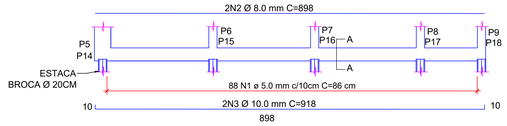
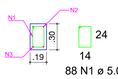
VB 1 = VB 4(19X30)
ESCALA 1/50

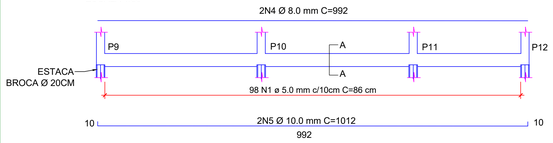


SEÇÃO A-A
ESCALA 1/25

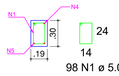


88 N1 ø 5.0 mm c/10cm C=86 cm

VB 2(19X30)
ESCALA 1/50

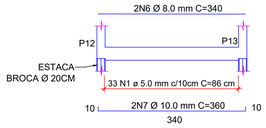


SEÇÃO A-A
ESCALA 1/25

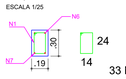


98 N1 ø 5.0 mm c/10cm C=86 cm

VB 3(19X30)
ESCALA 1/50

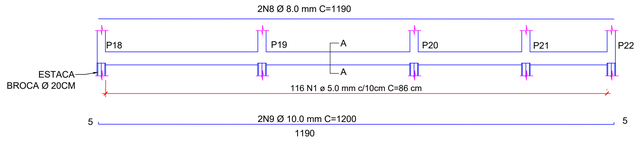


SEÇÃO A-A
ESCALA 1/25

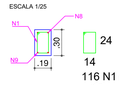


33 N1 ø 5.0 mm
c/10cm C=86 cm

VB 5(19X30)
ESCALA 1/50

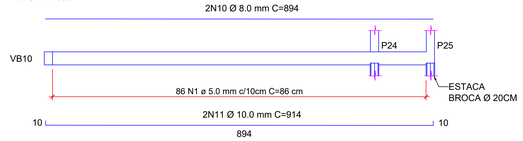


SEÇÃO A-A
ESCALA 1/25

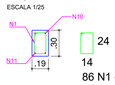


116 N1 ø 5.0 mm
c/10cm C=86 cm

VB 6(19X30)
ESCALA 1/50

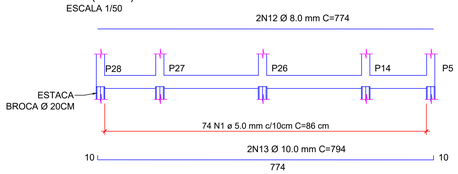


SEÇÃO A-A
ESCALA 1/25

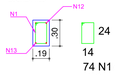


86 N1 ø 5.0 mm
c/10cm C=86 cm

VB 7(19X30)
ESCALA 1/50

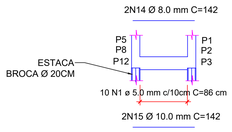


SEÇÃO A-A
ESCALA 1/25



74 N1 ø 5.0 mm
c/10cm C=86 cm

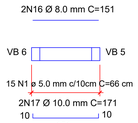
VB 8 = VB9 = VB11(19X30)
ESCALA 1/50



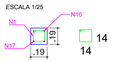
SEÇÃO A-A
ESCALA 1/25

10 N1 ø 5.0 mm
c/10cm C=86 cm

VB 10(19X19)
ESCALA 1/50

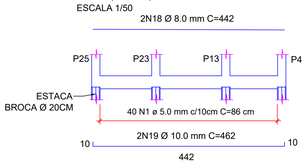


SEÇÃO A-A
ESCALA 1/25

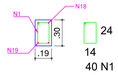


15 N20 ø 5.0 mm
c/10cm C=66 cm

VB 12(19X30)
ESCALA 1/50

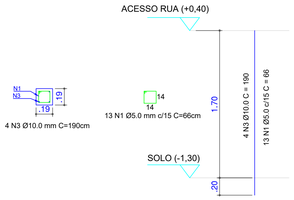


SEÇÃO A-A
ESCALA 1/25

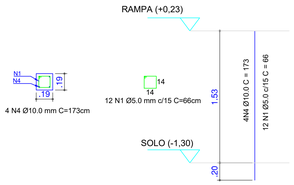


40 N1 ø 5.0 mm
c/10cm C=86 cm

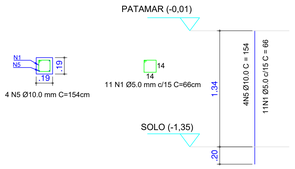
P27 = P28 (19X19)
ESCALA 1/25



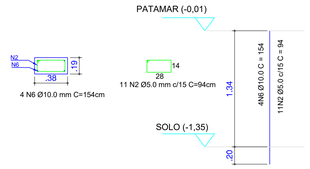
P26 (19X19)
ESCALA 1/25



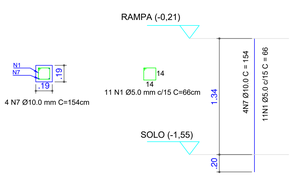
P1 = P14 (19X19)
ESCALA 1/25



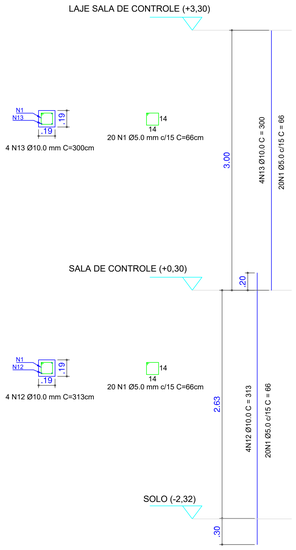
P5 (38X19)
ESCALA 1/25



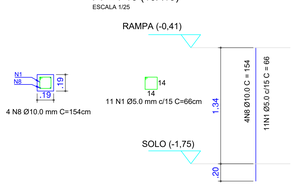
P6 = P15 (19X19)
ESCALA 1/25



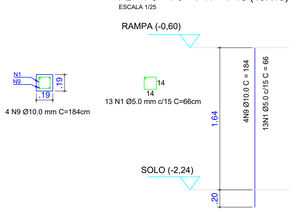
P3=P4=P12=P13 (19X19)
ESCALA 1/25



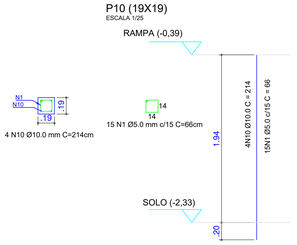
P7 = P16 (19X19)
ESCALA 1/25



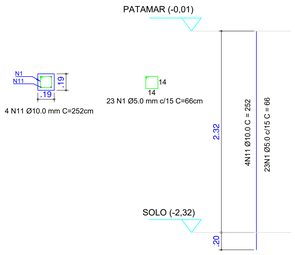
P2 = P8 = P9 = P17 = P18 (19X19)
ESCALA 1/25



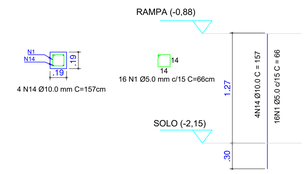
P10 (19X19)
ESCALA 1/25



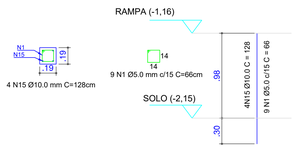
P11 (19X19)
ESCALA 1/25



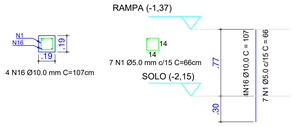
P19 (19X19)
ESCALA 1/25



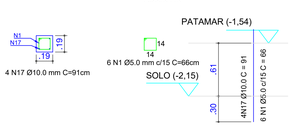
P20 (19X19)
ESCALA 1/25



P21 (19X19)
ESCALA 1/25



P22=P23=P24=P25 (19X19)
ESCALA 1/25



ANCORAGEM DOS PILARES P1=P2=P3=P4=P28 (DETALHE 1)

55 N18 Ø10.0 mm C=24cm

RELAÇÃO DO AÇO BALDRAMES

AÇO	N	DIAM	Q	UNIT (cm)	C.TOTAL (cm)
60	1	5.0	545	86	46870
	20	5.0	15	66	990
50	2	8.0	4	898	3592
	3	10.0	4	918	3672
	4	8.0	2	992	1984
	5	10.0	2	1012	2024
	6	8.0	2	340	680
	7	10.0	2	360	720
	8	8.0	2	1190	2380
	9	10.0	2	1200	2400
	10	8.0	2	894	1788
	11	10.0	2	914	1828
	12	8.0	2	774	1548
	13	10.0	2	794	1588
	14	8.0	6	142	852
	15	10.0	6	142	852
	16	8.0	2	151	302
	17	10.0	2	171	342
	18	8.0	2	442	884
	19	10.0	2	462	924

RESUMO DO AÇO

AÇO	DIAM	C.TOTAL (m)	PESO+10% (kg)
CA50	8.0	140,10	60,87
	10.0	143,50	88,54
CA60	5.0	478,60	73,70
PESO TOTAL			
CA50	149,41		
CA60	73,70		

Vol. de concreto total (C-25) = 4,00 m³
Área de forma total = 43,50 m²

RELAÇÃO DO AÇO DOS PILARES

AÇO	N	DIAM	Q	UNIT (cm)	C.TOTAL (cm)
60	1	5.0	187	66	12342
	2	5.0	11	94	1034
50	3	10.0	8	190	1520
	4	10.0	4	173	692
	5	10.0	8	154	1232
	6	10.0	4	154	616
	7	10.0	8	154	1232
	8	10.0	8	154	1232
	9	10.0	16	184	2944
	10	10.0	4	214	856
	11	10.0	4	252	1008
	12	10.0	16	313	5008
	13	10.0	16	300	4800
	14	10.0	4	157	628
	15	10.0	4	128	512
	16	10.0	4	107	428
	17	10.0	16	91	1456
	18	10.0	55	24	1320

RESUMO DO AÇO

AÇO	DIAM	C.TOTAL (m)	PESO+10% (kg)
CA50	10.0	254,84	172,96
CA60	5.0	133,76	22,66
PESO TOTAL			
CA50	172,96		
CA60	22,66		

Vol. de concreto total (C-25) = 2,50 m³
Área de forma total = 57,42 m²

Estacas com 3 Ø 8.0 mm (barras c=2,0m)				
Simbologia	Nome	Ø (m)	Prof. (m)	Quantidade
	C 20	0,20	3,00	28

INSTITUTO FEDERAL
Sul de Minas Gerais
Reitoria

PROJETO
OBRA: AUDITÓRIO
LOCAL: CAMPUS AVANÇADO CARMO DE MINAS
TIPO: ESTRUTURAL DA RAMPA

PROPRIETÁRIO: IFSULDEMINAS - REITORIA
MARCELO BRAGAGNOLI - REITOR

ENDEREÇO OBRA: Alameda Eugênio Murilo Rubião,s/n Área da Expansão Urbana - CEP 37.472-000 Carmo de Minas / MG

RESPONSÁVEIS: ENG°. CIVIL PAULO ROBERTO DE OLIVEIRA
CREA-MG 29.949/D

QUADRO DE ÁREAS:

CARIMBOS:

DATA:	REVISÃO:	ESCALAS:	UNIDADE:	FOLHA:
JUN2018		INDICADAS	INDICADAS	02/02