



Prefeitura Municipal de Caciقة Doble
Estado do Rio Grande do Sul



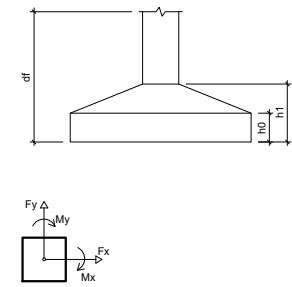
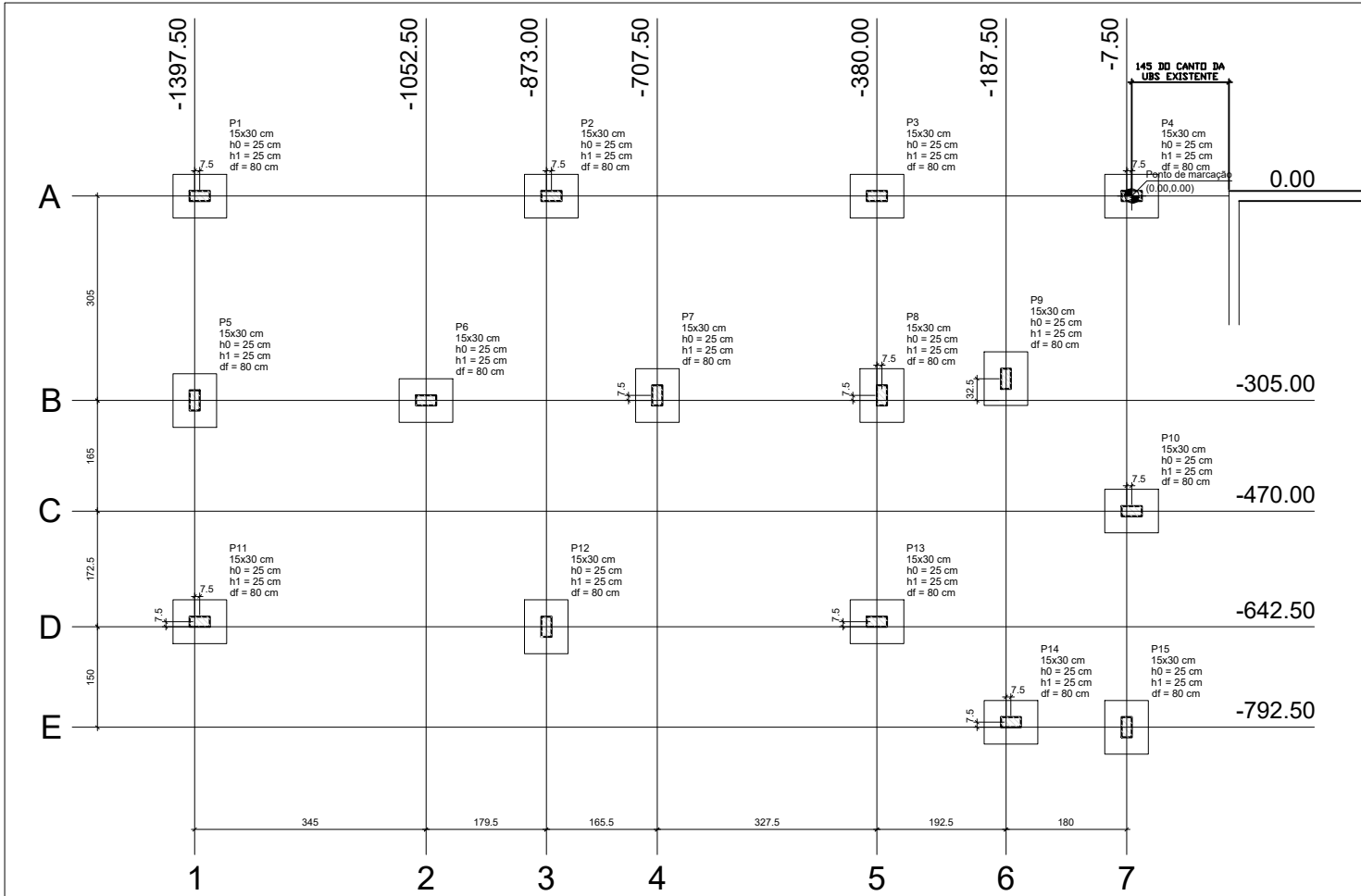
PROJETO ESTRUTURAL



Prefeitura Municipal de Caciقة Doble
Estado do Rio Grande do Sul



PLANTA DE LOCAÇÃO



Planta de locação
escala 1:50

Nome	Seção (cm)	X (cm)	Y (cm)	Pilar				Fundação				Localização no eixo X		Localização no eixo Y		
				Carga Máx (tf)	Carga Min (tf)	Mx (kgf.m)	My (kgf.m)	Fx (tf)	Fy (tf)	Lado B (cm)	Lado H (cm)	H1 (cm)	H2 (cm)	Nome	Nome	
P1	15x30	-1397.50	0.00	3.3	4.1	0	0	0.3	0.4	65	80	25	25	80	-1397.50	P1
P2	15x30	-865.50	0.00	4.8	4.5	0	0	0.2	0.1	65	80	25	25	80	-1390.00	P1, P11
P3	15x30	-380.00	0.00	5.1	4.4	0	0	0.3	0.3	65	80	25	25	80	-1052.50	P6
P4	15x30	0.00	0.00	4.6	4.7	0	0	0.4	0.8	65	80	25	25	80	-873.00	P7, P8
P5	15x30	-1397.50	-305.00	4.5	4.7	0	0	0.4	0.2	65	80	25	25	80	-865.50	P2
P6	15x30	-1052.50	-305.00	3.2	3.1	0	0	0.1	0.2	65	80	25	25	80	-707.50	P7
P7	15x30	-707.50	-297.50	5.5	5.4	0	0	0.1	0.2	65	80	25	25	80	-380.00	P3, P13
P8	15x30	-372.50	-297.50	4.5	4.3	0	0	0.3	0.5	65	80	25	25	80	-187.50	P8
P9	15x30	-187.50	-272.50	4.4	4.2	0	0	0.1	0.8	65	80	25	25	80	-187.50	P9
P10	15x30	0.00	-470.00	5.1	4.8	0	0	0.3	0.8	65	80	25	25	80	-180.00	P14
P11	15x30	-1390.00	-635.00	3.7	3.3	0	0	0.5	0.5	65	80	25	25	80	0.00	P4, P10
P12	15x30	-873.00	-642.50	5.9	5.6	0	0	0.1	0.1	65	80	25	25	80		
P13	15x30	-380.00	-635.00	5.8	5.1	0	0	0.1	0.7	65	80	25	25	80		
P14	15x30	-180.00	-785.00	3.3	3.0	0	0	0.1	0.9	65	80	25	25	80		
P15	15x30	-7.50	-792.50	2.7	2.3	0	0	0.3	0.3	65	80	25	25	80		

PREFEITURA MUNICIPAL DE CACIQUE DOBLE
AV. KAINGANG, 292 - FONE - (54)3552-1244 - CACIQUE DOBLE - RS

CONTEÚDO -
PLANTA LOCAÇÃO

ENDEREÇO OBRA -
RUA EDIMO LUIZ TONIAL, CENTRO - CACIQUE DOBLE - RS

PROJETO -
AMPLIAÇÃO DA UNIDADE BÁSICA DE SAÚDE - CENTRO

ÁREA -
107,71M²

DATA -
MARÇO/2023

ESCALA -
INDICADAS

ANEXO -
01-E

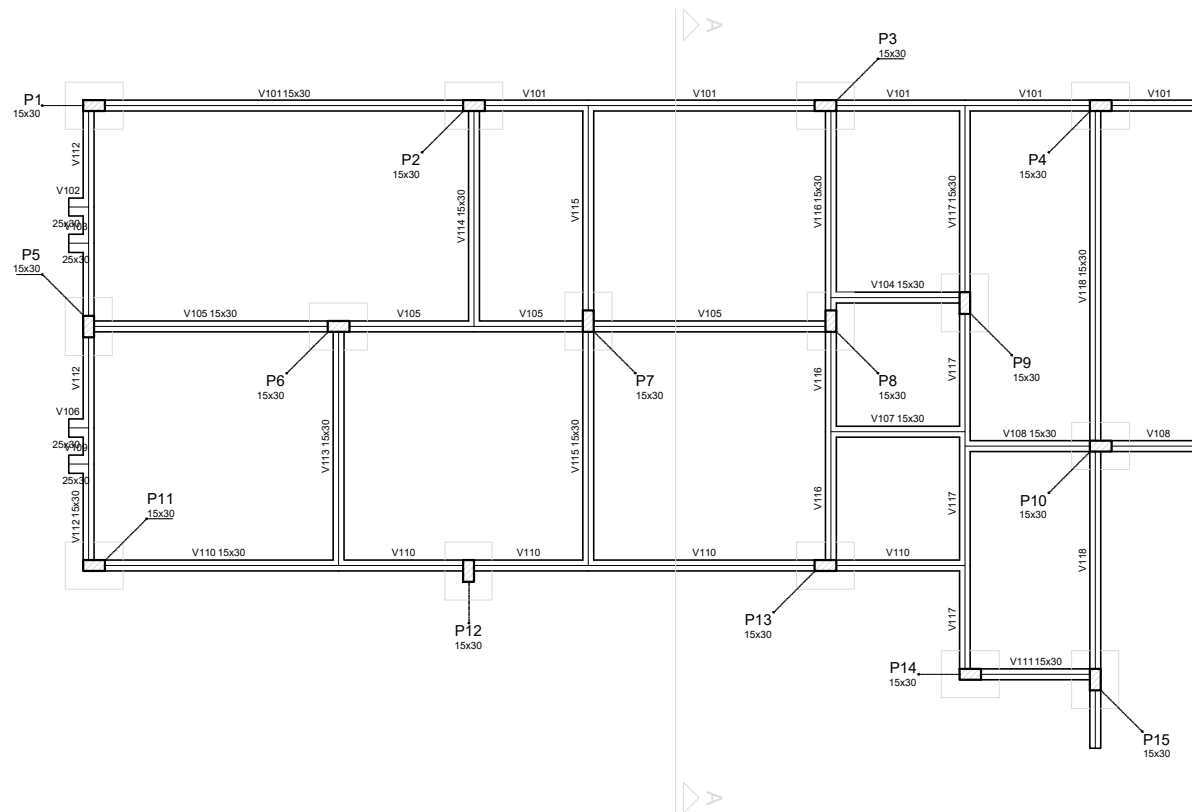
ENG. CARLA RAGNINI AGOSTINETTO - CREA 137639-6



Prefeitura Municipal de CaciQue Doble
Estado do Rio Grande do Sul



PLANTAS DE FORMAS



Vigas			
Nome	Seção (cm)	Elevação (cm)	Nível (cm)
V101	15x30	0	0
V102	25x30	0	0
V103	25x30	0	0
V104	15x30	0	0
V105	15x30	0	0
V106	25x30	0	0
V107	15x30	0	0
V108	15x30	0	0
V109	25x30	0	0
V110	15x30	0	0
V111	15x30	0	0
V112	15x30	0	0
V113	15x30	0	0
V114	15x30	0	0
V115	15x30	0	0
V116	15x30	0	0
V117	15x30	0	0
V118	15x30	0	0

Características dos materiais		
fck (kgf/cm ²)	Ecs (kgf/cm ²)	
250	285600	

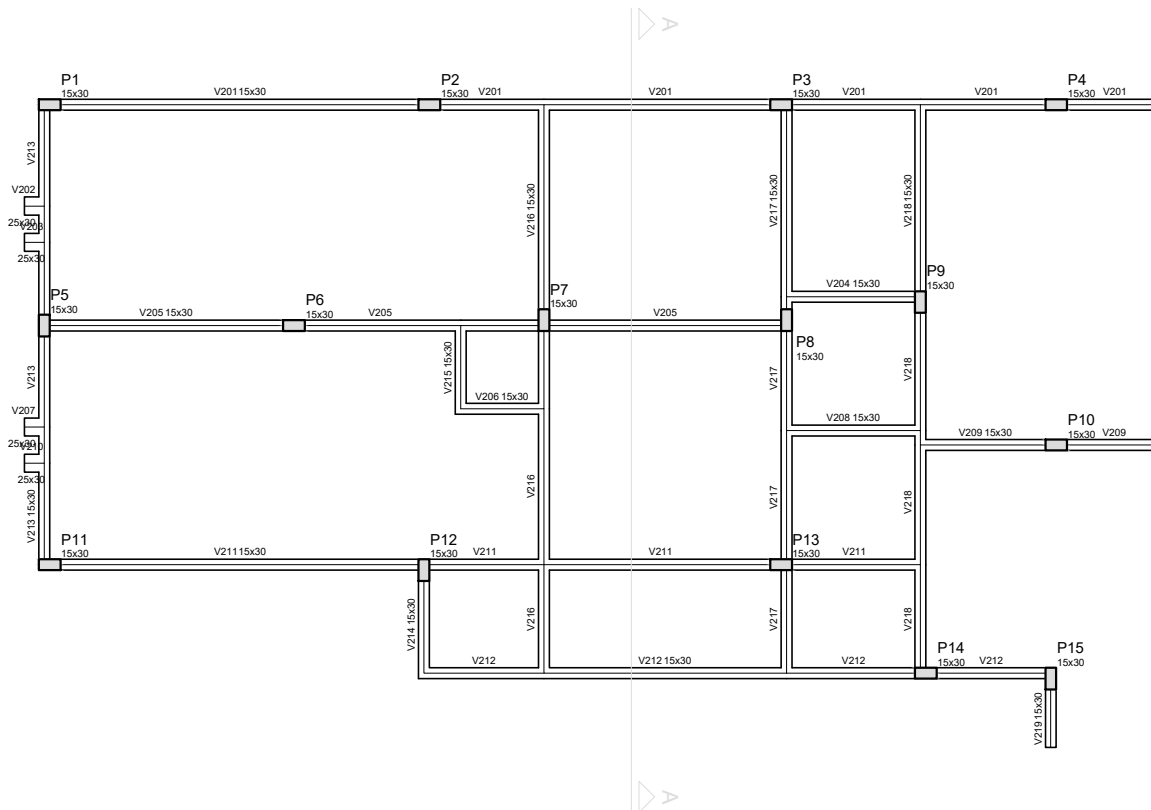
Pilares			
Nome	Seção (cm)	Elevação (cm)	Nível (cm)
P1	15 x 30	0	0
P2	15 x 30	0	0
P3	15 x 30	0	0
P4	15 x 30	0	0
P5	15 x 30	0	0
P6	15 x 30	0	0
P7	15 x 30	0	0
P8	15 x 30	0	0
P9	15 x 30	0	0
P10	15 x 30	0	0
P11	15 x 30	0	0
P12	15 x 30	0	0
P13	15 x 30	0	0
P14	15 x 30	0	0
P15	15 x 30	0	0

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

Forma do pavimento Baldrame

escala 1:50

PREFEITURA MUNICIPAL DE CACIQUE DOBLE		
AV. KAINGANG, 292 - FONE - (54)3552-1244 - CACIQUE DOBLE - RS		
CONTEÚDO - PLANTA DE FORMA BALDRAME		
ENDEREÇO OBRA - RUA EDIMO LUIZ TONIAL, CENTRO - CACIQUE DOBLE - RS		ESCALA - INDICADAS
PROJETO - AMPLIAÇÃO DA UNIDADE BÁSICA DE SAÚDE - CENTRO		ANEXO - <h1>02-E</h1>
ENG. CARLA RAGNINI AGOSTINETTO - CREA 137639-6		
ÁREA - 107,71M ²		DATA - MARÇO/2023



Vigas			
Nome	Seção (cm)	Elevação (cm)	Nível (cm)
V201	15x30	0	300
V202	25x30	0	300
V203	25x30	0	300
V204	15x30	0	300
V205	15x30	0	300
V206	15x30	0	300
V207	25x30	0	300
V208	15x30	0	300
V209	15x30	0	300
V210	25x30	0	300
V211	15x30	0	300
V212	15x30	0	300
V213	15x30	0	300
V214	15x30	0	300
V215	15x30	0	300
V216	15x30	0	300
V217	15x30	0	300
V218	15x30	0	300
V219	15x30	0	300

Características dos materiais		
Tck	Ecs	
(kgf/cm²)	(kgf/cm²)	
250	285600	

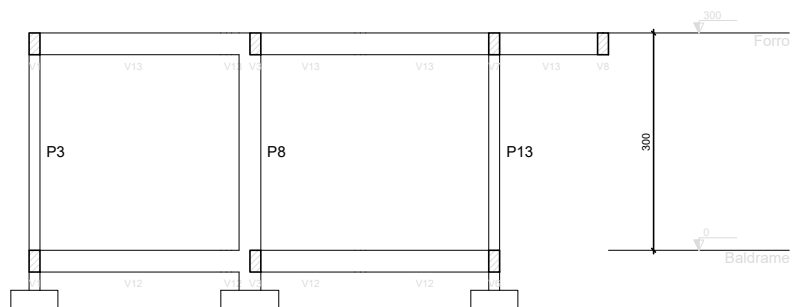
Pilares			
Nome	Seção (cm)	Elevação (cm)	Nível (cm)
P1	15 x 30	0	300
P2	15 x 30	0	300
P3	15 x 30	0	300
P4	15 x 30	0	300
P5	15 x 30	0	300
P6	15 x 30	0	300
P7	15 x 30	0	300
P8	15 x 30	0	300
P9	15 x 30	0	300
P10	15 x 30	0	300
P11	15 x 30	0	300
P12	15 x 30	0	300
P13	15 x 30	0	300
P14	15 x 30	0	300
P15	15 x 30	0	300

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

Forma do pavimento Forro

escala 1:50

PREFEITURA MUNICIPAL DE CACIQUE DOBLE AV. KAINGANG, 292 - FONE - (54)3552-1244 - CACIQUE DOBLE - RS		
CONTEÚDO - PLANTA DE FORMA FORRO		
ENDEREÇO OBRA - RUA EDIMO LUIZ TONIAL, CENTRO - CACIQUE DOBLE - RS		ESCALA - INDICADAS
PROJETO - AMPLIAÇÃO DA UNIDADE BÁSICA DE SAÚDE - CENTRO		ANEXO - <div style="font-size: 2em; font-weight: bold; text-align: center;">03-E</div>
ENG. CARLA RAGNINI AGOSTINETTO - CREA 137639-6		
		ÁREA - 107,71M ²
		DATA - MARÇO/2023



Corte A-A
escala 1:50

PREFEITURA MUNICIPAL DE CACIQUE DOBLE AV. KAINGANG, 292 - FONE - (54)3552-1244 - CACIQUE DOBLE - RS		
CONTEÚDO - CORTE AA		
ENDEREÇO OBRA - RUA EDIMO LUIZ TONIAL, CENTRO - CACIQUE DOBLE - RS		ESCALA - INDICADAS
PROJETO - AMPLIAÇÃO DA UNIDADE BÁSICA DE SAÚDE - CENTRO	ÁREA - 107,71M ²	ANEXO - 04-E
ENG. CARLA RAGNINI AGOSTINETTO - CREA 137639-6	DATA - MARÇO/2023	



Prefeitura Municipal de CaciQue Doble
Estado do Rio Grande do Sul



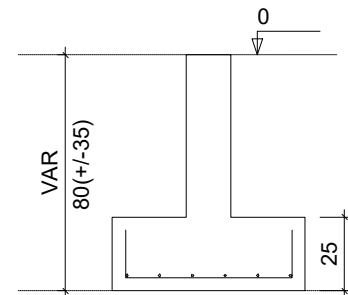
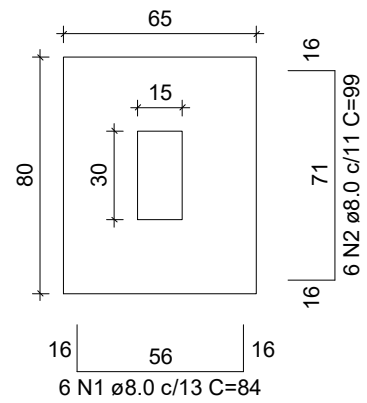
SAPATAS

Baldrame

S1=S2=S3=S4=S5=S6=S7=S8=S9=S10=S11=S12
=S13=S14=S15

PLANTA
ESC 1:25

CORTE
ESC 1:25



RELAÇÃO DO AÇO

15xS12

AÇO	N	DIAM	Q	UNIT (cm)	C.TOTAL (cm)
CA50	1	8.0	90	84	7560
	2	8.0	90	99	8910

RESUMO DO AÇO

AÇO	DIAM	C.TOTAL (m)	PESO+10% (kg)
CA50	8.0	164.7	71.5
PESO TOTAL			
CA50	71.5		

Vol. concreto (C-25) = 1.95 m³

Área de forma total = 10.88 m²

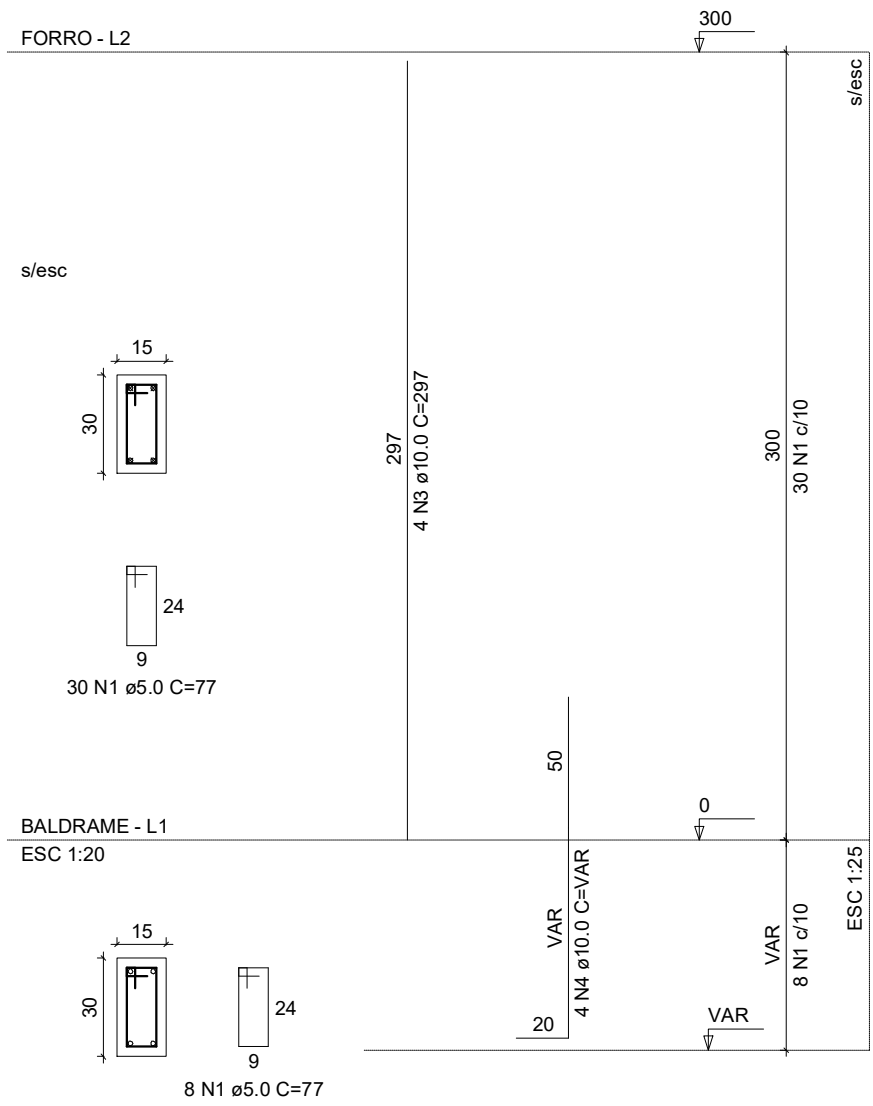


Prefeitura Municipal de Caciقة Doble
Estado do Rio Grande do Sul

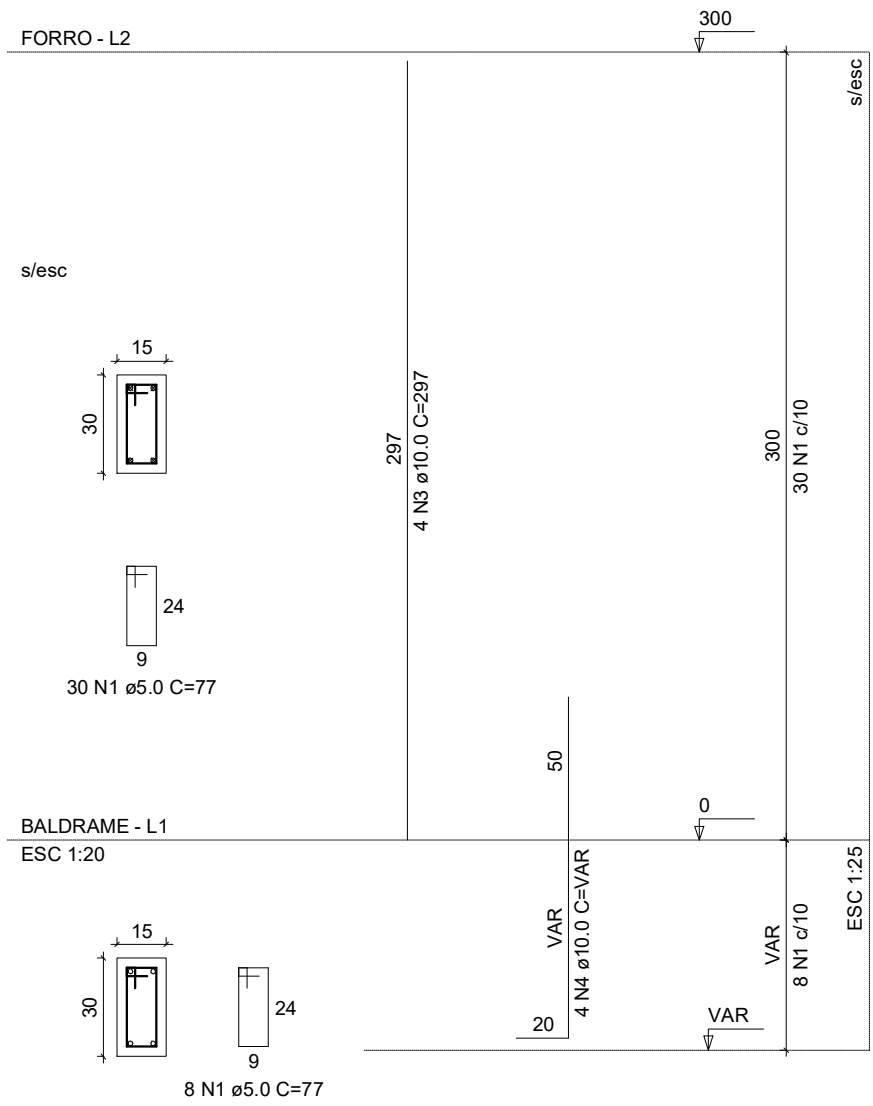


PILARES

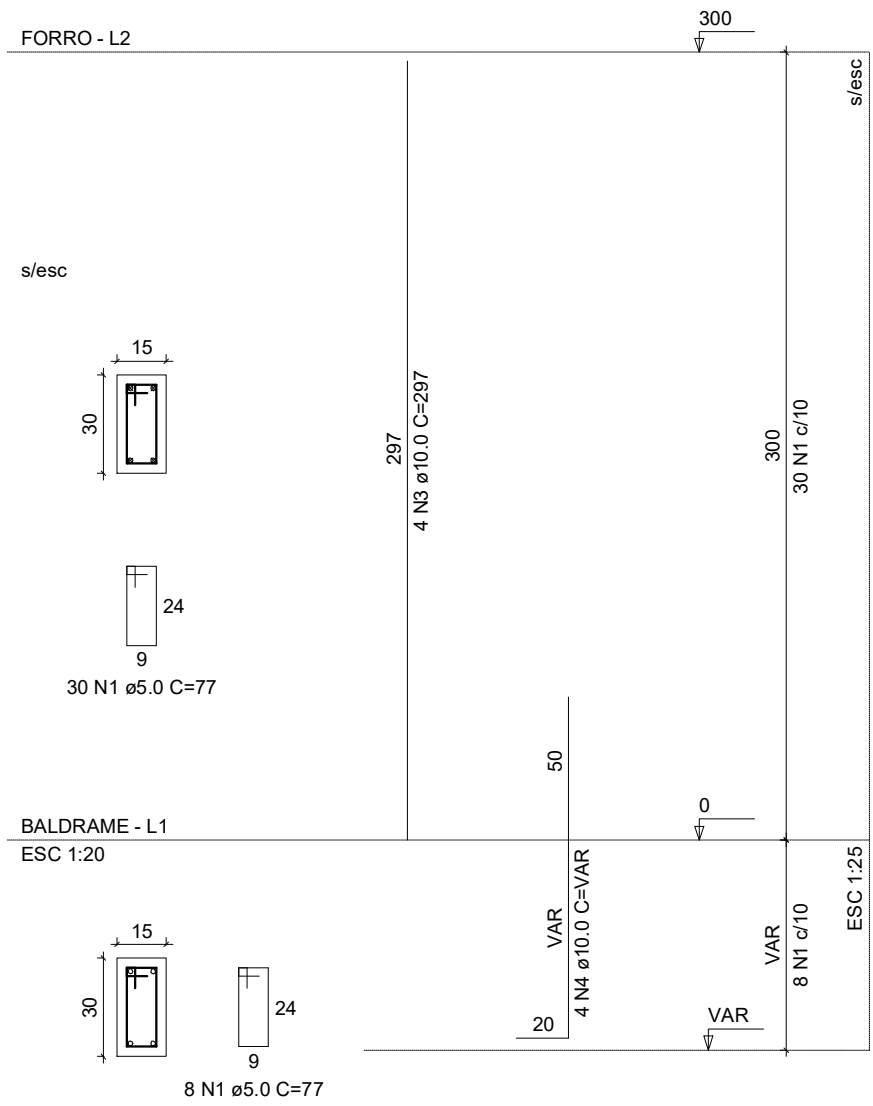
P1



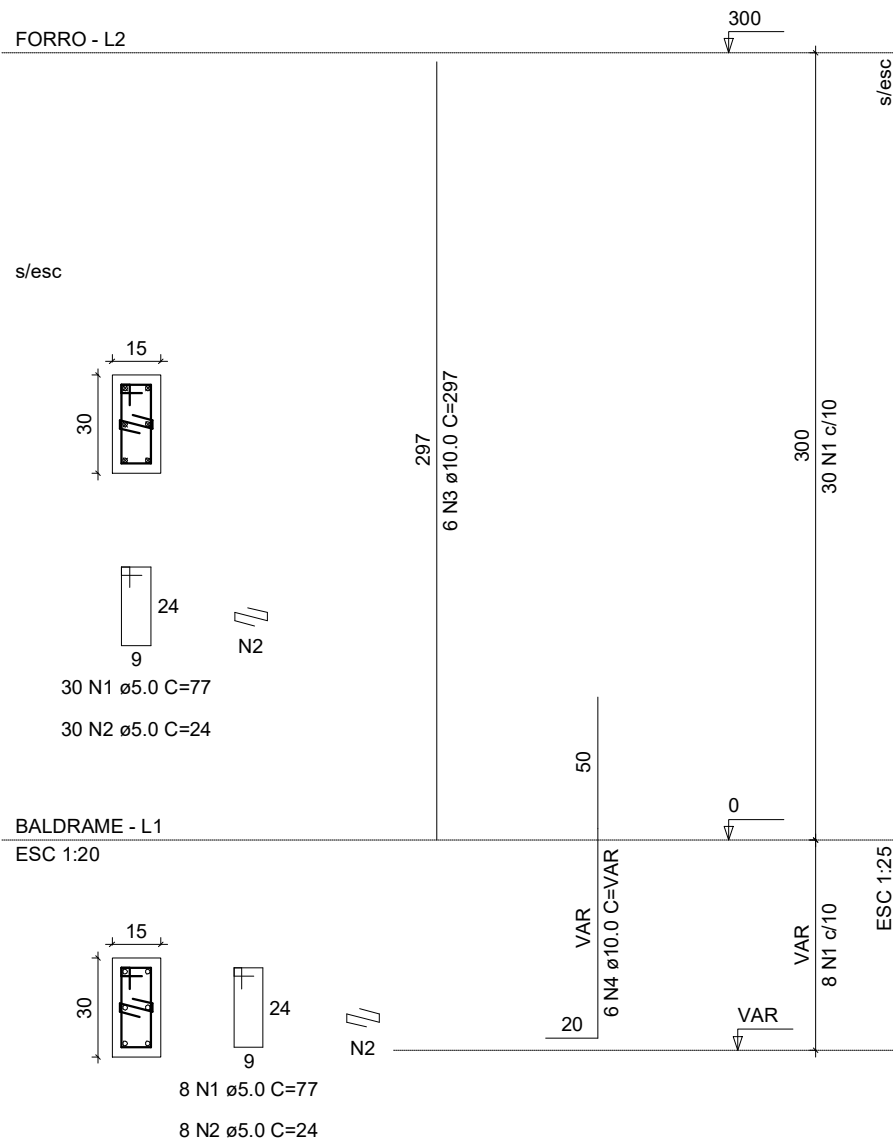
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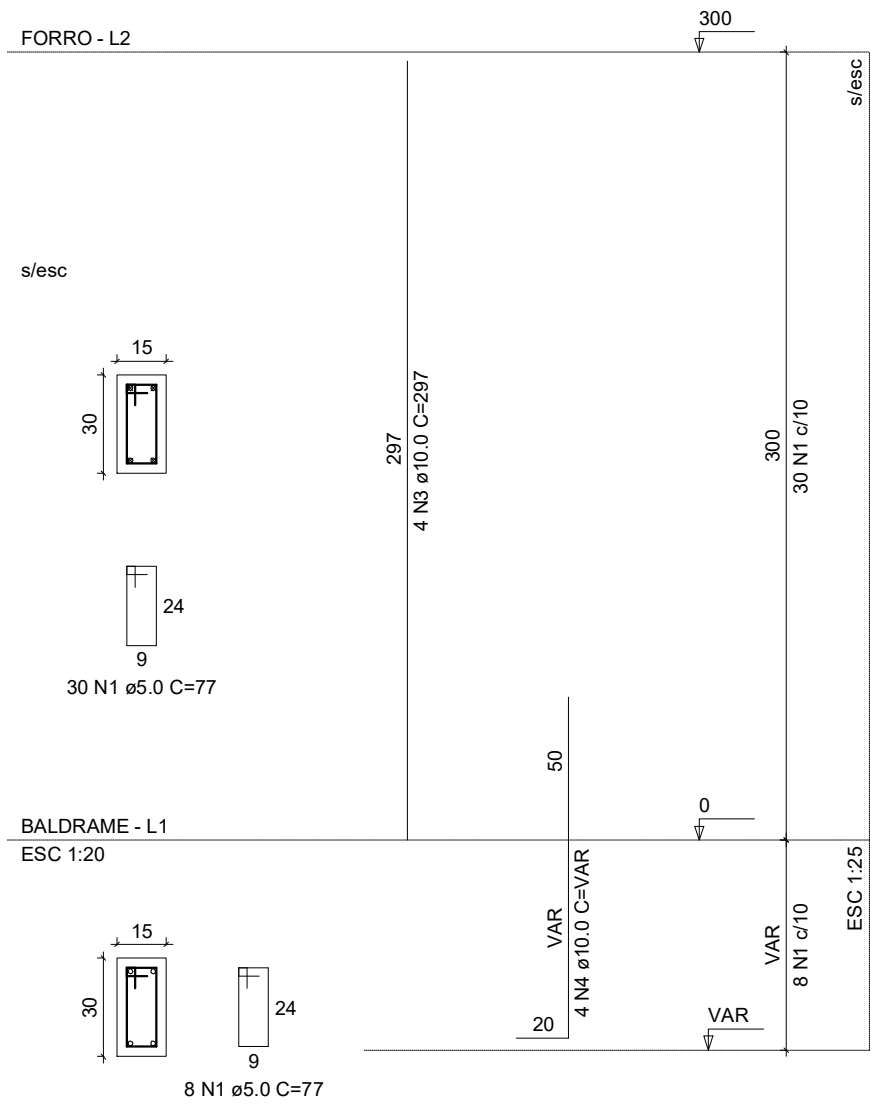
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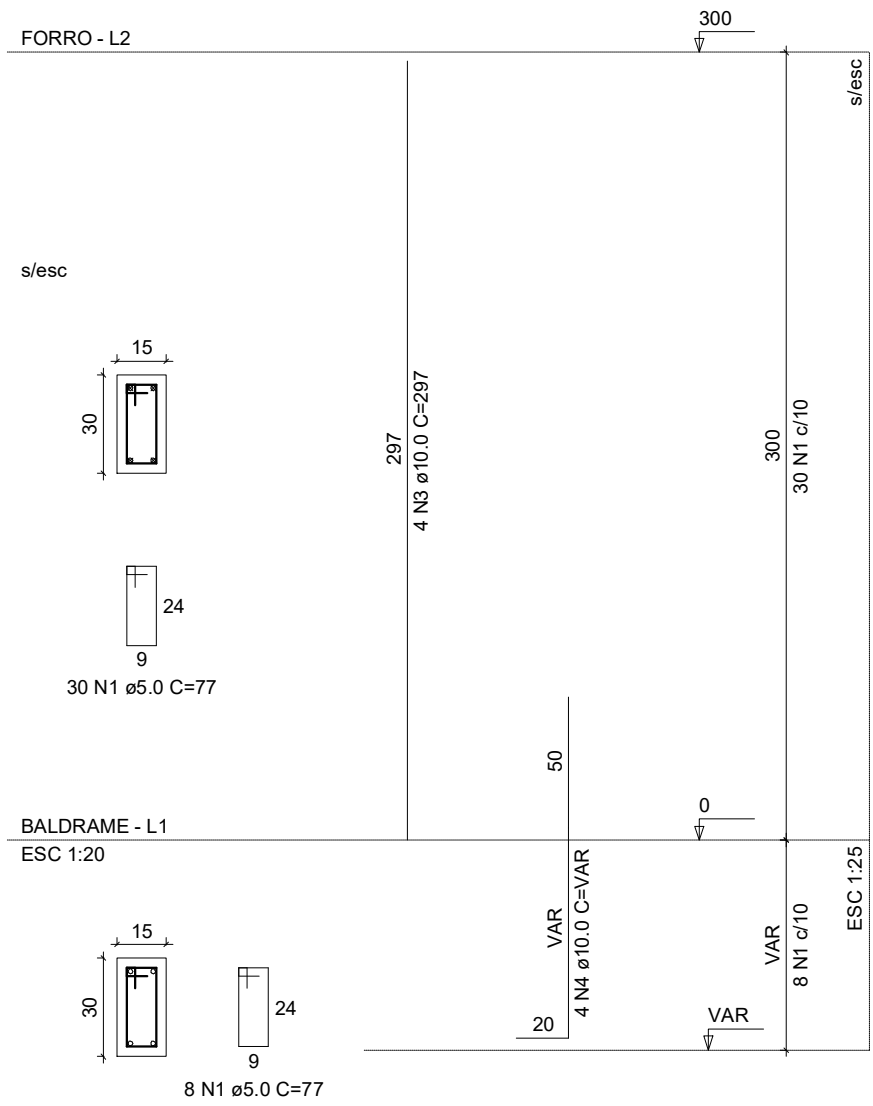
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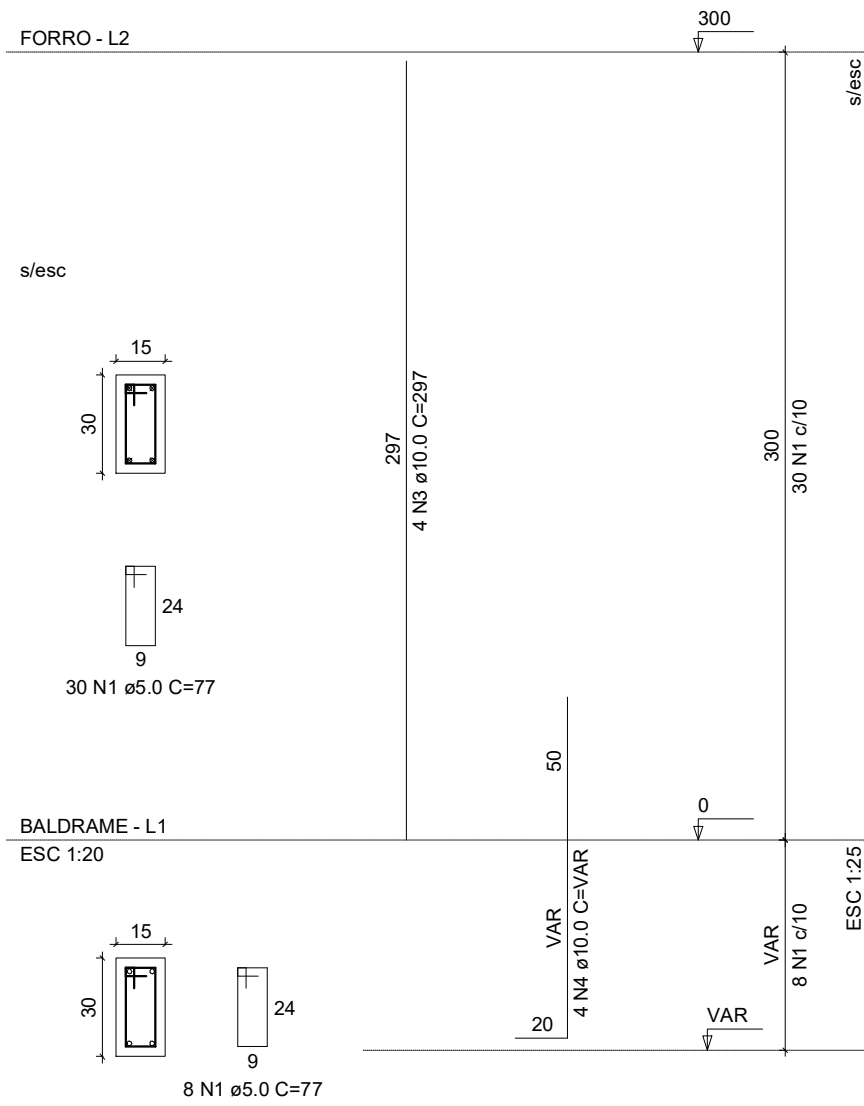
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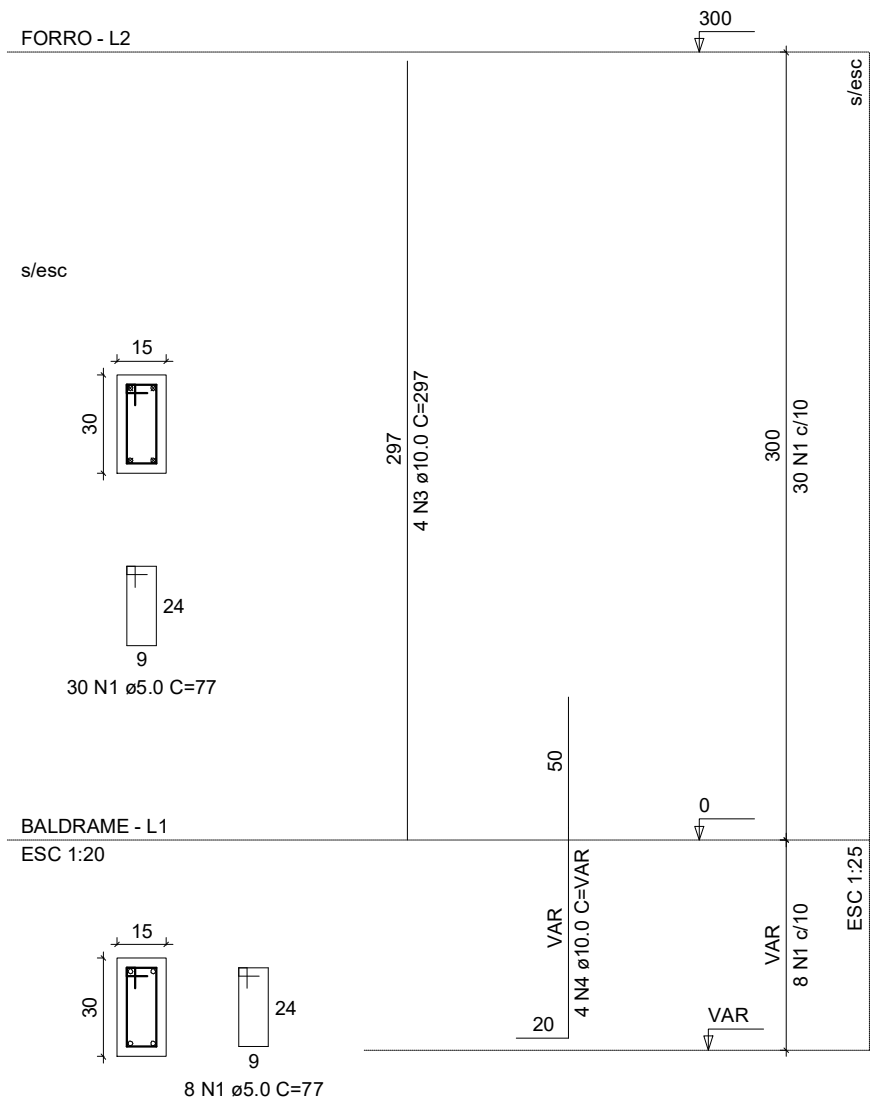
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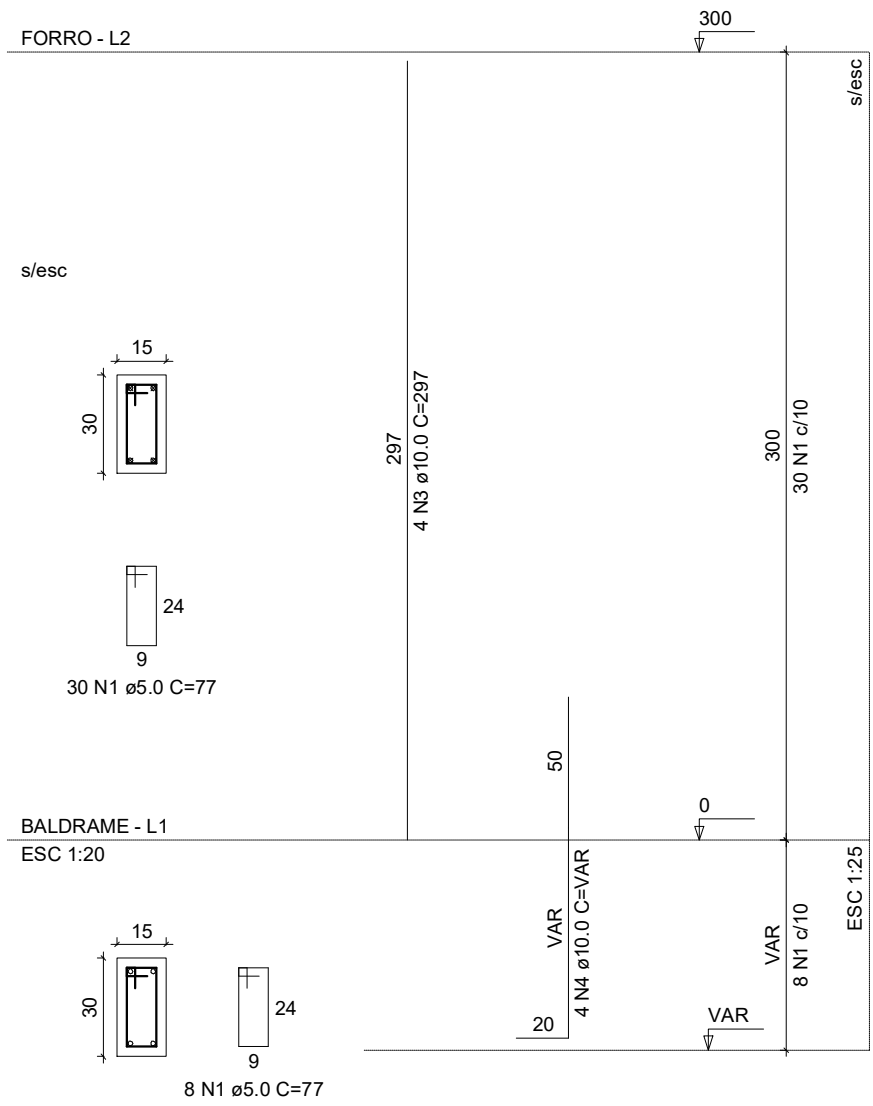
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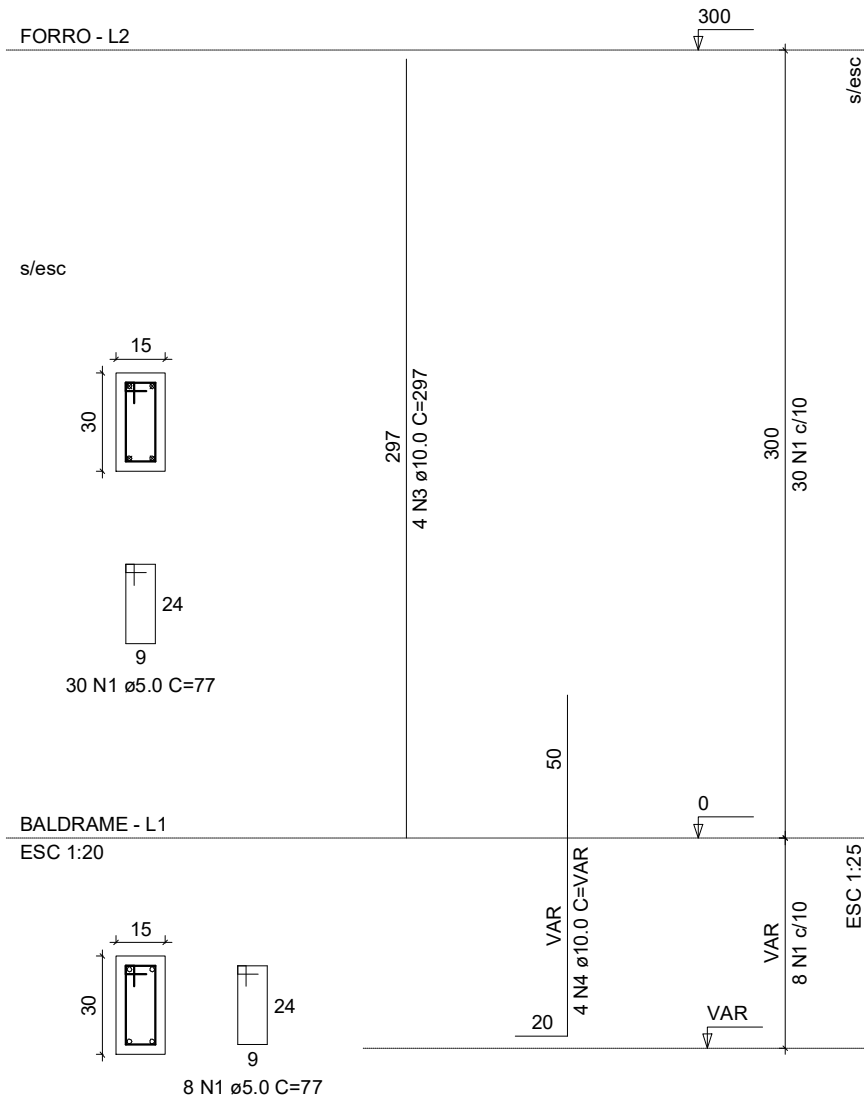
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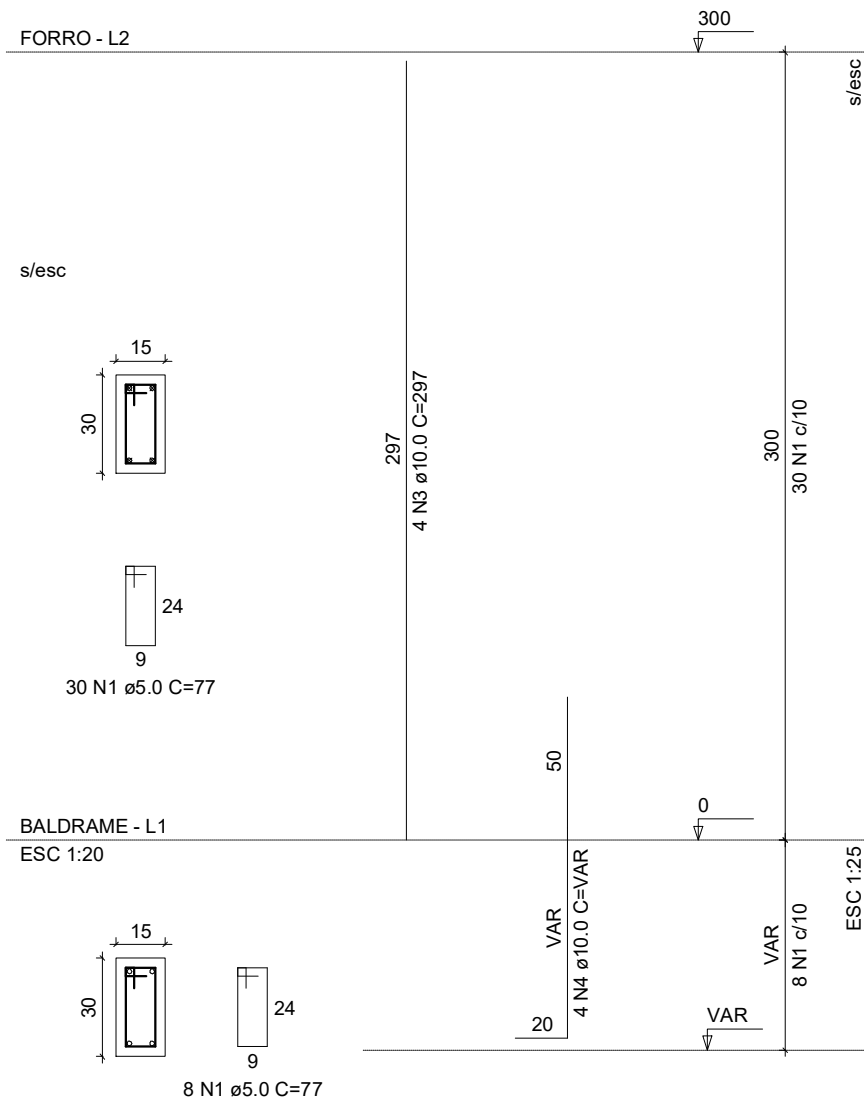
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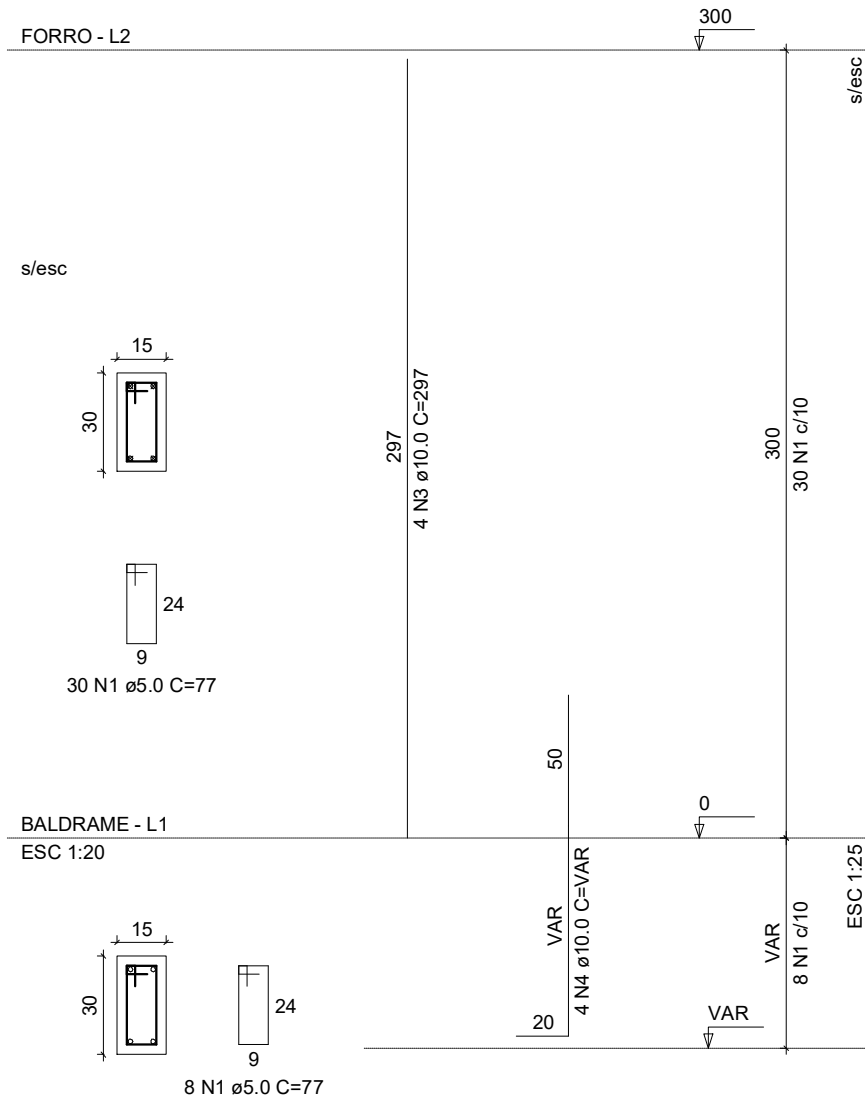
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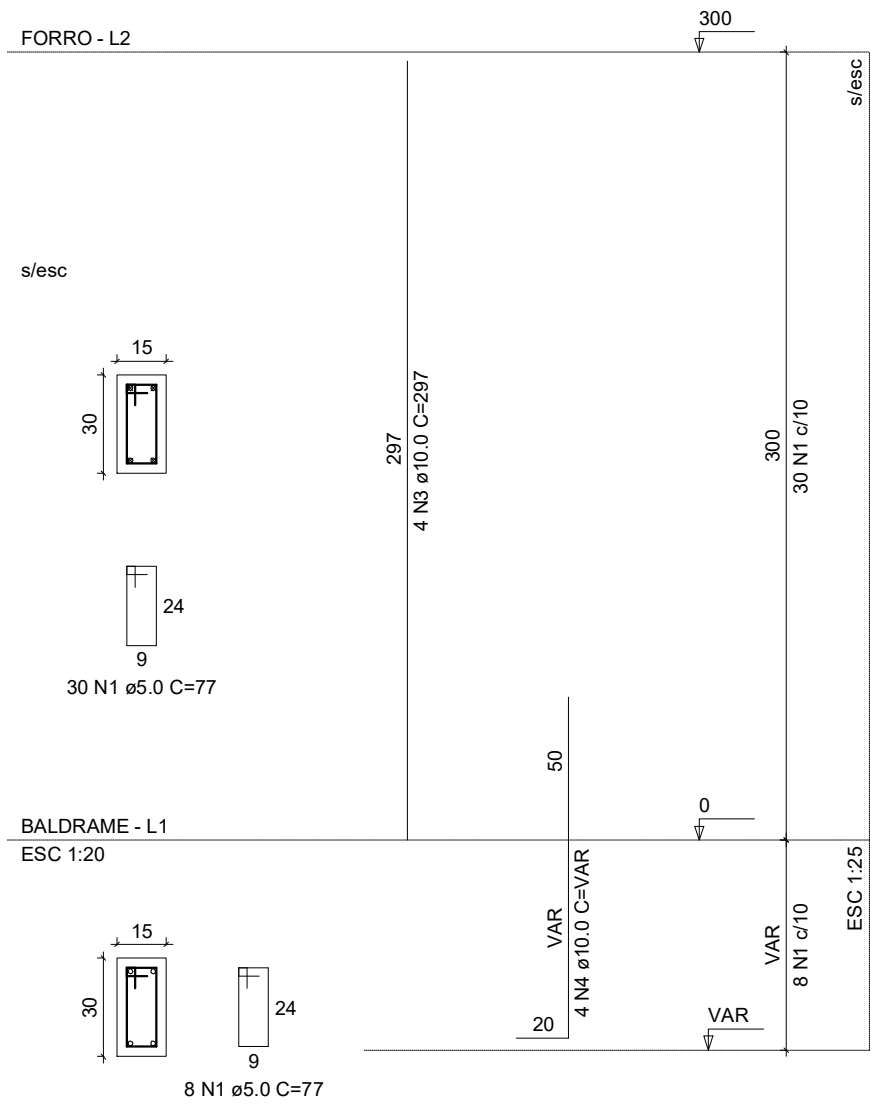
P11



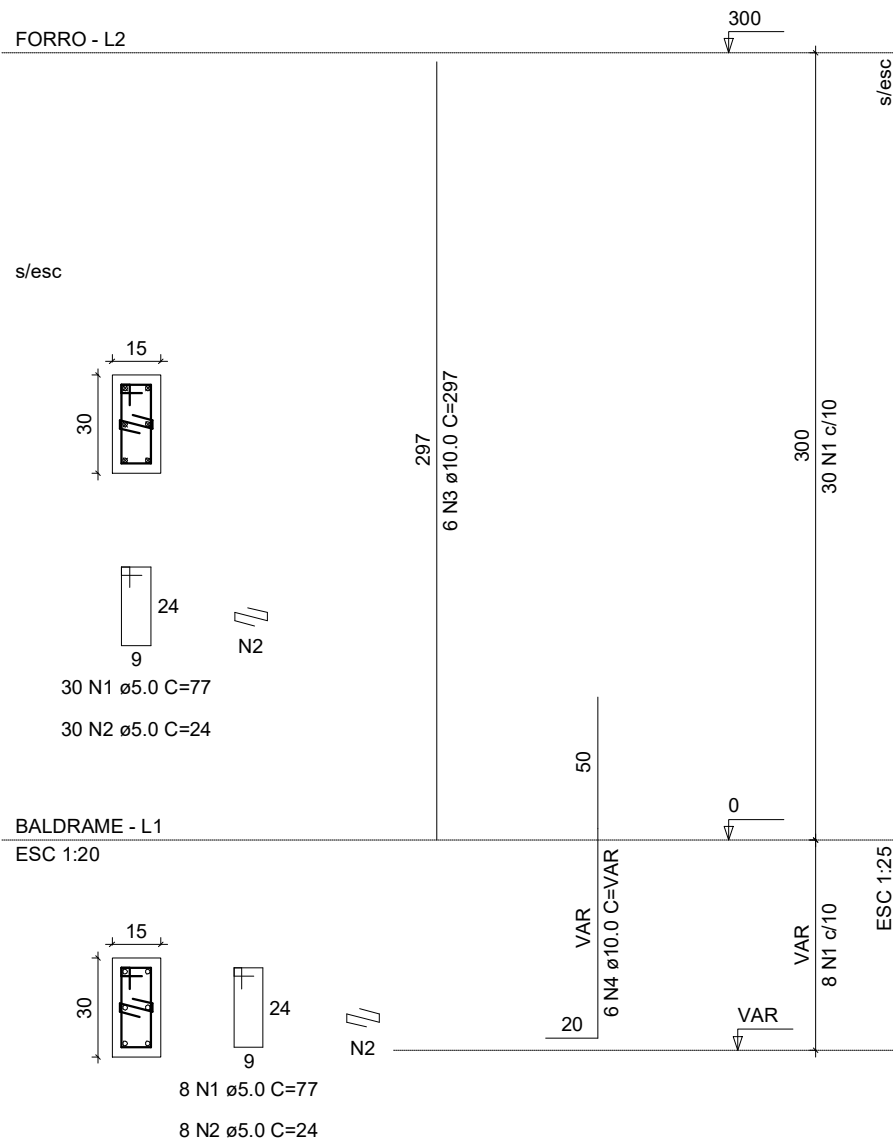
P12



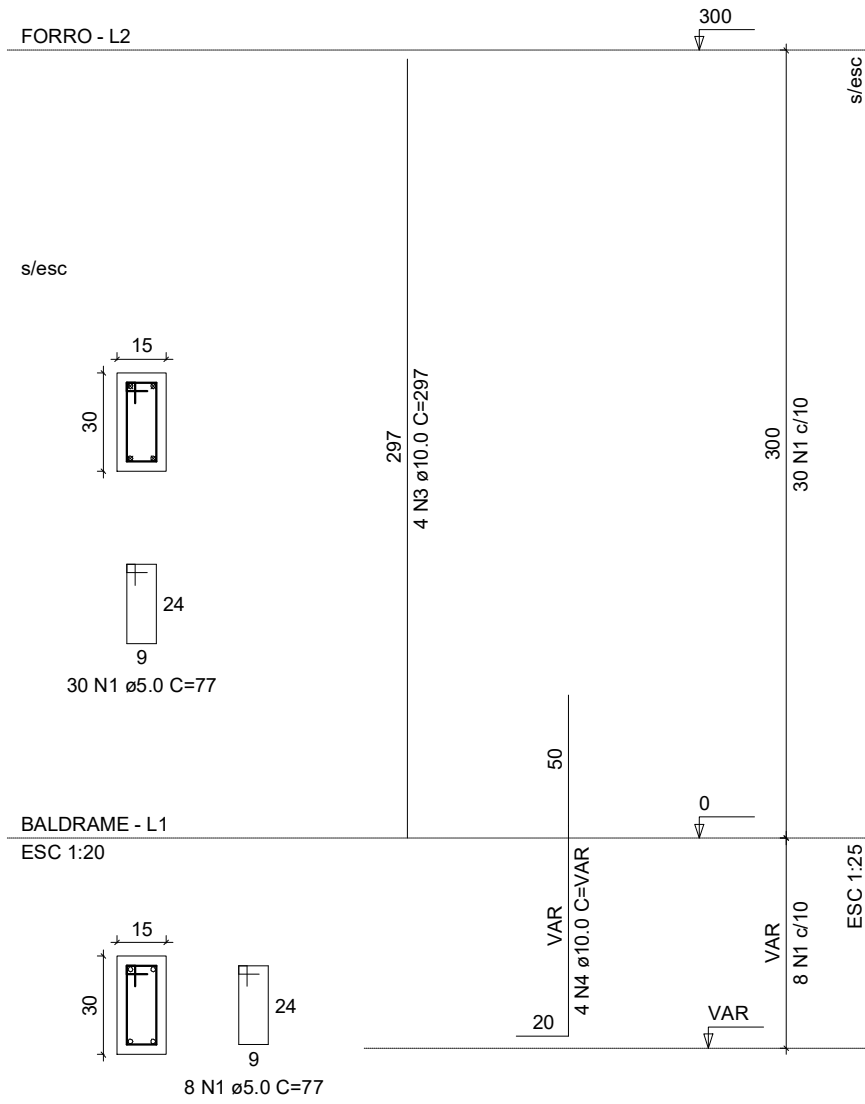
P13



P14



P15



RELAÇÃO DO AÇO

P1-L2	P2-L2	P3-L2
P4-L2	P5-L2	P6-L2
P7-L2	P8-L2	P9-L2
P10-L2	P11-L2	P12-L2
P13-L2	P14-L2	P15-L2
P1-L1	P2-L1	P3-L1
P4-L1	P5-L1	P6-L1
P7-L1	P8-L1	P9-L1
P10-L1	P11-L1	P12-L1
P13-L1	P14-L1	P15-L1

AÇO	N	DIAM	Q	UNIT (cm)	C.TOTAL (cm)
CA60	1	5.0	570	77	43890
	2	5.0	76	24	1824
CA50	3	10.0	64	297	19008
	4	10.0	64	VAR	VAR

RESUMO DO AÇO

AÇO	DIAM	C.TOTAL (m)	PESO+10% (kg)
CA50	10.0	284.8	193.1
CA60	5.0	457.1	77.5
PESO TOTAL			
CA50	193.1		
CA60	77.5		

Vol. concreto (C-25) = 2.56 m³

Área de forma total = 51.30 m²



Prefeitura Municipal de CaciQue Doble
Estado do Rio Grande do Sul

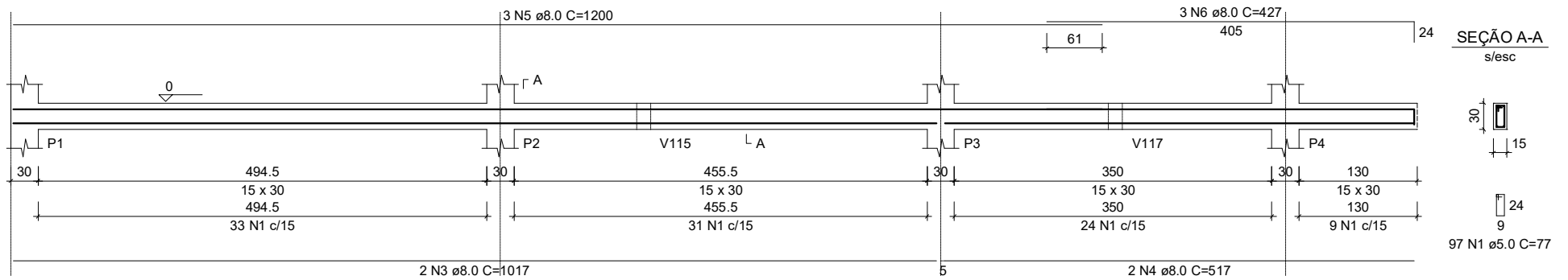


VIGAS DE BALDRAME

Baldrame

V101 (15 x 30)

s/esc



Baldrame

V102 (25 x 30)

ESC 1:50

3 N8 \varnothing 8.0 C=71

24 | 29 | 22

Γ₀A



L A V112
35

25 x 30

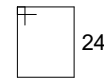
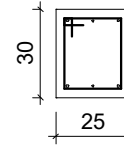
20

2N2c/15

3 N7 \varnothing 8.0 C=29

SEÇÃO A-A

ESC 1:25



19

2 N2 \varnothing 5.0 C=97

Baldrame
V103 (25 x 30)
ESC 1:50

3 N8 ϕ 8.0 C=71

24 | 29 | 22

Γ⁰A



L A V112
35

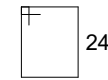
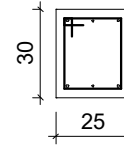
25 x 30

20

2N2c/15

3 N7 ϕ 8.0 C=29

SEÇÃO A-A
ESC 1:25



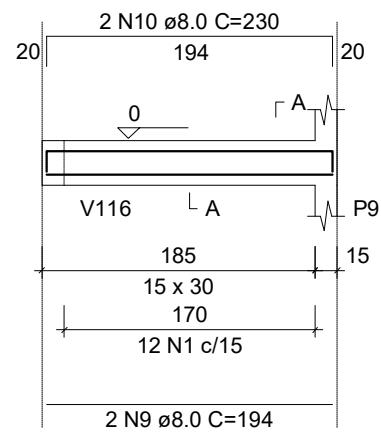
19

2 N2 ϕ 5.0 C=97

Baldrame

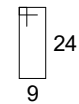
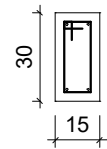
V104 (15 x 30)

ESC 1:50



SEÇÃO A-A

ESC 1:25

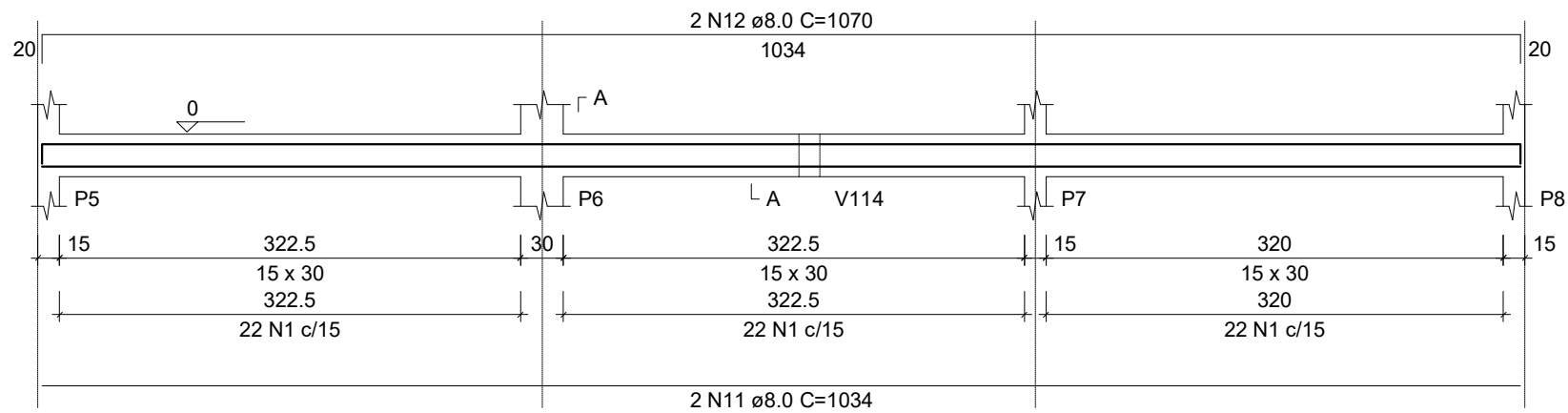


12 N1 \varnothing 5.0 C=77

Baldrame

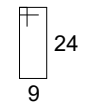
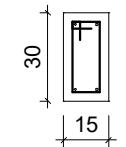
V105 (15 x 30)

ESC 1:50



SEÇÃO A-A

ESC 1:25



66 N1 ø5.0 C=77

Baldrame
V106 (25 x 30)
ESC 1:50

3 N8 \varnothing 8.0 C=71

24 | 29 | 22

Γ⁰A



L A V112
35

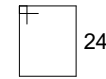
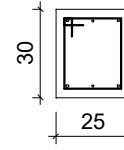
25 x 30

20

2N2c/15

3 N7 \varnothing 8.0 C=29

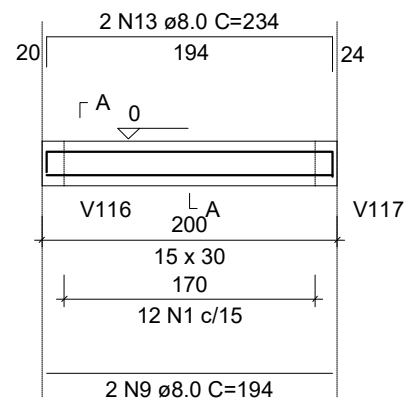
SEÇÃO A-A
ESC 1:25



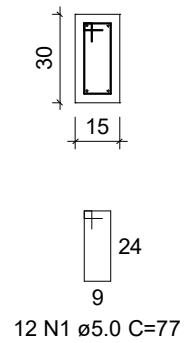
19

2 N2 \varnothing 5.0 C=97

Baldrame
V107 (15 x 30)
ESC 1:50



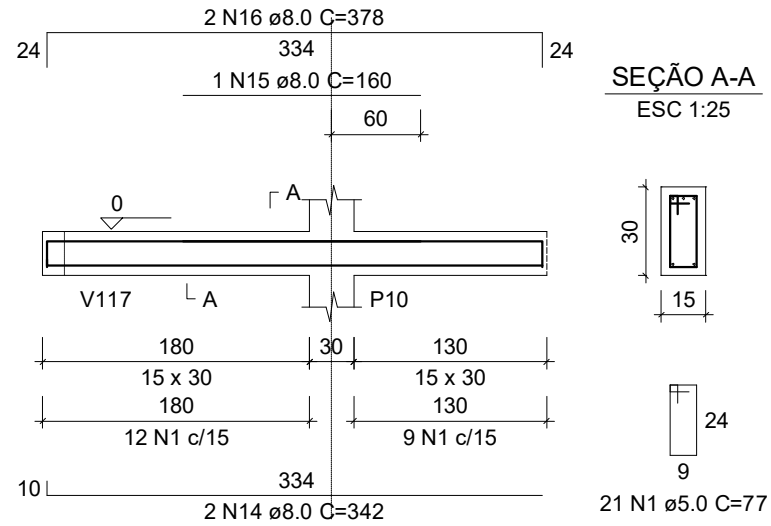
SEÇÃO A-A
ESC 1:25



Baldrame

V108 (15 x 30)

ESC 1:50



Baldrame

V109 (25 x 30)

ESC 1:50

3 N8 \varnothing 8.0 C=71

24 | 29 | 22

Γ⁰A



L A V112

35

25 x 30

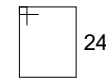
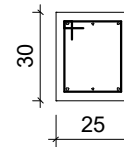
20

2N2c/15

3 N7 \varnothing 8.0 C=29

SEÇÃO A-A

ESC 1:25



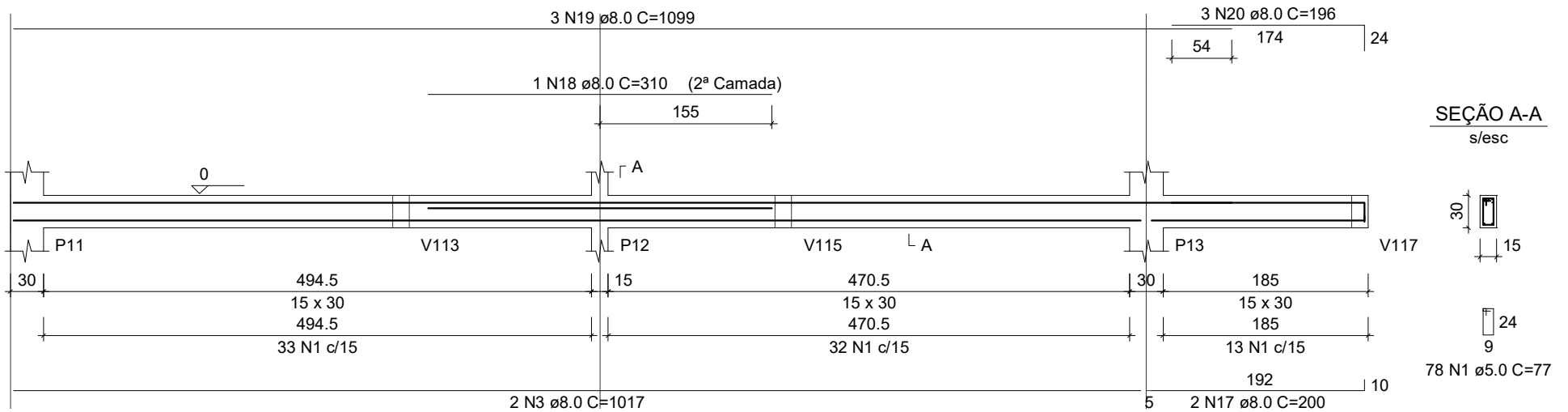
19

2 N2 \varnothing 5.0 C=97

Baldrame

V110 (15 x 30)

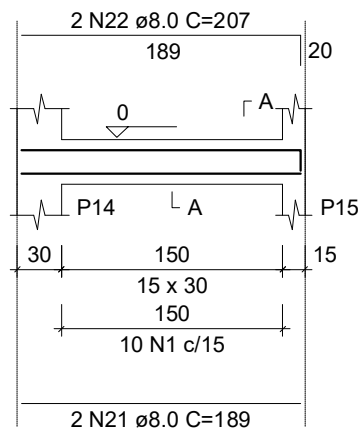
s/esc



Baldrame

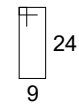
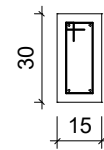
V111 (15 x 30)

ESC 1:50



SEÇÃO A-A

ESC 1:25

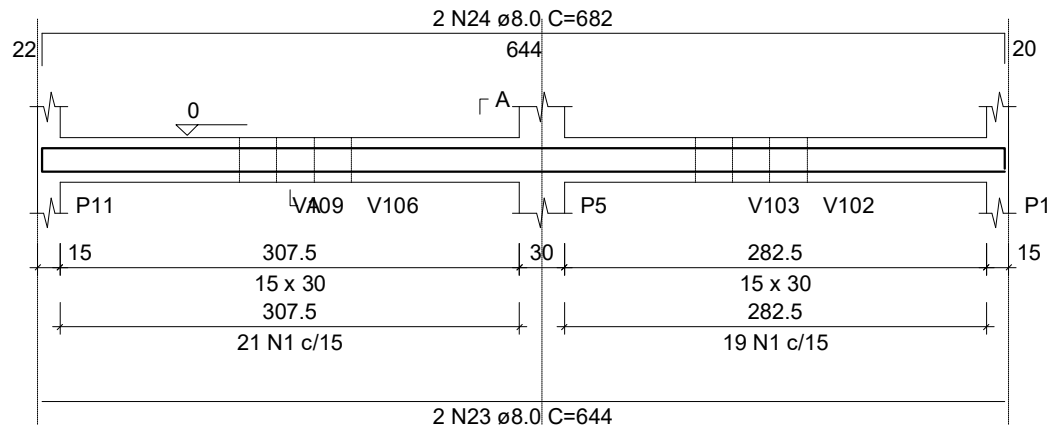


10 N1 \varnothing 5.0 C=77

Baldrame

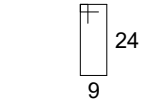
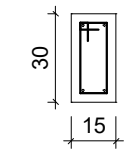
V112 (15 x 30)

ESC 1:50



SEÇÃO A-A

ESC 1:25

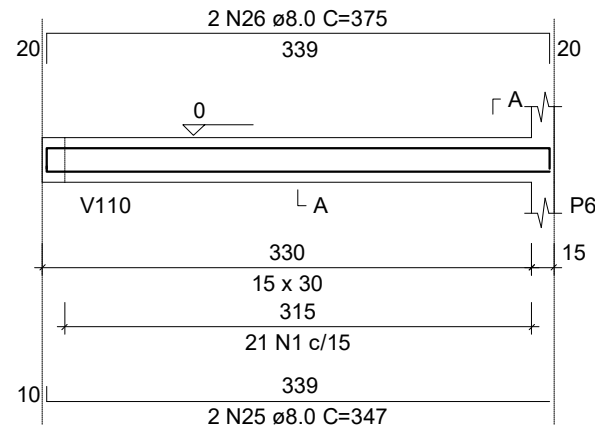


40 N1 ø5.0 C=77

Baldrame

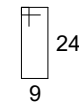
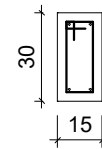
V113 (15 x 30)

ESC 1:50



SEÇÃO A-A

ESC 1:25

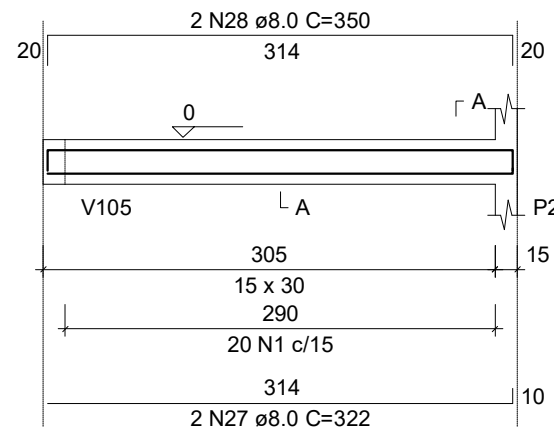


21 N1 ø5.0 C=77

Baldrame

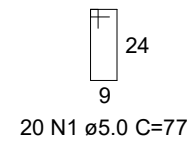
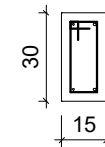
V114 (15 x 30)

ESC 1:50



SEÇÃO A-A

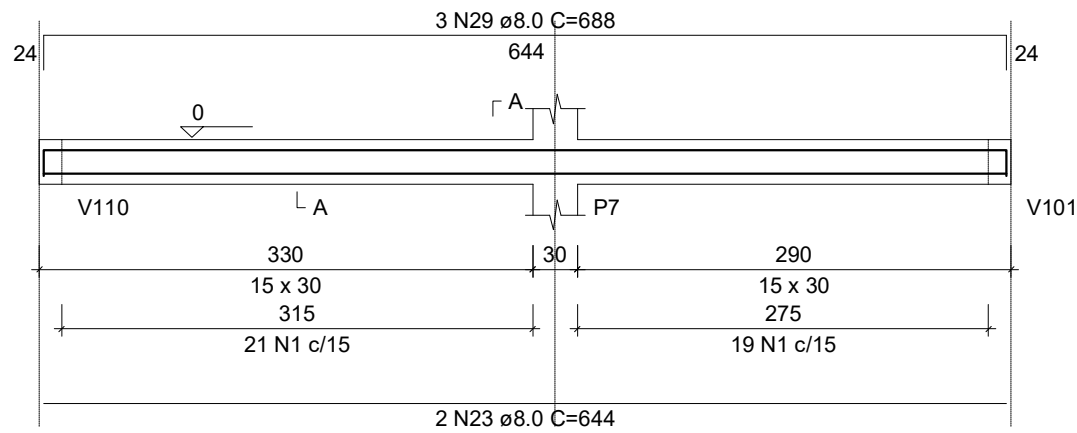
ESC 1:25



Baldrame

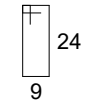
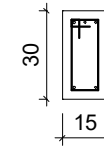
V115 (15 x 30)

ESC 1:50



SEÇÃO A-A

ESC 1:25

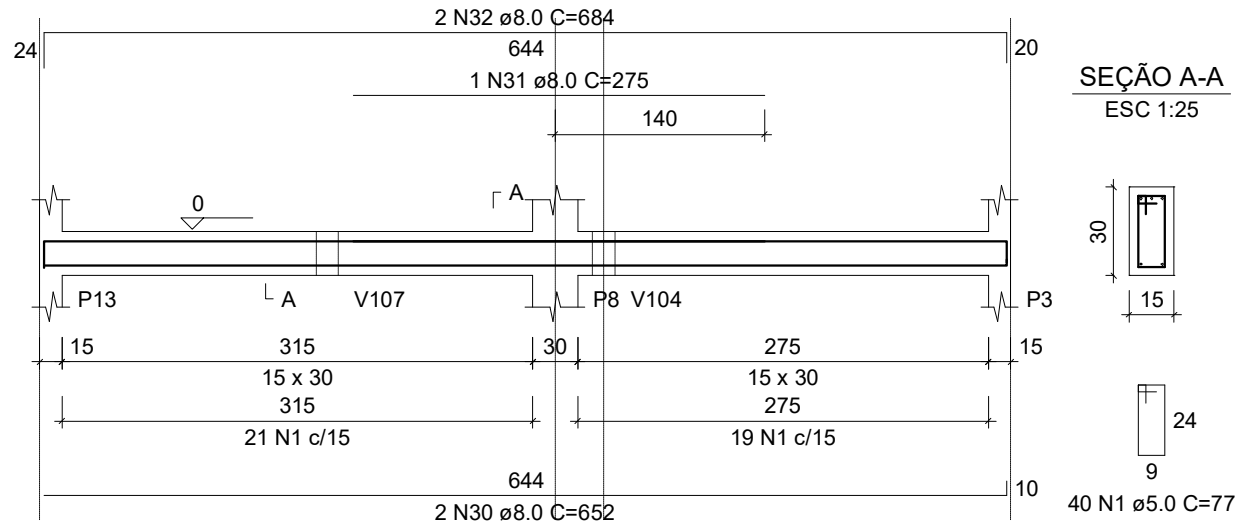


40 N1 \varnothing 5.0 C=77

Baldrame

V116 (15 x 30)

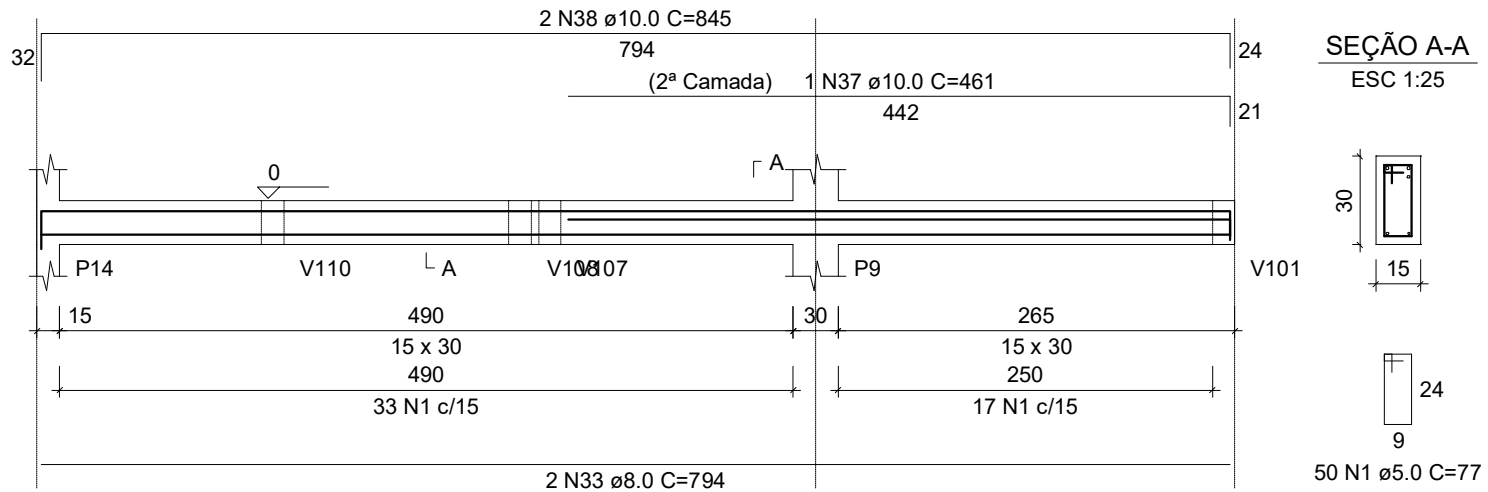
ESC 1:50



Baldrame

V117 (15 x 30)

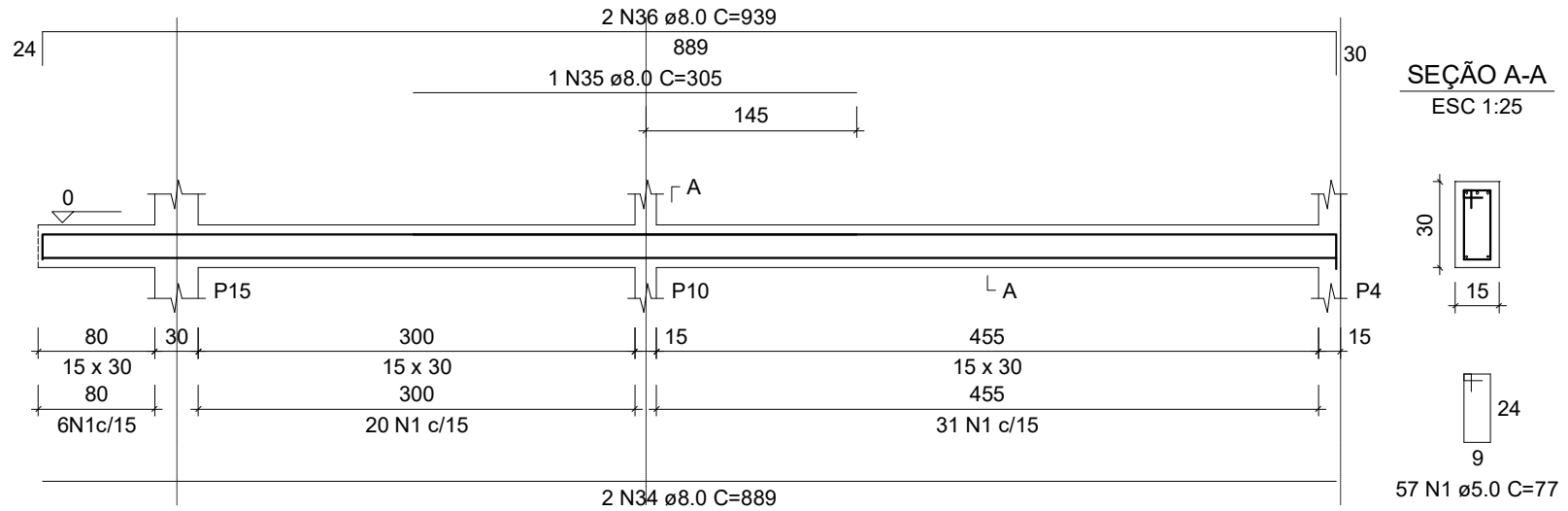
ESC 1:50



Baldrame

V118 (15 x 30)

ESC 1:50



RELAÇÃO DO AÇO

V101	V102	V103
V104	V105	V106
V107	V108	V109
V110	V111	V112
V113	V114	V115
V116	V117	V118

AÇO	N	DIAM	Q	UNIT (cm)	C.TOTAL (cm)
CA60	1	5.0	564	77	43428
	2	5.0	8	97	776
CA50	3	8.0	4	1017	4068
	4	8.0	2	517	1034
	5	8.0	3	1200	3600
	6	8.0	3	427	1281
	7	8.0	12	29	348
	8	8.0	12	71	852
	9	8.0	4	194	776
	10	8.0	2	230	460
	11	8.0	2	1034	2068
	12	8.0	2	1070	2140
	13	8.0	2	234	468
	14	8.0	2	342	684
	15	8.0	1	160	160
	16	8.0	2	378	756
	17	8.0	2	200	400
	18	8.0	1	310	310
	19	8.0	3	1099	3297
	20	8.0	3	196	588
	21	8.0	2	189	378
	22	8.0	2	207	414
	23	8.0	4	644	2576
	24	8.0	2	682	1364
	25	8.0	2	347	694
	26	8.0	2	375	750
	27	8.0	2	322	644
	28	8.0	2	350	700
	29	8.0	3	688	2064
	30	8.0	2	652	1304
	31	8.0	1	275	275
	32	8.0	2	684	1368
	33	8.0	2	794	1588
	34	8.0	2	889	1778
	35	8.0	1	305	305
	36	8.0	2	939	1878
	37	10.0	1	461	461
	38	10.0	2	845	1690

RESUMO DO AÇO

AÇO	DIAM	C.TOTAL (m)	PESO+10% (kg)
CA50	8.0	413.7	179.6
	10.0	21.5	14.6
CA60	5.0	442.0	74.9
PESO TOTAL			
CA50	194.2		
CA60	74.9		

Vol. concreto (C-25) = 4.18 m³

Área de forma total = 69.14 m²

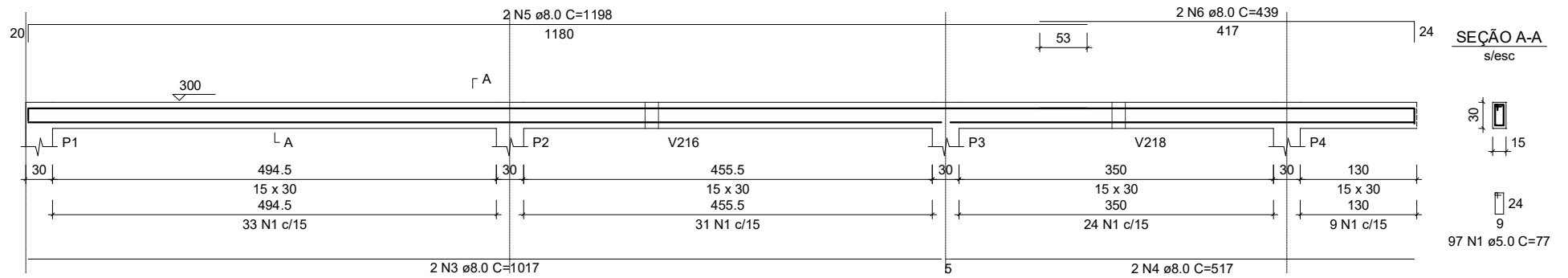


Prefeitura Municipal de Caciقة Doble
Estado do Rio Grande do Sul

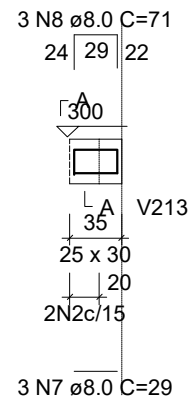


VIGAS FORRO

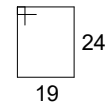
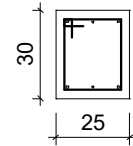
Forro
V201 (15 x 30)
 s/esc



Forro
V202 (25 x 30)
ESC 1:50

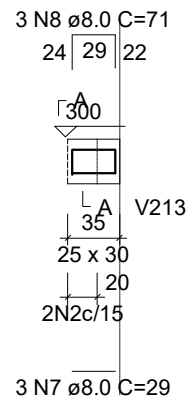


SEÇÃO A-A
ESC 1:25

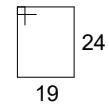
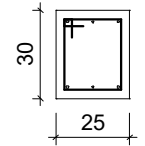


2 N2 ϕ 5.0 C=97

Forro
V203 (25 x 30)
ESC 1:50

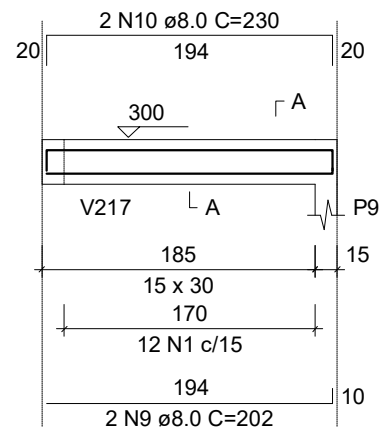


SEÇÃO A-A
ESC 1:25

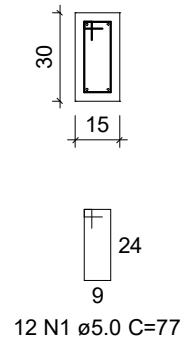


2 N2 ϕ 5.0 C=97

Forro
V204 (15 x 30)
ESC 1:50



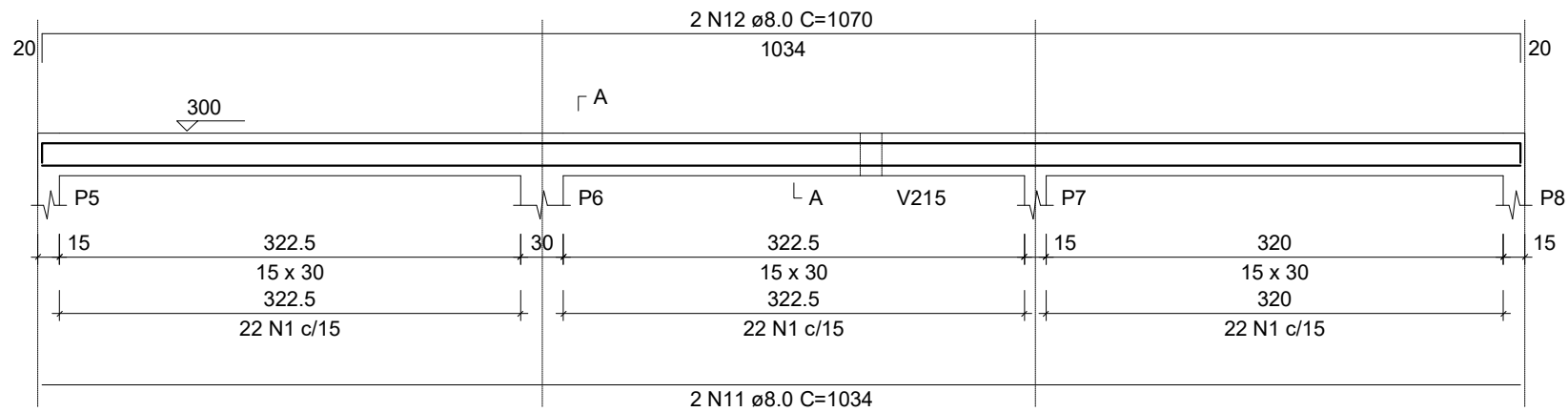
SEÇÃO A-A
ESC 1:25



Forro

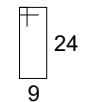
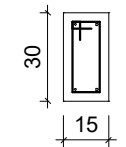
V205 (15 x 30)

ESC 1:50



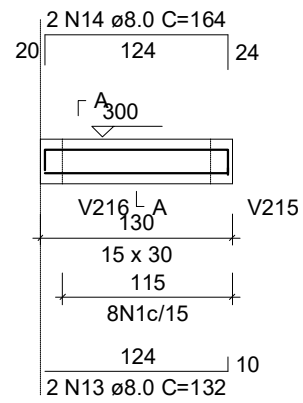
SEÇÃO A-A

ESC 1:25

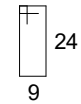
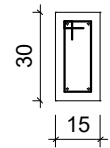


66 N1 ϕ 5.0 C=77

Forro
V206 (15 x 30)
 ESC 1:50

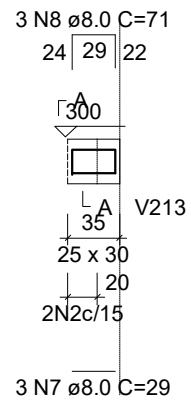


SEÇÃO A-A
 ESC 1:25

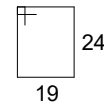
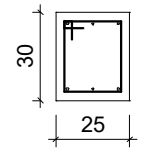


8 N1 ø5.0 C=77

Forro
V207 (25 x 30)
ESC 1:50

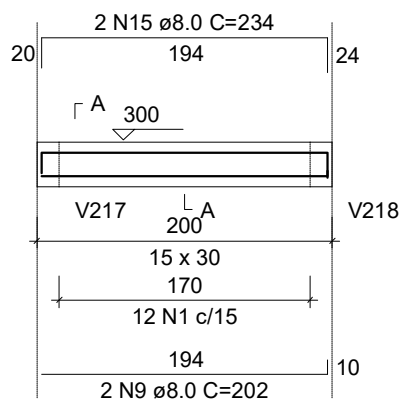


SEÇÃO A-A
ESC 1:25

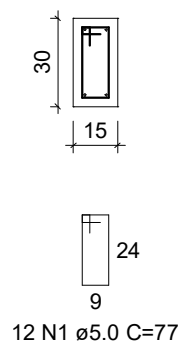


2 N2 ø5.0 C=97

Forro
V208 (15 x 30)
ESC 1:50



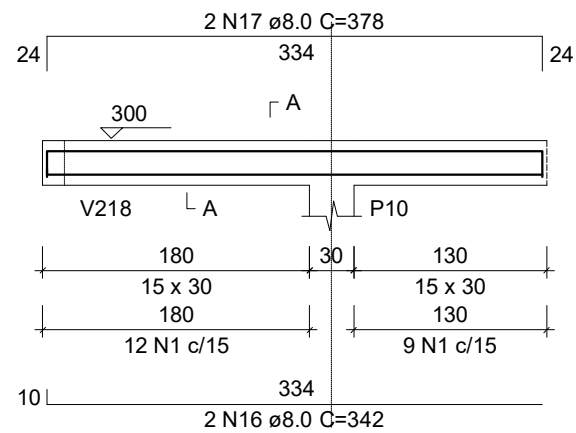
SEÇÃO A-A
ESC 1:25



Forro

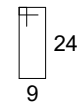
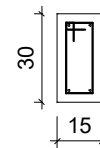
V209 (15 x 30)

ESC 1:50



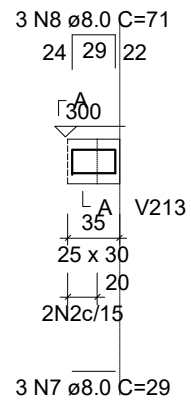
SEÇÃO A-A

ESC 1:25

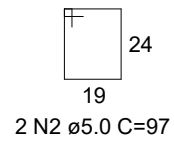
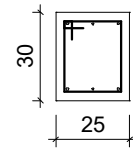


21 N1 ø5.0 C=77

Forro
V210 (25 x 30)
ESC 1:50



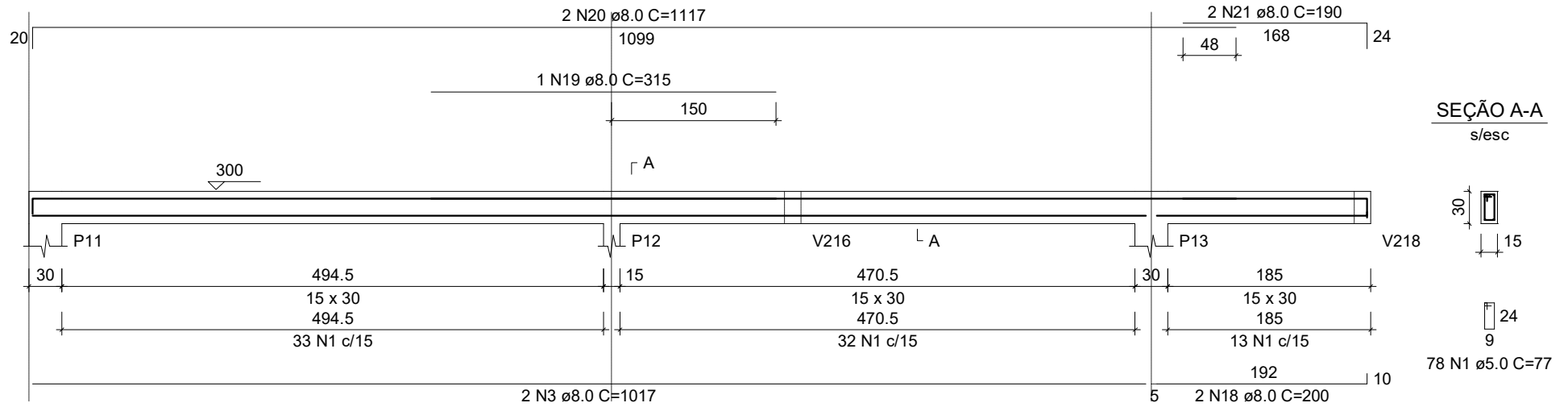
SEÇÃO A-A
ESC 1:25



Forro

V211 (15 x 30)

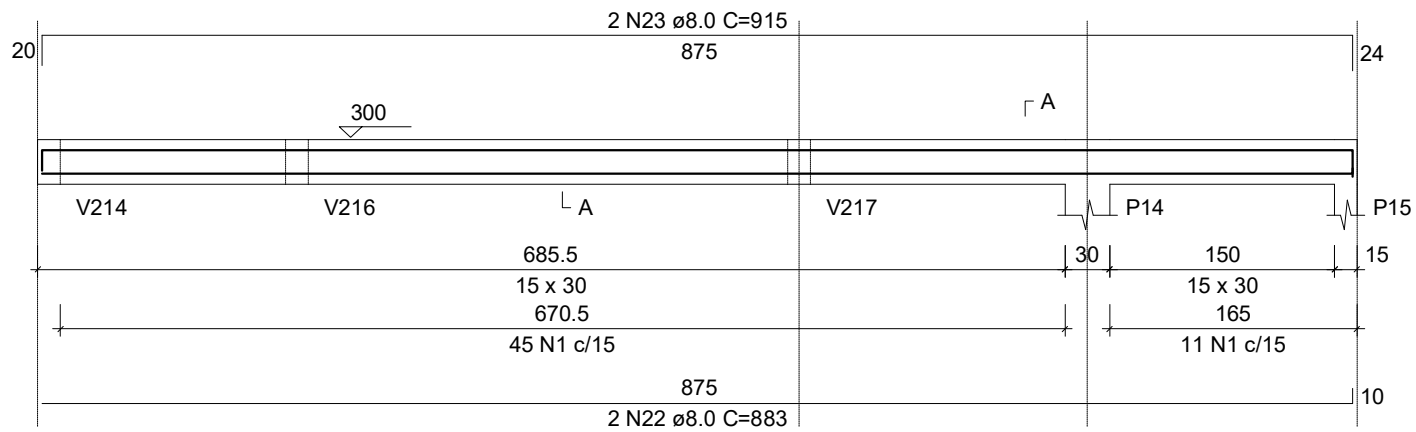
s/esc



Forro

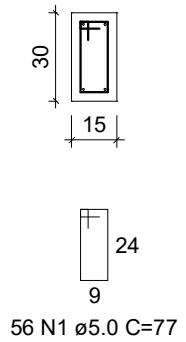
V212 (15 x 30)

ESC 1:50

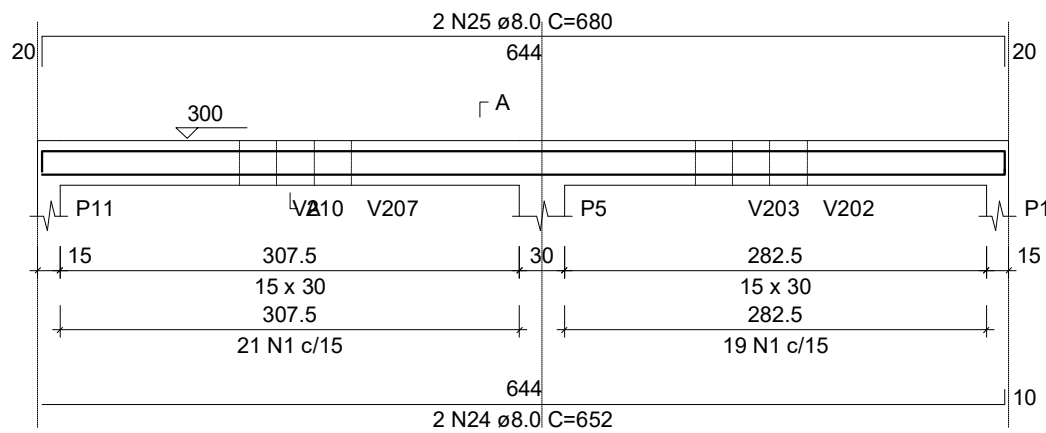


SEÇÃO A-A

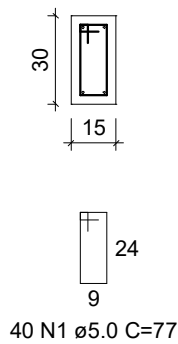
ESC 1:25



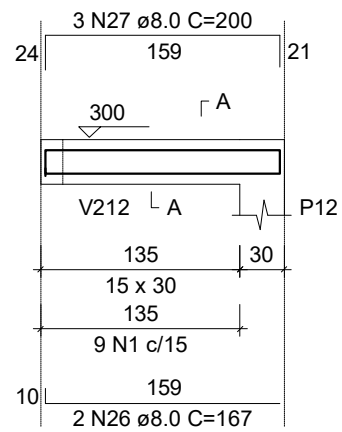
Forro
V213 (15 x 30)
 ESC 1:50



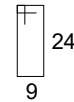
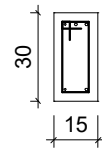
SEÇÃO A-A
 ESC 1:25



Forro
V214 (15 x 30)
 ESC 1:50

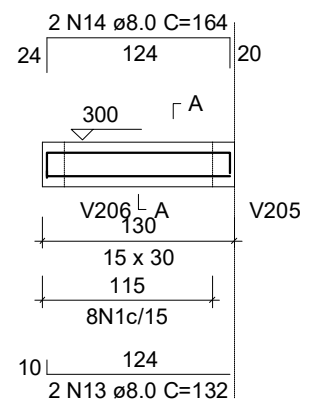


SEÇÃO A-A
 ESC 1:25

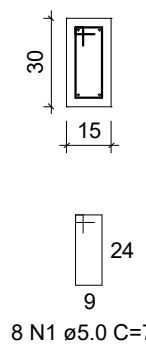


9 N1 ø5.0 C=77

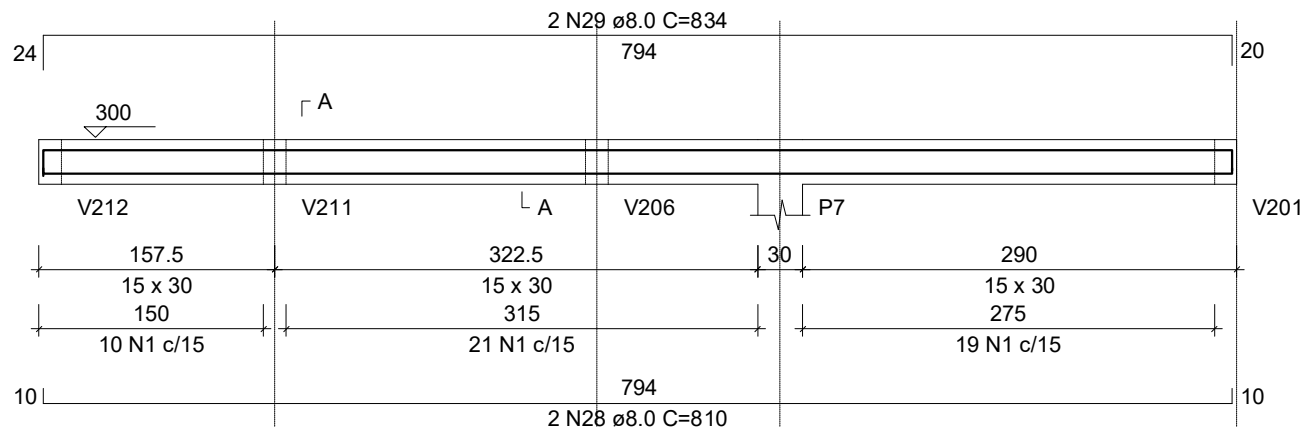
Forro
V215 (15 x 30)
 ESC 1:50



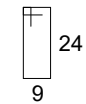
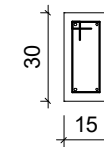
SEÇÃO A-A
 ESC 1:25



Forro
V216 (15 x 30)
 ESC 1:50

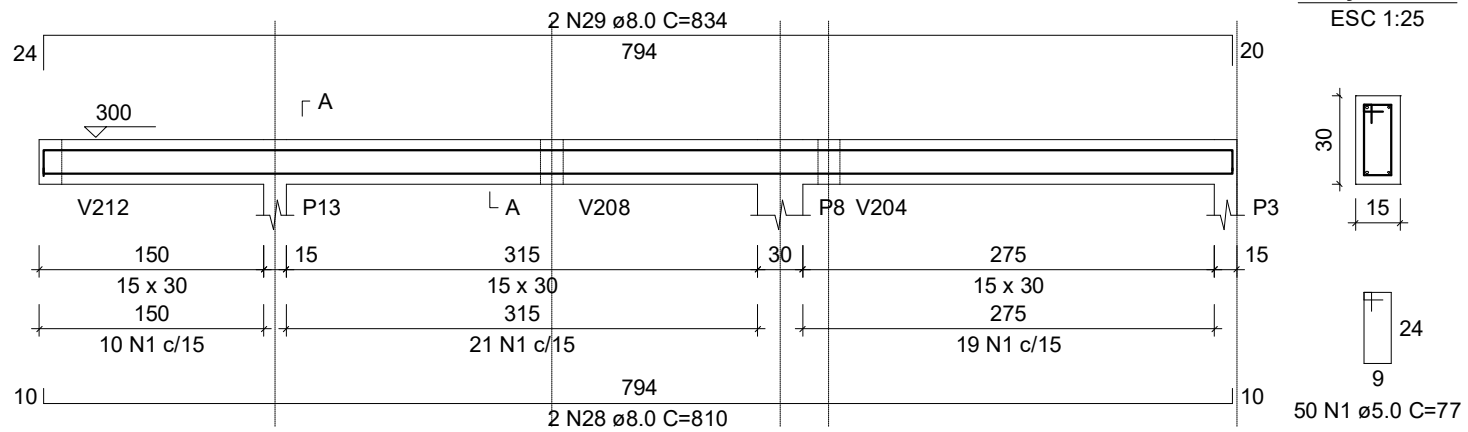


SEÇÃO A-A
 ESC 1:25



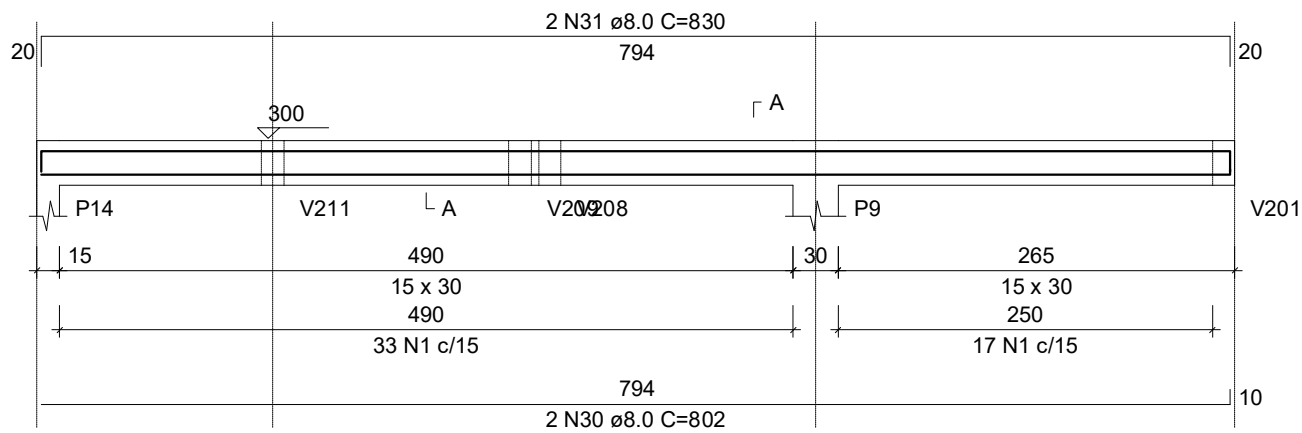
50 N1 ø5.0 C=77

Forro
V217 (15 x 30)
 ESC 1:50

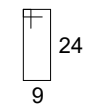
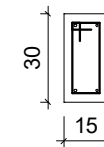


SEÇÃO A-A
 ESC 1:25

Forro
V218 (15 x 30)
 ESC 1:50

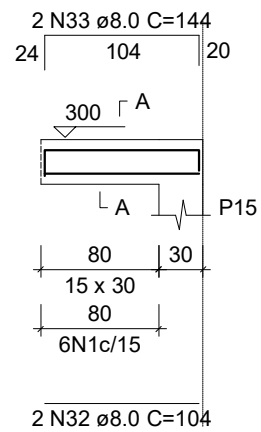


SEÇÃO A-A
 ESC 1:25

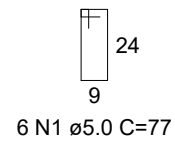
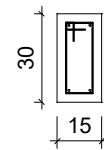


50 N1 ø5.0 C=77

Forro
V219 (15 x 30)
ESC 1:50



SEÇÃO A-A
ESC 1:25



RELAÇÃO DO AÇO

V201	V202	V203
V204	V205	V206
V207	V208	V209
V210	V211	V212
V213	V214	V215
V216	V217	V218
V219		

AÇO	N	DIAM	Q	UNIT (cm)	C.TOTAL (cm)
CA60	1	5.0	563	77	43351
	2	5.0	8	97	776
CA50	3	8.0	4	1017	4068
	4	8.0	2	517	1034
	5	8.0	2	1198	2396
	6	8.0	2	439	878
	7	8.0	12	29	348
	8	8.0	12	71	852
	9	8.0	4	202	808
	10	8.0	2	230	460
	11	8.0	2	1034	2068
	12	8.0	2	1070	2140
	13	8.0	4	132	528
	14	8.0	4	164	656
	15	8.0	2	234	468
	16	8.0	2	342	684
	17	8.0	2	378	756
	18	8.0	2	200	400
	19	8.0	1	315	315
	20	8.0	2	1117	2234
	21	8.0	2	190	380
	22	8.0	2	883	1766
	23	8.0	2	915	1830
	24	8.0	2	652	1304
	25	8.0	2	680	1360
	26	8.0	2	167	334
	27	8.0	3	200	600
	28	8.0	4	810	3240
	29	8.0	4	834	3336
	30	8.0	2	802	1604
	31	8.0	2	830	1660
	32	8.0	2	104	208
	33	8.0	2	144	288

RESUMO DO AÇO

AÇO	DIAM	C.TOTAL (m)	PESO+10% (kg)
CA50	8.0	390.0	169.3
CA60	5.0	441.3	74.8
PESO TOTAL			
CA50	169.3		
CA60	74.8		

Vol. concreto (C-25) = 4.16 m³

Área de forma total = 68.84 m²