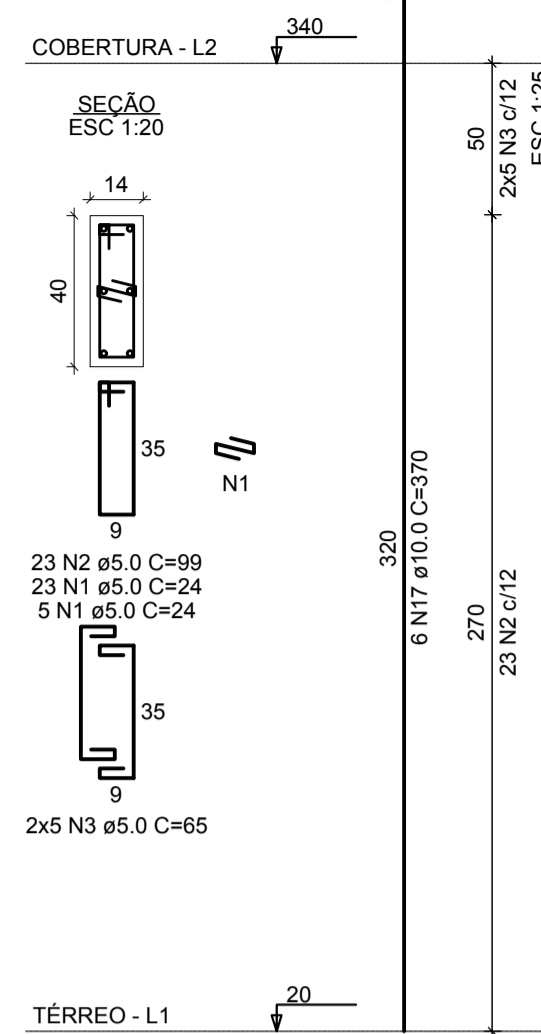
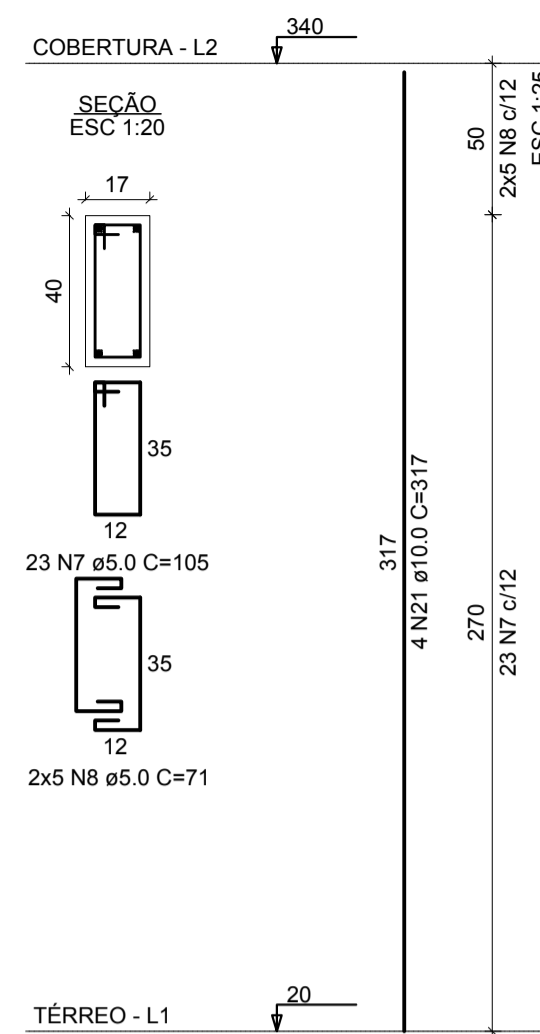


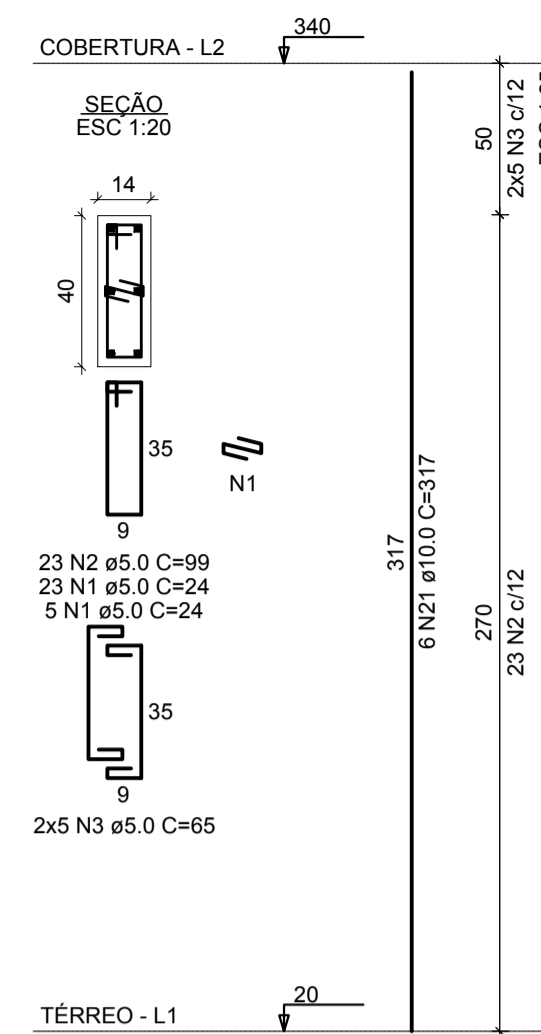
P1=P3=P4=P10=P16=P17=
=P28=P32=P35



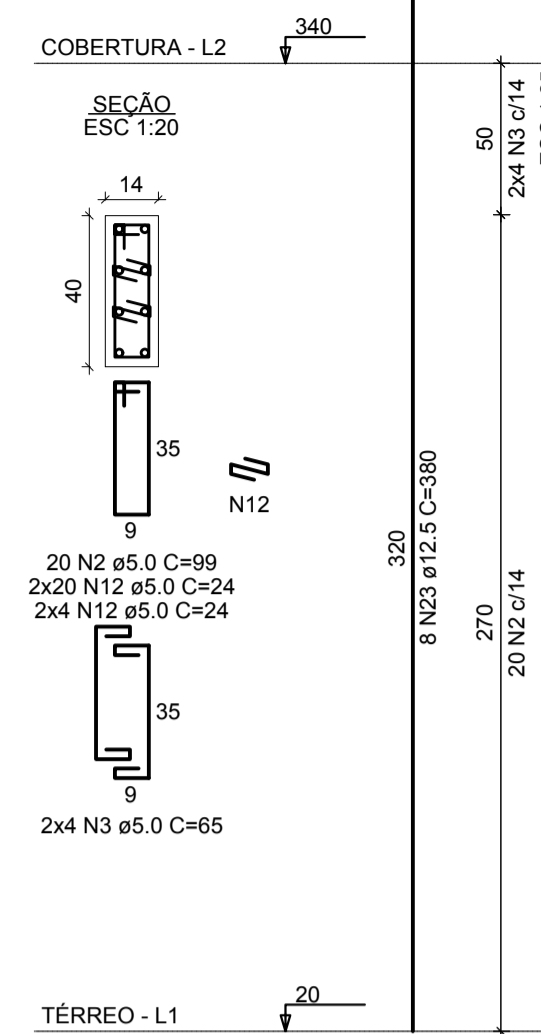
P11=P21=P22



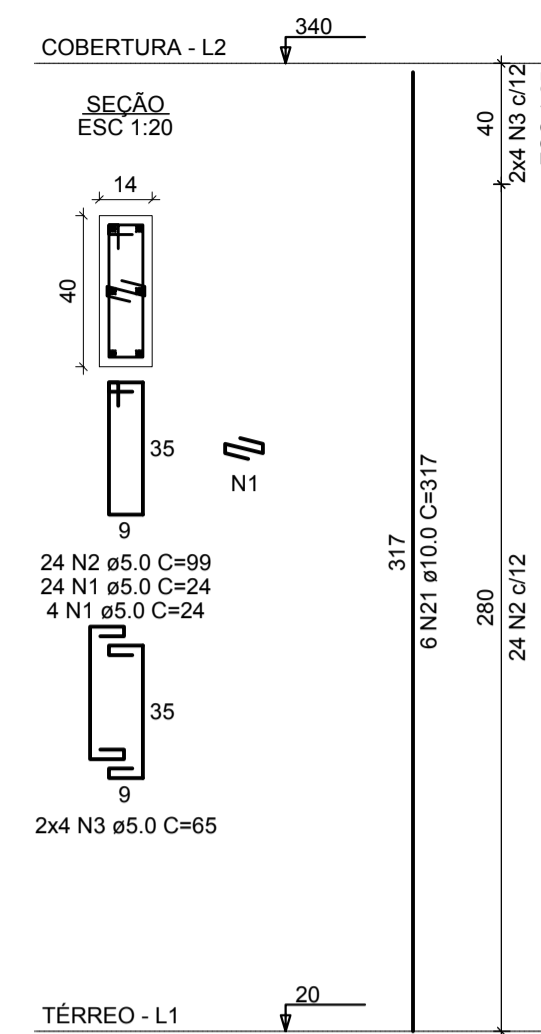
P12=P13=P14=P15



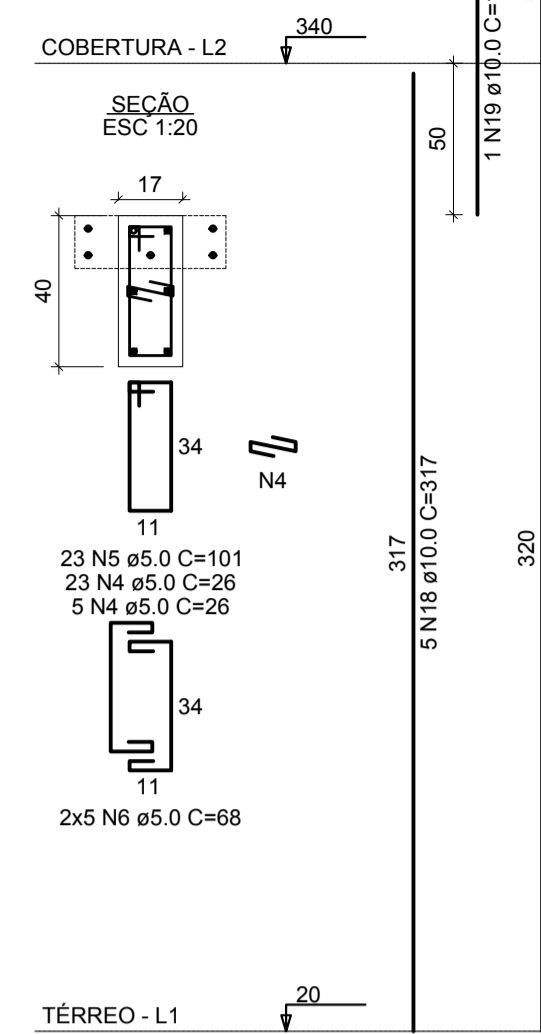
P18



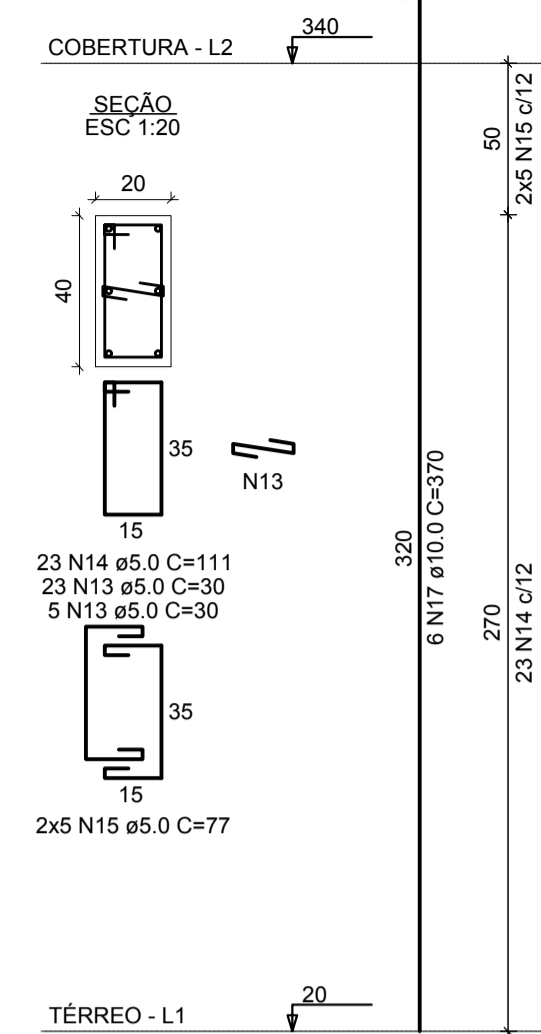
P19



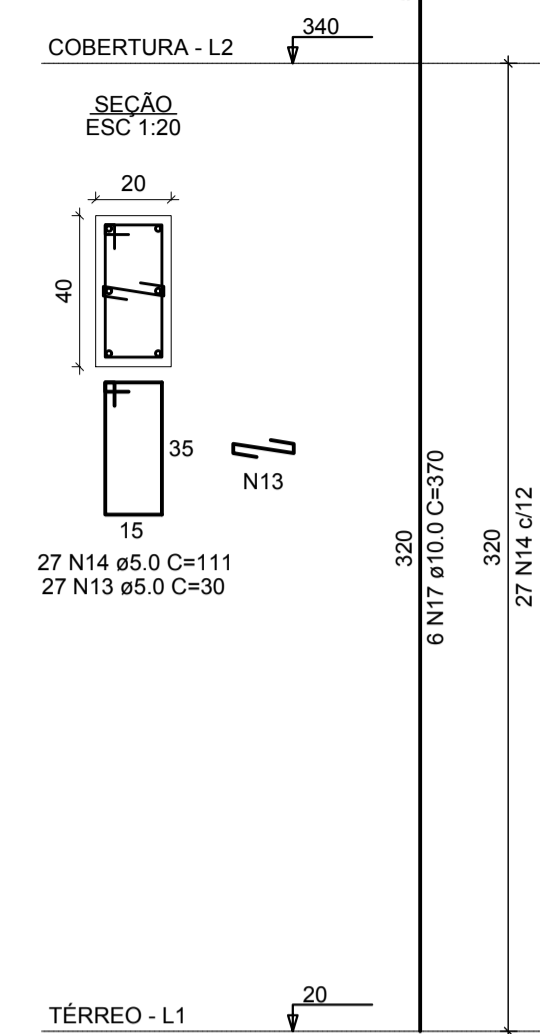
P2



P20



P24



RELAÇÃO DO AÇO

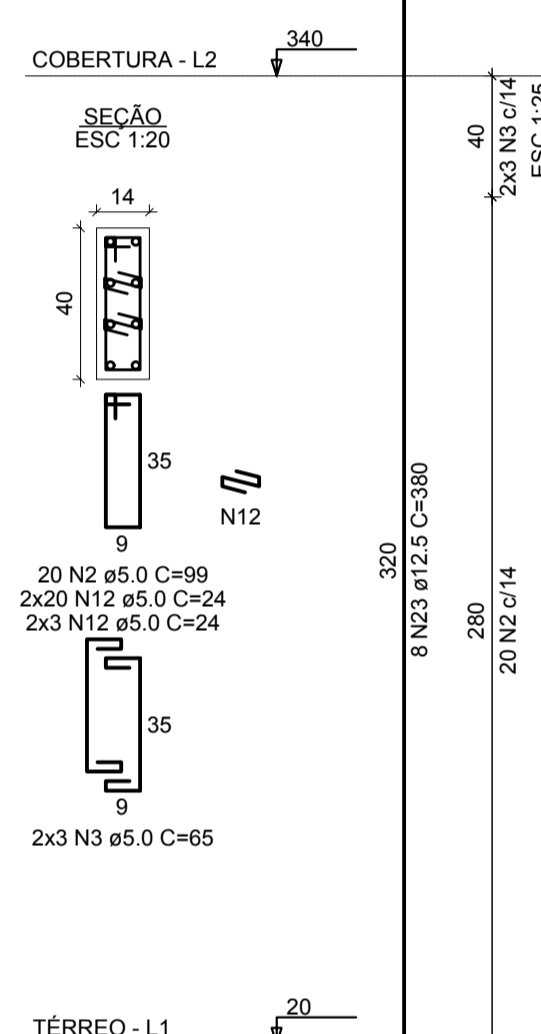
AÇO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
CA60	1	5.0	616	24	14784
	2	5.0	529	99	52371
	3	5.0	212	65	13780
	4	5.0	28	26	728
	5	5.0	23	101	2323
	6	5.0	10	68	680
	7	5.0	187	105	19635
	8	5.0	74	71	5254
	9	5.0	28	23	644
	10	5.0	24	95	2280
	11	5.0	8	62	496
	12	5.0	94	24	2256
	13	5.0	55	30	1650
	14	5.0	50	111	5550
	15	5.0	10	77	770
	16	5.0	56	27	1512
	17	10.0	94	370	34780
	18	10.0	10	317	3170
	19	10.0	8	100	800
	20	10.0	20	115	2300
	21	10.0	84	317	26628
	22	10.0	12	105	1260
	23	12.5	16	180	2880

RESUMO DO AÇO

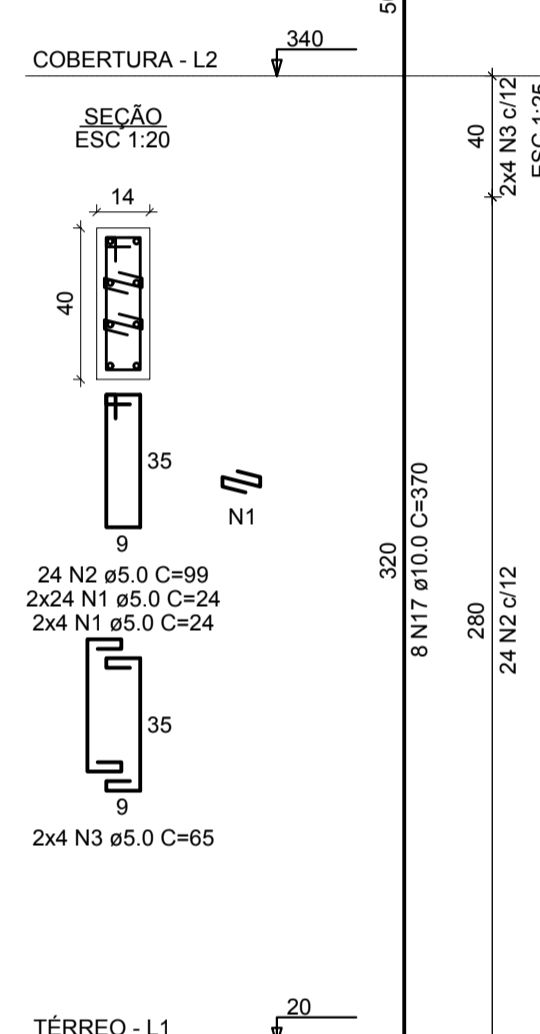
AÇO	DIAM (mm)	C.TOTAL (m)	PESO + 0% (kg)
CA50	10.0	689.4	425
CA60	5.0	1247.1	58.6
PESO TOTAL (kg)			
CA50			483.6
CA60			192.2

Volume de concreto (C-25) = 6.77 m³
Área de forma = 123.46 m²

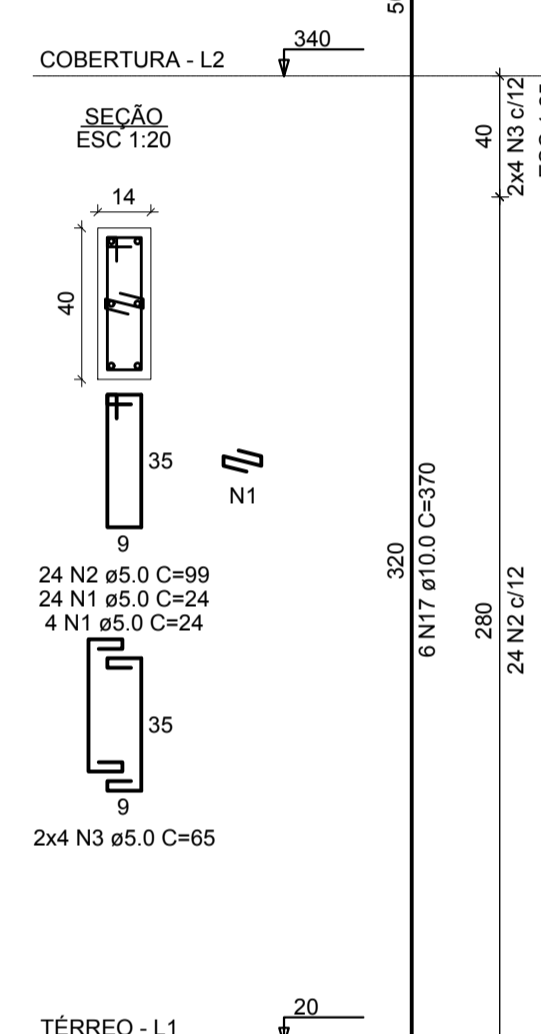
P25



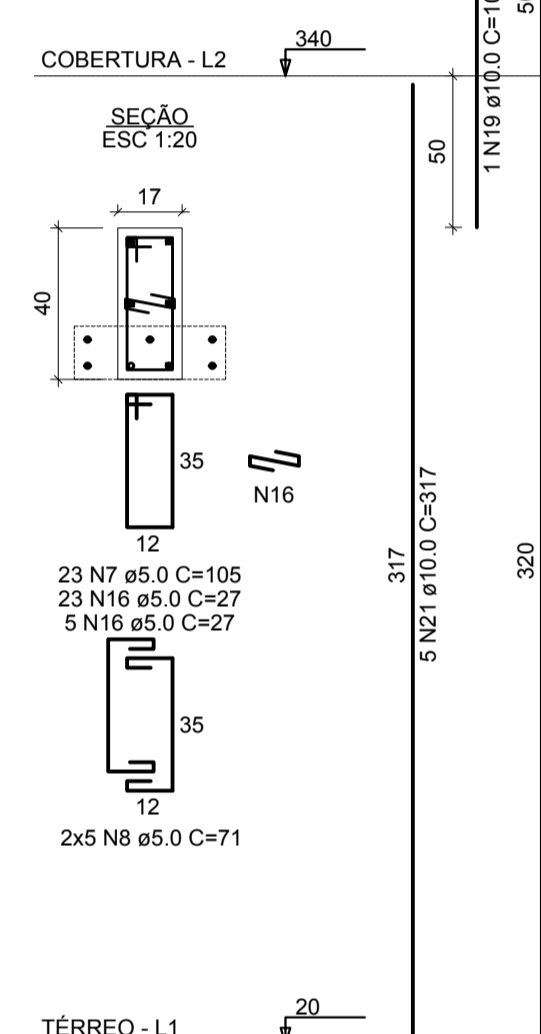
P29



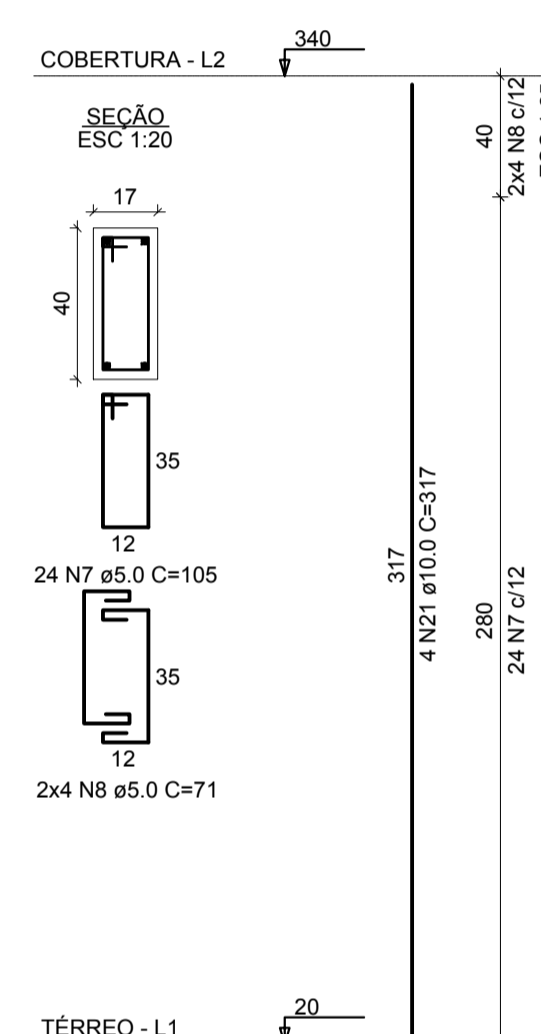
P30=P31



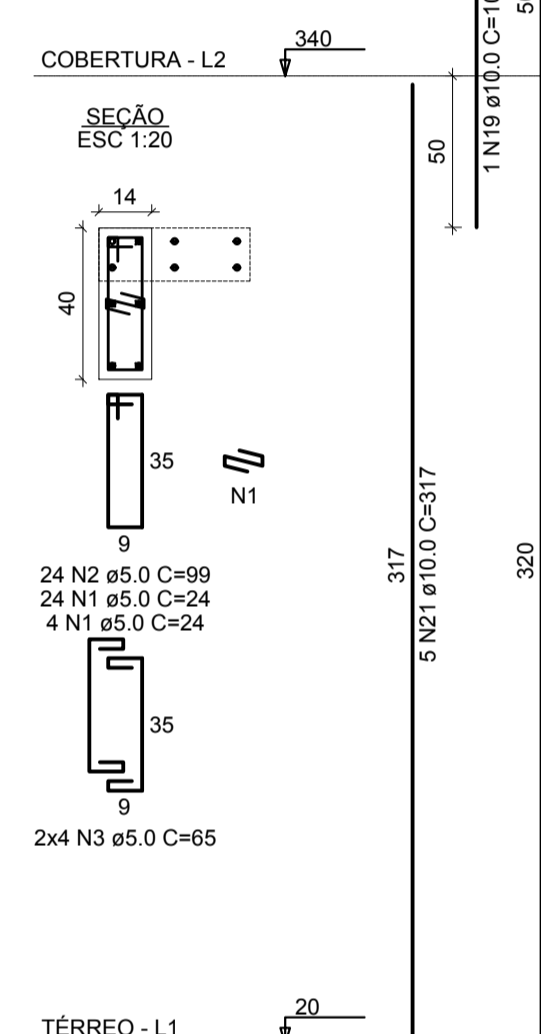
P33=P34



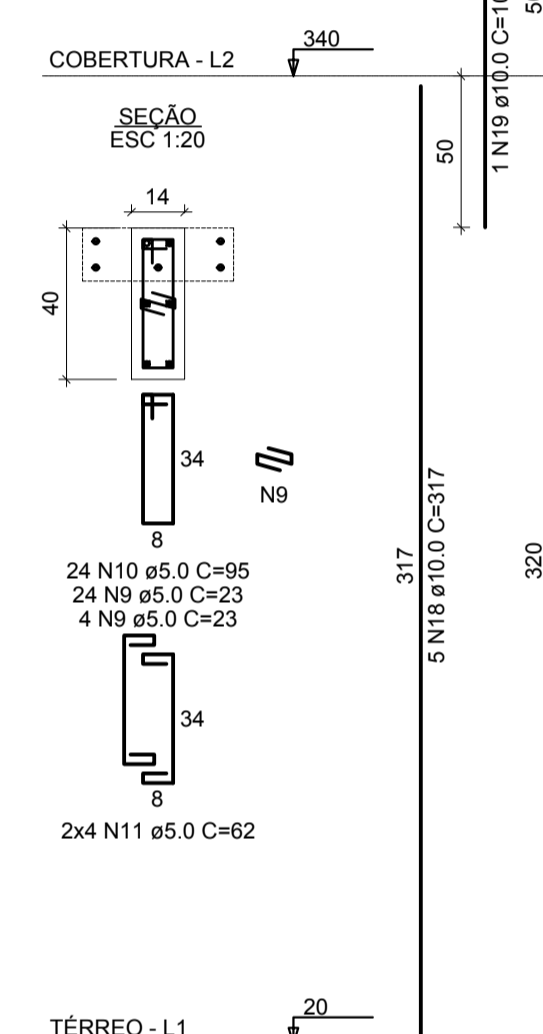
P5=P26=P27



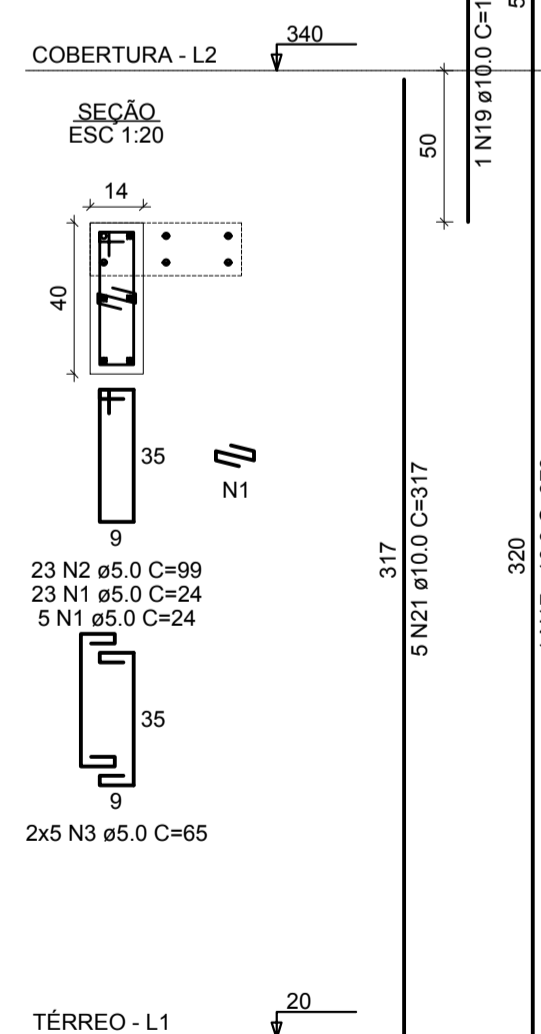
P6=P8



P7

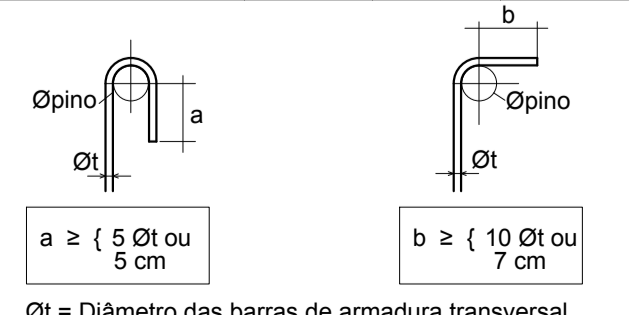


P9=P23



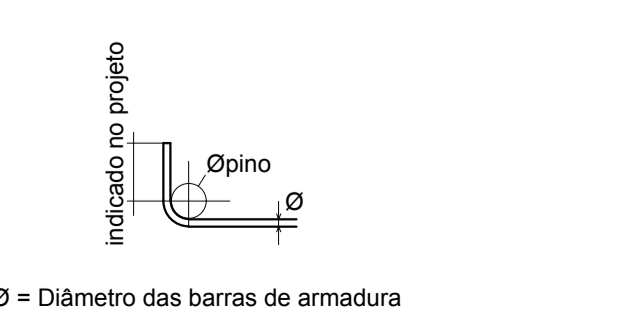
Ancoragem dos estribos - Norma NBR 6118 - item 9.4.6
DIÂMETRO DOS PINOS DE DOBRAMENTO DOS ESTRIBOS (Øpino)

BITOLA (mm)	TIPO DE AÇO		
	CA25	CA50	CA60
Ø ≤ 10mm	3 Ø	3 Ø	3 Ø
10mm < Ø ≤ 20mm	4 Ø	5 Ø	-
Ø ≥ 20mm	5 Ø	6 Ø	-

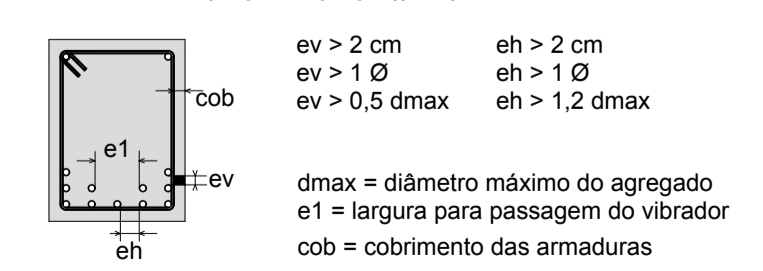


Ganchos nas extremidades das barras longitudinais - Norma NBR 6118 - item 9.4.2.3
DIÂMETRO DOS PINOS DE DOBRAMENTO (Øpino)

BITOLA (mm)	TIPO DE AÇO		
	CA25	CA50	CA60
< 20mm	4 Ø	5 Ø	6 Ø
≥ 20mm	5 Ø	6 Ø	-



DISTRIBUIÇÃO TRANSVERSAL DAS ARMADURAS LONGITUDINAIS - Norma NBR 6118 - item 18.4.2.2



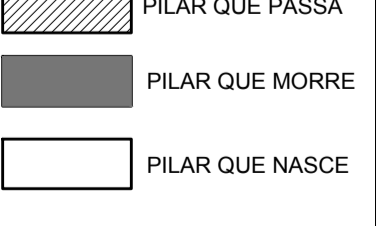
ev > 2 cm eh > 2 cm
ev > 1 Ø eh > 1 Ø
ev > 0,5 dmax eh > 1,2 dmax
dmax = diâmetro máximo do agregado
e1 = largura para passagem do vibrador
cob = cobrimento das armaduras

PROPRIEDADES DO CONCRETO
1- RESISTÊNCIA CARACTERÍSTICA DO CONCRETO A COMPRESSÃO - Fck = 25 MPa (250 Kgf/cm²)
2- PESO ESPECÍFICO DO CONCRETO = 2500 kgf/m³
3- MÓDULO DE ELASTICIDADE ECS = 241500 Kgf/cm²
4- DIÂMETRO MÁXIMO DO AGREGADO = 19mm
5- ABATIMENTO (SLUMP) = 7 cm +/- 1cm
6- CONSUMO DE CIMENTO > 350 Kg/cm³

COBRIMENTO DAS ARMADURAS
- BLOCOS = 4,5 cm
- PILARES = 4,5 cm (em contato com o solo)
- PILARES = 3 cm (demais)
- VIGAS = 3 cm
- LAJES = 2,5 cm

NOTAS:
01 - DIMENSÕES EM CENTÍMETROS.
02 - CONFIRAR MEDIDAS NO LOCAL.
03 - AS FORMAS DEVEM SER MOLHADAS ANTES DA CONCRETAGEM E CONSERVAR ÚMIDAS AS PARTES CONCRETADAS, NO MÍNIMO SETE DIAS.
04 - NA RETIRADA DAS FORMAS E ESCORAMENTOS CONSIDERAR OS SEGUINTE TEMPOS:
- FACE LATERAL : 3 DIAS
- FACES INFERIORES, MANTENDO-SE OS PONTALETES BEM ENCUNHADOS E CONVENIENTEMENTE ESPAÇADOS : 14 DIAS
- FACES INFERIORES, SEM PONTALETES : 21 DIAS.

SIMBOLOGIA



ESTRUTURAL
MUNICÍPIO ANTÔNIO CARLOS - SC

OBRA CASA DO AGRICULTOR	CONTEÚDO PILARES DA COBERTURA - FORMAS E ARMADURAS
PROJETO Eng. Civil Virginia Maria Wolff CREA/SC: 37888-1	EXECUÇÃO
DESENHO GRANFPOLIS	ESCALA INDICADAS
DATA MAI/2019	ÁREA 287,50 m²
PRANCHA 9	

ASSOCIAÇÃO DOS MUNICÍPIOS DA REGIÃO DA GRANDE FLORIANÓPOLIS
GRANFPOLIS
ASSESSORIA DE ENGENHARIA E ARQUITETURA