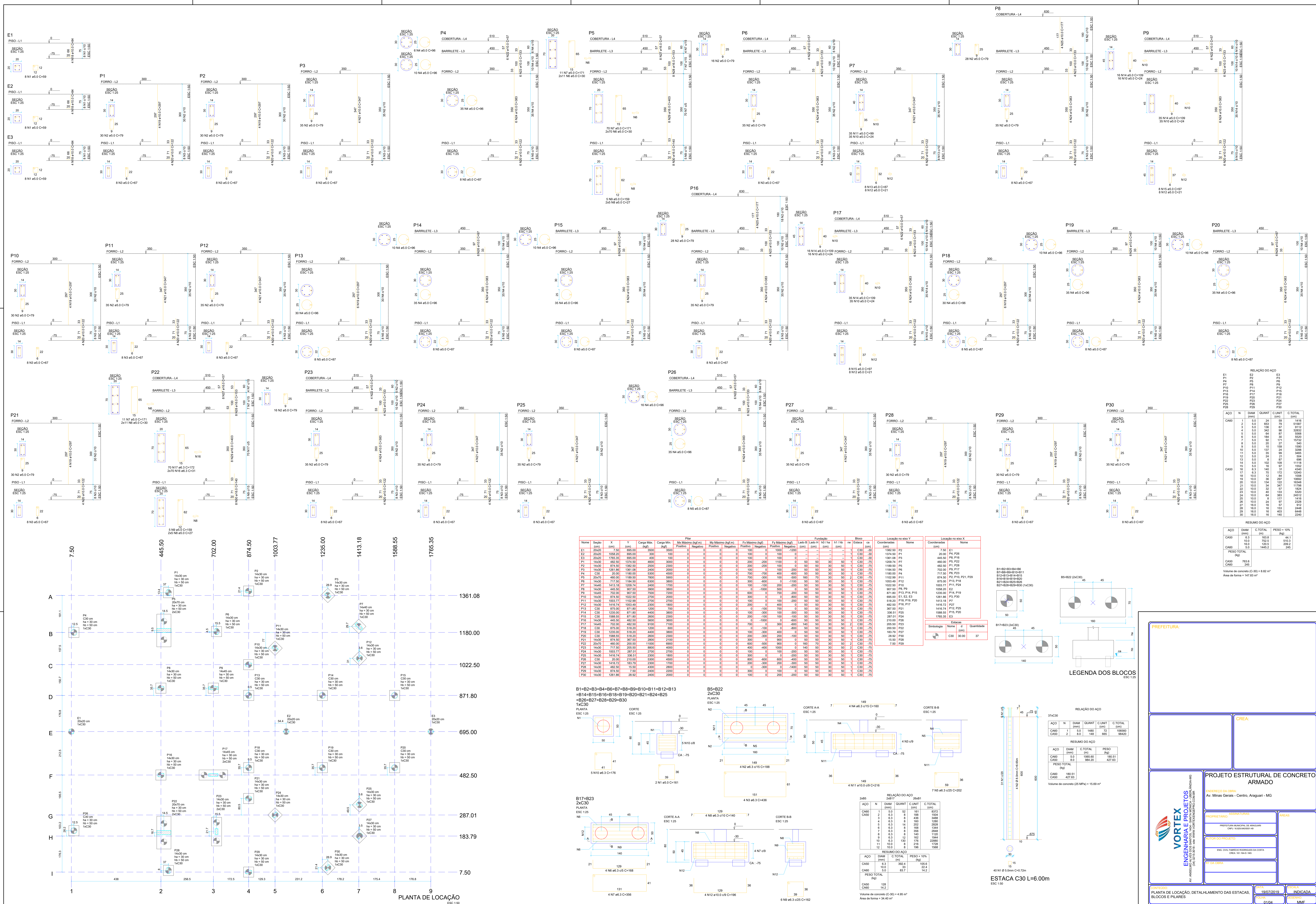
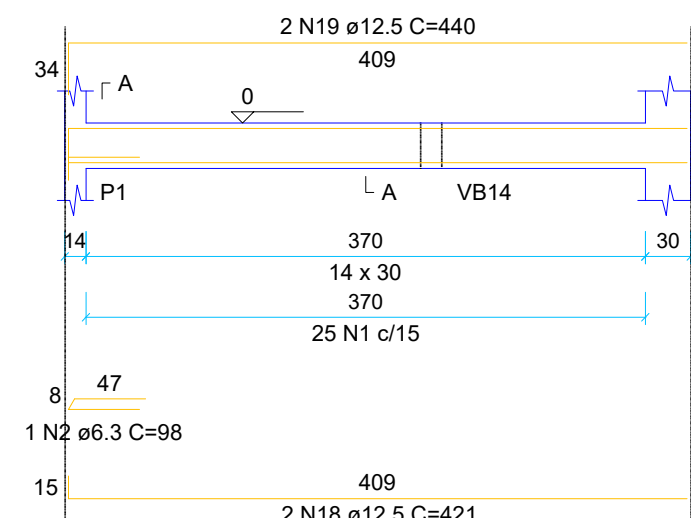




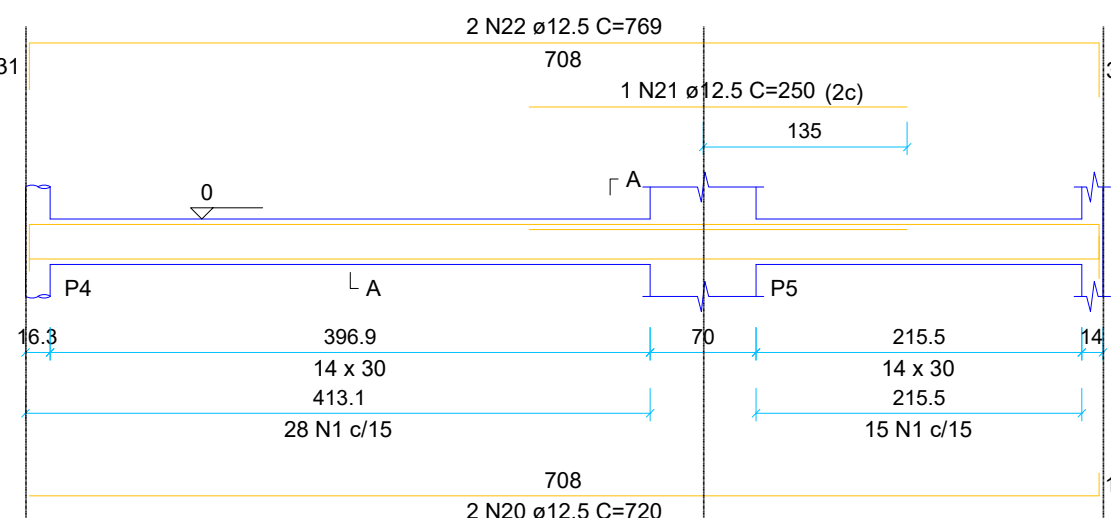
VB1

ESC 1:50



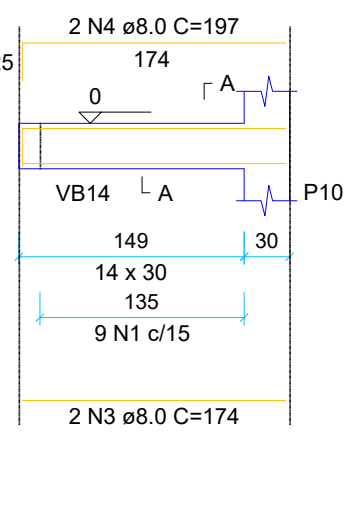
VB2

ESC 1:50



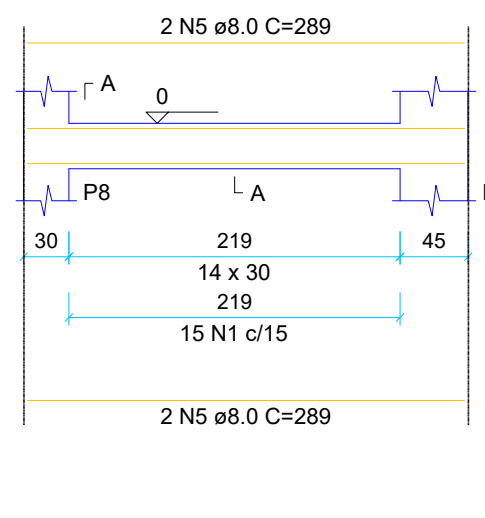
VB3

ESC 1:50



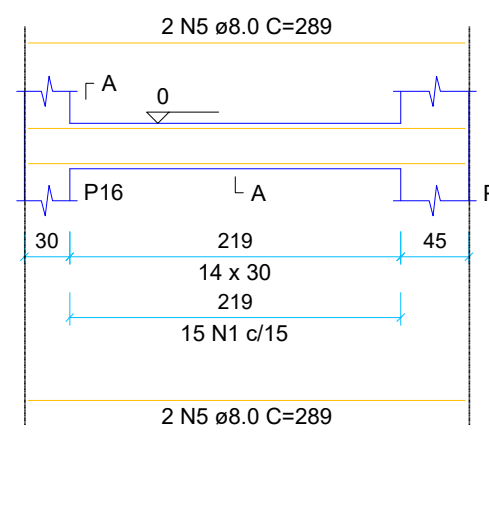
VB4

ESC 1:50



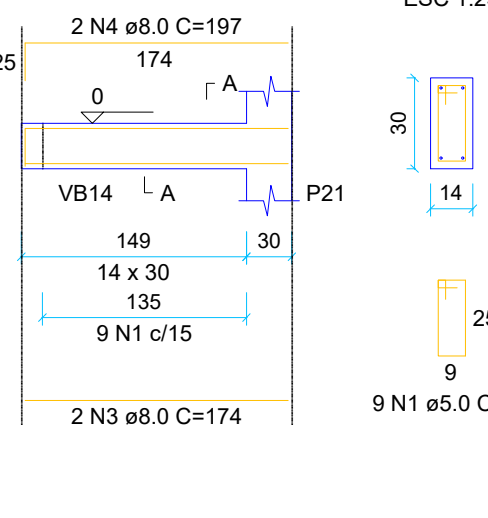
VB5

ESC 1:50



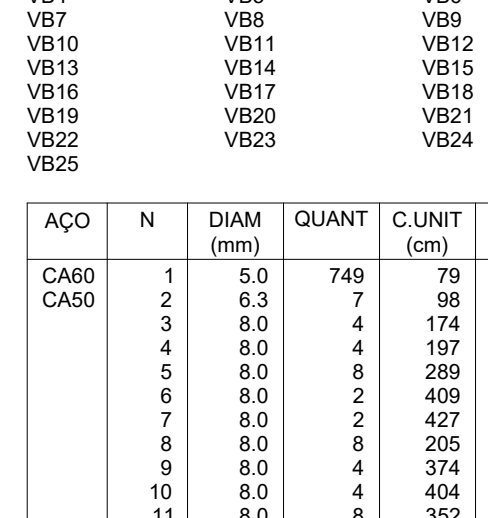
VB6

ESC 1:50



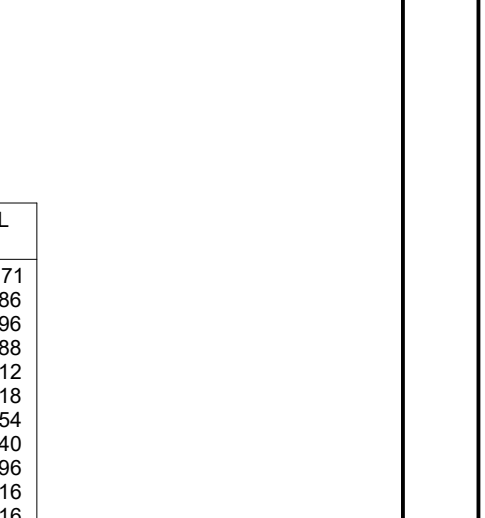
VB7

ESC 1:50



VB8

ESC 1:50



VB9

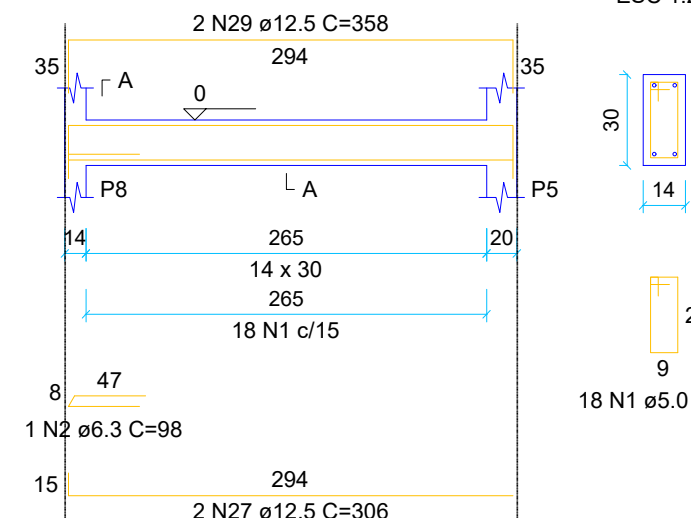
ESC 1:50

VB10

ESC 1:50

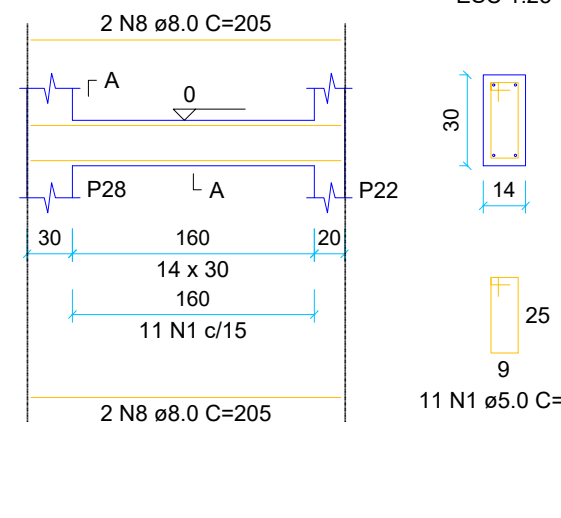
VB11

ESC 1:50



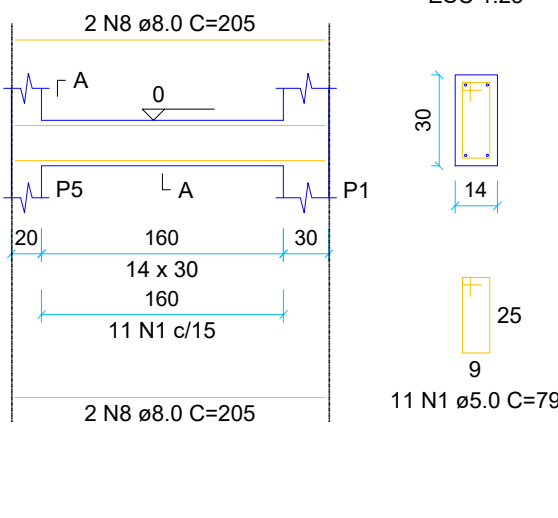
VB12

ESC 1:50



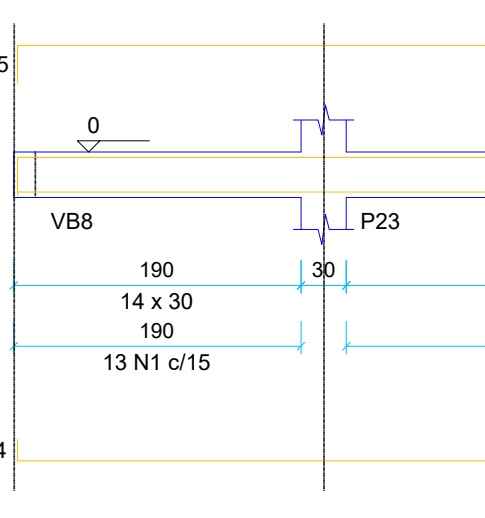
VB13

ESC 1:50



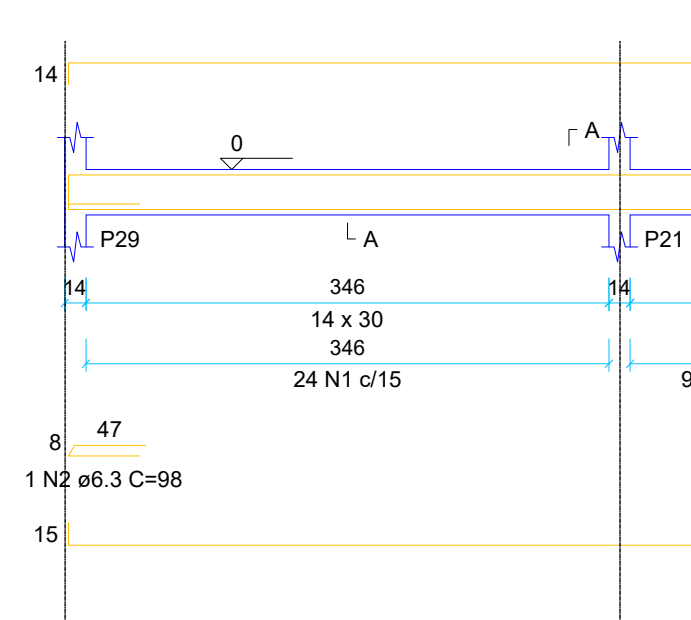
VB14

ESC 1:50



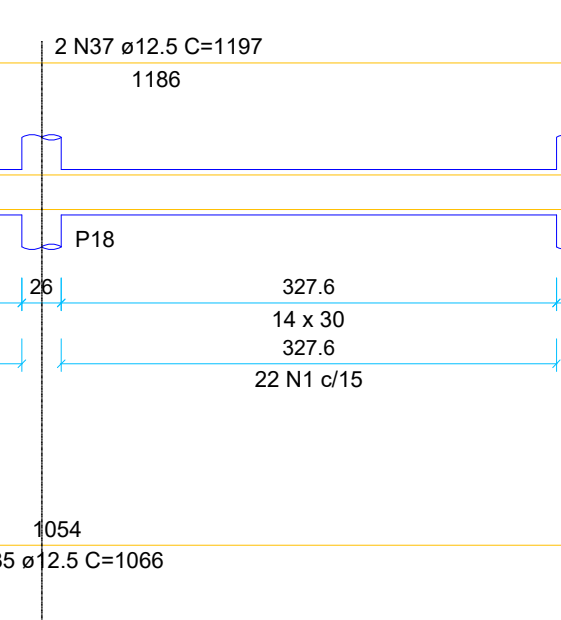
VB15

ESC 1:50



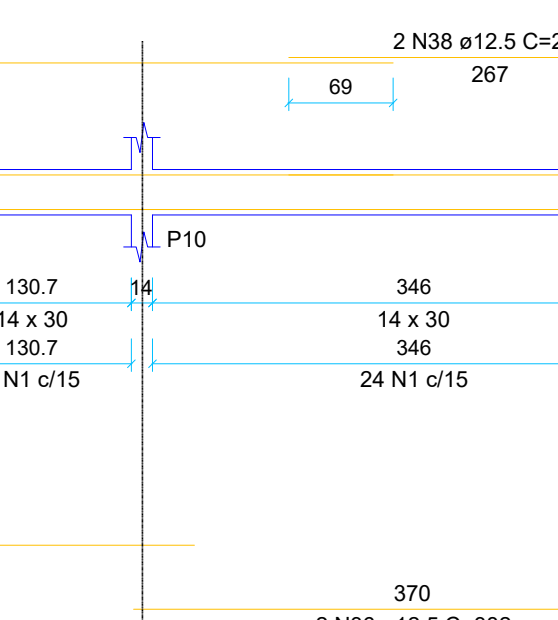
VB16

ESC 1:50



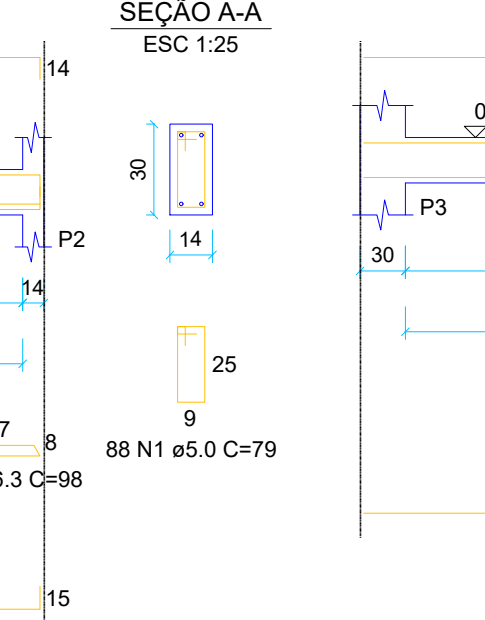
VB17

ESC 1:50



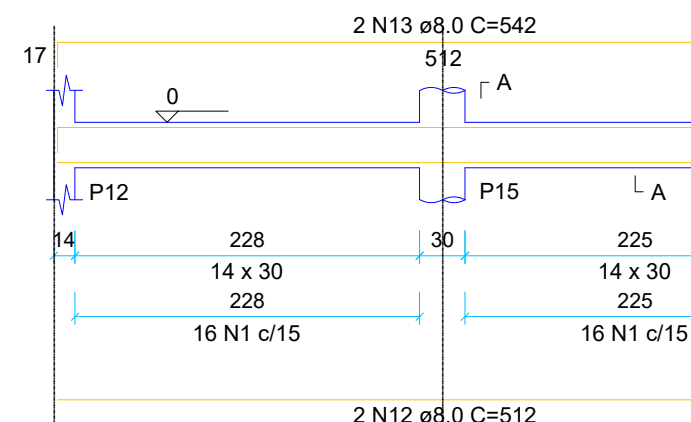
VB18

ESC 1:50



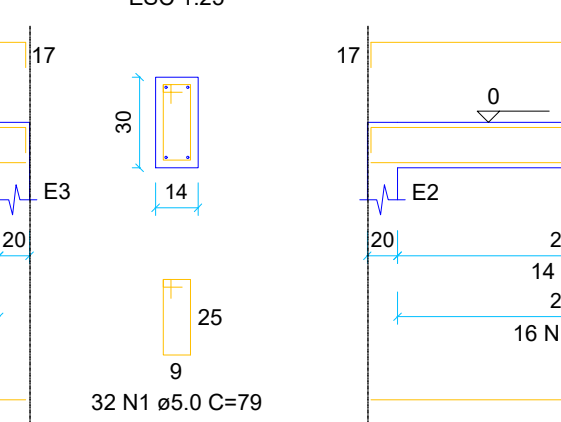
VB19

ESC 1:50



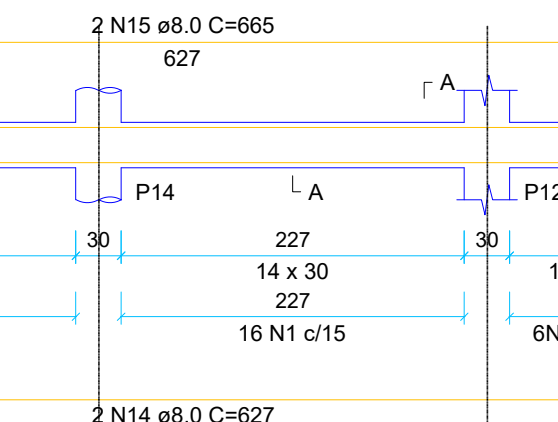
VB20

ESC 1:50



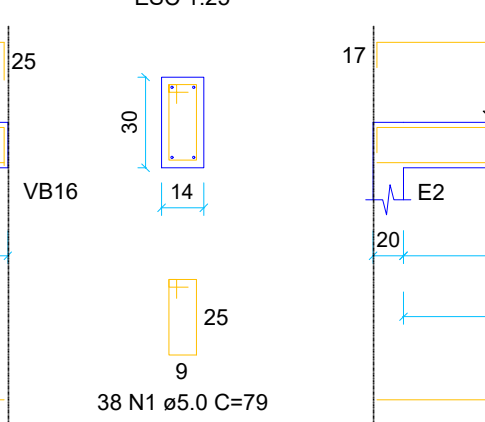
VB21

ESC 1:50



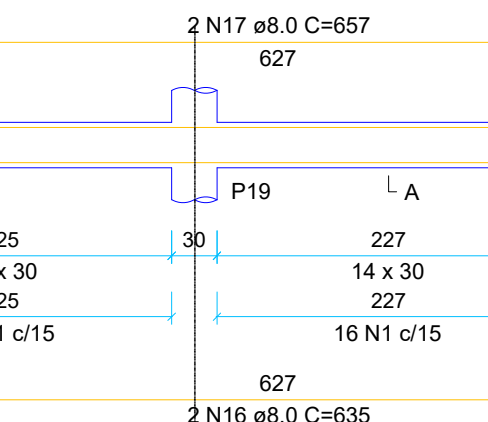
VB22

ESC 1:50



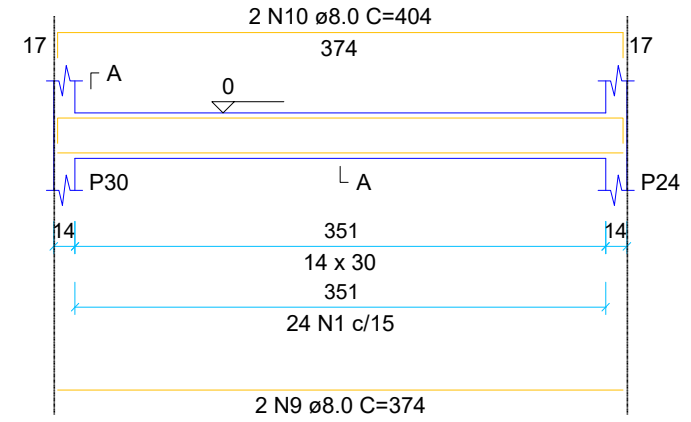
VB23

ESC 1:50



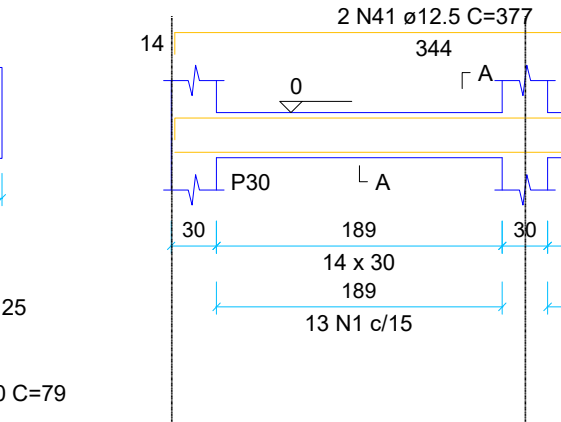
VB24

ESC 1:50



VB25

ESC 1:50

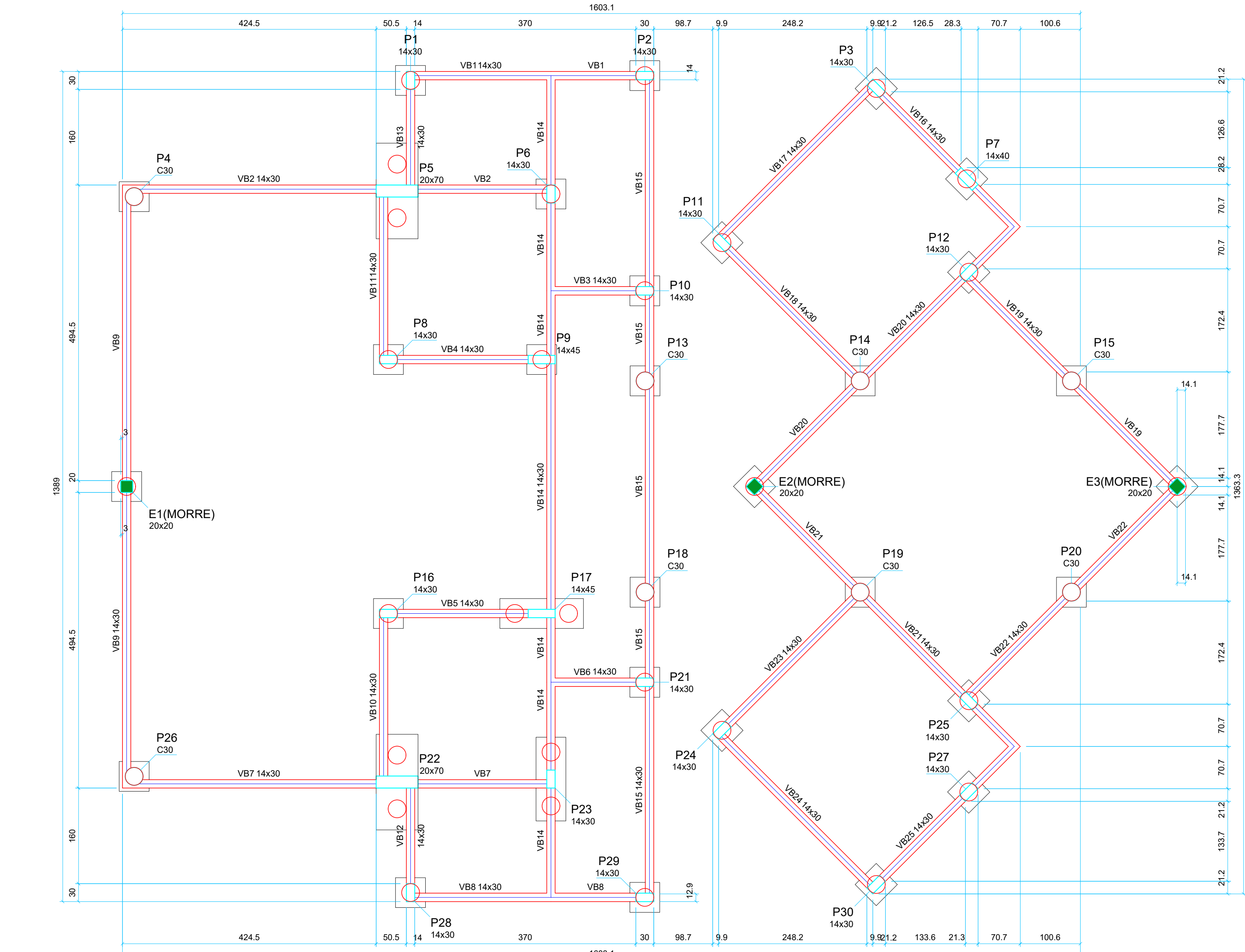


RELAÇÃO DO AÇO

AÇO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
CA50	1	5.0	749	79	59171
CA50	2	6.3	98	686	686
CA50	3	8.0	4	174	698
CA50	4	8.0	4	197	788
CA50	5	8.0	8	289	2312
CA50	6	8.0	2	409	818
CA50	7	8.0	2	427	854
CA50	8	8.0	8	205	1640
CA50	9	8.0	4	374	1496
CA50	10	8.0	4	404	1616
CA50	11	8.0	8	352	2816
CA50	12	8.0	4	512	2048
CA50	13	8.0	4	542	2168
CA50	14	8.0	2	627	1254
CA50	15	8.0	2	655	1330
CA50	16	8.0	2	635	1270
CA50	17	8.0	2	657	1314
CA50	18	12.5	2	421	842
CA50	19	12.5	2	440	880
CA50	20	12.5	4	720	2880
CA50	21	12.5	1	250	250
CA50	22	12.5	2	769	1538
CA50	23	12.5	1	240	240
CA50	24	12.5	2	769	1538
CA50	25	12.5	2	981	1962
CA50	26	12.5	2	1037	2074
CA50	27	12.5	4	306	1224
CA50	28	12.5	2	358	716
CA50	29	12.5	2	358	716
CA50	30	12.5	2	1114	2228
CA50	31	12.5	2	187	374
CA50	32	12.5	2	255	510
CA50	33	12.5	2	1197	2394
CA50	34	12.5	2	301	602
CA50	35	12.5	2	1066	2132
CA50	36	12.5	2	382	764
CA50	37	12.5	2	1197	2394
CA50	38	12.5	2	278	556
CA50	39	12.5	4	356	1424
CA50	40	12.5	2	354	708
CA50	41	12.5	2	377	754

RESUMO DO AÇO

AÇO	DIAM (mm)	C.TOTAL (m)	PESO + 10% (kg)
CA50	6.3	6.9	1.8
CA50	8.0	224.2	97.3
CA50	12.5	297	314.7
CA50	5.0	591.7	100.3
PESO TOTAL (kg)			
CA50	413.9		
CA50	100.3		
Volume de concreto (C-30) = 5.23 m³			
Área de forma = 92.13 m²			



Pilares				Vigas			
Nome	Seção (cm)	Elevação (cm)	Nível (cm)	Nome	Seção (cm)	Elevação (cm)	Nível (cm)
E1	20x20	0	0	VB1	14x30	0	0
E2	20x20	0	0	VB2	14x30	0	0
E3	20x20	0	0	VB3	14x30	0	0
P1	14x30	0	0	VB4	14x30	0	0
P2	14x30	0	0	VB5	14x30	0	0
P3	14x30	0	0	VB6	14x30	0	0
P4	Circ 30	0	0	VB7	14x30	0	0
P5	20x70	0	0	VB8	14x30	0	0
P6	14x30	0	0	VB9	14x30	0	0
P7	14x40	0	0	VB10	14x30	0	0
P8	14x30	0	0	VB11	14x30	0	0
P9	14x45	0	0	VB12	14x30	0	0
P10	14x30	0	0	VB13	14x30	0	0
P11	14x30	0	0	VB14	14x30	0	0
P12	14x30	0	0	VB15	14x30	0	0
P13	Circ 30	0	0	VB16	14x30	0	0
P14	Circ 30	0	0	VB17	14x30	0	0
P15	Circ 30	0	0	VB18	14x30	0	0
P16	14x30	0	0	VB19	14x30	0	0
P17	14x45	0	0	VB20	14x30	0	0
P18	Circ 30	0	0	VB21	14x30	0	0
P19	Circ 30	0	0	VB22	14x30	0	0
P20	Circ 30	0	0	VB23	14x30	0	0
P21	14x30	0	0	VB24	14x30	0	0
P22	20x70	0	0	VB25	14x30	0	0
P23	14x30	0	0				
P24	14x30	0	0				
P25	14x30	0	0				
P26	Circ 30	0	0				
P27	14x30	0	0				
P28	14x30	0	0				
P29	14x30	0	0				
P30	14x30	0	0				

Legenda dos pilares			
■	Pilar que morre		
□	Pilar que passa		
Legenda das vigas			
—	Viga		

Características dos materiais	
f _{ck}	Abatimento (cm)
(kg/cm²)	300
	5.00
Dimensão máxima de agregado = 19 mm	

PREFEITURA:

CREA:



PROJETO ESTRUTURAL DE CONCRETO ARMADO

ENDEREÇO DA OBRA
Av. Minas Gerais - Centro, Araguari - MG

PROPRIETÁRIO:

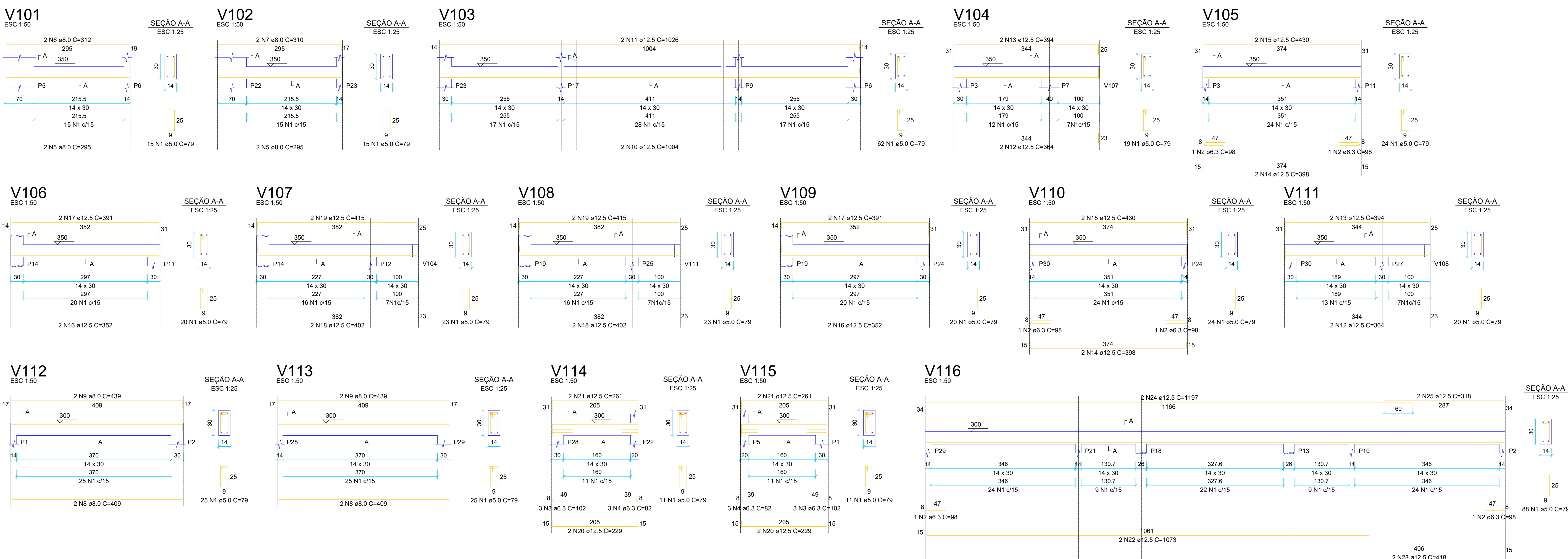
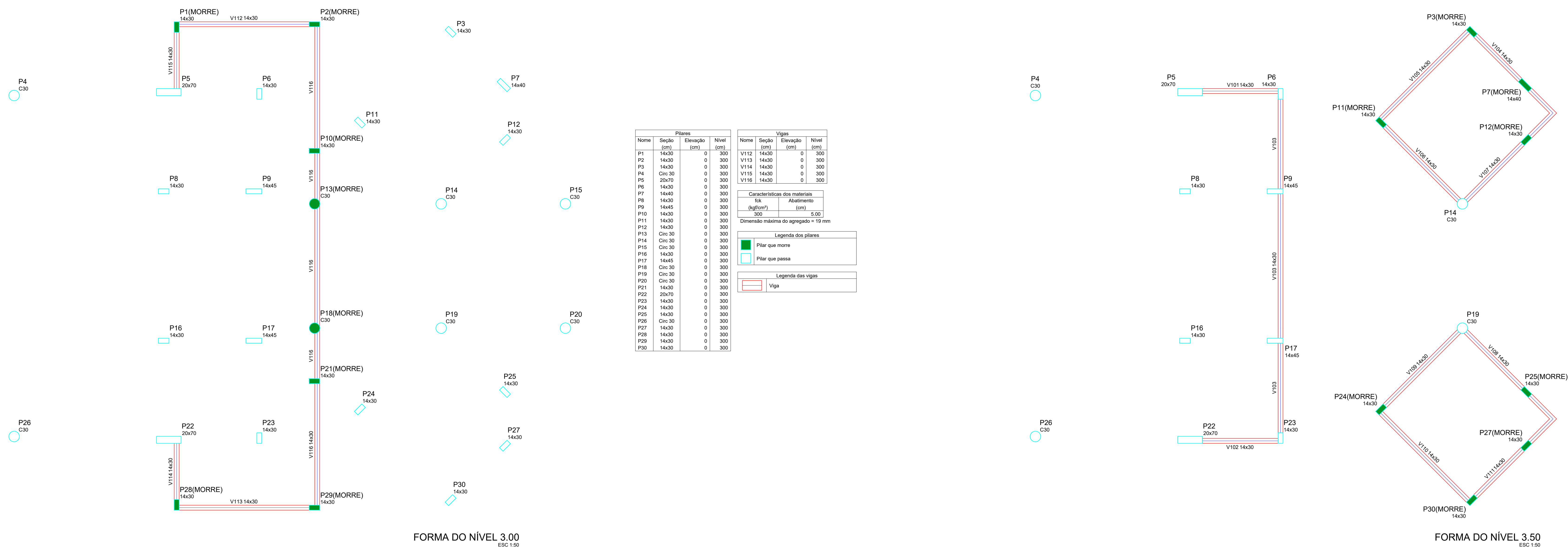
PREFEITURA MUNICIPAL DE ARAGUARI
CPF: 16.929.949/0001-48

AUTOR DO PROJETO:

ENG. CIVIL FABRICIO RODRIGUES DA COSTA
CREA: 191.194/0 - MG

RT DA OBRA

CONTEÚDO:
PLANTA DE FORMA DO NÍVEL 0.00m E DETALHAMENTO
DAS VIGAS BALDRAMESDATA:
19/07/2019FECHA:
02/04ASSINATURAS:
INDICADARESENHA:
MMF



RELAÇÃO DO AÇO									
AÇO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)	AÇO	N	DIAM (mm)	QUANT
CA50	1	5.0	426	79	33676	V103	1	5.0	426
CA50	2	6.3	6	98	588	V106	2	6.3	6
	3	6.3	6	102	612	V109	3	6.3	6
	4	6.3	6	82	492	V111	4	6.3	6
	5	8.0	4	295	1180	V115	5	8.0	4
	6	8.0	2	312	624	V116	6	8.0	2
	7	8.0	2	310	620				
	8	8.0	4	409	1636				
	9	8.0	4	430	1716				
	10	12.5	2	1034	2068				
	11	12.5	2	1026	2052				
	12	12.5	4	364	1456				
	13	12.5	4	394	1576				
	14	12.5	4	398	1592				
	15	12.5	4	430	1720				
	16	12.5	4	352	1408				
	17	12.5	4	391	1564				
	18	12.5	4	402	1608				
	19	12.5	4	291	1164				
	20	12.5	4	229	916				
	21	12.5	2	291	1164				
	22	12.5	2	1073	2146				
	23	12.5	2	418	1672				
	24	12.5	2	1197	2394				
	25	12.5	2	318	1272				

AÇO	DIAM (mm)	C.TOTAL (m)	PESO + 10% (kg)
CA50	5.0	10.3	4.4
CA50	6.3	58.2	25.2
CA50	8.0	146.2	60.8
CA50	5.0	335.8	66.9

Peso total (kg): 290.6
CA50: 290.6
CA50: 58.9

Volume de concreto (C-30) = 3.02 m³
Área de forma = 53.20 m²

PREFEITURA:

CREA:

PROJETO ESTRUTURAL DE CONCRETO ARMADO

GERENCIADO POR: [NOME]

ASSINATURAS

ÁREAS

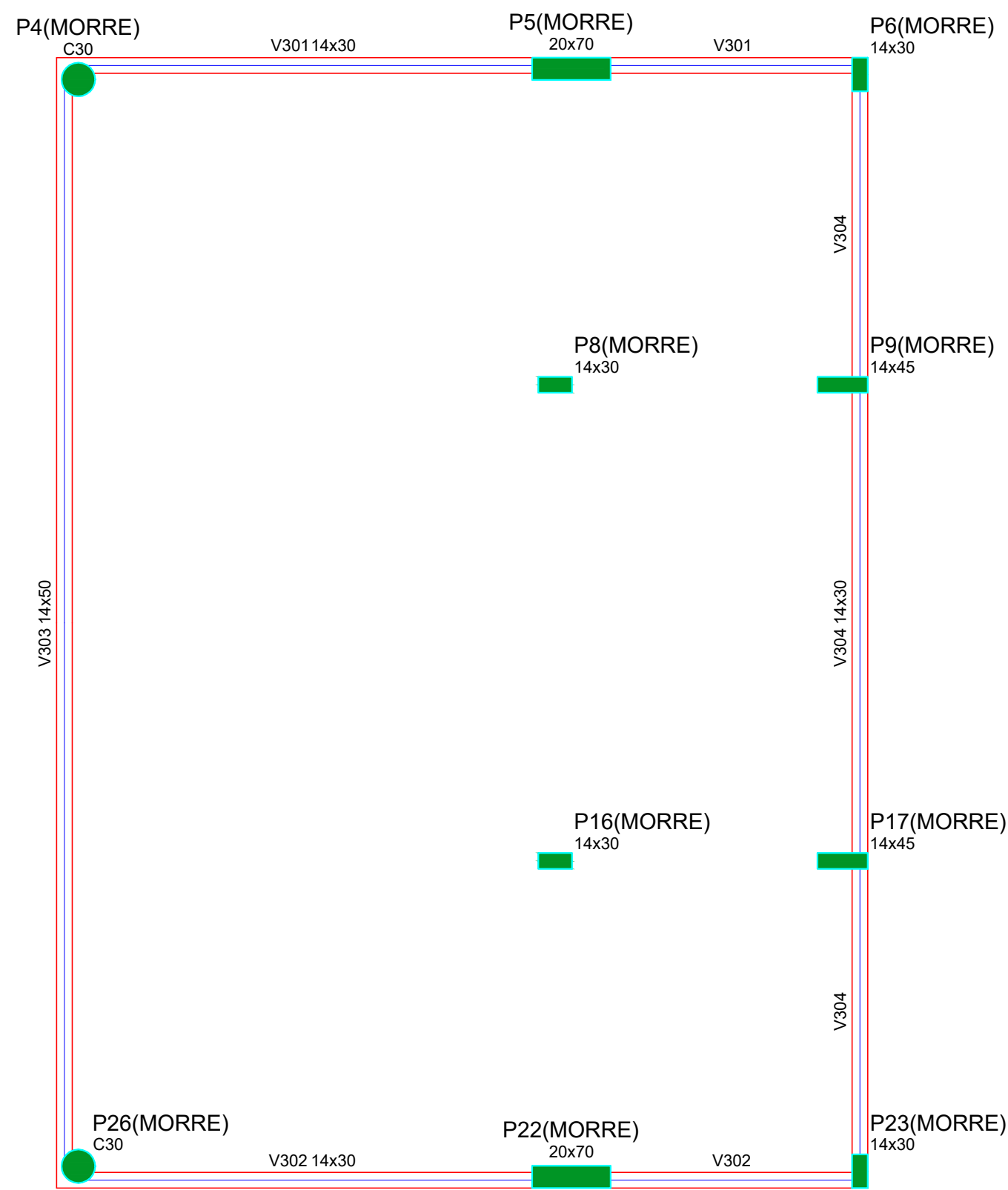
REVISÃO

19/07/2019

INDICADA

03/04

MMF

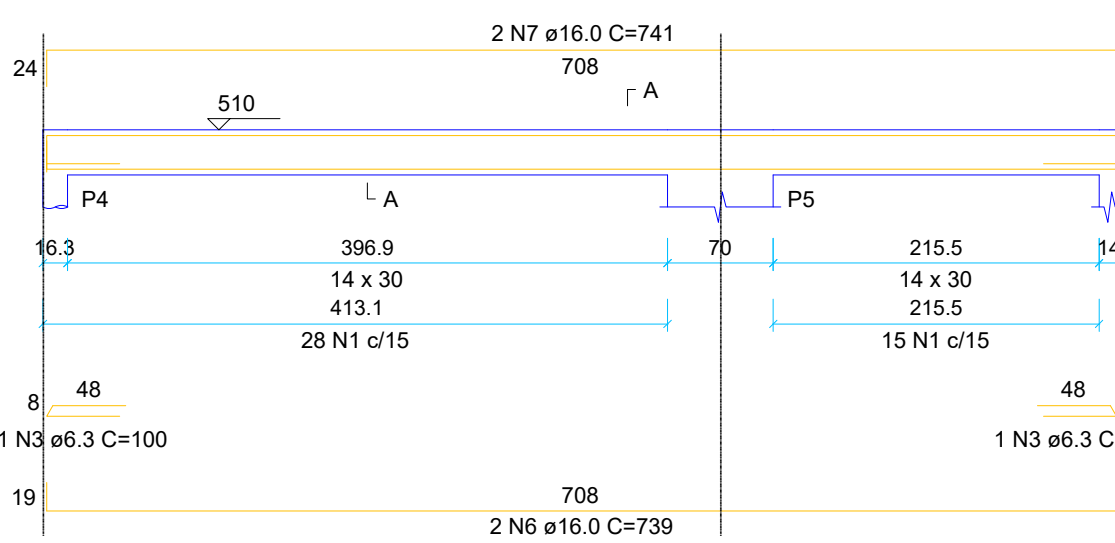


FORMA DO NÍVEL 5.10
ESC 1:50

Plano				Viga			
Nome	Seção	Elevação (cm)	Nível (cm)	Nome	Seção	Elevação (cm)	Nível (cm)
P4	Circ 30	0	510	V301	14x30	0	510
P5	20x70	0	510	V302	14x30	0	510
P6	14x30	0	510	V303	14x30	0	510
P7	14x30	120	630	V304	14x30	0	510
P8	14x30	0	510				
P9	14x30	0	510				
P10	14x30	120	630				
P11	14x30	0	510				
P12	20x70	0	510				
P13	14x30	0	510				
P14	Circ 30	0	510				

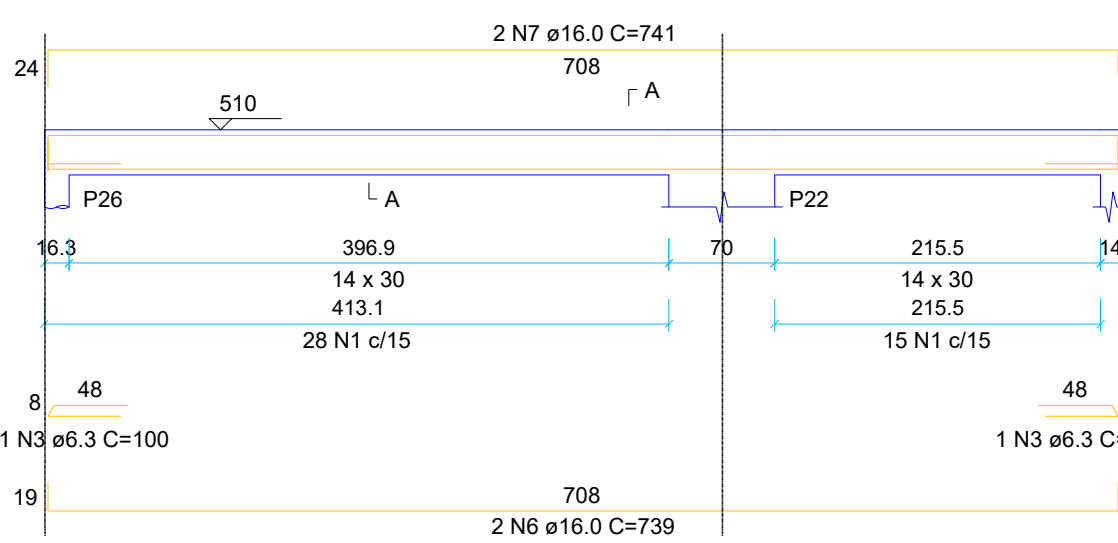
Legenda das vigas	
	Viga
Legenda das pilas	
	Pilar que mora
	Pilar que passa

V301
ESC 1:50



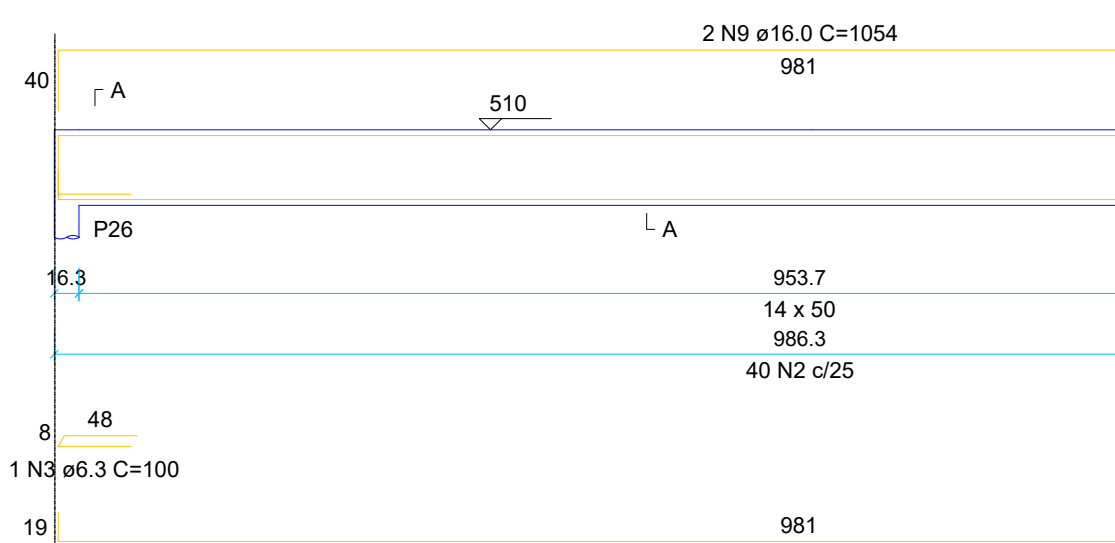
SEÇÃO A-A
ESC 1:25

V302
ESC 1:50



SEÇÃO A-A
ESC 1:25

V303
ESC 1:50



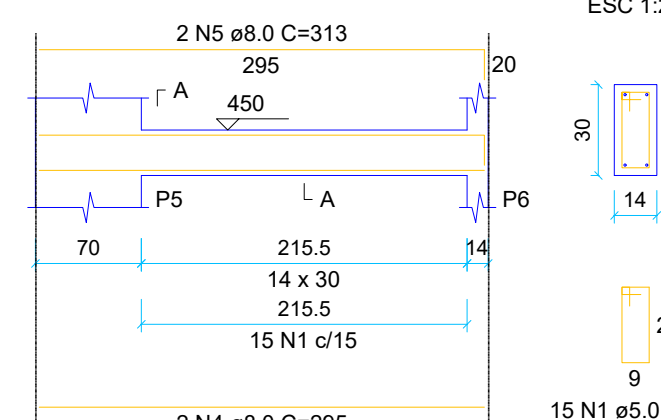
SEÇÃO A-A
ESC 1:25

RELAÇÃO DO AÇO				
CAO	N	DIAM (mm)	QUANT	C.TOTAL (cm)
CAO1	1	5.0	148	11682
CAO2	2	5.0	40	4780
CAO3	3	6.3	6	630
CAO4	4	12.5	2	1004
CAO5	5	16.0	2	2152
CAO6	6	16.0	4	739
CAO7	7	16.0	4	264
CAO8	8	16.0	2	1012
CAO9	9	16.0	2	1004

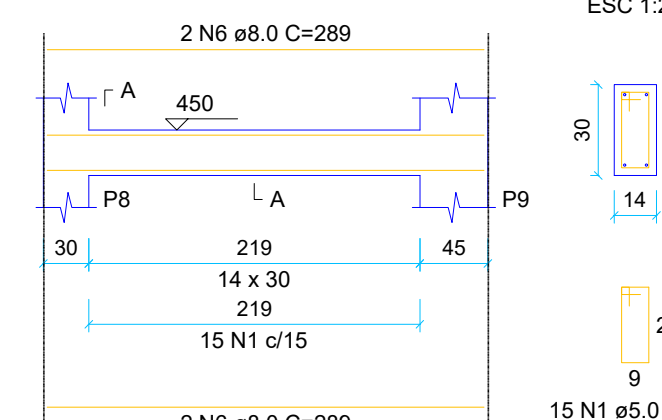
RESUMO DO AÇO			
CAO	DIAM (mm)	C.TOTAL (m)	PESO + 10% (kg)
CAO1	5.0	6	1.6
CAO2	5.0	41.4	43.9
CAO3	6.3	104.5	174.3
CAO4	12.5	104.5	27.9
CAO5	16.0	220	27.9
CAO6	16.0	220	27.9

Volume de concreto (C-30) = 1.71 m³
Área de forma = 29.26 m²

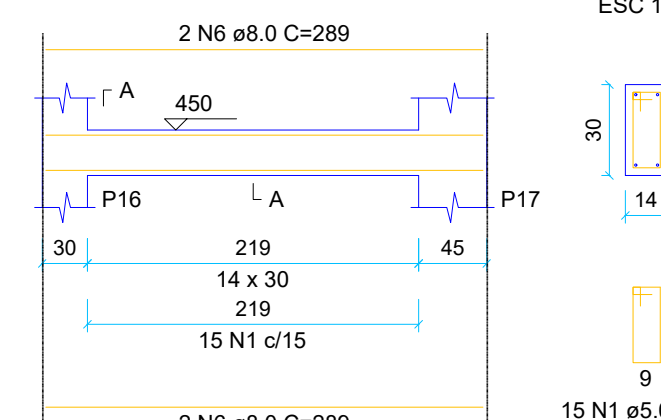
V201
ESC 1:50



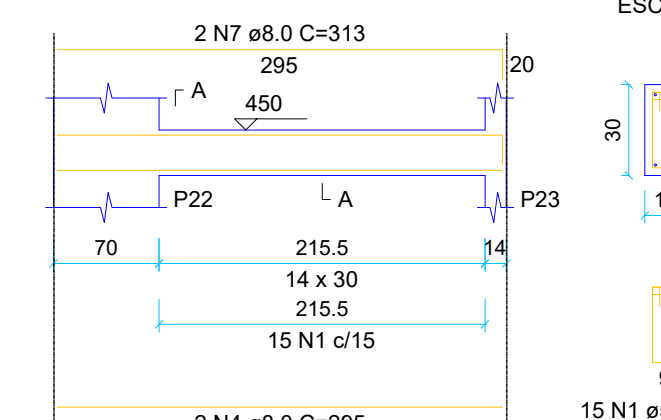
V202
ESC 1:50



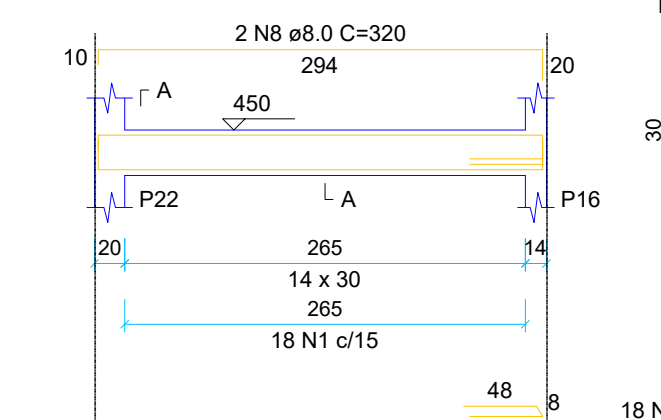
V203
ESC 1:50



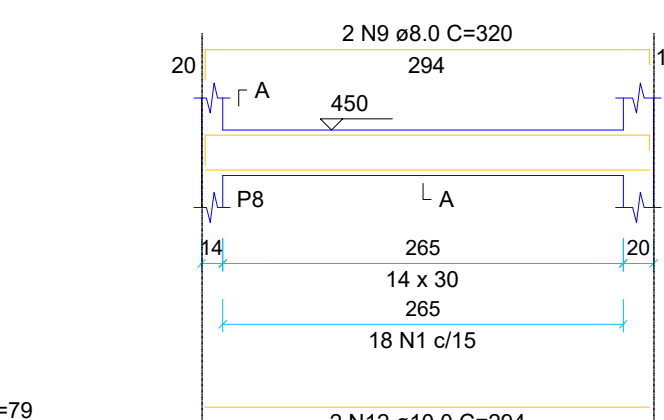
V204
ESC 1:50



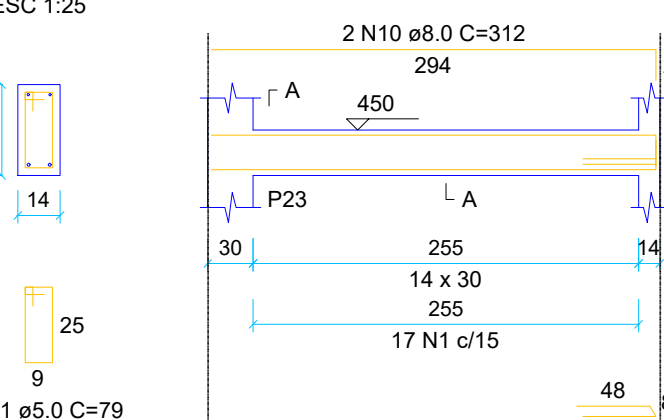
V205
ESC 1:50



V206
ESC 1:50



V207
ESC 1:50

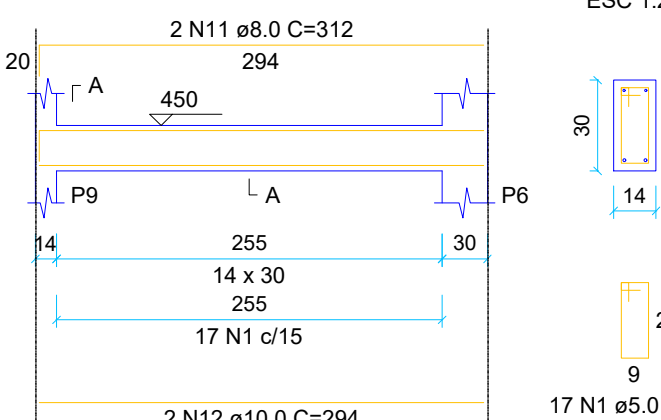


RELAÇÃO DO AÇO				
CAO	N	DIAM (mm)	QUANT	C.TOTAL (cm)
CAO1	1	5.0	130	10270
CAO2	2	5.0	104	10504
CAO3	3	6.3	4	400
CAO4	4	8.0	2	1180
CAO5	5	8.0	2	1180
CAO6	6	8.0	2	1180
CAO7	7	8.0	2	1180
CAO8	8	8.0	2	1180
CAO9	9	8.0	2	1180
CAO10	10	8.0	2	1180
CAO11	11	8.0	2	1180
CAO12	12	10.0	4	1180
CAO13	13	16.0	2	1180
CAO14	14	16.0	2	1180
CAO15	15	16.0	8	4582
CAO16	16	16.0	8	4582

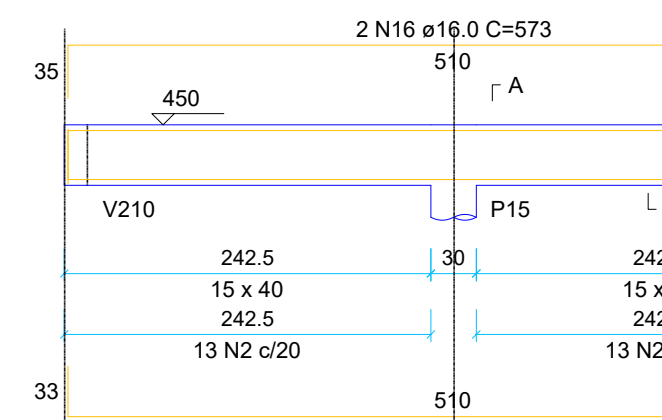
RESUMO DO AÇO			
CAO	DIAM (mm)	C.TOTAL (m)	PESO + 10% (kg)
CAO1	5.0	72.7	1.1
CAO2	5.0	11.8	31.9
CAO3	6.3	104	180.6
CAO4	8.0	207.7	35.2
CAO5	8.0	221.2	35.2
CAO6	8.0	221.2	35.2

Volume de concreto (C-30) = 2.24 m³
Área de forma = 37.21 m²

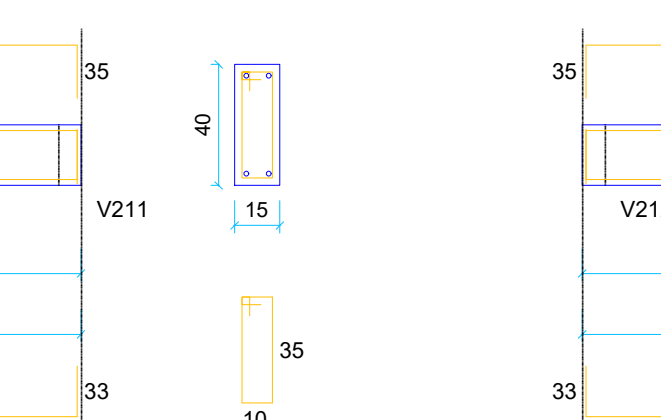
V208
ESC 1:50



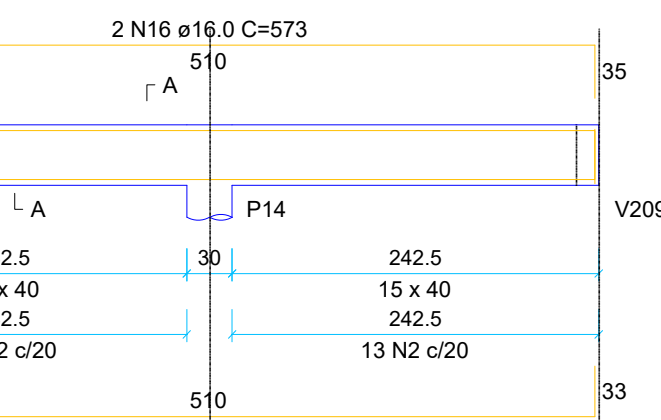
V209
ESC 1:50



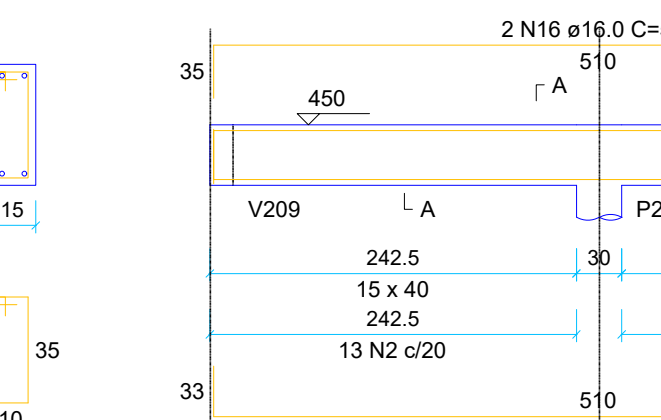
V210
ESC 1:50



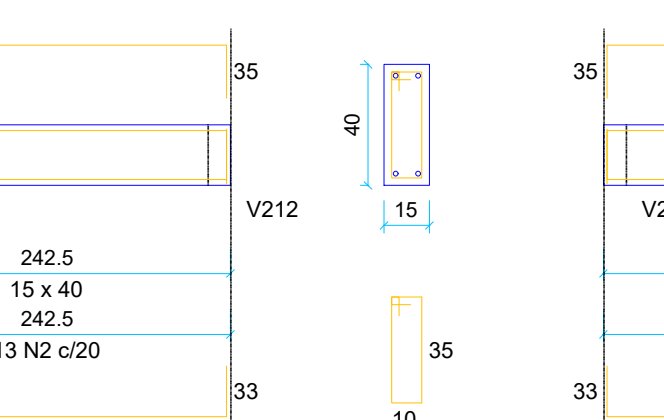
V211
ESC 1:50



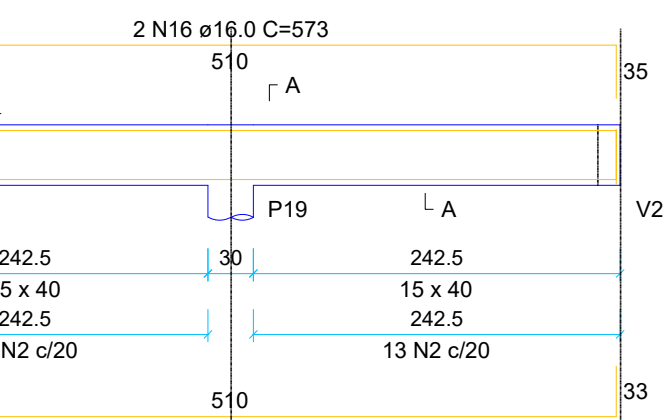
V212
ESC 1:50



V213
ESC 1:50



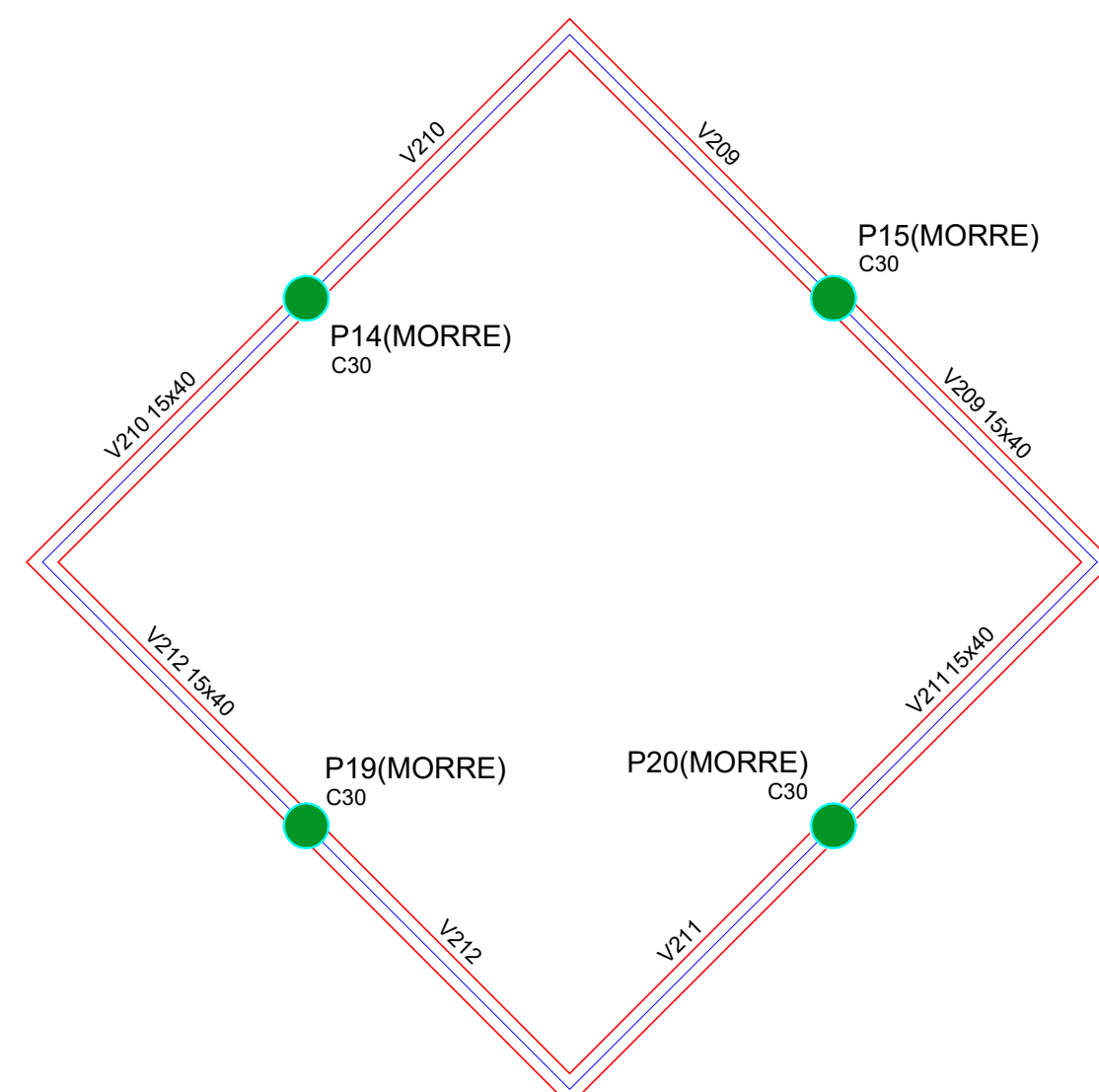
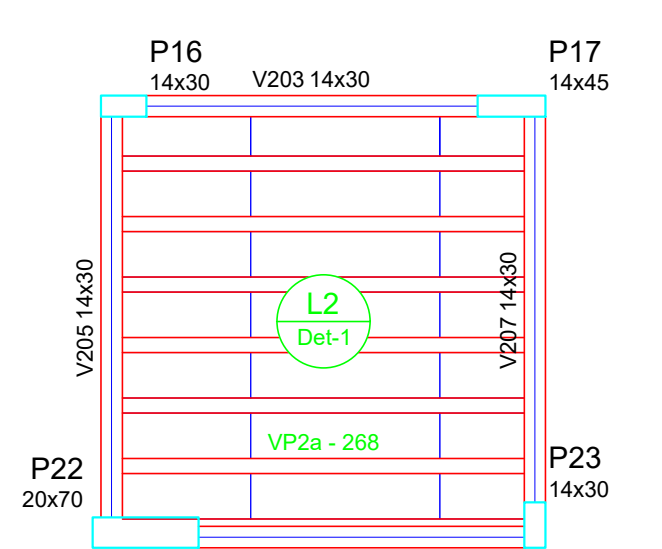
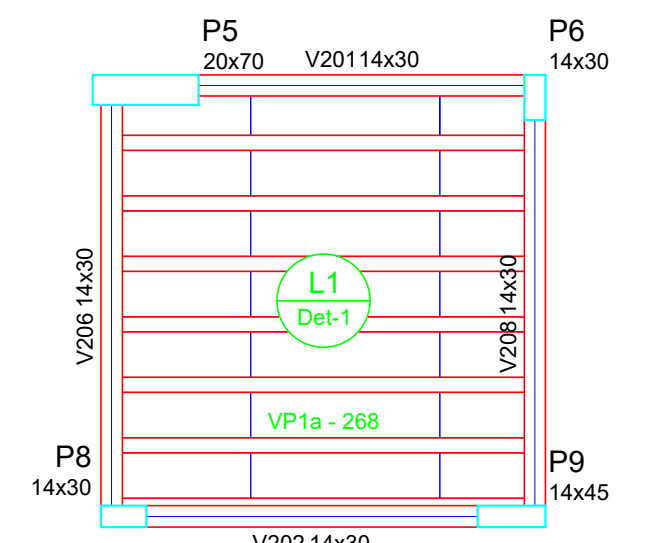
V214
ESC 1:50



RELAÇÃO DO AÇO			
CAO	DIAM (mm)	C.TOTAL (m)	PESO + 10% (kg)
CAO1	5.0	72.7	1.1
CAO2	5.0	11.8	31.9
CAO3	6.3	104	180.6
CAO4	8.0	207.7	35.2
CAO5	8.0	221.2	35.2
CAO6	8.0	221.2	35.2

Volume de concreto (C-30) = 2.24 m³
Área de forma = 37.21 m²

P4
C30



FORMA DO NÍVEL 4.50
ESC 1:50

Lajes									
Nome	Tipo	Altura (cm)	Elevação (cm)	Nível (cm)	Peso próprio (kg/m²)	Adicional (kg/m²)	Acidental (kg/m²)	Localizada (kg/m²)	Água (kg/m²)
L1	Nervurada	20	0	450	202	182	50	-	0
L2	Nervurada	20	0	450	202	182	50	-	1000

Bloco de enclenchimento				
Detalhe	Tipo	Nome	Dimensões (cm)	Quantidade
1	EPS Unidirecional	B16/30/125	150 x 30 x 125	42

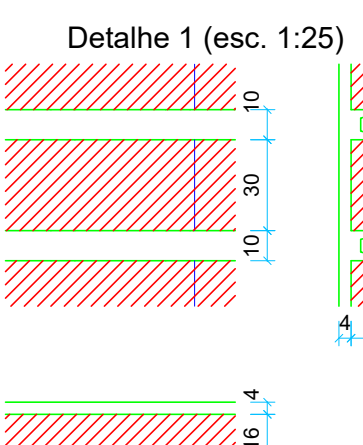
Área de lajes			
Tipo	Altura (cm)	Bloco de Enclenchimento	Área (m²)
Nervurada	20	B16/30/125	14.42

Características dos materiais	
ICA	Abatimento (cm)
300	5.00

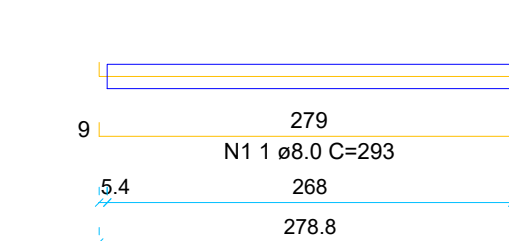
Dimensão máxima do agregado = 19 mm

Plano				Viga			
Nome	Seção	Elevação (cm)	Nível (cm)	Nome	Seção	Elevação (cm)	Nível (cm)
P4	Circ 30	0	450	V201	14x30	0	450
P5	20x70	0	450	V202	14x30	0	450
P6	14x30	0	450	V203	14x30	0	450
P7	14x30	0	450	V204	14x30	0	450
P8	14x30	0	450	V205	14x30	0	450
P9	14x30	0	450	V206	14x30	0	450
P10	Circ 30	0	450	V207	14x30	0	450
P11	14x30	0	450	V208	14x30	0	450
P12	14x30	0	450	V209	14x30	0	450
P13	Circ 30	0	450	V210	14x30	0	450
P14	14x30	0	450	V211	14x30	0	450
P15	14x30	0	450	V212	14x30	0	450
P16	14x30	0	450				
P17	14x30	0	450				
P18	14x30	0	450				
P19	Circ 30	0	450				
P20	Circ 30	0	450				
P21	20x70	0	450				
P22	14x30	0	450				
P23	14x30	0	450				
P24	Circ 30	0	450				

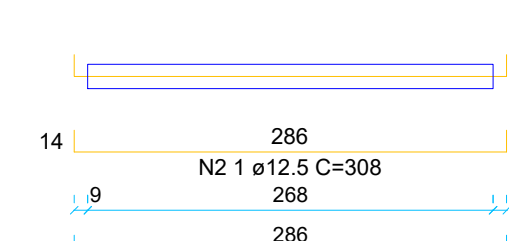
Legenda das pilas	
	Pilar que mora
	Pilar que passa
Legenda das vigas	
	Viga



VP1a (6 unidades)
ESC 1:50



VP2a (6 unidades)
ESC 1:50



RELAÇÃO DO AÇO				
CAO	N	DIAM (mm)	QUANT	C.TOTAL (cm)
CAO1	1	8.0	6	293
CAO2	2	12.5	6	1758

RESUMO DO AÇO			
CAO	DIAM (mm)	C.TOTAL (m)	PESO + 10% (kg)
CAO1	8.0	17.6	7.6
CAO2	12.5	10.5	19.6
CAO3	12.5	27.2	7.6

Volume de concreto (C-30) = 0.58 m³
Área de forma = 0.00 m²

PREFEITURA:

CREA:

VORTEX
ENGENHARIA E PROJETOS
AV. ANSELMO LAGES DOS SANTOS, 100 - JARDIM SANTA ANA - ANÁPOLIS - PA - 06000-000

PROJETO ESTRUTURAL DE CONCRETO ARMADO
PLANTA DE FORMA DOS NÍVEIS 4.50m E 5.10m E DETALHAMENTO DAS VIGAS E LAJES

19/07/2019
04/04

INDICADA
MMF