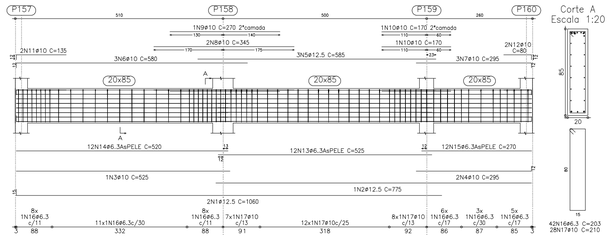
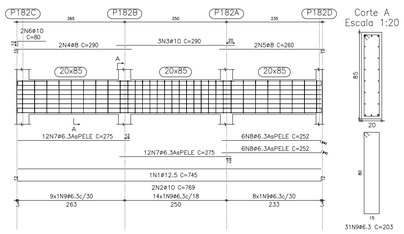
V 22
Escala 1:50



Corte A
Escala 1:20

42N16ø6.3 C=203
28N17ø10 C=210

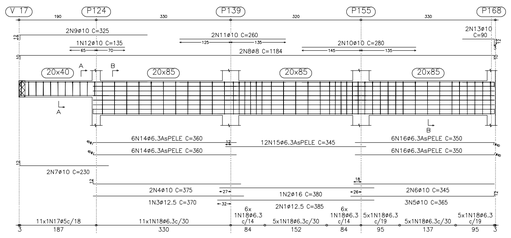
V 25
Escala 1:50



Corte A
Escala 1:20

31N9ø6.3 C=203

V 44
Escala 1:50



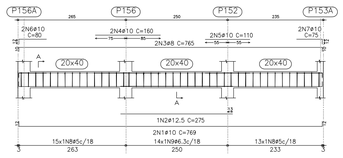
Corte A
Escala 1:20

11N17ø5 C=110

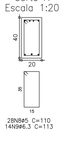
Corte B
Escala 1:20

44N18ø6.3 C=203

V 23
Escala 1:50

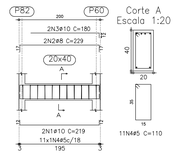


Corte A
Escala 1:20

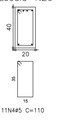


28N8ø5 C=110
14N9ø6.3 C=113

V 45
Escala 1:50

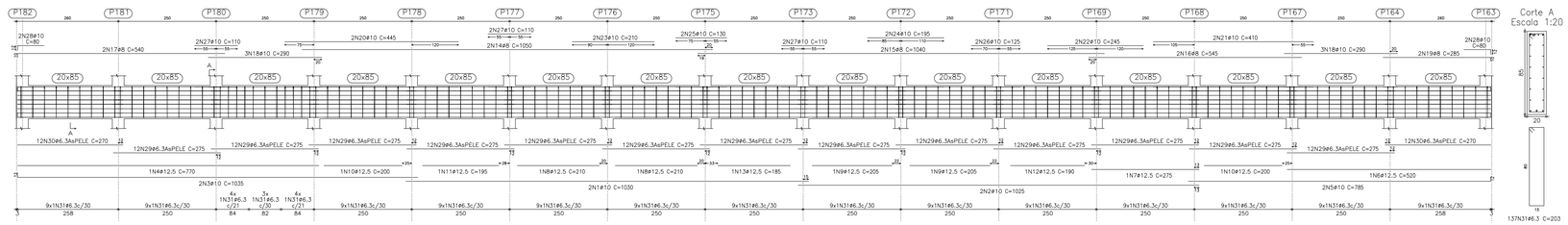


Corte A
Escala 1:20



11N4ø5 C=110

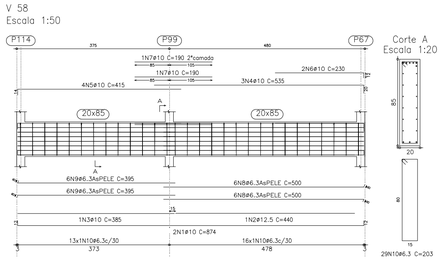
V 24
Escala 1:50



Corte A
Escala 1:20

157N3ø6.3 C=203

V 58
Escala 1:50

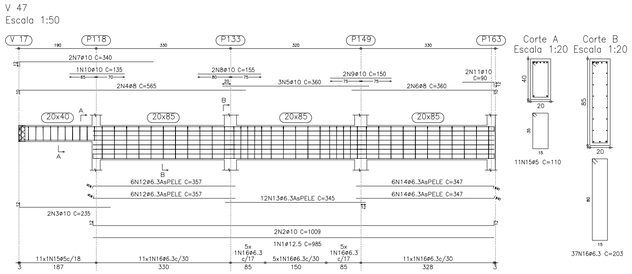


Corte A
Escala 1:20

29N10ø6.3 C=203

Segundo piso
Desenho de vigas
Concreto: C25, con.desfav.
Aço: CA-50-A e CA-60-B
Escala vigas: 1:50
Escala seções: 1:20

V 47
Escala 1:50



Corte A
Escala 1:20

11N15ø5 C=110

Corte B
Escala 1:20

37N16ø6.3 C=203

Elemento	Pos.	Diam.	Q.	Dob. (cm)	Reta (cm)	Dob. (cm)	Comp. (cm)	Total (cm)	CA-50-A (kg)	CA-60-B (kg)
V 47	1	ø12.5	1		985		985	985	9.7	
	2	ø10	2	12	985	12	1009	2018	12.7	
	3	ø10	1	12	223		235	470	3.0	
	4	ø8	2	10	555		565	1130	4.4	
	5	ø10	3		360		360	1080	6.8	
	6	ø8	2		350	10	360	720	2.8	
	7	ø10	2	12	328		340	680	4.3	
	8	ø10	2		155		155	310	1.9	
	9	ø10	2		150		150	300	1.9	
	10	ø10	1		135		135	135	0.8	
	11	ø10	2		78	12	90	180	1.1	
	12	ø6.3	12	8	349		357	4284	10.6	
	13	ø6.3	12		345		345	4140	10.2	
	14	ø6.3	12		339	8	347	4164	10.3	
	15	ø5	11				110	1210		1.9
	16	ø6.3	37				203	7511	18.6	
								Total+10%	109.0	2.1

Elemento	Pos.	Diam.	Q.	Dob. (cm)	Reta (cm)	Dob. (cm)	Comp. (cm)	Total (cm)	CA-50-A (kg)	CA-60-B (kg)
V 22	1	ø12.5	2	15	1045		1060	2120	20.8	
	2	ø12.5	1		775		775	775	7.6	
	3	ø10	1		525		525	525	3.3	
	4	ø10	2		283	12	295	590	3.7	
	5	ø12.5	3		585		585	1755	17.2	
	6	ø10	3	12	568		580	1740	10.9	
	7	ø10	3		283	12	295	885	5.6	
	8	ø10	2		345		345	690	4.3	
	9	ø10	1		270		270	270	1.7	
	10	ø10	2		170		170	340	2.1	
	11	ø10	2	12	123		135	270	1.7	
	12	ø10	2		68	12	80	160	1.0	
	13	ø6.3	12		525		525	6300	15.6	
	14	ø6.3	12		520		520	6240	15.4	
	15	ø6.3	12		270		270	3240	8.0	
	16	ø6.3	41				203	8323	20.6	
	17	ø10	27				210	5670	35.6	
								Total+10%	192.6	
V 23	1	ø10	2	12	745	12	769	1538	9.7	
	2	ø12.5	1		275		275	275	2.7	
	3	ø8	2	10	745	10	765	1530	6.0	
	4	ø10	2		160		160	320	2.0	
	5	ø10	2		110		110	220	1.4	
	6	ø10	2	12	68		80	160	1.0	
	7	ø10	2		63	12	75	150	0.9	
	8	ø5	28				110	3080		4.8
	9	ø6.3	14				113	1582	3.9	
								Total+10%	30.4	5.3
V 24	1	ø10	2		1030		1030	2060	12.9	
	2	ø10	2		1025		1025	2050	12.9	
	3	ø10	2	12	1003		1035	2070	13.0	
	4	ø12.5	1		770		770	770	7.6	
	5	ø10	2	12	773	12	785	1570	9.9	
	6	ø12.5	1		520		520	520	5.1	
	7	ø12.5	1		275		B 275	275	2.7	
	8	ø12.5	2		210		210	420	4.1	
	9	ø12.5	2		205		205	410	4.0	
	10	ø12.5	2		200		200	400	3.9	
	11	ø12.5	1		195		195	195	1.9	
	12	ø12.5	1		190		190	190	1.9	
	13	ø12.5	1		185		185	185	1.8	
	14	ø8	2		1050		1050	2100	8.2	
	15	ø8	2		1040		1040	2080	8.2	
	16	ø8	2		545		545	1090	4.3	
	17	ø8	2	10	530		540	1080	4.2	
	18	ø10	6		290		290	1740	10.9	
	19	ø10	2	10	275	10	285	570	2.2	
	20	ø10	2		445		445	890	5.6	
	21	ø10	2		410		410	820	5.1	
	22	ø10	2		245		245	490	2.1	
	23	ø10	2		210		210	420	2.6	
	24	ø10	2		195		195	390	2.4	
	25	ø10	2		130		130	260	1.6	
	26	ø10	2		125		125	250	1.6	
	27	ø10	6		110		110	660	4.1	
	28	ø10	4	12	68		80	320	2.0	
	29	ø6.3	156		275		275	42900	106.1	
	30	ø6.3	24		270		270	6480	16.0	
	31	ø6.3	137				203	27811	68.8	
								Total+10%	372.6	
V 25	1	ø12.5	1		745		745	745	7.3	
	2	ø10	2	12	745	12	769	1538	9.7	
	3	ø10	1		290		290	870	5.5	
	4	ø8	2	10	280		290	580	2.3	
	5	ø8	2		250	10	260	520	2.0	
	6	ø10	2	12	68		80	160	1.0	
	7	ø6.3	24		275		275	6600	16.3	
	8	ø6.3	12		244	8	252	3024	7.5	
	9	ø6.3	31				203	6293	15.6	
								Total+10%	73.9	
V 44	1	ø12.5	2		385		385	770	7.6	
	2	ø16	1		380		380	380	6.0	
	3	ø12.5	1		370		370	370	3.6	
	4	ø10	2	12	363		375	750	4.7	
	5	ø10	3		353	12	365	1095	6.9	
	6	ø10	2		345		345	690	4.3	
	7	ø10	2	12	218		230	460	2.9	
	8	ø8	2	10	1164	10	1184	2368	9.3	
	9	ø10	2	12	313		325	650	4.1	
	10	ø10	2		280		280	560	3.5	
	11	ø10	2		260		260	520	3.3	
	12	ø10	1		135		135	135	0.8	
	13	ø10	2		78	12	90	180	1.1	
	14	ø6.3	12	8	352		360	4320	10.7	
	15	ø6.3	12		345		345	4140	10.2	
	16	ø6.3	12		342	8	350	4200	10.4	
	17	ø5	11				110	1210		1.9
	18	ø6.3	43				203	8729	21.6	
								Total+10%	122.1	2.1
V 45	1	ø10	2	12	195	12	219	438	2.8	
	2	ø8	2	17	195	17	229	458	1.8	
	3	ø10	2		168	12	180	360	2.3	
	4	ø5	11				110	1210		1.9
								Total+10%	7.6	2.1
V 58	1	ø10	2	12	850	12	874	1748	11.0	
	2	ø12.5	1		440		440	440	4.3	
	3	ø10	1		385		385	385	2.4	
	4	ø10	3		515	20	535	1605	10.1	
	5	ø10	4	14	401		415	1660	10.4	
	6	ø10	2		218	12	230	460	2.9	
	7	ø10	2		190		190	380	2.4	
	8	ø6.3	12		492	8	500	6000	14.8	
	9	ø6.3	12	8	387		395	4740	11.7	
	10	ø6.3	29				203	5887	14.6	
								Total+10%	93.1	
								ø5:	0.0	11.6
								ø6.3:	481.2	0.0
								ø8:	61.2	0.0
								ø10:	327.0	0.0
								ø12.5:	135.3	0.0
								ø16:	6.6	0.0
								Total:	1001.3	11.6

OBSERVAÇÕES

. Medidas das cotas em cm (exceto onde indicado)
. Verificar medidas na obra
. Molhar as formas antes da concretagem
. Usar espaçadores para garantir recobrimento do aço
. Nas armações negativas das lajes – usar "caranguejos"
. Cura minima = 7 dias
. Descimbramento(formas) = mínimo de 28 dias
. Todas as peças de concreto em contato com o solo devem ser executadas sobre lastro de concreto magro c/ e=5cm
. Em caso de dúvidas, contactar o Calculista

Classe de Agresiv.: C II	Ec(5600 √fck):	Agreg. Graudo: Brita 01	
CONCRETO(Fck): 25 MPa	AÇO: CA 50	SLUMP (mm): 100+−10	
Fator A/C (max.):< 0.60	FORMAS: C. Res.	ADITIVO:	

Nº	DATA	DESCRIÇÃO	VISTO

QUADRO DE REVISÕES

FASE: PROJETO EXECUTIVO DE ESTRUTURAL

PAVILHÃO DE SALAS DE AULA II
CAMPUS UNAÍ-JANAUBA
RODOVIA MG 367, KM 583, Nº 5000 - ALTO DA JACUBA - DIAMANTINA/MG

UFVJM

PROPRIETÁRIO: UNIVERSIDADE FEDERAL DOS VALES DO JEQUITINHONHA E MUCURI — CNPJ: 16.886.315/0001-57

TÍTULO: ARMAÇÃO DE VIGAS - SEGUNDO PISO - 04

AUTOR PROJETO ARQUITETÔNICO / RT:

ALESSANDRO DE OLIVEIRA ALVES
RT: ENG. CIVIL ALESSANDRO DE OLIVEIRA ALVES — CREA: 137.372-D/MG
RUA N Nº15, VILA ARRAIOLOS , DIAMANTINA/MG
FONES: (38) 3532-1257 / 8823-8034

VERSÃO:	DATA:	AUTOCAD:	FOLHA:
VERSÃO 1	16.10.2012		29

ARQUIVO: PAVILHÃO DE AULAS\FA2-PTB-121(02 PAVTOS) - EST