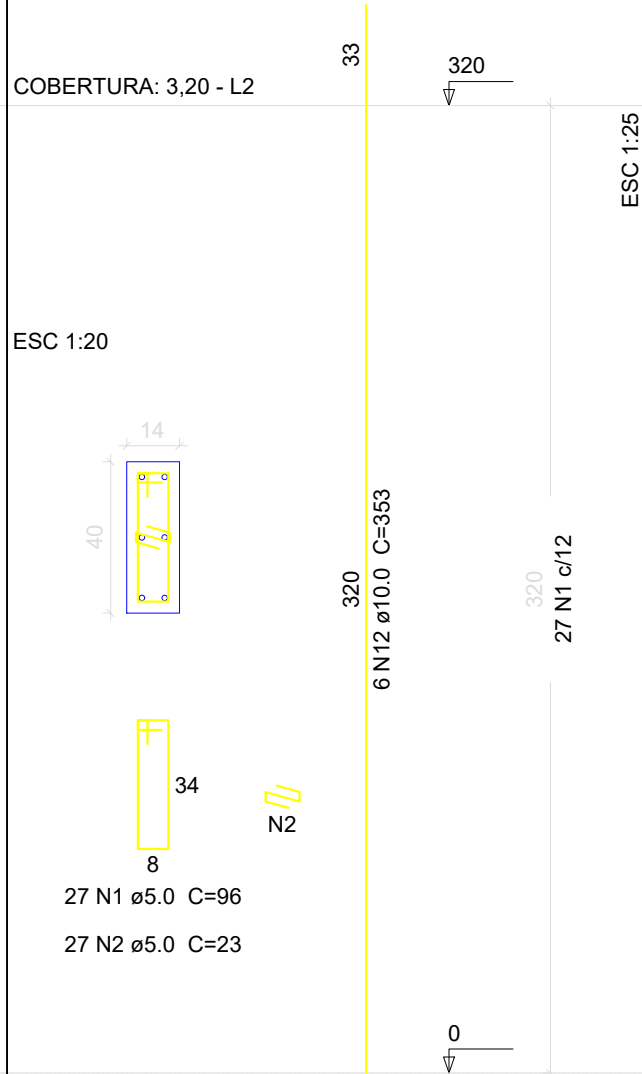
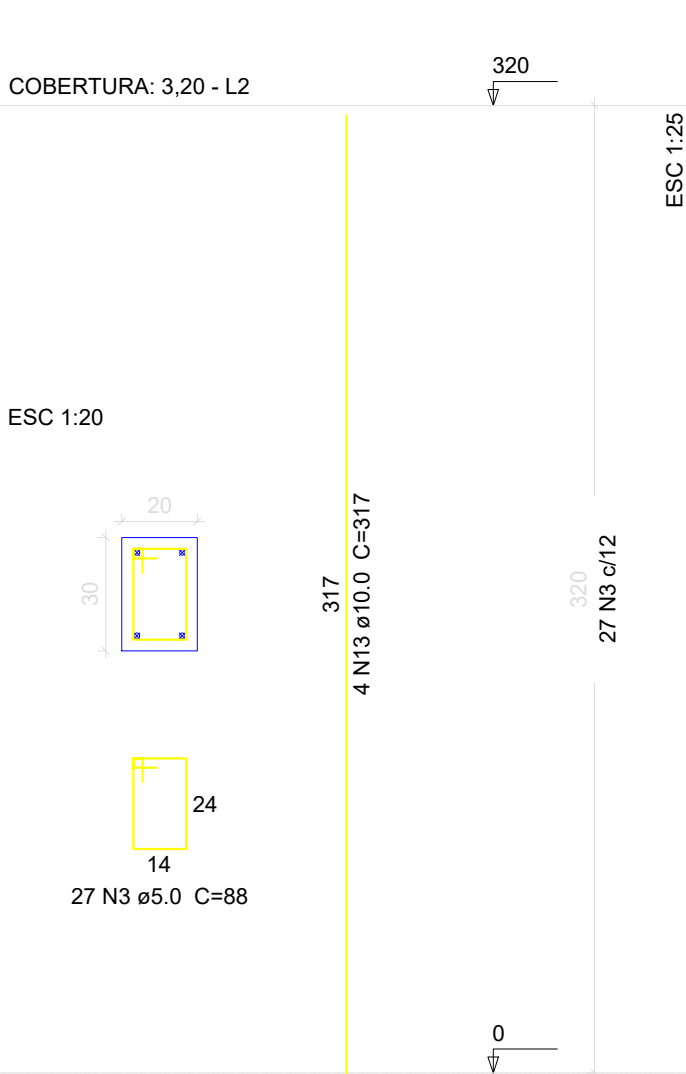


P46=P147=P148



P49=P128



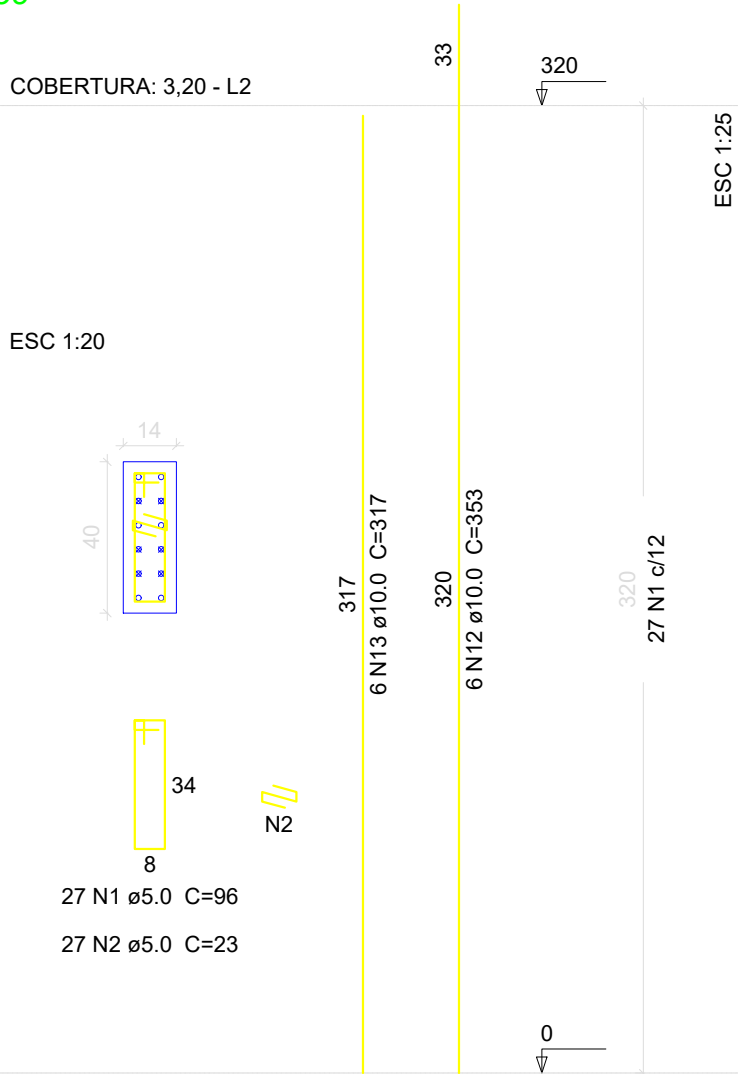
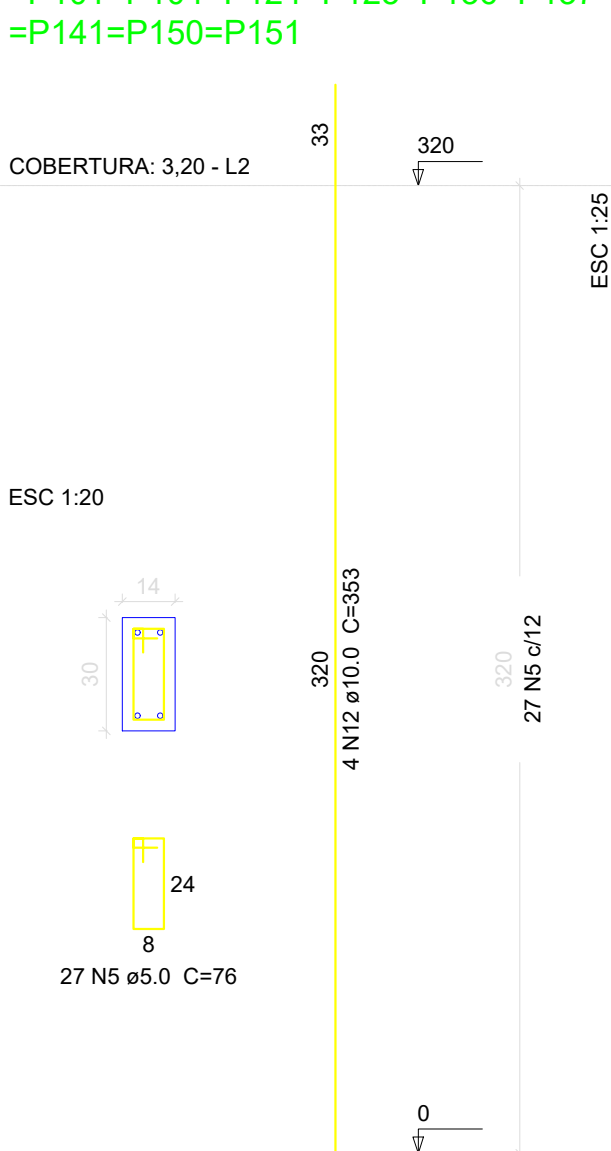
P50



P52=P77=P91=P103=P122=P135



P54=P55=P56=P61=P70=P82=P93=P96=P97=P98P63
=P101=P104=P124=P125=P136=P137=P138=P139
=P141=P150=P151



Relação do aço

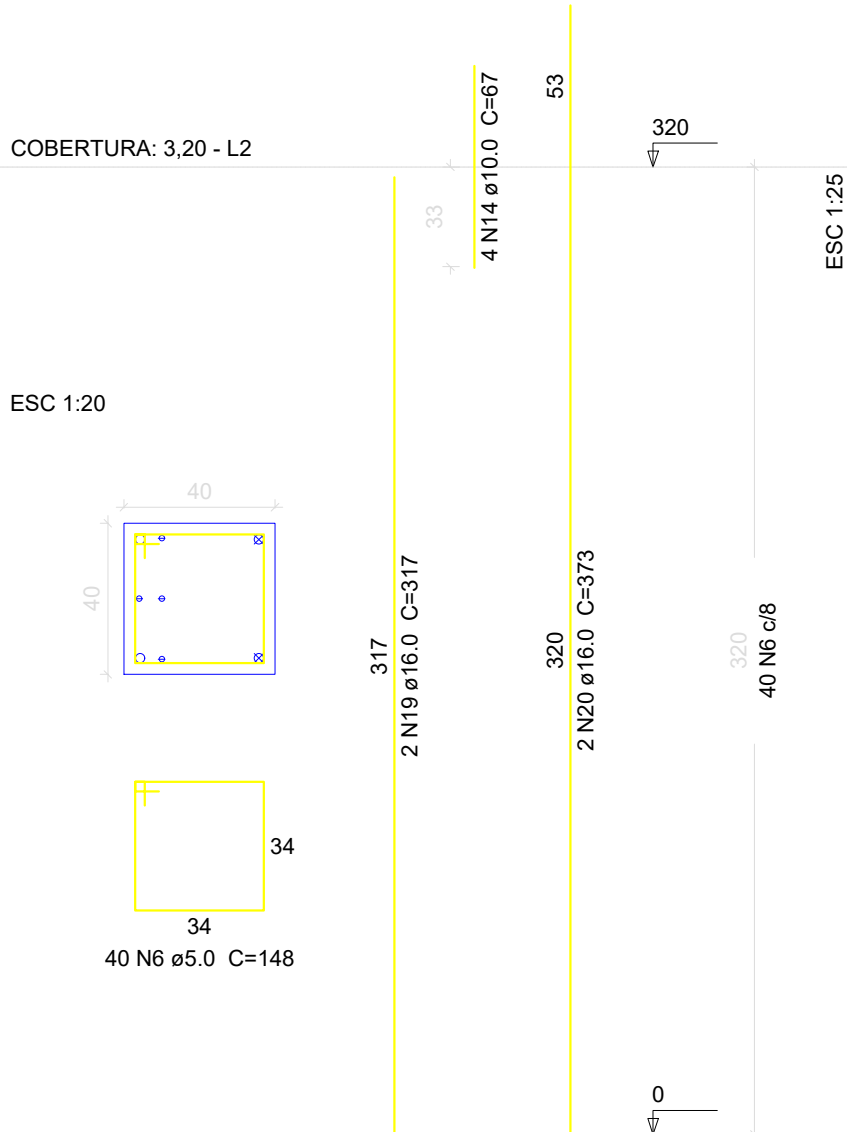
3xP46	2xP49	P50			
6xP52	21xP54	P63			
P68	P80	P95			
P102	P111	P116			
2xP118	P121	P123			
P149					
AÇO	N	DIAM	Q	UNIT (cm)	C.TOTAL (cm)
CA60	1	5.0	162	96	15552
	2	5.0	162	23	3726
	3	5.0	108	88	9504
	4	5.0	228	108	24624
	5	5.0	621	76	47196
	6	5.0	40	148	5920
	7	5.0	27	118	3186
	8	5.0	27	39	1053
	9	5.0	27	68	1836
	10	5.0	27	86	2322
	11	5.0	27	29	763
CA50	12	10.0	120	353	42360
	13	10.0	50	317	15850
	14	10.0	20	67	1340
	15	12.5	16	317	5072
	16	12.5	12	362	4344
	17	12.5	2	267	534
	18	12.5	2	312	624
19	16.0	2	317	634	
20	16.0	2	373	746	

Resumo do aço

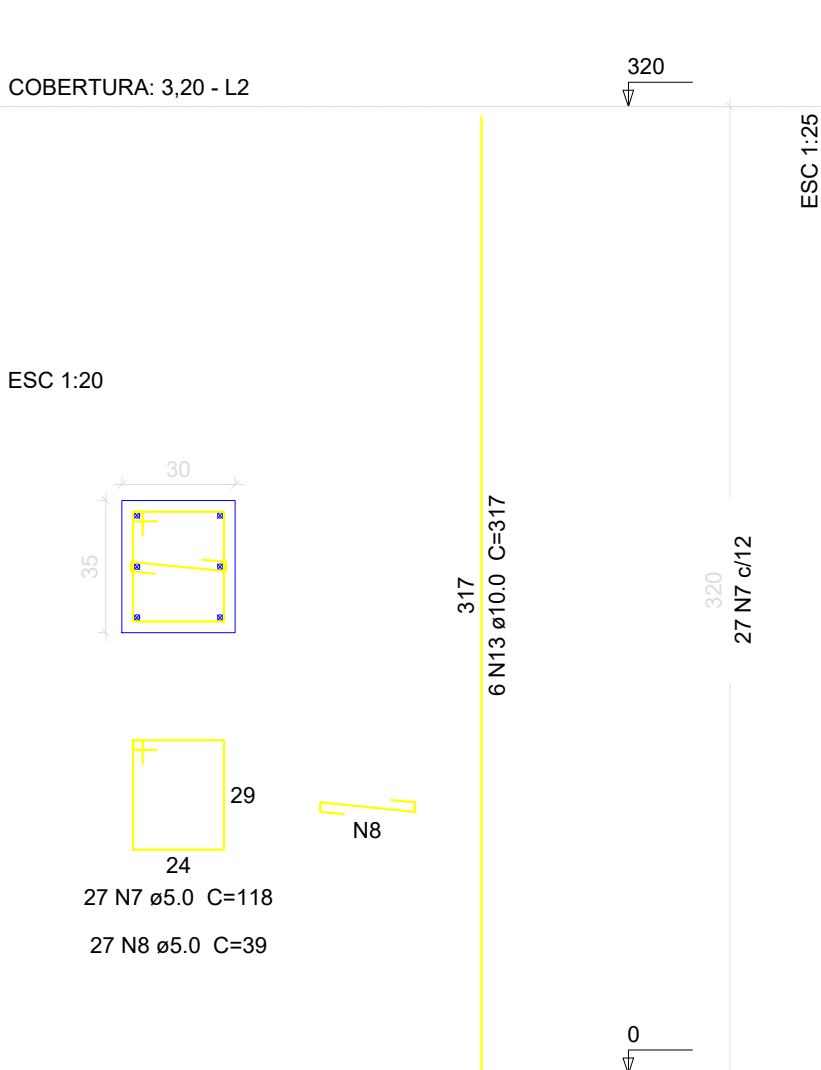
ÁÇO	DIAM	C.TOTAL (m)	PESO + 10 % (kg)
CA50	10.0	595.5	403.9
	12.5	105.8	112
	16.0	13.8	24
CA60	5.0	1157.1	196.2
PESO TOTAL			
CA50	539.9		
CA60	196.2		

Vol. de concreto total (C=30) = 8.33 m³
Área de forma total = 143.4 m²

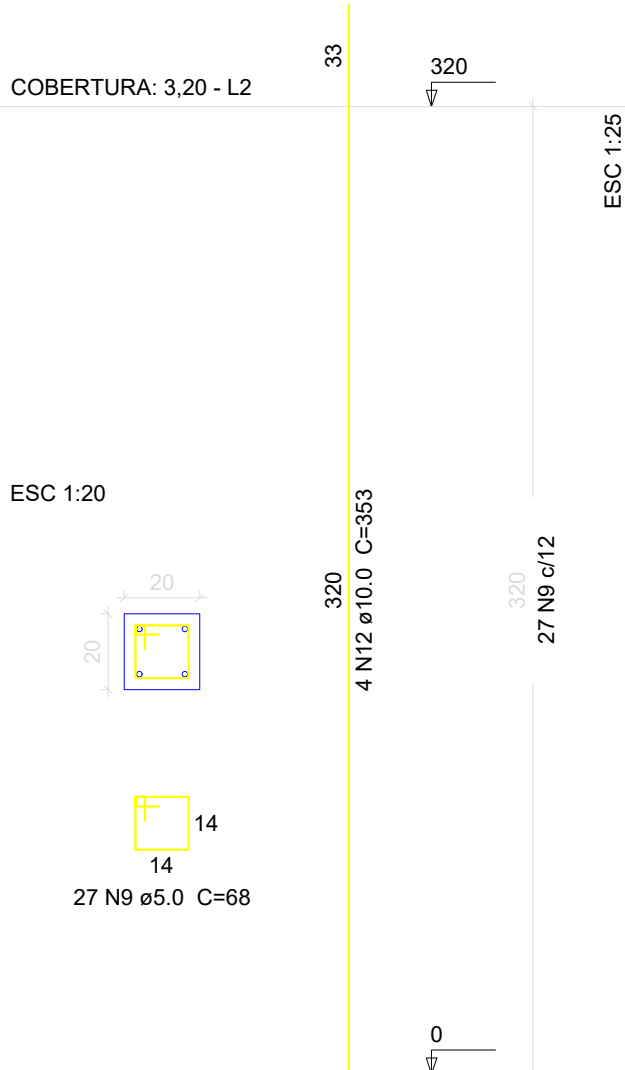
P68



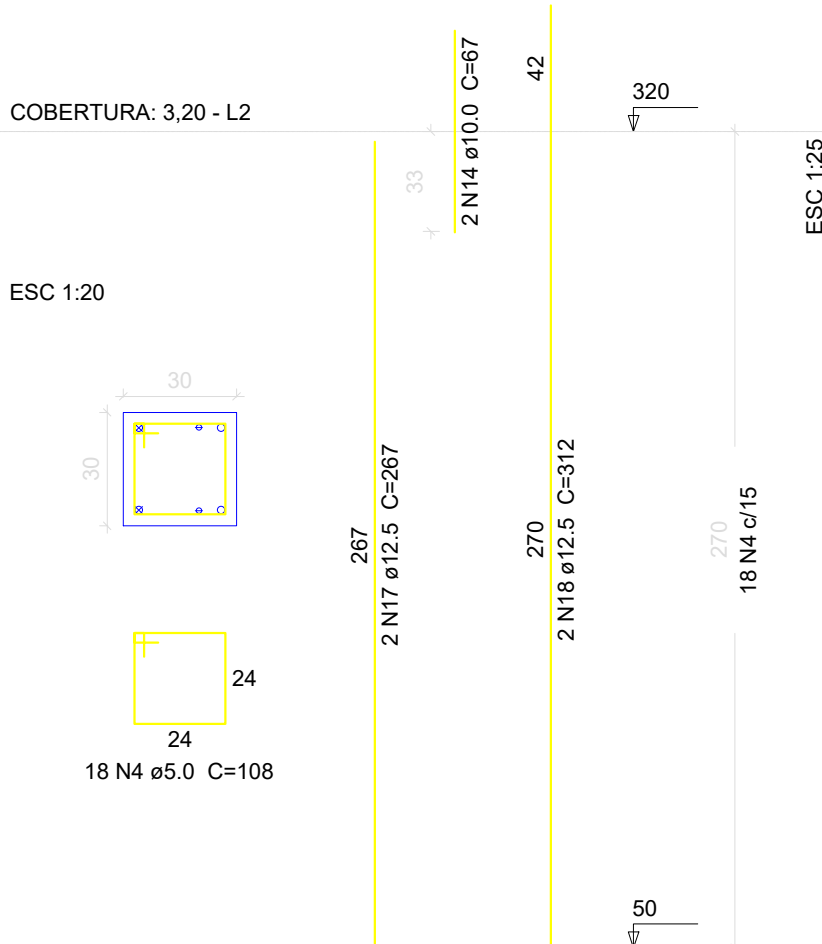
P80



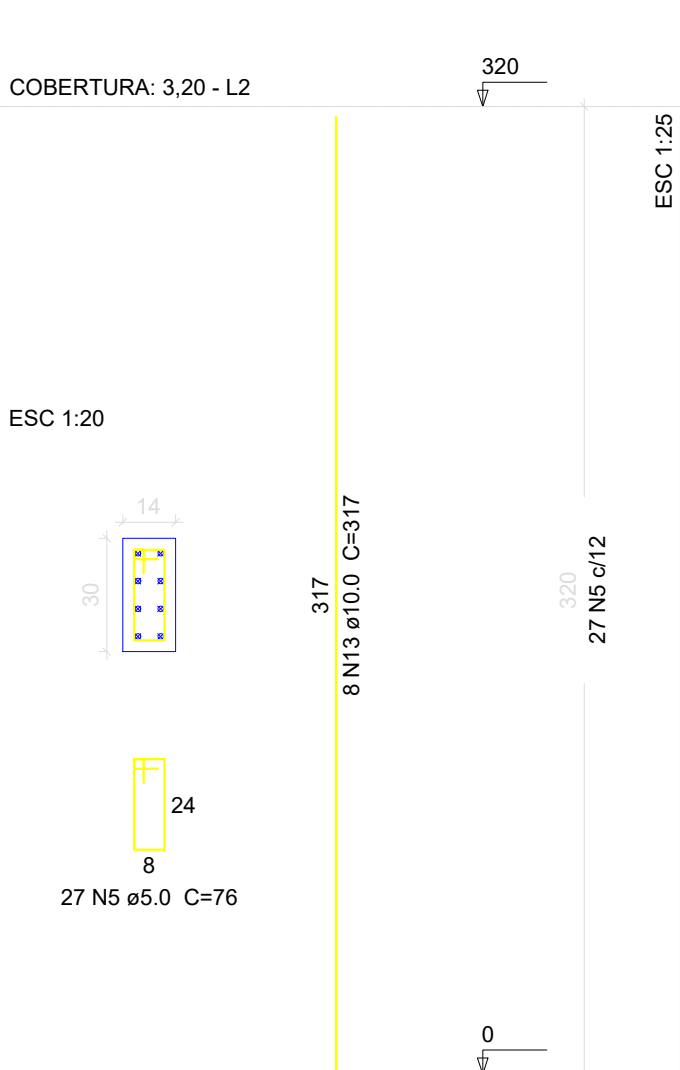
P95



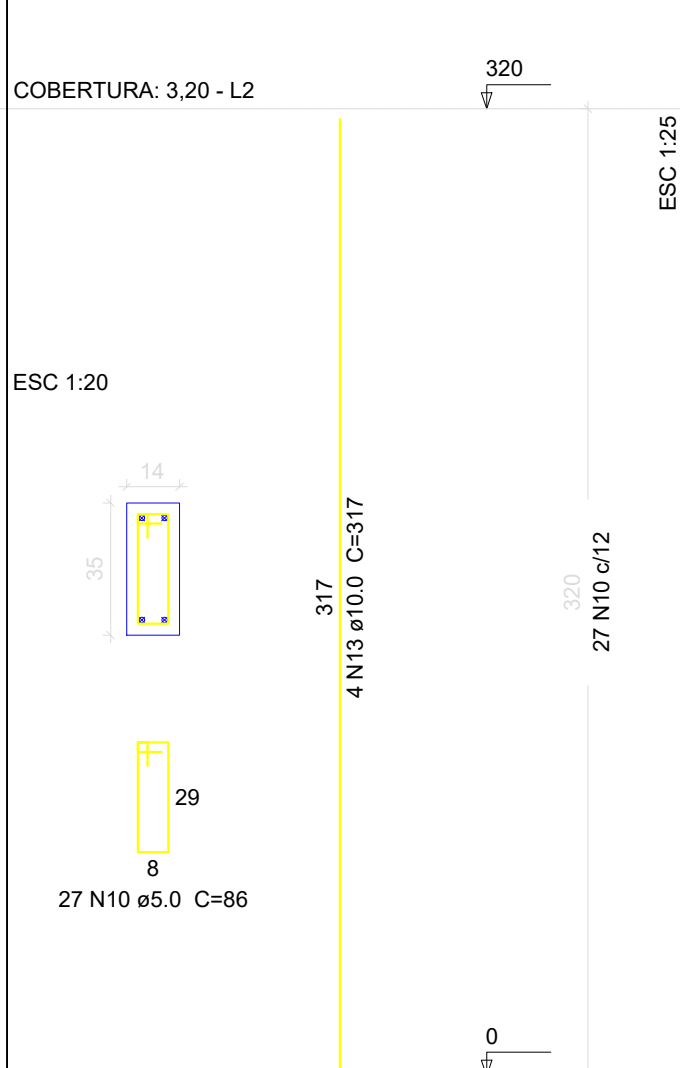
P102



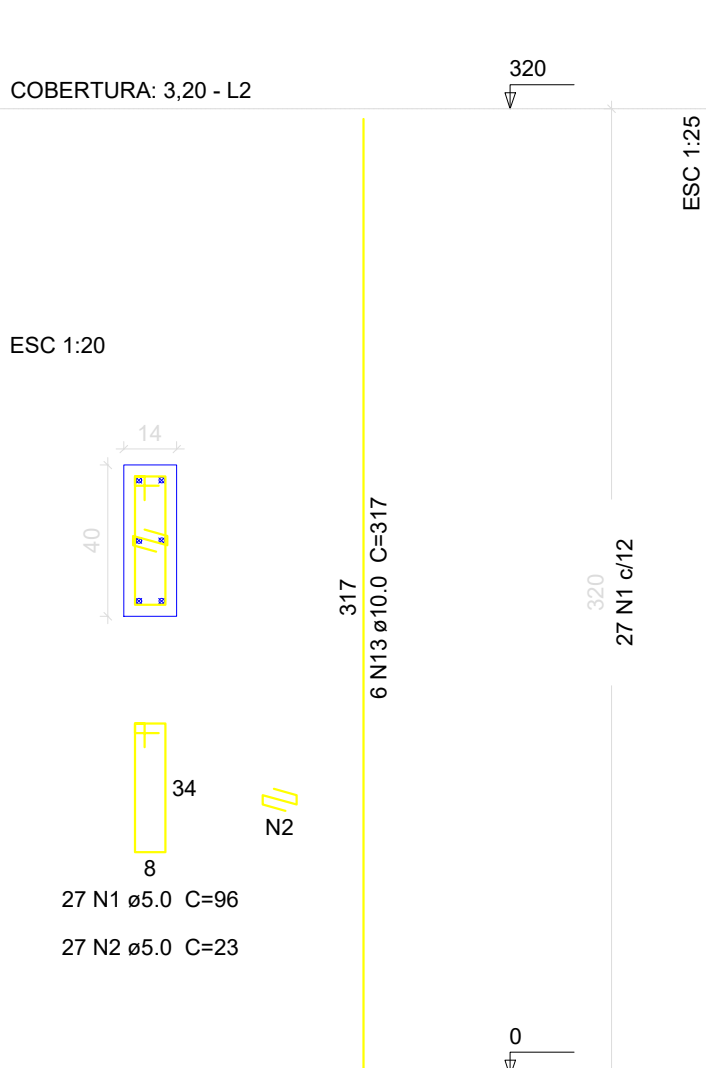
P111



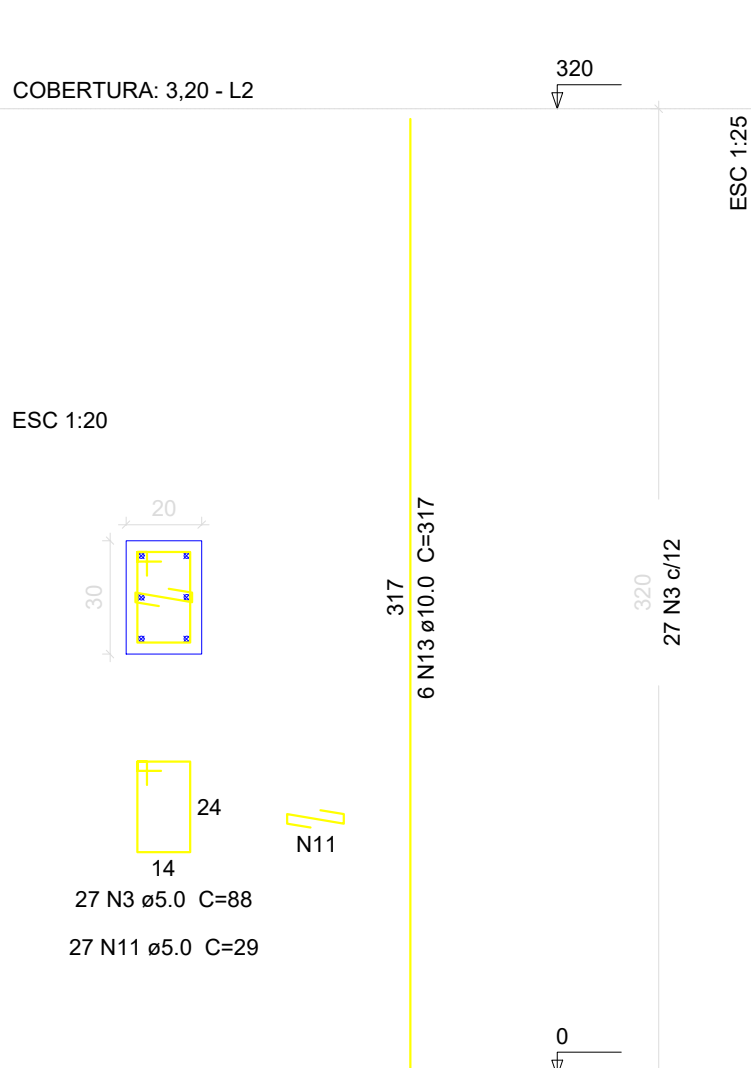
P116



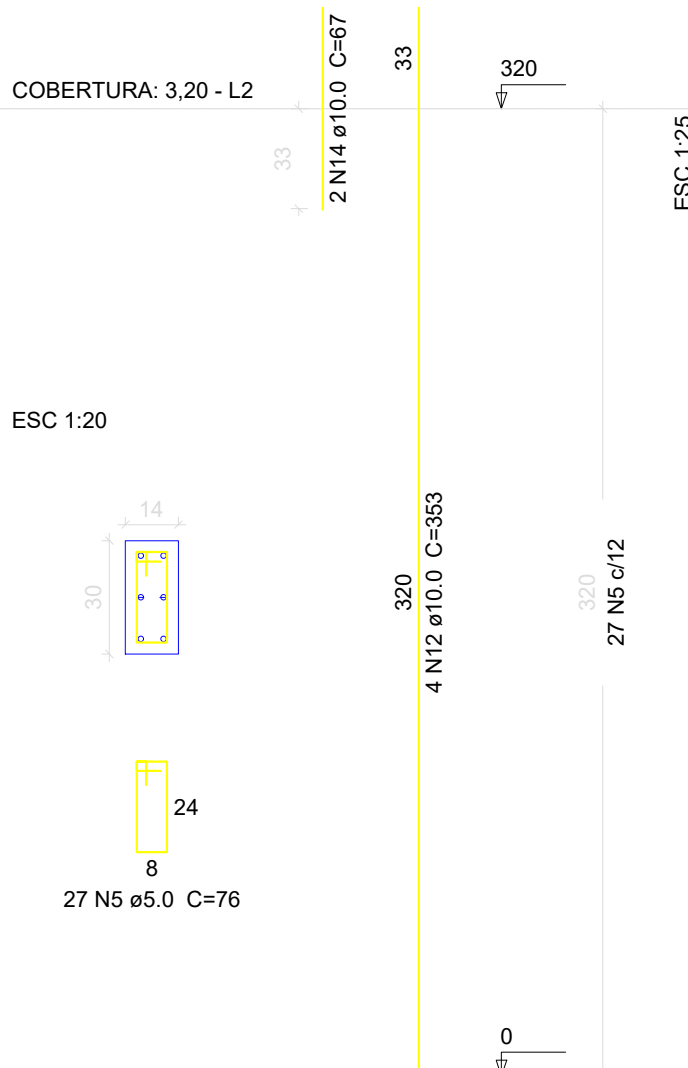
P118=P119



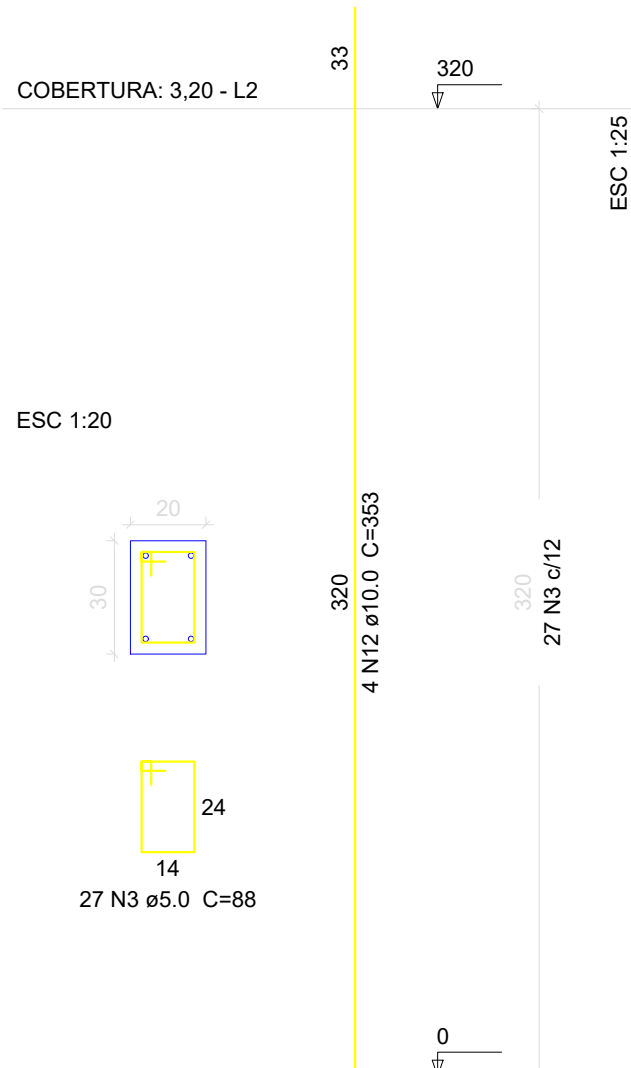
P121



P123



P149



ARQUITETURA E ENGENHARIA

> PROJETOS INDUSTRIAIS / COMERCIAIS / RESIDENCIAIS E PÚBLICAS
> ASSESSORIA / CONSULTORIA
> GESTÃO DE OBRAS
> PERÍCIAS
> EXECUÇÃO DE OBRAS

AV. BRASIL, 1225 - SALA 03
UNIVERSITÁRIO
CSP 04609-017 - JARDIM
TEL. (49) 99923 2944
CNPJ 20.270.410/0001-40

27

RESP. TÉCN.:

James André Clauberg
Eng. Civil - CREA 45.160-6

RESP. TÉCN.:

Indiamara de Oliveira Ribeiro
Eng. Civil - CREA 13.4548-3

CLIENTE:

Prefeitura Municipal de Rio Rufino

OBRA:

PROJETO ESTRUTURAL
ESCOLA MUNICIPAL DE RIO RUFINO

PLANTA DOS PILARES DA COBERTURA

DESENHO:

ESCALA:

DATA:

OUT/2022