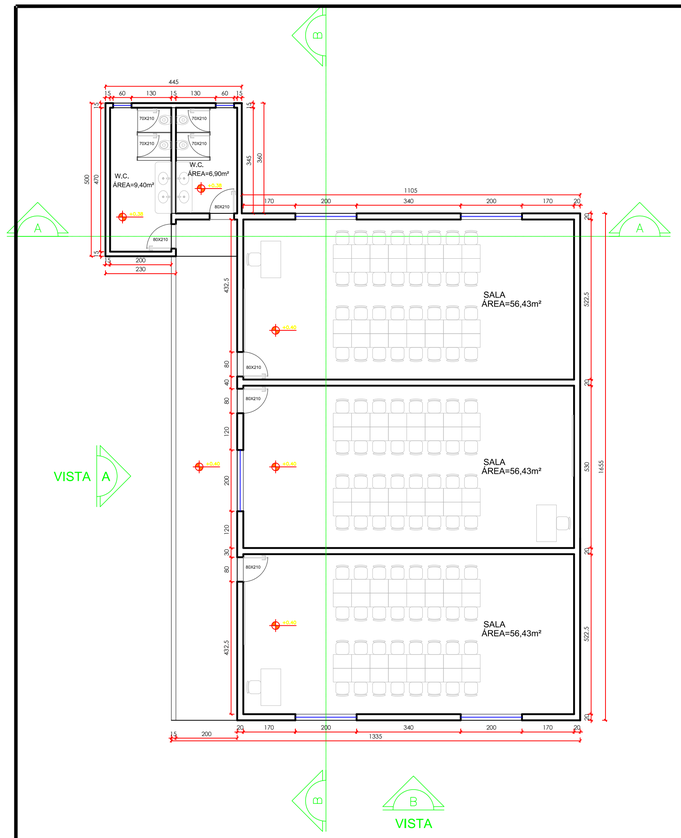
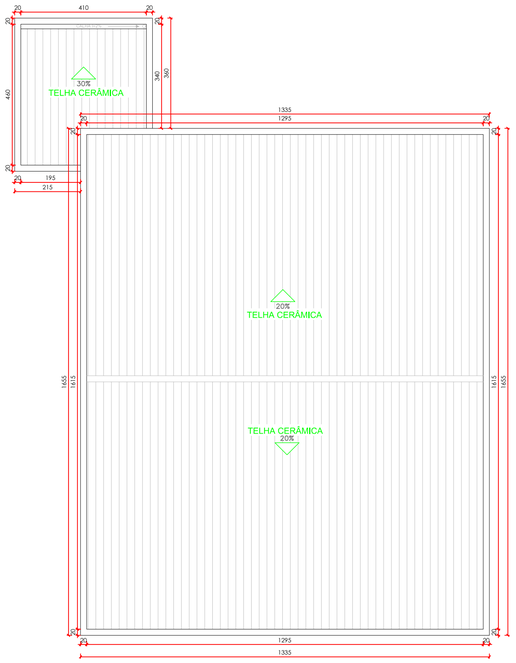
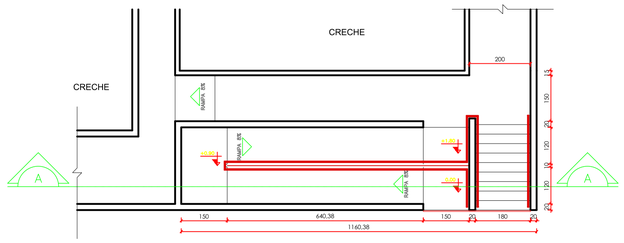


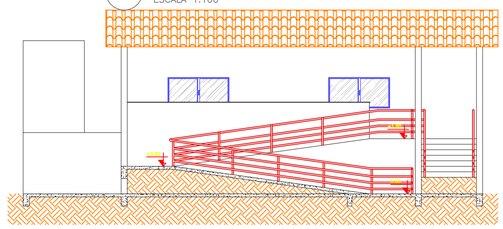
1 PLANTA BAIXA DO PAV. TÉRREO
ESCALA 1:100



2 DIAGRAMA DE COBERTURA
ESCALA 1:100



7 PLANTA BAIXA - RAMPA DE ACESSO
ESCALA 1:100



8 CORTE RAMPA DE ACESSO
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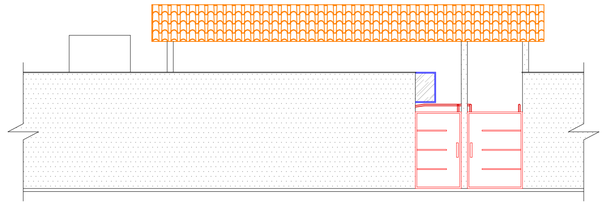
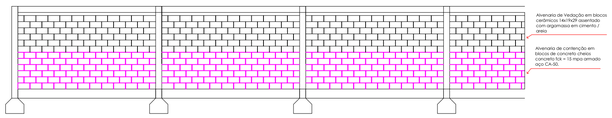
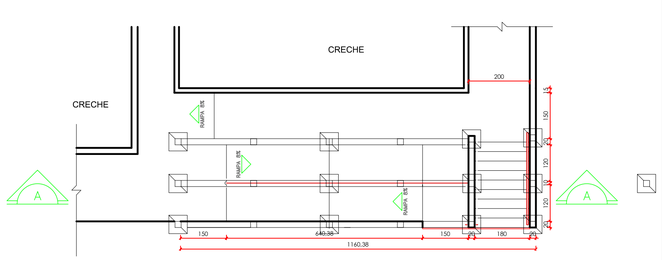


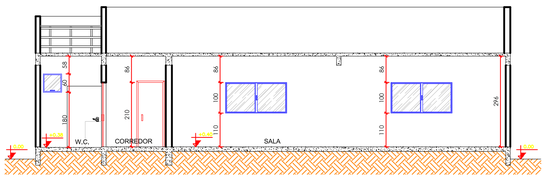
9 VISTA DA FACHADA FRONTAL
ESCALA 1:100



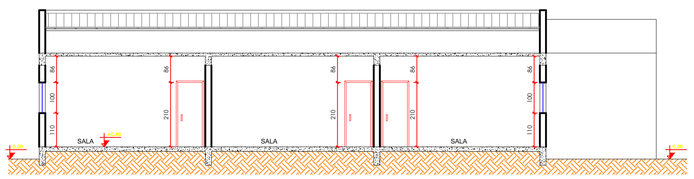
11 MURO ATRAS DA QUADRA
ESCALA 1:100



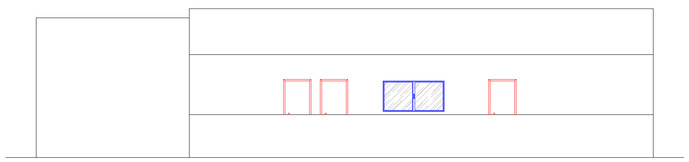
10 LOCAÇÃO E DETALHAMENTO ESTRUTRAL - RAMPA ACESSO
ESCALA 1:100



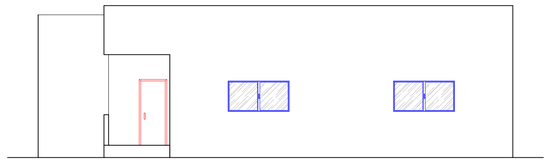
3 CORTE AA
ESCALA 1:100



4 CORTE BB
ESCALA 1:100



5 VISTA DA FACHADA FRONTAL A
ESCALA 1:100



6 VISTA DA FACHADA FRONTAL B
ESCALA 1:100

NÚMERO	HISTÓRICO DAS REVISÕES	DATA
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01	-	-
02	-	-

TÍTULO PROJETO EXECUTIVO
REFORMA, ADEQUAÇÕES E AMPLIAÇÃO

OBRA CENTRO EDUCACIONAL CRECHE ALEIXINA SILVEIR GOULART

ENDEREÇO OBRA R Osvaldo Santos, SN São Pedro dos Ferros, MG - CEP: 35360-000

3 ENGENHARIA
PROJETOS E CONSULTORIA
TEL: (31) 98489-7627
j3projetoseconstrucao@gmail.com

PROPRIETÁRIO
MUNICIPIO DE SÃO PEDRO DOS FERROS
CNPJ: 19.243.500/0001-82

RESPONSÁVEL TÉCNICO
JULIANO OLIVEIRA VASCONCELOS:07455452624
Assinado de forma digital por JULIANO OLIVEIRA VASCONCELOS:07455452624
Dados: 2022.08.18 16:22:51 -03'00'
JULIANO OLIVEIRA VASCONCELOS
Engenheiro Civil - CREA-MG:220.240/D

ESCALA	*FORMATO*	*DATA*	*REVISÃO*	*FOLHA*
INDICADA	A1	JUNHO/2022	00	01/01

PROJ. EXECUTIVO

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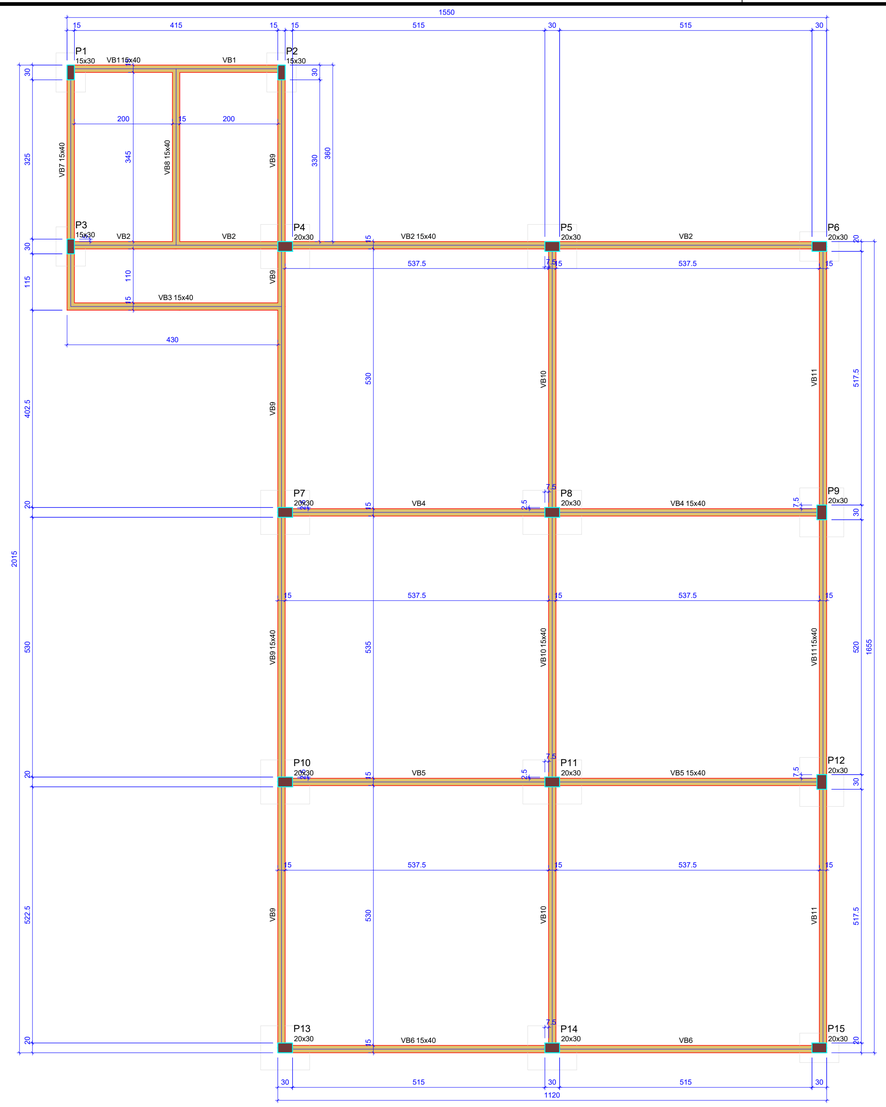
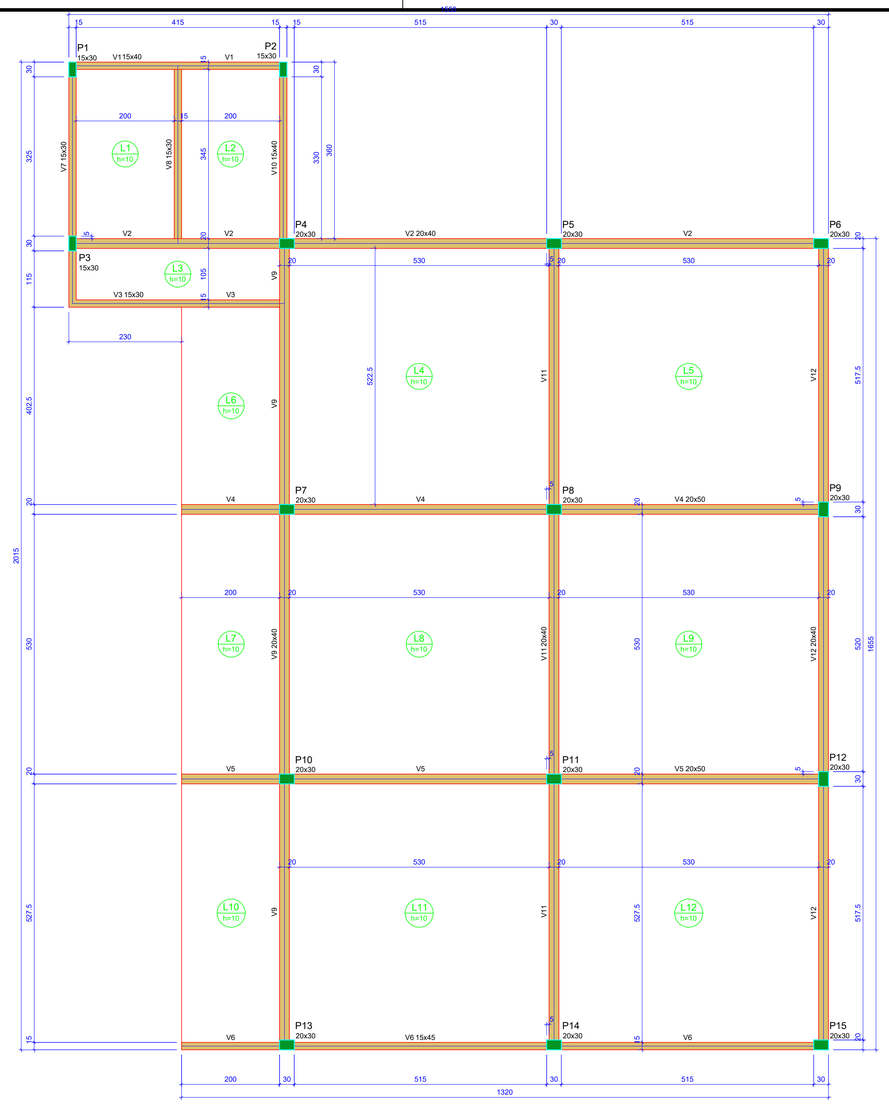


Forma do pavimento FUNDAÇÃO

escala 1:50



Forma do pavimento TÉRREO

escala 1:50

Vigas			
Nome	Seção (cm)	Elevação (cm)	Nível (cm)
V1	15x40	0	350
V2	20x40	0	350
V3	15x30	0	350
V4	20x50	0	350
V5	20x50	0	350
V6	15x45	0	350
V7	15x30	0	350
V8	15x30	0	350
V9	20x40	0	350
V10	15x40	0	350
V11	20x40	0	350
V12	20x40	0	350

Lajes								
	Dados					Sobrecarga (kgf/m²)		
Nome	Tipo	Altura (cm)	Elevação (cm)	Nível (cm)	Peso próprio (kgf/m²)	Adicional	Acidental	Localizada
L1	Maciça	10	0	350	250	154	10	-
L2	Maciça	10	0	350	250	154	10	-
L3	Maciça	10	0	350	250	154	10	-
L4	Maciça	10	0	350	250	154	10	-
L5	Maciça	10	0	350	250	154	10	-
L6	Maciça	10	0	350	250	154	10	-
L7	Maciça	10	0	350	250	154	10	-
L8	Maciça	10	0	350	250	154	10	-
L9	Maciça	10	0	350	250	154	10	-
L10	Maciça	10	0	350	250	154	10	-
L11	Maciça	10	0	350	250	154	10	-
L12	Maciça	10	0	350	250	154	10	-

Características dos materiais	
fck	Ecs
(kgf/cm²)	(kgf/cm²)
250	241500

Dimensão máxima do agregado = 19 mm

Pilares			
Nome	Seção (cm)	Elevação (cm)	Nível (cm)
P1	15x30	0	350
P2	15x30	0	350
P3	15x30	0	350
P4	20x30	0	350
P5	20x30	0	350
P6	20x30	0	350
P7	20x30	0	350
P8	20x30	0	350
P9	20x30	0	350
P10	20x30	0	350
P11	20x30	0	350
P12	20x30	0	350
P13	20x30	0	350
P14	20x30	0	350
P15	20x30	0	350

Legenda dos pilares	
	Pilar que morre

Legenda das vigas e paredes	
	Viga

RELAÇÃO DO AÇO

3xP1 8xP4 2xP6
2xP8 5xS1 8xS10
2xS11

AÇO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
CA60	1	5.0	39	24	936
	2	5.0	39	77	3003
	3	5.0	156	29	4524
	4	5.0	156	87	13572
CA50	5	8.0	35	89	3115
	6	8.0	30	109	3270
	7	8.0	94	119	11186
	8	8.0	64	129	8256
	9	8.0	18	149	2682
	10	10.0	90	202	18180

RESUMO DO AÇO

AÇO	DIAM (mm)	C.TOTAL (m)	QUANT + 10% (Barras)	UNIT	PESO + 10% (kg)
CA50	8.0	285.1	27	12 m	123.7
	10.0	181.8	17	12 m	123.3
CA60	5.0	220.3	21	12 m	37.4
PESO TOTAL (kg)					
CA50	247				
CA60	37.4				

Volume de concreto (C-25) = 4.55 m³
Área de forma = 37.89 m²

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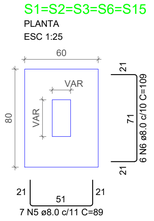

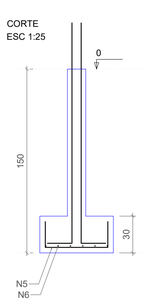

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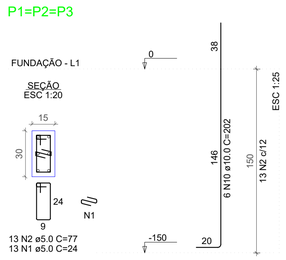

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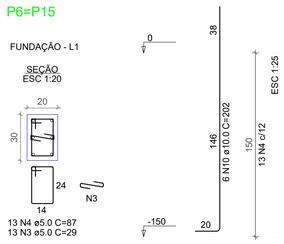

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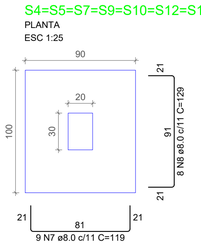

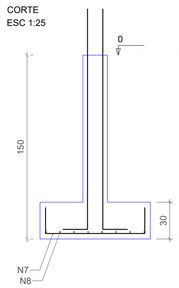

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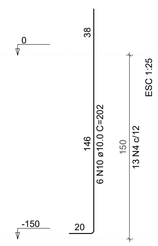

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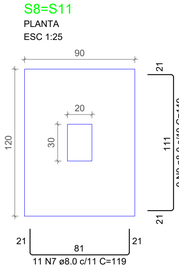

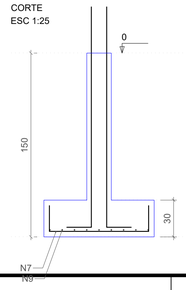

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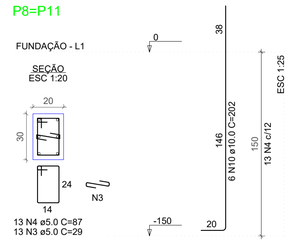

NÚMERO	HISTÓRICO DAS REVISÕES	DATA
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01	-	-
02	-	-

TÍTULO PROJETO EXECUTIVO
REFORMA, ADEQUAÇÕES E AMPLIAÇÃO

OBRA CENTRO EDUCACIONAL CRECHE ALEIXINA SILVEIR GOULART

ENDEREÇO OBRA R Osvaldo Santos, SN São Pedro dos Ferros, MG - CEP: 35360-000

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j3projetoseconstrucao@gmail.com

PROPRIETÁRIO
MUNICIPIO DE SÃO PEDRO DOS FERROS
CNPJ: 19.243.500/0001-82

RESPONSÁVEL TÉCNICO
JULIANO OLIVEIRA VASCONCELOS:07455452624
Assinado de forma digital por JULIANO OLIVEIRA VASCONCELOS:07455452624
Dados: 2022.08.10 16:33:28 -03'00'
JULIANO OLIVEIRA VASCONCELOS
Engenheiro Civil - CREA-MG:220.240/D

ESCALA	*FORMATO*	*DATA*	*REVISÃO*	*FOLHA*
INDICADA	A1	JUNHO/2022	00	01/06

PROJ. ESTRUTURAL

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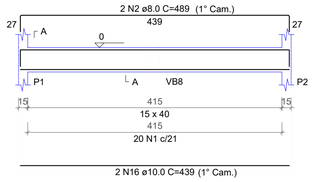
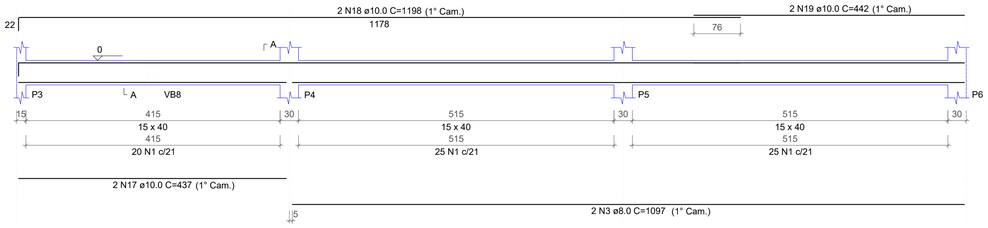


SEÇÃO A-A
ESC 1:25

VB2
ESC 1:50



SEÇÃO A-A
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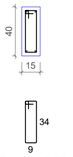
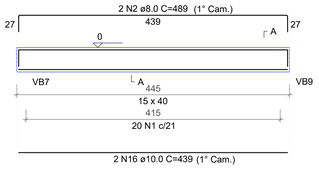


VB3
ESC 1:50



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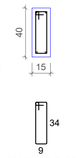
ESC 1:25



VB4
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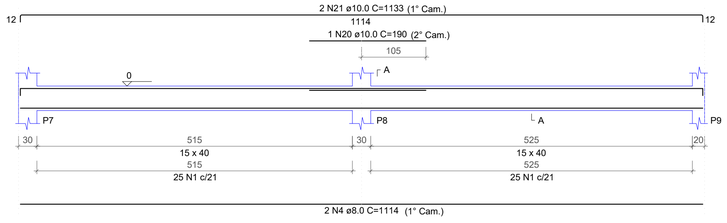

SEÇÃO A-A
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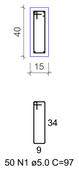

VB5
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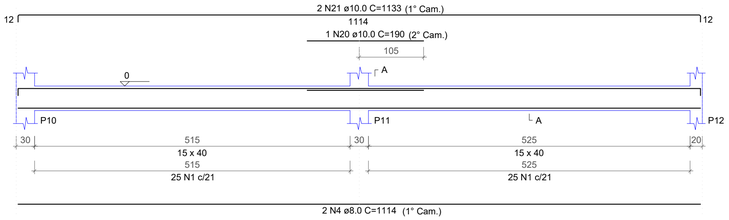

SEÇÃO A-A
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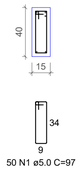

VB8
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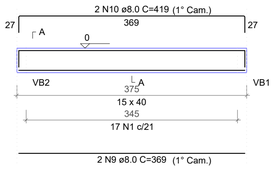

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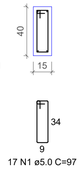

VB6
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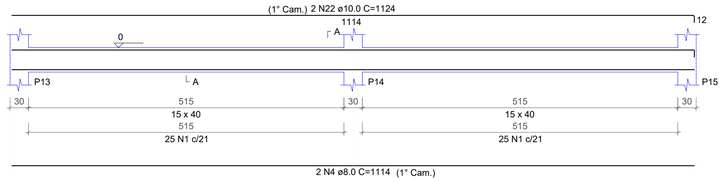

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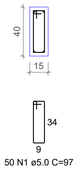

VB7
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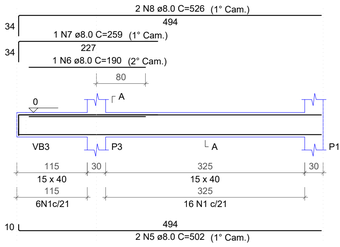
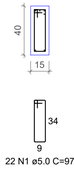
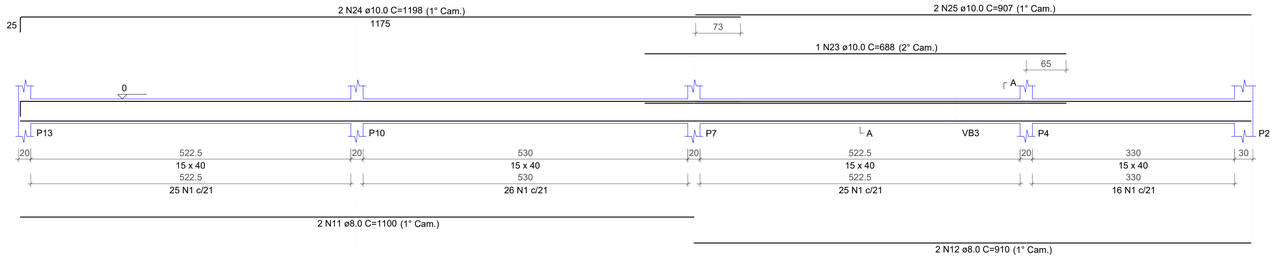


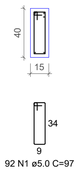
SEÇÃO A-A
ESC 1:25



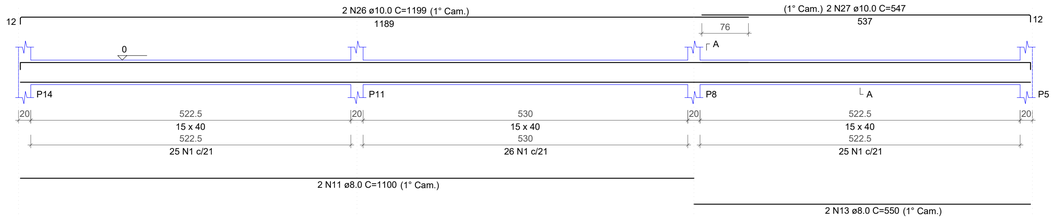
VB9
ESC 1:50



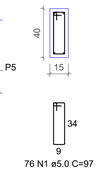
SEÇÃO A-A
ESC 1:25



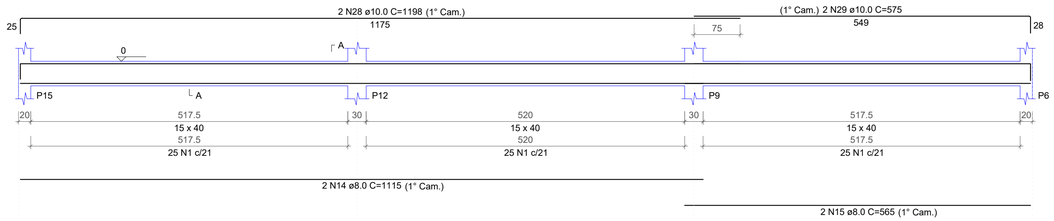
VB10
ESC 1:50



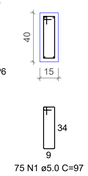
SEÇÃO A-A
ESC 1:25



VB11
ESC 1:50



SEÇÃO A-A
ESC 1:25



RELAÇÃO DO AÇO

VB1 VB2 VB3
VB4 VB5 VB6
VB7 VB8 VB9
VB10 VB11

AÇO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
CA60	1	5.0	542	97	52574
CA50	2	8.0	4	489	1956
	3	8.0	2	1097	2194
	4	8.0	6	1114	6684
	5	8.0	2	502	1004
	6	8.0	1	190	190
	7	8.0	1	259	259
	8	8.0	2	526	1052
	9	8.0	2	369	738
	10	8.0	2	419	838
	11	8.0	4	1100	4400
	12	8.0	2	910	1820
	13	8.0	2	550	1100
	14	8.0	2	1115	2230
	15	8.0	2	565	1130
	16	10.0	4	439	1756
	17	10.0	2	437	874
	18	10.0	2	1198	2396
	19	10.0	2	442	884
	20	10.0	2	190	380
	21	10.0	4	1133	4532
	22	10.0	2	1124	2248
	23	10.0	1	688	688
	24	10.0	2	1198	2396
	25	10.0	2	907	1814
	26	10.0	2	1199	2398
	27	10.0	2	547	1094
	28	10.0	2	1198	2396
	29	10.0	2	575	1150

RESUMO DO AÇO

AÇO	DIAM (mm)	C.TOTAL (m)	QUANT + 10% (Barras)	UNIT	PESO + 10% (kg)
CA50	8.0	256	24	12 m	111.1
	10.0	250.1	23	12 m	169.6
CA60	5.0	525.7	49	12 m	89.1

PESO TOTAL (kg)	
CA50	280.7
CA60	89.1

Volume de concreto (C-25) = 6.73 m³
Área de forma = 114.00 m²

NÚMERO	HISTÓRICO DAS REVISÕES	DATA
00	EMISSÃO INICIAL	-
01	-	-
02	-	-

TÍTULO PROJETO EXECUTIVO
REFORMA, ADEQUAÇÕES E AMPLIAÇÃO

OBRA CENTRO EDUCACIONAL CRECHE ALEIXINA SILVEIR GOULART

ENDEREÇO OBRA R Osvaldo Santos, SN São Pedro dos Ferros, MG - CEP: 35360-000

3 ENGENHARIA
PROJETOS E CONSULTORIA
TEL: (31) 98489-7627
j3projetosconstrucao@gmail.com

PROPRIETÁRIO
MUNICIPIO DE SÃO PEDRO DOS FERROS
CNPJ: 19.243.500/0001-82

RESPONSÁVEL TÉCNICO
JULIANO OLIVEIRA VASCONCELOS:07455452624
Assinado de forma digital por JULIANO OLIVEIRA VASCONCELOS:07455452624
Dados: 2022.08.10 16:34:27 -03'00'
JULIANO OLIVEIRA VASCONCELOS
Engenheiro Civil - CREA-MG:220.240/D

ESCALA	*FORMATO*	*DATA*	*REVISÃO*	*FOLHA*
INDICADA	A1	JUNHO/2022	00	02/06

PROJ. ESTRUTURAL

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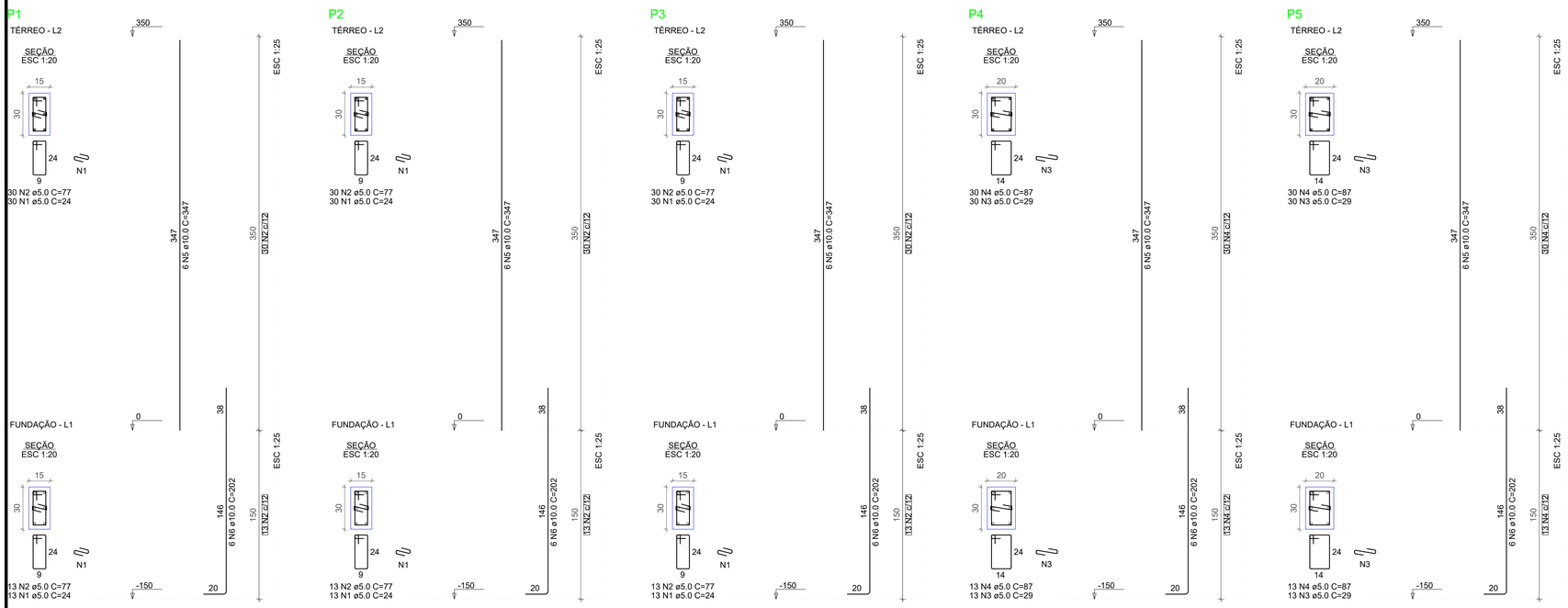


RELAÇÃO DO AÇO

P1-L2 P1-L1 P2-L2
P2-L1 P3-L2 P3-L1
P4-L2 P4-L1 P5-L2
P5-L1

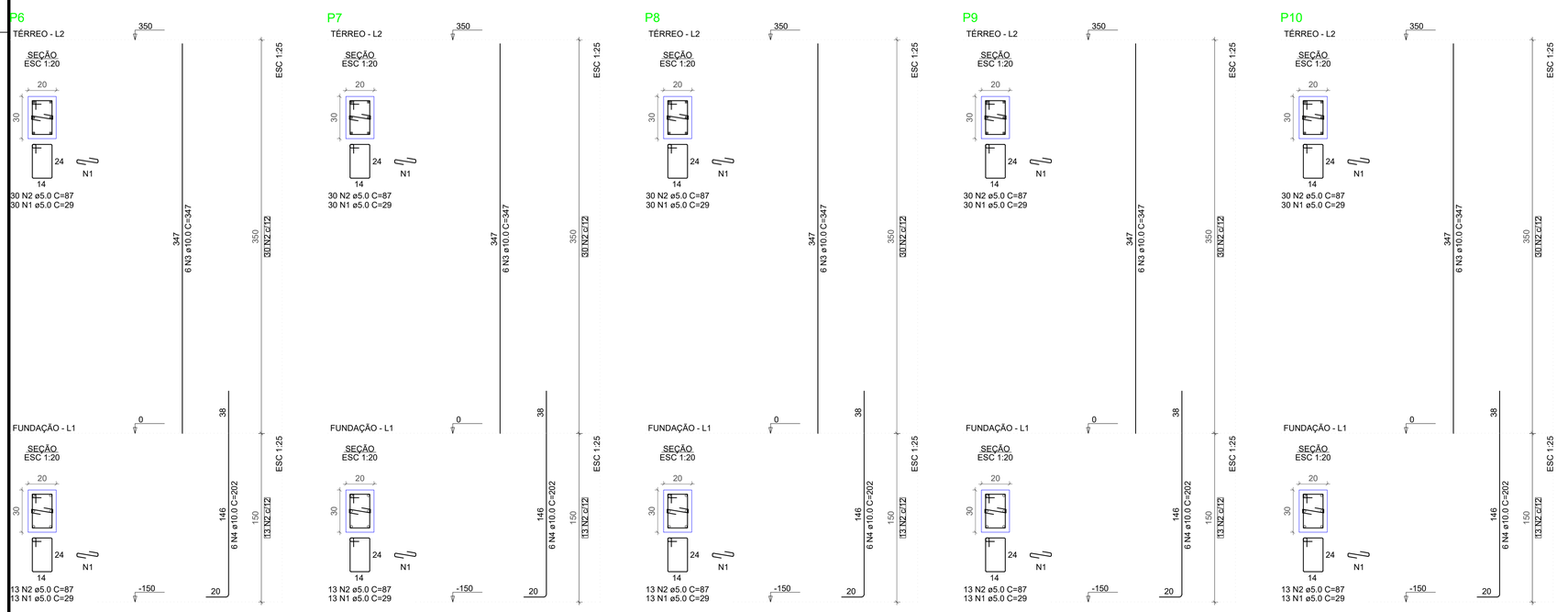
AÇO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
CA60	1	5.0	129	24	3096
	2	5.0	129	77	9933
	3	5.0	86	29	2494
	4	5.0	86	87	7482
CA50	5	10.0	30	347	10410
	6	10.0	30	202	6060

RESUMO DO AÇO

AÇO	DIAM (mm)	C.TOTAL (m)	QUANT + 10% (Barras)	UNIT	PESO + 10% (kg)
CA50	10.0	164.7	16	12 m	111.7
CA60	5.0	230.1	22	12 m	39

PESO TOTAL (kg)	
CA50	111.7
CA60	39

Volume de concreto (C-25) = 1.20 m³
Área de forma = 23.50 m²



RELAÇÃO DO AÇO

P6-L2 P6-L1 P7-L2
P7-L1 P8-L2 P8-L1
P9-L2 P9-L1 P10-L2
P10-L1

AÇO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
CA60	1	5.0	215	29	6235
	2	5.0	215	87	18705
CA50	3	10.0	30	347	10410
	4	10.0	30	202	6060

RESUMO DO AÇO

AÇO	DIAM (mm)	C.TOTAL (m)	QUANT + 10% (Barras)	UNIT	PESO + 10% (kg)
CA50	10.0	164.7	16	12 m	111.7
CA60	5.0	249.4	23	12 m	42.3

PESO TOTAL (kg)	
CA50	111.7
CA60	42.3

Volume de concreto (C-25) = 1.41 m³
Área de forma = 25.00 m²

NÚMERO	HISTÓRICO DAS REVISÕES	DATA
00	EMISSÃO INICIAL	-
01	-	-
02	-	-

TÍTULO PROJETO EXECUTIVO
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j3projetoseconstrucao@gmail.com

PROPRIETÁRIO
MUNICIPIO DE SÃO PEDRO DOS FERROS
CNPJ: 19.243.500/0001-82

RESPONSÁVEL TÉCNICO
JULIANO OLIVEIRA VASCONCELOS:07455452624
Assinado de forma digital por JULIANO OLIVEIRA VASCONCELOS:07455452624
Dados: 2022.08.10 16:34:55 -03'00'
JULIANO OLIVEIRA VASCONCELOS
Engenheiro Civil - CREA-MG:220.240/D

ESCALA	*FORMATO*	*DATA*	*REVISÃO*	*FOLHA*
INDICADA	A1	JUNHO/2022	00	03/06

PROJ. ESTRUTURAL

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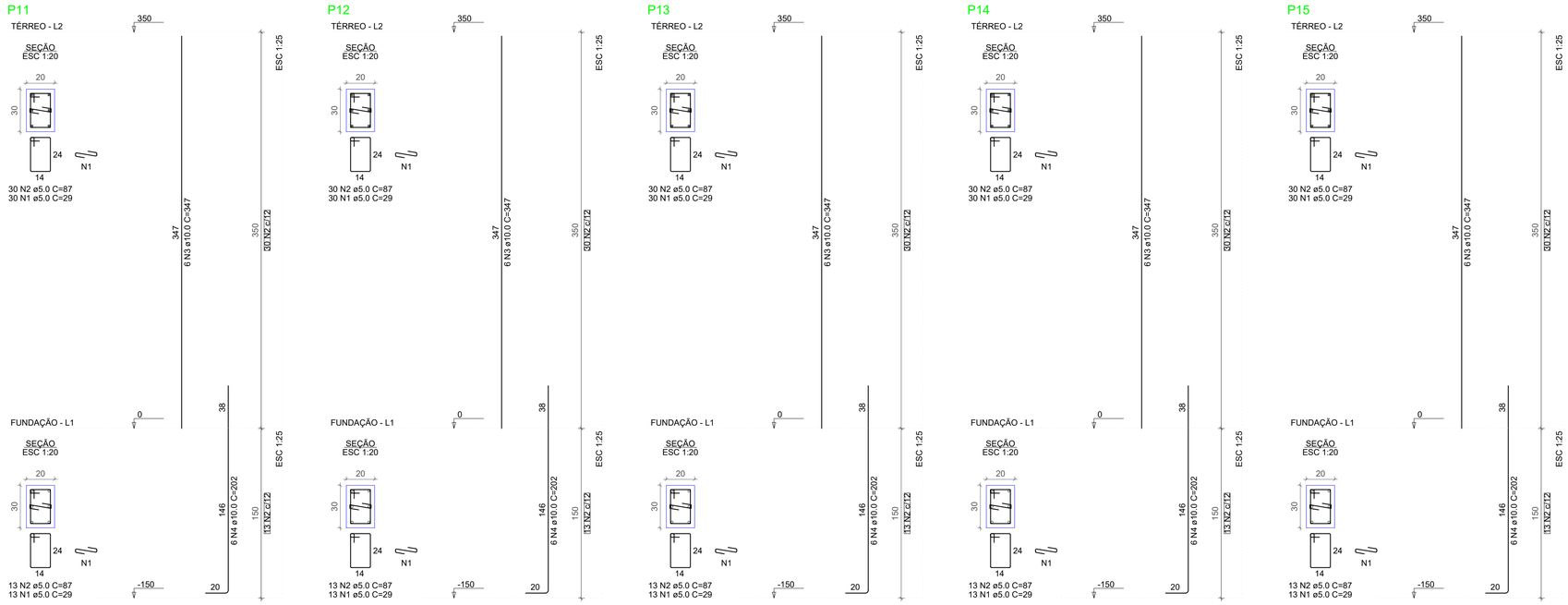

RELAÇÃO DO AÇO

P11-L2	P11-L1	P12-L2
P12-L1	P13-L2	P13-L1
P14-L2	P14-L1	P15-L2
P15-L1		

AÇO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
CA60	1	5.0	215	29	6235
	2	5.0	215	87	18705
CA50	3	10.0	30	347	10410
	4	10.0	30	202	6060

RESUMO DO AÇO

AÇO	DIAM (mm)	C.TOTAL (m)	QUANT + 10% (Barras)	UNIT	PESO + 10% (kg)
CA50	10.0	164.7	16	12 m	111.7
CA60	5.0	249.4	23	12 m	42.3

PESO TOTAL (kg)	
CA50	111.7
CA60	42.3

Volume de concreto (C-25) = 1.41 m³
Área de forma = 25.00 m²

NÚMERO	HISTÓRICO DAS REVISÕES	DATA
00	EMISSÃO INICIAL	-
01	-	-
02	-	-

TÍTULO PROJETO EXECUTIVO
REFORMA, ADEQUAÇÕES E AMPLIAÇÃO

OBRA CENTRO EDUCACIONAL CRECHE ALEIXINA SILVEIR GOULART

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ENGENHARIA PROJETOS E CONSULTORIA
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PROPRIETÁRIO
MUNICIPIO DE SÃO PEDRO DOS FERROS
CNPJ: 19.243.500/0001-82

RESPONSÁVEL TÉCNICO
JULIANO OLIVEIRA VASCONCELOS:07455452624
Assinado de forma digital por JULIANO OLIVEIRA VASCONCELOS:07455452624
Dados: 2022.08.10 16:35:47 -03'00'
JULIANO OLIVEIRA VASCONCELOS
Engenheiro Civil - CREA-MG:220.240/D

ESCALA	*FORMATO*	*DATA*	*REVISÃO*	*FOLHA*
INDICADA	A1	JUNHO/2022	00	04/06

PROJ. ESTRUTURAL

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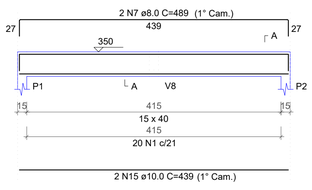
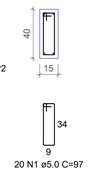
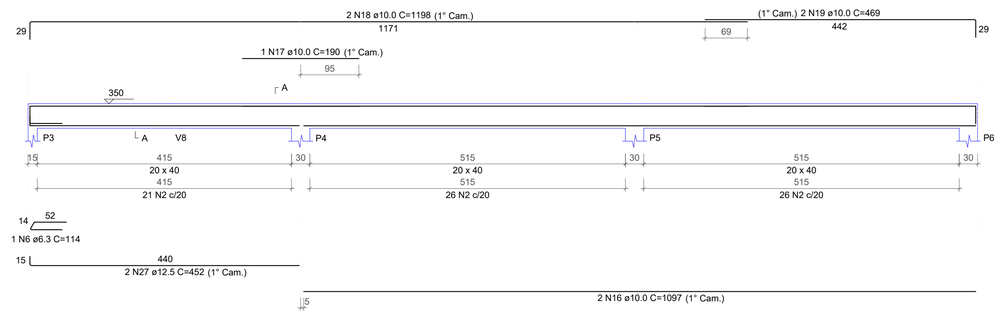
V1
ESC 1:50



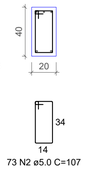
SEÇÃO A-A
ESC 1:25



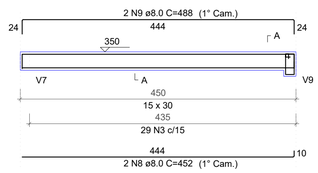
V2
ESC 1:50



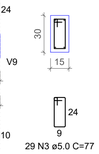
SEÇÃO A-A
ESC 1:25



V3
ESC 1:50

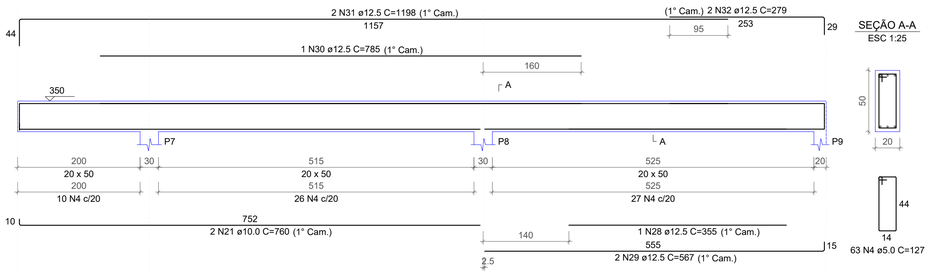


SEÇÃO A-A
ESC 1:25



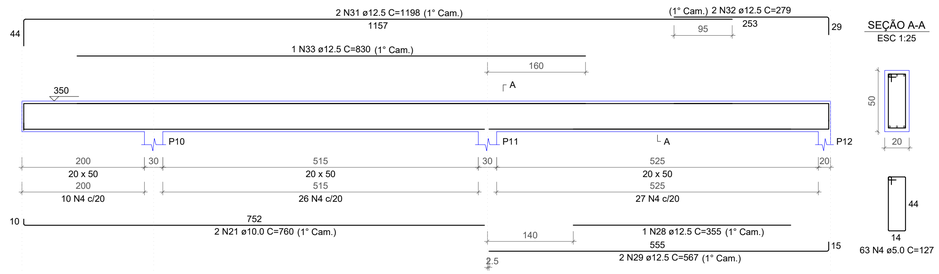
SUSPENSÃO V9
ESC 1:25

V4
ESC 1:50



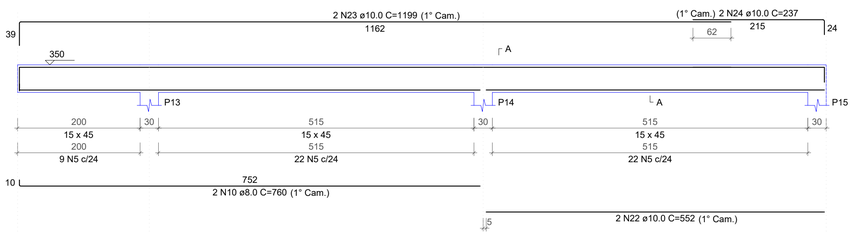
SEÇÃO A-A
ESC 1:25

V5
ESC 1:50

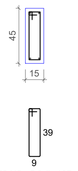


SEÇÃO A-A
ESC 1:25

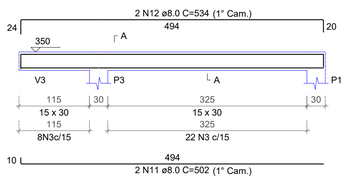
V6
ESC 1:50



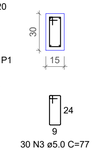
SEÇÃO A-A
ESC 1:25



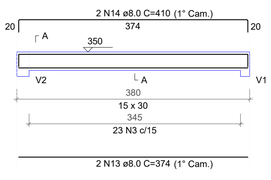
V7
ESC 1:50



SEÇÃO A-A
ESC 1:25

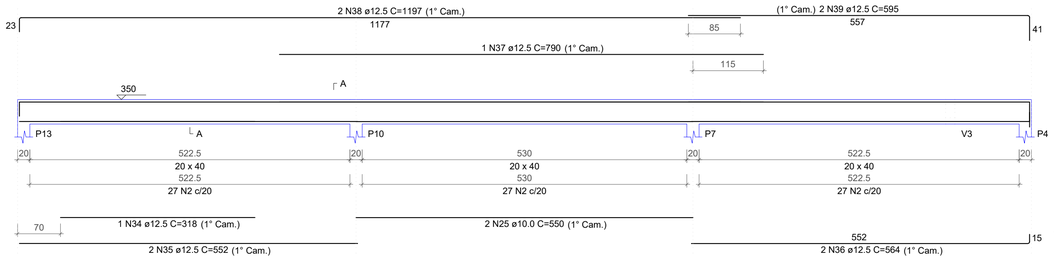


V8
ESC 1:50



SEÇÃO A-A
ESC 1:25

V9
ESC 1:50



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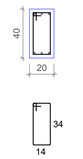
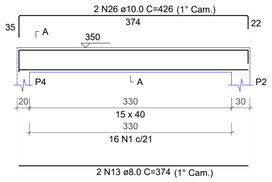
ESC 1:25

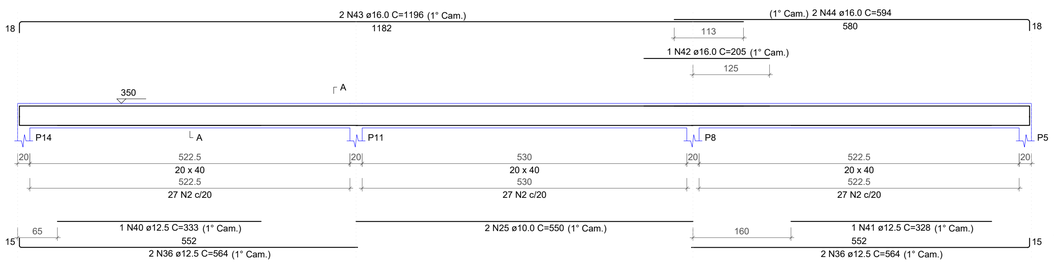


V10
ESC 1:50

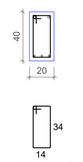


SEÇÃO A-A
ESC 1:25

V11
ESC 1:50



SEÇÃO A-A
ESC 1:25



RELAÇÃO DO AÇO

V1	V2	V3
V4	V5	V6
V7	V8	V9
V10	V11	

AÇO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
CA60	1	5.0	36	97	3492
	2	5.0	235	107	25145
	3	5.0	82	77	6314
	4	5.0	126	127	16002
	5	5.0	53	107	5671
CA50	6	6.3	1	114	114
	7	8.0	2	489	978
	8	8.0	2	452	904
	9	8.0	2	488	976
	10	8.0	2	760	1520
	11	8.0	2	502	1004
	12	8.0	2	534	1068
	13	8.0	4	374	1496
	14	8.0	2	410	820
	15	10.0	2	439	878
	16	10.0	2	1097	2194
	17	10.0	1	190	190
	18	10.0	2	1198	2396
	19	10.0	2	469	938
	20	10.0	1	109	109
	21	10.0	4	760	3040
	22	10.0	2	552	1104
	23	10.0	2	1199	2398
	24	10.0	2	237	474
	25	10.0	4	550	2200
	26	10.0	2	426	852
	27	12.5	2	452	904
	28	12.5	2	355	710
	29	12.5	4	567	2268
	30	12.5	1	785	785
	31	12.5	4	1198	4792
	32	12.5	4	279	1116
	33	12.5	1	830	830
	34	12.5	1	318	318
	35	12.5	2	552	1104
	36	12.5	6	564	3384
	37	12.5	1	790	790
	38	12.5	2	1197	2394
	39	12.5	2	595	1190
	40	12.5	1	333	333
	41	12.5	1	328	328
	42	16.0	1	205	205
	43	16.0	2	1196	2392
	44	16.0	2	594	1188

RESUMO DO AÇO

AÇO	DIAM (mm)	C.TOTAL (m)	QUANT + 10% (Barras)	UNIT	PESO + 10% (kg)
CA50	6.3	1.1	1	12 m	0.3
	8.0	87.7	9	12 m	38
	10.0	167.7	16	12 m	113.8
	12.5	212.5	20	12 m	225.1
	16.0	37.9	4	12 m	65.7
CA60	5.0	566.2	52	12 m	96

PESO TOTAL (kg)	
CA50	443
CA60	96

Volume de concreto (C-25) = 7.99 m³
Área de forma = 111.95 m²

NÚMERO	HISTÓRICO DAS REVISÕES	DATA
00	EMISSÃO INICIAL	-
01	-	-
02	-	-

TÍTULO PROJETO EXECUTIVO
REFORMA, ADEQUAÇÕES E AMPLIAÇÃO

OBRA CENTRO EDUCACIONAL CRECHE ALEIXINA SILVEIR GOULART

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PROPRIETÁRIO
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CNPJ: 19.243.500/0001-82

RESPONSÁVEL TÉCNICO
JULIANO OLIVEIRA VASCONCELOS:07455452624
Assinado de forma digital por JULIANO OLIVEIRA VASCONCELOS:07455452624
Dados: 2022.08.10 16:37:08 -03'00'
JULIANO OLIVEIRA VASCONCELOS
Engenheiro Civil - CREA-MG:220.240/D

ESCALA	*FORMATO*	*DATA*	*REVISÃO*	*FOLHA*
INDICADA	A1	JUNHO/2022	00	05/06

PROJ. ESTRUTURAL

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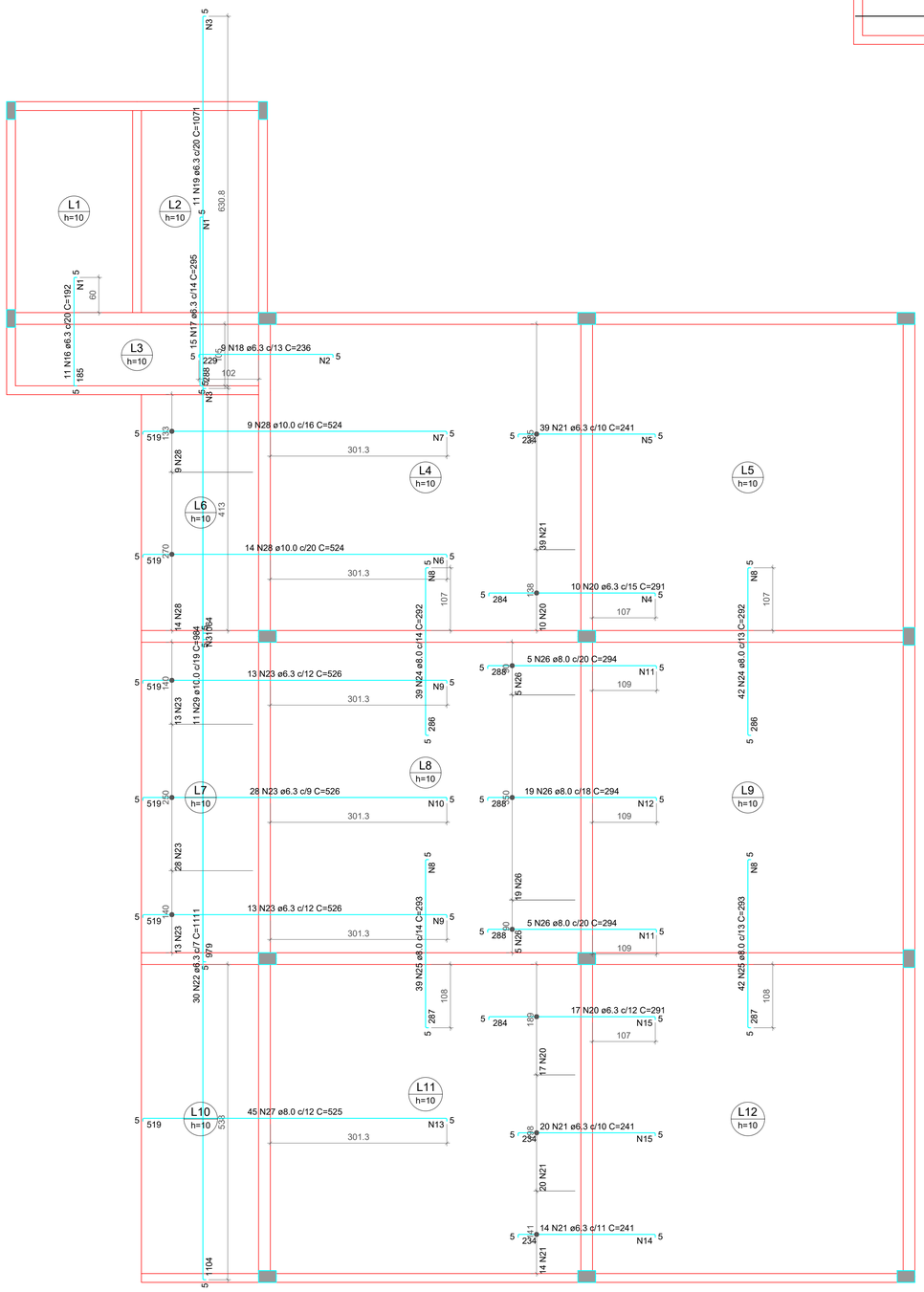
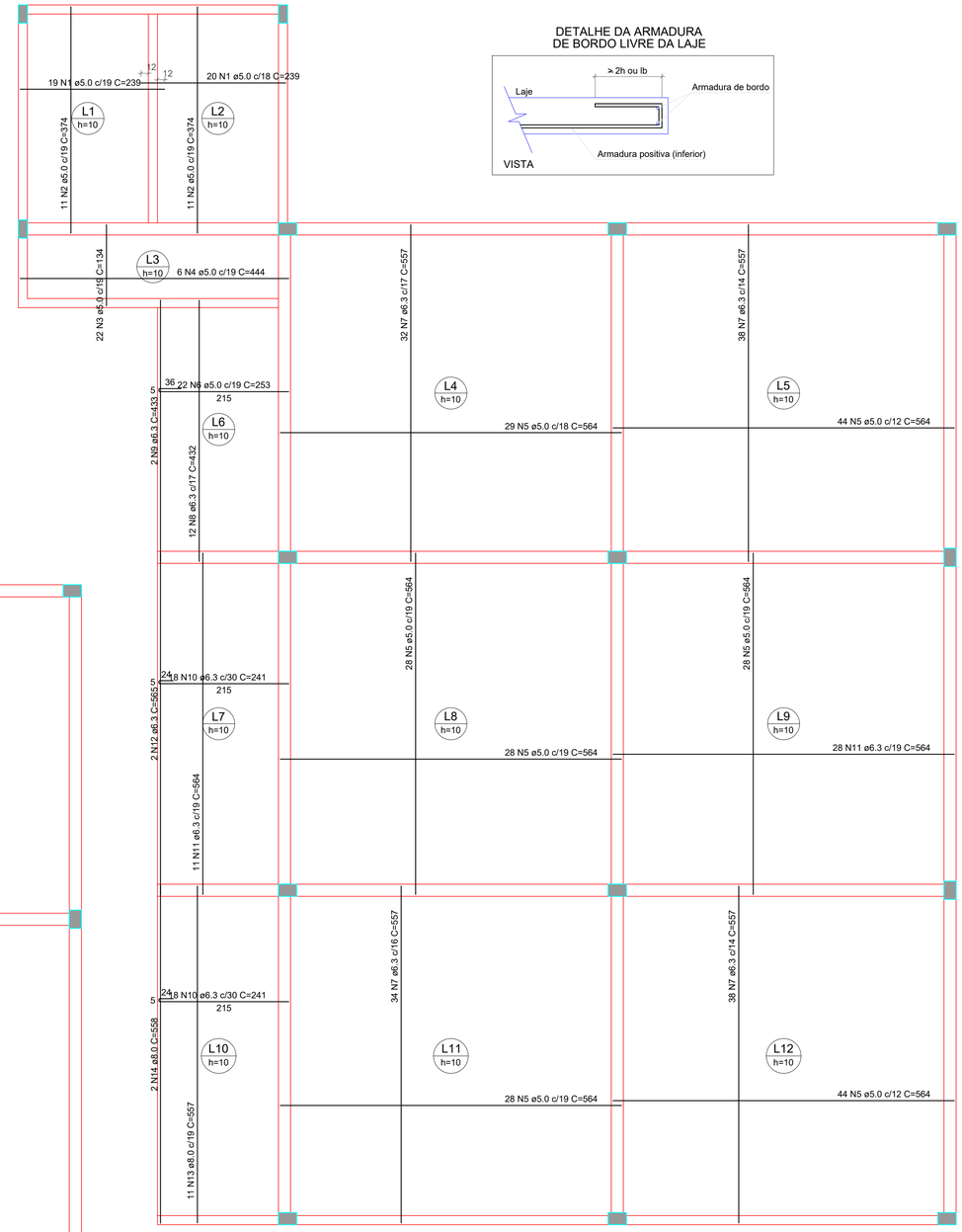


Armação negativa das lajes do pavimento TÉRREO

escala 1:50



Armação positiva das lajes do pavimento TÉRREO

escala 1:50

DETALHE DA ARMADURA DE BORDO LIVRE DA LAJE

Armaduras de distribuição	
Armadura	Armadura de distribuição
N16	10 N1 ø5.0 c/20 C=215
N17	15 N1 ø5.0 c/20 C=215
N18	12 N2 ø5.0 c/20 C=123
N19	54 N3 ø5.0 c/20 C=210
N20	15 N4 ø5.0 c/20 C=148
N21	12 N5 ø5.0 c/20 C=395
N28	26 N6 ø5.0 c/20 C=280
N28	26 N7 ø5.0 c/20 C=140
N24	15 N8 ø5.0 c/20 C=550
N24	15 N8 ø5.0 c/20 C=550
N29	49 N3 ø5.0 c/20 C=210
N22	56 N3 ø5.0 c/20 C=210
N23	26 N9 ø5.0 c/20 C=150
N23	26 N10 ø5.0 c/20 C=250
N23	26 N9 ø5.0 c/20 C=150
N25	15 N8 ø5.0 c/20 C=550
N26	15 N11 ø5.0 c/20 C=100
N26	15 N12 ø5.0 c/20 C=350
N26	15 N11 ø5.0 c/20 C=100
N25	15 N8 ø5.0 c/20 C=550
N27	26 N13 ø5.0 c/20 C=545
N21	12 N14 ø5.0 c/20 C=149
N21	12 N15 ø5.0 c/20 C=198
N20	15 N15 ø5.0 c/20 C=198

RELAÇÃO DO AÇO

Negativos

AÇO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
CA60	1	5.0	25	215	5375
	2	5.0	12	123	1476
	3	5.0	159	210	33390
	4	5.0	15	148	2220
	5	5.0	12	395	4740
	6	5.0	26	280	7280
	7	5.0	26	140	3640
	8	5.0	60	550	33000
	9	5.0	52	150	7800
	10	5.0	26	250	6500
	11	5.0	30	100	3000
	12	5.0	15	350	5250
	13	5.0	26	545	14170
	14	5.0	12	149	1788
	15	5.0	27	198	5346
CA50	16	6.3	11	192	2112
	17	6.3	15	295	4425
	18	6.3	9	236	2124
	19	6.3	11	1071	11781
	20	6.3	27	291	7857
	21	6.3	73	241	17593
	22	6.3	30	1111	33330
	23	6.3	54	526	28404
	24	8.0	81	292	23652
	25	8.0	81	293	23733
	26	8.0	29	294	8526
	27	8.0	45	525	23625
	28	10.0	23	524	12052
	29	10.0	11	984	10824

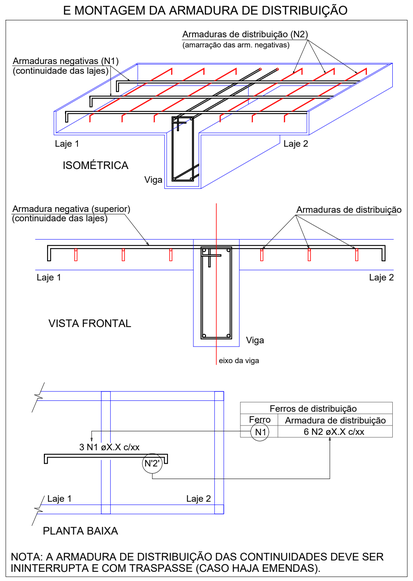
RESUMO DO AÇO

AÇO	DIAM (mm)	C.TOTAL (m)	QUANT + 10% (Barras)	UNIT	PESO + 10% (kg)
CA50	6.3	1076.3	99	12 m	269.7
	8.0	795.4	73	12 m	364.2
	10.0	228.8	21	12 m	155.1
CA60	5.0	1349.8	124	12 m	228.8

PESO TOTAL (kg)	
CA50	790.1
CA60	228.8

Volume de concreto (C-25) = 0.00 m³
Área de forma = 0.00 m²

DETALHE DA ARMADURA SUPERIOR DE CONTINUIDADE DA LAJE E MONTAGEM DA ARMADURA DE DISTRIBUIÇÃO



NOTA: A ARMADURA DE DISTRIBUIÇÃO DAS CONTINUIDADES DEVE SER ININTERRUPTA E COM TRASPASSE (CASO HAJA EMENDAS).

RELAÇÃO DO AÇO

Positivos

AÇO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
CA60	1	5.0	39	239	9321
	2	5.0	22	374	8228
	3	5.0	22	134	2948
	4	5.0	6	444	2664
	5	5.0	229	564	129156
	6	5.0	22	253	5566
CA50	7	6.3	142	557	79094
	8	6.3	12	432	5184
	9	6.3	2	433	866
	10	6.3	36	241	8676
	11	6.3	39	564	21996
	12	6.3	2	565	1130
	13	8.0	11	557	6127
	14	8.0	2	558	1116

RESUMO DO AÇO

AÇO	DIAM (mm)	C.TOTAL (m)	QUANT + 10% (Barras)	UNIT	PESO + 10% (kg)
CA50	6.3	1169.5	108	12 m	314.8
	8.0	72.4	7	12 m	31.4
CA60	5.0	1578.8	145	12 m	267.7

PESO TOTAL (kg)	
CA50	346.2
CA60	267.7

Volume de concreto (C-25) = 21.49 m³
Área de forma = 216.45 m²

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Engenheiro Civil - CREA-MG:220.240/D

ESCALA	*FORMATO*	*DATA*	*REVISÃO*	*FOLHA*
INDICADA	A1	JUNHO/2022	00	06/06

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