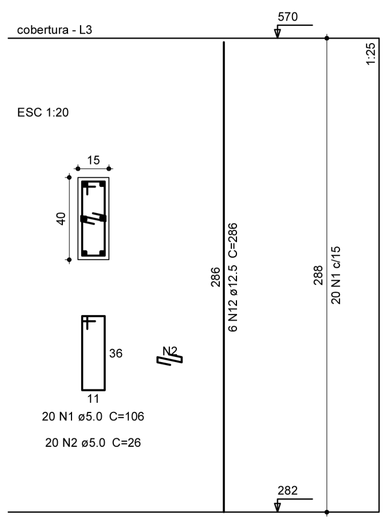
PILARES DA COBERTURA

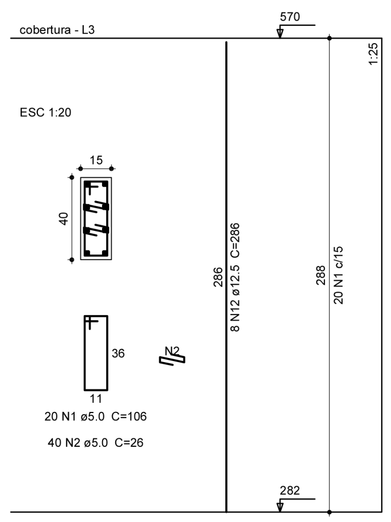
P1=P9=P10=P12=P13=P35=P38=P42=P48=P53 =P55=P58=P63=P64=P65



20 N1 ø5.0 C=106

20 N2 ø5.0 C=26

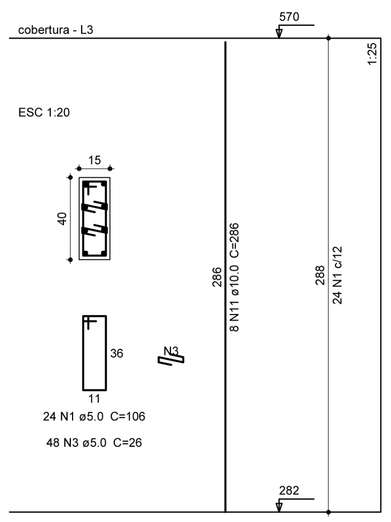
P14=P49=P50



20 N1 ø5.0 C=106

40 N2 ø5.0 C=26

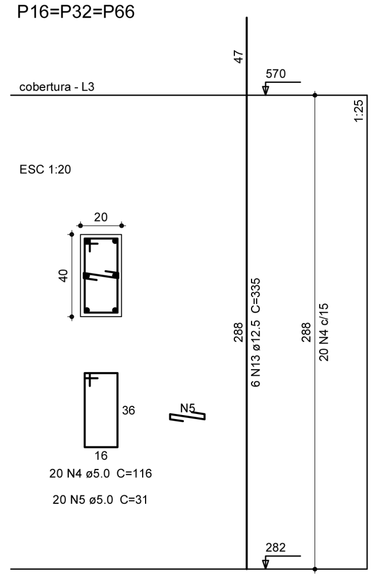
P15



24 N1 ø5.0 C=106

48 N3 ø5.0 C=26

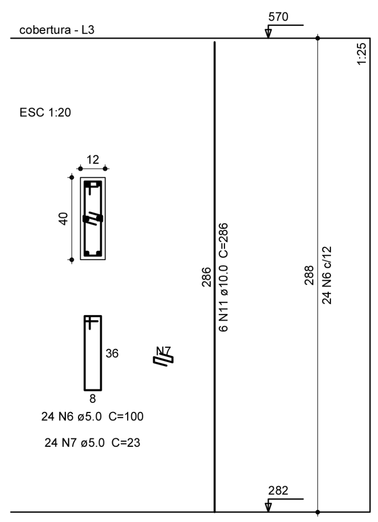
P16=P32=P66



20 N4 ø5.0 C=116

20 N5 ø5.0 C=31

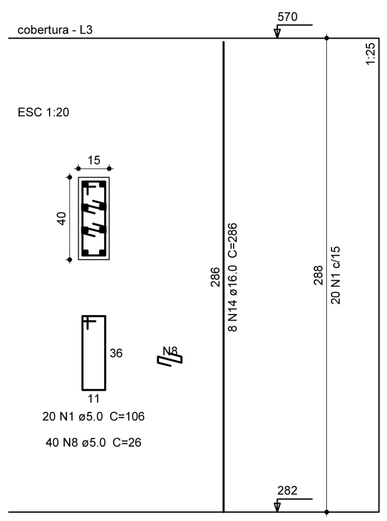
P17=P18=P19=P20=P21=P24



24 N6 ø5.0 C=100

24 N7 ø5.0 C=23

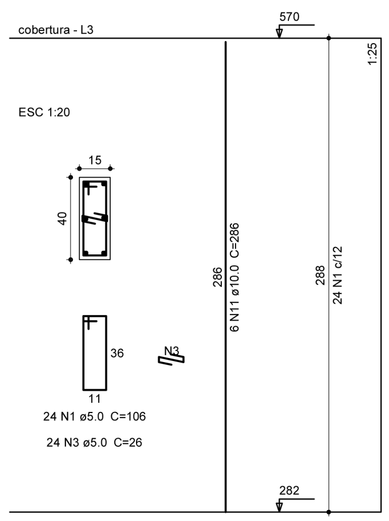
P2=P4=P6=P44



20 N1 ø5.0 C=106

40 N8 ø5.0 C=26

P3=P5=P11=P25=P26=P27=P28=P29=P36=P51 =P54=P56=P57=P59=P61



24 N1 ø5.0 C=106

24 N3 ø5.0 C=26

Relação do aço

15xP1 4xP2 15xP3
P7 3xP14 P15
3xP16 6xP17 P30
P43 2xP52 P67

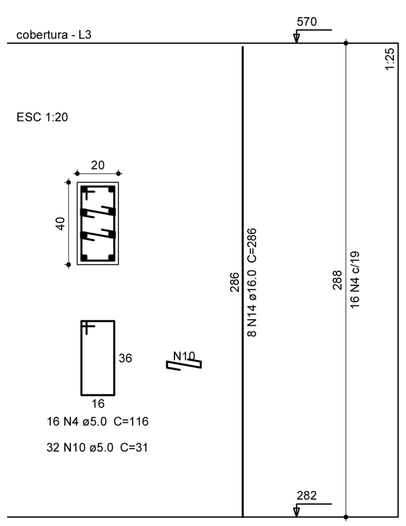
AÇO	N	DIAM	Q	UNIT (cm)	C.TOTAL (cm)
CA60	1	5.0	864	106	91584
	2	5.0	440	26	11440
	3	5.0	408	26	10608
	4	5.0	136	116	15776
	5	5.0	100	31	3100
	6	5.0	144	100	14400
	7	5.0	144	23	3312
	8	5.0	180	26	4680
	9	5.0	24	31	744
	10	5.0	64	31	1984
CA50	11	10.0	140	286	40040
	12	12.5	114	286	32604
	13	12.5	32	335	10720
	14	16.0	54	286	15444

Resumo do aço

AÇO	DIAM	C.TOTAL (m)	PESO + 10 % (kg)
CA50	10.0	400.4	271.5
	12.5	433.3	459.1
	16.0	154.5	268.1
CA60	5.0	1576.3	267.3
PESO TOTAL			
CA50	998.8		
CA60	267.3		

Vol. de concreto total (C-25) = 9.35 m³
Área de forma total = 168.88 m²

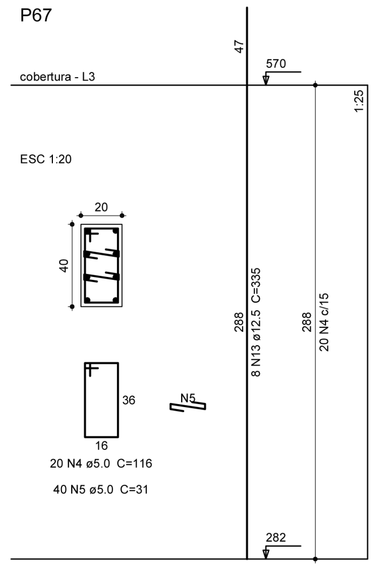
P52=P62



16 N4 ø5.0 C=116

32 N10 ø5.0 C=31

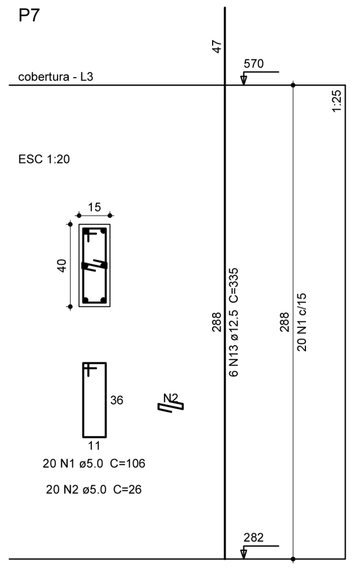
P67



20 N4 ø5.0 C=116

40 N5 ø5.0 C=31

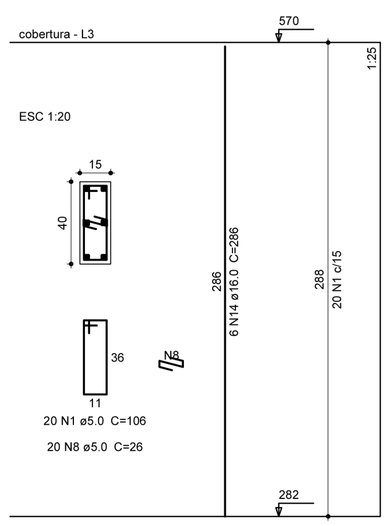
P7



20 N1 ø5.0 C=106

20 N2 ø5.0 C=26

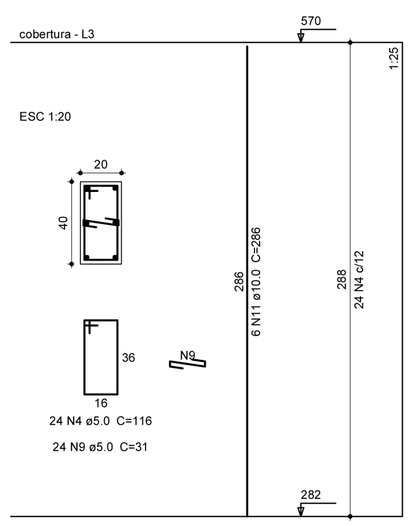
P43



20 N1 ø5.0 C=106

20 N8 ø5.0 C=26

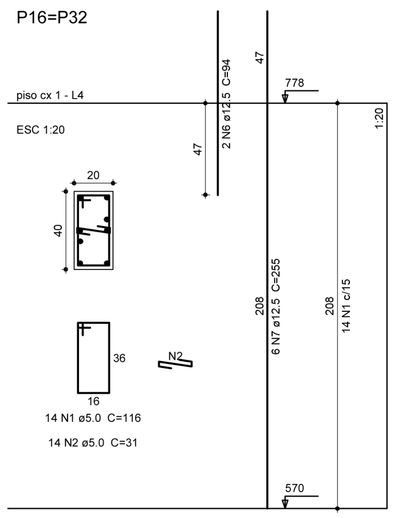
P30



24 N4 ø5.0 C=116

24 N9 ø5.0 C=31

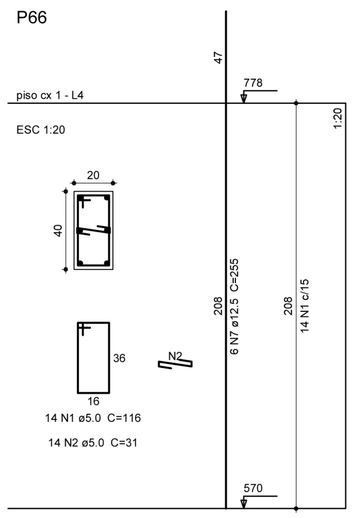
P16=P32



14 N1 ø5.0 C=116

14 N2 ø5.0 C=31

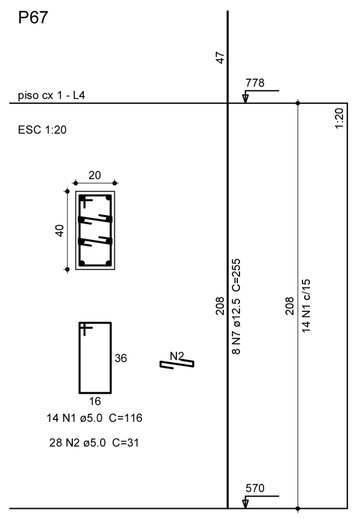
P66



14 N1 ø5.0 C=116

14 N2 ø5.0 C=31

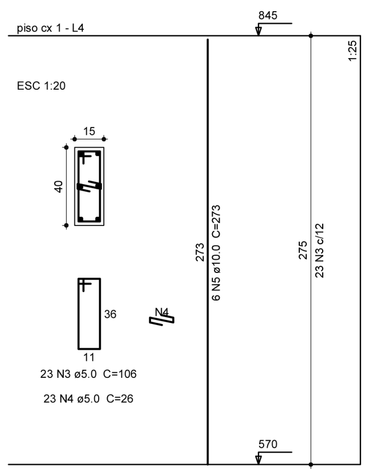
P67



14 N1 ø5.0 C=116

28 N2 ø5.0 C=31

P7



23 N3 ø5.0 C=106

23 N4 ø5.0 C=26

Relação do aço

P7 2xP16 P66
P67

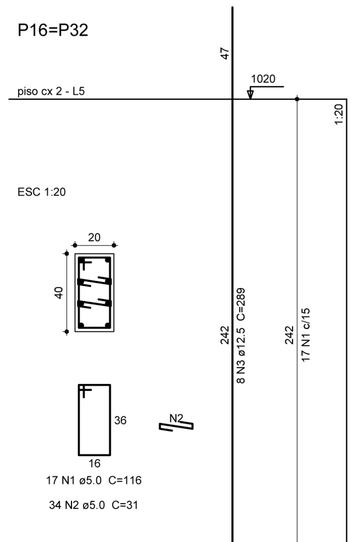
AÇO	N	DIAM	Q	UNIT (cm)	C.TOTAL (cm)
CA60	1	5.0	56	116	6496
	2	5.0	70	31	2170
	3	5.0	23	106	2438
	4	5.0	23	26	598
CA50	5	10.0	6	273	1638
	6	12.5	4	94	376
	7	12.5	26	255	6630

Resumo do aço

AÇO	DIAM	C.TOTAL (m)	PESO + 10 % (kg)
CA50	10.0	16.4	11.1
	12.5	70.1	74.2
CA60	5.0	117.1	19.8
PESO TOTAL			
CA50	85.3		
CA60	19.8		

Vol. de concreto total (C-25) = 0.83 m³
Área de forma total = 13.01 m²

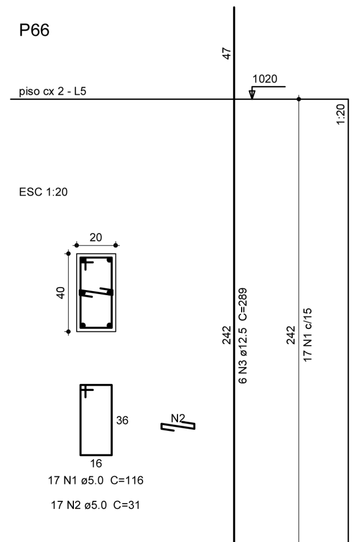
P16=P32



17 N1 ø5.0 C=116

34 N2 ø5.0 C=31

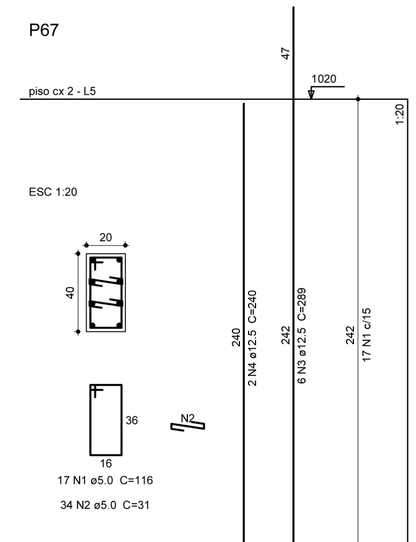
P66



17 N1 ø5.0 C=116

17 N2 ø5.0 C=31

P67



17 N1 ø5.0 C=116

34 N2 ø5.0 C=31

Relação do aço

2xP16 P66 P67

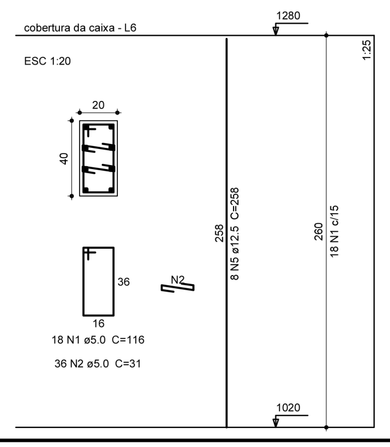
AÇO	N	DIAM	Q	UNIT (cm)	C.TOTAL (cm)
CA60	1	5.0	68	116	7888
	2	5.0	119	31	3689
CA50	3	12.5	28	289	8092
	4	12.5	2	240	480

Resumo do aço

AÇO	DIAM	C.TOTAL (m)	PESO + 10 % (kg)
CA50	12.5	85.8	90.8
CA60	5.0	115.8	19.6
PESO TOTAL			
CA50	90.8		
CA60	19.6		

Vol. de concreto total (C-25) = 0.77 m³
Área de forma total = 11.62 m²

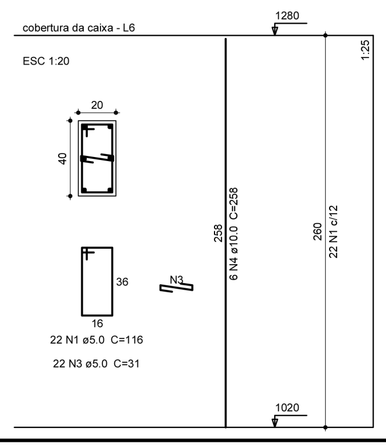
P16=P32



18 N1 ø5.0 C=116

36 N2 ø5.0 C=31

P66=P67



22 N1 ø5.0 C=116

22 N3 ø5.0 C=31

Relação do aço

2xP16 2xP66

AÇO	N	DIAM	Q	UNIT (cm)	C.TOTAL (cm)
CA60	1	5.0	80	116	9280
	2	5.0	72	31	2232
	3	5.0	44	31	1364
CA50	4	10.0	12	258	3096
	5	12.5	16	258	4128

Resumo do aço

AÇO	DIAM	C.TOTAL (m)	PESO + 10 % (kg)
CA50	10.0	31	21
	12.5	41.3	43.7
CA60	5.0	128.8	21.8
PESO TOTAL			
CA50	64.7		
CA60	21.8		

Vol. de concreto total (C-25) = 0.83 m³
Área de forma total = 12.48 m²

ESTRUTURAL

MUNICÍPIO

ANTÔNIO CARLOS – SC

OBRA ESCOLA MUNICIPAL

CONTEÚDO
PILARES DA COBERTURA
PILARES DO PISO 1 E 2 DA CAIXA DÁGUA
PILARES DA COBERTURA DA CAIXA DÁGUA

PROJETO
Eng. Civil Virginia Maria Wolff
CREA-SC 37928-1

EXECUÇÃO

DESENHO	ESCALA	DATA	ÁREA	PRANCHA
GRANFPOLIS	INDICADAS	DEZ/2011	1301,00m²	26/26

ASSOCIAÇÃO DOS MUNICÍPIOS
DA REGIÃO DA GRANDE FLORIANÓPOLIS
" G R A N F P O L I S "
ASSESSORIA DE ENGENHARIA E ARQUITETURA