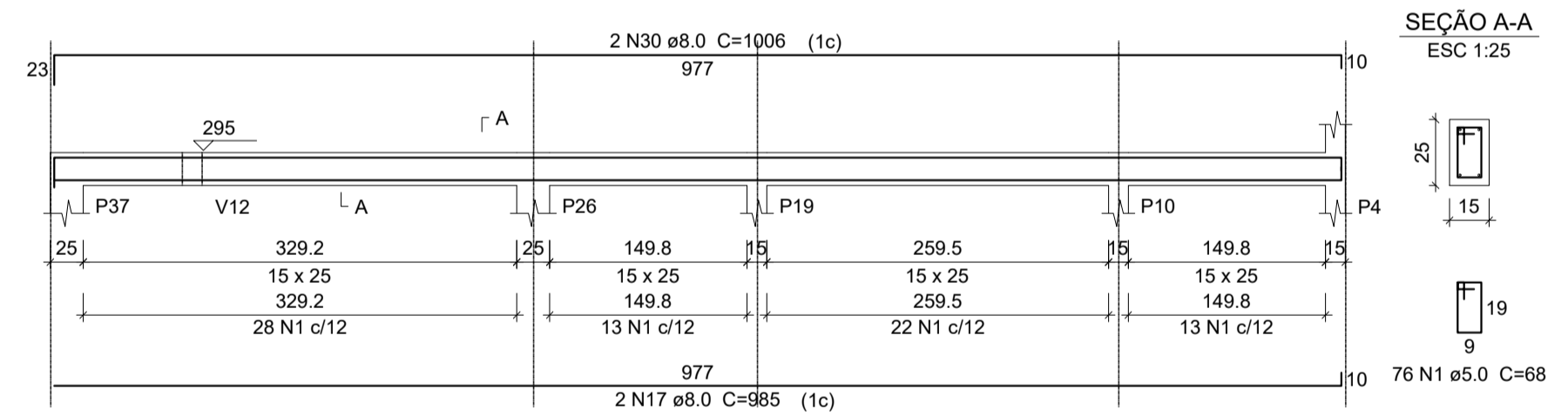
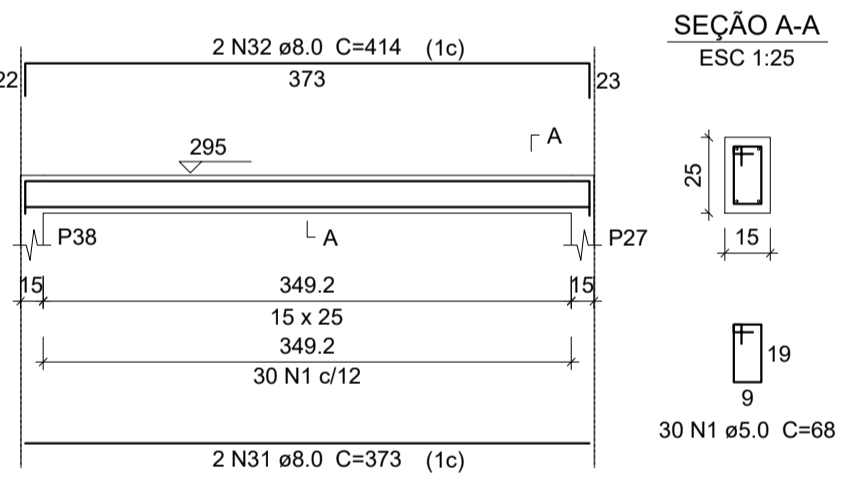
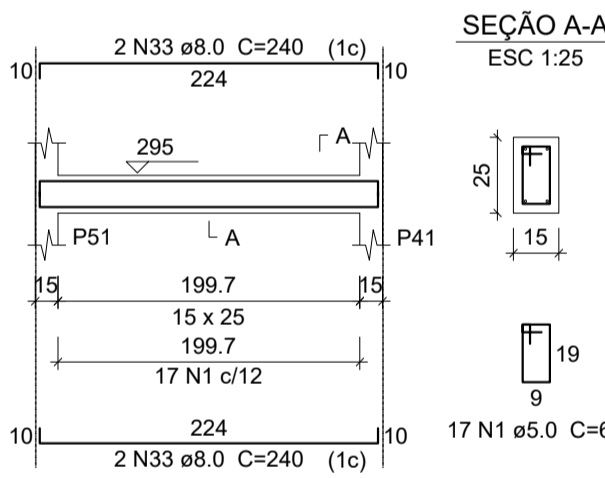
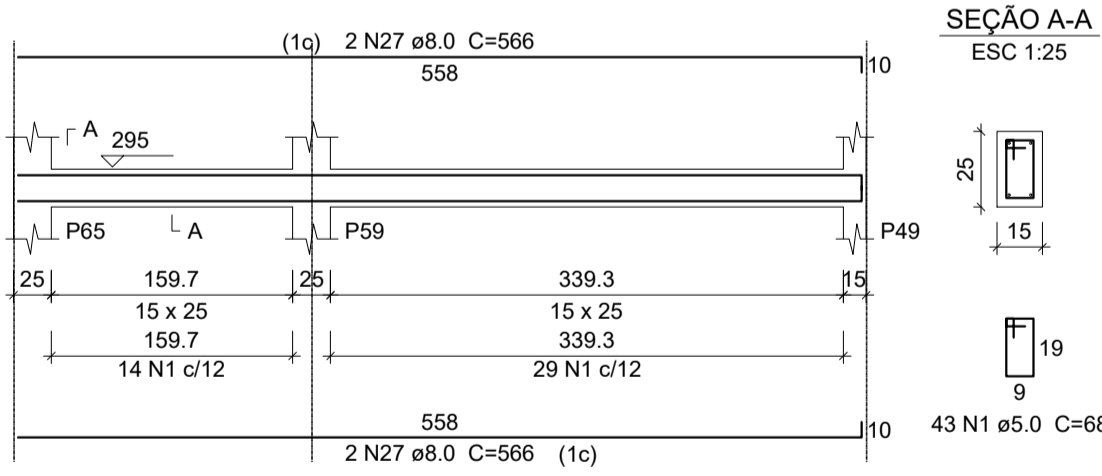
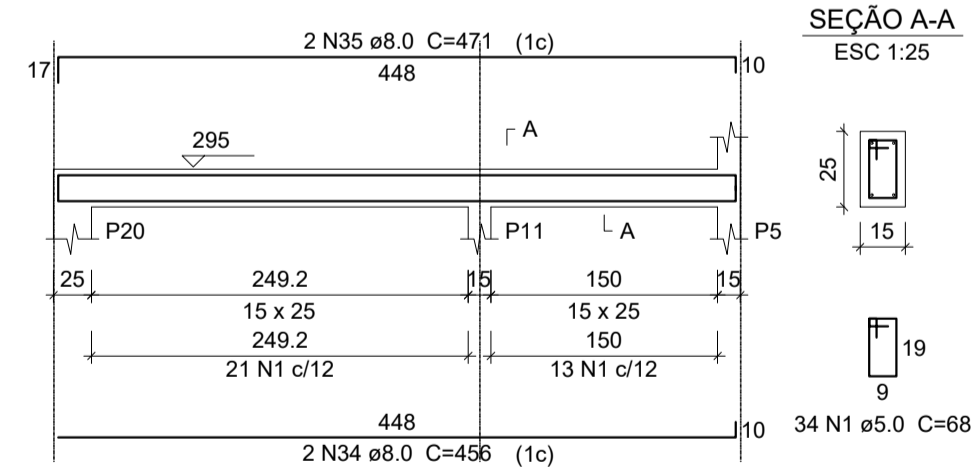
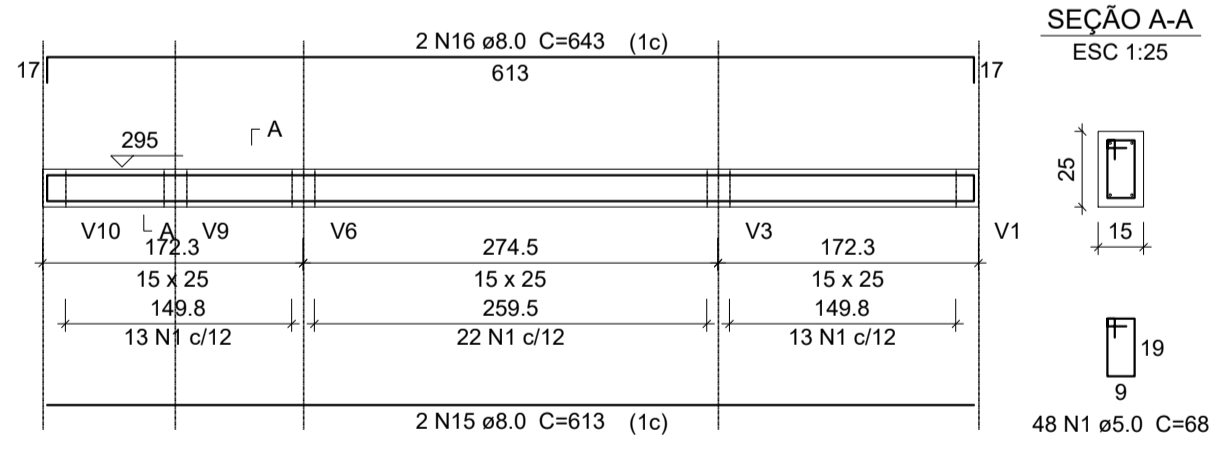
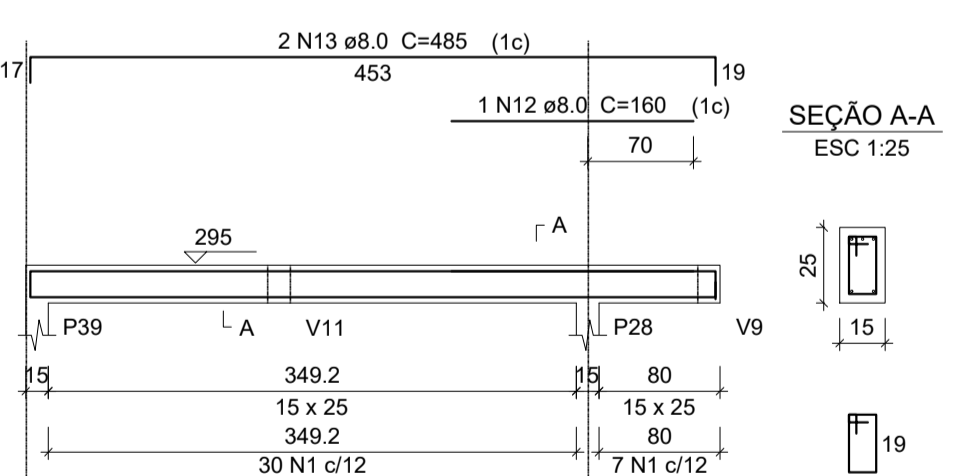
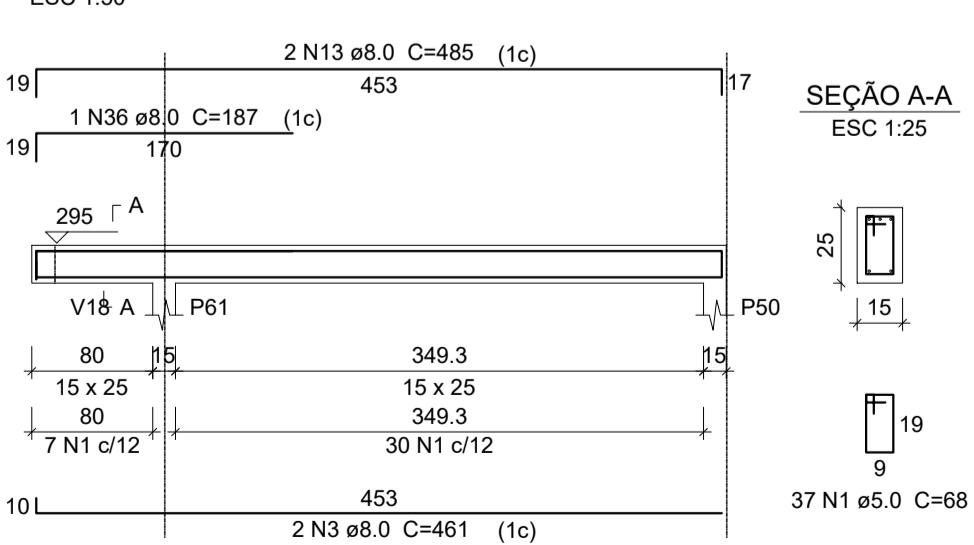
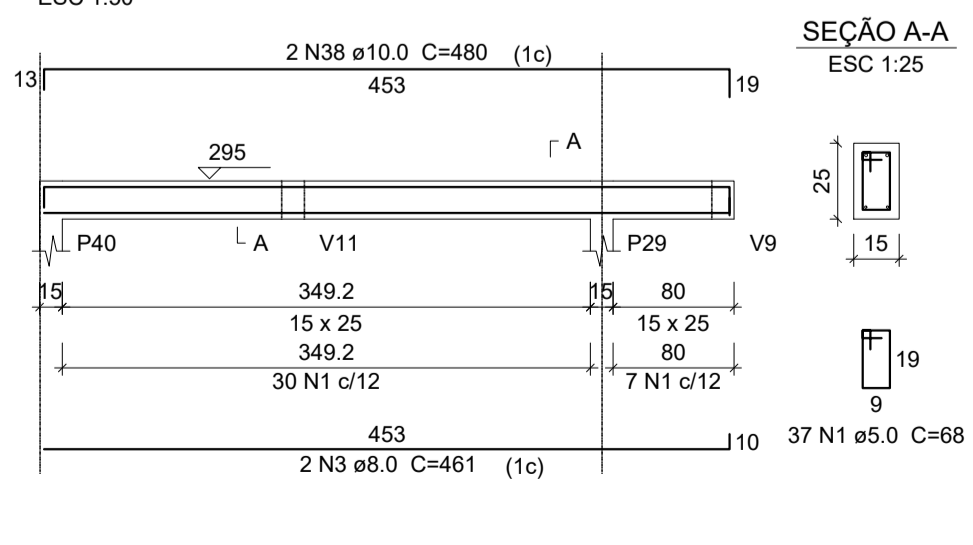
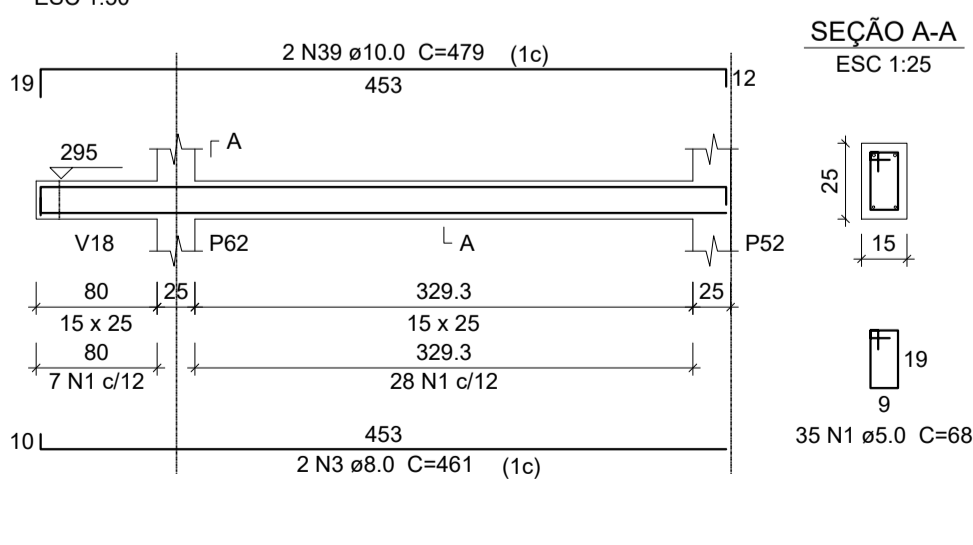
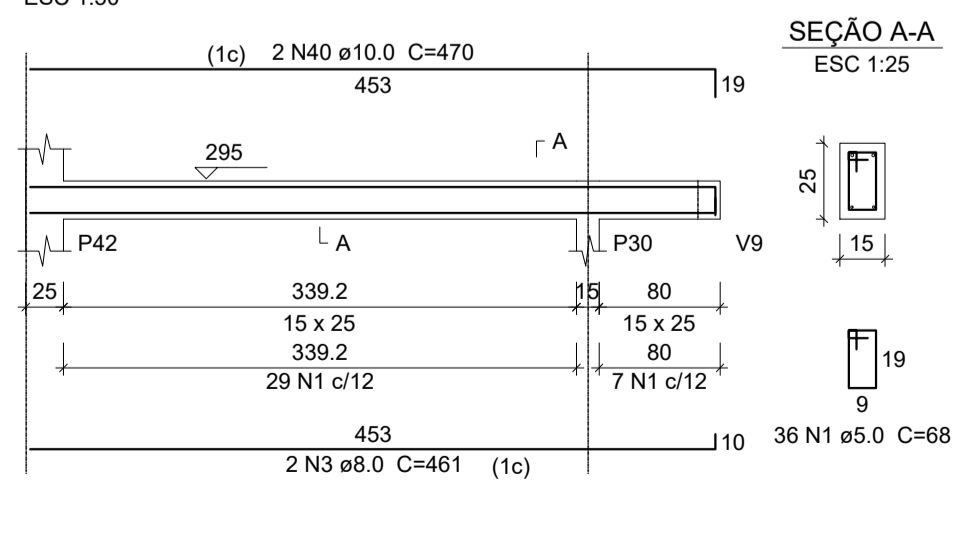
ENDEREÇO/OBRA
 MINHA CASA MINHA VIDA ZONA RURAL DO MUNICÍPIO DE BARBALHA - CE

ASSUNTO **ESTRUTURAL** **PRANCHA**

- VIGAS NÍVEL +295: V1 A V19

08/17

PROJETO MARX2 PROJETOS	DESENHO RODOLFO FREITAS	ESCALA INDICADA	DATA JANEIRO 2022
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V20**V21****V22****V23****V24****V25****V26****V27****V28****V29****V30****V31****V32****V33****V36****V41****V34****V35****V37****V45****V38****V39****V40****V42****V43****V44****V46****V47****Relação do aço**

CAÇO	N	DIAM	Q	UNIT (cm)	C.TOTAL (cm)
V20	1	5.0	1019	68	69292
V23	2	8.0	4	190	760
V26	3	8.0	20	461	9220
V29	4	8.0	2	165	330
V32	5	8.0	2	493	986
V35	6	8.0	1	202	202
V38	7	8.0	2	486	972
V40	8	8.0	2	684	1368
V41	9	8.0	1	210	210
V44	10	8.0	1	217	217
V45	11	8.0	2	693	1386
	12	8.0	3	160	480
	13	8.0	10	485	4850
	14	8.0	1	212	212
	15	8.0	4	613	2452
	16	8.0	4	643	2572
	17	8.0	6	985	5910
	18	8.0	4	1000	4000
	19	8.0	2	162	324
	20	8.0	2	169	338
	21	8.0	2	453	906
	22	8.0	1	150	150
	23	8.0	2	175	350
	24	8.0	2	189	378
	25	8.0	8	202	1616
	26	8.0	2	558	1116
	27	8.0	6	556	3336
	28	8.0	2	174	348
	29	8.0	2	204	408
	30	8.0	2	1006	2012
	31	8.0	2	373	746
	32	8.0	2	414	828
	33	8.0	4	240	960
	34	8.0	2	456	912
	35	8.0	2	471	942
	36	8.0	1	187	187
	37	10.0	2	485	970
	38	10.0	2	480	960
	39	10.0	2	479	958
	40	10.0	2	470	940

Resumo do aço

CAÇO	DIAM	C.TOTAL (m)	PESO + 10% (kg)
CA50	8.0	520.5	225.9
CA60	10.0	38.3	26
CA60	5.0	693	117.5
PESO TOTAL			
CA50		251.9	
CA60		117.5	

Vol. de concreto total (C-25) = 4.95 m³
Área de forma total = 85.72 m²

Rodolfo Alves de Freitas
Engenheiro Civil - CREAC/CE 344558
RFB 121817929-3



PROJETO
CONSTRUÇÃO DE UNIDADE BÁSICA DE SAÚDE - PORTE 1

PROPRIETÁRIO
PREFEITURA MUNICIPAL DE BARBALHA

ENDEREÇO/OBRA
MINHA CASA MINHA VIDA ZONA RURAL DO MUNICÍPIO DE BARBALHA - CE

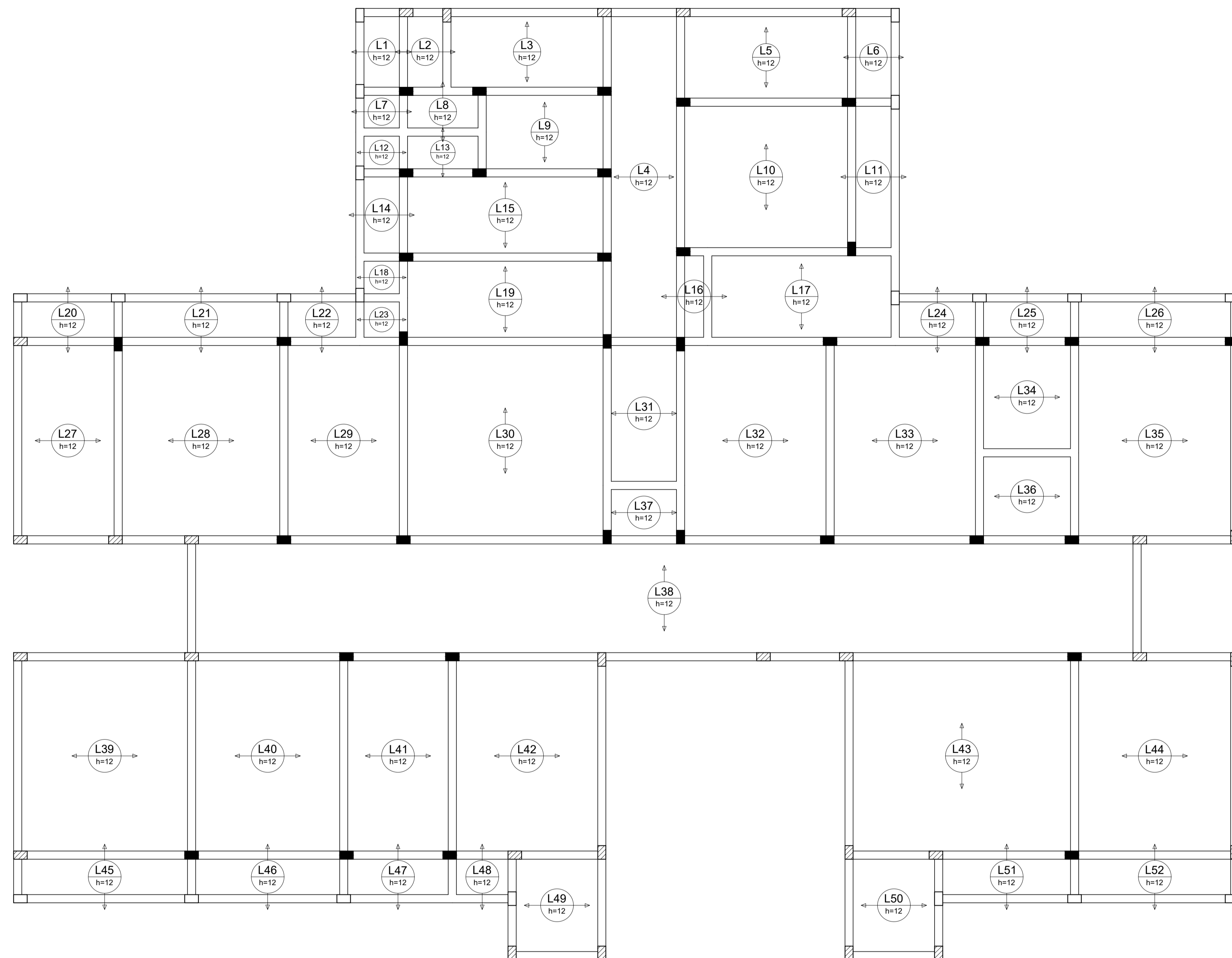
ASSUNTO
ESTRUTURAL

PRANCHA

- VIGAS NÍVEL +295: V20 A V47

09/17

PROJETO	DESENHO	ESCALA	DATA
MARX2 PROJETOS	RODOLFO FREITAS	INDICADA	JANEIRO 2022



Armação positiva das lajes do pavimento Nível +295 (Eixo X)

escala 1:50

Rodolfo Alves de Freitas
Engenheiro Civil - CREA/CE 344558
RFB 16187929-2



PROJETO
CONSTRUÇÃO DE UNIDADE BÁSICA DE SAÚDE - PORTE 1

PROPRIETÁRIO
PREFEITURA MUNICIPAL DE BARBALHA

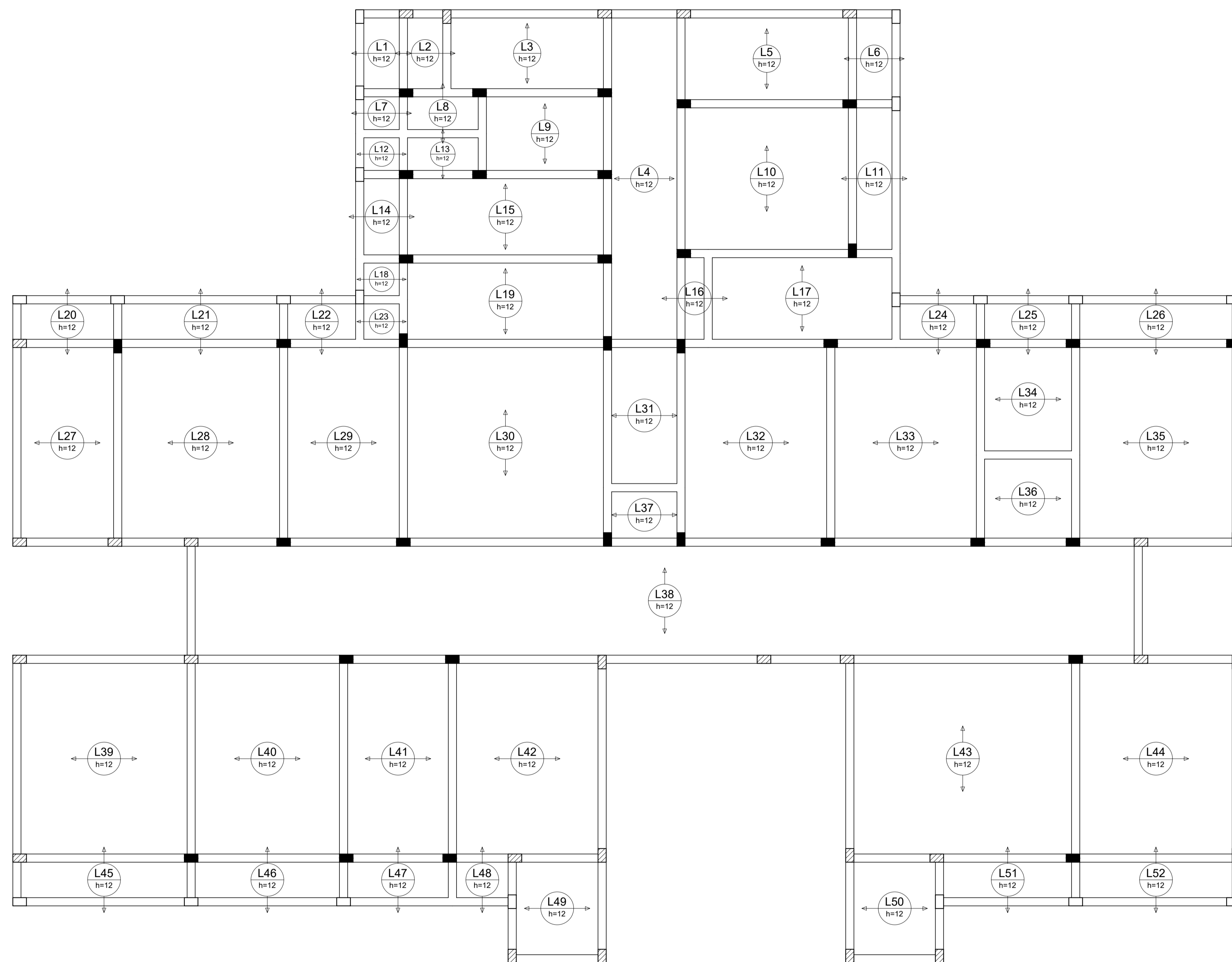
ENDEREÇO/OBRA
MINHA CASA MINHA VIDA ZONA RURAL DO MUNICÍPIO DE BARBALHA - CE

ASSUNTO **ESTRUTURAL** **PRANCHA**

- LAJES NÍVEL +295: ARMAÇÃO POSITIVA (EIXO X)

10/17

PROJETO MARX2 PROJETOS	DESENHO RODOLFO FREITAS	ESCALA INDICADA	DATA JANEIRO 2022
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Armação positiva das lajes do pavimento Nível +295 (Eixo Y) escala 1:50

Rodolfo Alves de Freitas
Engenheiro Civil - CREA/CE 344558
RNP 161887929-3



PROJETO
CONSTRUÇÃO DE UNIDADE BÁSICA DE SAÚDE - PORTE 1

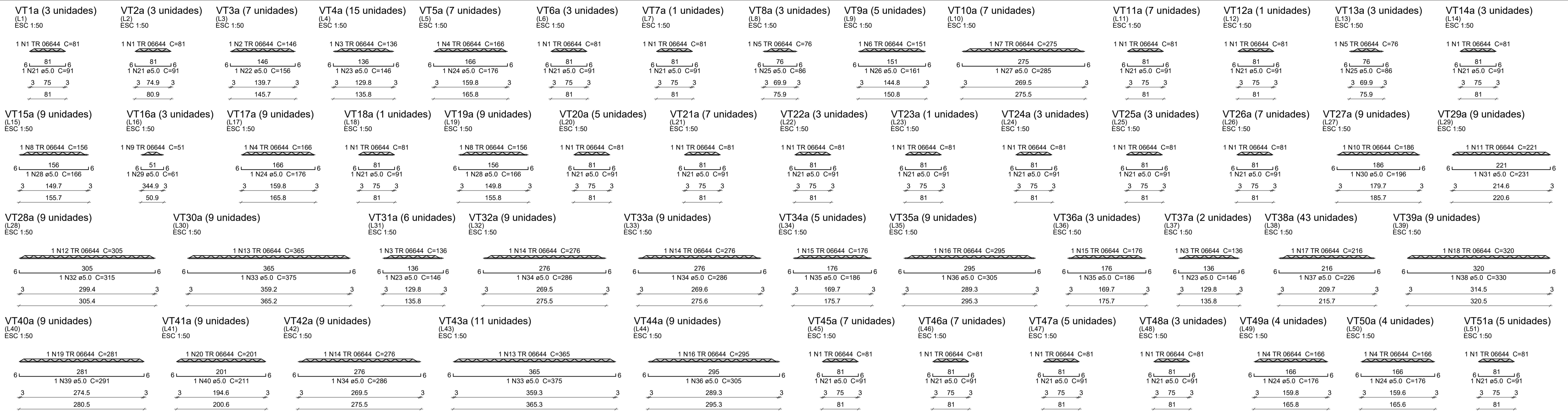
PROPRIETÁRIO
PREFEITURA MUNICIPAL DE BARBALHA

ENDEREÇO/OBRA
MINHA CASA MINHA VIDA ZONA RURAL DO MUNICÍPIO DE BARBALHA - CE

ASSUNTO ESTRUTURAL PRANCHA

- LAJES NÍVEL +295: ARMAÇÃO POSITIVA (EIXO Y) 11/17

PROJETO MARX2 PROJETOS	DESENHO RODOLFO FREITAS	ESCALA INDICADA	DATA JANEIRO 2022
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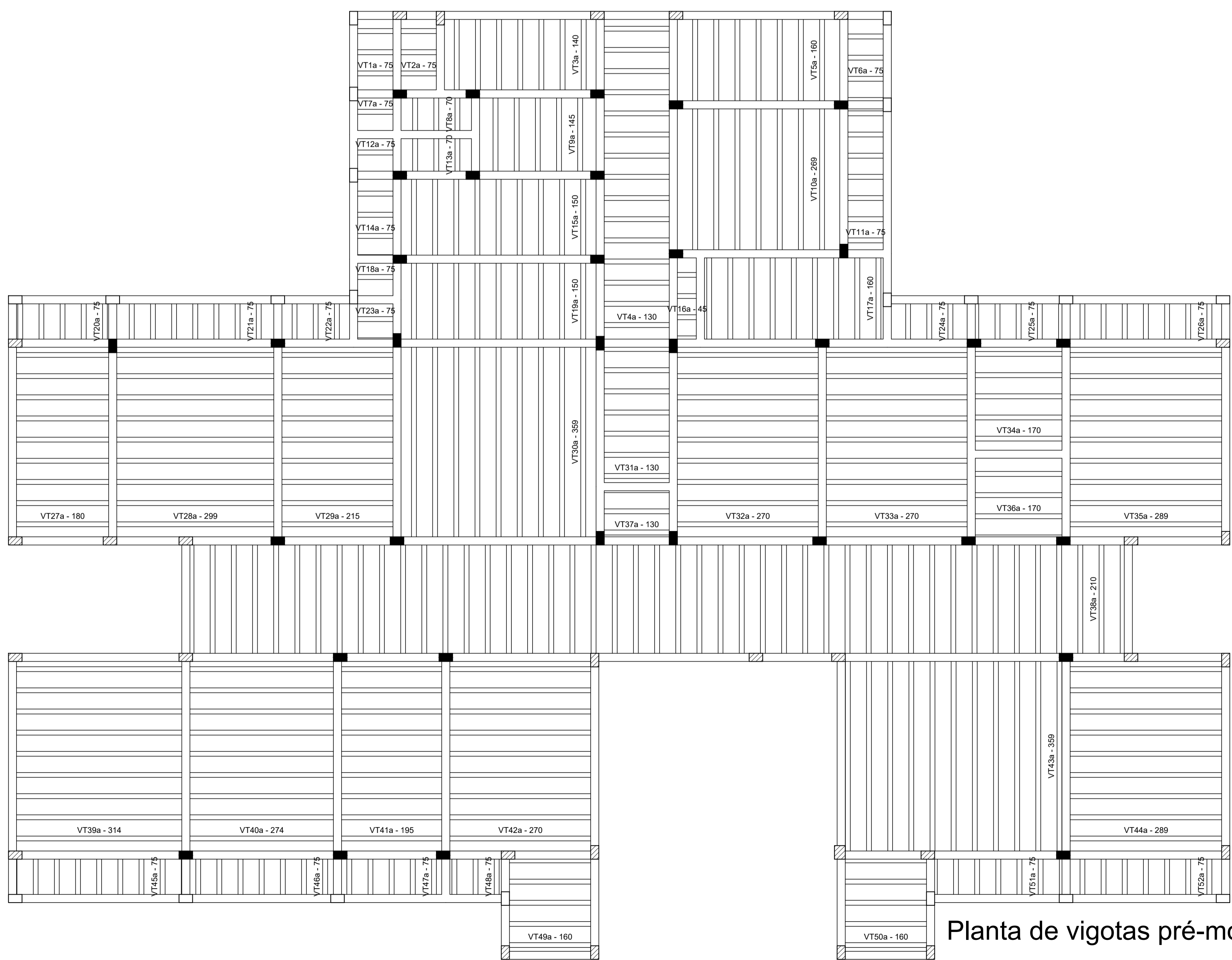
Relação do aço

VT	Q	UNIT (cm)	C.TOTAL (cm)
3xVT1a	85	81	6885
15xVT4a	7	146	1022
VT7a	23	136	3128
7xVT10a	24	166	3984
3xVT13a	5	76	456
3xVT16a	5	151	755
9xVT19a	7	275	1925
3xVT22a	8	156	2808
3xVT25a	9	51	153
9xVT28a	9	186	1674
6xVT31a	11	221	1989
5xVT34a	12	305	2745
2xVT37a	13	305	2745
9xVT40a	14	265	7300
11xVT43a	17	216	9288
4xVT46a	18	176	1408
7xVT49a	15	295	5310
7xVT52a	16	176	1408
	17	320	2680
	18	295	5310
	19	43	216
	20	320	2680
	21	5.0	85
	22	5.0	7
	23	5.0	23
	24	5.0	24
	25	5.0	6
	26	5.0	5
	27	5.0	7
	28	5.0	18
	29	5.0	3
	30	5.0	9
	31	5.0	9
	32	5.0	9
	33	5.0	20
	34	5.0	27
	35	5.0	8
	36	5.0	18
	37	5.0	43
	38	5.0	9
	39	5.0	9
	40	5.0	9

AÇO	N	DIAM	Q	UNIT (cm)	C.TOTAL (cm)
CA60	1	TR 06644	85	81	6885
	2	TR 06644	7	146	1022
	3	TR 06644	23	136	3128
	4	TR 06644	24	166	3984
	5	TR 06644	5	76	456
	6	TR 06644	5	151	755
	7	TR 06644	7	275	1925
	8	TR 06644	18	156	2808
	9	TR 06644	3	51	153
	10	TR 06644	9	186	1674
	11	TR 06644	9	221	1989
	12	TR 06644	9	305	2745
	13	TR 06644	20	365	7300
	14	TR 06644	27	276	7452
	15	TR 06644	8	176	1408
	16	TR 06644	18	295	5310
	17	TR 06644	43	216	9288
	18	TR 06644	9	320	2680
	19	TR 06644	9	281	2529
	20	TR 06644	9	201	1809
	21	5.0	85	91	7735
	22	5.0	7	156	1092
	23	5.0	23	146	3358
	24	5.0	24	176	4224
	25	5.0	6	86	516
	26	5.0	5	161	805
	27	5.0	7	285	1995
	28	5.0	18	166	2988
	29	5.0	3	61	183
	30	5.0	9	196	1764
	31	5.0	9	231	2079
	32	5.0	9	315	2835
	33	5.0	20	375	7500
	34	5.0	27	286	7722
	35	5.0	8	186	1488
	36	5.0	18	305	5490
	37	5.0	43	226	9718
	38	5.0	9	330	2970
	39	5.0	9	291	2619
	40	5.0	9	211	1899

Resumo do aço

AÇO	DIAM	C.TOTAL (m)	PESO + 10% (kg)
CA60	TR 06644	655	512.3
	5.0	689.8	117
PESO TOTAL			
CA60		629.2	



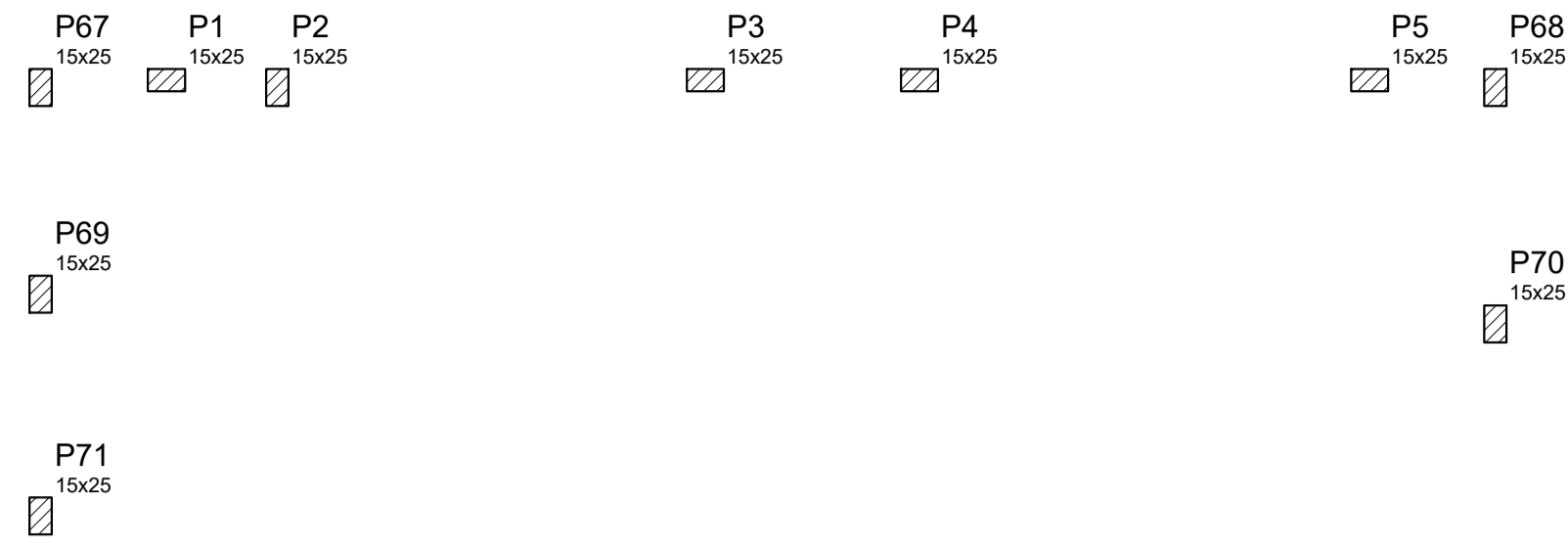
Planta de vigotas pré-moldadas Nível +295
escala 1:50

Rodolfo Alves de Freitas
Engenheiro Civil - CREAL/CE 344558
RNP 016107029-3

GOVERNO MUNICIPAL DE **BARBALHA**

MARX2
MARX2 CONSTRUÇÕES EIRELI-ME
CNPJ: 07.143.989/00-01
RUA EDUARDO PARRILLO DA COSTA, Nº 328
DISTRITO DO ROSÁRIO, BARBALHA-PE
TELEFONE: (81) 9 8821-4237
E-MAIL: marx2projeto@gmail.com

PROJETO	CONSTRUÇÃO DE UNIDADE BÁSICA DE SAÚDE - PORTE 1		
PROPRIETÁRIO	PREFEITURA MUNICIPAL DE BARBALHA		
ENDEREÇO/OBRA	MINHA CASA MINHA VIDA ZONA RURAL DO MUNICÍPIO DE BARBALHA - CE		
ASSUNTO	ESTRUTURAL	PRANCHA	
- VIGOTAS PRÉ-MOLDADAS - PLANTA DE VIGOTAS - DETALHES			
PROJETO	DESENHO	ESCALA	DATA
MARX2 PROJETOS	RODOLFO FREITAS	INDICADA	JANEIRO 2022



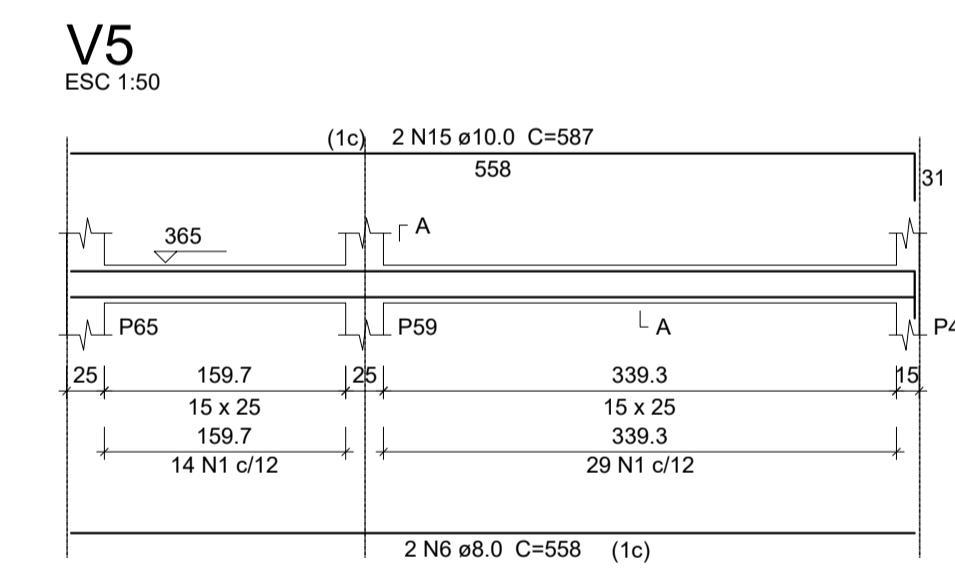
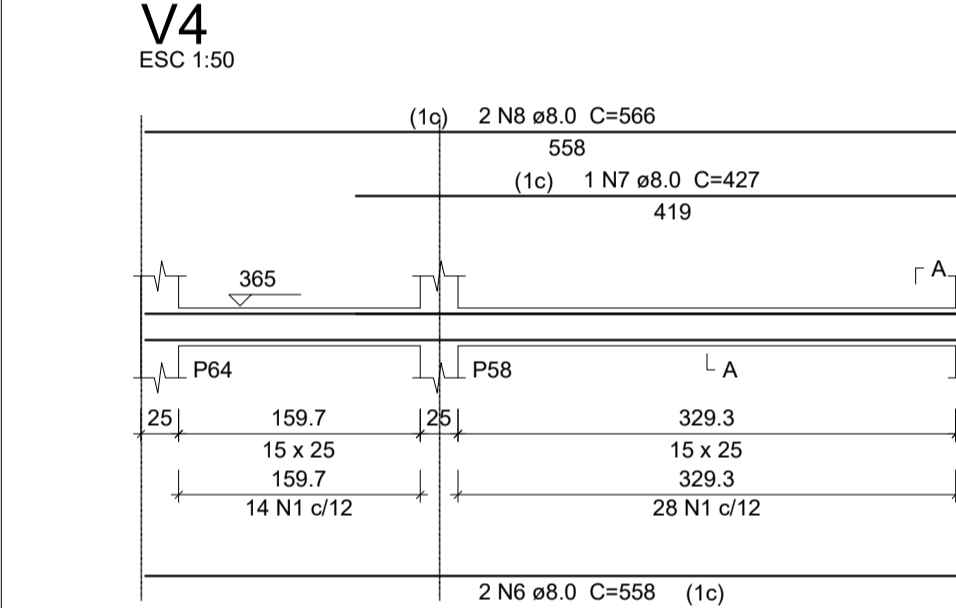
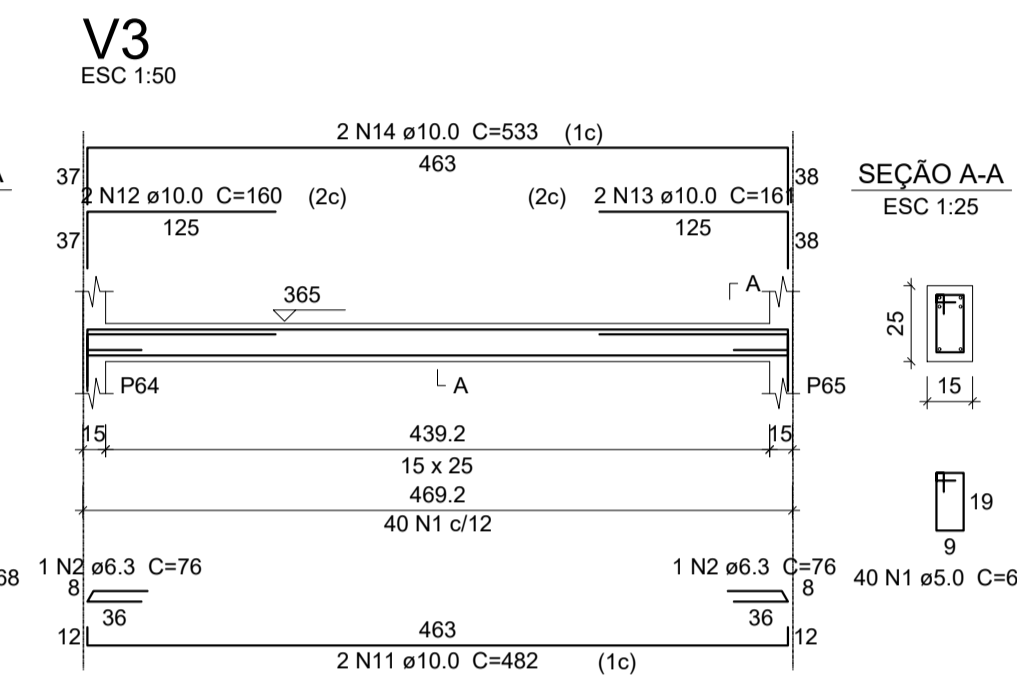
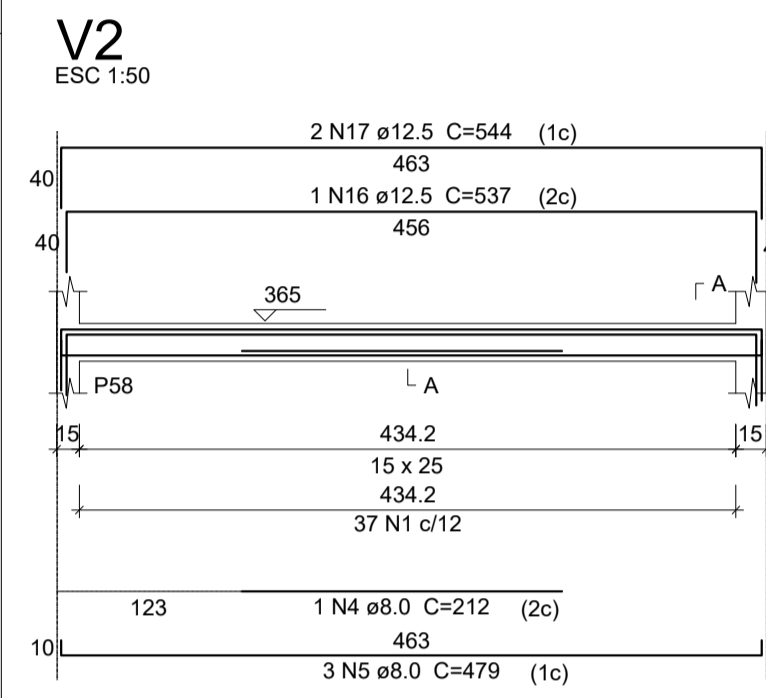
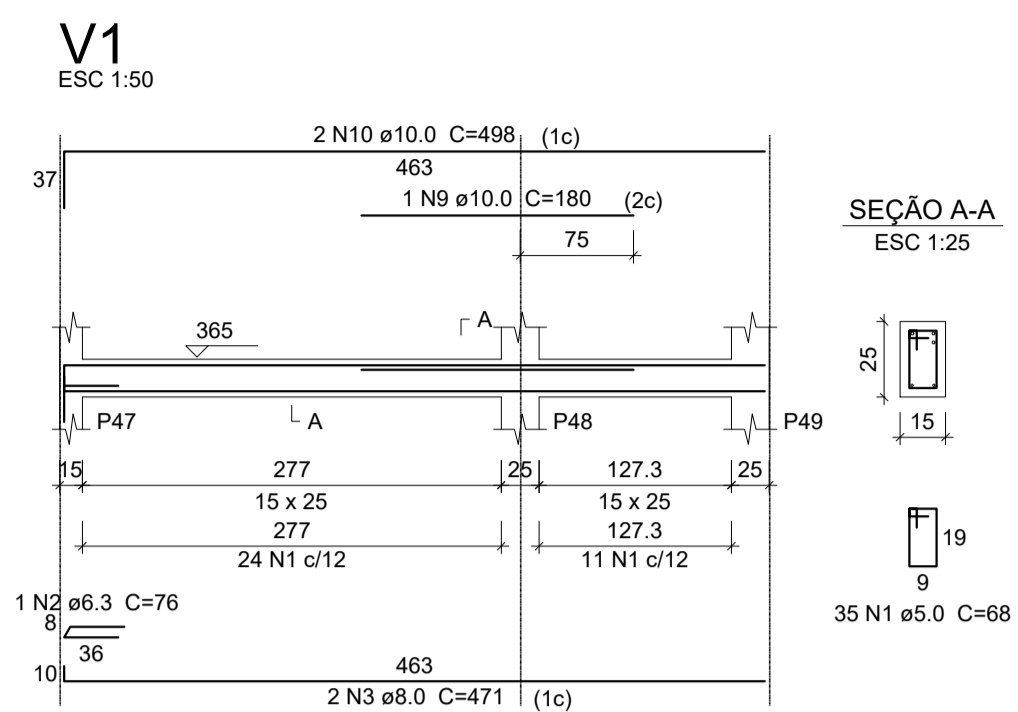
Vigas			
Nome	Seção (cm)	Elevação (cm)	Nível (cm)
V1	15x25	0	365
V2	15x25	0	365
V3	15x25	0	365
V4	15x25	0	365
V5	15x25	0	365

Blocos de enchimento				
Detalhe	Tipo	Nome	Dimensões (cm)	Quantidade
1	EPS Unidirecional	B8/30/125	8 30 125	60

Lajes								
Nome	Tipo	Altura (cm)	Elevação (cm)	Nível (cm)	Sobrecarga (kg/m²)			Água
					Peso próprio (kg/m²)	Adicional	Accidental	
L1	Treliçada 1D	12	0	365	147	100	100	300
L2	Treliçada 1D	12	0	365	147	100	-	135

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

Pilares			
Nome	Seção (cm)	Elevação (cm)	Nível (cm)
P1	15 x 25	0	365
P2	15 x 25	0	365
P3	15 x 25	0	365
P4	15 x 25	0	365
P5	15 x 25	0	365
P6	15 x 25	0	365
P7	15 x 25	0	365
P8	15 x 25	0	365
P9	15 x 25	0	365
P10	15 x 25	0	365
P11	15 x 25	0	365
P12	15 x 25	0	365
P13	15 x 25	0	365
P14	15 x 25	0	365
P15	15 x 25	0	365
P16	15 x 25	0	365
P17	15 x 25	0	365
P18	15 x 25	0	365
P19	15 x 25	0	365
P20	15 x 25	0	365
P21	15 x 25	0	365
P22	15 x 25	0	365
P23	15 x 25	0	365
P24	15 x 25	0	365
P25	15 x 25	0	365
P26	15 x 25	0	365
P27	15 x 25	0	365
P28	15 x 25	0	365
P29	15 x 25	0	365
P30	15 x 25	0	365
P31	15 x 25	0	365
P32	15 x 25	0	365
P33	15 x 25	0	365
P34	15 x 25	0	365
P35	15 x 25	0	365
P36	15 x 25	0	365
P37	15 x 25	0	365
P38	15 x 25	0	365
P39	15 x 25	0	365
P40	15 x 25	0	365
P41	15 x 25	0	365
P42	15 x 25	0	365
P43	15 x 25	0	365
P44	15 x 25	0	365
P45	15 x 25	0	365
P46	15 x 25	0	365
P47	15 x 25	0	365
P48	15 x 25	0	365
P49	15 x 25	0	365
P50	15 x 25	0	365
P51	15 x 25	0	365
P52	15 x 25	0	365
P53	15 x 25	0	365
P54	15 x 25	0	365
P55	15 x 25	0	365
P56	15 x 25	0	365
P57	15 x 25	0	365
P58	15 x 25	0	365
P59	15 x 25	0	365
P60	15 x 25	0	365
P61	15 x 25	0	365
P62	15 x 25	0	365
P63	15 x 25	0	365
P64	15 x 25	0	365
P65	15 x 25	0	365
P66	15 x 25	0	365
P67	15 x 25	0	365
P68	15 x 25	0	365
P69	15 x 25	0	365
P70	15 x 25	0	365
P71	15 x 25	0	365
P72	15 x 25	0	365
P73	15 x 25	0	365
P74	15 x 25	0	365
P75	15 x 25	0	365
P76	15 x 25	0	365
P77	15 x 25	0	365
P78	15 x 25	0	365
P79	15 x 25	0	365
P80	15 x 25	0	365
P81	15 x 25	0	365
P82	15 x 25	0	365
P83	15 x 25	0	365
P84	15 x 25	0	365
P85	15 x 25	0	365
P86	15 x 25	0	365



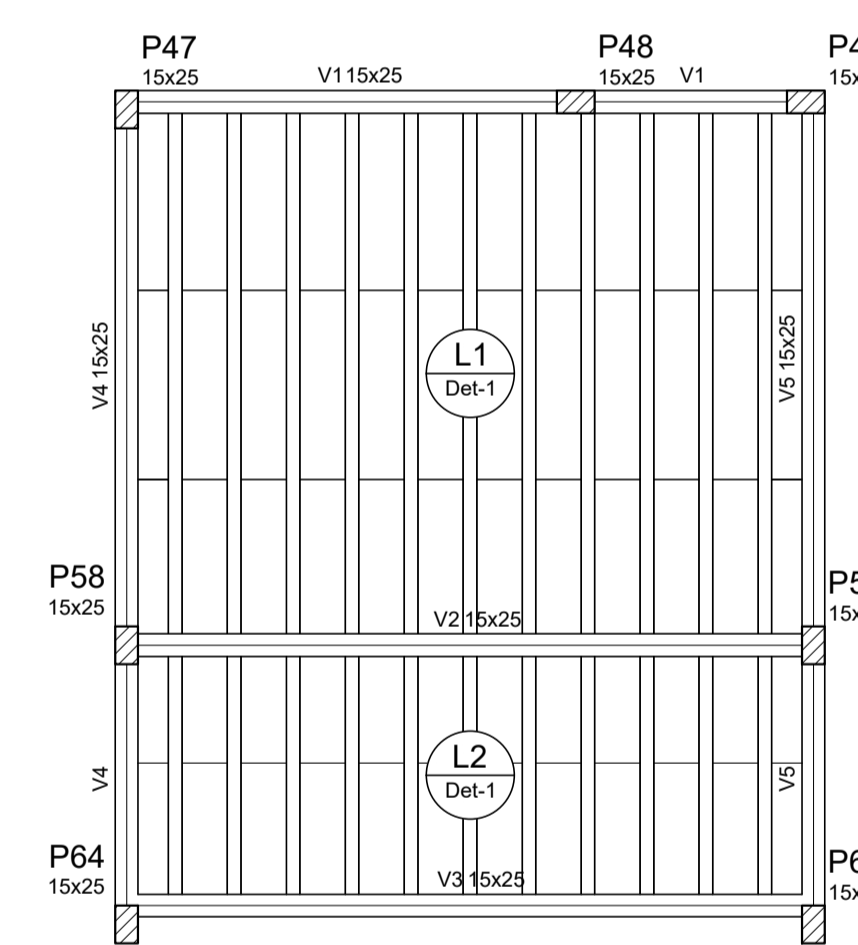
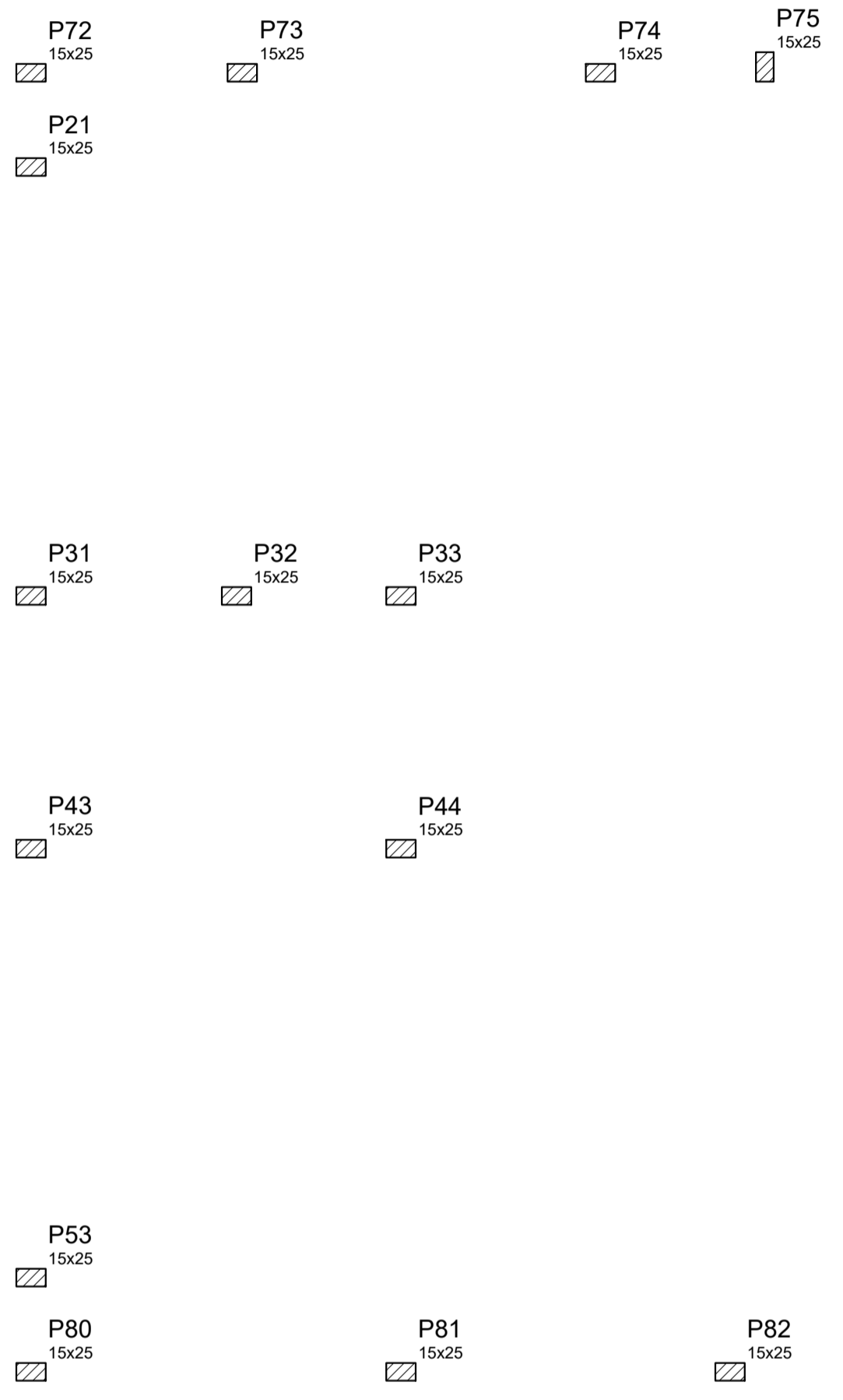
Relação do aço

AÇO	N	DIAM	Q	UNIT (cm)	C.TOTAL (cm)
CA60	1	5.0	197	68	13396
CA50	2	6.3	3	76	228
	3	8.0	2	471	942
	4	8.0	1	212	212
	5	8.0	3	479	1437
	6	8.0	4	558	2232
	7	8.0	1	427	427
	8	8.0	2	566	1132
	9	10.0	1	150	150
	10	10.0	2	498	996
	11	10.0	2	482	964
	12	10.0	2	160	320
	13	10.0	2	161	322
	14	10.0	2	533	1066
	15	10.0	2	557	1114
	16	12.5	1	537	537
	17	12.5	2	544	1088

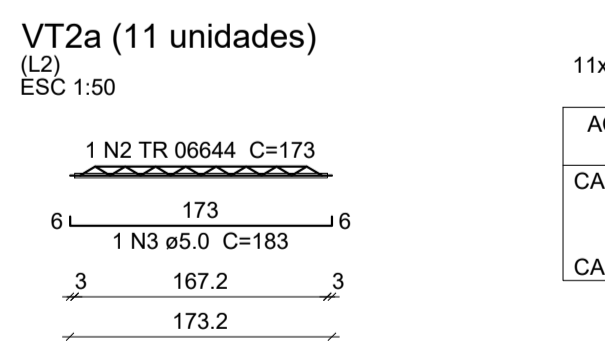
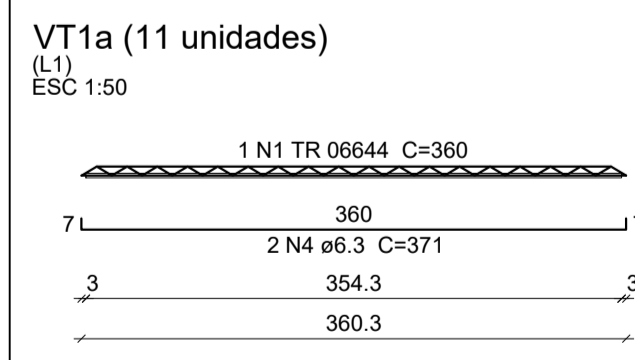
Resumo do aço

AÇO	DIAM	C.TOTAL (m)	PESO + 10% (kg)
CA50	6.3	2.3	0.6
	8.0	63.9	27.7
	10.0	50.3	34.1
	12.5	16.3	17.2
CA60	5.0	134	22.7
PESO TOTAL			
CA50		79.6	
CA60		22.7	

Vol. de concreto total (C-25) = 0.95 m³
Área de forma total = 16.48 m²



Forma da Base Cx d'agua Nível +365
escala 1:50

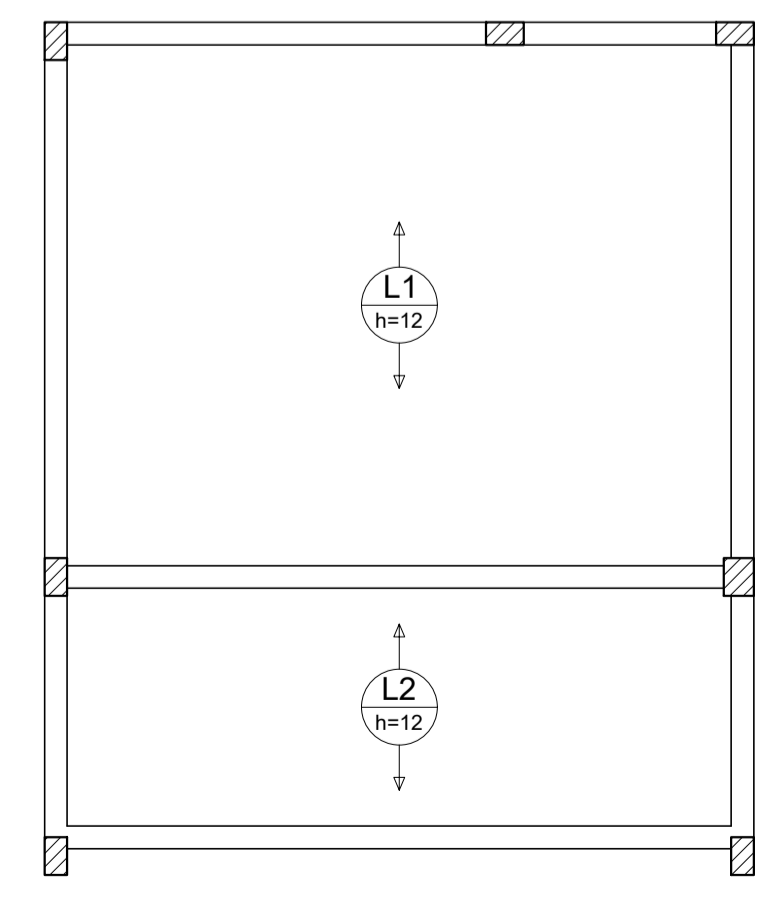


Relação do aço

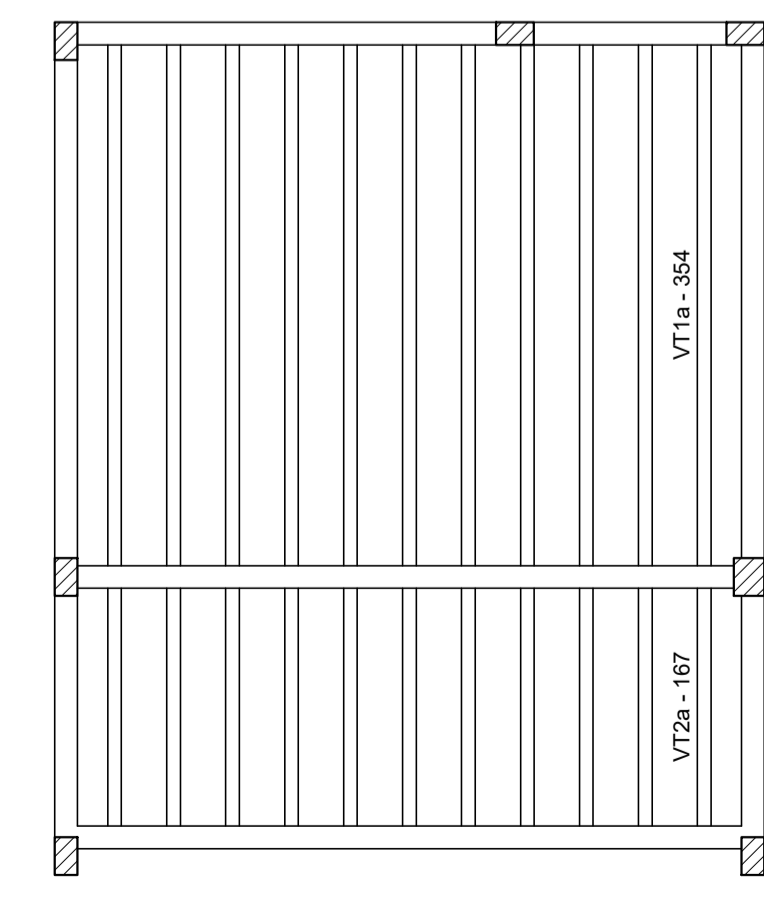
AÇO	N	DIAM	Q	UNIT (cm)	C.TOTAL (cm)
CA60	1	TR 06644	11	360	3960
	2	TR 06644	11	173	1903
	3	5.0	11	183	2013
CA50	4	6.3	22	371	8182

Resumo do aço

AÇO	DIAM	C.TOTAL (m)	PESO + 10% (kg)
CA50	6.3	81.7	22
CA60	TR 06644	58.7	45.9
	5.0	20.2	3.4
PESO TOTAL			
CA50		22	
CA60		49.3	



Armação positiva das lajes da Base Cx d'agua Nível 365 (Eixo Y)
escala 1:50



Planta de vigotas pré-moldadas Nível 365
escala 1:50

GOVERNO MUNICIPAL DE BARBALHA

MARX2
MARX2 CONSTRUÇÕES EIRELI-ME
RUA EDUARDO PORTO DA COSTA Nº 328
DISTRITO DO ROSÁRIO - BARBALHA - PE
TELEFONE: (81) 9 821-4337
E-MAIL: marx2projetos@gmail.com

PROJETO: CONSTRUÇÃO DE UNIDADE BÁSICA DE SAÚDE - PORTE 1

PROPRIETÁRIO: PREFEITURA MUNICIPAL DE BARBALHA

ENDEREÇO/OBRA: MINHA CASA MINHA VIDA ZONA RURAL DO MUNICÍPIO DE BARBALHA - CE

ASSUNTO: ESTRUTURAL PRANCHA

- FORMA NÍVEL +365
- LAJES NÍVEL +365
- VIGAS NÍVEL +365
- VIGOTAS PRÉ-MOLDADAS
- DETALHES / LEGENDAS

PROJETO: MARX2 PROJETOS DESENHO: RODOLFO FREITAS ESCALA: INDICADA DATA: JANEIRO 2022

13/17

Rodolfo Alves de Freitas
Engenheiro: CA - 054526-3
RFP 12/12/20-3



Vigas			
Nome	Seção (cm)	Elevação (cm)	Nível (cm)
V1	12x20	0	450
V2	12x20	0	450
V3	12x20	0	450
V4	12x20	0	450
V5	12x20	0	450
V6	12x20	0	450
V7	12x20	0	450
V8	12x20	0	450
V9	12x20	0	450
V10	12x20	0	450
V11	12x20	0	450
V12	12x20	0	450
V13	12x20	0	450
V14	12x20	0	450
V15	12x20	0	450
V16	12x20	0	450
V17	12x20	0	450
V18	12x20	0	450
V19	12x20	0	450
V20	12x20	0	450
V21	12x20	0	450
V22	12x20	0	450
V23	12x20	0	450

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

Pilares			
Nome	Seção (cm)	Elevação (cm)	Nível (cm)
P1	15 x 25	0	450
P2	15 x 25	0	450
P3	15 x 25	0	450
P4	15 x 25	0	450
P5	15 x 25	0	450
P21	15 x 25	0	450
P31	15 x 25	0	450
P32	15 x 25	0	450
P33	15 x 25	0	450
P41	15 x 25	0	450
P42	15 x 25	0	450
P43	15 x 25	0	450
P44	15 x 25	0	450
P51	15 x 25	0	450
P52	15 x 25	0	450
P53	15 x 25	0	450
P57	15 x 25	0	450
P58	15 x 25	0	450
P59	15 x 25	0	450
P60	15 x 25	0	450
P62	15 x 25	0	450
P63	15 x 25	0	450
P64	15 x 25	0	450
P65	15 x 25	0	450
P66	15 x 25	0	450
P67	15 x 25	0	450
P68	15 x 25	0	450
P69	15 x 25	0	450
P70	15 x 25	0	450
P71	15 x 25	0	450
P72	15 x 25	0	450
P73	15 x 25	0	450
P74	15 x 25	0	450
P75	15 x 25	0	450
P76	15 x 25	0	450
P77	15 x 25	0	450
P78	15 x 25	0	450
P79	15 x 25	0	450
P80	15 x 25	0	450
P81	15 x 25	0	450
P82	15 x 25	0	450
P83	15 x 25	0	450
P84	15 x 25	0	450
P85	15 x 25	0	450
P86	15 x 25	0	450

Legenda dos Pilares	
	Pilar que morre
	Pilar que passa
	Pilar que nasce
	Pilar com mudança de seção

Forma do pavimento Nível +450

escala 1:50

Rodolfo Alves de Freitas
Engenheiro Civil - CREA/CE 344558
RFB 18187929-3



PROJETO
CONSTRUÇÃO DE UNIDADE BÁSICA DE SAÚDE - PORTE 1

PROPRIETÁRIO
PREFEITURA MUNICIPAL DE BARBALHA

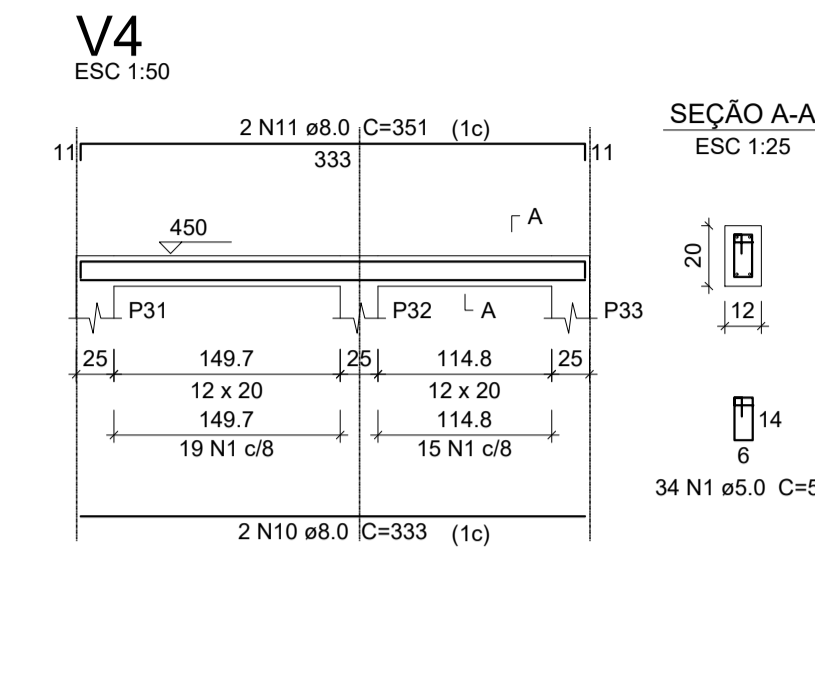
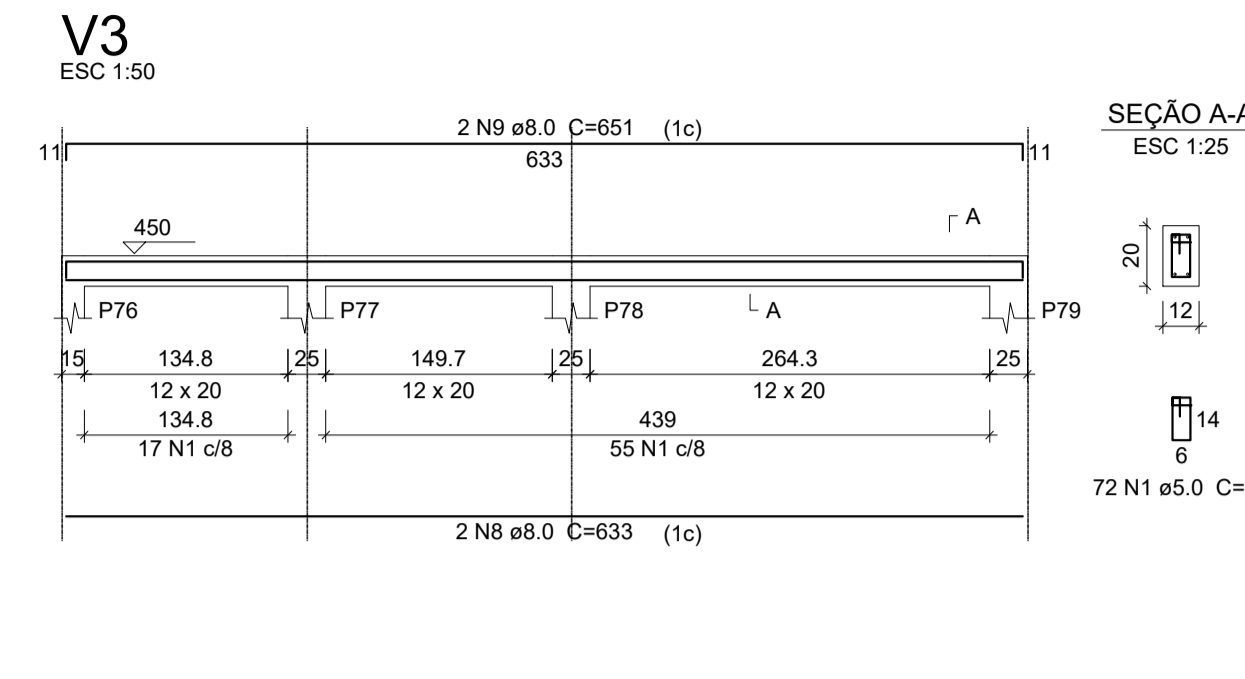
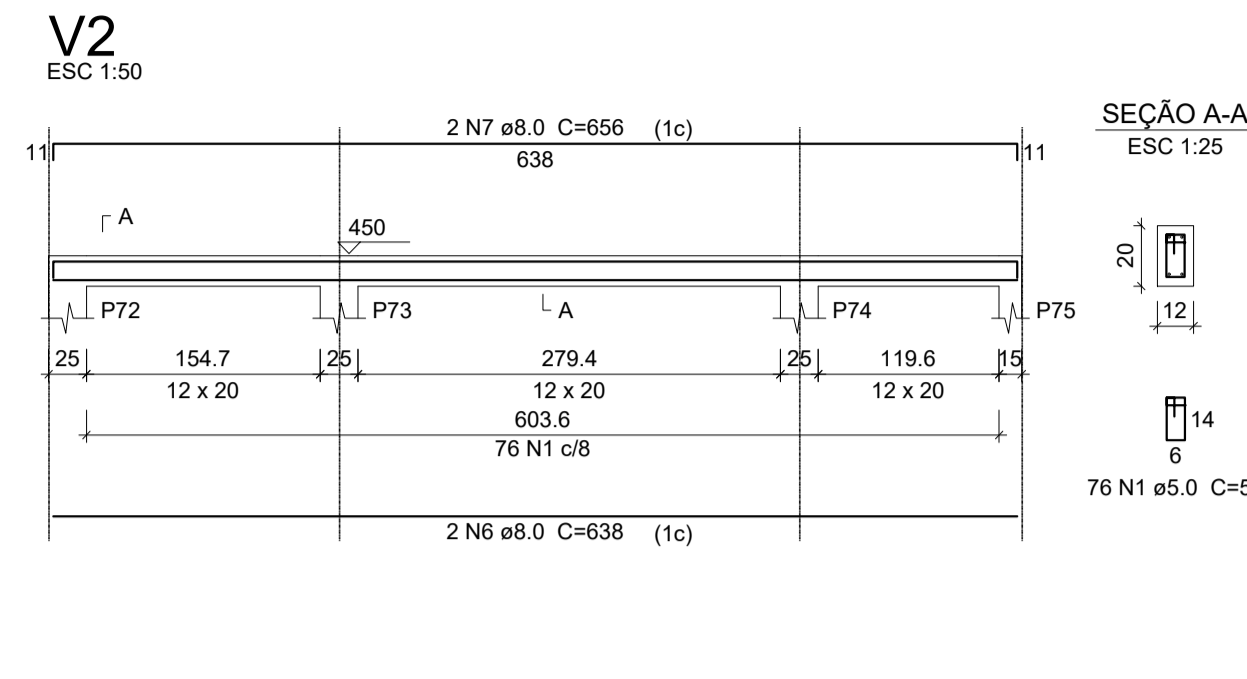
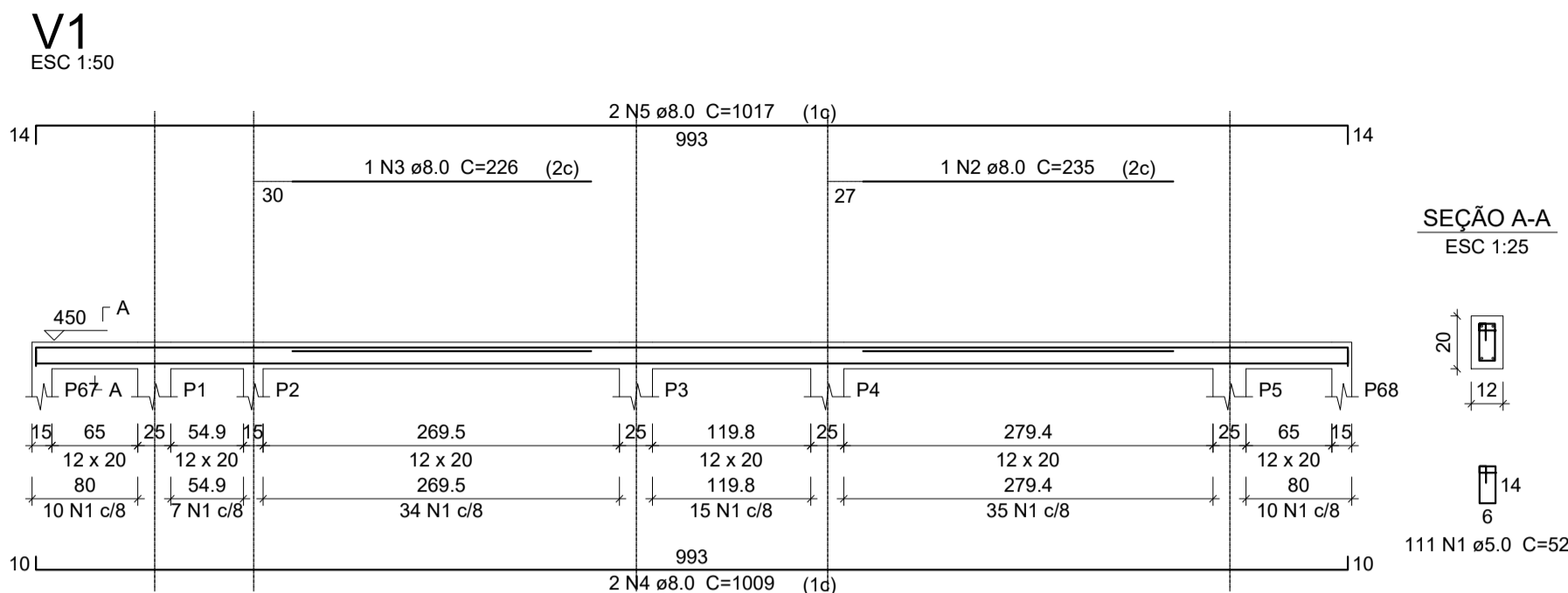
ENDEREÇO/OBRA
MINHA CASA MINHA VIDA ZONA RURAL DO MUNICÍPIO DE BARBALHA - CE

ASSUNTO ESTRUTURAL PRANCHA

- PLANTA DE FORMA NÍVEL +450
- LEGENDAS

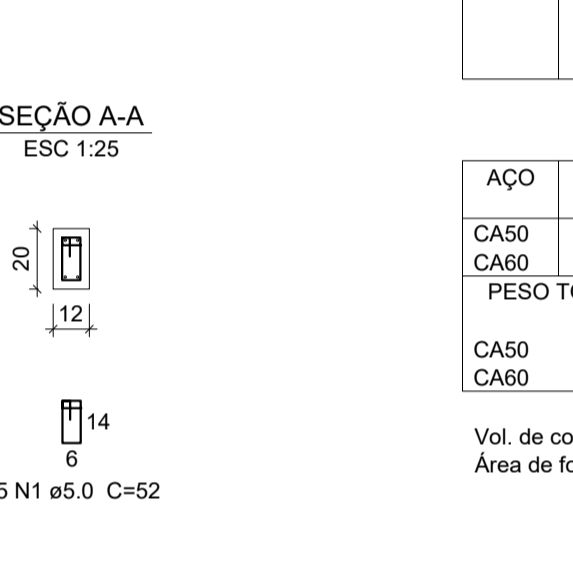
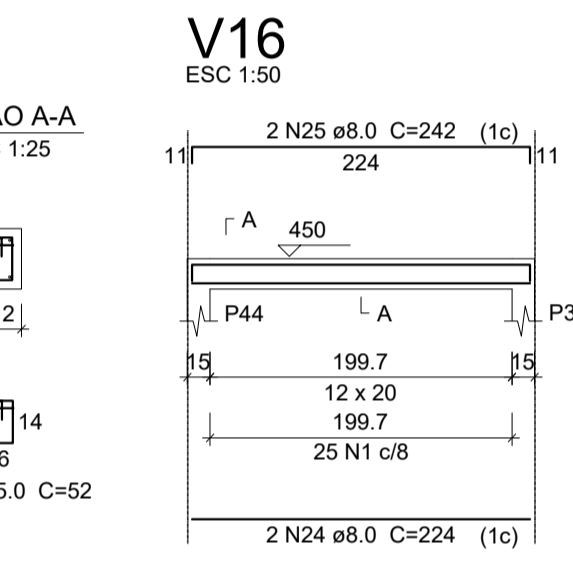
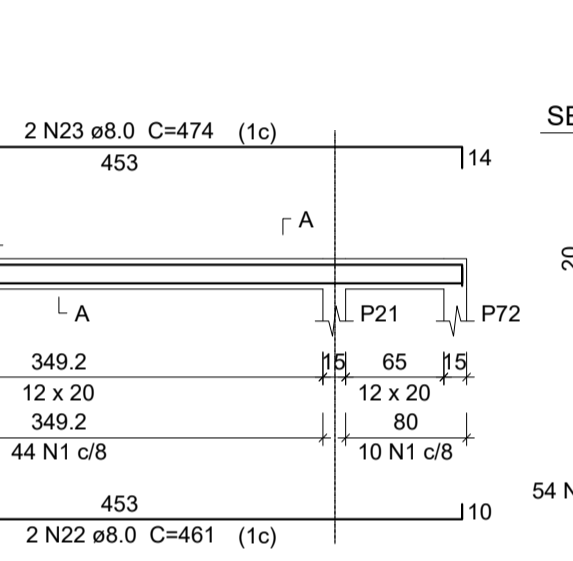
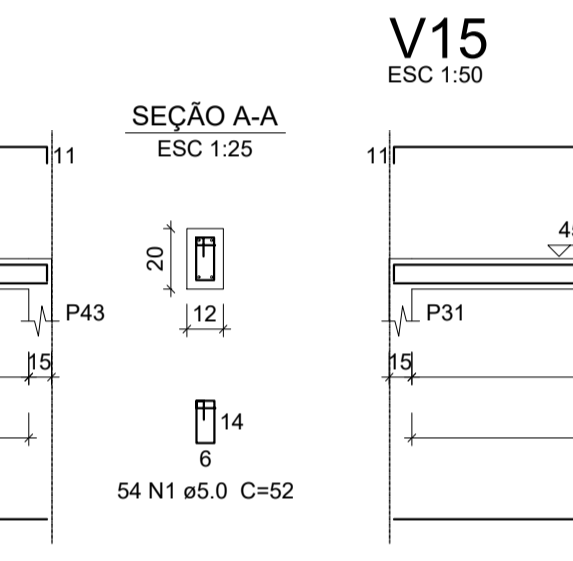
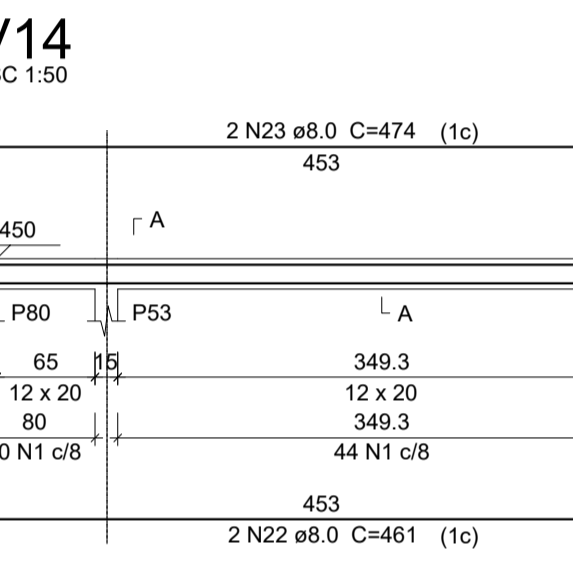
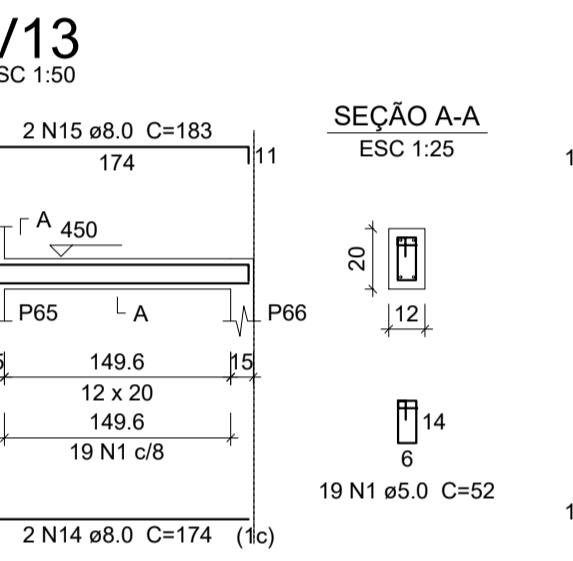
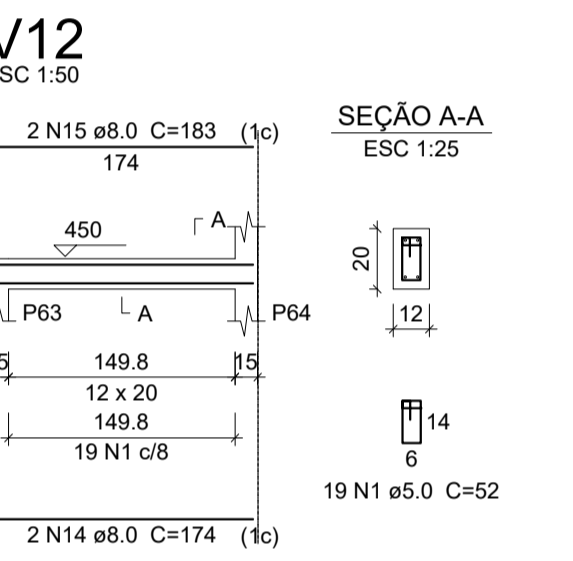
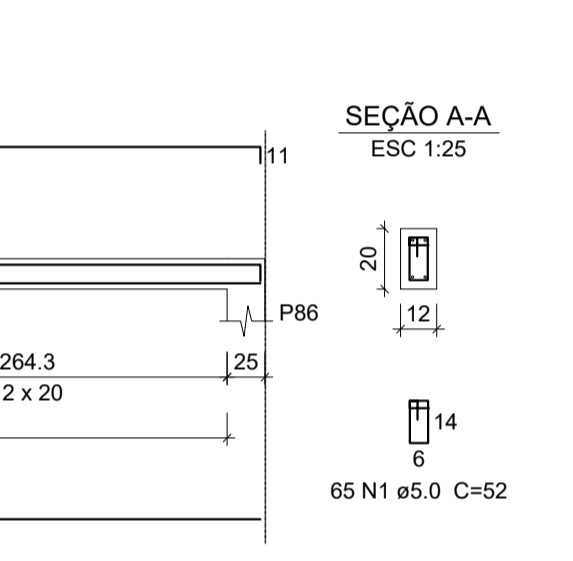
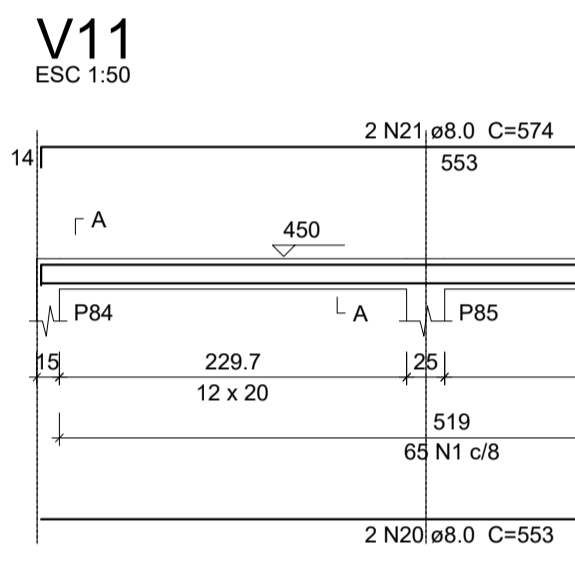
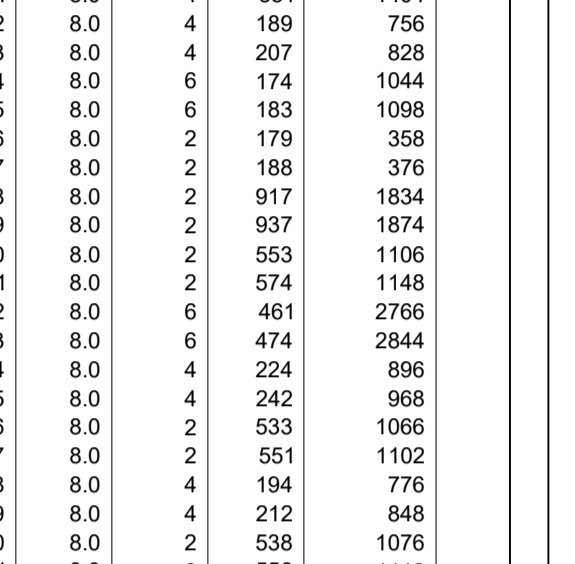
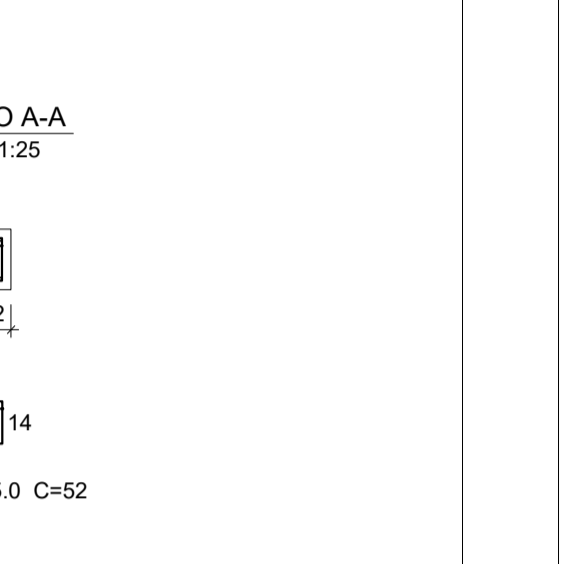
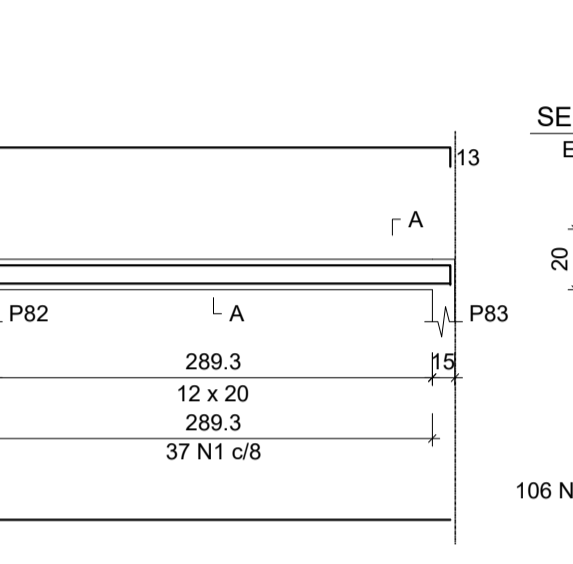
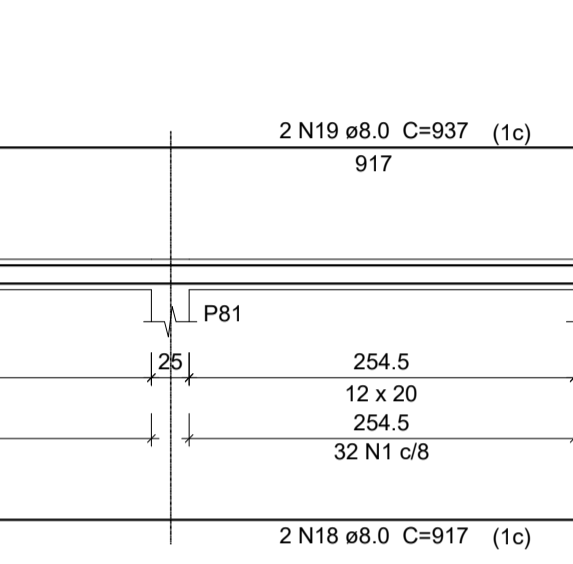
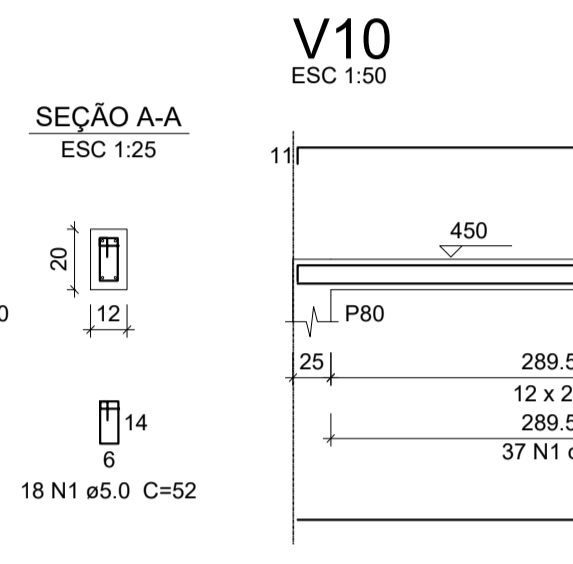
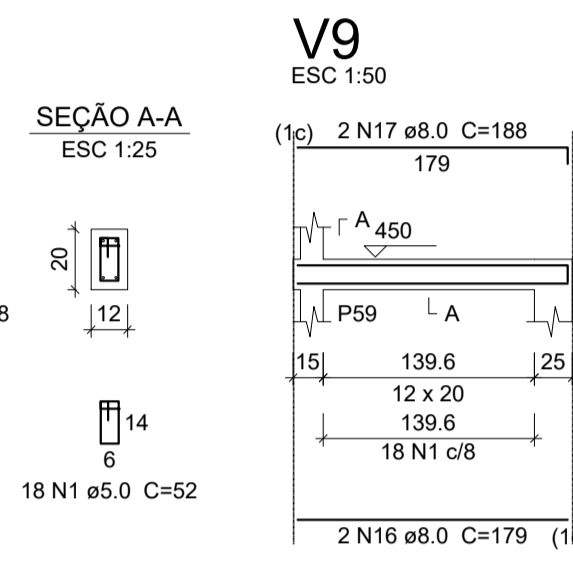
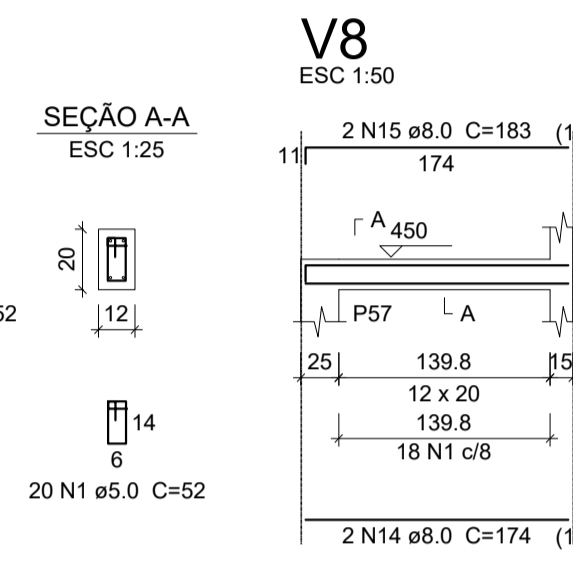
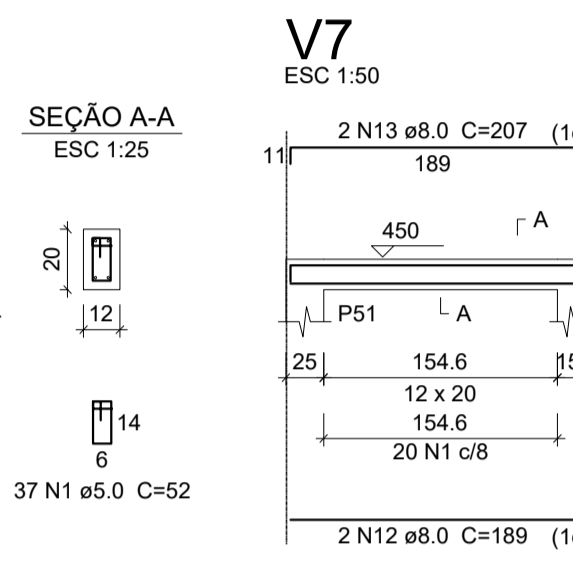
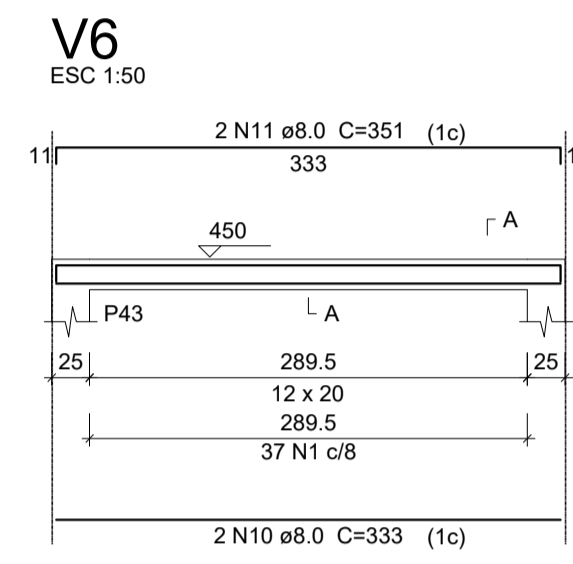
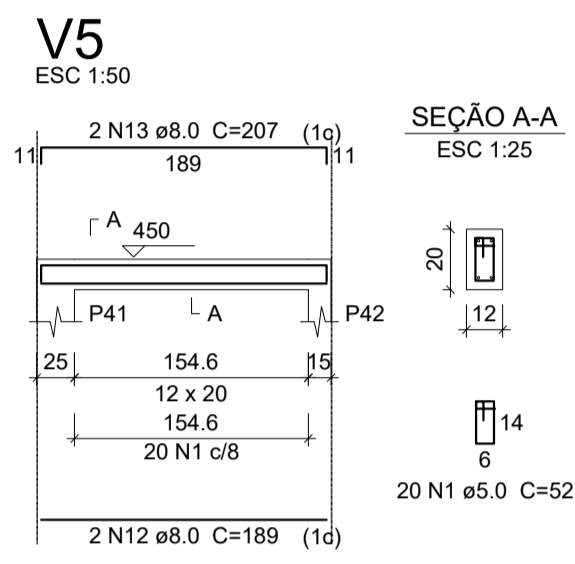
14/17

PROJETO MARX2 PROJETOS	DESENHO RODOLFO FREITAS	ESCALA INDICADA	DATA JANEIRO 2022
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Relação do aço

AÇO	N	DIAM	Q	UNIT (cm)	C.TOTAL (cm)
CA60	1	5.0	1042	52	54184
CA50	2	8.0	1	235	235
	3	8.0	1	226	226
	4	8.0	2	1009	2018
	5	8.0	2	1017	2034
	6	8.0	2	638	1276
	7	8.0	2	656	1312
	8	8.0	2	633	1266
	9	8.0	2	651	1302
	10	8.0	4	333	1332
	11	8.0	4	351	1404
	12	8.0	4	189	756
	13	8.0	4	207	828
	14	8.0	6	174	1044
	15	8.0	6	183	1098
	16	8.0	2	179	358
	17	8.0	2	188	376
	18	8.0	2	917	1834
	19	8.0	2	937	1874
	20	8.0	2	553	1106
	21	8.0	2	574	1148
	22	8.0	6	461	2766
	23	8.0	6	474	2844
	24	8.0	4	224	896
	25	8.0	4	242	968
	26	8.0	2	533	1066
	27	8.0	2	551	1102
	28	8.0	4	194	776
	29	8.0	4	212	848
	30	8.0	2	538	1076
	31	8.0	2	556	1112
	32	8.0	2	453	906
	33	8.0	2	471	942



Resumo do aço

AÇO	DIAM	C.TOTAL (m)	PESO + 10% (kg)
CA50	8.0	381.3	165.5
CA60	5.0	541.9	91.9
PESO TOTAL			
CA50		165.5	
CA60		91.9	

Vol. de concreto total (C-25) = 2.24 m³
Área de forma total = 48.53 m²

Rodolfo Alves de Freitas
Engenheiro Civil - CREACE 344558
RFB 161729-3



PROJETO
CONSTRUÇÃO DE UNIDADE BÁSICA DE SAÚDE - PORTE 1

PROPRIETÁRIO
PREFEITURA MUNICIPAL DE BARBALHA

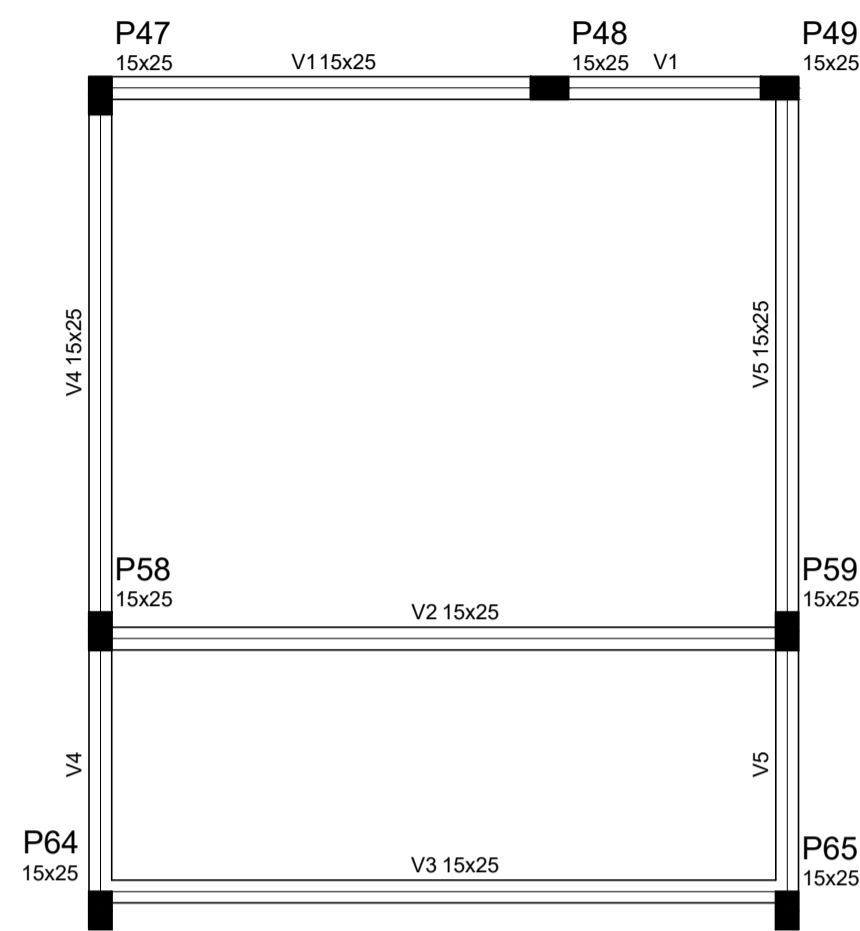
ENDEREÇO/OBRA
MINHA CASA MINHA VIDA ZONA RURAL DO MUNICÍPIO DE BARBALHA - CE

ASSUNTO **ESTRUTURAL** PRANCHA

- VIGAS DE AMARRAÇÃO NÍVEL +450

15/17

PROJETO MARX2 PROJETOS	DESENHO RODOLFO FREITAS	ESCALA INDICADA	DATA JANEIRO 2022
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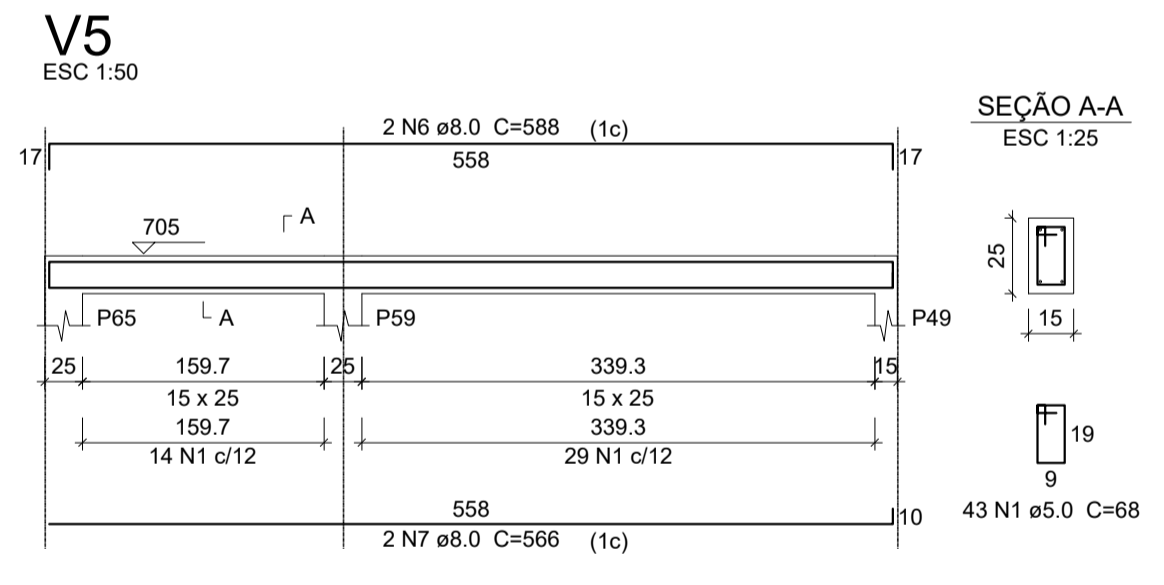
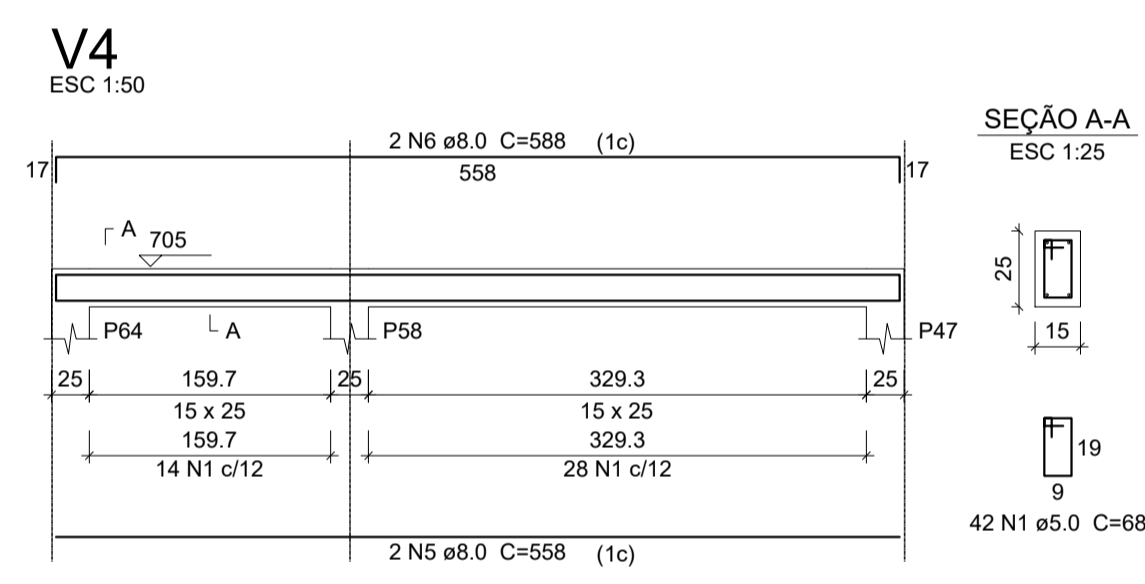
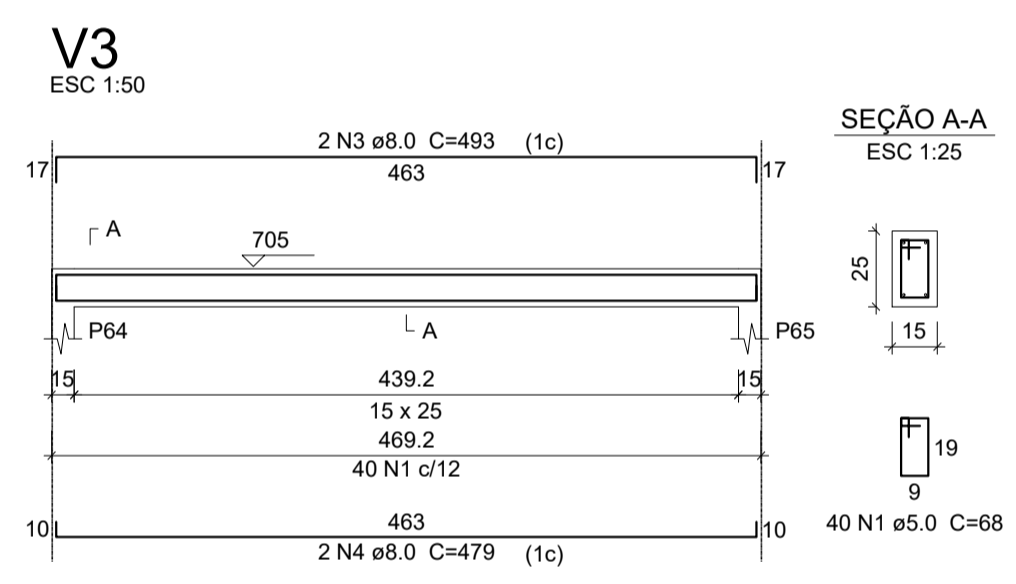
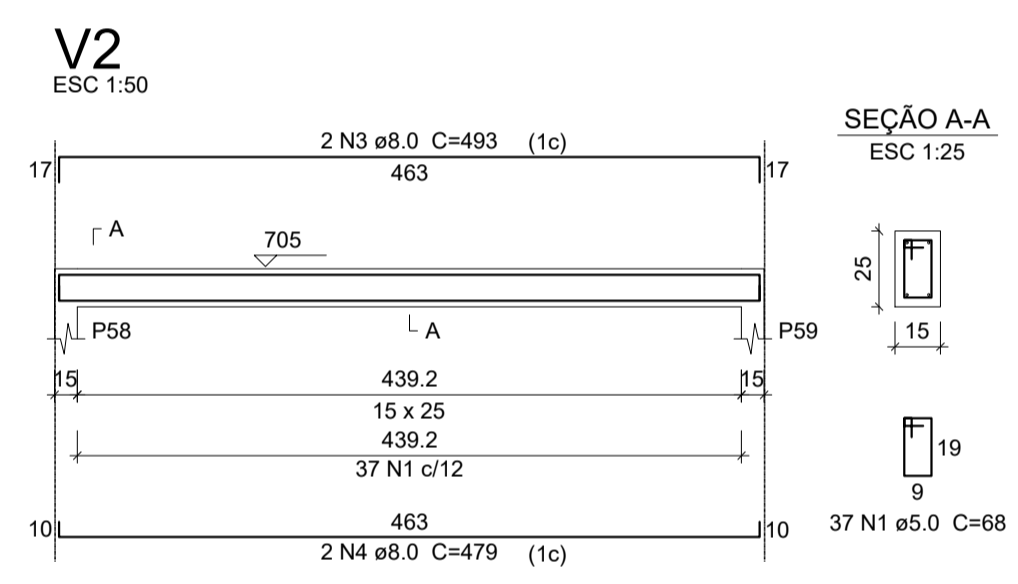
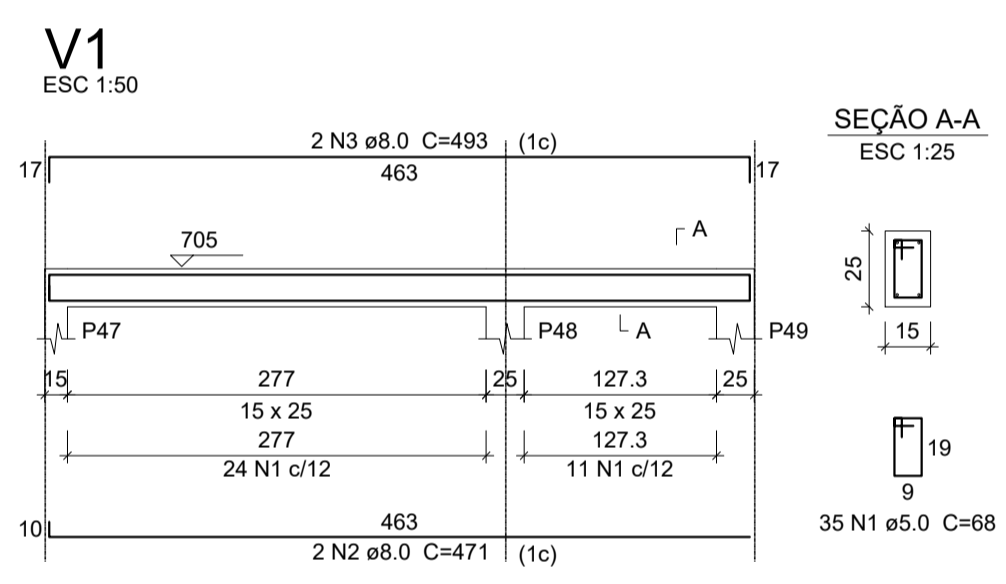
Vigas			
Nome	Seção (cm)	Elevação (cm)	Nível (cm)
V1	15x25	0	705
V2	15x25	0	705
V3	15x25	0	705
V4	15x25	0	705
V5	15x25	0	705

Características dos materiais		
fck (kgf/cm²)	Ecs (kgf/cm³)	
250	238000	

Pilares			
Nome	Seção (cm)	Elevação (cm)	Nível (cm)
P47	15 x 25	0	705
P48	15 x 25	0	705
P49	15 x 25	0	705
P58	15 x 25	0	705
P59	15 x 25	0	705
P64	15 x 25	0	705
P65	15 x 25	0	705

Legenda dos Pilares	
	Pilar que morre
	Pilar que passa
	Pilar que nasce
	Pilar com mudança de seção

Forma do pavimento Nível +705
escala 1:50



Relação do aço

AÇO	V1		V2		V3	
	N	DIAM	Q	UNIT (cm)	C.TOTAL (cm)	
CA60	1	5.0	197	68	13396	
CA50	2	8.0	2	471	942	
	3	8.0	6	493	2958	
	4	8.0	4	479	1916	
	5	8.0	2	558	1116	
	6	8.0	4	588	2352	
	7	8.0	2	566	1132	

Resumo do aço

AÇO	DIAM	C.TOTAL (m)	PESO + 10 % (kg)
CA50	8.0	104.2	45.2
CA60	5.0	134	22.7
PESO TOTAL			
CA50			45.2
CA60			22.7

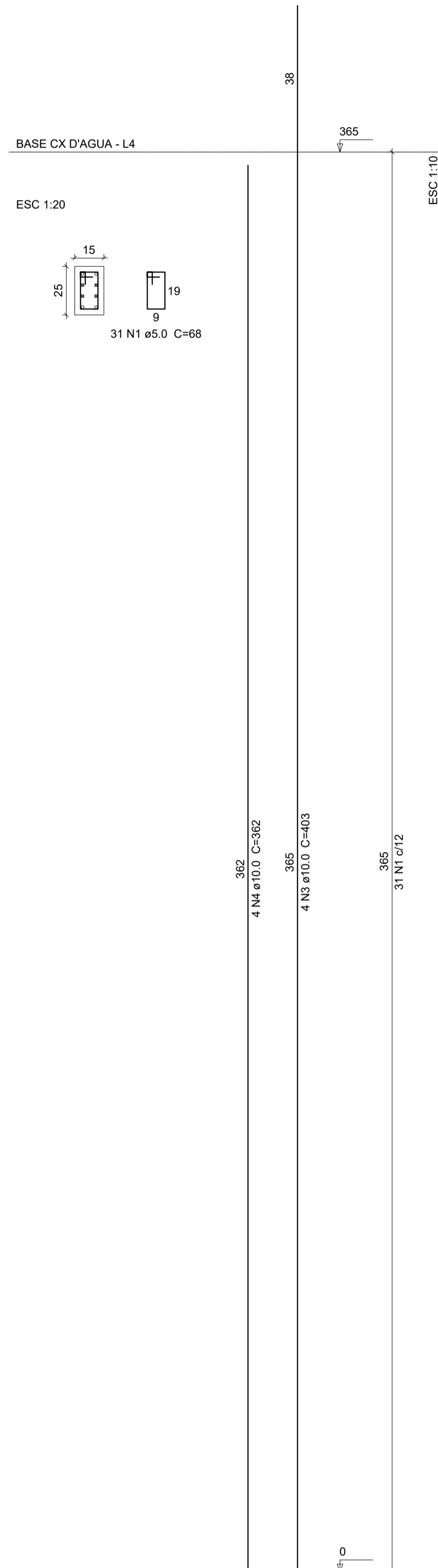
Vol. de concreto total (C-25) = 0.95 m³
Área de forma total = 16.48 m²

Rodolfo Alves de Freitas
Engenheiro Civil - CREACE 344558
RNP 061887529-3



PROJETO	CONSTRUÇÃO DE UNIDADE BÁSICA DE SAÚDE - PORTE 1		
PROPRIETÁRIO	PREFEITURA MUNICIPAL DE BARBALHA		
ENDEREÇO/OBRA	MINHA CASA MINHA VIDA ZONA RURAL DO MUNICÍPIO DE BARBALHA - CE		
ASSUNTO	ESTRUTURAL	PRANCHA	
	- PLANTA DE FORMA NÍVEL +705 - VIGAS NÍVEL +705 - LEGENDAS	16/17	
PROJETO	DESENHO	ESCALA	DATA
MARX2 PROJETOS	RODOLFO FREITAS	INDICADA	JANEIRO 2022

P47=P48=P49=P58=P59=P64=P65



Relação do aço

7xP47

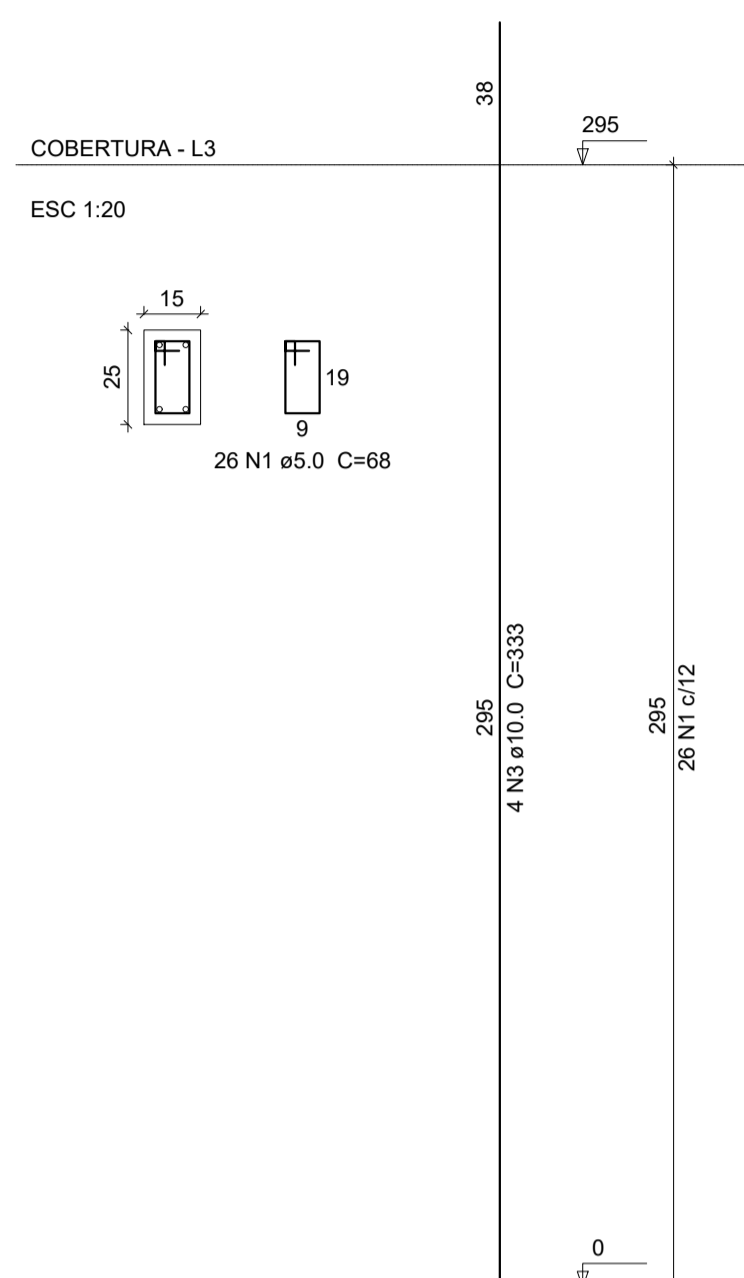
AÇO	N	DIAM	Q	UNIT (cm)	C.TOTAL (cm)
CA60	1	5.0	217	68	14756
CA50	2	10.0	28	403	11284
CA50	3	10.0	28	362	10136

Resumo do aço

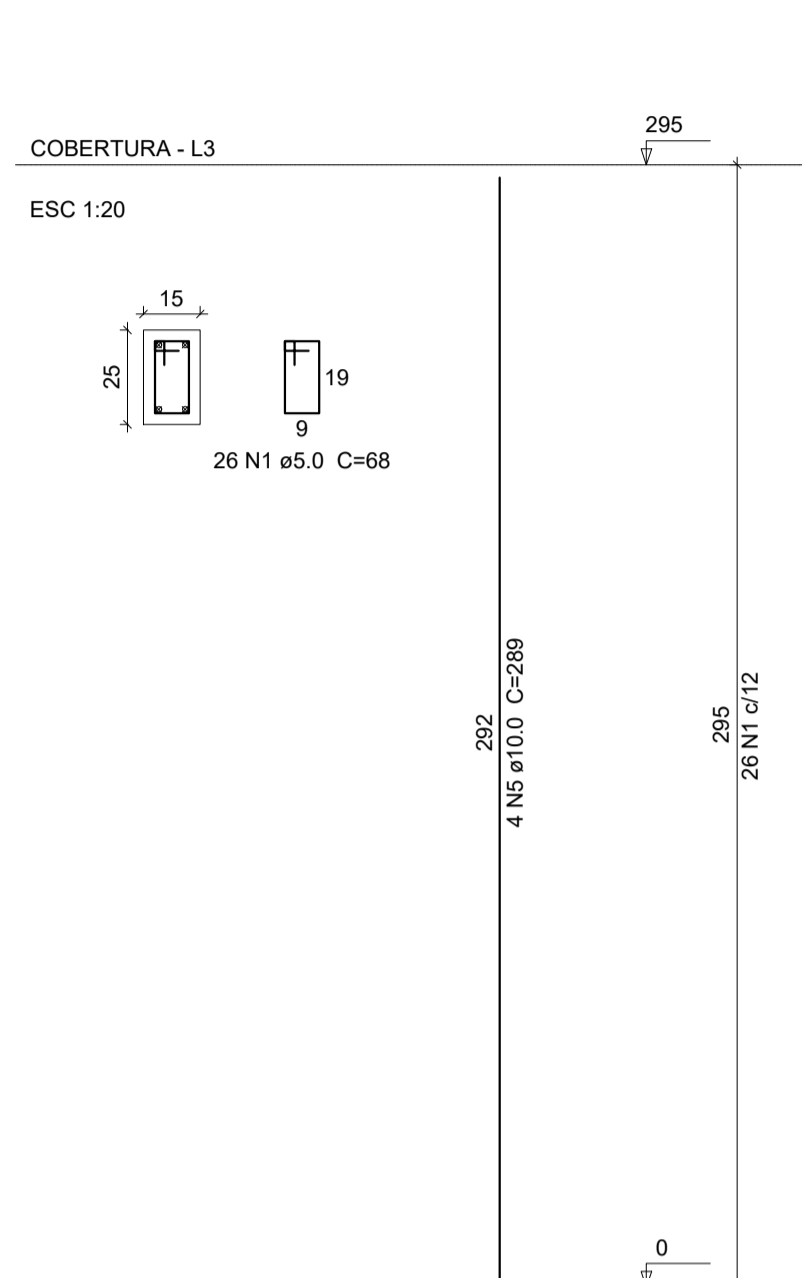
AÇO	DIAM (m)	C.TOTAL (m)	PESO + 10 % (kg)
CA50	10.0	214.2	145.3
CA60	5.0	147.6	25.0
PESO TOTAL			
CA50		145.3	
CA60		25.0	

Vol. de concreto total (C-25) = 0.96 m³
Área de forma total = 20.44 m²

P1=P2=P3=P4=P5=P21=P30=P31=P32=P33
=P41=P42=P43=P44=P51=P52=P53=P57=P60
=P62=P63=P66



P7=P8=P9=P10=P11=P12=P13=P14=P17=P18
=P19=P20=P22=P23=P24=P25=P26=P27=P28
=P29=P34=P35=P36=P37=P38=P39=P40=P45
=P46=P50=P54=P55=P56=P61



Relação do aço

22xP1 34xP7

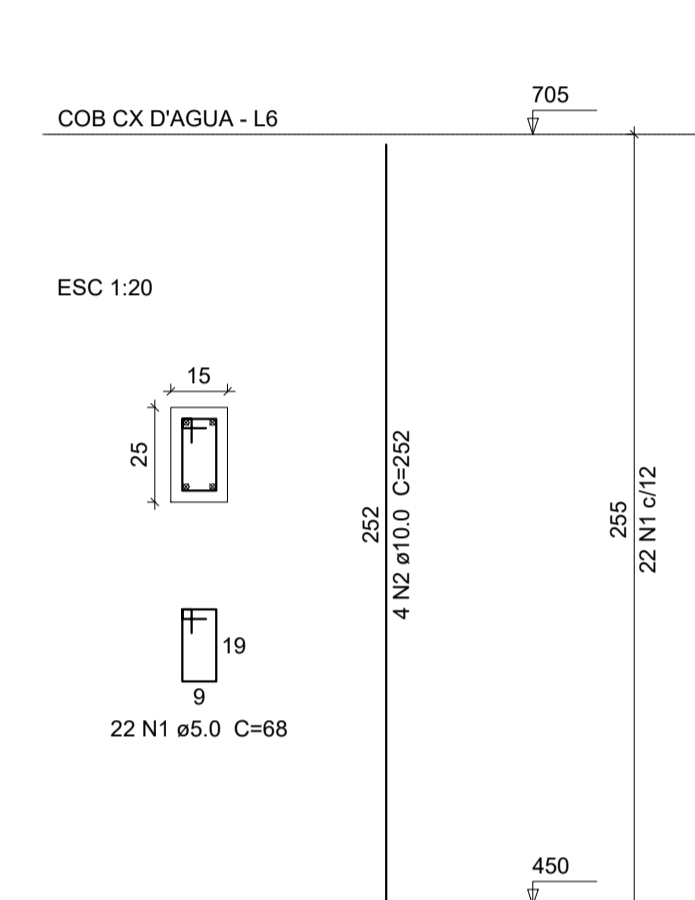
AÇO	N	DIAM	Q	UNIT (cm)	C.TOTAL (cm)
CA60	1	5.0	1456	68	99008
CA50	2	10.0	88	333	29304
CA50	3	10.0	136	292	39712

Resumo do aço

AÇO	DIAM (m)	C.TOTAL (m)	PESO + 10 % (kg)
CA50	10.0	690.16	468.1
CA60	5.0	990.08	167.9
PESO TOTAL			
CA50		468.1	
CA60		167.9	

Vol. de concreto total (C-25) = 7.00 m³
Área de forma total = 151.69 m²

P47=P48=P49=P58=P59=P64=P65



Relação do aço

7xP47

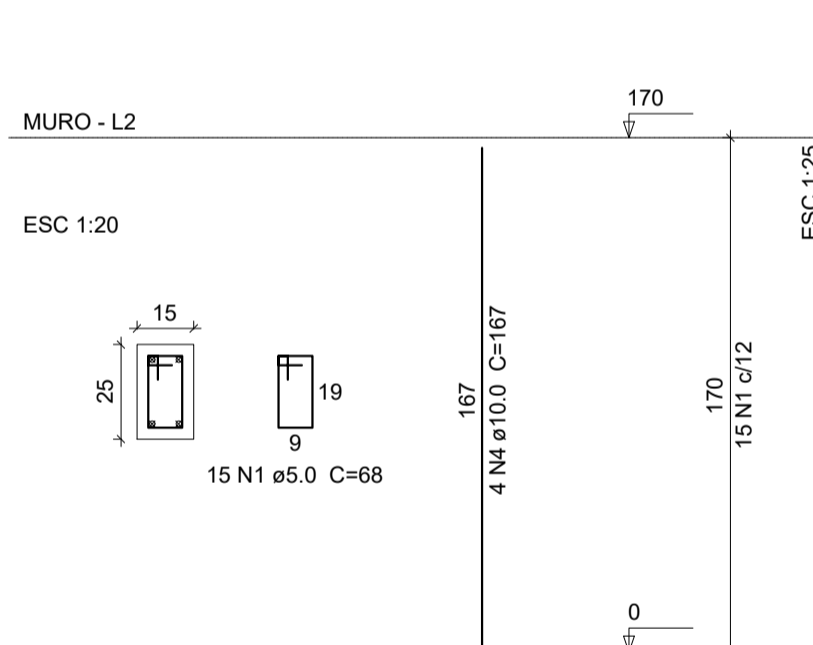
AÇO	N	DIAM	Q	UNIT (cm)	C.TOTAL (cm)
CA60	1	5.0	154	68	10472
CA50	2	10.0	28	252	7056

Resumo do aço

AÇO	DIAM (m)	C.TOTAL (m)	PESO + 10 % (kg)
CA50	10.0	70.6	47.9
CA60	5.0	104.8	17.8
PESO TOTAL			
CA50		47.9	
CA60		17.8	

Vol. de concreto total (C-25) = 0.67 m³
Área de forma total = 14.28 m²

P6=P15=P16



Relação do aço

3xP6

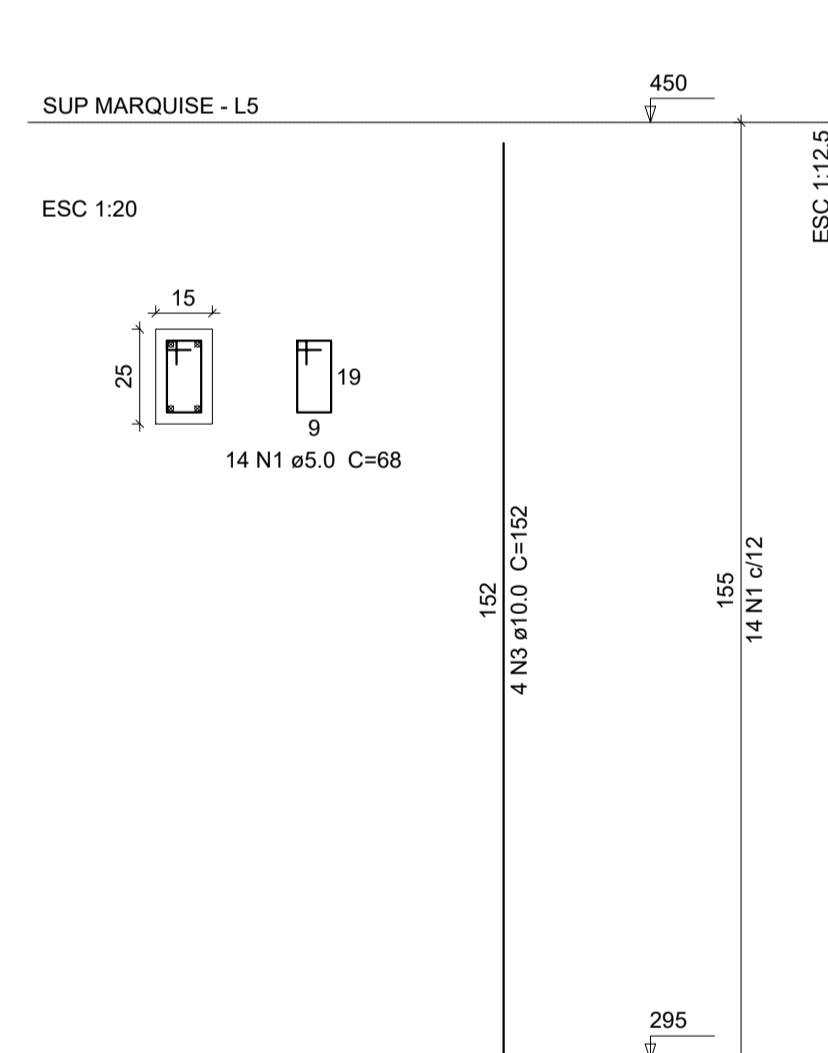
AÇO	N	DIAM	Q	UNIT (cm)	C.TOTAL (cm)
CA60	1	5.0	45	68	3060
CA50	4	10.0	12	167	2004

Resumo do aço

AÇO	DIAM (m)	C.TOTAL (m)	PESO + 10 % (kg)
CA50	10.0	20.04	13.6
CA60	5.0	30.6	5.2
PESO TOTAL			
CA50		13.6	
CA60		5.2	

Vol. de concreto total (C-25) = 0.20 m³
Área de forma total = 1.36 m²

P1=P2=P3=P4=P5=P21=P30=P31=P32=P33=P41
=P42=P43=P44=P51=P52=P53=P57=P60=P62=P63
=P66=P67=P68=P69=P70=P71=P72=P73=P74=P75
=P76=P77=P78=P79=P80=P81=P82=P83=P84=P85
=P86



Relação do aço

42xP1

AÇO	N	DIAM	Q	UNIT (cm)	C.TOTAL (cm)
CA60	1	5.0	588	68	39984
CA50	2	10.0	168	152	25536

Resumo do aço

AÇO	DIAM (m)	C.TOTAL (m)	PESO + 10 % (kg)
CA50	10.0	255.36	173.2
CA60	5.0	399.84	67.8
PESO TOTAL			
CA50		173.2	
CA60		67.8	

Vol. de concreto total (C-25) = 2.45 m³
Área de forma total = 52.08 m²

Rodolfo Alves de Freitas
Engenheiro Civil - CREA/CE 344558
RNP 16188729-3



PROJETO
CONSTRUÇÃO DE UNIDADE BÁSICA DE SAÚDE - PORTE 1

PROPRIETÁRIO
PREFEITURA MUNICIPAL DE BARBALHA

ENDEREÇO/OBRA
MINHA CASA MINHA VIDA ZONA RURAL DO MUNICÍPIO DE BARBALHA - CE

ASSUNTO ESTRUTURAL PRANCHA

- PILARES

17/17

PROJETO MARX2 PROJETOS DESENHO RODOLFO FREITAS ESCALA INDICADA DATA JANEIRO 2022