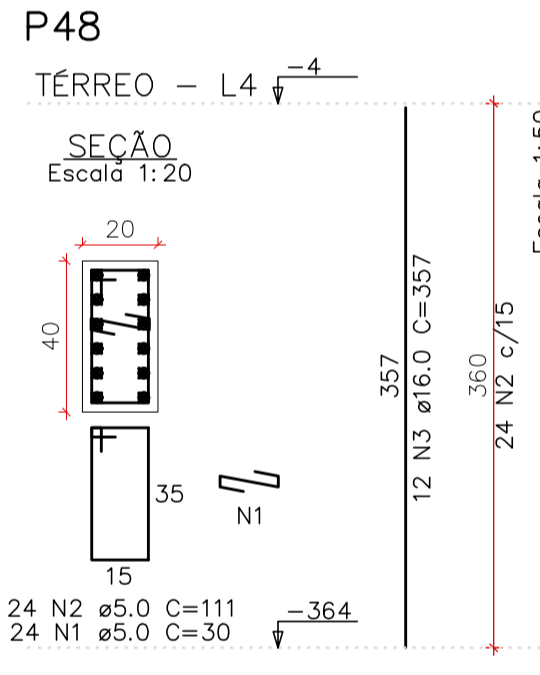
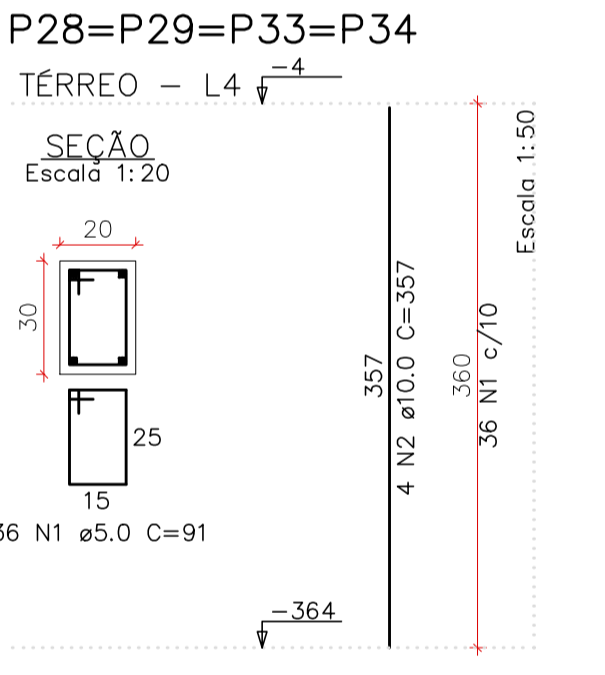
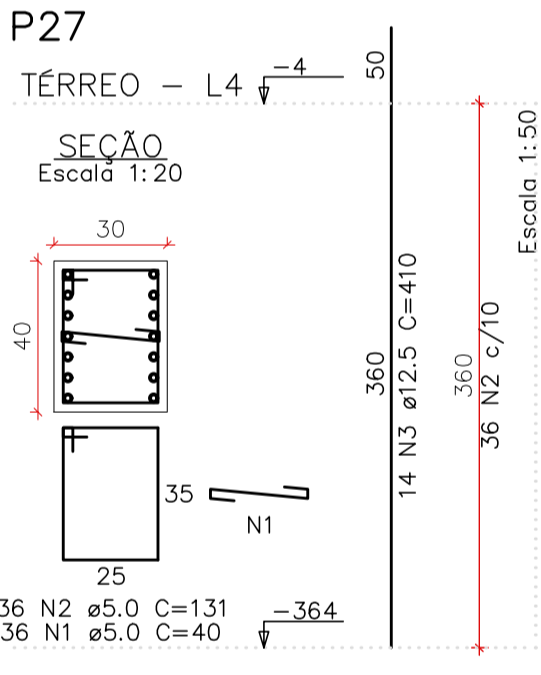
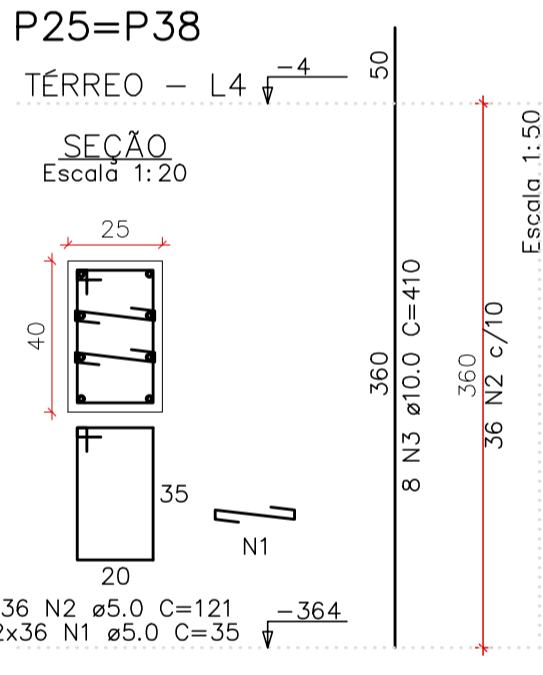
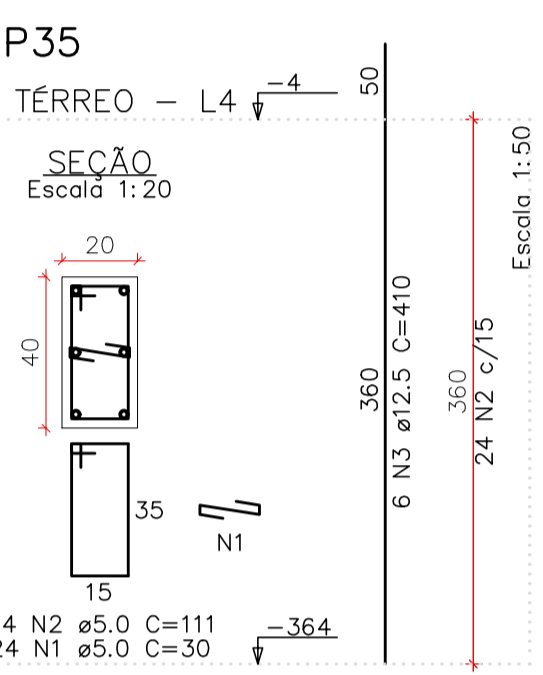
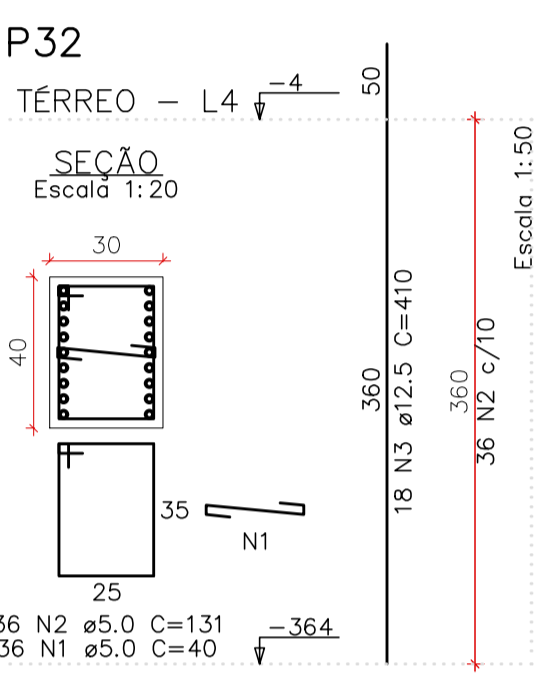
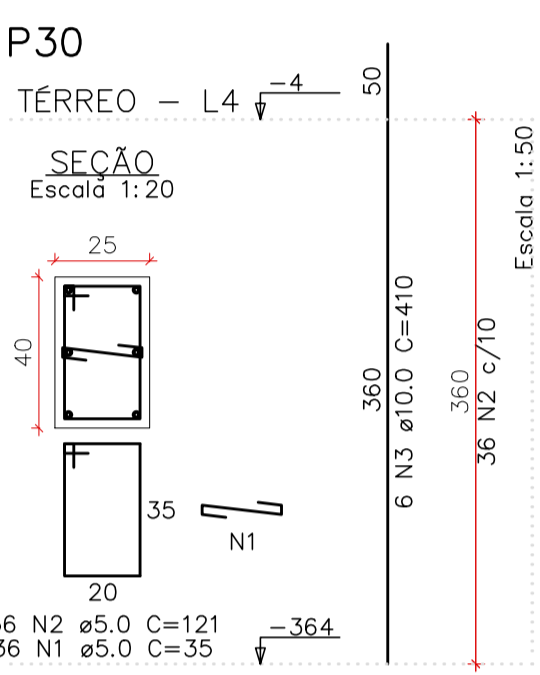
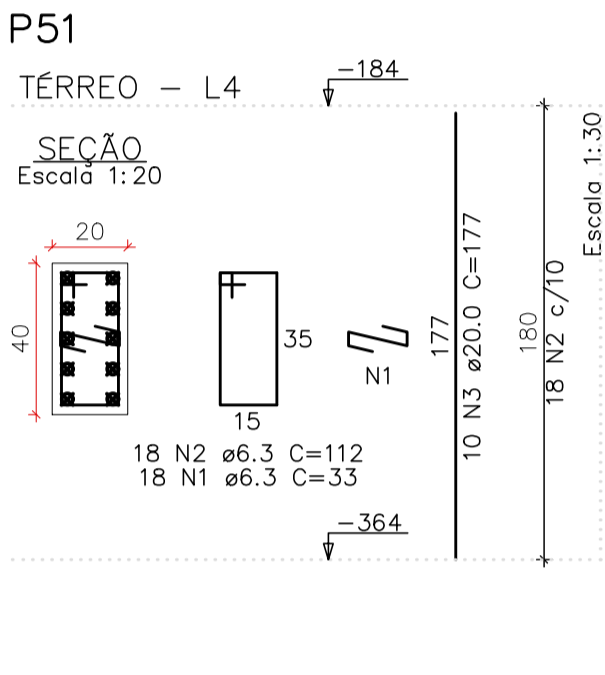
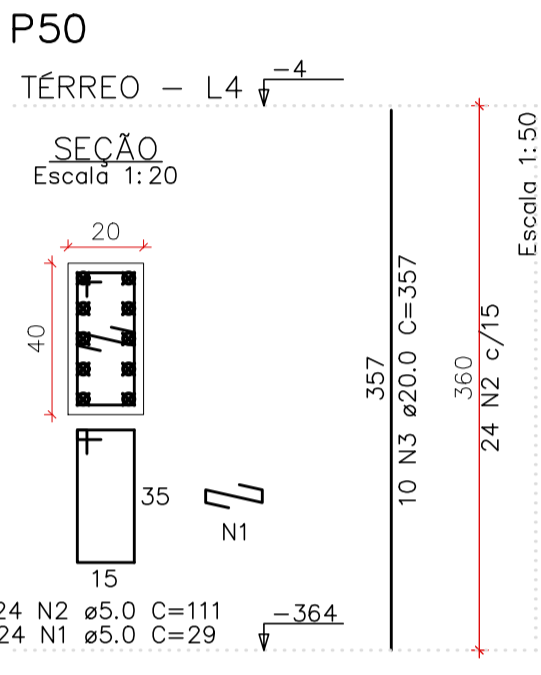
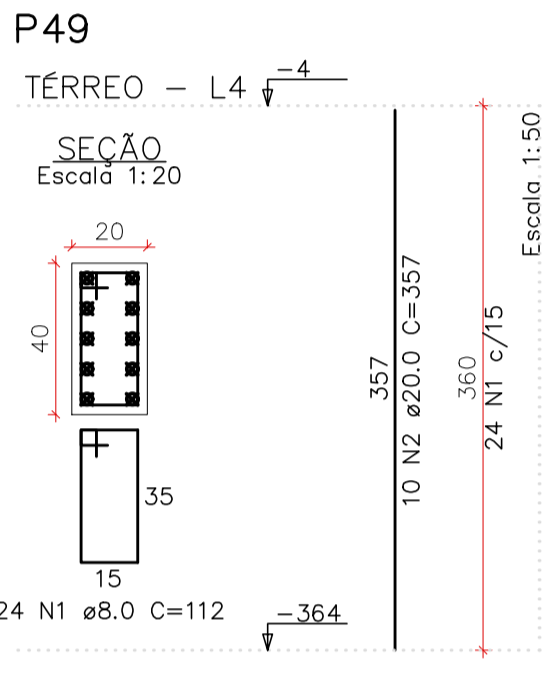
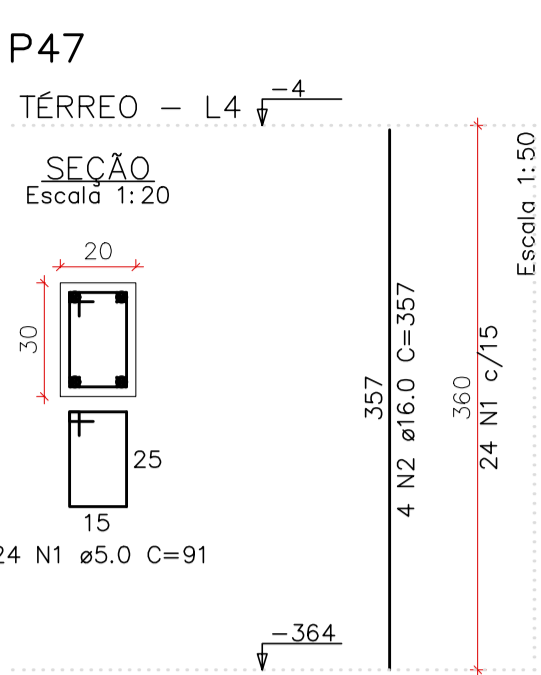
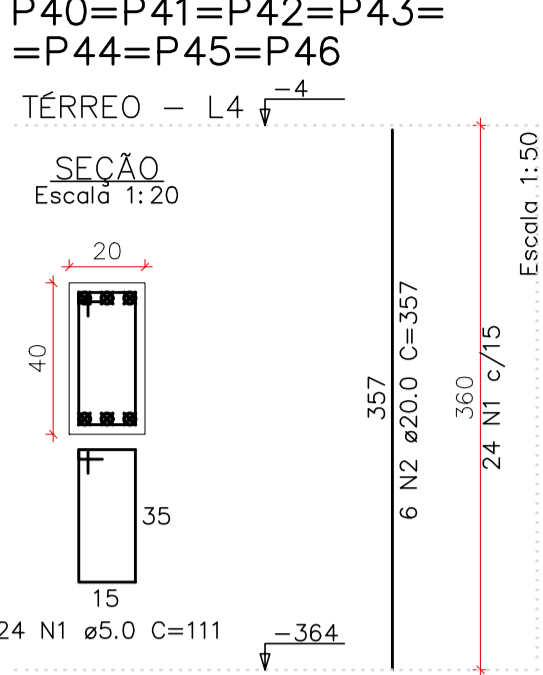
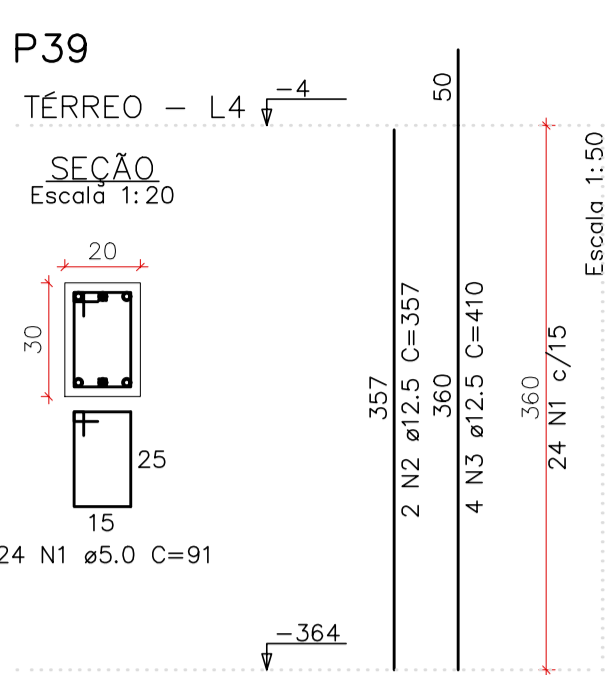
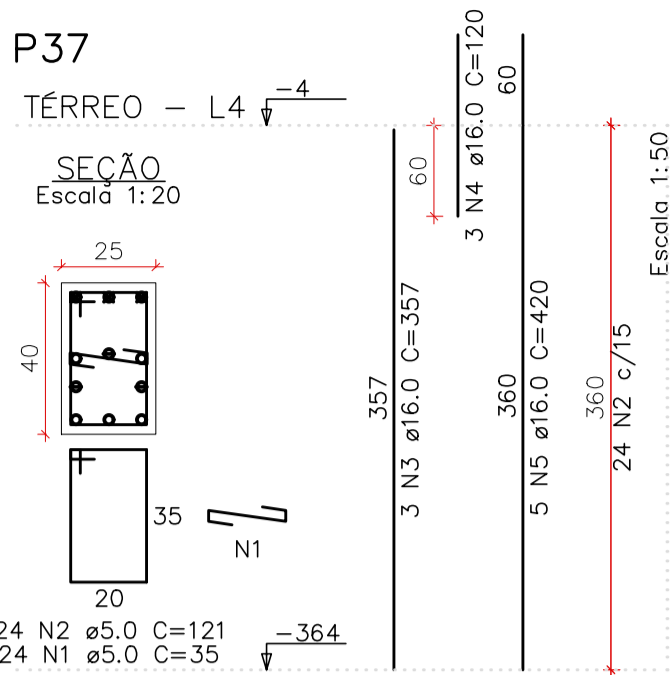
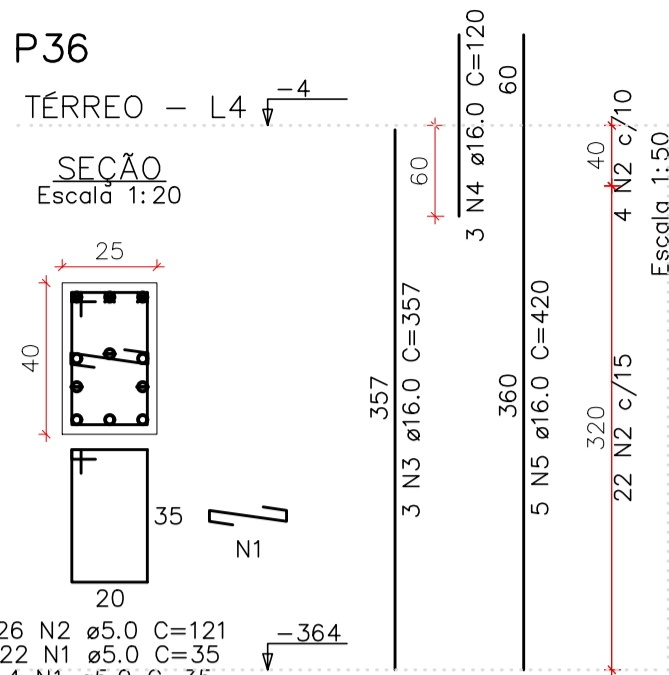


CONSTRUÇÃO DO HUB DE EMPREENDEDORISMO DE POUSO ALEGRE
ESCALA INDICADA



RELAÇÃO DO AÇO

ELEMENTO	AÇO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
2xP25	CA60	1	5.0	144	35	5040
	CA60	2	5.0	72	121	8712
	CA50	3	10.0	16	410	6560
P27	CA60	1	5.0	36	40	1440
	CA60	2	5.0	36	131	4716
	CA50	3	12.5	14	410	5740
4xP28	CA60	1	5.0	144	91	13104
	CA50	2	10.0	16	357	5712
	CA60	1	5.0	36	35	1260
P30	CA60	2	5.0	36	121	4356
	CA50	3	10.0	6	410	2460
	CA60	1	5.0	36	40	1440
P32	CA60	2	5.0	36	131	4716
	CA50	3	12.5	18	410	7380
	CA60	1	5.0	24	30	720
P35	CA60	2	5.0	24	111	2664
	CA50	3	12.5	6	410	2460
	CA60	1	5.0	26	35	910
P36	CA60	2	5.0	26	121	3146
	CA50	3	16.0	3	357	1071
	CA50	4	16.0	3	120	360
P37	CA50	5	16.0	5	420	2100
	CA60	1	5.0	24	35	840
	CA60	2	5.0	24	121	2904
P39	CA50	3	16.0	3	357	1071
	CA50	4	16.0	3	120	360
	CA50	5	16.0	5	420	2100
7xP40	CA60	1	5.0	24	91	2184
	CA50	2	10.0	4	357	1428
	CA60	1	5.0	24	30	720
P48	CA60	2	5.0	24	111	2664
	CA50	3	16.0	12	357	4284
	CA50	1	8.0	24	112	2688
P49	CA50	3	20.0	10	357	3570
	CA60	2	5.0	24	111	2664
	CA50	3	20.0	10	357	3570
P50	CA50	1	6.3	18	33	594
	CA50	2	6.3	18	112	2016
	CA50	3	20.0	10	177	1770

RESUMO DO AÇO

AÇO	DIAM (mm)	C.TOTAL (m)	QUANT + 10% (Barras)	PESO + 10% (kg)
CA50	6.3	26.1	3	7
	8.0	26.9	3	11.7
	10.0	147.3	14	99.9
	12.5	179.3	17	190
	16.0	127.7	12	221.8
CA60	20.0	239	22	648.5
	5.0	857.3	79	145.3

PESO TOTAL (kg)
CA50 1178.9
CA60 145.3

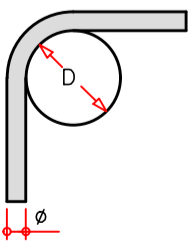
Volume de concreto (C-30) = 7.27 m³
Área de forma = 104.76 m²

DETALHE DE DOBRAS
SEM ESCALA

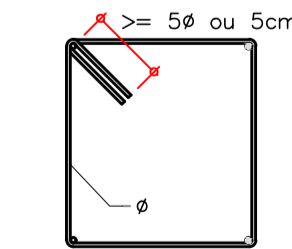
DIÂMETRO MÍNIMO DOS PINOS DE DOBRAMENTO DAS BARRAS:

ESTRIBOS	
Ø (mm)	D (mm)
5,0	15,0
6,3	18,9
8,0	24,0
10,0	30,0
12,5	62,5
16,0	80,0
≥ 20,0	8xØ

BARRAS DE TRAÇÃO	
Ø (mm)	D (mm)
5,0	30,0
6,3	31,5
8,0	40,0
10,0	50,0
12,5	62,5
16,0	80,0
>= 20,0	8xØ

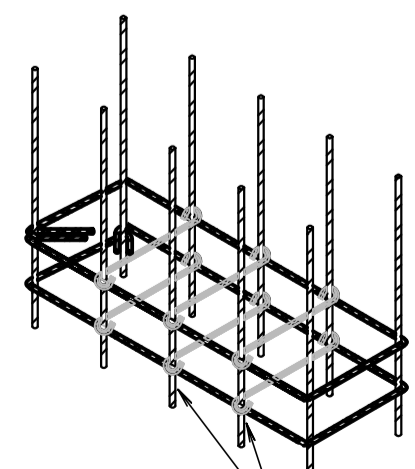


GANCHO DOS ESTRIBOS:



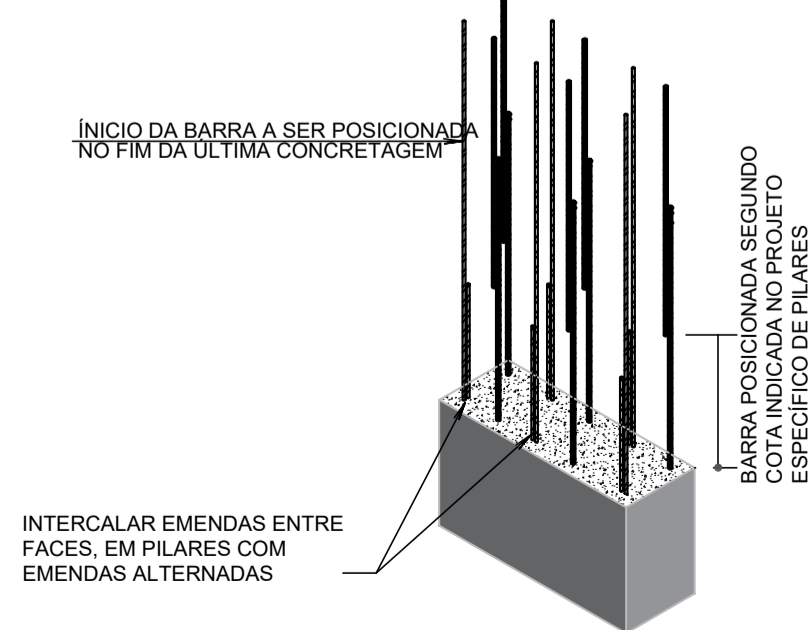
NOTA: gancho em ângulo de 45°

POSICIONAMENTO DOS
GANCHOS
SEM ESCALA



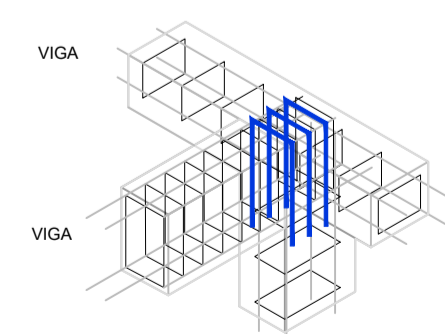
GANCHOS "ABRAÇAM" APENAS A ARMADURA LONGITUDINAL DO PILAR, SEM ENVOLVER O ESTRIBO.

MONTAGEM DE
ARMADURAS ALTERNADAS
NOS PILARES
SEM ESCALA



INTERCALAR EMENDAS ENTRE FACES, EM PILARES COM EMENDAS ALTERNADAS

GRAMPOS DE ANCORAGEM
SEM ESCALA



IMPORTANTE: OS GRAMPOS VERTICAIS DEVEM AMARRAR OS FERROS PRINCIPAIS DOS PILARES COM OS FERROS HORIZONTAIS DAS VIGAS. A QUANTIDADE DE GRAMPOS DEVE SER VERIFICADA NO DETALHEMAMENTO DO ÚLTIMO LANCE DO PILAR.

LEGENDA DAS BARRAS DOS PILARES

- BARRA QUE NASCE
- BARRA QUE MORRE
- BARRA QUE PASSA



PROJETO		COORDENAÇÃO	
RUA MIGUEL VIÂNNA, N.º 81, 2.º ANDAR BAIRRO MORRO CHIC CEP: 37500-080 - ITAJUBÁ / MG TEL: (35) 3623-8846 WWW.DACENGENHARIA.COM.BR		ALCÍSSIO CAETANO FERREIRA	
EMPREENHAMENTO		RESPONSÁVEL TÉCNICO E AUTOR	
HUB DE EMPREENDEDORISMO DE POUSO ALEGRE		ENG. CIVIL FLÁVIA BARBOSA	
ENDEREÇO		DISCIPLINA	
RUA GERALDO COUTINHO DE SOUZA, JARDIM VERGANI POUSO ALEGRE - MINAS GERAIS		ESTRUTURAL	
ASSUNTO		FASE DO PROJETO	
PROJETO ESTRUTURAL EM CONCRETO ARMADO DETALHEMAMENTO DOS PILARES DO PAV. TÉRREO LISTA DE MATERIAIS		EXECUTIVO	
FOLHA Nº.		16/49	
DATA INICIAL	ESCALA	REVISÃO	ARQUIVO
30/05/2023	INDICADA	R01	DAC-PMPA-HUB-PE-EST-R01.dwg