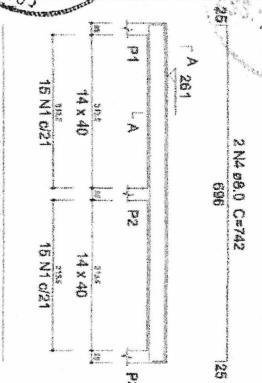
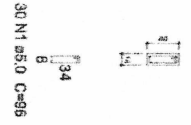


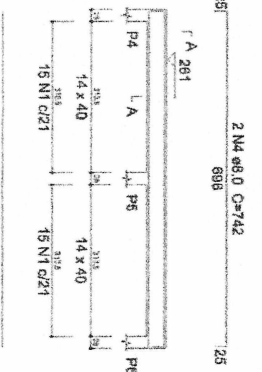
ESC 1:50



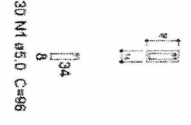
SEÇÃO A-A  
ESC 1:30



V2  
ESC 1:50

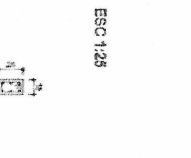


SEÇÃO A-A  
ESC 1:30

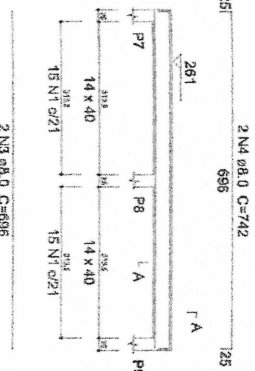


P1=P3=P7=P9

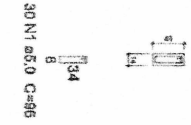
TERREO - L2



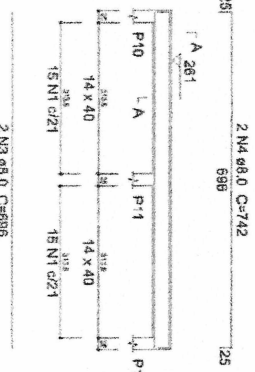
V3  
ESC 1:50



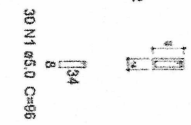
SEÇÃO A-A  
ESC 1:30



V4  
ESC 1:50

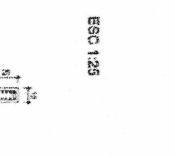


SEÇÃO A-A  
ESC 1:30

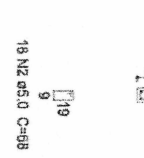


P11

TERREO - L2



ESC 1:25



6 N5 ø10.0 C=258

10 N6 ø12.5 C=258

27 N2 c/10

18 N2 c/15

ESC 1:15

ESC 1:15

Relação do aço

AÇO	N	DIAM (mm)	QUANT (Barra)	UNIT (cm)	C.TOTAL (cm)
CA80	1	5.0	120	86	11520
	2	5.0	126	68	8568
CA50	3	8.0	8	686	5488
	4	8.0	8	742	5936
	5	10.0	24	268	6192
	6	12.5	10	298	2980

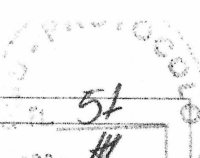
Resumo do aço

AÇO	DIAM (mm)	C.TOTAL (m)	PESO (kg)
CA50	8.0	116.4	45.4
CA50	10.0	62	38.2
CA50	12.5	25.8	24.9
CASO PESO TOTAL (kg)			31
CASO	108.4		
CASO	31		

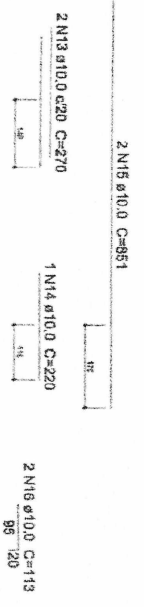
Volume de concreto (C-25) = 2.08 m³  
Área da forma = 36.84 m²

**LAESTE L.M. FREIRE**  
**ENGENHEIRO CIVIL**  
**CREA-CE 322353**

PROPOSTA DE PREÇO PARA OBRAS  
PRÉDIO: ESTADUAL  
ENDEREÇO: RUA ARAUCÁRIA, S/N, BAIRRO ESTRELA, JUAZEIRO DO NORTE, CEARÁ  
EMPRESA: LAESTE L.M. FREIRE ENGENHARIA CIVIL  
CNPJ: 07.089.412/0001-01  
INSCRIÇÃO ESTADUAL: 07089412000101  
RUA: RUA ARAUCÁRIA, S/N, BAIRRO ESTRELA, JUAZEIRO DO NORTE, CEARÁ  
CEP: 63011-000



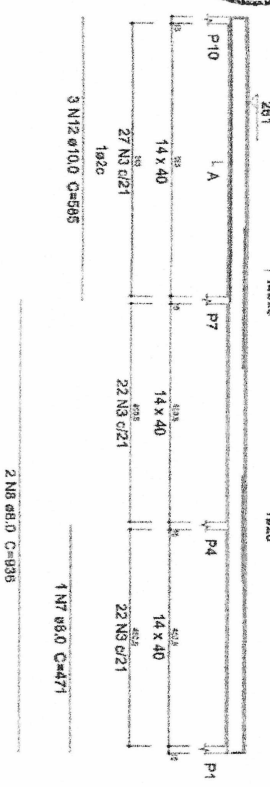
V5  
ESC 1:50



SEÇÃO A-A  
ESC 1:30

P2  
TERREÇO - L2

ESC 1:25

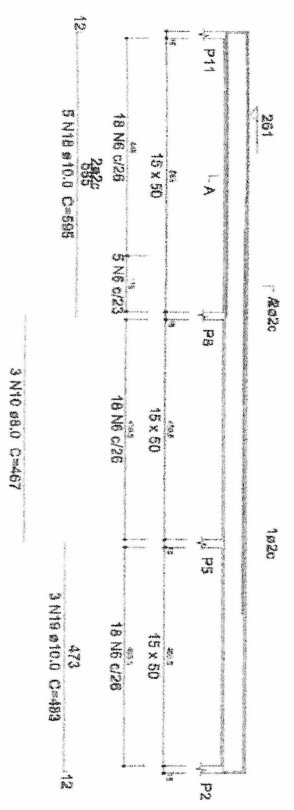


V6  
ESC 1:50

P4=P5=P6

TERREÇO - L2

ESC 1:25



SEÇÃO A-A  
ESC 1:30

TERREÇO - L2

ESC 1:25

AÇO	N	DIAM (mm)	QUANT (Barra)	UNIT (cm)	C.TOTAL (cm)
CABO	1	5,0	2	233	566
	2	5,0	2	221	442
	3	5,0	71	96	5616
	4	5,0	106	69	7344
	5	5,0	2	233	466
	6	5,0	56	118	6592
	7	8,0	1	471	1872
	8	8,0	2	133	266
	9	8,0	1	471	1872
	10	8,0	3	149	435
CABO	11	10,0	3	565	1755
	12	10,0	3	270	540
	13	10,0	2	220	220
	14	10,0	1	220	220
	15	10,0	2	851	1702
	16	10,0	2	113	226
	17	10,0	22	238	5236
	18	10,0	5	595	2975
	19	10,0	3	483	1449
	20	12,5	1	330	330
21	12,5	1	791	791	
22	12,5	2	1081	2162	
23	12,5	2	222	444	

Resumo do aço

AÇO	DIAM (mm)	C.TOTAL (m)	PESO (kg)
CA50	8,0	44,5	17,5
CA50	10,0	146,5	89,7
CA50	12,5	36,9	36,5
CA50	5,0	226	34,8
PESO TOTAL			
CABO	142,7		
CABO	34,8		

Volume de concreto (C-25) = 2,30 m³  
Área de forma = 40,2 m²

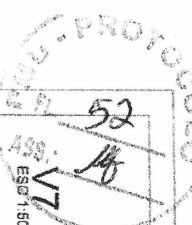
**LAESTE L.M. FREIRE**  
**ENGENHEIRO CIVIL**  
**CREA-CE 322353**

PROPOSTA DE PREÇOS PARA OBRAS DE RECONSTRUÇÃO DE EDIFÍCIO PÚBLICO - PROJETO ESTRUTURAL

EMPRESA: LAESTE L.M. FREIRE

ENDEREÇO: RUA ...

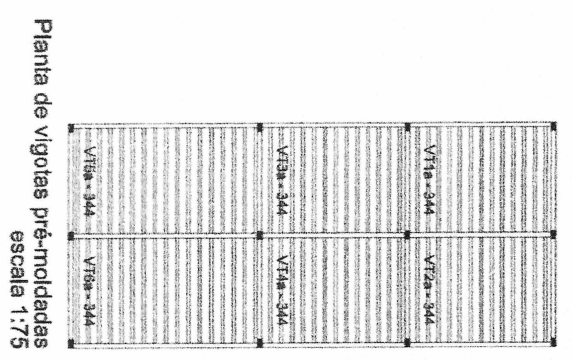
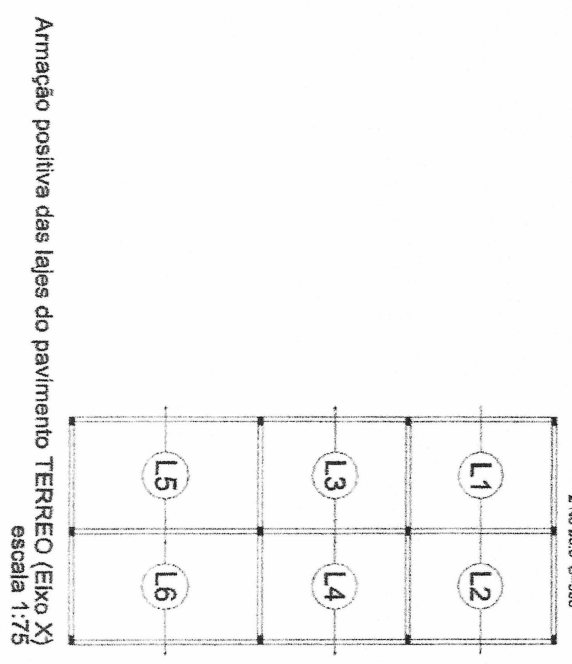
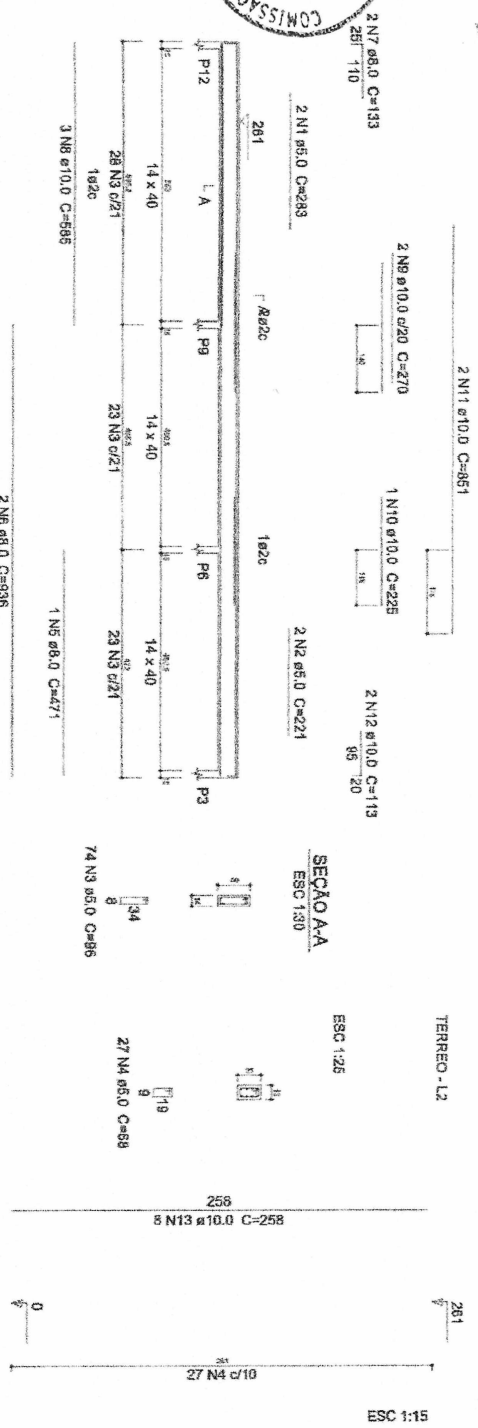
DATA: ...



P8=P10=P12

Relação do aço

3xP8  
V7



Armação positiva das lajes do pavimento TERREO (Eixo X)  
escala 1:75

Planta de vigotas pré-moldadas  
escala 1:75

ACO	N	DIAM (mm)	QUANT (Barras)	UNIT (cm)	C.TOTAL (cm)
CA60	1	5,0	2	283	566
	2	5,0	2	221	442
	3	5,0	74	86	7104
	4	5,0	B1	88	5508
	5	8,0	1	471	471
	6	8,0	2	936	1872
	7	8,0	133	256	3388
	8	10,0	3	585	1755
	9	10,0	2	270	540
	10	10,0	2	225	225
CA50	11	10,0	1	851	1702
	12	10,0	2	851	1702
	13	10,0	2	119	238
			24	258	6192

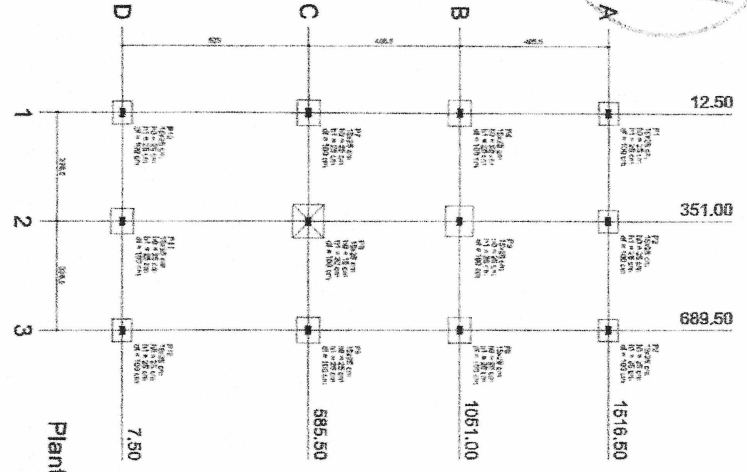
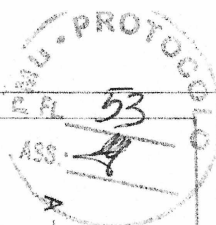
Resumo do aço

ACO	DIAM (mm)	C.TOTAL (m)	PESO (kg)
CA60	8,0	26,1	18,3
CA60	10,0	106,4	69,6
CA60	5,0	136,2	21
PESO TOTAL (kg)			108,9
CASO	75,9		
CASO	21		

Volume de concreto (C-25) = 1,15 m³  
Área da forma = 20,59 m²

**LAESTE L.M. FREIRE**  
**ENGENHEIRO CIVIL**  
**CREA-CE 322353**

PROJETO DE ARMAÇÃO DE BARRAS  
PROJETO ESTRUTURAL  
RUA ADELINO, S/N - BAIRRO SANTA LINDA  
Cidade: URUCÁ - CE  
CEP: 63000-000  
FONE: (85) 3333-3333  
E-MAIL: laeste@laeste.com.br  
LAESTE L.M. FREIRE  
PROFESSOR DE ENGENHARIA CIVIL  
PROFESSOR DE ENGENHARIA CIVIL  
PROFESSOR DE ENGENHARIA CIVIL



Item	Quantidade	Valor Unitário	Valor Total
P1	12.50	121.32	1516.50
P2	351.00	3.02	1061.00
P3	585.50	1.01	585.50
P4	7.50	-	-



**Quantidade da obra**

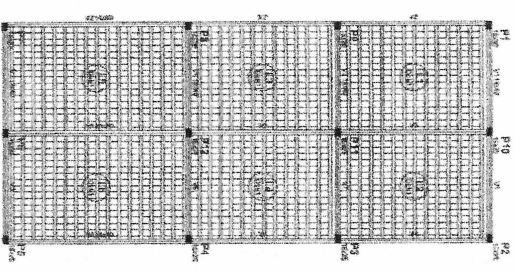
Item	Quantidade	Valor Unitário	Valor Total
P1	12.50	121.32	1516.50
P2	351.00	3.02	1061.00
P3	585.50	1.01	585.50
P4	7.50	-	-

**Legenda**

■	14.00 cm de concreto
■	10.00 cm de concreto
■	10.00 cm de concreto
■	10.00 cm de concreto

Forma do pavimento FUNDADAÇÕES  
escala 1:75

Forma do pavimento TERRECO  
escala 1:75



**Blocos de enclenchimento**

Detalhe	Tipo	Nome	Dimensões (h x b x y)	Quantidade
1	Laíola cerâmica	B&25/20	6 x 25 x 20	1344

**Legenda**

■	14.00 cm de concreto
■	10.00 cm de concreto
■	10.00 cm de concreto
■	10.00 cm de concreto

**Quantidade da obra**

Item	Quantidade	Valor Unitário	Valor Total
P1	12.50	121.32	1516.50
P2	351.00	3.02	1061.00
P3	585.50	1.01	585.50
P4	7.50	-	-

**Legenda**

■	14.00 cm de concreto
■	10.00 cm de concreto
■	10.00 cm de concreto
■	10.00 cm de concreto

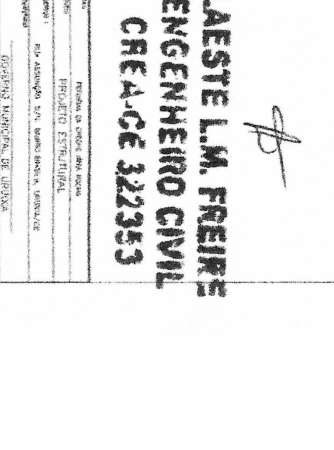
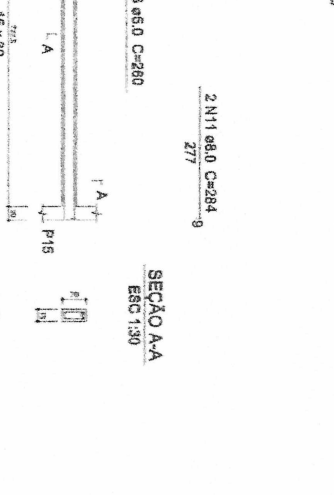
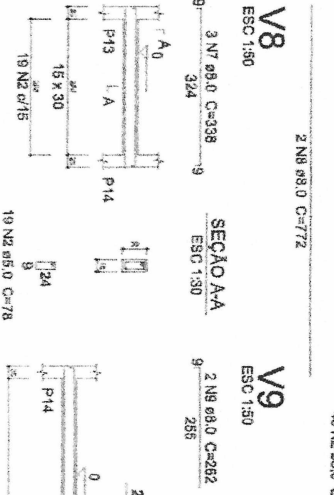
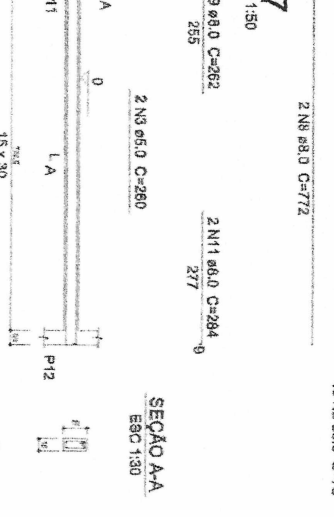
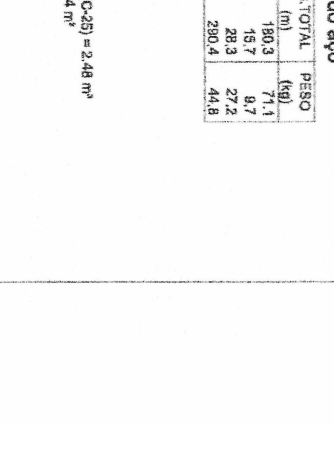
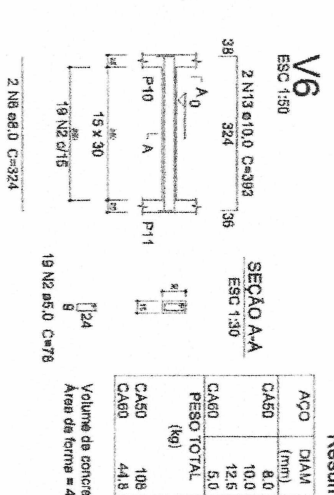
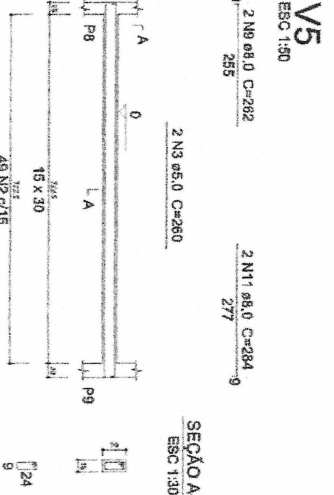
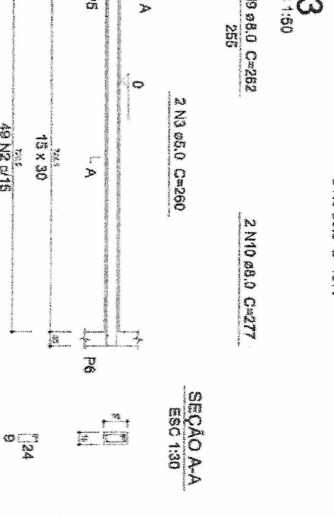
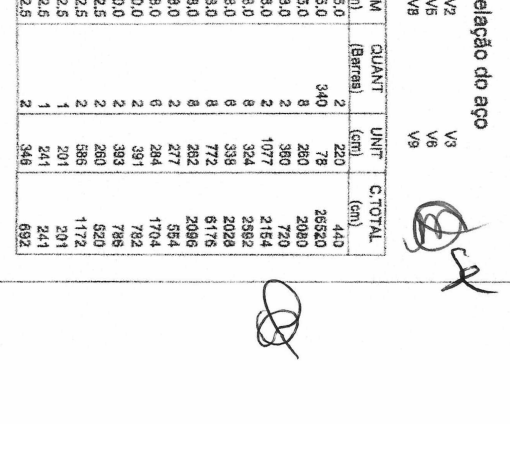
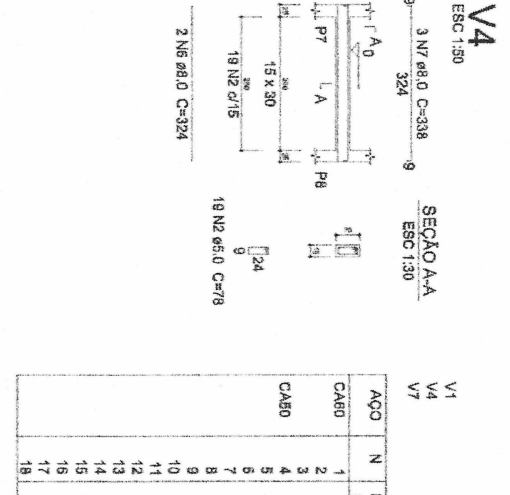
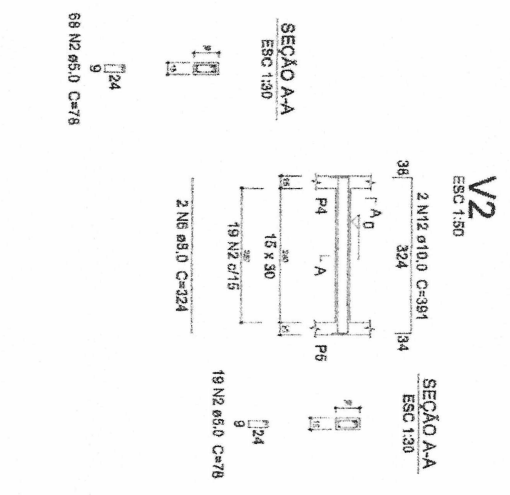
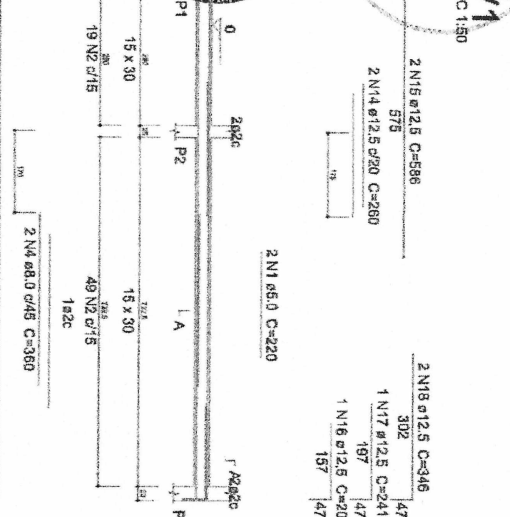
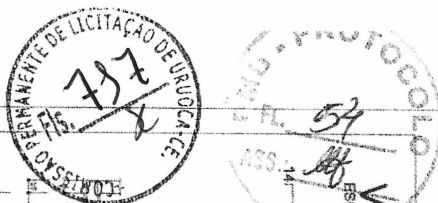
**LAESTEL M. FREIRE**  
ENGENHEIRO CIVIL  
CREACE 322353

**PROPOSTA DE PREÇOS**

EMPRESA: LAESTEL M. FREIRE ENGENHEIRO CIVIL

PROJETO: [ ]

VALOR TOTAL: [ ]



**Relação do aço**

ACO	N	DIAM (mm)	QUANT (Barras)	UNIF (cm)	C.TOTAL (cm)
CA60	1	5,0	2	220	440
	2	5,0	340	78	26520
	3	5,0	8	280	2240
	4	6,0	2	380	760
	5	6,0	2	1077	2154
	6	8,0	8	324	2592
	7	8,0	8	338	2704
	8	8,0	8	772	6176
	9	8,0	8	282	2256
	10	8,0	2	277	554
	11	8,0	6	284	1704
CA50	12	10,0	2	393	786
	13	10,0	2	260	520
	14	12,5	2	586	1172
	15	12,5	2	201	402
	16	12,5	1	241	241
	17	12,5	1	241	241
	18	12,5	2	346	692

**Resumo do aço**

ACO	DIAM (mm)	C.TOTAL (m)	PESO (kg)
CA60	8,0	180,3	71,1
CA60	10,0	15,7	9,7
CA60	12,5	28,3	27,2
<b>PESO TOTAL</b>	5,0	290,4	44,8
CA50	100		
CA60	44,8		

Volume de concreto (C-25) = 2,48 m³  
Área da forma = 41,34 m²

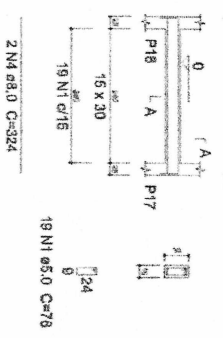
**LAESTE L.M. FREIRE**  
**ENGENHEIRO CIVIL**  
**CREA-CE 322353**

PROJETO DE OBRAS DE ENGENHARIA  
PROJETO ESTRUTURAL  
RUA ALVARO DE ARAUJO, S/N, BARRIO SAO JOAO, FORTALEZA  
GOVERNADOR MILTON DE ARAUJO  
LAESTE L.M. FREIRE, ENR  
PROJETO DE OBRAS DE ENGENHARIA  
PROJETO ESTRUTURAL  
RUA ALVARO DE ARAUJO, S/N, BARRIO SAO JOAO, FORTALEZA  
GOVERNADOR MILTON DE ARAUJO  
LAESTE L.M. FREIRE, ENR



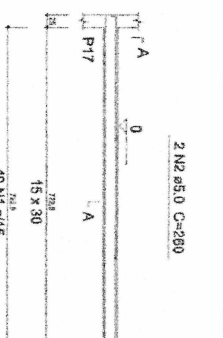
V10  
ESC 1:50

SEÇÃO A-A  
ESC 1:30



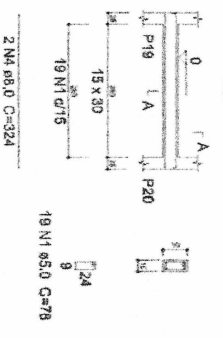
V11  
ESC 1:50

SEÇÃO A-A  
ESC 1:30



V12  
ESC 1:50

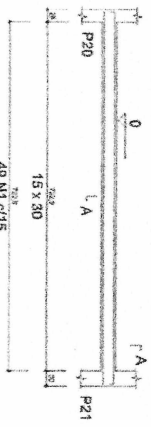
SEÇÃO A-A  
ESC 1:30



V13  
ESC 1:50

2 N7 ø8.0 C=284  
277

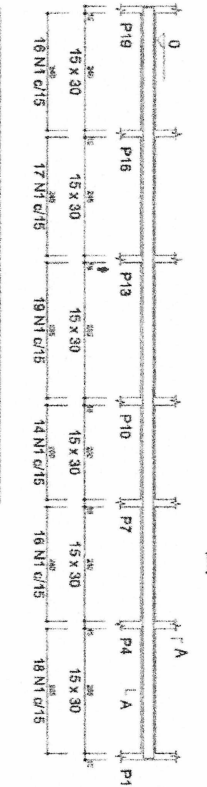
SEÇÃO A-A  
ESC 1:30



V14  
ESC 1:50

2 N11 ø8.0 C=1198  
1190

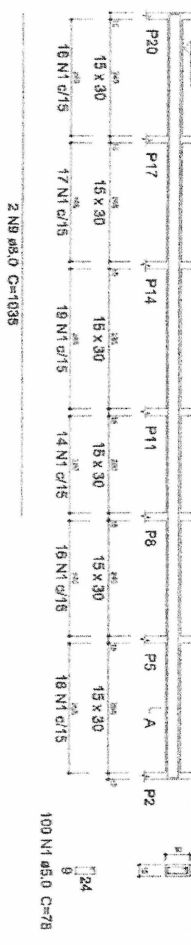
SEÇÃO A-A  
ESC 1:30



V15  
ESC 1:50

2 N11 ø8.0 C=1198  
1180

SEÇÃO A-A  
ESC 1:30



Relação do aço

2P1	V10	V12	V13	V14
2P1	V10	V12	V13	V14
V10	V13	V14		
V12				
V13				
V14				

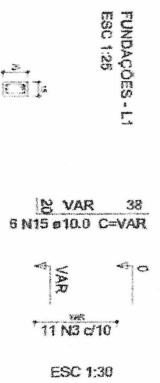
Resumo do aço

ACO	N	DIAM (mm)	QUANT (Barras)	UNIT (cm)	C.TOTAL (cm)	PESO (kg)
CA60	1	5.0	386	78	26208	80.5
	2	5.0	4	260	1040	16.4
	3	5.0	22	66	1498	23.5
	4	8.0	4	324	1296	40.3
	5	8.0	4	772	3088	48.2
	6	8.0	4	262	1048	16.4
	7	8.0	4	284	1136	17.6
	8	8.0	3	328	1296	20.1
	9	8.0	4	1925	7700	119.8
	10	8.0	4	540	2160	33.7
	11	8.0	4	1198	4792	74.3
	12	8.0	2	452	904	14.0
	13	8.0	2	453	906	14.0
	14	10.0	2	394	788	12.2
	15	10.0	12	VAR	VAR	VAR

SEÇÃO A-A  
ESC 1:30

ACO	DIAM (mm)	C.TOTAL (m)	PESO (kg)
CA90	8.0	204.9	80.5
CA80	10.0	25.6	16.4
CA60	5.0	287.5	44.3
<b>PESO TOTAL</b>			<b>141.2</b>

100 NI ø5.0 C=78  
Volume de concreto (C=25) = 2.48 m³  
Área de forma = 41.81 m²



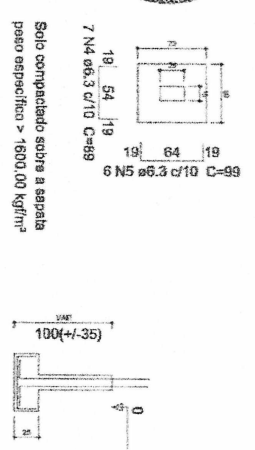
**LAESTE L.M. FREIRE**  
**ENGENHEIRO CIVIL**  
**CREA-CE 322353**

PROJETO DE ARQUITETURA E ESTRUTURA  
PROJETO ESTRUTURAL  
Rua. Alexandre V. N. Soares, 1000 - JARDIM  
CADERNETO MANUTENÇÃO DE PROJETOS  
LAESTE L.M. FREIRE  
PROJETO ESTRUTURAL DE

COMISSÃO PERMANENTE DE LICITAÇÃO - CE Nº 173/2017  
 COMISSÃO PERMANENTE DE LICITAÇÃO - CE Nº 173/2017  
 56  
 21

S1=S19  
 PLANTA  
 ESC 1:25

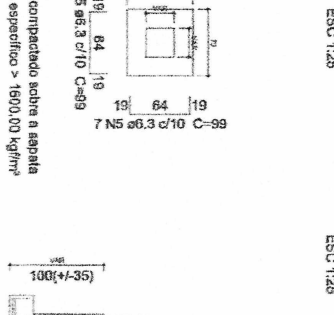
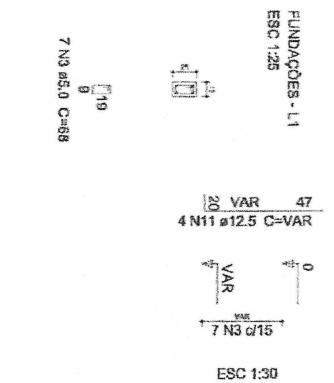
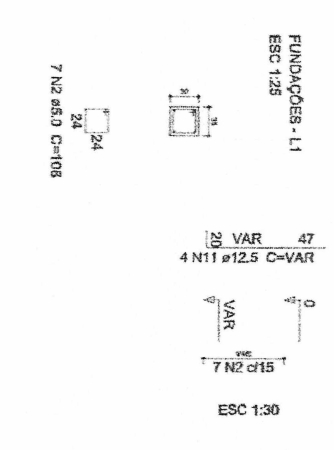
V16  
 ESC 1:50  
 CORTE  
 ESC 1:25



P6=P9=P12=P15=P18=P21  
 ESC 1:25

P7  
 ESC 1:25

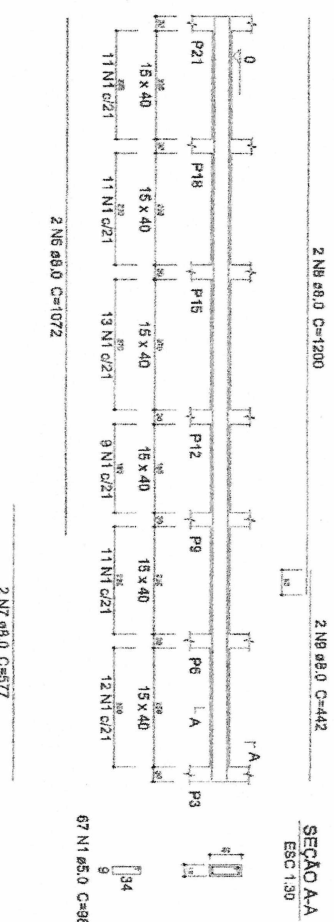
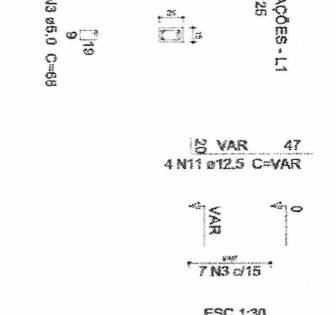
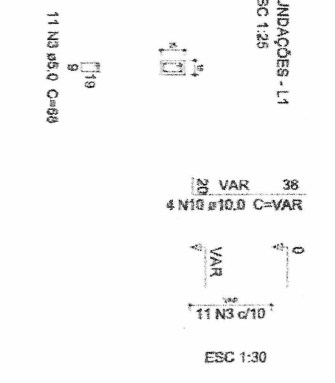
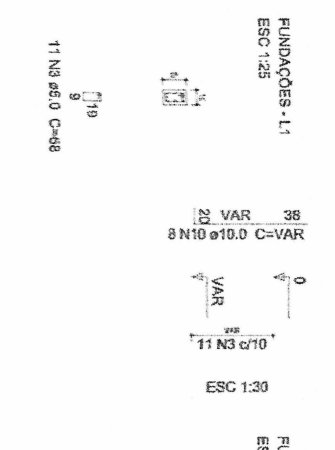
S6=S7=S9=S12=S15=S18=S21  
 PLANTA  
 ESC 1:25



P10=P13=P16  
 ESC 1:25

P20  
 ESC 1:25

P4  
 ESC 1:25



SEÇÃO A-A  
 ESC 1:30

Resumo do aço

ACO	N	DIAM (mm)	QUANT (Barras)	UNIT (cm)	C.TOTAL (cm)
CA80	1	5,0	67	88	5886
	2	5,0	42	108	4536
	3	5,0	58	68	3944
	4	6,3	14	89	1246
	5	6,3	110	89	10880
	6	8,0	2	2	2
	7	8,0	2	577	2144
	8	8,0	2	2	2
	9	8,0	2	1200	2400
	10	8,0	2	442	864
	11	10,0	28	28	664
VAR			32	VAR	VAR

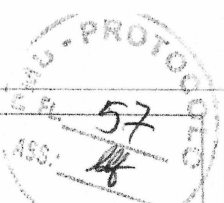
ACO	DIAM (mm)	C.TOTAL (m)	PESO (Kg)
CA80	6,3	121,4	28,7
CA80	8,0	65,9	26
CA80	10,0	43,7	21,9
CA80	12,5	52,5	50,6
CA80	5,0	160,3	23,2
<b>PESO TOTAL (Kg)</b>			133,2
CA80			23,2

Volume de concreto (C-20) = 1,07 m³  
 Volume de concreto (C-25) = 1,72 m³  
 Área de forma = 33,35 m²

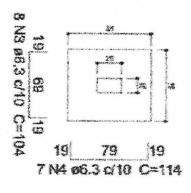
Relação do aço  
 P4 6xP8  
 3xP10 P20  
 2xS19 V16  
 P7 7xS12

**LAESTE L.M. FREIRE**  
**ENGENHEIRO CIVIL**  
**CREAÇÃO 322363**

PROPOSTA DE PREÇOS PARA OBRAS  
 PROJETO ESTRUTURAL  
 FOLHA Nº 01/01 - VOLT. SEMPRE INDICAR A ORÇAMENTAR  
 GOVERNAMENTO MUNICIPAL DO BRASIL  
 LACSONI LUIZ ANDREONI FREIRE  
 LACSONI LUIZ ANDREONI FREIRE  
 Projeto estrutural - CIVIL  
 Valor estimado: R\$ 10.000,00

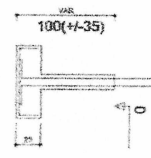


S4=S10=S13=S16=S20  
 PLANTA  
 ESC 1:25



Solo compactado sobre a sapata  
 peso específico > 1600,00 kg/m³

CORTE  
 ESC 1:25

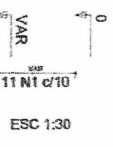


P8=P11

FUNDAÇÕES - L1  
 ESC 1:25



4 N9 ø10.0 C=VAR

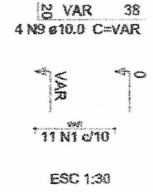


P2

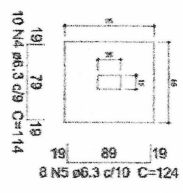
FUNDAÇÕES - L1  
 ESC 1:25



10 N10 ø10.0 C=VAR

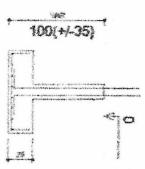


S2=S8=S11  
 PLANTA  
 ESC 1:25



Solo compactado sobre a sapata  
 peso específico > 1600,00 kg/m³

CORTE  
 ESC 1:25

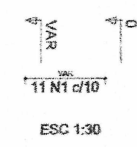


P5=P14=P17

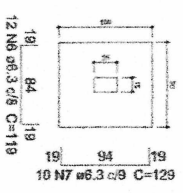
FUNDAÇÕES - L1  
 ESC 1:25



4 N9 ø10.0 C=VAR

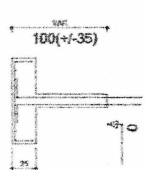


S5=S14=S17  
 PLANTA  
 ESC 1:25



Solo compactado sobre a sapata  
 peso específico > 1600,00 kg/m³

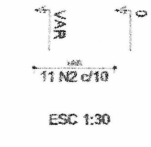
CORTE  
 ESC 1:25



FUNDAÇÕES - L1  
 ESC 1:25

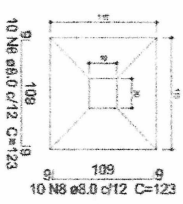


4 N11 ø12.5 C=VAR



P3

S3  
 PLANTA  
 ESC 1:25



Solo compactado sobre a sapata  
 peso específico > 1600,00 kg/m³

CORTE  
 ESC 1:25



Relação do aço	P2		P3		3XP5		3XS11	
	2XP8	S3	3XS14					
AÇO	N	DIAM (mm)	QUANT (Barras)	UNIT (cm)	C-TOTAL (cm)			
CASO	1	5,0	66	69	4488			
	2	5,0	11	108	1188			
	3	6,3	40	104	4190			
	4	6,3	65	114	7410			
CASO	5	6,3	24	124	2976			
	6	6,3	36	119	4294			
	7	6,3	30	128	3870			
	8	8,0	20	123	2480			
CASO	9	10,0	24	VAR	VAR			
	10	10,0	4	VAR	VAR			
CASO	11	12,5	10	VAR	VAR			
	12	12,5	4	VAR	VAR			

Resumo do aço

AÇO	DIAM (mm)	C-TOTAL (m)	PESO (kg)
CASO	6,3	227	55,6
CASO	8,0	24,6	8,7
CASO	10,0	48	30,2
CASO	12,5	6,8	8,2
CASO PESO TOTAL (kg)			99,8
CASO	5,0	6,7	8,7
CASO	101,7		
CASO	8,7		

Volume de concreto (C-20) = 2,38 m³  
 Volume de concreto (C-25) = 0,32 m³  
 Área de forma = 18,24 m²

**LAESTE L.M. FREIRE**  
**ENGENHEIRO CIVIL**  
**CREA-CE 322353**

DECLARAÇÃO DE OBRAS EM EXECUÇÃO

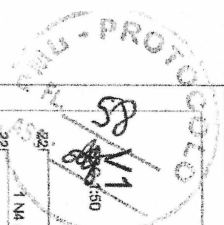
PROFESSOR RESPONSÁVEL

LAESTE L.M. FREIRE

ASSINATURA

DATA





Relação do aço

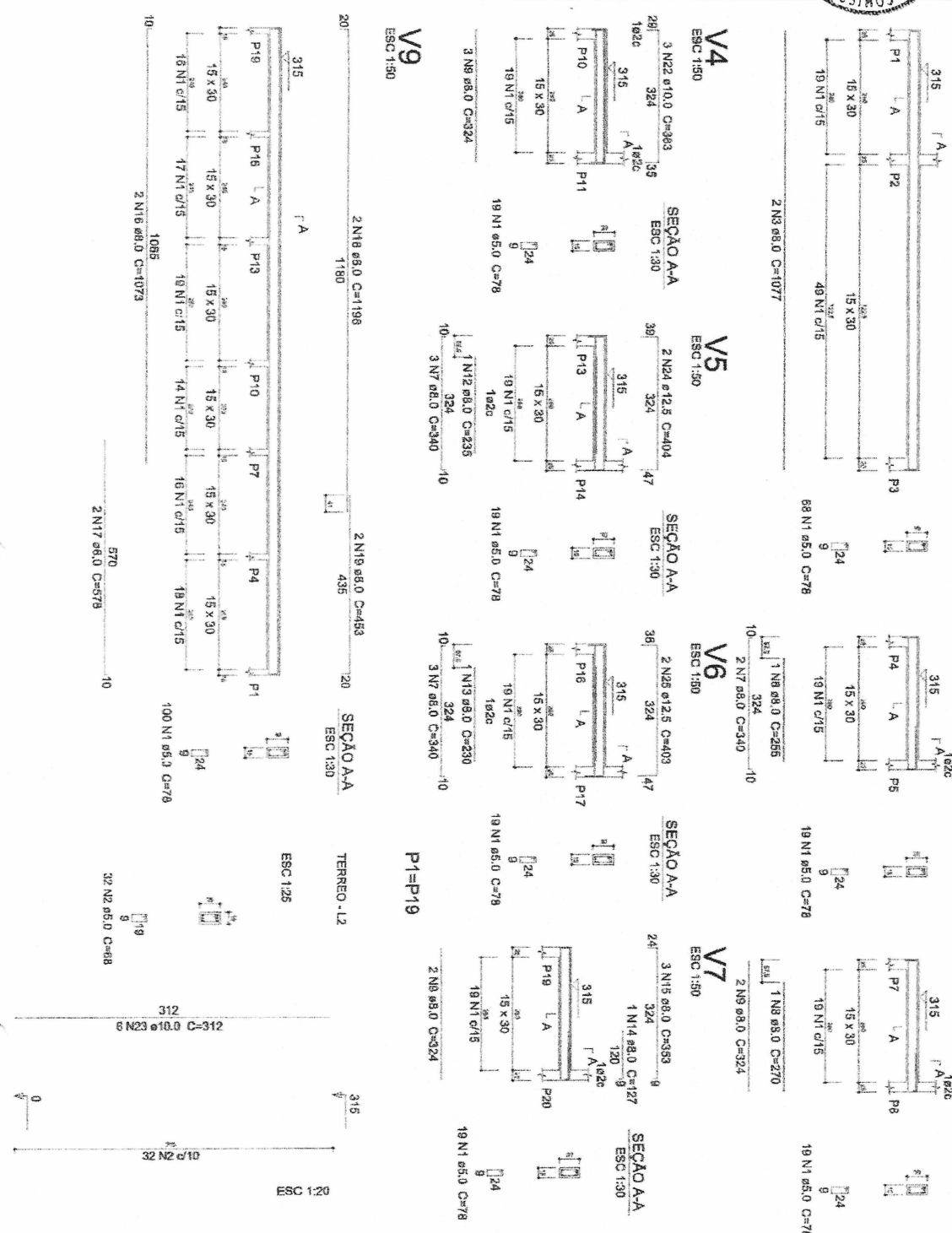
2xP1	V1	V2
V3	V4	V5
V6	V7	V9

ACO	N	DIAM (mm)	QUANT (Barras)	UNIT (mm)	C'TOTAL (mm)
CAS0	1	6,0	282	78	21985
CAS0	2	5,0	68	68	4352
CAS0	3	6,0	2	1077	2154
CAS0	4	6,0	1	420	420
CAS0	5	6,0	2	1125	2250
CAS0	6	6,0	1	285	285
CAS0	7	6,0	8	340	2720
CAS0	8	6,0	1	270	270
CAS0	9	6,0	7	324	2268
CAS0	10	6,0	1	102	102
CAS0	11	6,0	3	359	1077
CAS0	12	6,0	1	235	235
CAS0	13	6,0	1	250	250
CAS0	14	6,0	1	127	127
CAS0	15	6,0	3	353	1059
CAS0	16	6,0	2	1073	2146
CAS0	17	6,0	2	378	756
CAS0	18	6,0	2	1189	2378
CAS0	19	6,0	2	453	906
CAS0	20	10,0	1	115	115
CAS0	21	10,0	1	369	738
CAS0	22	10,0	3	383	1149
CAS0	23	10,0	12	312	3744
CAS0	24	12,5	2	404	808
CAS0	25	12,5	2	403	806

Resumo do aço

ACO	DIAM (mm)	C'TOTAL (m)	PESO (kg)
CAS0	6,0	197,8	78
CAS0	10,0	67,5	35,4
CAS0	12,5	16,2	15,5
PESO TOTAL (kg)		261,5	40,8

Volume de concreto (C-25) = 2,33 m³  
 Área de forma = 39,96 m²



**LAESTE L.M. FREIRE**  
**ENGENHEIRO CIVIL**  
**CREACE 322353**

EMPRESA DE SERVIÇOS DE ENGENHARIA  
 LAESTE L.M. FREIRE, ENGENHEIRO CIVIL  
 CREA-CE 322353  
 ENDEREÇO: RUA...  
 CIDADE: ...



P3=P21  
 2 N7 ø8,0 C=302  
 1 N9 ø8,0 C=122  
 ESC 1:50

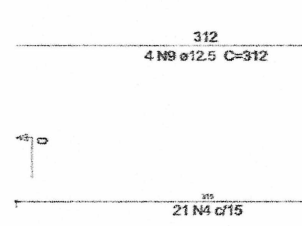
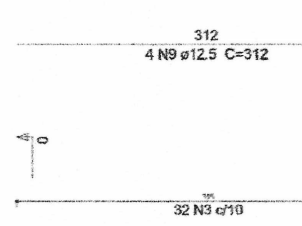
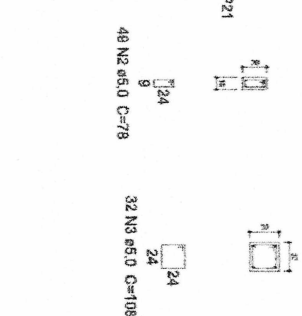
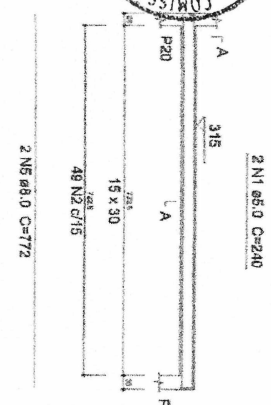
2 N6 ø8,0 C=281  
 257

SEÇÃO A-A  
 ESC 1:30

TERREO - L2  
 ESC 1:25

TERREO - L2  
 ESC 1:25

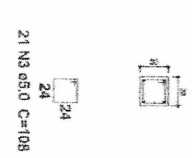
TERREO - L2  
 ESC 1:20



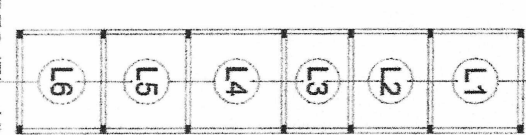
P6=P9=P12=P15=P18

TERREO - L2

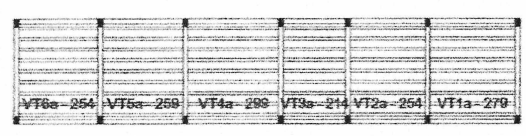
ESC 1:20



Armação positiva das lajes do pavimento TERREO (Eixo Y)  
 escala 1:75



Planta de vigotas pré-moldadas  
 escala 1:75



Relação do aço  
 2XP3  
 V12  
 2XP4  
 5XP8

ACO	N	DIAM (mm)	QUANT (Barras)	UNIT (cm)	C.TOTAL (cm)
CA60	1	5,0	2	78	480
	2	5,0	49	78	3822
	3	5,0	160	108	18252
	4	5,0	42	68	2856
CA50	5	8,0	2	772	1544
	6	8,0	1	122	122
	7	8,0	2	302	604
	8	8,0	2	281	562
					11232

Resumo do aço

ACO	DIAM (mm)	C.TOTAL (cm)	PESO (kg)
CA60	5,0	28,4	11,2
CA60	12,5	112,4	108,2
CA60	5,0	284,1	39,2
PEBO TOTAL (kg)			
CA60	118,4		
CA60	38,2		

Volume de concreto (C-25) = 2,57 m³  
 Área de forma = 37,33 m²

**LAESTE L.M. FREIRE**  
**ENGENHEIRO CIVIL**  
**CREA-CE 222363**

PROPOSTA DE LICITAÇÃO PARA OBRAS  
 PROJETO ESTRUTURAL  
 PARA OBRAS DE RECONSTRUÇÃO DE OBRAS  
 DE RECONSTRUÇÃO DE OBRAS  
 DE RECONSTRUÇÃO DE OBRAS  
 DE RECONSTRUÇÃO DE OBRAS