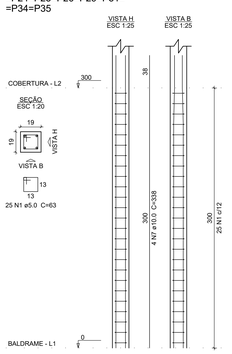
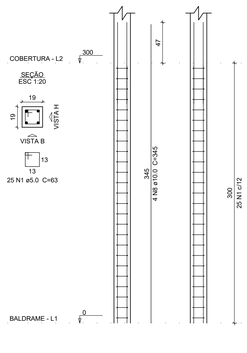
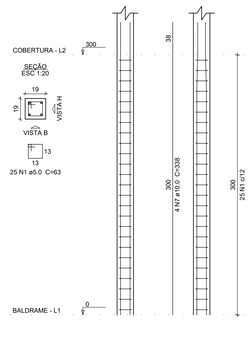
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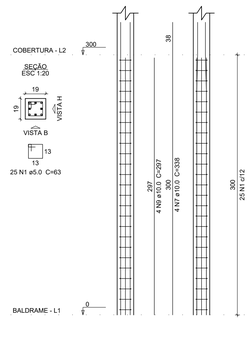
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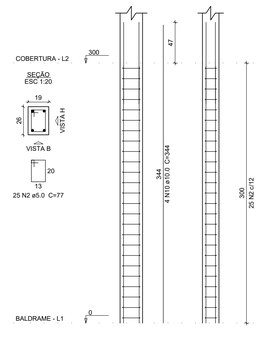
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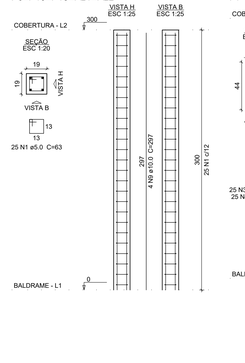
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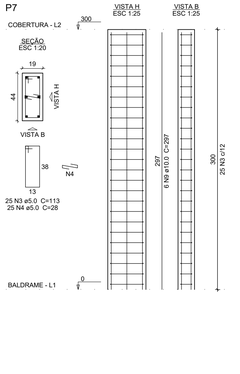
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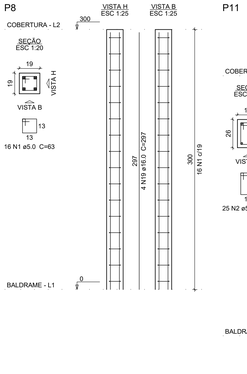
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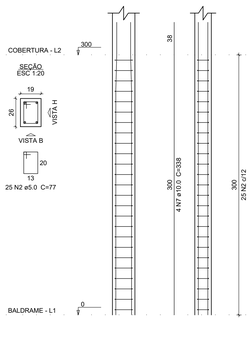
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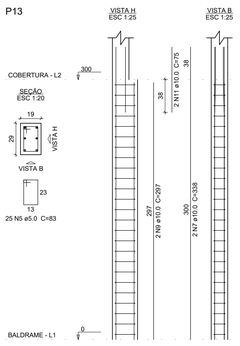
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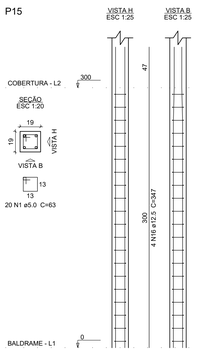
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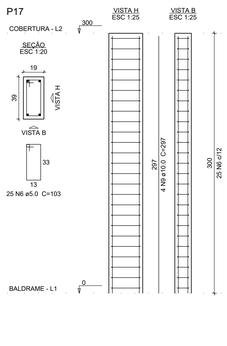
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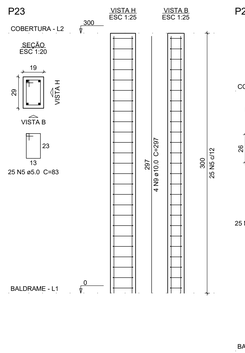
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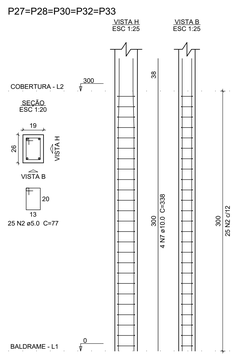
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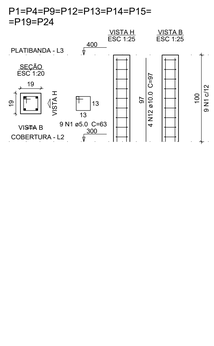
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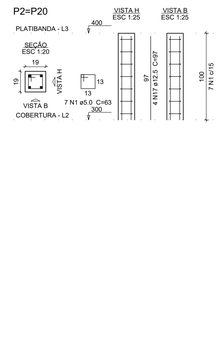
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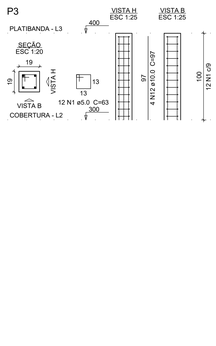
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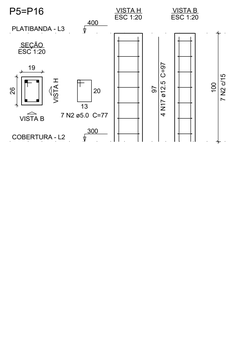
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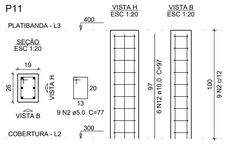
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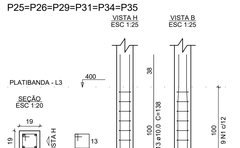
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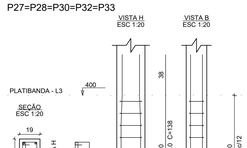
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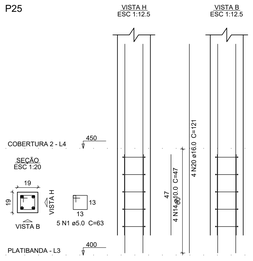
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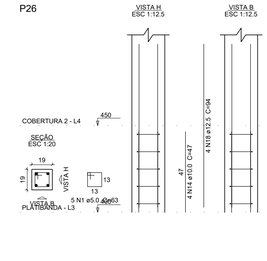
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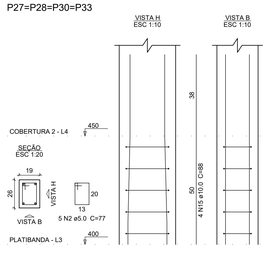
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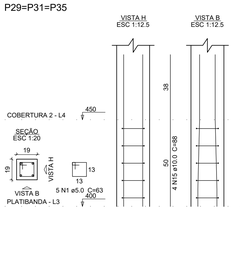
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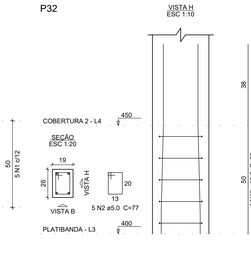
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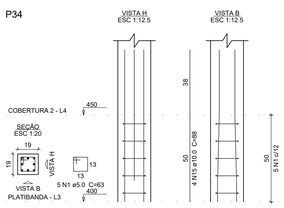
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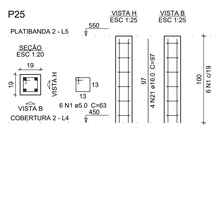
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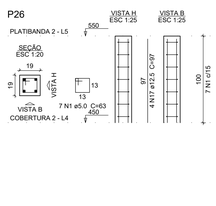
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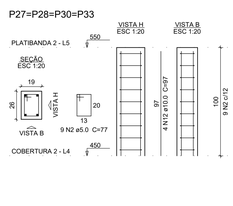
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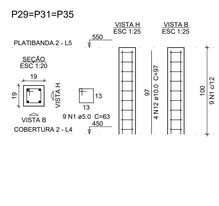
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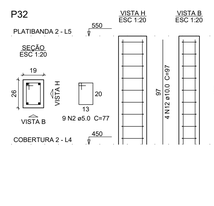
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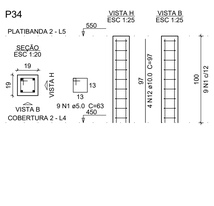
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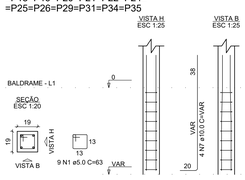
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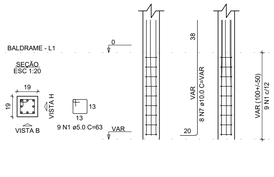
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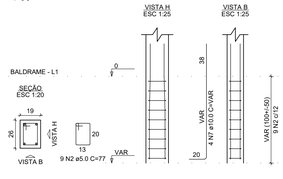
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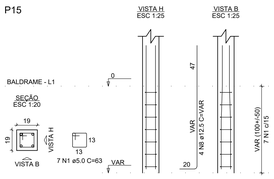
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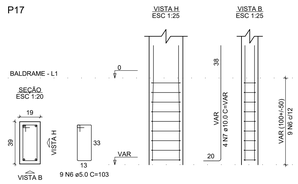
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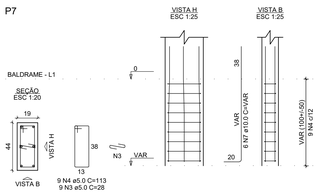
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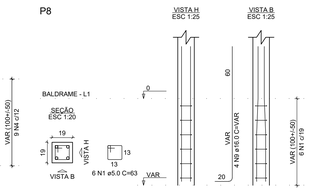
P17



P7



P8



P13=P23

RELAÇÃO DO AÇO

20xP1
P7
P15
P4
P8
P17
8xP5
2xP13

AÇO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
CA60	1	5.0	202	63	12726
	2	5.0	72	77	5544
	3	5.0	9	28	252
	4	5.0	9	113	1017
	5	5.0	18	83	1494
	6	5.0	9	103	927
CA50	7	10.0	138	VAR	VAR
	8	12.5	4	VAR	VAR
	9	16.0	4	VAR	VAR

RESUMO DO AÇO

AÇO	DIAM (mm)	C.TOTAL (m)	PESO + 10% (kg)
CA50	10.0	209.8	142.3
	12.5	6.4	6.8
	16.0	6.9	11.9
CA60	5.0	219.6	37.2
PESO TOTAL (kg)			
CA50	161		
CA60	37.2		

Volume de concreto (C-25) = 0.89 m³
Área de forma = 17.18 m²

Relação do aço

COBERTURA:	12xP1		2xP2
	P3		P4
	2xP5		5xP6
	P7		P8
	P11		P13
	P15		P17
COBERTURA 2:	P23		5xP27
	P25		P26
	4xP27		3xP29
	P32		P34
PLATIBANDA:	9xP1		2xP2
	P3		2xP5
	P11		6xP25
	5xP27		
PLATIBANDA 2:	P25		P26
	4xP27		3xP29
	P32		P34

AÇO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
CA60	1	5.0	801	63	50463
	2	5.0	338	77	26026
	3	5.0	25	113	2825
	4	5.0	25	28	700
	5	5.0	50	83	4150
	6	5.0	25	103	2575
CA50	7	10.0	82	338	27716
	8	10.0	8	345	2760
	9	10.0	40	297	11880
	10	10.0	8	344	2752
	11	10.0	2	75	150
	12	10.0	86	97	8342
	13	10.0	44	138	6072
	14	10.0	8	47	376
	15	10.0	36	88	3168
	16	12.5	4	347	1388
	17	12.5	24	97	2328
	18	12.5	4	94	376
	19	16.0	4	297	1188
	20	16.0	4	121	484
	21	16.0	4	97	388

Resumo do aço

AÇO	DIAM (mm)	C.TOTAL (m)	PESO + 10 % (kg)
CA50	10.0	632.2	428.7
	12.5	41	43.4
	16.0	20.6	35.8
CA60	5.0	867.4	147.1
PESO TOTAL (kg)			
CA50	507.9		
CA60	147.1		

Volume de concreto (C-25) = 6.22 m³
Área de forma = 121.53 m²

TRMUNCHEN ENGENHARIA
trmunchen@outlook.com (51) 9 9509 6182

OBRA:
NOVA SEDE DEFESA CIVÍL E CORPO DE BOMBEIROS

ÁREA A CONSTRUIR:
644.46 m²

LOCAL:
Rua Firmino Britz, S/N
Centro - Feliz

EQUIPE TÉCNICA:
TRMUNCHEN ENGENHARIA

PROPRIETÁRIO:
MUNICÍPIO DE FELIZ
CNPJ: 87.838.330/0001-39

RESP. TÉCNICO - ENGENHEIRO CIVIL
TIAGO RODRIGO MÜNCHEN
CREA/RS: 251585

CONTEÚDO:
PILARES

PROJETO
PROJETO ESTRUTURAL

ESCALA:	DESENHISTA:	DATA:	FOLHA:
INDICADA	TIAGO RODRIGO MÜNCHEN	JUL/2026	06/ 18

DIREITOS AUTORAIS RESERVADOS. PROIBIDA A REPRODUÇÃO TOTAL OU PARCIAL.