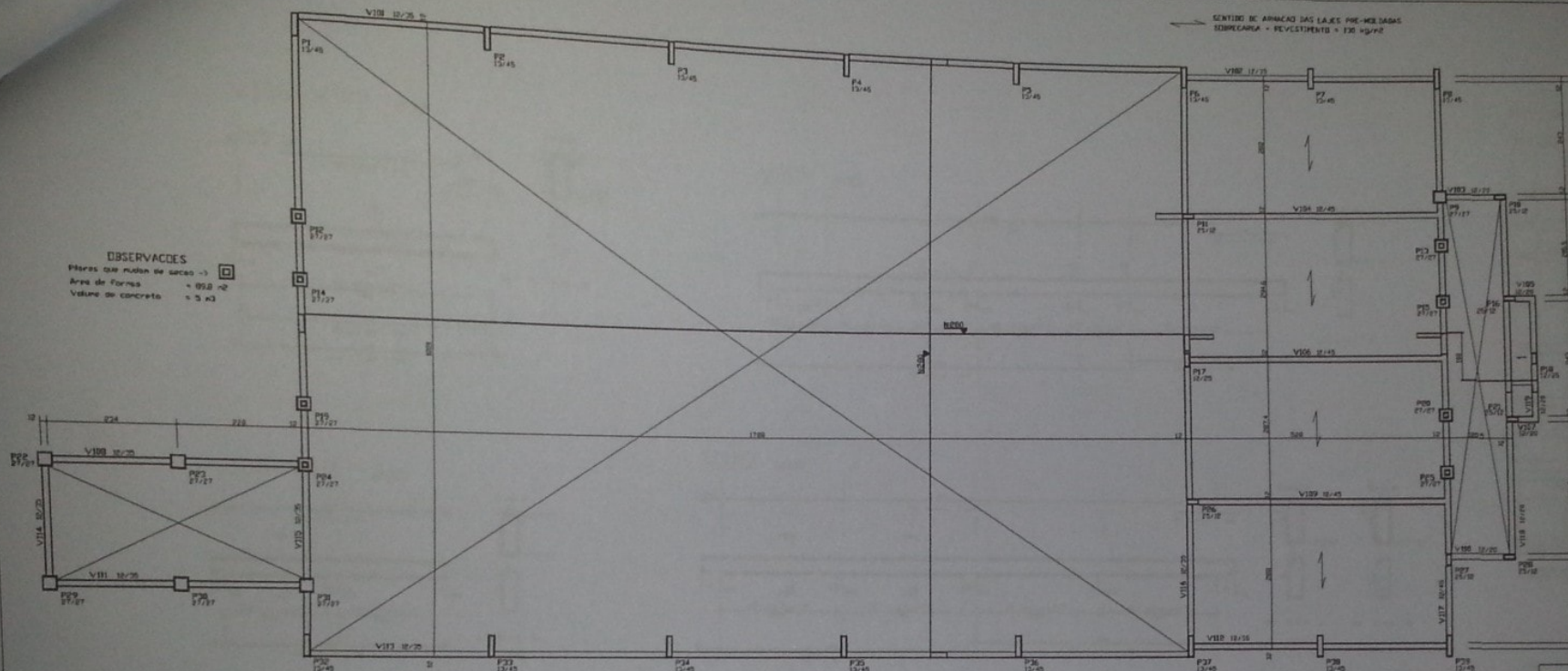


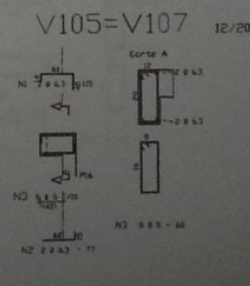
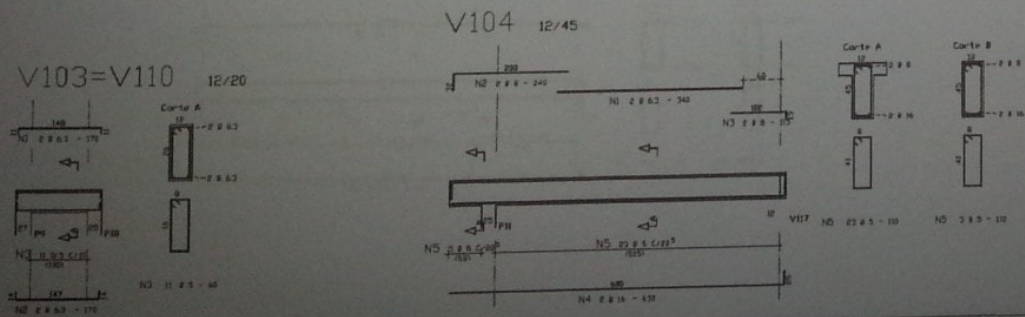
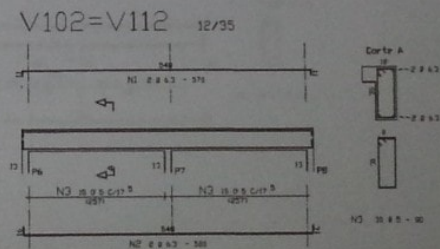
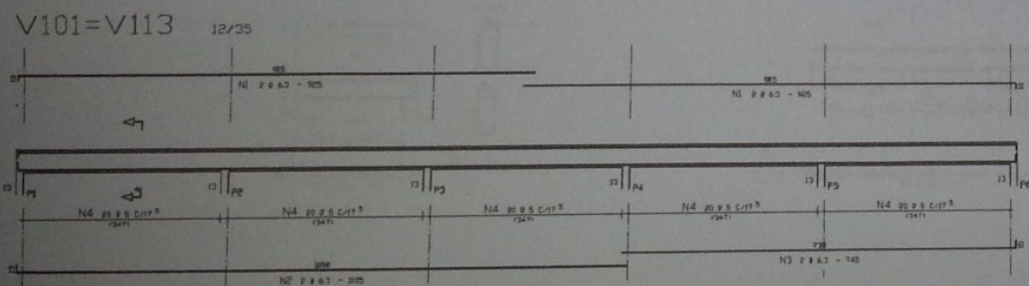


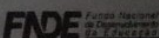
RESIDUAL ACCOUNT 50-68				
ACD	BRT	CDMP	PERS	
	6.3	10		
50A	0	22		3%
50A	0	7		3
50A	16	13		28
50E	0	282		46
PERS Total		50A =		79 H.R.
PERS Total		50E =		25 H.R.

	Exo	Faces
Volume de concreto de VIGA (m ³)	2,4	2,3
Isola de armadura (kg/m ³)	51,8	54,5

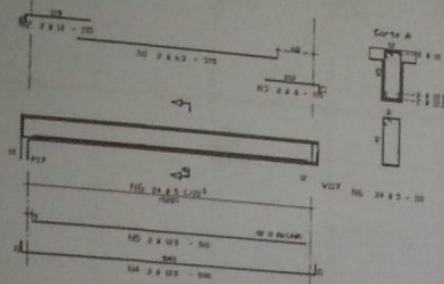
NOTA: CONCRETO $f_{ck} = 20 \text{ MPa}$

FORMAS DAS VIGAS E LAJES DO FORRO

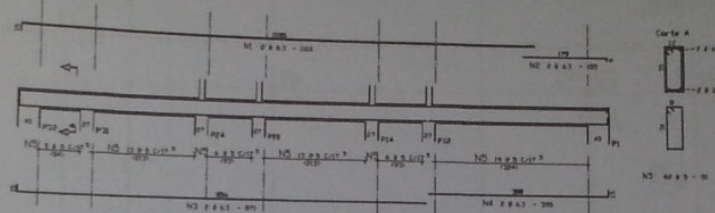


 GOVERNOS DO BRASIL Ministério da Educação		 FNE Fundo Nacional de Desenvolvimento da Educação	
PROJETO PADRÃO - FNE			
MUNICÍPIO - UF:			
PROPRIETÁRIO:			
ENDEREÇO:			
PROPRIETÁRIO RESP. TÉCNICO END. IMPL. TAVARES RIBEIRO - CREA-00.000.000 AUTOR DO PROJETO			
SLOTO		ONÇA	
		Pa	
OBSERVAÇÕES:			
PAULO RICARDO CABO NOGARA Engenheiro Civil CREA 70056			
ESCOLA 12 SALAS DE AULA			
PROJETO ESTRUTURAL concreto armado			
Coordenação GEDIST - Coordenação Geral de Infraestrutura Educacional		BLOCO DE PATIO COBERTO FORMAS E ARMADURAS DE VIGAS DO FORNO	
FUNDADO PLAN - NOVEMBRO DE 2004 PLAN - JULHO DE 2007		PLAN PLAN - JULHO DE 2007	
FUNDADO		FUNDADO	
INICIADO		20/04	

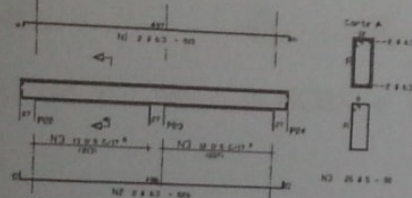
V106=V109 12/43



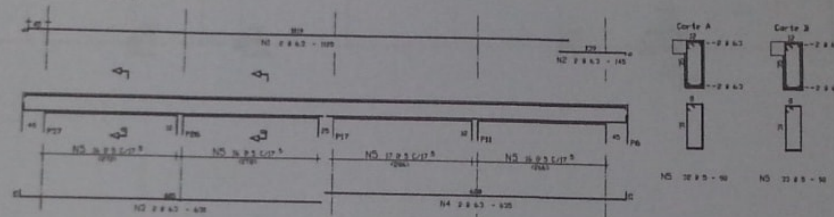
V115 12/35



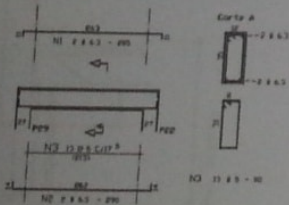
V108=V111 12/35



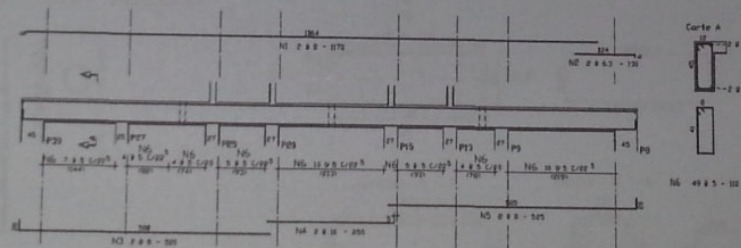
V116 12/35



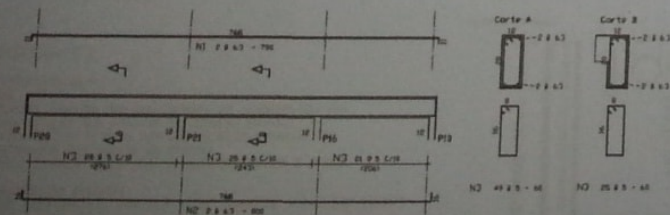
V114 1E/35



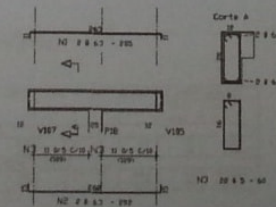
V117 12/45



V118 12/20



V119 12/20

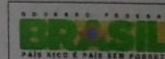


	ACD	PDS	BT	UNIT	UNIT	TOTAL
					UNIT	UNIT
					UNIT	UNIT
V136-V139	504	2	4.3	4	296	868
	504	2	10	4	480	1440
	504	4	12.5	4	175	540
	504	4	12.5	4	175	540
	504	4	12.5	4	175	540
V138-V141	504	2	4.3	4	296	868
	504	2	4.3	4	296	868
	504	2	4.3	4	296	868
	504	2	4.3	4	296	868
V14	504	2	4.3	4	296	868
	504	2	4.3	4	296	868
V15	504	2	4.3	4	296	868
	504	2	4.3	4	296	868
	504	2	4.3	4	296	868
V16	504	2	4.3	4	296	868
	504	2	4.3	4	296	868
	504	2	4.3	4	296	868
	504	2	4.3	4	296	868
V17	504	2	4.3	4	296	868
	504	2	4.3	4	296	868
	504	2	4.3	4	296	868
	504	2	4.3	4	296	868
V18	504	2	4.3	4	296	868
	504	2	4.3	4	296	868
	504	2	4.3	4	296	868
	504	2	4.3	4	296	868
V19	504	2	4.3	4	296	868
	504	2	4.3	4	296	868
	504	2	4.3	4	296	868
	504	2	4.3	4	296	868

PESQUISA DE OPINIAO CA 50-58			
ACU	BIT (m=1)	COMPO (m=2)	PESO (m=2)
50A	6.3	256	54
50B	7	49	54
51A	10	11	7
51B	125	44	44
51C	8	225	54
Peso Total		504 =	124 + 10
Peso Total		603 =	54 + 54

Volume de concreto de VIGAS (m ³)	20
Tela de armadura (kg/m ²)	294

NOTA: CONCRETO $f_{ck} = 20 \text{ MPa}$

Ministério
da Educação

FNDE Fundo Nacional de Desenvolvimento da Educação

PROJETO PADRÃO - FNDE

MUNICIPIO - UF:

PROPRIETARIO:

ENDRECO

PROPRIETARIO _____

RES. TÉCNICO _____ DIA _____

(R.S. SMARL TAVARES RICHIA - CREA-00 1823/D)

AUTOR DO PROJETO

DL70	DL70
------	------

PAULO RICARDO ZAGO NOGARA
Engenheiro Civil
CREA 70065

ESCOLA 12 SALAS DE AULA

PROJETO ESTRUTURAL concreto armado

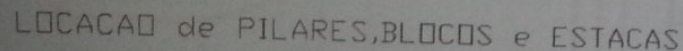
DOCUMENT	DATE
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COEST - Coordenação BLOCO DE PÁTIO COBERTO

ARMACÕES DE VIGAS DO FORRO

E ARMAÇÃO DAS ESTACAS

	Rio + NOVEMBRO DE 2020	HISTÓRICO
	8:00 - 22:07 DE 2021	



- ESTACAS A TRAVEZ DO DIAMETRO=30cm
- CONCRETO Fc = 135 MPa
- A PROFUNDIDADE DAS ESTACAS DEVERIA SER CONSIDERADA EM TERRENO NATURAL.
- O COMPROMISSO DA ESTACA DEVERIA SER APARTIR DO TERRENO NATURAL.
- SE NECESSER ATENDER O COMPROMISSO DEVERIA SER CONSIDERADO A PARTIR DO TERRENO NATURAL.
- A FUNDACAO DEVERIA PROVERBIALMENTE ATENDER
- NA ADEQUACAO DOS PILARES (CARCABA DA ESTACA) DEVERIA SER USADO O MESMO Fc NA ESTRUTURA.
- VERIFICAR O CONCRETO NA REGIÃO DA ARMADA.
- PARA DETECLAR AS COTAS DE ARRANZAMENTO, VER PLANTA DE FORMA DE VIGAS BAL DRAKES
- SE NECESSER MODIFICACAO NA FUNDACAO DEVERIA SER COMUNICADA AO AUTOR
- DO PROJETO DE FUNDACAO.

DESEJO A MANUTENÇÃO DE UM NÍVEL DE VIDA DESEJADO, ATRAVÉS DE UM AUMENTO DA PRODUÇÃO DE ENERGIA ELÉTRICA, SEM O EMPREGO DE RECURSOS NATURAIS, ASSIM COMO A PROTEÇÃO DO MEIO AMBIENTE E DO PATRIMÔNIO CULTURAL DO PAÍS. O PROJETO DE LERMA TEM COMO OBJETIVO A SUA VIABILIDADE DE APLICAÇÃO EM UM NÍVEL DE VIDA DESEJADO.

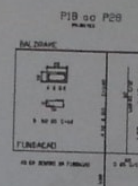
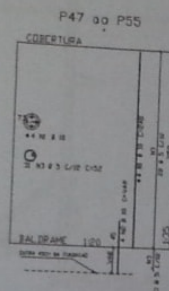
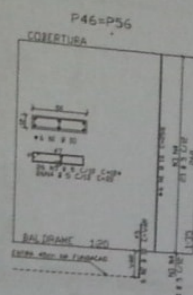
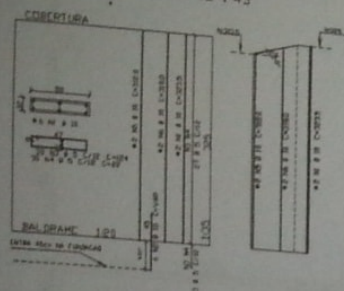
4 NO 8 5 C 005

4 NO 8 5 C 005

RESUMO ACD CA 50-60			
ACD	BTT (cm)	CMPR (in)	PESO (kg)
608	5	234	54
508	8	231	132
Peso Total		608 =	54 kg
Peso Total		508 =	132 kg

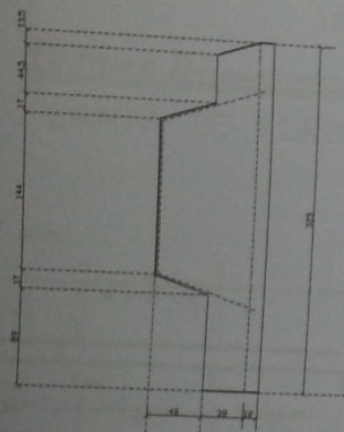
ESCOLA 12 SALAS DE AULA					
PROJETO ESTRUTURAL concreto armado					
COORDENADOR COREST - Coordenação Geral da Infraestrutura Educacional	BLOCO B e 4 SALAS COM BANHEIRO				ESTRUTURA
	LOCALIZAÇÃO DE PILARES, BLOCOS E ESTACAS				
	DETALHES DE PILARES E ESTACAS				
FUNDAÇÃO RF-000-100	PIE PLANTA Nº= 000-000-000-000 Auto = 000-000-00-00	PROJEÇÃO 1º Bloco de Fundação 000-000-000-000 Auto = 000-000-00-00			DATA 22/03/2017

P14 oo P17,P29=P41=P42=P43

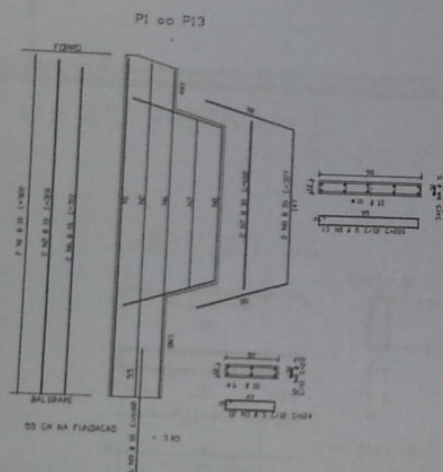


	AGE	SEX	REL	EDUCATION	LAST INCOME	PREVIOUS INCOME
P1 (a, b, c)	(x, y, z)					
P1	1	F	1	44	1000	1000
P2	1	F	1	25	1000	1000
P3	1	F	1	25	1000	1000
P4	1	F	1	44	1000	1000
P5	1	F	1	25	1000	1000
P6	1	F	1	25	1000	1000
P7	1	F	1	25	1000	1000
P8	1	F	1	25	1000	1000
P9	1	F	1	25	1000	1000
P10	1	F	1	25	1000	1000
P11	1	F	1	25	1000	1000
P12	1	F	1	25	1000	1000
P13	1	F	1	25	1000	1000
P14	1	F	1	25	1000	1000
P15	1	F	1	25	1000	1000
P16	1	F	1	25	1000	1000
P17	1	F	1	25	1000	1000
P18	1	F	1	25	1000	1000
P19	1	F	1	25	1000	1000
P20	1	F	1	25	1000	1000
P21	1	F	1	25	1000	1000
P22	1	F	1	25	1000	1000
P23	1	F	1	25	1000	1000
P24	1	F	1	25	1000	1000
P25	1	F	1	25	1000	1000
P26	1	F	1	25	1000	1000
P27	1	F	1	25	1000	1000
P28	1	F	1	25	1000	1000
P29	1	F	1	25	1000	1000
P30	1	F	1	25	1000	1000
P31	1	F	1	25	1000	1000
P32	1	F	1	25	1000	1000
P33	1	F	1	25	1000	1000
P34	1	F	1	25	1000	1000
P35	1	F	1	25	1000	1000
P36	1	F	1	25	1000	1000
P37	1	F	1	25	1000	1000
P38	1	F	1	25	1000	1000
P39	1	F	1	25	1000	1000
P40	1	F	1	25	1000	1000
P41	1	F	1	25	1000	1000
P42	1	F	1	25	1000	1000
P43	1	F	1	25	1000	1000
P44	1	F	1	25	1000	1000
P45	1	F	1	25	1000	1000
P46	1	F	1	25	1000	1000
P47	1	F	1	25	1000	1000
P48	1	F	1	25	1000	1000
P49	1	F	1	25	1000	1000
P50	1	F	1	25	1000	1000
P51	1	F	1	25	1000	1000
P52	1	F	1	25	1000	1000
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P54	1	F	1	25	1000	1000
P55	1	F	1	25	1000	1000
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P57	1	F	1	25	1000	1000
P58	1	F	1	25	1000	1000
P59	1	F	1	25	1000	1000
P60	1	F	1	25	1000	1000
P61	1	F	1	25	1000	1000
P62	1	F	1	25	1000	1000
P63	1	F	1	25	1000	1000
P64	1	F	1	25	1000	1000
P65	1	F	1	25	1000	1000
P66	1	F	1	25	1000	1000
P67	1	F	1	25	1000	1000
P68	1	F	1	25	1000	1000
P69	1	F	1	25	1000	1000
P70	1	F	1	25	1000	1000
P71	1	F	1	25	1000	1000
P72	1	F	1	25	1000	1000
P73	1	F	1	25	1000	1000
P74	1	F	1	25	1000	1000
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P96	1	F	1	25	1000	1000
P97	1	F	1	25	1000	1000
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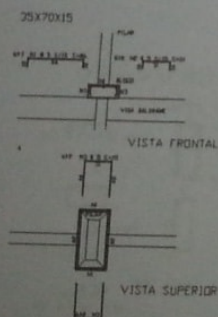
BILIRUBIN AZO LA 98-03			
AZO	BT	CONTR	PCSO
	(mm)	(u)	(u)
508	0	0.8	BT
509	10	0.75	BT
508	0	0.75	BT
Febo Total	509		0.75 BT
Febo Total	509		0.75 BT



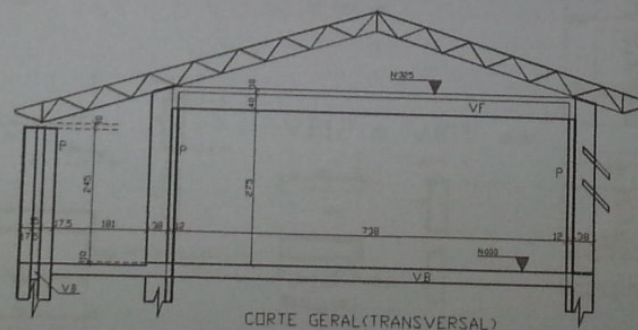
ABA DOS PILARES
(P1 ao P13)



CONSIDERAÇÕES FINAIS		
TEMPO DO CONCRETO FUNDADO		
VIGAS DE DIMENSÃO PADRÃO = PLATINADO A PLÁSTICA		
RESUMO	ANÁLISE DE TEMPO - ANÁLISE DE VIGAS DE CONCRETO FUNDADO	
COMPORTAMENTO DAS ARMADURAS		
VIGAS BALANÇADAS 22 CM VIGAS COM PISOS 22 CM PLÁSTICA 22 CM		
COMPORTAMENTO DE PILARES		
		
MADE	MADE	MADE
L.A.E. PRE-VERIFICAÇÃO		
SERVIDOR DE APOIO		
SOLICITAÇÃO DE REVISÃO/REVISÃO DE PROJETO		
ALTERNATIVA		
TEMPO DO CONCRETO FUNDADO		
TEMPO DO CONCRETO FUNDADO		



BLOCO NA BASE DOS PILARES



CORTE GERAL (TRANSVERSAL)

NOTA: CONCRETO $f_{ck} = 20 \text{ MPa}$



Ministério
da Educação



Fundo Nacional
de Desenvolvimento
da Educação

PROJETO PADRÃO - FNEDE

MUNICÍPIO - UF: _____

PROPRIETÁRIO: _____

ENGENHEIRO: _____

PROPRIETÁRIO: _____

RESP. TÉCNICO: _____ CPA

Eng. PAULO RICARDO LAGO NOGARA - CREA - GO 1823/0

AUTOR DO PROJETO: _____

DADO	CREA
OBSERVAÇÕES	SA

PAULO RICARDO LAGO NOGARA
Engenheiro Civil

54.704/85

ESCOLA 12 SALAS DE AULA

PROJETO ESTRUTURAL concreto armado

SUCCO EL 4 SALAS COM SANITÁRIO
DETALHE DOS PILARES

PROJETO
AUTOR: PAULO RICARDO LAGO NOGARA
NOME: PAULO RICARDO LAGO NOGARA

PROJETO
TÍTULO: ESCOLA 12 SALAS DE AULA
DETALHE DOS PILARES

Hand-drawn technical drawing of a road layout, likely a plan view. The drawing shows a road with multiple lanes and a central median. The road is labeled with stationing numbers (e.g., 2+6.5, 3+00, 3+6.5, 4+00, 4+6.5, 5+00, 5+6.5, 6+00, 6+6.5, 7+00, 7+6.5, 8+00, 8+6.5, 9+00, 9+6.5, 10+00, 10+6.5, 11+00, 11+6.5, 12+00, 12+6.5, 13+00, 13+6.5, 14+00, 14+6.5, 15+00, 15+6.5, 16+00, 16+6.5, 17+00, 17+6.5, 18+00, 18+6.5, 19+00, 19+6.5, 20+00, 20+6.5, 21+00, 21+6.5, 22+00, 22+6.5, 23+00, 23+6.5, 24+00, 24+6.5, 25+00, 25+6.5, 26+00, 26+6.5, 27+00, 27+6.5, 28+00, 28+6.5, 29+00, 29+6.5, 30+00, 30+6.5, 31+00, 31+6.5, 32+00, 32+6.5, 33+00, 33+6.5, 34+00, 34+6.5, 35+00, 35+6.5, 36+00, 36+6.5, 37+00, 37+6.5, 38+00, 38+6.5, 39+00, 39+6.5, 40+00, 40+6.5, 41+00, 41+6.5, 42+00, 42+6.5, 43+00, 43+6.5, 44+00, 44+6.5, 45+00, 45+6.5, 46+00, 46+6.5, 47+00, 47+6.5, 48+00, 48+6.5, 49+00, 49+6.5, 50+00, 50+6.5, 51+00, 51+6.5, 52+00, 52+6.5, 53+00, 53+6.5, 54+00, 54+6.5, 55+00, 55+6.5, 56+00, 56+6.5, 57+00, 57+6.5, 58+00, 58+6.5, 59+00, 59+6.5, 60+00, 60+6.5, 61+00, 61+6.5, 62+00, 62+6.5, 63+00, 63+6.5, 64+00, 64+6.5, 65+00, 65+6.5, 66+00, 66+6.5, 67+00, 67+6.5, 68+00, 68+6.5, 69+00, 69+6.5, 70+00, 70+6.5, 71+00, 71+6.5, 72+00, 72+6.5, 73+00, 73+6.5, 74+00, 74+6.5, 75+00, 75+6.5, 76+00, 76+6.5, 77+00, 77+6.5, 78+00, 78+6.5, 79+00, 79+6.5, 80+00, 80+6.5, 81+00, 81+6.5, 82+00, 82+6.5, 83+00, 83+6.5, 84+00, 84+6.5, 85+00, 85+6.5, 86+00, 86+6.5, 87+00, 87+6.5, 88+00, 88+6.5, 89+00, 89+6.5, 90+00, 90+6.5, 91+00, 91+6.5, 92+00, 92+6.5, 93+00, 93+6.5, 94+00, 94+6.5, 95+00, 95+6.5, 96+00, 96+6.5, 97+00, 97+6.5, 98+00, 98+6.5, 99+00, 99+6.5, 100+00, 100+6.5, 101+00, 101+6.5, 102+00, 102+6.5, 103+00, 103+6.5, 104+00, 104+6.5, 105+00, 105+6.5, 106+00, 106+6.5, 107+00, 107+6.5, 108+00, 108+6.5, 109+00, 109+6.5, 110+00, 110+6.5, 111+00, 111+6.5, 112+00, 112+6.5, 113+00, 113+6.5, 114+00, 114+6.5, 115+00, 115+6.5, 116+00, 116+6.5, 117+00, 117+6.5, 118+00, 118+6.5, 119+00, 119+6.5, 120+00, 120+6.5, 121+00, 121+6.5, 122+00, 122+6.5, 123+00, 123+6.5, 124+00, 124+6.5, 125+00, 125+6.5, 126+00, 126+6.5, 127+00, 127+6.5, 128+00, 128+6.5, 129+00, 129+6.5, 130+00, 130+6.5, 131+00, 131+6.5, 132+00, 132+6.5, 133+00, 133+6.5, 134+00, 134+6.5, 135+00, 135+6.5, 136+00, 136+6.5, 137+00, 137+6.5, 138+00, 138+6.5, 139+00, 139+6.5, 140+00, 140+6.5, 141+00, 141+6.5, 142+00, 142+6.5, 143+00, 143+6.5, 144+00, 144+6.5, 145+00, 145+6.5, 146+00, 146+6.5, 147+00, 147+6.5, 148+00, 148+6.5, 149+00, 149+6.5, 150+00, 150+6.5, 151+00, 151+6.5, 152+00, 152+6.5, 153+00, 153+6.5, 154+00, 154+6.5, 155+00, 155+6.5, 156+00, 156+6.5, 157+00, 157+6.5, 158+00, 158+6.5, 159+00, 159+6.5, 160+00, 160+6.5, 161+00, 161+6.5, 162+00, 162+6.5, 163+00, 163+6.5, 164+00, 164+6.5, 165+00, 165+6.5, 166+00, 166+6.5, 167+00, 167+6.5, 168+00, 168+6.5, 169+00, 169+6.5, 170+00, 170+6.5, 171+00, 171+6.5, 172+00, 172+6.5, 173+00, 173+6.5, 174+00, 174+6.5, 175+00, 175+6.5, 176+00, 176+6.5, 177+00, 177+6.5, 178+00, 178+6.5, 179+00, 179+6.5, 180+00, 180+6.5, 181+00, 181+6.5, 182+00, 182+6.5, 183+00, 183+6.5, 184+00, 184+6.5, 185+00, 185+6.5, 186+00, 186+6.5, 187+00, 187+6.5, 188+00, 188+6.5, 189+00, 189+6.5, 190+00, 190+6.5, 191+00, 191+6.5, 192+00, 192+6.5, 193+00, 193+6.5, 194+00, 194+6.5, 195+00, 195+6.5, 196+00, 196+6.5, 197+00, 197+6.5, 198+00, 198+6.5, 199+00, 199+6.5, 200+00, 200+6.5, 201+00, 201+6.5, 202+00, 202+6.5, 203+00, 203+6.5, 204+00, 204+6.5, 205+00, 205+6.5, 206+00, 206+6.5, 207+00, 207+6.5, 208+00, 208+6.5, 209+00, 209+6.5, 210+00, 210+6.5, 211+00, 211+6.5, 212+00, 212+6.5, 213+00, 213+6.5, 214+00, 214+6.5, 215+00, 215+6.5, 216+00, 216+6.5, 217+00, 217+6.5, 218+00, 218+6.5, 219+00, 219+6.5, 220+00, 220+6.5, 221+00, 221+6.5, 222+00, 222+6.5, 223+00, 223+6.5, 224+00, 224+6.5, 225+00, 225+6.5, 226+00, 226+6.5, 227+00, 227+6.5, 228+00, 228+6.5, 229+00, 229+6.5, 230+00, 230+6.5, 231+00, 231+6.5, 232+00, 232+6.5, 233+00, 233+6.5, 234+00, 234+6.5, 235+00, 235+6.5, 236+00, 236+6.5, 237+00, 237+6.5, 238+00, 238+6.5, 239+00, 239+6.5, 240+00, 240+6.5, 241+00, 241+6.5, 242+00, 242+6.5, 243+00, 243+6.5, 244+00, 244+6.5, 245+00, 245+6.5, 246+00, 246+6.5, 247+00, 247+6.5, 248+00, 248+6.5, 249+00, 249+6.5, 250+00, 250+6.5, 251+00, 251+6.5, 2

Technical drawing of a mechanical part showing three views: front, top, and side. The front view shows a rectangular block with dimensions 100 (width) and 100 (height). The top view shows a rectangular block with dimensions 100 (width) and 100 (depth). The side view shows a rectangular block with dimensions 100 (width) and 100 (height). The drawing includes dimension lines and numerical values for each dimension.

Technical drawing of a bridge structure. The drawing includes a plan view and two cross-sections, Corte A and Corte B.

Plan View:

- Overall length: 102.00 m
- Span lengths: 30.00 m, 40.00 m, 32.00 m
- Dimensions: 102.00 m, 30.00 m, 40.00 m, 32.00 m
- Labels: 102.00 m, 30.00 m, 40.00 m, 32.00 m

Corte A:

- Dimensions: 2.00 m, 2.00 m, 2.00 m
- Labels: 2.00 m, 2.00 m, 2.00 m

Corte B:

- Dimensions: 2.00 m, 2.00 m, 2.00 m
- Labels: 2.00 m, 2.00 m, 2.00 m

Technical drawing of a mechanical part. The main view shows a cross-section of a cylindrical component with a central hole. Dimensions include a total width of 100, a central hole diameter of $\varnothing 46$, and a distance of 20 from the center to the outer edge. A section view labeled 'Corte A' shows the internal profile, with dimensions 20 and 20 indicating the thickness of the material on either side of the central hole.

Technical drawing of a beam cross-section and elevation. The cross-section shows a rectangular beam with a top flange of 100 mm, a web of 10 mm, and a bottom flange of 100 mm. The total height is 200 mm. The elevation shows a beam of length 1000 mm with a central section of 400 mm. The beam is supported by two columns. The drawing is labeled "Corte A" and "Fig. 10".

The schematic diagram illustrates the experimental setup for studying the effect of fiber length on composite properties. It shows a cross-section of a composite material with fibers embedded in a matrix. Key components labeled include:

- Corte A**: A vertical section line indicating where the material was cut.
- Fibers**: Represented by horizontal bars with labels such as $N_0 = 8 \times 6.3 - 10$, $N_0 = 8 \times 8.5 - 100$, and $N_0 = 8 \times 8.5 - 70$.
- Matrix**: The surrounding material, indicated by the shaded regions.
- Dimensions**: Various dimensions are specified, including 10 , 100 , 1000 , and 10 mm.
- Labels**: Other labels include V_{B0} , V_{B7} , V_{B4} , $N_0 = 8 \times 8.5 - 100$, $N_0 = 8 \times 8.5 - 70$, and $N_0 = 8 \times 8.5 - 10$.

[illegible]

502	5	5	228	75	1250
$V_{216} = V_{210} + V_{220} + V_{222} \quad (2.4)$					
502	1	6.5	8	120	962
508	8	0	8	215	2500
502	3	6.5	8	120	1040
508	4	6.5	8	525	4260
508	5	5	144	30	10000

V825	5012	7	8	9	28%	14.53
5013	8	4.5	2	30	14.53	
5014	9	10	2	47%	14.53	
5015	10	20	2	49%	14.53	
5016	11	5	2	55%	14.53	
5017	12	8	2	59%	14.53	
5018	7	18	4	75%	14.53	
5019	8	8	2	80%	14.53	
5020	9	2	2	80%	14.53	
5021	10	2	4	79%	14.53	
5022	11	5	4	77%	14.53	
5023	12	5	4	79%	14.53	
5024	13	5	7	77%	14.53	
5025	14	6.3	8	74%	14.53	
5026	15	5	145	80	14.53	

	503	6	5	36	40	1798
	503	7	5	2	724	1452
$V_{02} = V_{03} \quad (x_2)$						
	503	1	6.3	4	275	1100
	503	2	6.3	4	305	1220
	503	3	5	38	60	2290
$V_{02} = V_{03} \quad (x_3)$						

500	5	10	70	80.0
500	1	0	190	10.0
500	2	10.5	5.0	206.0
500	3	6.0	290	1200
500	4	10.5	4.0	25.0
500	5	0	4.0	24.0

588	3	6.5	2	240	480
589	4	6.5	2	280	560
590	5	10	2	700	1400
600	5	5	74	70	2185
V832					
588	1	6.5	2	290	400
589	2	12.5	2	475	920

500	2	6.0	4	195	440
500	2	6.0	4	210	520
500	2	6.0	4	440	900
500	4	6.0	20	70	2040
V825=V836 (X2)					
500	1	6.0	4	195	780
500	1	6.0	4	210	840

RESULTS ACC CA 50-60					
ACC	BIT	COMP	PER		
500	4	38	7	930	1675
600	5	5	4	754	2876
600	5	5	5	95	5013

Peso	500 g	125 g	57 g	57 g
Peso	500 g	5	125 g	57 g
Peso	500 g	500 g	220 g	220 g
Peso	500 g	500 g	220 g	220 g
Volume de concreto de VISAS (m³)			0,6	0,2
Taxe de rendibilite			0,2	0,2

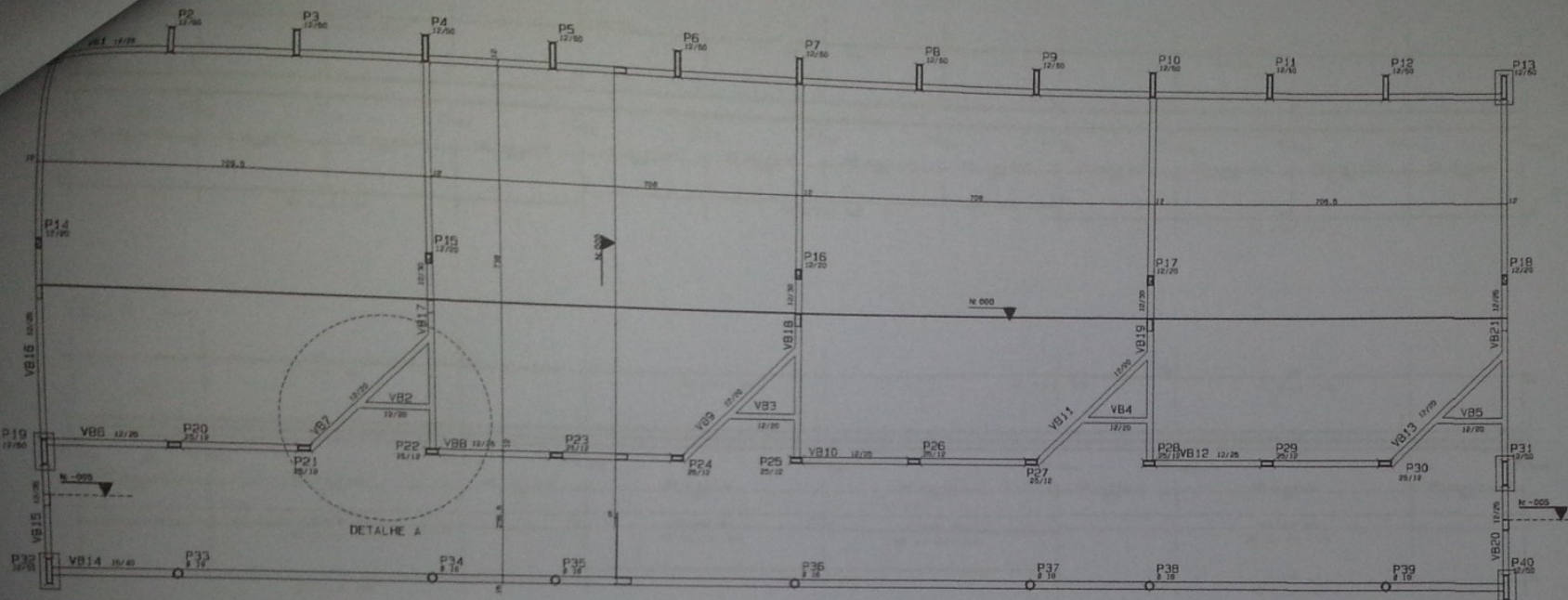
Ministério da Educação

MANCINI - 101
FRANZISANO
LAZZARINI

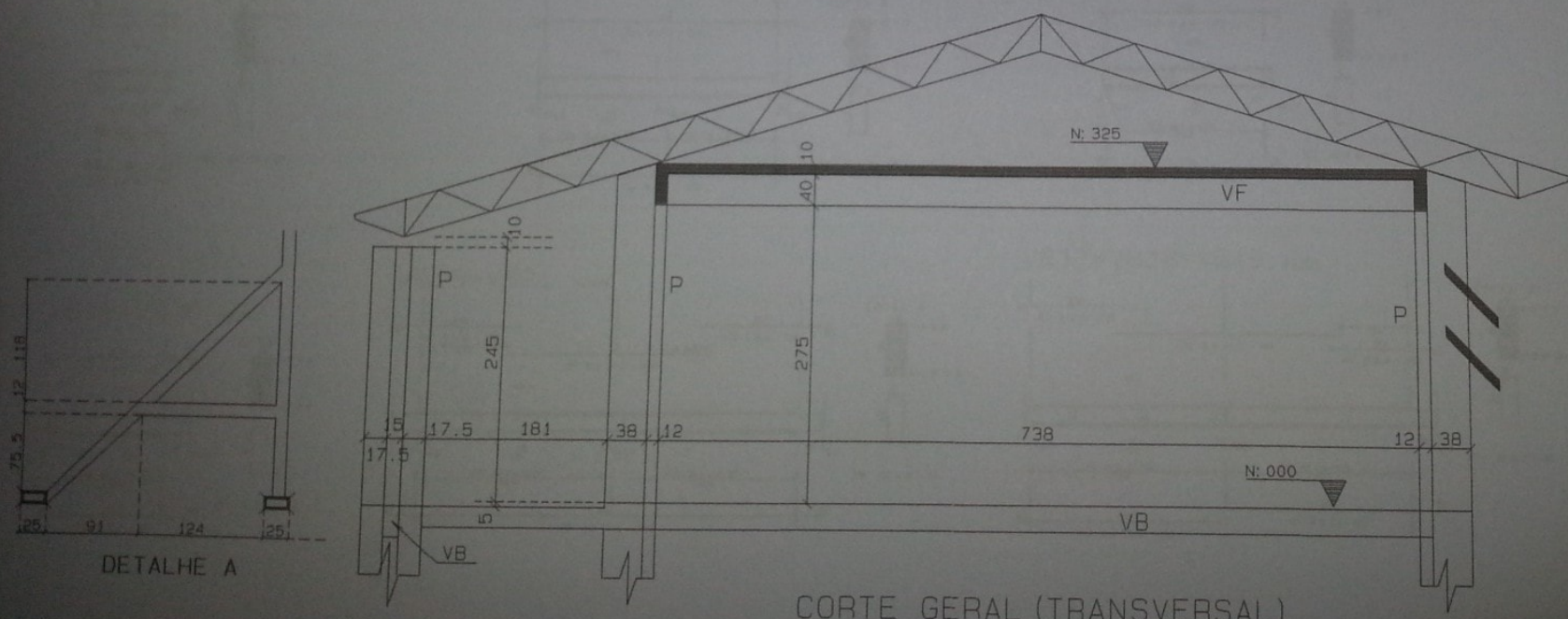
PAULO RICARDO ZAGO NOGAR

Engelhardt CW
CREA 70065

ESCOLA Nº 2 SALAS DE AULA	
PROJETO ESTRUTURAL concreto armado	
PROFESSOR	ALUNO
DEPT. - Construção	DEPT. - Engenharia
Disciplina - Estruturas	Disciplina - Estruturas



PLANTA DE FORMAS DAS VIGAS BALDRAMES



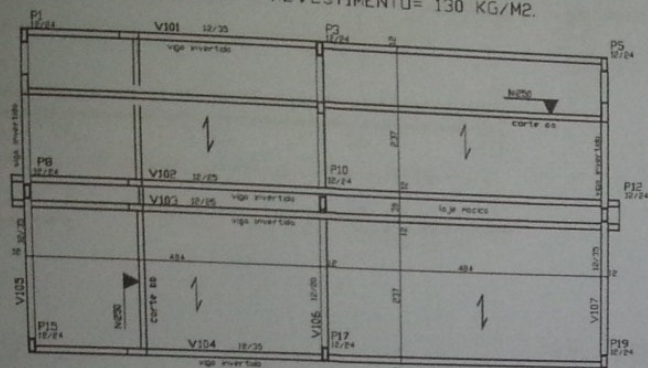
CORTE GERAL (TRANSVERSAL)

CONSIDERAÇÕES FINAIS	
TEMSÃO DO CONCRETO	$f_{ck} = 20 \text{ MPa}$
VIDAS BALDRAMES, COBERTURA e PLATIBANDA e PILARES.	
RESUMO	ÁREA DE FORMAS: 353,24 m ² VOLUME DE CONCRETO: 18,34 m ³
COBRIMENTO DAS ARMADURAS	VIDAS BALDRAMES: 2,0 cm VIDAS COBERTURA: 1,5 cm PILARES: 1,5 cm
CONVENIÊNCIA DE PILARES	
LAJE	PRE-MOLDADA
SENTIDO DE ARMADURA	
(SOBRECARGA + REVESTIMENTO) = 130 kg/m ²	
ALVENARIA	
FURADO de 1/2 VEZ 1,95 kN/m ²	
MACIO de 1/2 VEZ (APARENTE) 3,50 kN/m ²	

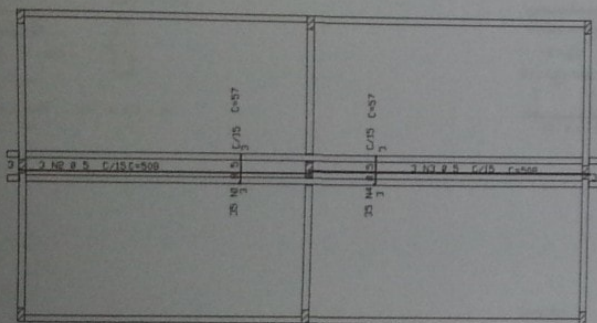
NOTA: CONCRETO $f_{ck} = 20 \text{ MPa}$

Ministério da Educação	
PROJETO PADRÃO - FNDE	
MUNICÍPIO - UF:	
PROPRIETÁRIO:	
ENDEREÇO:	
PROPRIETÁRIO:	
RESP. TÉCNICO:	
Eng. Paulo Ricardo Zago Nogarai - CREA-03/4378/D	
AUTOR DO PROJETO:	
DLTO:	CREA:
OBSERVAÇÕES:	
PAULO RICARDO ZAGO NOGARAI Engenheiro Civil CREA 70085	
ESCOLA 12 SALAS DE AULA	
PROJETO ESTRUTURAL concreto armado	
SLOCO P: 4 SALAS FORMAS DAS VIGAS BALDRAME E CORTE GERAL	
EST	28/34

SENTIDO DE ARMACAD DAS LAJES PRE-MOLDADAS
SOBRECARGA + REVESTIMENTO = 130 KG/M2.



FORMAS DAS LAJES e VIGAS DA COBERTURA



ARMACAD DAS LAJES

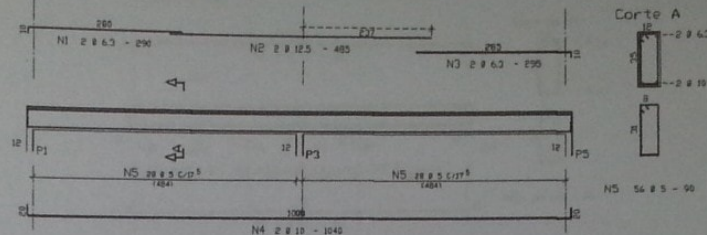
ACD	POS	BIT	QUANT	CONCRETO	UNIT	TOTAL
(cm)		(cm)		(cm)		
V101=V104 (x2)						
508	1	6,3	4	299	1360	
508	2	12,5	4	485	1940	
508	3	6,3	4	299	1180	
508	4	10	4	1040	4160	
508	5	5	10	90	10000	
V102=V103 (x2)						
508	1	6,3	8	735	2640	
508	2	12,5	4	445	1960	
508	3	10	4	1040	4160	
508	4	5	16	70	11480	
V105=V107 (x2)						
508	1	6,3	4	576	2280	
508	2	6,3	4	577	2280	
508	3	5	26	90	2040	
V106						
508	1	8	2	568	1136	
508	2	6,3	2	577	1134	
508	3	5	26	90	1260	
508	4	6,3	26	90	1260	
ARMACAD DAS LAJES						
508	1	5	25	37	1995	
508	2	5	3	508	1524	
508	3	5	508	1504		
508	4	5	25	37	1995	

ACD	BIT	CONCR	50-60	PESO
(cm)		(cm)		(kg)
508	6,3	12,5	31	5
508	10	11	52	5
508	12,5	28	28	54
508	5	250		
Peso Total	508	125	125	125
Peso Total	508	50	50	50

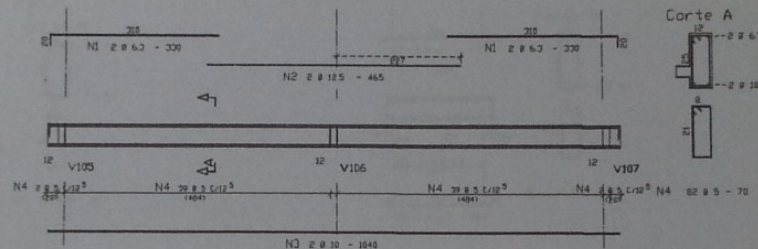
Volume de concreto de VIGAS (m³)
Taxa de armadura

Em Faces
(kg/m³)

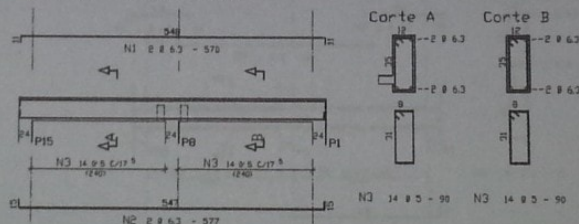
V101=V104 12/35



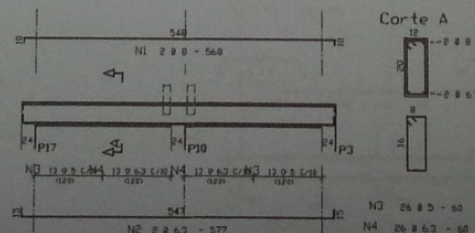
V102=V103 12/25



V105=V107 12/35



V106 12/20



NOTA: CONCRETO fck = 20 MPa

BRASIL Ministério da Educação FNE Fundo Nacional de Desenvolvimento da Educação

PROJETO PADRÃO - FNE

MUNICÍPIO - UF:
PROPRIETÁRIO:
ENDEREÇO:

PROPRIETÁRIO:
RESP. TÉCNICO: DR.
Eng. ISMAEL TAVARES BOMBA - CREA-CE 1833/D
AUTOR DO PROJETO

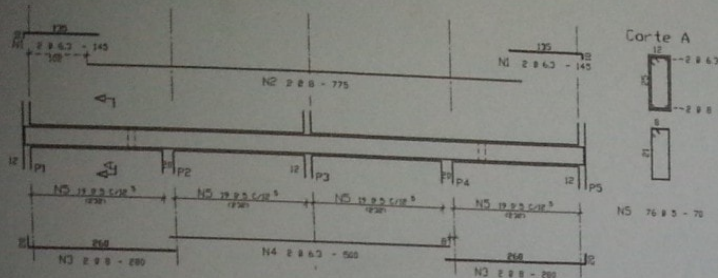
DLTO: CREA

OBSERVAÇÕES: PAULO RICARDO ZAGO NOGARA Engenheiro Civil CREA 70065

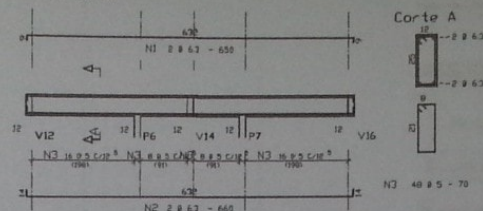
ESCOLA 12 SALAS DE AULA

PROJETO ESTRUTURAL concreto armado
COORDENADOR: BLOCO Q: VESTIBULOS FORMAS E DETALHES DAS VIGAS E LAJES DE COBERTURA
EST
FOLHA: 32/34

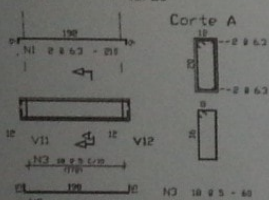
V1 12/25



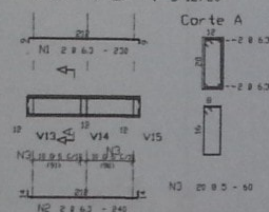
V2 12/25



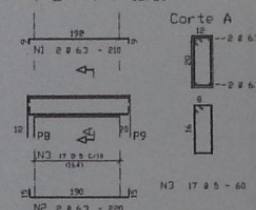
V3=V4 12/20



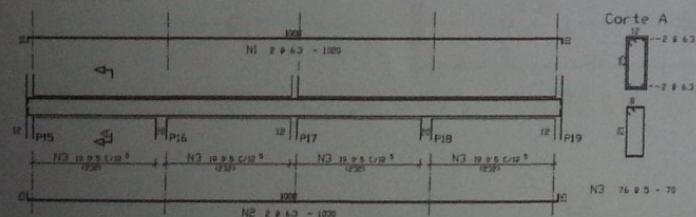
V5=V8=V9 12/20



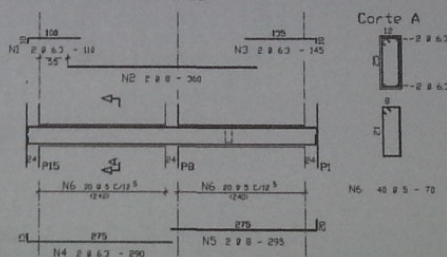
V6=V7 12/20



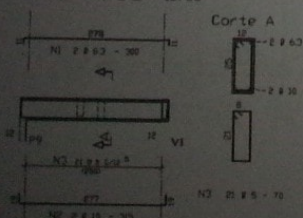
V10 12/25



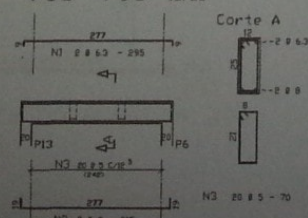
V11=V17 12/25



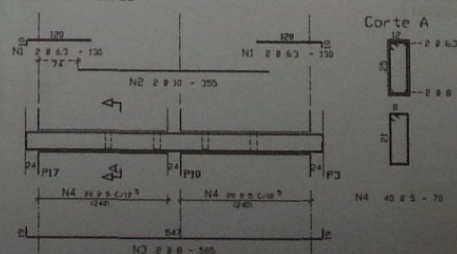
V12=V16 12/25



V13=V15 12/25



V14 12/25

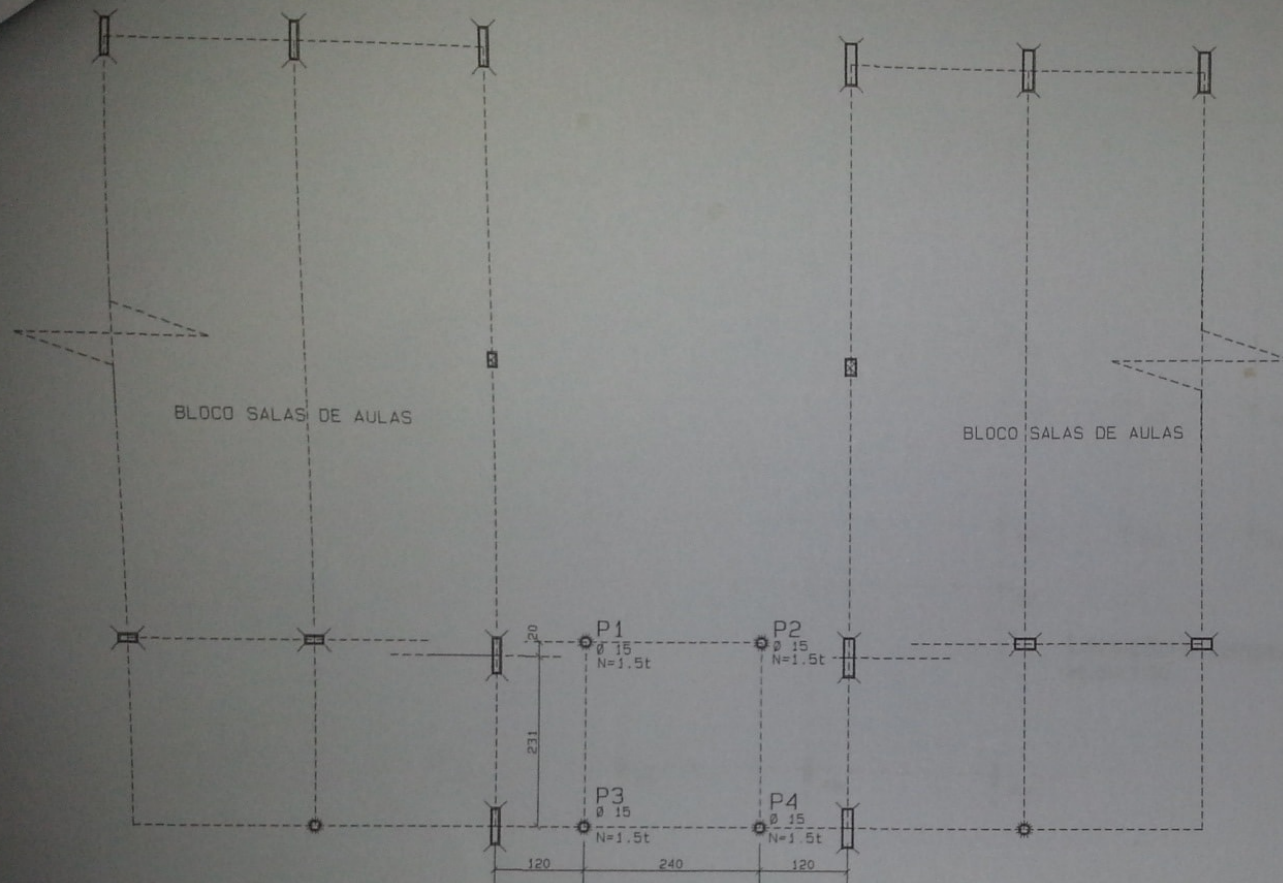


	ACO	PESO	BIT	QUANT	CONCRETO	PESO
	(m²)		(m³)		(m³)	(kg)
V1	508	1	6,3	4	180	508
	508	0	0	0	775	1050
	508	2	0	4	282	1050
	508	4	6,3	2	300	1050
	508	5	5	76	71	330
V2	508	1	6,3	2	180	1200
	508	0	0	0	640	130
	508	3	5	48	71	230
V3=V4	508	1	6,3	4	180	840
	508	0	0	0	220	840
	508	2	6,3	4	220	840
V5=V8=V9	508	1	6,3	6	220	1350
	508	0	0	0	240	1440
	508	3	5	95	80	3600
V6=V7	508	1	6,3	4	180	880
	508	0	0	0	240	880
	508	2	6,3	4	240	880
V10	508	1	6,3	2	180	220
	508	0	0	0	1030	220
	508	3	5	76	71	530
V11=V17	508	1	6,3	4	180	440
	508	0	0	0	240	1440
	508	3	6,3	4	240	1440
	508	4	6,3	4	240	1160
	508	5	8	4	240	1160
	508	6	5	80	71	240
V12=V16	508	1	6,3	4	180	1050
	508	0	0	0	1208	1050
	508	2	6,3	4	1208	1050
V13=V15	508	1	6,3	4	180	1840
	508	0	0	0	240	1840
	508	2	6,3	4	240	1840
V14	508	1	6,3	4	180	220
	508	0	0	0	720	71
	508	2	6,3	4	720	1170
	508	3	5	48	71	2000
	508	4	5	48	71	2000

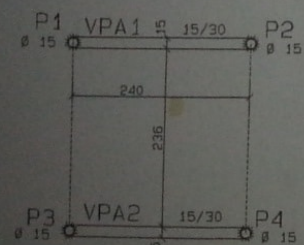
ACO	BIT	ACR	CA	50-50	PESO
(m²)	(m³)	(m)			(kg)
508	6,3	196	7	43	49
508	5	176	7	21	21
508	10	76	7	12	12
508	2	329	7	50	50
Peso Total	508	=			508
					508

Valor de concreto de V14=21
Taxa de enlaxado 710

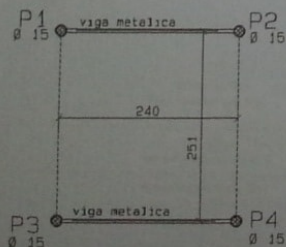
Das Faces
18



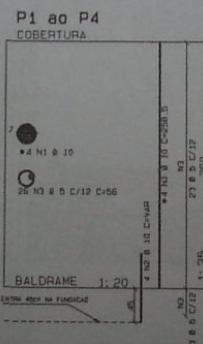
PLANTA DE LOCAÇÃO e CARGAS DOS PILARES



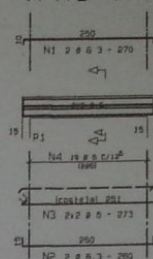
VIGAS NIVEL N: 000



PLANTA DO NIVEL N: 260



VPA1=VPA2



15/30

Corte A

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ACO	POS	BIT	QUANT	COMPRIMENTO
				UNIT TOTAL
P3 ad P4	541	1	10	10
541	2	10	10	100
541	3	10	10	100
VPA1=VPA2	102	1	10	10
102	2	10	10	100
102	3	10	10	100
102	4	10	10	100
102	5	10	10	100
102	6	10	10	100
102	7	10	10	100
102	8	10	10	100
102	9	10	10	100
102	10	10	10	100

ACO	BIT	COMPR	QUANT	PESO
				(kg)
541	1	10	10	100
541	2	10	10	100
541	3	10	10	100
541	4	10	10	100
541	5	10	10	100
541	6	10	10	100
541	7	10	10	100
541	8	10	10	100
541	9	10	10	100
541	10	10	10	100

Valor de concreto de VIGAS (m3)
Taxa de armadura

Elas. Fece
kg/m3

GOVERNO FEDERAL
BRASIL
PAÍS RICO E PAÍS SEM POBREZA

Ministério
da Educação

FNDE Fundo Nacional
de Desenvolvimento
da Educação

PROJETO PADRÃO - FNDE

MUNICÍPIO - UF:

PROPRIETÁRIO:

ENDEREÇO:

PROPRIETÁRIO

RESP. TÉCNICO

CREA

Eng. Tânia Cristiane Rosa Abrantes - CREA-GO 4376/D

AUTOR DO PROJETO

DUFO

CREA

RA

OBSERVAÇÕES:

PAULO RICARDO LAGO NOGARA
Engenheiro Civil
CREA 70065

ESCOLA 12 SALAS DE AULA

PROJETO ESTRUTURAL

COORDENAÇÃO
CGEST - Coordenação
Geral de Infraestrutura
Educativa

BLOCO: PASSARELA
DETALHES GERAIS DA PASSARELA

EST

REVISÃO

R01 - NOVEMBRO DE 2005

ESCOLA

100 m

PRIMEIRA

FORNATO

R02 - JULHO DE 2011

DATA CRIAÇÃO

JULHO / 2011

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