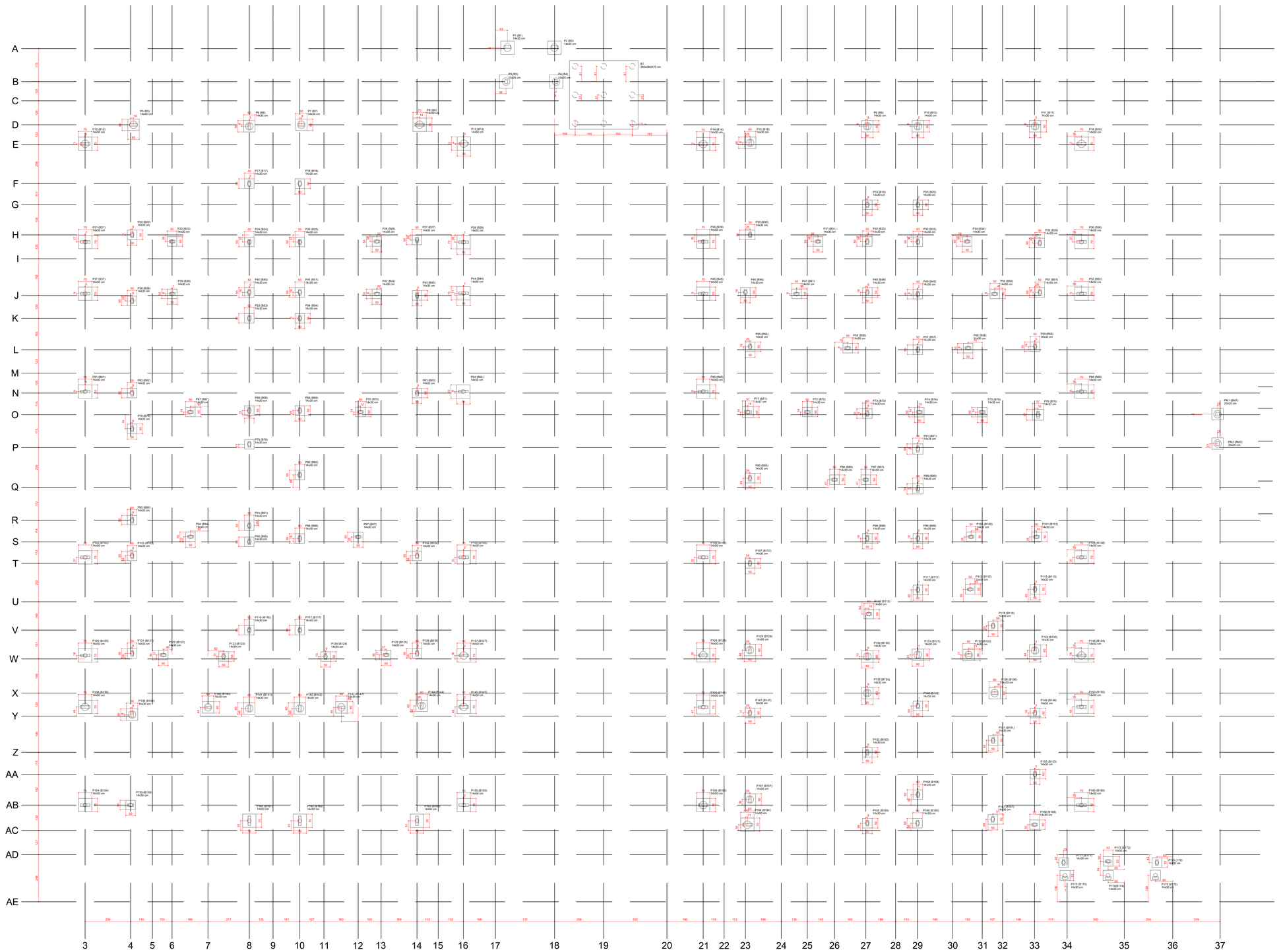
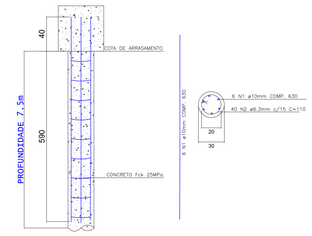
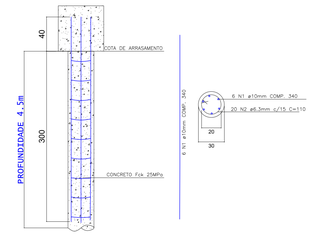


LOCAÇÃO DE ESTACAS
NÍVEL 00
ESC: 1/75

DETALHE ARMAÇÃO DE ESTACAS
TRADO MECÂNICO Ø30
ESC: 1/25



DETALHE ARMAÇÃO DE ESTACAS - BM1,BM2
TRADO MECÂNICO Ø30
ESC: 1/25



Estacas - TRADO MECÂNICO			
Simbologia	Nome	d (cm)	Quantidade
	E3(15)-P7(0) (7,5m)	30	170
	E3(15)-P4(0) (4,5m)	30	2

RESUMO DE AÇO DAS ESTACAS			
AÇO	BIT	COMPR	PESO
	mm	m	kgf
50A	6.3	7524	1843.4
50A	10	6466.8	3990
Peso Total		50A =	5833.4 kgf

Volume de concreto (C-25) = 90.8 m³

NOTAS PARA CONCRETO

a. Classificação do Concreto será de 25Mpa;
b. Relação A/C igual à 0,55;
c. Abatimento entre 100 e 140 (10+-2);
d. Consumo mínimo de concreto por m³ será de 350kg;
e. O diâmetro máximo do agregado graúdo será de 19mm;
f. Cimento Portland CP II E-32 ou CP II F-32;
g. Módulo de Elasticidade médio de 28.000 a 32.000 MPa;

NOTAS
1- Todas as medidas devem ser conferidas no local.

REVISÕES		
R00	07/02/2025	EMISSÃO INICIAL - PROJETO NÃO APROVADO
R01	20/02/2025	AJUSTE ARQUITETURA
R02	24/04/25	AJUSTE ARQUITETURA
R03	27/06/25	REVISÃO PARA ADEQUAÇÃO AS NORMAS DO CBMMG
R04	11/08/2025	REVISÃO PARA COMPATIBILIZAÇÃO DE PROJETO

Ponto S
Rua Nilda, 213
Bairro Glória - Contagem /MG
comercial@pontosengenharia.com
Tel: (31) 9 9693-8131 / 9 9612-0612

ART
RESPONSÁVEL TÉCNICO
POLEANA TAMIRIS RESENDE
CREA : MG 282.137/D

PROJETISTA
FILEMON

CLIENTE
CENTRO DE OPORTUNIDADES DO BRASIL - COB

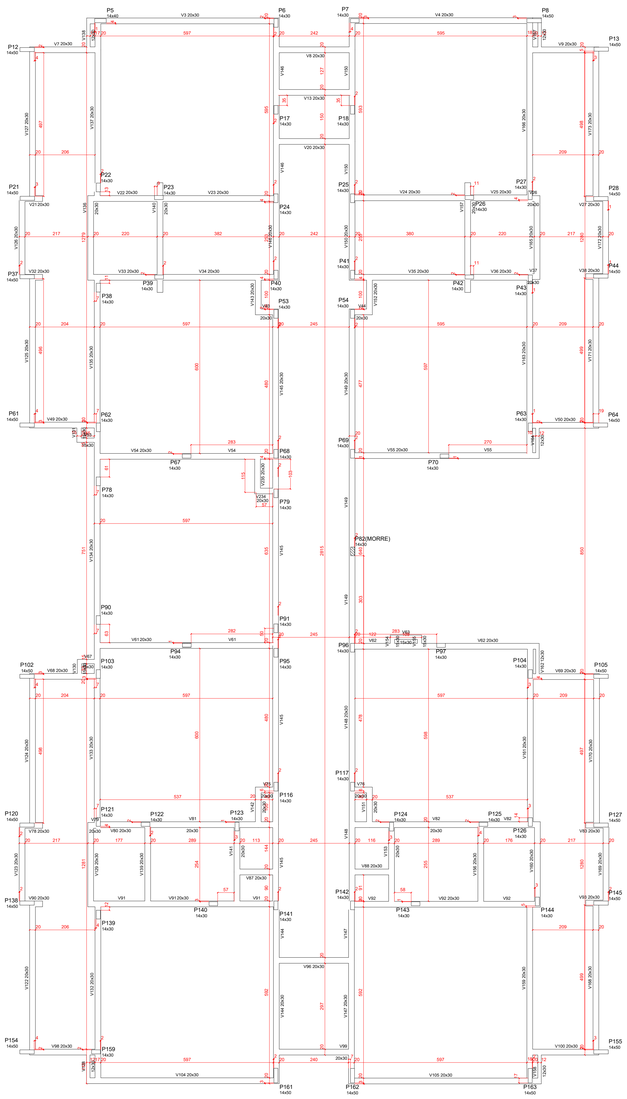
PROPRIETÁRIO
PREFEITURA MUNICIPAL DE IGARAPÉ

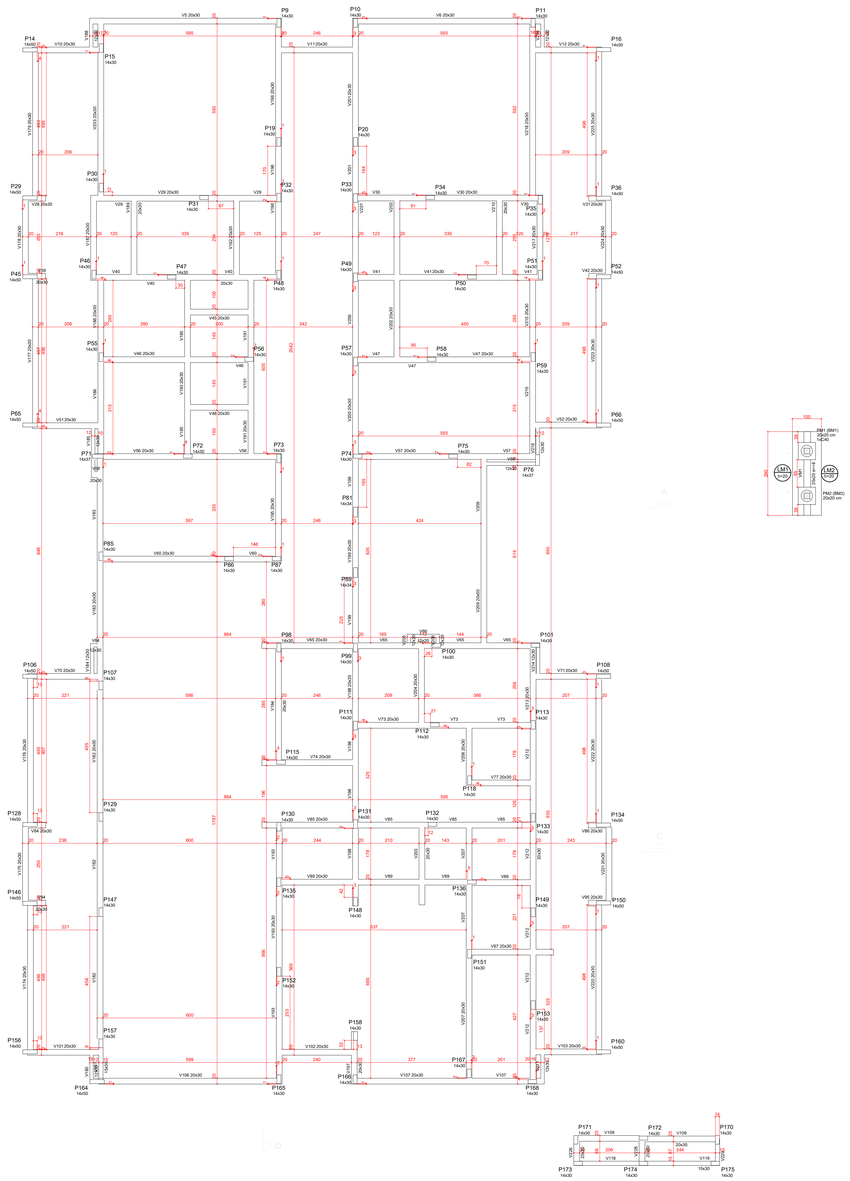
LOCAL
RUA PARAÍBA, Nº136 - BAIRRO RESPLENDOR, IGARAPÉ - MG, 32900-000

TIPO/ESPECIFICAÇÃO DO DOCUMENTO
PROJETO ESTRUTURAL - PLANTA DE LOCAÇÃO, DETALHAMENTO DA FUNDAÇÃO
CONSTRUÇÃO DE ESCOLA MUNICIPAL DE EDUCAÇÃO INFANTIL - EMEI

DATA:	ÁREA TOTAL	LOTE/QUADRA
08/2025	1.542,86m²	XX/XX
FORMATO: A0	ESCALA: IND.	FOLHA: 1 /28

ARQUIVO: 173-2024-EST-EXEC-OS 42_EMEI RESPLENDOR_FNDE_R4-V1





FORMAS DOS BLOCOS E VIGAS DA FUNDAÇÃO

NÍVEL 00
ESC: 1/75

Legenda dos pilares
Pilar que morre
Pilar que passa
Pilar que nasce
Pilar com mudança de seção

ORIENTAÇÕES CONSTRUTIVAS:

- O CONCRETO DE TODA A OBRA DEVE SER O DE 30MPA
- OS COBRIMENTOS ADOTADOS DEVEM SER GARANTIDOS PELO USO DE ESPAÇADORES PLÁSTICOS OU PASTILHAS SEMI-ESFÉRICAS DE ARGAMASSA
- UTILIZAR VERGAS E CONTRA-VERGAS NAS ABERTURAS DA ALVENARIA
- O ENCUNHAMENTO OU "APERTO" DA ALVENARIA DEVE SER ORIENTADO PELO RESPONSÁVEL TÉCNICO DA OBRA, PARA QUE SEJAM EVITADAS CONCENTRAÇÕES DE TENSÃO NOS BLOCOS DE VEDAÇÃO E POSSÍVEIS PATOLOGIAS
- COMPACTAR O SOLO E LANÇAR CAMADA DE PELO MENOS 5 CM DE CONCRETO MAGRO ABAIXO DO NÍVEL DE ASSENTAMENTO DAS FUNDAÇÕES E VIGAS BALDRAME. QUANDO FOR O CASO, PARA QUE NÃO HAJA MISTURA ENTRE O SOLO E O CONCRETO ESTRUTURAL DOS ELEMENTOS
- AS FACES DOS ELEMENTOS DE FUNDAÇÃO E ELEMENTOS EM CONTATO COM O SOLO DEVERÃO SER IMPERMEABILIZADAS COM EMULSÃO ASFÁLTICA TIPO IGOL 2 OU SIMILAR
- VERIFIQUE: ANTES DA CONCRETAGEM, TODAS AS PASSAGENS DE TUBULAÇÕES ELETRICAS E HIDRÁULICAS
- CANALIZAÇÕES EMBUTIDAS VERTICALMENTE NOS PILARES E VIGAS NÃO PODEM OCORRER. SOMENTE SERÃO PERMITIDAS FURAÇÕES QUE RESPEITEM OS ITENS 13.2.5.1 E 21.3.3 DA NBR 6118
- PROJETO DE ESTRUTURAS DE CONCRETO, COM PRÉVIA ANÁLISE E AUTORIZAÇÃO DO PROJETISTA
- CONFIRA ATENTAMENTE A IMPLANTAÇÃO E MARCAÇÃO DOS EIXOS A FIM DE QUE A OBRA SEJA LOCADA CORRETAMENTE DENTRO DO TERRENO
- VERIFIQUE SE HÁ INDICAÇÃO DE CONTRA-FLECHA NOS ELEMENTOS E CERTIFIQUE-SE DE QUE A MESMA SEJA EXECUTADA
- SUGERE-SE A UTILIZAÇÃO DE TELA SOLDADA PARA EVITAR FISSURAS NA INTERFACE ENTRE PAREDE DE ALVENARIA E PILAR, APLICADA COM O ACOMPANHAMENTO DO RESPONSÁVEL TÉCNICO DA OBRA

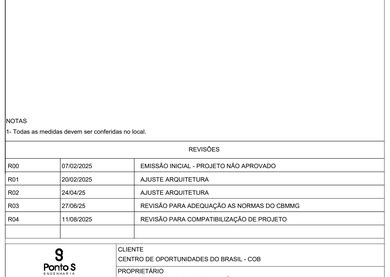
NOTAS GERAIS:

- PROJETO ELABORADO DE ACORDO COM A NBR 6118 - PROJETO DE ESTRUTURAS DE CONCRETO
- O CONCRETO EMPREGADO NA EXECUÇÃO DAS ESTRUTURAS DEVE CUMPRIR OS REQUISITOS ESTABELECIDOS NA NBR 12655 - CONCRETO DE CIMENTO PORTLAND - PREPARO, CONTROLE, RECEBIMENTO E ACEITAÇÃO
- A EXECUÇÃO DA OBRA, ASSIM COMO A CURA E A DESFORMA DO CONCRETO, DEVE SEGUIR A NORMA NBR 14931 - EXECUÇÃO DE ESTRUTURAS DE CONCRETO. É NECESSÁRIO O ACOMPANHAMENTO DE PROFISSIONAL HABILITADO E A EXECUÇÃO DA ESTRUTURA É DE RESPONSABILIDADE DA CONSTRUTORA
- OS QUANTITATIVOS DE CONCRETO, FORMA E AÇO DEVEM SER CONFIRMADOS PELO RESPONSÁVEL TÉCNICO DA OBRA
- NÍVEIS DO PROJETO EM CENTÍMETROS
- COTAS DO PROJETO EM CENTÍMETROS
- A COTA PREVALECE SOBRE A ESCALA

DESFORMA:

- FACES LATERAIS: 3 DIAS APÓS A CONCRETAGEM
- FACES INFERIORES, DEIXANDO PONTALETES DE ESCORAMENTO: 14 DIAS APÓS A CONCRETAGEM
- FACES INFERIORES SEM PONTALETES DE ESCORAMENTO: 28 DIAS APÓS A CONCRETAGEM
- NOS BALANÇOS, A RETIRADA DAS ESCORAS DEVERÁ SER REALIZADA DA PONTA PARA O APOIO
- É DE RESPONSABILIDADE DA CONSTRUTORA O PROJETO DE ESCORAMENTO E CIMBRAMENTO

DETALHES ORIENTATIVOS:



NOTAS PARA CONCRETO

a. Classificação do Concreto será de 30Mpa;
b. Relação A/C igual à 0,55;
c. Abatimento entre 100 e 140 (10+-2);
d. Consumo mínimo de concreto por m³ será de 350kg;
e. O diâmetro máximo do agregado graúdo será de 19mm;
f. Cimento Portland CP II E-32 ou CP II F-32;
g. Módulo de Elasticidade médio de 28.000 a 32.000 MPa;

NOTAS
1- Todas as medidas devem ser conferidas no local.

REVISÕES		
R00	07/02/2025	EMISSÃO INICIAL - PROJETO NÃO APROVADO
R01	20/02/2025	AJUSTE ARQUITETURA
R02	24/04/25	AJUSTE ARQUITETURA
R03	27/06/25	REVISÃO PARA ADEQUAÇÃO AS NORMAS DO CBMMG
R04	11/08/2025	REVISÃO PARA COMPATIBILIZAÇÃO DE PROJETO

Ponto S ENGENHARIA
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Bairro Glória - Contagem- MG
comercial@pontosengenharia.com
Tel: (31) 8 9959-8131 / 9 9672-0612

POLEANA TAMIRIS RESENDE
CREA : MG 282.137/D

CLIENTE	CENTRO DE OPORTUNIDADES DO BRASIL - COB
PROPRIETÁRIO	PREFEITURA MUNICIPAL DE IGARAPÉ
LOCAL	RUA PARAÍBA, Nº136 - BAIRRO RESPLENDOR, IGARAPÉ - MG, 32900-000
ART	
PROJETISTA	FILEMON
TIPO/ESPECIFICAÇÃO DO DOCUMENTO	PROJETO ESTRUTURAL - FORMAS VIGAS BALDRAME/FUNDAÇÃO CONSTRUÇÃO DE ESCOLA MUNICIPAL DE EDUCAÇÃO INFANTIL - EMEI
DATA: 08/2025	ÁREA TOTAL 1.542,86m²
LOTE/QUADRA XX/XX	
FORMATO A0	ESCALA IND.
FOLHA: 2 /28	

ARQUIVO: 173-2024-EST-EXEC-OS 42_EMEI RESPLENDOR_FNDE_R4-V1

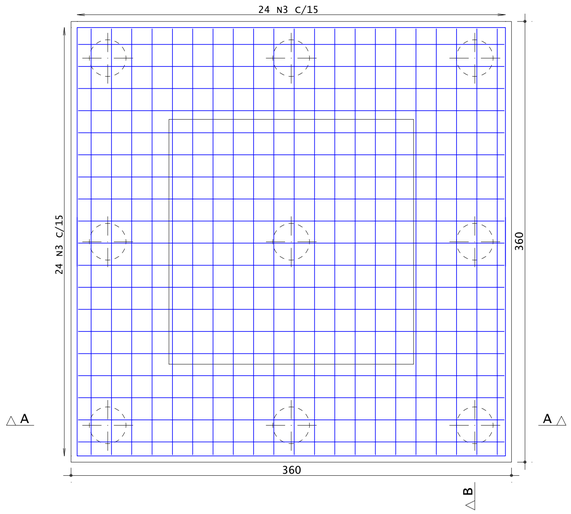
AÇO	POS	BIT	QUANT	COMPRIMENTO	
				UNIT	TOTAL
		mm		cm	cm
B134					
50A	1	10	8	740	5920
50A	2	12.5	24	454	10896
50A	3	12.5	48	408	19584
50A	4	12.5	24	456	10944

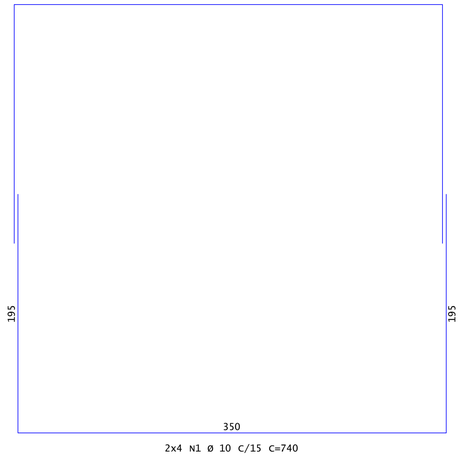
RESUMO DE AÇO			
AÇO	BIT	COMPR	PESO
	mm	m	kgf
50A			
50A	10	59	37
50A	12.5	414	399
Peso Total	50A =		436 kgf

Volume de concreto (C-30) = 9 m³
Área de forma = 10 m²

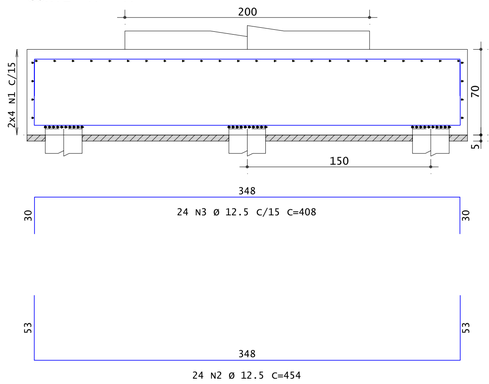
BT
(ESCALA 1:25)

PLANTA

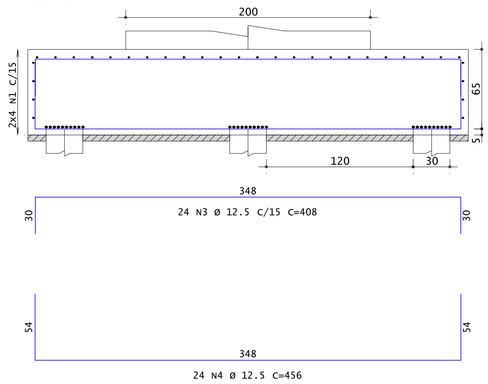




CORTE A - A

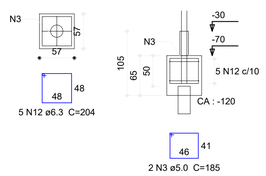


CORTE B - B



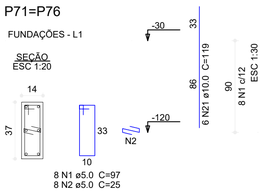
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PLANTA ESC 1:50 / CORTE ESC 1:50



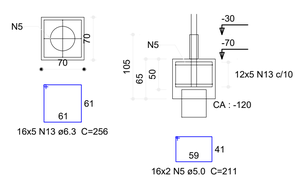
P71=P76

FUNDAÇÕES - L1 / SEÇÃO ESC 1:20



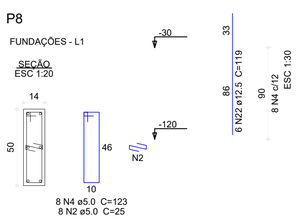
B1=B2=B3=B4=B8=B12=B13=B14
B16=B127=B128=B134=B138=B145=B156=B164

PLANTA ESC 1:50 / CORTE ESC 1:50



P8

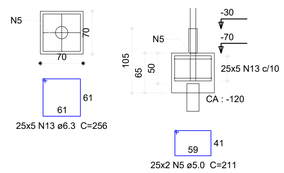
FUNDAÇÕES - L1 / SEÇÃO ESC 1:20



AÇO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
CA60	1	5.0	16	97	1552
	2	5.0	312	25	7800
	3	5.0	4	185	740
	4	5.0	296	123	36408
	5	5.0	82	211	17302
	6	5.0	16	91	1456
	7	5.0	4	179	716
	9	5.0	8	177	1416
CA50	12	6.3	10	204	2040
	13	6.3	205	256	52480
	14	6.3	10	192	1920
	15	6.3	20	188	3760
	21	10.0	231	119	27489
	22	12.5	6	119	714

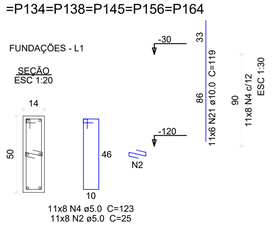
B21=B28=B29=B36=B37=B44=B45=B52=B61=B64
=B65=B66=B102=B105=B106=B108=B120=B146
=B150=B154=B155=B160=B161=B162=B163

PLANTA ESC 1:50 / CORTE ESC 1:50



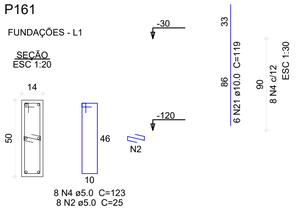
P12=P13=P14=P16=P127=P128=
=P134=P138=P145=P156=P164

FUNDAÇÕES - L1 / SEÇÃO ESC 1:20



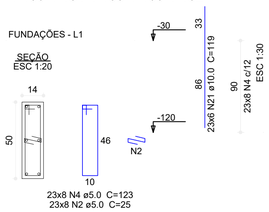
P161

FUNDAÇÕES - L1 / SEÇÃO ESC 1:20



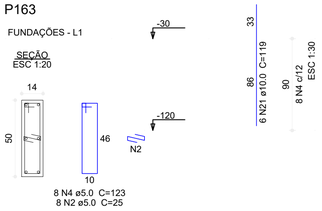
P21=P28=P29=P36=P37=P44=P45=
=P52=P61=P64=P65=P66=P102=
=P105=P106=P108=P120=P146=
=P150=P154=P155=P160=P162

FUNDAÇÕES - L1 / SEÇÃO ESC 1:20



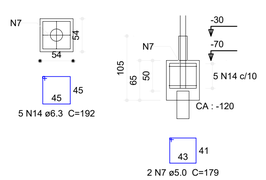
P163

FUNDAÇÕES - L1 / SEÇÃO ESC 1:20



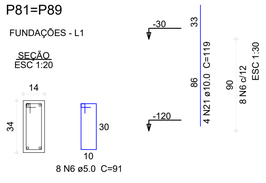
B81=B89

PLANTA ESC 1:50 / CORTE ESC 1:50



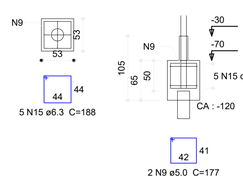
P81=P89

FUNDAÇÕES - L1 / SEÇÃO ESC 1:20



B173=B174=B175=B170

PLANTA ESC 1:50 / CORTE ESC 1:50



Resumo do aço

AÇO	DIAM (mm)	C.TOTAL (m)	PESO (kg)
CA50	6.3	620.4	152
	10.0	274.89	169.6
	12.5	7.14	6.87
CA60	5.0	673.9	103.78

PESO TOTAL (kg)	
CA50	328,47
CA60	103.78

Volume de concreto (C-30) = 16.8m³

Área de forma = 110.11 m²

NOTAS

1- Todas as medidas devem ser conferidas no local.

REVISÕES		
R00	07/02/2025	EMISSÃO INICIAL - PROJETO NÃO APROVADO
R01	20/02/2025	AJUSTE ARQUITETURA
R02	24/04/25	AJUSTE ARQUITETURA
R03	27/06/25	REVISÃO PARA ADEQUAÇÃO AS NORMAS DO CBMMG
R04	11/08/2025	REVISÃO PARA COMPATIBILIZAÇÃO DE PROJETO

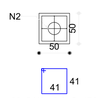
Ponto S ENGENHARIA
Rua Itália, 313
Bairro Glória - Contagem /MG
comercial@pontosengenharia.com
Tel: (31) 9.9593-8131 / 9.9672-0612

CLIENTE	CENTRO DE OPORTUNIDADES DO BRASIL - COB
PROPRIETÁRIO	PREFEITURA MUNICIPAL DE IGARAPÉ
LOCAL	RUA PARAÍBA, Nº136 - BAIRRO RESPLENDOR, IGARAPÉ - MG, 32900-000
ART / PROJETISTA	FILEMON
TIPO/ESPECIFICAÇÃO DO DOCUMENTO	PROJETO ESTRUTURAL - DETALHE DE PILARES E BLOCOS DE FUNDAÇÃO
	CONSTRUÇÃO DE ESCOLA MUNICIPAL DE EDUCAÇÃO INFANTIL - EMEI
RESPONSÁVEL TÉCNICO	POLEANA TAMIRIS RESENDE CREA : MG 282.137/D
DATA: 08/2025	ÁREA TOTAL 1.542,86m²
LOTE/QUADRA XX/XX	
FORMATO A1	ESCALA IND.
FOLHA: 3 /28	

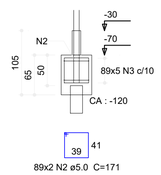
ARQUIVO: 173-2024-EST-EXEC-OS 42_EMEI RESPLENDOR_FNDE_R4-V1

B17=B18=B19=B20=B22=B23=B24=B25=B26=B27
=B30=B31=B32=B33=B34=B35=B38=B39=B40
=B41=B42=B43=B46=B47=B48=B49=B50=B51
=B53=B54=B55=B56=B57=B58=B59=B62=B63
=B67=B68=B69=B70=B72=B73=B74=B75
=B78=B79=B82=B85=B86=B87=B90=B91
=B94=B95=B96=B97=B98=B99=B100=B101
=B103=B104=B107=B111=B112=B113=B115=B116
=B117=B118=B121=B122=B123=B124=B125=B126
=B147=B148=B149=B151=B152=B153=B158=B159
=B165=B166=B167=B168

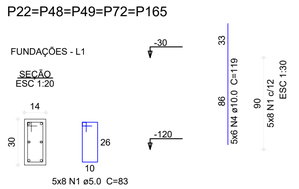
PLANTA
ESC 1:50



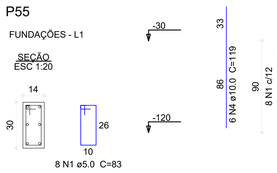
CORTE
ESC 1:50



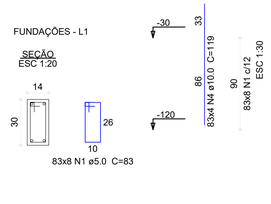
P22=P48=P49=P72=P165



P55



P17=P18=P19=P20=P23=P24=
=P25=P26=P27=P30=P31=P32=
=P33=P34=P35=P38=P39=P40=
=P41=P42=P43=P46=P47=P50=
=P51=P53=P54=P56=P57=P58=
=P59=P62=P63=P67=P68=P69=
=P70=P73=P74=P75=P78=
=P79=P82=P85=P86=P87=
=P90=P91=P94=P95=P96=
=P97=P98=P99=P100=P101=
=P103=P104=P107=P111=P112=
=P113=P115=P116=P117=P118=
=P121=P122=P123=P124=P125=
=P126=P147=P148=P149=P151=
=P152=P153=P158=P159=P166=
=P167=P168



Relação do aço

B168

AÇO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
CA60	1	5.0	712	83	59096
	2	5.0	178	171	30438
CA50	3	6.3	445	176	78320
	4	10.0	368	119	43792

Resumo do aço

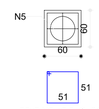
AÇO	DIAM (mm)	C.TOTAL (m)	PESO (kg)
CA50	6.3	783.2	191.7
	10.0	438	270
CA60	5.0	895.4	138

PESO TOTAL (kg)	
CA50	461.6
CA60	138

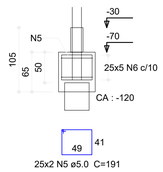
Volume de concreto (C-30) = 15.54 m³
Área de forma = 147.03 m²

B5=B6=B7=B9=B10=B11=B15=B129=B130
=B131=B132=B133=B135=B136=B139=B140
=B141=B142=B143=B144=B157=B171=B172=BM1=BM2

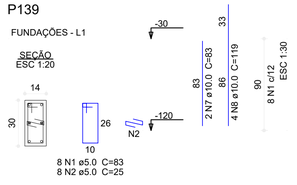
PLANTA
ESC 1:50



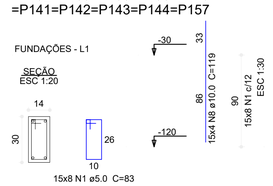
CORTE
ESC 1:50



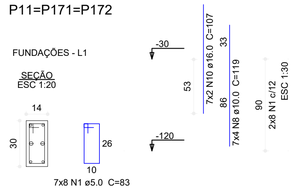
P139



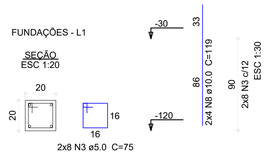
P7=P15=P129=P130=P131=
=P132=P133=P135=P136=P140=
=P141=P142=P143=P144=P157



P173=P174=P175=P170
P11=P171=P172



PM1=PM2



AÇO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
CA60	1	5.0	208	83	18592
	2	5.0	24	25	600
	3	5.0	16	75	1200
	4	5.0	8	103	824
	5	5.0	50	191	9550
	11	5.0	15	65	1040
CA50	6	6.3	125	216	27000
	7	10.0	2	83	166
	8	10.0	132	119	15708
	9	12.5	6	119	714
	10	16.0	14	107	1498

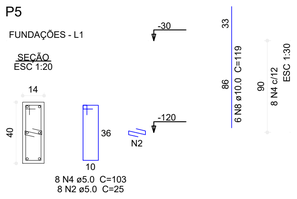
Resumo do aço

AÇO	DIAM (mm)	C.TOTAL (m)	PESO (kg)
CA50	6.3	270	66.1
	10.0	158.74	97.94
	12.5	7.2	6.9
	16.0	14.98	23.64
CA60	5.0	304.13	47.38

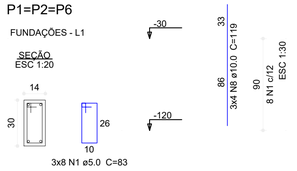
PESO TOTAL (kg)	
CA50	185.36
CA60	46.83

Volume de concreto (C-30) = 5.8 m³
Área de forma = 47.78 m²

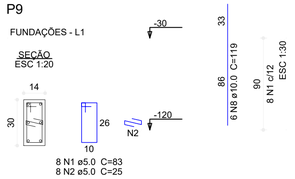
P5



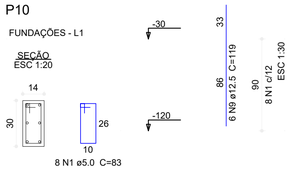
P1=P2=P6



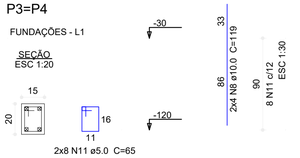
P9



P10



P3=P4



NOTAS
1- Todas as medidas devem ser conferidas no local.

REVISÕES		
R00	07/02/2025	EMISSÃO INICIAL - PROJETO NÃO APROVADO
R01	20/02/2025	AJUSTE ARQUITETURA
R02	24/04/25	AJUSTE ARQUITETURA
R03	27/06/25	REVISÃO PARA ADEQUAÇÃO AS NORMAS DO CBMMG
R04	11/08/2025	REVISÃO PARA COMPATIBILIZAÇÃO DE PROJETO

Ponto S ENGENHARIA
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comercial@pontosengenharia.com
Tel: (31) 9.9593-8131 / 9.9672-0612

CLIENTE
CENTRO DE OPORTUNIDADES DO BRASIL - COB

PROPRIETÁRIO
PREFEITURA MUNICIPAL DE IGARAPÉ

LOCAL
RUA PARAÍBA, Nº136 - BAIRRO RESPLENDOR, IGARAPÉ - MG, 32900-000

ART

PROJETISTA
FILEMON

TIPO/ESPECIFICAÇÃO DO DOCUMENTO
PROJETO ESTRUTURAL - DETALHE DE PILARES
CONSTRUÇÃO DE ESCOLA MUNICIPAL DE EDUCAÇÃO INFANTIL - EMEI

RESPONSÁVEL TÉCNICO
POLEANA TAMIRIS RESENDE
CREA : MG 282.137/D

DATA:
08/2025

ÁREA TOTAL
1.542,86m²

LOTE/QUADRA
XX/XX

FORMATO
A1

ESCALA
IND.

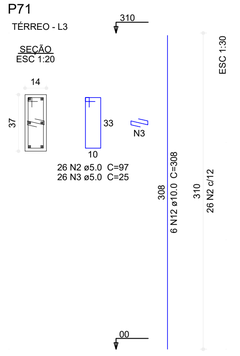
FOLHA:
4 /28

ARQUIVO: 173-2024-EST-EXEC-OS 42_EMEI RESPLENDOR_FNDE_R4-V1

P71

TÉRREO - L3

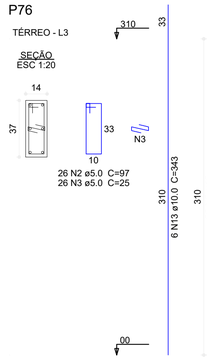
SEÇÃO
ESC 1:20



P76

TÉRREO - L3

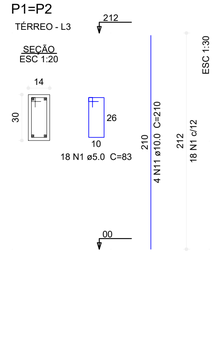
SEÇÃO
ESC 1:20



P1=P2

TÉRREO - L3

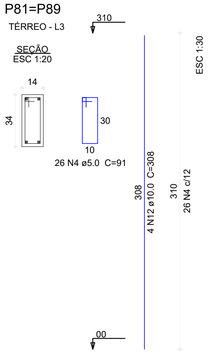
SEÇÃO
ESC 1:20



P81=P89

TÉRREO - L3

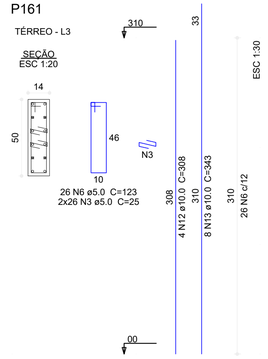
SEÇÃO
ESC 1:20



P161

TÉRREO - L3

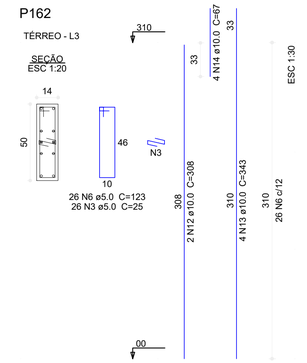
SEÇÃO
ESC 1:20



P162

TÉRREO - L3

SEÇÃO
ESC 1:20

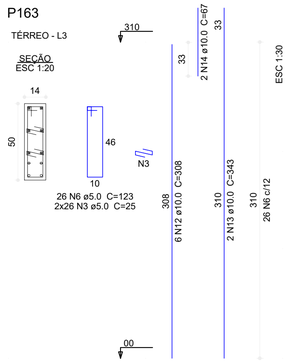


AÇO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
CA60	1	5.0	2961	83	245763
	2	5.0	52	97	5044
	3	5.0	1302	25	32550
	4	5.0	52	91	4732
	6	5.0	962	123	118326
	7	5.0	45	25	1125
	8	5.0	26	103	2678
	9	5.0	33	65	2145
CA50	11	10.0	40	210	8400
	12	10.0	412	308	126896
	13	10.0	290	343	99470
	14	10.0	16	67	1072
	16	12.5	8	210	1680
	17	12.5	6	352	2112
	18	16.0	4	210	840

P163

TÉRREO - L3

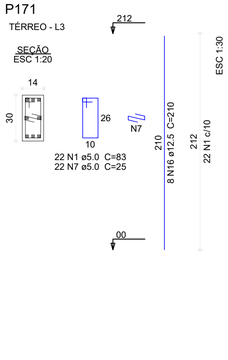
SEÇÃO
ESC 1:20



P171

TÉRREO - L3

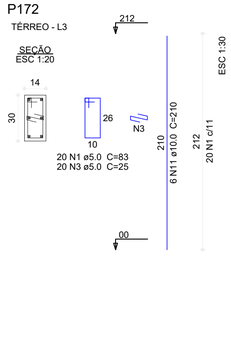
SEÇÃO
ESC 1:20



P172

TÉRREO - L3

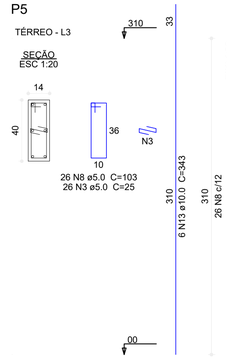
SEÇÃO
ESC 1:20



P5

TÉRREO - L3

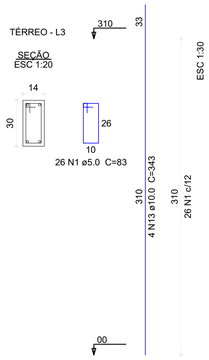
SEÇÃO
ESC 1:20



P6=P7=P62=P78=P85= =P90=P101=P103=P165= =P166=P168

TÉRREO - L3

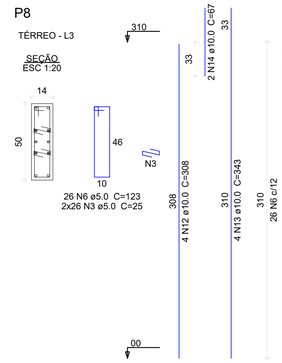
SEÇÃO
ESC 1:20



P8

TÉRREO - L3

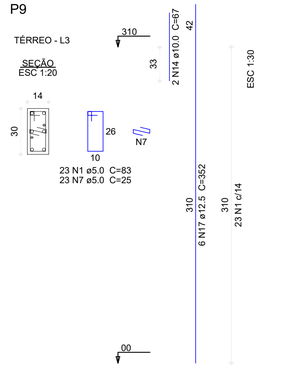
SEÇÃO
ESC 1:20



P9

TÉRREO - L3

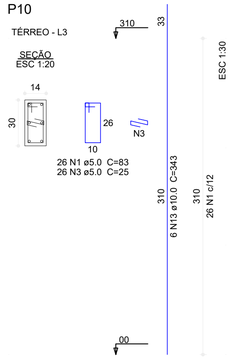
SEÇÃO
ESC 1:20



P10

TÉRREO - L3

SEÇÃO
ESC 1:20



Resumo do aço

AÇO	DIAM (mm)	C.TOTAL (m)	PESO (kg)
CA50	10.0	2346.3	1447.52
	12.5	38	36.5
	16.0	8.4	13.3
CA60	5.0	4123	635.04

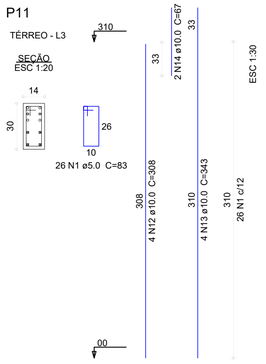
PESO TOTAL (kg)	
CA50	1497.29
CA60	635.04

Volume de concreto (C-30) = 24.03 m³
Área de forma = 493.7 m²

P11

TÉRREO - L3

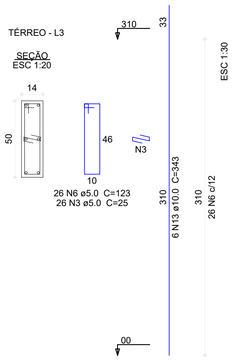
SEÇÃO
ESC 1:20



P12=P13=P14=P16=P21=P28= =P29=P36=P37=P44=P45=P52= =P61=P64=P65=P66=P102=P105= =P106=P108=P120=P127=P128= =P134=P138=P145=P146=P150= =P154=P155=P156=P160=P164

TÉRREO - L3

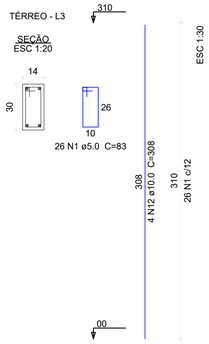
SEÇÃO
ESC 1:20



P15=P17=P18=P19=P20=P22= =P23=P24=P25=P26=P27= =P30=P31=P32=P33=P34= =P35=P38=P39=P40=P41= =P42=P43=P46=P47=P48= =P49=P50=P51=P55=P56= =P57=P58=P59=P67=P68= =P69=P70=P72=P73=P74= =P75=P79=P86=P87= =P91=P94=P95=P96= =P97=P98=P99=P100= =P107=P111=P112=P113= =P115=P116=P117=P118= =P121=P122=P123=P124= =P125=P126=P129=P130= =P131=P132=P133=P135= =P136=P139=P140=P141= =P142=P143=P144=P147= =P148=P149=P151=P152= =P153=P157=P158=P167

TÉRREO - L3

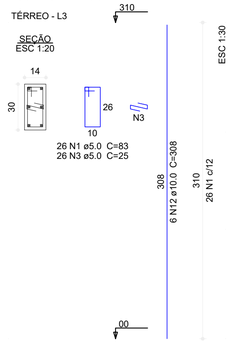
SEÇÃO
ESC 1:20



P53=P54=P159

TÉRREO - L3

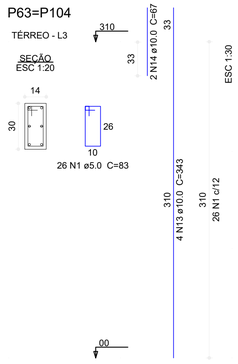
SEÇÃO
ESC 1:20



P63=P104

TÉRREO - L3

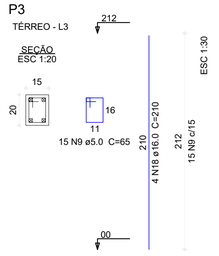
SEÇÃO
ESC 1:20



P3

TÉRREO - L3

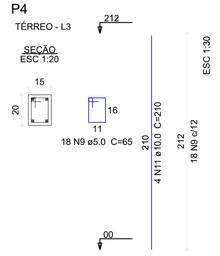
SEÇÃO
ESC 1:20



P4

TÉRREO - L3

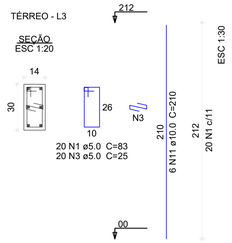
SEÇÃO
ESC 1:20



P173=P174=P175=P170

TÉRREO - L3

SEÇÃO
ESC 1:20



NOTAS

1- Todas as medidas devem ser conferidas no local.

REVISÕES		
R00	07/02/2025	EMISSÃO INICIAL - PROJETO NÃO APROVADO
R01	20/02/2025	AJUSTE ARQUITETURA
R02	24/04/25	AJUSTE ARQUITETURA
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CLIENTE
CENTRO DE OPORTUNIDADES DO BRASIL - COB

PROPRIETÁRIO
PREFEITURA MUNICIPAL DE IGARAPÉ

LOCAL
RUA PARAÍBA, Nº136 - BAIRRO RESPLENDOR, IGARAPÉ - MG, 32900-000

ART | PROJETISTA FILEMON

TIPO/ESPECIFICAÇÃO DO DOCUMENTO
PROJETO ESTRUTURAL - DETALHAMENTO DE PILARES
CONSTRUÇÃO DE ESCOLA MUNICIPAL DE EDUCAÇÃO INFANTIL - EMEI

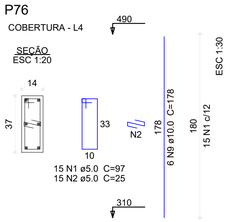
RESPONSÁVEL TÉCNICO
POLEANA TAMIRIS RESENDE
CREA : MG 282.137/D

DATA: 08/2025 | ÁREA TOTAL 1.542,86m² | LOTE/QUADRA XX/XX

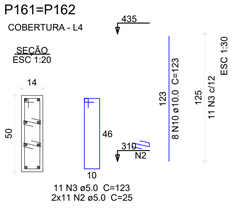
FORMATO A1 | ESCALA IND. | FOLHA: 5 /28

ARQUIVO: 173-2024-EST-EXEC-OS 42_EMEI RESPLENDOR_FNDE_R4-V1

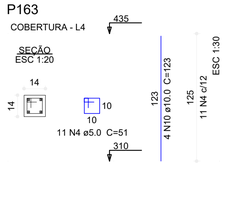
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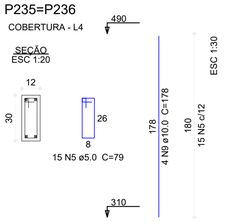
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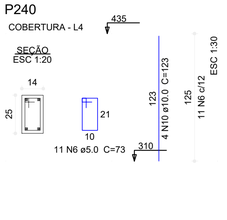
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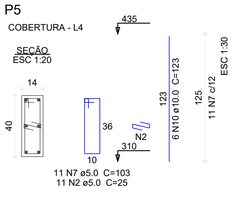
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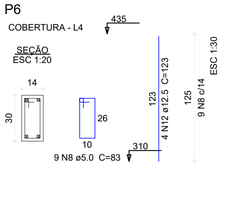
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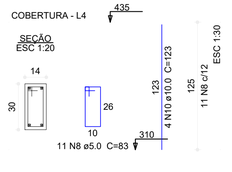
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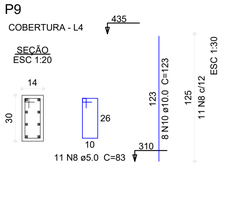
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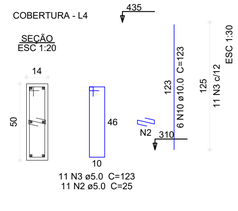
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P9



P8=P12=P13=P14=P16=P64=P65= =P105=P106=P154=P155=P156= =P160=P164



P10=P63=P104=P230

P11

P21=P28=P29=P36=P37=P44=P45= =P52=P120=P127=P128=P134= =P138=P145=P146=P150

P61=P66=P102=P108

P62=P78=P90=P101=P103

AÇO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
CA60	1	5.0	15	97	1455
	2	5.0	520	25	13000
	3	5.0	428	123	52644
	4	5.0	22	51	1122
	5	5.0	30	79	2370
	6	5.0	11	73	803
	7	5.0	11	103	1133
	8	5.0	271	83	22493
CA50	9	10.0	58	178	10324
	10	10.0	200	123	24600
	11	10.0	96	140	13440
	12	12.5	4	123	492

Resumo do aço

AÇO	DIAM (mm)	C.TOTAL (m)	PESO (kg)
CA50	10.0	483.7	298.2
	12.5	5	4.7
CA60	5.0	950.2	146.5

PESO TOTAL (kg)	
CA50	302.9
CA60	146.5

Volume de concreto (C-30) = 5.2 m³
Área de forma = 100.2 m²

NOTAS

1- Todas as medidas devem ser conferidas no local.

REVISÕES		
R00	07/02/2025	EMISSÃO INICIAL - PROJETO NÃO APROVADO
R01	20/02/2025	AJUSTE ARQUITETURA
R02	24/04/25	AJUSTE ARQUITETURA
R03	27/06/25	REVISÃO PARA ADEQUAÇÃO AS NORMAS DO CBMMG
R04	11/08/2025	REVISÃO PARA COMPATIBILIZAÇÃO DE PROJETO

Ponto S ENGENHARIA
Rua Itália, 313
Bairro Glória - Contagem -MG
comercial@pontosengenharia.com
Tel: (31) 9.9593-8131 / 9.9672-0612

CLIENTE
CENTRO DE OPORTUNIDADES DO BRASIL - COB

PROPRIETÁRIO
PREFEITURA MUNICIPAL DE IGARAPÉ

LOCAL
RUA PARAÍBA, Nº136 - BAIRRO RESPLENDOR, IGARAPÉ - MG, 32900-000

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RESPONSÁVEL TÉCNICO

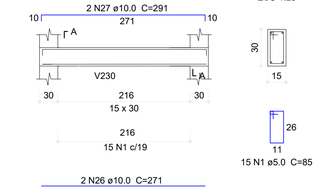
POLEANA TAMIRIS RESENDE
CREA : MG 282.137/D

DATA:	ÁREA TOTAL	LOTE/QUADRA
08/2025	1.542,86m²	XX/XX
FORMATO	ESCALA	FOLHA:
A1	IND.	6 /28

ARQUIVO: 173-2024-EST-EXEC-OS 42_EMEI RESPLENDOR_FNDE_R4-V1

V1 (15 x 30)

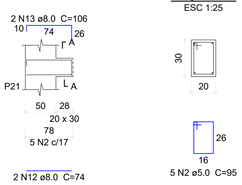
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SEÇÃO A-A
ESC 1:25

V21 (20 x 30)

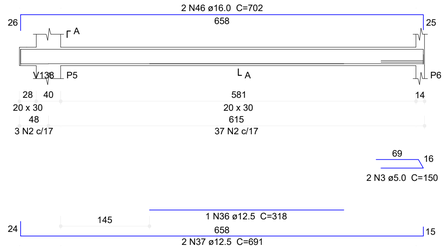
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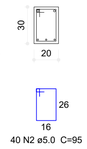
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ESC 1:25

V3 (20 x 30)

ESC 1:50

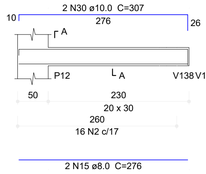


SEÇÃO A-A
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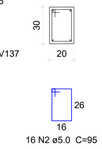


V7 (20 x 30)

ESC 1:50



SEÇÃO A-A
ESC 1:25

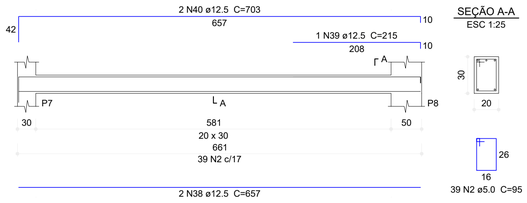


15 N1 ø5.0 C=85

AÇO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
CA60	1	5.0	15	85	1275
	2	5.0	370	95	35150
	3	5.0	2	150	300
	4	5.0	5	152	760
	5	5.0	4	104	416
	6	5.0	4	279	1116
	7	5.0	4	148	592
CA50	12	8.0	2	74	148
	13	8.0	2	106	212
	15	8.0	4	276	1104
	16	8.0	2	69	138
	17	8.0	2	59	118
	18	8.0	8	279	2232
	19	8.0	2	278	556
	20	8.0	2	275	550
	21	8.0	2	305	610
	22	8.0	4	283	1132
	23	8.0	2	279	558
	24	8.0	2	229	458
	25	8.0	2	259	518
	26	10.0	2	271	542
	27	10.0	2	291	582
	30	10.0	4	307	1228
	31	10.0	2	86	172
	32	10.0	2	309	618
	33	10.0	2	288	576
	34	10.0	2	424	848
	35	10.0	2	423	846
	36	12.5	1	318	318
	37	12.5	2	691	1382
	38	12.5	2	657	1314
	39	12.5	1	215	215
	40	12.5	2	703	1406
	41	12.5	2	721	1442
	42	12.5	3	694	2082
	43	12.5	2	717	1434
	44	12.5	2	446	892
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	46	16.0	2	702	1404
	47	16.0	2	647	1294

V4 (20 x 30)

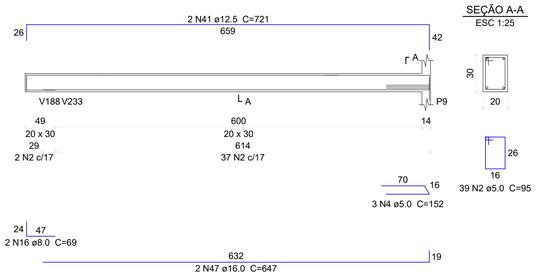
ESC 1:50



SEÇÃO A-A
ESC 1:25

V5 (20 x 30)

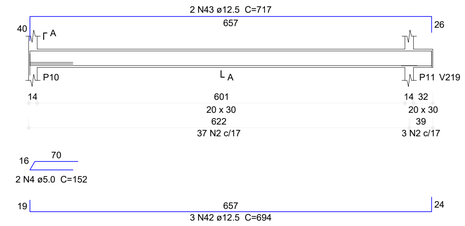
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SEÇÃO A-A
ESC 1:25

V6 (20 x 30)

ESC 1:50

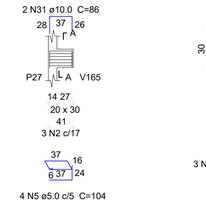


SEÇÃO A-A
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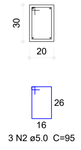


V26 (20 x 30)

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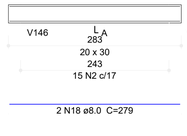


SEÇÃO A-A
ESC 1:25

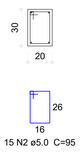


V8 (20 x 30)

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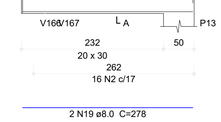


SEÇÃO A-A
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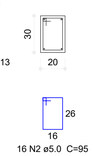


V9 (20 x 30)

ESC 1:50

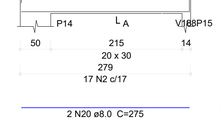


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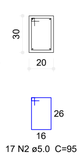


V10 (20 x 30)

ESC 1:50

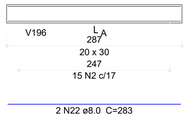


SEÇÃO A-A
ESC 1:25

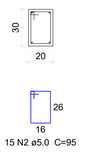


V11 (20 x 30)

ESC 1:50

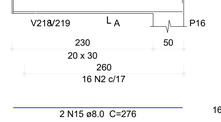


SEÇÃO A-A
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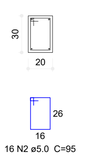


V12 (20 x 30)

ESC 1:50

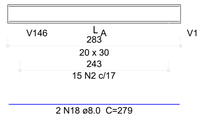


SEÇÃO A-A
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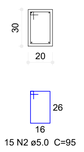


V13 (20 x 30)

ESC 1:50

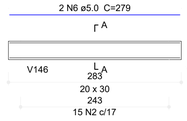


SEÇÃO A-A
ESC 1:25

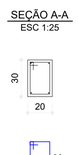


V20 (20 x 30)

ESC 1:50

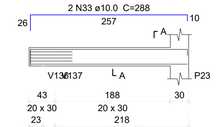


SEÇÃO A-A
ESC 1:25

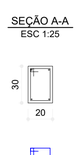


V22 (20 x 30)

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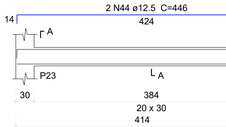


SEÇÃO A-A
ESC 1:25

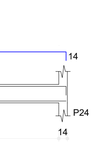


V23 (20 x 30)

ESC 1:50



SEÇÃO A-A
ESC 1:25

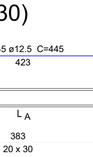


V24 (20 x 30)

ESC 1:50

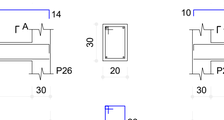


SEÇÃO A-A
ESC 1:25

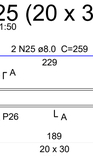


V25 (20 x 30)

ESC 1:50



SEÇÃO A-A
ESC 1:25



Resumo do aço

AÇO	DIAM (mm)	C.TOTAL (m)	PESO (kg)
CA50	8.0	84.37	33.33
	10.0	54.12	33.4
	12.5	113.8	109.6
	16.0	27	42.6
CA60	5.0	396	61

PESO TOTAL (kg)	
CA50	218.93
CA60	61

Volume de concreto (C-30) = 4.2 m³
Área de forma = 56,9 m²

NOTAS

1- Todas as medidas devem ser conferidas no local.

REVISÕES		
R00	07/02/2025	EMISSÃO INICIAL - PROJETO NÃO APROVADO
R01	20/02/2025	AJUSTE ARQUITETURA
R02	24/04/25	AJUSTE ARQUITETURA
R03	27/06/25	REVISÃO PARA ADEQUAÇÃO AS NORMAS DO CBMMG
R04	11/08/2025	REVISÃO PARA COMPATIBILIZAÇÃO DE PROJETO

Ponto S ENGENHARIA
Rua Itália, 313
Bairro Glória - Contagem -MG
comercial@pontosengenharia.com
Tel: (31) 9.9593-8131 / 9.9672-0612

ART | PROJETISTA FILEMON

RESPONSÁVEL TÉCNICO
POLEANA TAMIRIS RESENDE
CREA : MG 282.137/D

CLIENTE
CENTRO DE OPORTUNIDADES DO BRASIL - COB

PROPRIETÁRIO
PREFEITURA MUNICIPAL DE IGARAPÉ

LOCAL
RUA PARAÍBA, Nº136 - BAIRRO RESPLENDOR, IGARAPÉ - MG, 32900-000

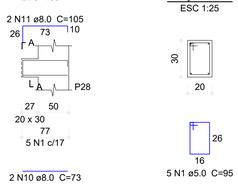
TIPO/ESPECIFICAÇÃO DO DOCUMENTO
PROJETO ESTRUTURAL - DETALHAMENTO DE VIGAS DA FUNDAÇÃO
CONSTRUÇÃO DE ESCOLA MUNICIPAL DE EDUCAÇÃO INFANTIL - EMEI

DATA: 08/2025 | ÁREA TOTAL 1.542,86m² | LOTE/QUADRA XX/XX

FORMATO A1 | ESCALA IND. | FOLHA: 7 /28

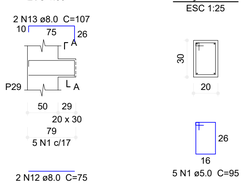
ARQUIVO: 173-2024-EST-EXEC-OS 42_EMEI RESPLENDOR_FNDE_R4-V1

V27 (20 x 30)
ESC 1:50



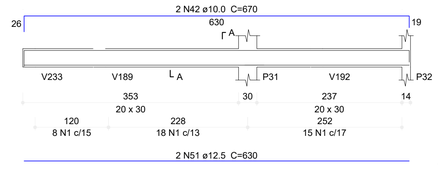
SEÇÃO A-A
ESC 1:25

V28 (20 x 30)
ESC 1:50

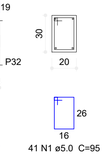


SEÇÃO A-A
ESC 1:25

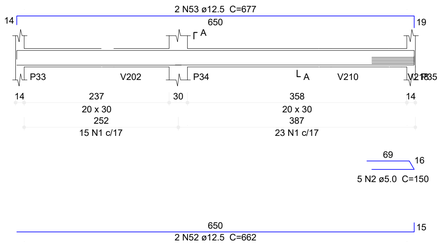
V29 (20 x 30)
ESC 1:50



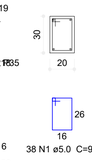
SEÇÃO A-A
ESC 1:25



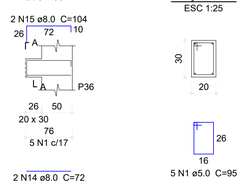
V30 (20 x 30)
ESC 1:50



SEÇÃO A-A
ESC 1:25

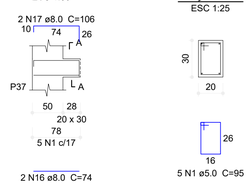


V31 (20 x 30)
ESC 1:50



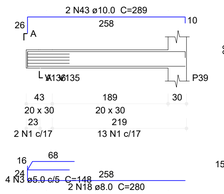
SEÇÃO A-A
ESC 1:25

V32 (20 x 30)
ESC 1:50

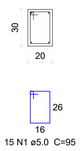


SEÇÃO A-A
ESC 1:25

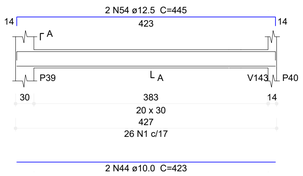
V33 (20 x 30)
ESC 1:50



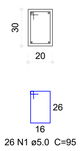
SEÇÃO A-A
ESC 1:25



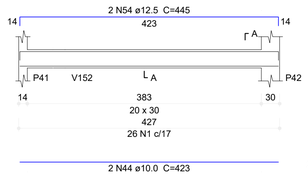
V34 (20 x 30)
ESC 1:50



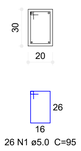
SEÇÃO A-A
ESC 1:25



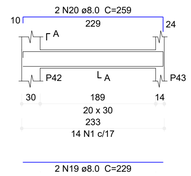
V35 (20 x 30)
ESC 1:50



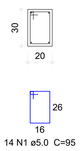
SEÇÃO A-A
ESC 1:25



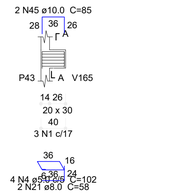
V36 (20 x 30)
ESC 1:50



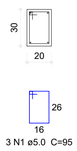
SEÇÃO A-A
ESC 1:25



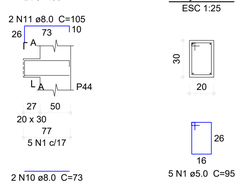
V37 (20 x 30)
ESC 1:50



SEÇÃO A-A
ESC 1:25

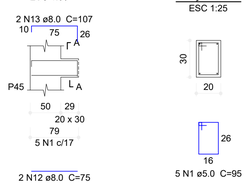


V38 (20 x 30)
ESC 1:50



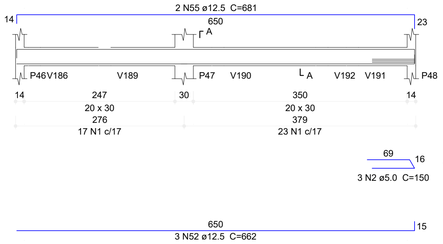
SEÇÃO A-A
ESC 1:25

V39 (20 x 30)
ESC 1:50

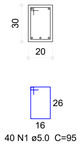


SEÇÃO A-A
ESC 1:25

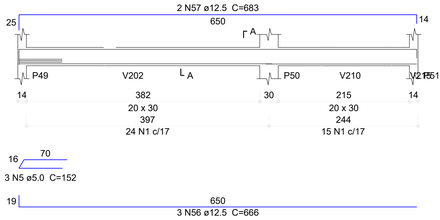
V40 (20 x 30)
ESC 1:50



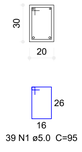
SEÇÃO A-A
ESC 1:25



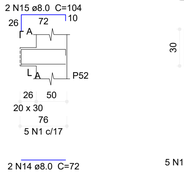
V41 (20 x 30)
ESC 1:50



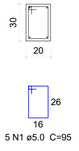
SEÇÃO A-A
ESC 1:25



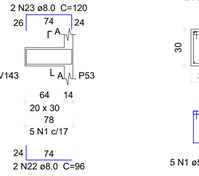
V42 (20 x 30)
ESC 1:50



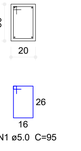
SEÇÃO A-A
ESC 1:25



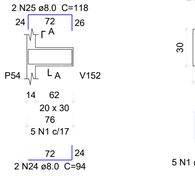
V43 (20 x 30)
ESC 1:50



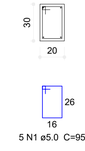
SEÇÃO A-A
ESC 1:25



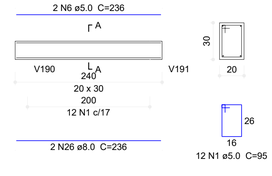
V44 (20 x 30)
ESC 1:50



SEÇÃO A-A
ESC 1:25

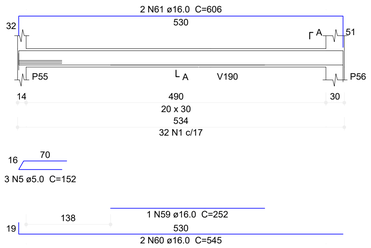


V45 (20 x 30)
ESC 1:50

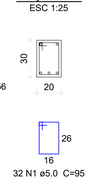


SEÇÃO A-A
ESC 1:25

V46 (20 x 30)
ESC 1:50



SEÇÃO A-A
ESC 1:25



V47 (20 x 30)
ESC 1:50

SEÇÃO A-A
ESC 1:25

V48 (20 x 30)
ESC 1:50

SEÇÃO A-A
ESC 1:25

V49 (20 x 30)
ESC 1:50

SEÇÃO A-A
ESC 1:25

V50 (20 x 30)
ESC 1:50

SEÇÃO A-A
ESC 1:25

V51 (20 x 30)
ESC 1:50

SEÇÃO A-A
ESC 1:25

V52 (20 x 30)
ESC 1:50

SEÇÃO A-A
ESC 1:25

V53 (15 x 30)
ESC 1:50

SEÇÃO A-A
ESC 1:25

V54 (20 x 30)
ESC 1:50

SEÇÃO A-A
ESC 1:25

V58 (20 x 30)
ESC 1:50

SEÇÃO A-A
ESC 1:25

V55 (20 x 30)
ESC 1:50

SEÇÃO A-A
ESC 1:25

V56 (20 x 30)
ESC 1:50

SEÇÃO A-A
ESC 1:25

V57 (20 x 30)
ESC 1:50

SEÇÃO A-A
ESC 1:25

V59 (12 x 30)
ESC 1:50

SEÇÃO A-A
ESC 1:25

AÇO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
CA60	1	5.0	603	95	57285
	2	5.0	10	150	1500
	3	5.0	8	148	1184
	4	5.0	4	102	408
	5	5.0	6	152	912
	6	5.0	4	236	944
	7	5.0	3	85	255
	8	5.0	2	100	200
	9	5.0	8	79	632
CA50	10	8.0	4	73	292
	11	8.0	4	105	420
	12	8.0	4	75	300
	13	8.0	4	107	428
	14	8.0	4	72	288
	15	8.0	4	104	416
	16	8.0	2	74	148
	17	8.0	2	106	212
	18	8.0	2	280	560
	19	8.0	2	229	458
	20	8.0	2	259	518
	21	8.0	4	58	232
	22	8.0	2	96	192
	23	8.0	2	120	240
	24	8.0	2	94	188
	25	8.0	2	118	236
	26	8.0	4	236	944
	27	8.0	2	669	1338
	28	8.0	2	274	548
	29	8.0	2	304	608
	30	8.0	2	271	542
	31	8.0	2	301	602
	32	8.0	4	276	1104
	33	8.0	4	308	1232
	34	8.0	2	92	184
	35	8.0	2	116	232
	36	8.0	2	632	1264
	37	8.0	2	678	1356
	38	8.0	2	82	164
	39	8.0	2	671	1342
	40	8.0	2	199	398
	41	8.0	2	231	462
	42	10.0	2	670	1340
	43	10.0	2	289	578
	44	10.0	4	423	1692
	45	10.0	2	85	170
	46	10.0	2	625	1250
	47	10.0	2	689	1378
	48	10.0	2	672	1344
	49	10.0	2	651	1302
	50	10.0	2	665	1330
	51	12.5	2	630	1260
	52	12.5	5	662	3310
	53	12.5	2	677	1354
	54	12.5	4	445	1780
	55	12.5	2	681	1362
	56	12.5	3	666	1998
	57	12.5	2	683	1366
	58	12.5	2	660	1320
	59	16.0	1	252	252
	60	16.0	2	545	1090
	61	16.0	2	606	1212

Resumo do aço

AÇO	DIAM (mm)	C.TOTAL (m)	PESO (kg)
CA50	8.0	174.5	68.8
	10.0	103.9	64
	12.5	137.5	132.5
	16.0	25.6	40.3
CA60	5.0	633.2	97.6
PESO TOTAL (kg)			
CA50	305.6		
CA60	97.6		

Volume de concreto (C-30) = 5.91 m³
Área de forma = 79.74 m²

NOTAS

1- Todas as medidas devem ser conferidas no local.

REVISÕES		
R00	07/02/2025	EMISSÃO INICIAL - PROJETO NÃO APROVADO
R01	20/02/2025	AJUSTE ARQUITETURA
R02	24/04/25	AJUSTE ARQUITETURA
R03	27/06/25	REVISÃO PARA ADEQUAÇÃO AS NORMAS DO CBMMG
R04	11/08/2025	REVISÃO PARA COMPATIBILIZAÇÃO DE PROJETO

Ponto S ENGENHARIA
Rua Itália, 313
Bairro Glória - Contagem -MG
comercial@pontosengenharia.com
Tel: (31) 9.9593-8131 / 9.9672-0612

CLIENTE
CENTRO DE OPORTUNIDADES DO BRASIL - COB

PROPRIETÁRIO
PREFEITURA MUNICIPAL DE IGARAPÉ

LOCAL
RUA PARAÍBA, Nº136 - BAIRRO RESPLENDOR, IGARAPÉ - MG, 32900-000

ART | PROJETISTA
FILEMON

TIPO/ESPECIFICAÇÃO DO DOCUMENTO
PROJETO ESTRUTURAL - DETALHAMENTO DE VIGAS DA FUNDAÇÃO

RESPONSÁVEL TÉCNICO
POLEANA TAMIRIS RESENDE
CREA : MG 282.137/D

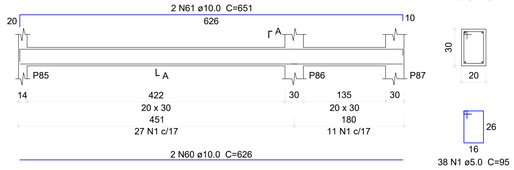
CONSTRUÇÃO DE ESCOLA MUNICIPAL DE EDUCAÇÃO INFANTIL - EMEI

DATA: 08/2025 | ÁREA TOTAL 1.542,86m² | LOTE/QUADRA XX/XX

FORMATO A1 | ESCALA IND. | FOLHA: 8 /28

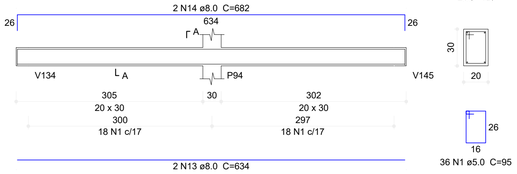
ARQUIVO: 173-2024-EST-EXEC-OS 42_EMEI RESPLENDOR_FNDE_R4-V1

V60 (20 x 30)
ESC 1:50



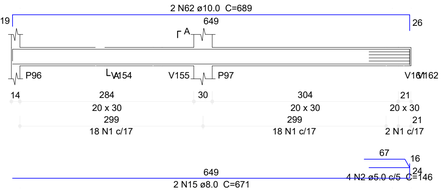
SEÇÃO A-A
ESC 1:25

V61 (20 x 30)
ESC 1:50

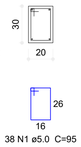


SEÇÃO A-A
ESC 1:25

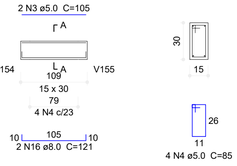
V62 (20 x 30)
ESC 1:50



SEÇÃO A-A
ESC 1:25

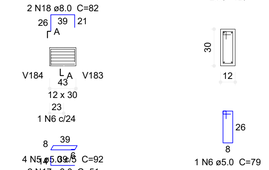


V63 (15 x 30)
ESC 1:50



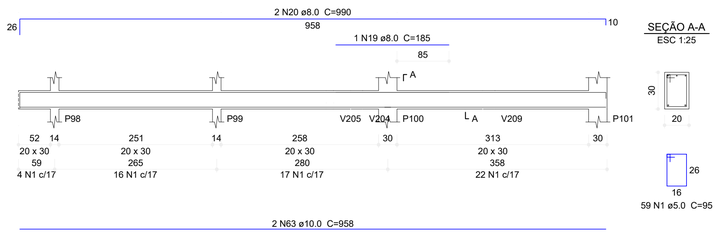
SEÇÃO A-A
ESC 1:25

V64 (12 x 30)
ESC 1:50



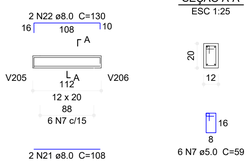
SEÇÃO A-A
ESC 1:25

V65 (20 x 30)
ESC 1:50



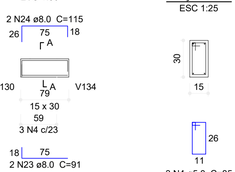
SEÇÃO A-A
ESC 1:25

V66 (12 x 20)
ESC 1:50



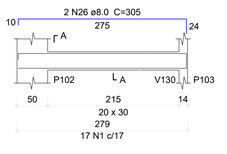
SEÇÃO A-A
ESC 1:25

V67 (15 x 30)
ESC 1:50

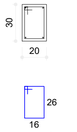


SEÇÃO A-A
ESC 1:25

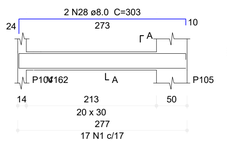
V68 (20 x 30)
ESC 1:50



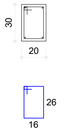
SEÇÃO A-A
ESC 1:25



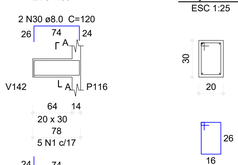
V69 (20 x 30)
ESC 1:50



SEÇÃO A-A
ESC 1:25

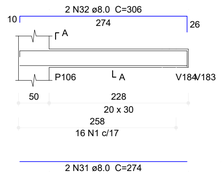


V75 (20 x 30)
ESC 1:50

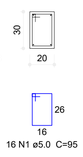


SEÇÃO A-A
ESC 1:25

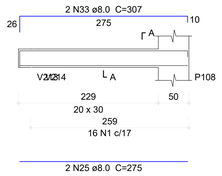
V70 (20 x 30)
ESC 1:50



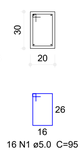
SEÇÃO A-A
ESC 1:25



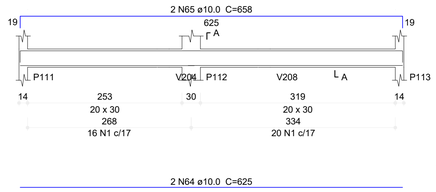
V71 (20 x 30)
ESC 1:50



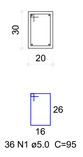
SEÇÃO A-A
ESC 1:25



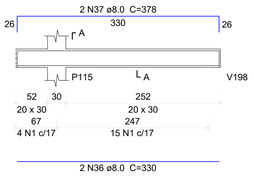
V73 (20 x 30)
ESC 1:50



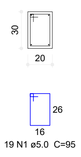
SEÇÃO A-A
ESC 1:25



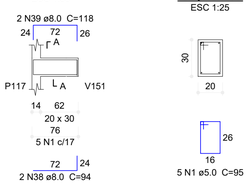
V74 (20 x 30)
ESC 1:50



SEÇÃO A-A
ESC 1:25

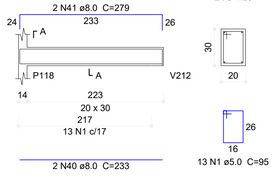


V76 (20 x 30)
ESC 1:50



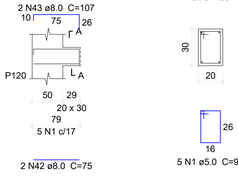
SEÇÃO A-A
ESC 1:25

V77 (20 x 30)
ESC 1:50



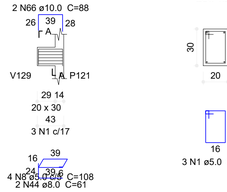
SEÇÃO A-A
ESC 1:25

V78 (20 x 30)
ESC 1:50



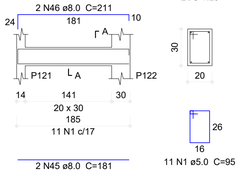
SEÇÃO A-A
ESC 1:25

V79 (20 x 30)
ESC 1:50



SEÇÃO A-A
ESC 1:25

V80 (20 x 30)
ESC 1:50



SEÇÃO A-A
ESC 1:25

V81 (20 x 30)
ESC 1:50

SEÇÃO A-A
ESC 1:25

V83 (20 x 30)
ESC 1:50

SEÇÃO A-A
ESC 1:25

V84 (20 x 30)
ESC 1:50

SEÇÃO A-A
ESC 1:25

V82 (20 x 30)
ESC 1:50

SEÇÃO A-A
ESC 1:25

V85 (20 x 30)
ESC 1:50

SEÇÃO A-A
ESC 1:25

V86 (20 x 30)
ESC 1:50

SEÇÃO A-A
ESC 1:25

V87 (20 x 30)
ESC 1:50

SEÇÃO A-A
ESC 1:25

V88 (20 x 30)
ESC 1:50

SEÇÃO A-A
ESC 1:25

V89 (20 x 30)
ESC 1:50

SEÇÃO A-A
ESC 1:25

V90 (20 x 30)
ESC 1:50

SEÇÃO A-A
ESC 1:25

V91 (20 x 30)
ESC 1:50

SEÇÃO A-A
ESC 1:25

AÇO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
CA60	1	5.0	580	95	55100
	2	5.0	4	146	584
	3	5.0	2	105	210
	4	5.0	7	85	595
	5	5.0	4	92	368
	6	5.0	1	79	79
	7	5.0	6	59	354
	8	5.0	4	108	432
	9	5.0	4	158	632
	10	5.0	2	150	300
	11	5.0	2	153	306
	12	5.0	4	154	616
CA50	13	8.0	2	634	1268
	14	8.0	2	682	1364
	15	8.0	2	671	1342
	16	8.0	2	121	242
	17	8.0	2	51	102
	18	8.0	2	82	164
	19	8.0	1	185	185
	20	8.0	2	990	1980
	21	8.0	2	108	216
	22	8.0	2	130	260
	23	8.0	2	91	182
	24	8.0	2	115	230
	25	8.0	4	275	1100
	26	8.0	2	305	610
	27	8.0	2	273	546
	28	8.0	2	303	606
	29	8.0	2	96	192
	30	8.0	2	120	240
	31	8.0	2	274	548
	32	8.0	2	306	612
	33	8.0	2	307	614
	36	8.0	2	330	660
	37	8.0	2	378	756
	38	8.0	2	94	188
	39	8.0	2	118	236
	40	8.0	2	233	466
	41	8.0	2	279	558
	42	8.0	6	75	450
	43	8.0	6	107	642
	44	8.0	2	61	122
	45	8.0	2	181	362
	46	8.0	2	211	422
	47	8.0	2	471	942
	48	8.0	2	503	1006
	49	8.0	2	74	148
	50	8.0	2	106	212
	51	8.0	2	679	1358
	52	8.0	1	147	147
	53	8.0	2	705	1410
	54	8.0	1	460	460
	55	8.0	2	993	1986
	56	8.0	2	73	146
	57	8.0	2	105	210
	58	8.0	2	150	300
	59	8.0	2	153	306
	60	10.0	2	626	1252
	61	10.0	2	651	1302
	62	10.0	2	689	1378
	63	10.0	2	958	1916
	64	10.0	2	625	1250
	65	10.0	2	658	1316
	66	10.0	2	88	176
	67	10.0	2	945	1890
	68	10.0	2	694	1388
	69	12.5	2	893	1786
	70	12.5	2	927	1854
	71	12.5	2	675	1350

Resumo do aço

AÇO	DIAM (mm)	C.TOTAL (m)	PESO (kg)
CA50	8.0	261.04	103.11
	10.0	118.7	73.2
	12.5	49.9	48.1
CA60	5.0	595.8	91.75

PESO TOTAL (kg)	
CA50	224.41
CA60	91.75

Volume de concreto (C-30) = 5.8 m³
Área de forma = 78.3 m²

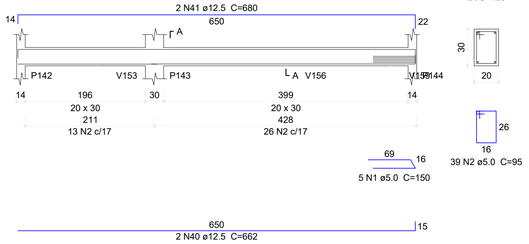
NOTAS
1- Todas as medidas devem ser conferidas no local.

REVISÕES		
R00	07/02/2025	EMISSÃO INICIAL - PROJETO NÃO APROVADO
R01	20/02/2025	AJUSTE ARQUITETURA
R02	24/04/25	AJUSTE ARQUITETURA
R03	27/06/25	REVISÃO PARA ADEQUAÇÃO AS NORMAS DO CBMMG
R04	11/08/2025	REVISÃO PARA COMPATIBILIZAÇÃO DE PROJETO

Ponto S ENGENHARIA
Rua Itália, 313
Bairro Glória - Contagem /MG
comercial@pontosengenharia.com
Tel: (31) 9.9593-8131 / 9.9672-0612

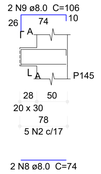
CLIENTE	CENTRO DE OPORTUNIDADES DO BRASIL - COB
PROPRIETÁRIO	PREFEITURA MUNICIPAL DE IGARAPÉ
LOCAL	RUA PARAÍBA, Nº136 - BAIRRO RESPLENDOR, IGARAPÉ - MG, 32900-000
ART / PROJETISTA	FILEMON
TIPO/ESPECIFICAÇÃO DO DOCUMENTO	PROJETO ESTRUTURAL - DETALHAMENTO DE VIGAS DA FUNDAÇÃO
	CONSTRUÇÃO DE ESCOLA MUNICIPAL DE EDUCAÇÃO INFANTIL - EMEI
RESPONSÁVEL TÉCNICO	POLEANA TAMIRIS RESENDE CREA : MG 282.137/D
DATA: 08/2025	ÁREA TOTAL 1.542,86m²
LOTE/QUADRA XX/XX	
FORMATO A1	ESCALA IND.
FOLHA: 9 /28	
ARQUIVO: 173-2024-EST-EXEC-OS 42_EMEI RESPLENDOR_FNDE_R4-V1	

V92 (20 x 30)
ESC 1:50

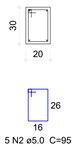


SEÇÃO A-A
ESC 1:25

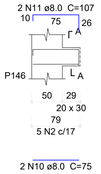
V93 (20 x 30)
ESC 1:50



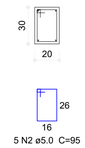
SEÇÃO A-A
ESC 1:25



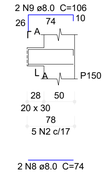
V94 (20 x 30)
ESC 1:50



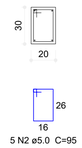
SEÇÃO A-A
ESC 1:25



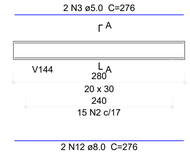
V95 (20 x 30)
ESC 1:50



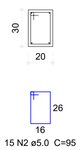
SEÇÃO A-A
ESC 1:25



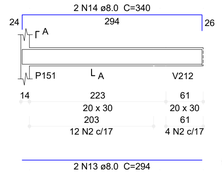
V96 (20 x 30)
ESC 1:50



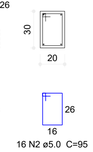
SEÇÃO A-A
ESC 1:25



V97 (20 x 30)
ESC 1:50



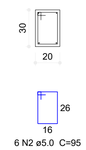
SEÇÃO A-A
ESC 1:25



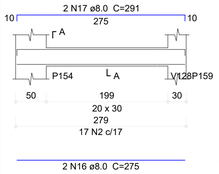
V142 (20 x 30)
ESC 1:50



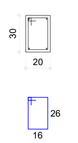
SEÇÃO A-A
ESC 1:25



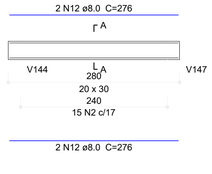
V98 (20 x 30)
ESC 1:50



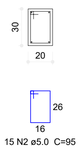
SEÇÃO A-A
ESC 1:25



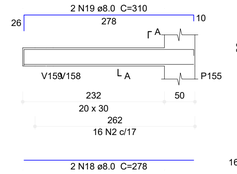
V99 (20 x 30)
ESC 1:50



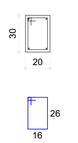
SEÇÃO A-A
ESC 1:25



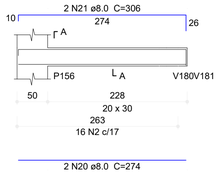
V100 (20 x 30)
ESC 1:50



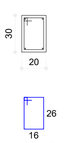
SEÇÃO A-A
ESC 1:25



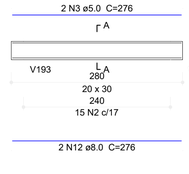
V101 (20 x 30)
ESC 1:50



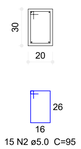
SEÇÃO A-A
ESC 1:25



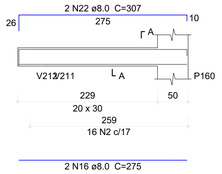
V102 (20 x 30)
ESC 1:50



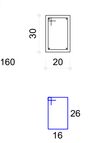
SEÇÃO A-A
ESC 1:25



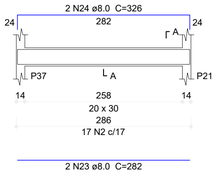
V103 (20 x 30)
ESC 1:50



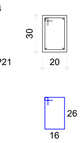
SEÇÃO A-A
ESC 1:25



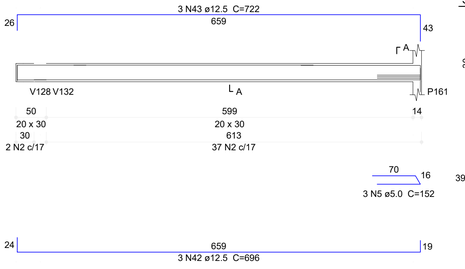
V126 (20 x 30)
ESC 1:50



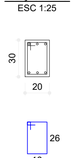
SEÇÃO A-A
ESC 1:25



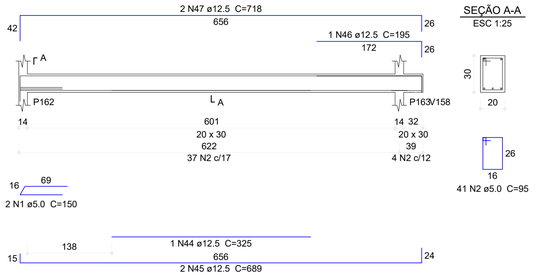
V104 (20 x 30)
ESC 1:50



SEÇÃO A-A
ESC 1:25

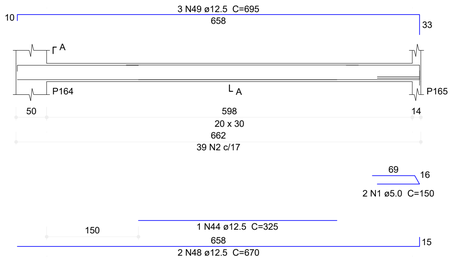


V105 (20 x 30)
ESC 1:50

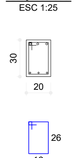


SEÇÃO A-A
ESC 1:25

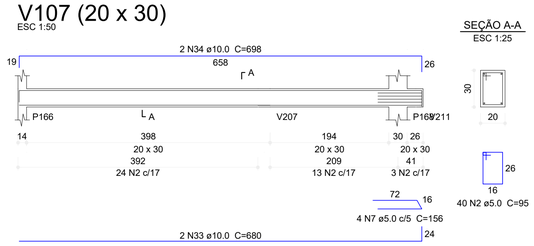
V106 (20 x 30)
ESC 1:50



SEÇÃO A-A
ESC 1:25

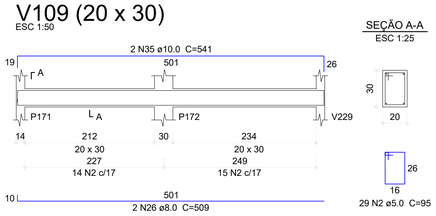


V107 (20 x 30)
ESC 1:50



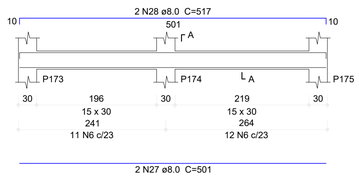
SEÇÃO A-A
ESC 1:25

V109 (20 x 30)
ESC 1:50

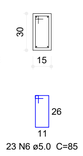


SEÇÃO A-A
ESC 1:25

V116 (15 x 30)
ESC 1:50



SEÇÃO A-A
ESC 1:25



AÇO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
CA60	1	5.0	9	150	1350
	2	5.0	391	95	37145
	3	5.0	4	276	1104
	4	5.0	2	136	272
	5	5.0	3	152	456
	6	5.0	23	85	1955
	7	5.0	4	156	624
CA50	8	8.0	4	74	296
	9	8.0	4	106	424
	10	8.0	2	75	150
	11	8.0	2	107	214
	12	8.0	8	276	2208
	13	8.0	2	294	588
	14	8.0	2	340	680
	15	8.0	2	136	272
	16	8.0	4	275	1100
	17	8.0	2	291	582
	18	8.0	2	278	556
	19	8.0	2	310	620
	20	8.0	2	274	548
	21	8.0	2	306	612
	22	8.0	2	307	614
	23	8.0	2	282	564
	24	8.0	2	326	652
	26	8.0	2	509	1018
	27	8.0	2	501	1002
	28	8.0	2	517	1034
	33	10.0	2	680	1360
	34	10.0	2	698	1396
	35	10.0	2	541	1082
	40	12.5	2	662	1324
	41	12.5	2	680	1360
	42	12.5	3	696	2088
	43	12.5	3	722	2166
	44	12.5	2	325	650
	45	12.5	2	689	1378
	46	12.5	1	195	195
	47	12.5	2	718	1436
	48	12.5	2	670	1340
	49	12.5	3	695	2085

Resumo do aço

AÇO	DIAM (mm)	C.TOTAL (m)	PESO (kg)
CA50	8.0	137.34	54.24
	10.0	38.38	23.68
	12.5	140.2	135
CA60	5.0	429.15	66.09
PESO TOTAL (kg)			
CA50	212.92		
CA60	66.09		

Volume de concreto (C-30) = 4.4 m³
Área de forma = 60.7 m²

NOTAS
1- Todas as medidas devem ser conferidas no local.

REVISÕES		
R00	07/02/2025	EMISSÃO INICIAL - PROJETO NÃO APROVADO
R01	20/02/2025	AJUSTE ARQUITETURA
R02	24/04/25	AJUSTE ARQUITETURA
R03	27/06/25	REVISÃO PARA ADEQUAÇÃO AS NORMAS DO CBMMG
R04	11/08/2025	REVISÃO PARA COMPATIBILIZAÇÃO DE PROJETO

Ponto S ENGENHARIA
Rua Itália, 313
Bairro Glória - Contagem -MG
comercial@pontosengenharia.com
Tel: (31) 9.9593-8131 / 9.9672-0612

ART
PROJETISTA
FILEMON

RESPONSÁVEL TÉCNICO
POLEANA TAMIRIS RESENDE
CREA : MG 282.137/D

CLIENTE
CENTRO DE OPORTUNIDADES DO BRASIL - COB

PROPRIETÁRIO
PREFEITURA MUNICIPAL DE IGARAPÉ

LOCAL
RUA PARAÍBA, Nº136 - BAIRRO RESPLENDOR, IGARAPÉ - MG, 32900-000

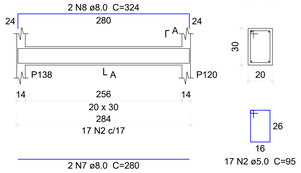
TIPO/ESPECIFICAÇÃO DO DOCUMENTO
PROJETO ESTRUTURAL - DETALHAMENTO DE VIGAS DA FUNDAÇÃO

CONSTRUÇÃO DE ESCOLA MUNICIPAL DE EDUCAÇÃO INFANTIL - EMEI

DATA:	ÁREA TOTAL	LOTE/QUADRA
08/2025	1.542,86m²	XX/XX
FORMATO: A1	ESCALA: IND.	FOLHA: 10/28

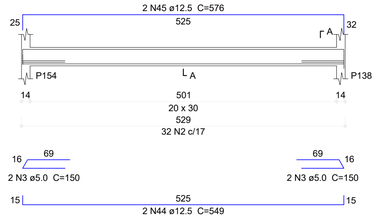
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V123 (20 x 30)
ESC 1:50

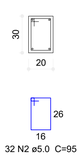


SEÇÃO A-A
ESC 1:25

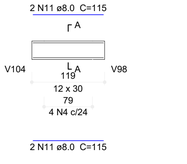
V122 (20 x 30)
ESC 1:50



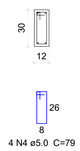
SEÇÃO A-A
ESC 1:25



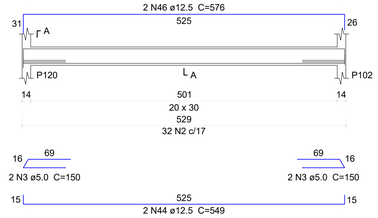
V128 (12 x 30)
ESC 1:50



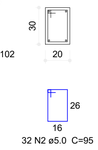
SEÇÃO A-A
ESC 1:25



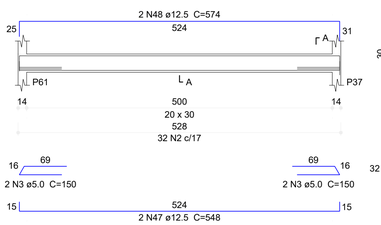
V124 (20 x 30)
ESC 1:50



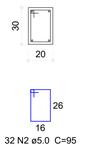
SEÇÃO A-A
ESC 1:25



V125 (20 x 30)
ESC 1:50

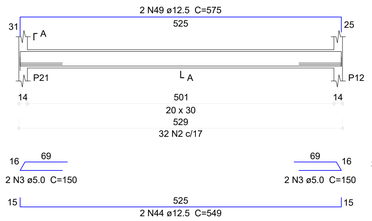


SEÇÃO A-A
ESC 1:25

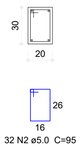


AÇO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
CA60	1	5.0	6	85	510
	2	5.0	446	95	42370
	3	5.0	16	150	2400
	4	5.0	8	79	632
	5	5.0	4	166	664
	6	5.0	2	289	578
CA50	7	8.0	2	280	560
	8	8.0	2	324	648
	11	8.0	4	115	460
	12	8.0	4	288	1152
	13	8.0	2	81	162
	14	8.0	2	105	210
	15	8.0	2	82	164
	16	8.0	2	106	212
	17	8.0	2	71	142
	18	8.0	2	116	232
	19	8.0	2	152	304
	20	8.0	2	289	578
	21	8.0	2	74	148
	22	8.0	2	334	668
	23	8.0	2	376	752
	24	8.0	2	424	848
	25	8.0	2	321	642
	33	10.0	2	288	576
	34	10.0	2	671	1342
	35	10.0	2	693	1386
	36	10.0	2	710	1420
	37	10.0	2	689	1378
	38	10.0	2	758	1516
	39	10.0	2	289	578
	44	12.5	6	549	3294
	45	12.5	2	576	1152
	46	12.5	2	576	1152
	47	12.5	2	548	1096
	48	12.5	2	574	1148
	49	12.5	2	575	1150
	50	12.5	2	539	1078
	51	12.5	2	561	1122
	52	12.5	1	323	323
	53	12.5	2	600	1200
	54	12.5	1	245	245
	55	12.5	2	684	1368
	56	20.0	2	668	1336

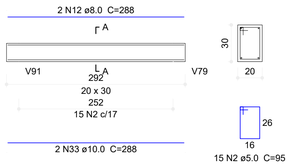
V127 (20 x 30)
ESC 1:50



SEÇÃO A-A
ESC 1:25

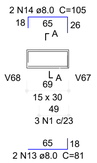


V129 (20 x 30)
ESC 1:50

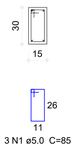


SEÇÃO A-A
ESC 1:25

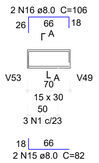
V130 (15 x 30)
ESC 1:50



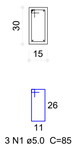
SEÇÃO A-A
ESC 1:25



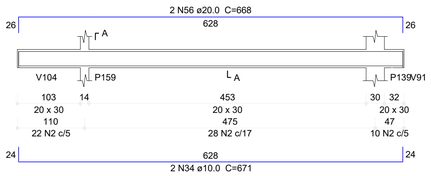
V131 (15 x 30)
ESC 1:50



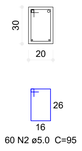
SEÇÃO A-A
ESC 1:25



V132 (20 x 30)
ESC 1:50



SEÇÃO A-A
ESC 1:25



V133 (20 x 30)
ESC 1:50

SEÇÃO A-A
ESC 1:25

V134 (20 x 30)
ESC 1:50

SEÇÃO A-A
ESC 1:25

V135 (20 x 30)
ESC 1:50

SEÇÃO A-A
ESC 1:25

V138 (12 x 30)
ESC 1:50

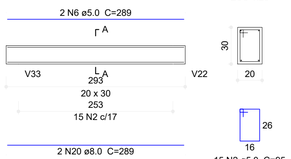
SEÇÃO A-A
ESC 1:25

Resumo do aço

AÇO	DIAM (mm)	C.TOTAL (m)	PESO (kg)
CA50	8.0	78.84	31.14
	10.0	81.96	50.57
	12.5	143.32	138.02
	20.0	13.4	32.9
CA60	5.0	471.55	72.62
PESO TOTAL (kg)			
CA50	252.63		
CA60	72.62		

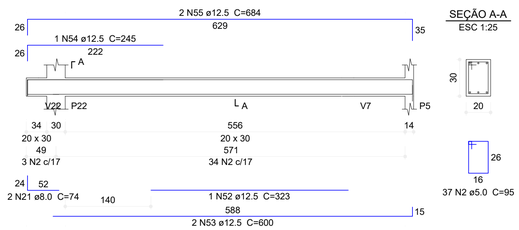
Volume de concreto (C-30) = 4.3 m³
Área de forma = 57.7 m²

V136 (20 x 30)
ESC 1:50



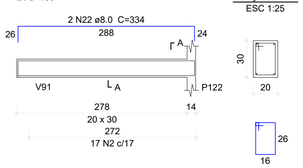
SEÇÃO A-A
ESC 1:25

V137 (20 x 30)
ESC 1:50



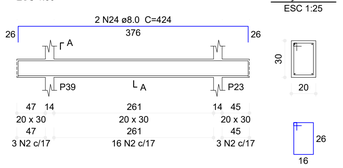
SEÇÃO A-A
ESC 1:25

V139 (20 x 30)
ESC 1:50



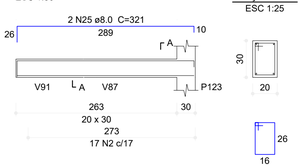
SEÇÃO A-A
ESC 1:25

V140 (20 x 30)
ESC 1:50



SEÇÃO A-A
ESC 1:25

V141 (20 x 30)
ESC 1:50



SEÇÃO A-A
ESC 1:25

NOTAS

1- Todas as medidas devem ser conferidas no local.

REVISÕES		
R00	07/02/2025	EMISSÃO INICIAL - PROJETO NÃO APROVADO
R01	20/02/2025	AJUSTE ARQUITETURA
R02	24/04/25	AJUSTE ARQUITETURA
R03	27/06/25	REVISÃO PARA ADEQUAÇÃO AS NORMAS DO CBMMG
R04	11/08/2025	REVISÃO PARA COMPATIBILIZAÇÃO DE PROJETO

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Bairro Glória - Contagem /MG
comercial@pontosengenharia.com
Tel: (31) 9.9593-8131 / 9.9672-0812

ART

PROJETISTA
FILEMON

RESPONSÁVEL TÉCNICO

POLEANA TAMIRIS RESENDE
CREA : MG 282.137/D

CLIENTE
CENTRO DE OPORTUNIDADES DO BRASIL - COB

PROPRIETÁRIO
PREFEITURA MUNICIPAL DE IGARAPÉ

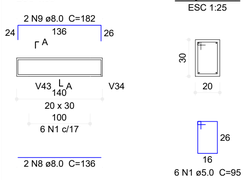
LOCAL
RUA PARAÍBA, Nº136 - BAIRRO RESPLENDOR, IGARAPÉ - MG, 32900-000

TIPO/ESPECIFICAÇÃO DO DOCUMENTO
PROJETO ESTRUTURAL - DETALHAMENTO DE VIGAS DA FUNDAÇÃO
CONSTRUÇÃO DE ESCOLA MUNICIPAL DE EDUCAÇÃO INFANTIL - EMEI

DATA:	ÁREA TOTAL	LOTE/QUADRA
08/2025	1.542,86m²	XX/XX
FORMATO: A1	ESCALA: IND.	FOLHA: 11/28

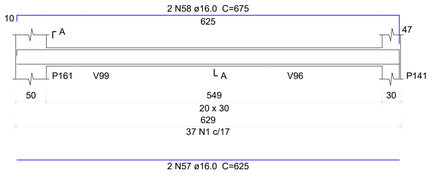
ARQUIVO: 173-2024-EST-EXEC-OS 42_EMEI RESPLENDOR_FNDE_R4-V1

V143 (20 x 30)
ESC 1:50

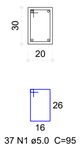


SEÇÃO A-A
ESC 1:25

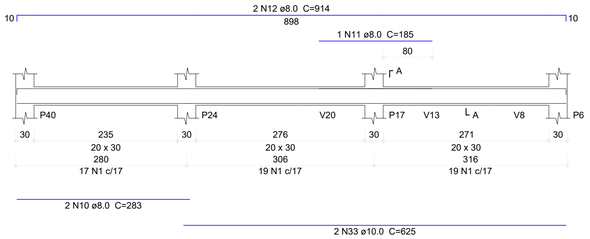
V144 (20 x 30)
ESC 1:50



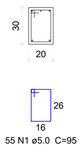
SEÇÃO A-A
ESC 1:25



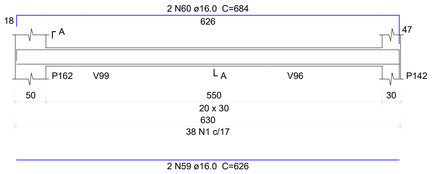
V146 (20 x 30)
ESC 1:50



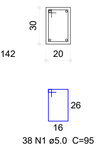
SEÇÃO A-A
ESC 1:25



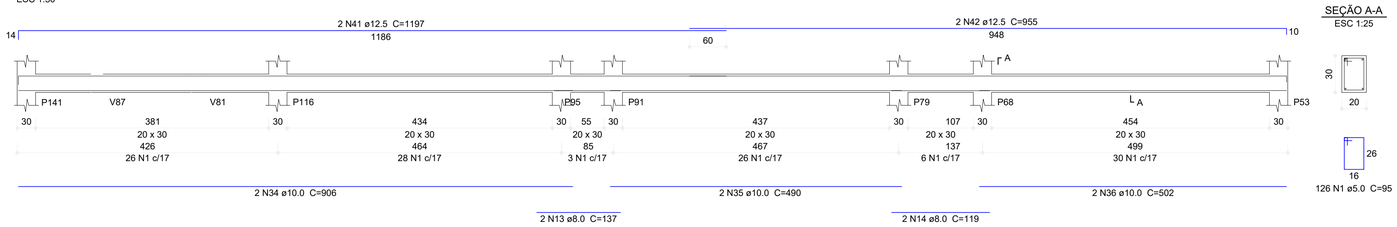
V147 (20 x 30)
ESC 1:50



SEÇÃO A-A
ESC 1:25



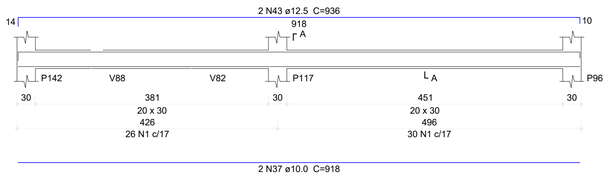
V145 (20 x 30)
ESC 1:50



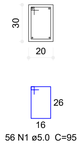
SEÇÃO A-A
ESC 1:25

Aviso 06 - Viga com apoios sobrepostos. Ajustar detalhamento de acordo com a forma.

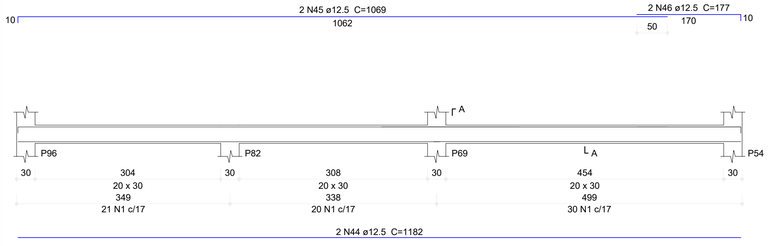
V148 (20 x 30)
ESC 1:50



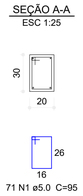
SEÇÃO A-A
ESC 1:25



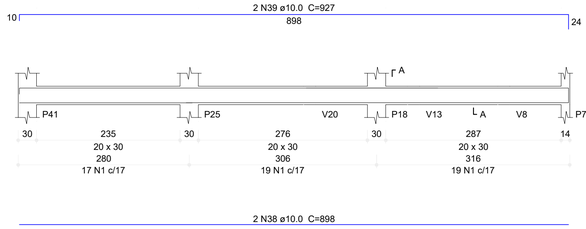
V149 (20 x 30)
ESC 1:50



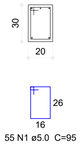
SEÇÃO A-A
ESC 1:25



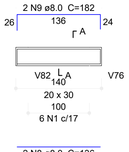
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ESC 1:50



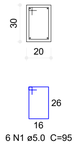
SEÇÃO A-A
ESC 1:25



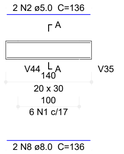
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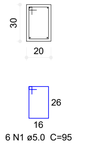
SEÇÃO A-A
ESC 1:25



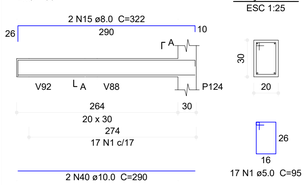
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SEÇÃO A-A
ESC 1:25

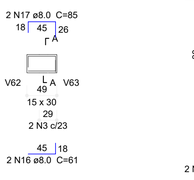


V153 (20 x 30)
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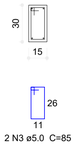


SEÇÃO A-A
ESC 1:25

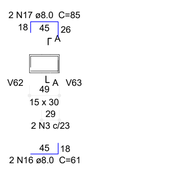
V154 (15 x 30)
ESC 1:50



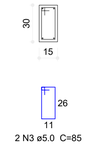
SEÇÃO A-A
ESC 1:25



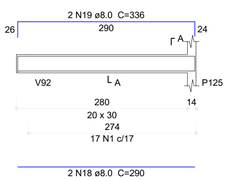
V155 (15 x 30)
ESC 1:50



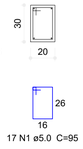
SEÇÃO A-A
ESC 1:25



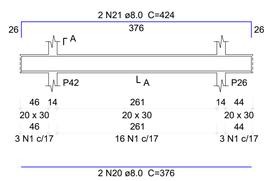
V156 (20 x 30)
ESC 1:50



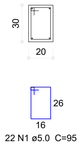
SEÇÃO A-A
ESC 1:25



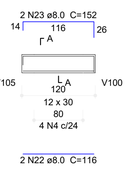
V157 (20 x 30)
ESC 1:50



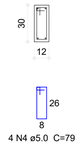
SEÇÃO A-A
ESC 1:25



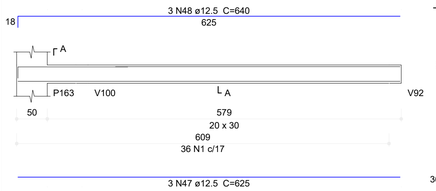
V158 (12 x 30)
ESC 1:50



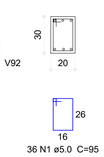
SEÇÃO A-A
ESC 1:25



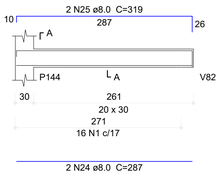
V159 (20 x 30)
ESC 1:50



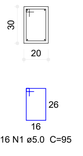
SEÇÃO A-A
ESC 1:25



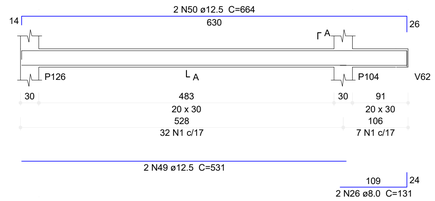
V160 (20 x 30)
ESC 1:50



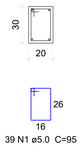
SEÇÃO A-A
ESC 1:25



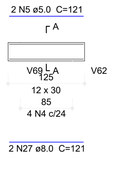
V161 (20 x 30)
ESC 1:50



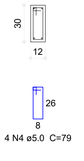
SEÇÃO A-A
ESC 1:25



V162 (12 x 30)
ESC 1:50



SEÇÃO A-A
ESC 1:25



V164 (12 x 30)
ESC 1:50

SEÇÃO A-A
ESC 1:25

V163 (20 x 30)
ESC 1:50

SEÇÃO A-A
ESC 1:25

V165 (20 x 30)
ESC 1:50

SEÇÃO A-A
ESC 1:25

V166 (20 x 30)
ESC 1:50

SEÇÃO A-A
ESC 1:25

V167 (12 x 30)
ESC 1:50

SEÇÃO A-A
ESC 1:25

V180 (12 x 30)
ESC 1:50

SEÇÃO A-A
ESC 1:25

AÇO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
CA60	1	5.0	694	95	65930
	2	5.0	2	136	272
	3	5.0	4	85	340
	4	5.0	22	79	1738
	5	5.0	4	121	484
	6	5.0	2	286	572
	7	5.0	2	150	300
CA50	8	8.0	6	136	816
	9	8.0	4	182	728
	10	8.0	2	283	566
	11	8.0	1	185	185
	12	8.0	2	914	1828
	13	8.0	2	137	274
	14	8.0	2	119	238
	15	8.0	2	322	644
	16	8.0	4	61	244
	17	8.0	4	85	340
	18	8.0	2	290	580
	19	8.0	2	336	672
	20	8.0	2	376	752
	21	8.0	2	424	848
	22	8.0	2	116	232
	23	8.0	2	152	304
	24	8.0	2	287	574
	25	8.0	2	319	638
	26	8.0	2	131	262
	27	8.0	4	121	484
	28	8.0	2	286	572
	29	8.0	2	126	252
	30	8.0	2	159	318
	31	8.0	2	127	254
	32	8.0	2	147	294
	33	10.0	2	625	1250
	34	10.0	2	906	1812
	35	10.0	2	490	980
	36	10.0	2	502	1004
	37	10.0	2	918	1836
	38	10.0	2	898	1796
	39	10.0	2	927	1854
	40	10.0	2	290	580
	41	12.5	2	1197	2394
	42	12.5	2	955	1910
	43	12.5	2	936	1872
	44	12.5	2	1182	2364
	45	12.5	2	1069	2138
	46	12.5	2	177	354
	47	12.5	3	625	1875
	48	12.5	3	640	1920
	49	12.5	2	531	1062
	50	12.5	2	664	1328
	51	12.5	2	653	1306
	52	12.5	2	666	1332
	53	12.5	1	325	325
	54	12.5	2	635	1270
	55	12.5	3	204	612
	56	12.5	2	481	962
	57	16.0	2	625	1250
	58	16.0	2	675	1350
	59	16.0	2	626	1252
	60	16.0	2	684	1368

Resumo do aço

AÇO	DIAM (mm)	C.TOTAL (m)	PESO (kg)
CA50	8.0	129	50.9
	10.0	111.2	68.5
	12.5	230.3	221.8
	16.0	52.2	82.4
CA60	5.0	696.4	107.3
PESO TOTAL (kg)			
CA50	423.6		
CA60	107.3		

Volume de concreto (C-30) = 7.02 m³
Área de forma = 95.13 m²

NOTAS
1- Todas as medidas devem ser conferidas no local.

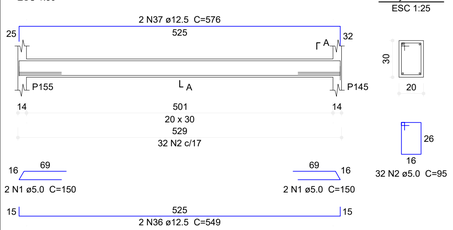
REVISÕES		
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Bairro Glória - Contagem /MG
comercial@pontosengenharia.com
Tel: (31) 9.9593-8131 / 9.9672-0612

ART	PROJETISTA FILEMON	CLIENTE: CENTRO DE OPORTUNIDADES DO BRASIL - COB	
		PROPRIETÁRIO: PREFEITURA MUNICIPAL DE IGARAPÉ	
		LOCAL: RUA PARAÍBA, Nº136 - BAIRRO RESPLENDOR, IGARAPÉ - MG, 32900-000	
RESPONSÁVEL TÉCNICO		TIPO/ESPECIFICAÇÃO DO DOCUMENTO: PROJETO ESTRUTURAL - DETALHAMENTO DE VIGAS DA FUNDAÇÃO	
		CONSTRUÇÃO DE ESCOLA MUNICIPAL DE EDUCAÇÃO INFANTIL - EMEI	
		DATA: 08/2025	ÁREA TOTAL 1.542,86m² / LOTE/QUADRA XX/XX
POLEANA TAMIRIS RESENDE CREA : MG 282.137/D		FORMATO A1	ESCALA IND. / FOLHA: 12/28

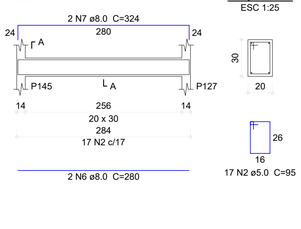
ARQUIVO: 173-2024-EST-EXEC-OS 42_EMEI RESPLENDOR_FNDE_R4-V1

V168 (20 x 30)
ESC 1:50



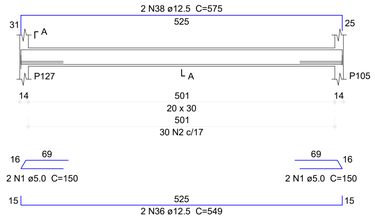
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V169 (20 x 30)
ESC 1:50



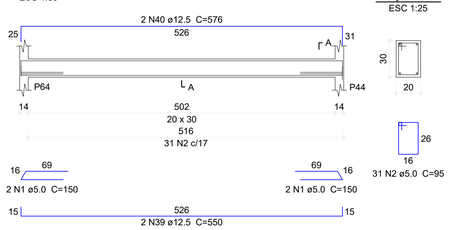
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ESC 1:25

V170 (20 x 30)
ESC 1:50



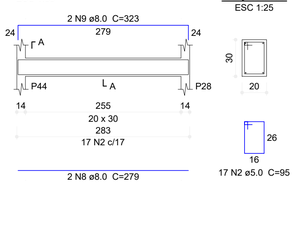
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ESC 1:25

V171 (20 x 30)
ESC 1:50



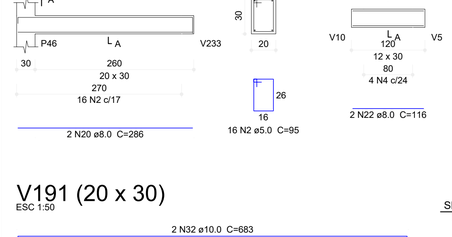
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ESC 1:25

V172 (20 x 30)
ESC 1:50



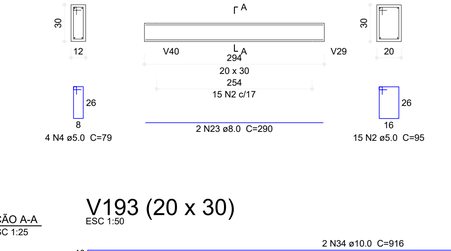
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ESC 1:25

V173 (20 x 30)
ESC 1:50



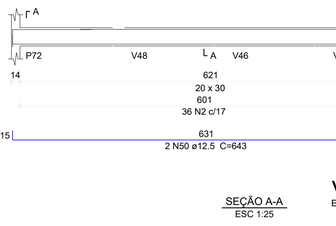
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ESC 1:25

V174 (20 x 30)
ESC 1:50



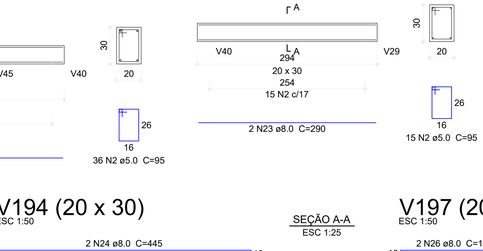
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ESC 1:25

V175 (20 x 30)
ESC 1:50



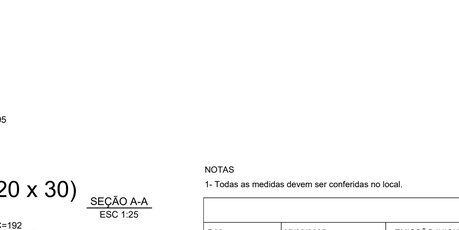
SEÇÃO A-A
ESC 1:25

V176 (20 x 30)
ESC 1:50



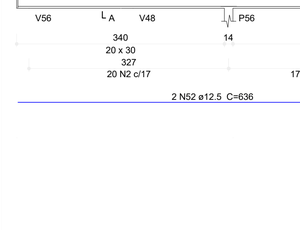
SEÇÃO A-A
ESC 1:25

V177 (20 x 30)
ESC 1:50



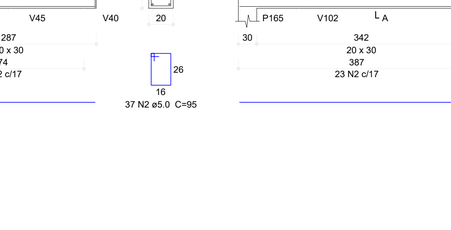
SEÇÃO A-A
ESC 1:25

V178 (20 x 30)
ESC 1:50



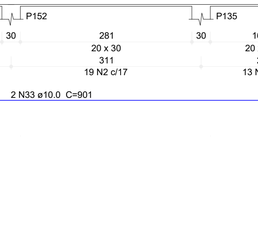
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ESC 1:25

V179 (20 x 30)
ESC 1:50



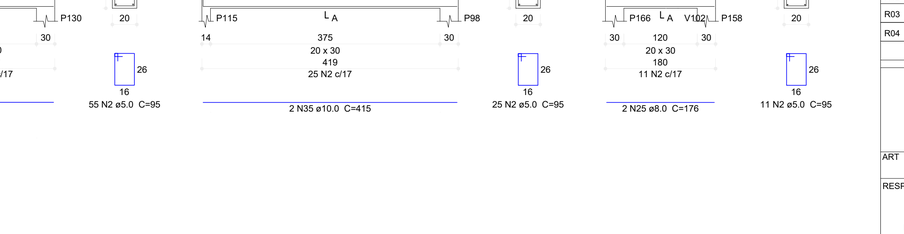
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ESC 1:25

V181 (15 x 30)
ESC 1:50



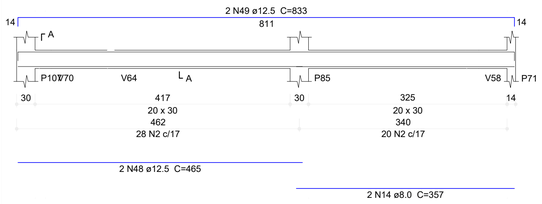
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ESC 1:25

V182 (20 x 30)
ESC 1:50



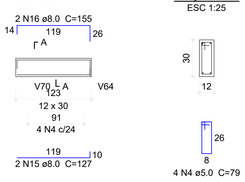
SEÇÃO A-A
ESC 1:25

V183 (20 x 30)
ESC 1:50



SEÇÃO A-A
ESC 1:25

V184 (12 x 30)
ESC 1:50



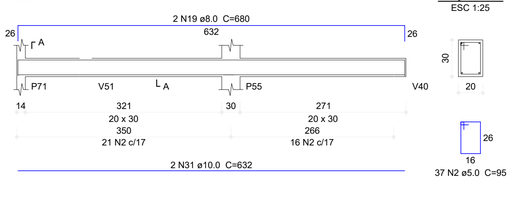
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ESC 1:25

V185 (12 x 30)
ESC 1:50



SEÇÃO A-A
ESC 1:25

V186 (20 x 30)
ESC 1:50

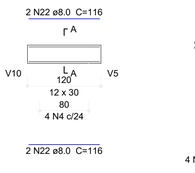


SEÇÃO A-A
ESC 1:25

V187 (20 x 30)
ESC 1:50

SEÇÃO A-A
ESC 1:25

V188 (12 x 30)
ESC 1:50



SEÇÃO A-A
ESC 1:25

V189 (20 x 30)
ESC 1:50

SEÇÃO A-A
ESC 1:25

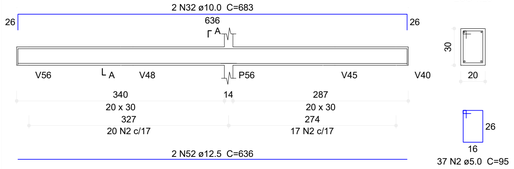
V190 (20 x 30)
ESC 1:50

SEÇÃO A-A
ESC 1:25

V192 (20 x 30)
ESC 1:50

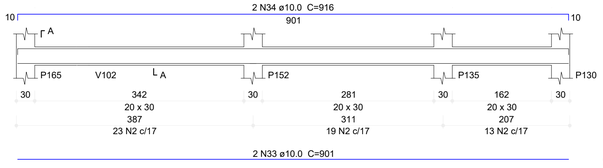
SEÇÃO A-A
ESC 1:25

V191 (20 x 30)
ESC 1:50



SEÇÃO A-A
ESC 1:25

V193 (20 x 30)
ESC 1:50



SEÇÃO A-A
ESC 1:25

V194 (20 x 30)
ESC 1:50

SEÇÃO A-A
ESC 1:25

V197 (20 x 30)
ESC 1:50

SEÇÃO A-A
ESC 1:25

AÇO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
CA60	1	5.0	32	150	4800
	2	5.0	686	95	65170
	3	5.0	7	85	595
	4	5.0	17	79	1343
	5	5.0	4	290	1160
CA50	6	8.0	2	280	560
	7	8.0	2	324	648
	8	8.0	2	279	558
	9	8.0	2	323	646
	10	8.0	4	283	1132
	11	8.0	4	327	1308
	12	8.0	2	159	318
	13	8.0	2	175	350
	14	8.0	2	357	714
	15	8.0	2	127	254
	16	8.0	2	155	310
	17	8.0	2	209	418
	18	8.0	2	233	466
	19	8.0	2	680	1360
	20	8.0	2	286	572
	21	8.0	2	318	636
	22	8.0	4	116	464
	23	8.0	4	290	1160
	24	8.0	2	445	890
	25	8.0	2	176	352
	26	8.0	2	192	384
	27	10.0	2	1153	2306
	28	10.0	2	195	390
	29	10.0	2	1200	2400
	30	10.0	2	161	322
	31	10.0	2	632	1264
	32	10.0	2	683	1366
	33	10.0	2	901	1802
	34	10.0	2	916	1832
	35	10.0	2	415	830
	36	12.5	4	549	2196
	37	12.5	2	576	1152
	38	12.5	2	575	1150
	39	12.5	2	550	1100
	40	12.5	2	576	1152
	41	12.5	2	551	1102
	42	12.5	2	578	1156
	43	12.5	6	548	3288
	44	12.5	4	575	2300
	45	12.5	2	574	1148
	46	12.5	2	546	1092
	47	12.5	2	571	1142
	48	12.5	2	465	930
	49	12.5	2	833	1666
	50	12.5	2	643	1286
	51	12.5	2	657	1314
	52	12.5	2	636	1272

Resumo do aço

AÇO	DIAM (mm)	C.TOTAL (m)	PESO (kg)
CA50	8.0	135	53.3
	10.0	125.2	77.1
	12.5	244.5	235.5
CA60	5.0	730.7	112.6
PESO TOTAL (kg)			
CA50	365.9		
CA60	112.6		

Volume de concreto (C-30) = 6.83 m³
Área de forma = 91.78 m²

NOTAS

1- Todas as medidas devem ser conferidas no local.

REVISÕES		
R00	07/02/2025	EMISSÃO INICIAL - PROJETO NÃO APROVADO
R01	20/02/2025	AJUSTE ARQUITETURA
R02	24/04/25	AJUSTE ARQUITETURA
R03	27/06/25	REVISÃO PARA ADEQUAÇÃO AS NORMAS DO CBMMG
R04	11/08/2025	REVISÃO PARA COMPATIBILIZAÇÃO DE PROJETO

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Tel: (31) 9.9593-8131 / 9.9672-0612

CLIENTE
CENTRO DE OPORTUNIDADES DO BRASIL - COB

PROPRIETÁRIO
PREFEITURA MUNICIPAL DE IGARAPÉ

LOCAL
RUA PARAÍBA, Nº136 - BAIRRO RESPLENDOR, IGARAPÉ - MG, 32900-000

ART

PROJETISTA
FILEMON

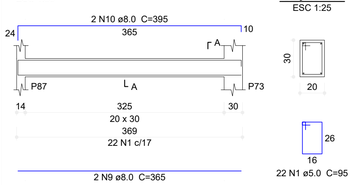
TIPO/ESPECIFICAÇÃO DO DOCUMENTO
PROJETO ESTRUTURAL - DETALHAMENTO DE VIGAS DA FUNDAÇÃO
CONSTRUÇÃO DE ESCOLA MUNICIPAL DE EDUCAÇÃO INFANTIL - EMEI

RESPONSÁVEL TÉCNICO
POLEANA TAMIRIS RESENDE
CREA : MG 282.137/D

DATA: 08/2025
ÁREA TOTAL 1.542,66m²
LOTE/QUADRA XX/XX
FORMATO A1
ESCALA IND.
FOLHA: 13/28

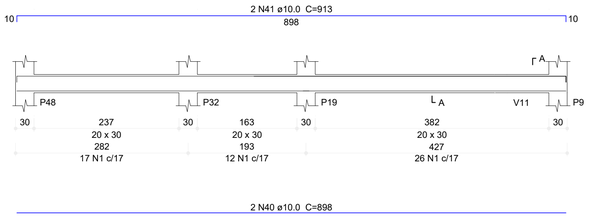
ARQUIVO: 173-2024-EST-EXEC-OS 42_EMEI RESPLENDOR_FNDE_R4-V1

V195 (20 x 30)
ESC 1:50

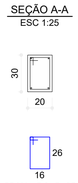


SEÇÃO A-A
ESC 1:25

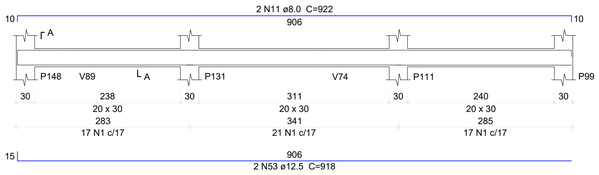
V196 (20 x 30)
ESC 1:50



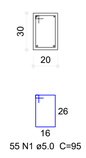
SEÇÃO A-A
ESC 1:25



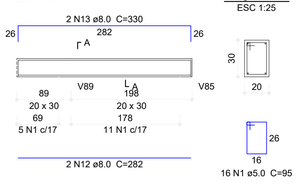
V198 (20 x 30)
ESC 1:50



SEÇÃO A-A
ESC 1:25

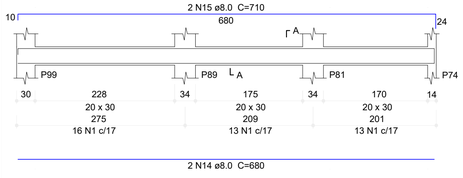


V203 (20 x 30)
ESC 1:50

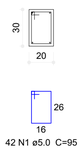


SEÇÃO A-A
ESC 1:25

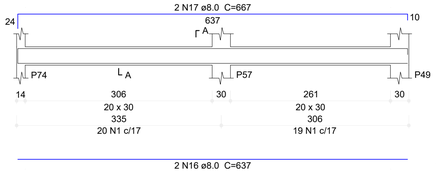
V199 (20 x 30)
ESC 1:50



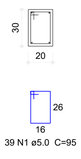
SEÇÃO A-A
ESC 1:25



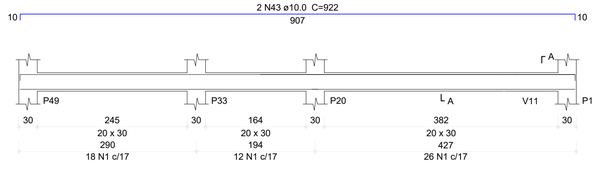
V200 (20 x 30)
ESC 1:50



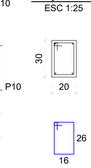
SEÇÃO A-A
ESC 1:25



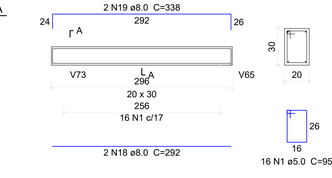
V201 (20 x 30)
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SEÇÃO A-A
ESC 1:25

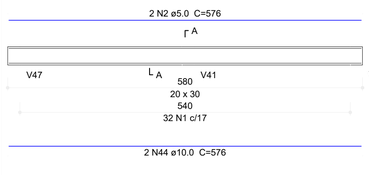


V204 (20 x 30)
ESC 1:50

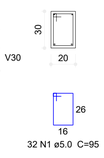


SEÇÃO A-A
ESC 1:25

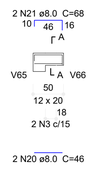
V202 (20 x 30)
ESC 1:50



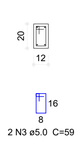
SEÇÃO A-A
ESC 1:25



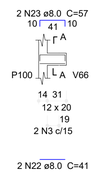
V205 (12 x 20)
ESC 1:50



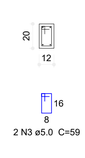
SEÇÃO A-A
ESC 1:25



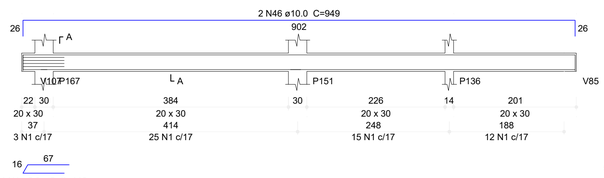
V206 (12 x 20)
ESC 1:50



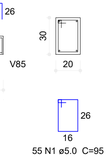
SEÇÃO A-A
ESC 1:25



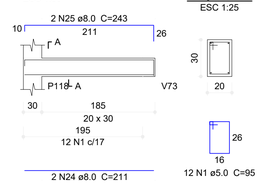
V207 (20 x 30)
ESC 1:50



SEÇÃO A-A
ESC 1:25

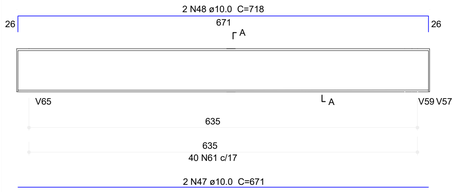


V208 (20 x 30)
ESC 1:50

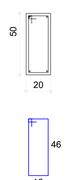


SEÇÃO A-A
ESC 1:25

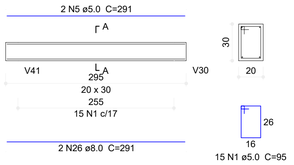
V209 (20 x 50)
ESC 1:50



SEÇÃO A-A
ESC 1:25



V210 (20 x 30)
ESC 1:50

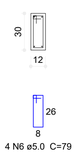


SEÇÃO A-A
ESC 1:25

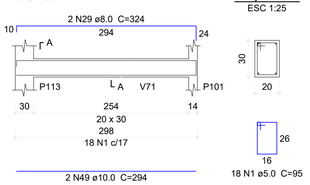
V211 (12 x 30)
ESC 1:50



SEÇÃO A-A
ESC 1:25

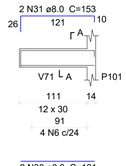


V213 (20 x 30)
ESC 1:50

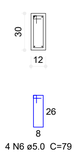


SEÇÃO A-A
ESC 1:25

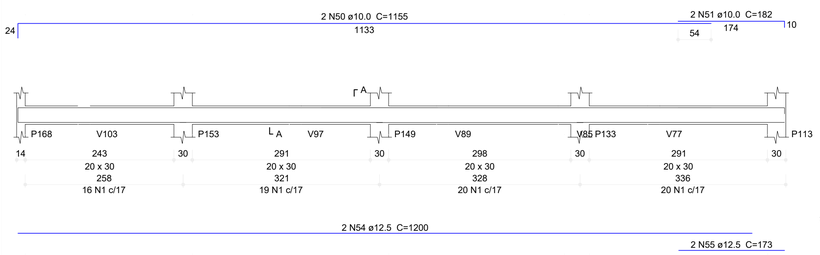
V214 (12 x 30)
ESC 1:50



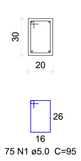
SEÇÃO A-A
ESC 1:25



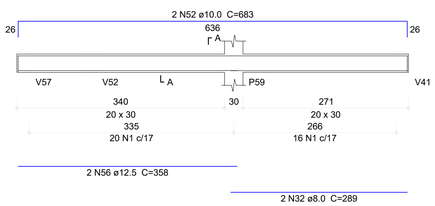
V212 (20 x 30)
ESC 1:50



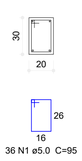
SEÇÃO A-A
ESC 1:25



V215 (20 x 30)
ESC 1:50



SEÇÃO A-A
ESC 1:25



V216 (12 x 30)
ESC 1:50

SEÇÃO A-A
ESC 1:25

V217 (20 x 30)
ESC 1:50

SEÇÃO A-A
ESC 1:25

V218 (20 x 30)
ESC 1:50

SEÇÃO A-A
ESC 1:25

V219 (12 x 30)
ESC 1:50

SEÇÃO A-A
ESC 1:25

V220 (20 x 30)
ESC 1:50

SEÇÃO A-A
ESC 1:25

V221 (20 x 30)
ESC 1:50

SEÇÃO A-A
ESC 1:25

AÇO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
CA60	1	5.0	686	95	65170
	2	5.0	2	576	1152
	3	5.0	4	59	236
	4	5.0	4	146	584
	5	5.0	2	291	582
	6	5.0	17	79	1343
	7	5.0	2	116	232
	8	5.0	4	150	600
	61	5.0	40	95	3800
CA50	9	8.0	2	365	730
	10	8.0	2	395	790
	11	8.0	2	922	1844
	12	8.0	2	282	564
	13	8.0	2	330	660
	14	8.0	2	680	1360
	15	8.0	2	710	1420
	16	8.0	2	637	1274
	17	8.0	2	667	1334
	18	8.0	2	292	584
	19	8.0	2	338	676
	20	8.0	2	46	92
	21	8.0	2	68	136
	22	8.0	2	41	82
	23	8.0	2	57	114
	24	8.0	2	211	422
	25	8.0	2	243	486
	26	8.0	2	291	582
	27	8.0	2	117	234
	28	8.0	2	153	306
	29	8.0	2	324	648
	30	8.0	2	121	242
	31	8.0	2	153	306
	32	8.0	2	289	578
	33	8.0	2	158	316
	34	8.0	2	178	356
	35	8.0	2	285	570
	36	8.0	2	301	602
	37	8.0	2	116	232
	38	8.0	2	280	560
	39	8.0	2	324	648
	40	10.0	2	898	1796
	41	10.0	2	913	1826
	42	10.0	2	907	1814
	43	10.0	2	922	1844
	44	10.0	2	576	1152
	45	10.0	2	924	1848
	46	10.0	2	949	1898
	47	10.0	2	671	1342
	48	10.0	2	718	1436
	49	10.0	2	294	588
	50	10.0	2	1155	2310
	51	10.0	2	182	364
	52	10.0	2	683	1366
	53	12.5	2	918	1836
	54	12.5	2	1200	2400
	55	12.5	2	173	346
	56	12.5	2	358	716
	57	12.5	3	627	1881
	58	12.5	3	677	2031
	59	12.5	2	550	1100
	60	12.5	2	577	1154

Resumo do aço

AÇO	DIAM (mm)	C.TOTAL (m)	PESO (kg)
CA50	8.0	187.5	74
	10.0	195.9	120.7
	12.5	114.7	110.4
CA60	5.0	699	107.7

PESO TOTAL (kg)	
CA50	305.2
CA60	107.7

Volume de concreto (C-30) = 6.94 m³
Área de forma = 93.39 m²

NOTAS

1- Todas as medidas devem ser conferidas no local.

REVISÕES		
R00	07/02/2025	EMISSÃO INICIAL - PROJETO NÃO APROVADO
R01	20/02/2025	AJUSTE ARQUITETURA
R02	24/04/25	AJUSTE ARQUITETURA
R03	27/06/25	REVISÃO PARA ADEQUAÇÃO AS NORMAS DO CBMMG
R04	11/08/2025	REVISÃO PARA COMPATIBILIZAÇÃO DE PROJETO

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CLIENTE
CENTRO DE OPORTUNIDADES DO BRASIL - COB

PROPRIETÁRIO
PREFEITURA MUNICIPAL DE IGARAPÉ

LOCAL
RUA PARAÍBA, Nº136 - BAIRRO RESPLENDOR, IGARAPÉ - MG, 32900-000

ART
PROJETISTA
FILEMON

TIPO/ESPECIFICAÇÃO DO DOCUMENTO
PROJETO ESTRUTURAL - DETALHAMENTO DE VIGAS DA FUNDAÇÃO
CONSTRUÇÃO DE ESCOLA MUNICIPAL DE EDUCAÇÃO INFANTIL - EMEI

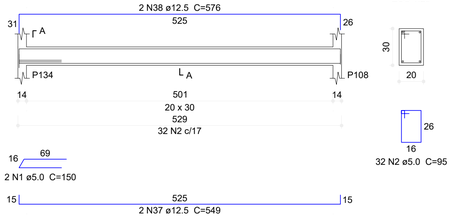
RESPONSÁVEL TÉCNICO
POLEANA TAMIRIS RESENDE
CREA : MG 282.137/D

DATA: 08/2025
ÁREA TOTAL 1.542,86m²
LOTE/QUADRA XX/XX
FORMATO A1
ESCALA IND.
FOLHA: 14/28

ARQUIVO: 173-2024-EST-EXEC-OS 42_EMEI RESPLENDOR_FNDE_R4-V1

V222 (20 x 30)

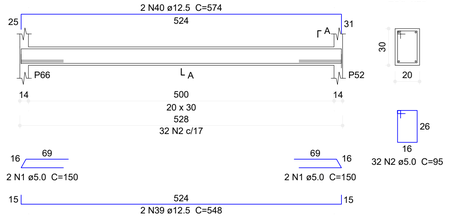
ESC 1:50



SEÇÃO A-A
ESC 1:25

V223 (20 x 30)

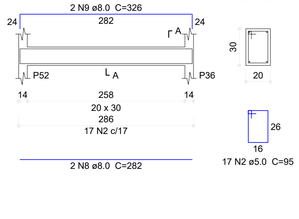
ESC 1:50



SEÇÃO A-A
ESC 1:25

V224 (20 x 30)

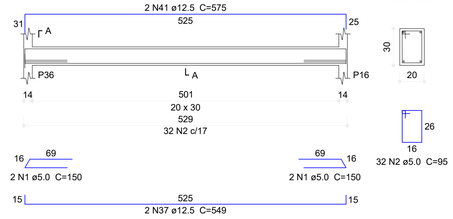
ESC 1:50



SEÇÃO A-A
ESC 1:25

V225 (20 x 30)

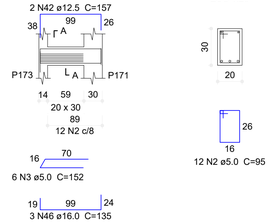
ESC 1:50



SEÇÃO A-A
ESC 1:25

V226 (20 x 30)

ESC 1:50

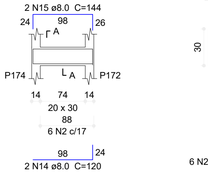


SEÇÃO A-A
ESC 1:25

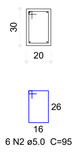
AÇO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
CA60	1	5.0	10	150	1500
	2	5.0	175	95	16625
	3	5.0	6	152	912
	4	5.0	52	85	442
	5	5.0	42	71	2982
	6	5.0	2	195	390
	7	5.0	5	65	325
	49	5.0	2	136	272
CA50	8	8.0	2	282	564
	9	8.0	2	326	652
	14	8.0	2	120	240
	15	8.0	2	144	288
	16	8.0	2	112	224
	17	8.0	2	125	250
	29	8.0	4	302	1208
	30	8.0	4	314	1256
	31	8.0	2	280	560
	32	8.0	2	312	624
	33	8.0	2	218	436
	48	8.0	2	136	272
	50	8.0	2	120	240
	51	8.0	2	96	192
	34	10.0	2	698	1396
	35	10.0	2	217	434
	36	10.0	4	81	324
	37	12.5	4	549	2196
	38	12.5	2	576	1152
	39	12.5	2	548	1096
	40	12.5	2	574	1148
	41	12.5	2	575	1150
	42	12.5	2	157	314
	43	12.5	2	260	520
	44	12.5	2	701	1402
	45	12.5	2	244	488
	46	16.0	3	135	405
	47	16.0	4	99	396

V228 (20 x 30)

ESC 1:50

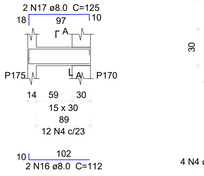


SEÇÃO A-A
ESC 1:25

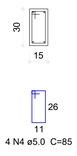


V229 (15 x 30)

ESC 1:50

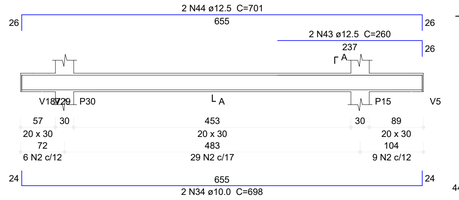


SEÇÃO A-A
ESC 1:25

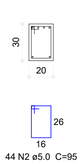


V233 (20 x 30)

ESC 1:50

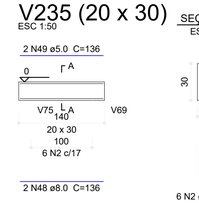


SEÇÃO A-A
ESC 1:25

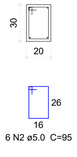


V235 (20 x 30)

ESC 1:50



SEÇÃO A-A
ESC 1:25

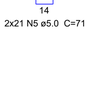


VM1 (25 x 20)

ESC 1:50

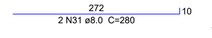


SEÇÃO A-A
ESC 1:25



V2 (15 x 30)

ESC 1:50

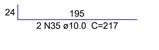


SEÇÃO A-A
ESC 1:25

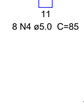


V230 (15 x 30)

ESC 1:50



SEÇÃO A-A
ESC 1:25

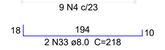


ESPERA P3
ESC 1:25



V231 (15 x 30)

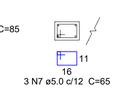
ESC 1:50



SEÇÃO A-A
ESC 1:25

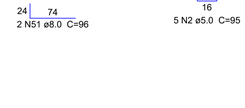


ESPERA P4
ESC 1:25



V234 (20 x 30)

ESC 1:50



SEÇÃO A-A
ESC 1:25

Resumo do aço

AÇO	DIAM (mm)	C.TOTAL (m)	PESO (kg)
CA50	8.0	70.06	27.67
	10.0	21.6	13.3
	12.5	94.7	91.2
	16.0	8.1	12.6
CA60	5.0	268.57	41.36

PESO TOTAL (kg)	
CA50	144.77
CA60	41.36

Volume de concreto (C-30) = 2.1 m³
Área de forma = 26.4 m²

NOTAS

1- Todas as medidas devem ser conferidas no local.

REVISÕES		
R00	07/02/2025	EMISSÃO INICIAL - PROJETO NÃO APROVADO
R01	20/02/2025	AJUSTE ARQUITETURA
R02	24/04/25	AJUSTE ARQUITETURA
R03	27/06/25	REVISÃO PARA ADEQUAÇÃO AS NORMAS DO CBMMG
R04	11/08/2025	REVISÃO PARA COMPATIBILIZAÇÃO DE PROJETO

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Rua Itália, 313
Bairro Glória - Contagem /MG
comercial@pontosengenharia.com
Tel: (31) 9.9593-8131 / 9.9672-0612

CLIENTE
CENTRO DE OPORTUNIDADES DO BRASIL - COB

PROPRIETÁRIO
PREFEITURA MUNICIPAL DE IGARAPÉ

LOCAL
RUA PARAÍBA, Nº136 - BAIRRO RESPLENDOR, IGARAPÉ - MG, 32900-000

ART

PROJETISTA
FILEMON

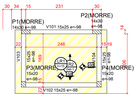
TIPO/ESPECIFICAÇÃO DO DOCUMENTO
PROJETO ESTRUTURAL - DETALHAMENTO DE VIGAS DA FUNDAÇÃO

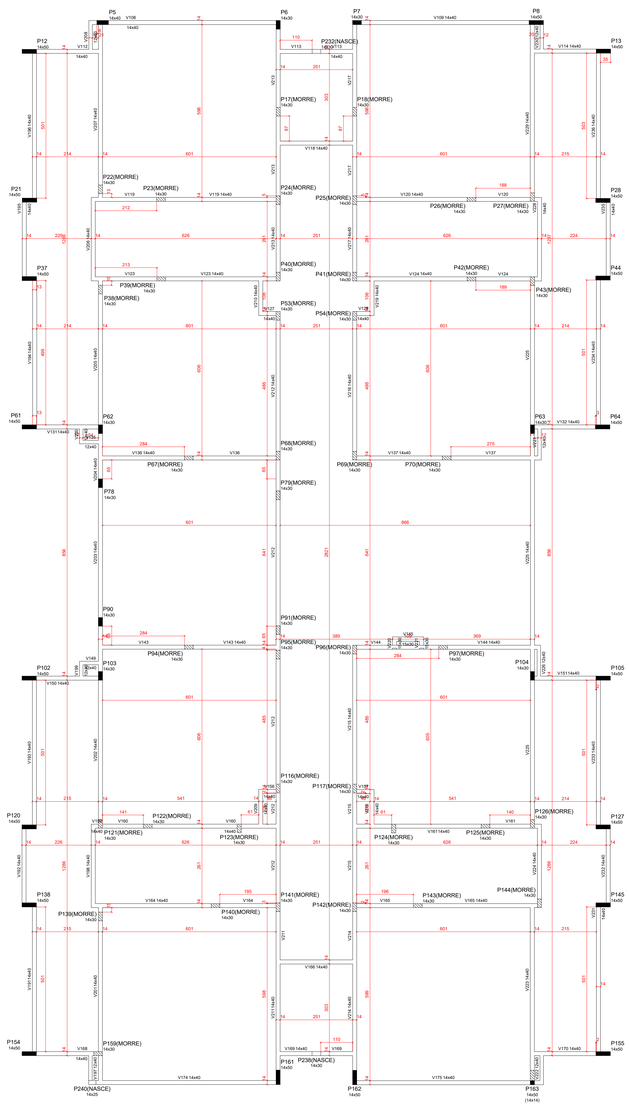
RESPONSÁVEL TÉCNICO
POLEANA TAMIRIS RESENDE
CREA : MG 282.137/D

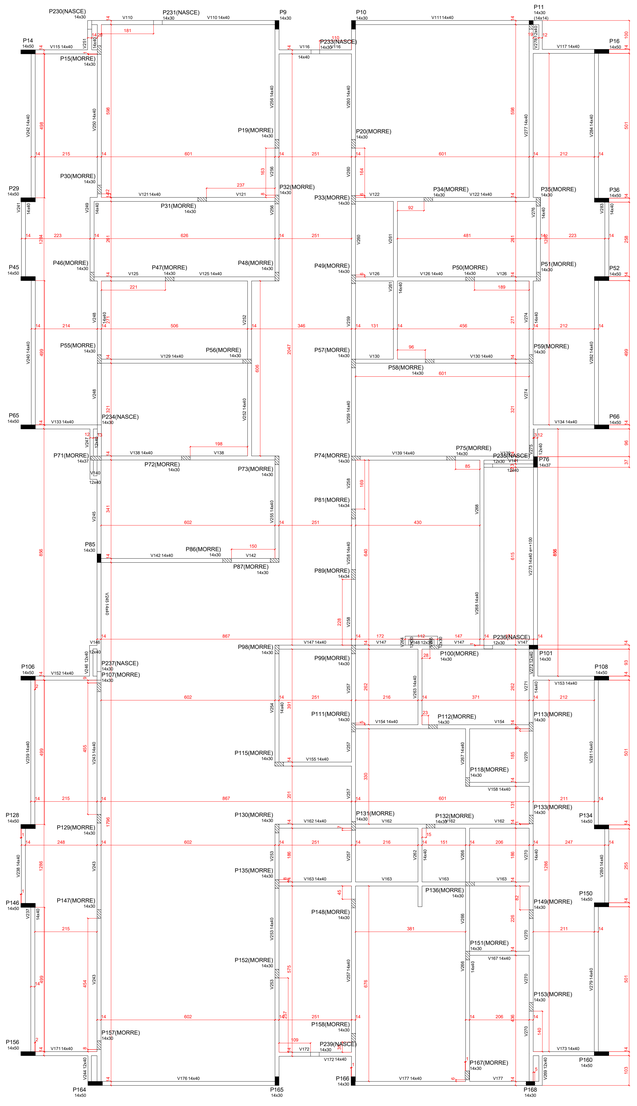
CONSTRUÇÃO DE ESCOLA MUNICIPAL DE EDUCAÇÃO INFANTIL - EMEI

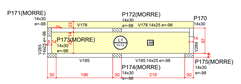
DATA:	ÁREA TOTAL	LOTE/QUADRA
08/2025	1.542,86m²	XX/XX
FORMATO: A1	ESCALA: IND.	FOLHA: 15/28

ARQUIVO: 173-2024-EST-EXEC-OS 42_EMEI RESPLENDOR_FNDE_R4-V1









FORMAS COBERTURA

NÍVEL +310

ESC: 1/75

Legenda dos pilares
Pilar que morre
Pilar que passa
Pilar que nasce
Pilar com mudança de seção

ORIENTAÇÕES CONSTRUTIVAS:

- O CONCRETO DE TODA A OBRA DEVE SER O DE 30MPA
- OS COBRIMENTOS ADOTADOS DEVEM SER GARANTIDOS PELO USO DE ESPAÇADORES PLÁSTICOS OU PASTILHAS SEMI-ESFÉRICAS DE ARGAMASSA
- UTILIZAR VERGAS E CONTRA-VERGAS NAS ABERTURAS DA ALVENARIA
- O ENCUNHAMENTO OU "APERTO" DA ALVENARIA DEVE SER ORIENTADO PELO RESPONSÁVEL TÉCNICO DA OBRA, PARA QUE SEJAM EVITADAS CONCENTRAÇÕES DE TENSÃO NOS BLOCOS DE VEDAÇÃO E POSSÍVEIS PATOLOGIAS
- COMPACTAR O SOLO E LANÇAR CAMADA DE PELO MENOS 5 CM DE CONCRETO MAGRO ABAIXO DO NÍVEL DE ASSENTAMENTO DAS FUNDAÇÕES E VIGAS BALDRAME, QUANDO FOR O CASO, PARA QUE NÃO HAJA MISTURA ENTRE O SOLO E O CONCRETO ESTRUTURAL DOS ELEMENTOS
- AS FACES DOS ELEMENTOS DE FUNDAÇÃO E ELEMENTOS EM CONTATO COM O SOLO DEVERÃO SER IMPERMEABILIZADAS COM EMULSÃO ASFÁLTICA TIPO IGOL 2 OU SIMILAR
- VERIFIQUE, ANTES DA CONCRETAGEM, TODAS AS PASSAGENS DE TUBULAÇÕES ELÉTRICAS E HIDRÁULICAS
- CANALIZAÇÕES EMBUTIDAS VERTICALMENTE NOS PILARES E VIGAS NÃO PODEM OCORRER. SOMENTE SERÃO PERMITIDAS TAIS INSTALAÇÕES QUE RESPEITEM OS ITENS 13.2.5.1 E 21.3.3 DA NBR 6118
- PROJETO DE ESTRUTURAS DE CONCRETO, COM PRÉVIA ANÁLISE E AUTORIZAÇÃO DO PROJETISTA
- CONFIRA ATENTAMENTE A IMPLANTAÇÃO E MARCAÇÃO DOS EIXOS A FIM DE QUE A OBRA SEJA LOCADA CORRETAMENTE DENTRO DO TERRENO
- VERIFIQUE SE HÁ INDICAÇÃO DE CONTRA-FLECHA NOS ELEMENTOS E CERTIFIQUE-SE DE QUE A MESMA SEJA EXECUTADA
- SUGERE-SE A UTILIZAÇÃO DE TELA SOLDADA PARA EVITAR FISSURAS NA INTERFACE ENTRE PAREDE DE ALVENARIA E PILAR, APLICADA COM O ACOMPANHAMENTO DO RESPONSÁVEL TÉCNICO DA OBRA

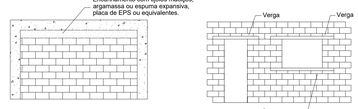
NOTAS GERAIS:

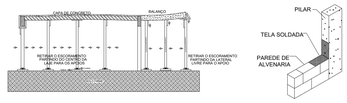
- PROJETO ELABORADO DE ACORDO COM A NBR 6118 - PROJETO DE ESTRUTURAS DE CONCRETO
- O CONCRETO EMPREGADO NA EXECUÇÃO DAS ESTRUTURAS DEVE CUMPRIR OS REQUISITOS ESTABELECIDOS NA NBR 12655 - CONCRETO DE CIMENTO PORTLAND - PREPARO, CONTROLE, RECEBIMENTO E ACEITAÇÃO
- A EXECUÇÃO DA OBRA, ASSIM COMO A CURA E A DESFORMA DO CONCRETO, DEVE SEGUIR A NORMA NBR 14931 - EXECUÇÃO DE ESTRUTURAS DE CONCRETO. É NECESSÁRIO O ACOMPANHAMENTO DE PROFISSIONAL HABILITADO E A EXECUÇÃO DA ESTRUTURA É DE RESPONSABILIDADE DA CONSTRUTORA
- OS QUANTITATIVOS DE CONCRETO, FORMA E AÇO DEVEM SER CONFIRMADOS PELO RESPONSÁVEL TÉCNICO DA OBRA
- NÍVEIS DO PROJETO EM CENTÍMETROS
- COTAS DO PROJETO EM CENTÍMETROS
- A COTA PREVALECE SOBRE A ESCALA

DESFORMA:

- FACES LATERAIS: 3 DIAS APÓS A CONCRETAGEM
- FACES INFERIORES, DEIXANDO PONTALETES DE ESCORAMENTO: 14 DIAS APÓS A CONCRETAGEM
- FACES INFERIORES SEM PONTALETES DE ESCORAMENTO: 28 DIAS APÓS A CONCRETAGEM
- NOS BALANÇOS, A RETIRADA DAS ESCORAS DEVERÁ SER REALIZADA DA PONTA PARA O APOIO
- É DE RESPONSABILIDADE DA CONSTRUTORA O PROJETO DE ESCORAMENTO E CIMBRAMENTO

DETALHES ORIENTATIVOS:



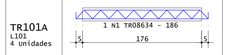


AÇO	POS	BIT	QUANT	COMPRIMENTO	
				UNIT	TOTAL
		mm		cm	cm
Cobertura - Armadura negativa horizontal					
50A	1	6.3	3	323	969
50A	2	6.3	3	507	1521
Cobertura - Armadura negativa vertical					
50A	1	6.3	26	67	1742
50A	2	6.3	16	105	1680
50A	3	6.3	16	116	1856
Cobertura - Armadura positiva horizontal					
50A	1	6.3	4	226	904
50A	2	6.3	40	41	1640
50A	3	6.3	16	36	576
50A	4	6.3	16	23	368
Cobertura - Armadura positiva vertical					
50A	1	6.3	18	36	648
50A	2	6.3	6	323	1938
50A	3	6.3	3	507	1521
50A	4	6.3	18	42	756

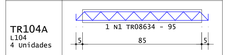
RESUMO DE AÇO			
AÇO	BIT	COMPR	PESO
	mm	m	kgf
50A	6.3	161	39
Peso Total		50A =	39 kgf

Projeto de fabricação de vigotas treliçadas
Sem escala

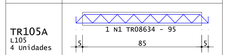
TR101A
L101
4 Unidades



TR104A
L104
4 Unidades



TR105A
L105
4 Unidades



NOTAS PARA CONCRETO

a. Classificação do Concreto será de 30Mpa;
b. Relação A/C igual à 0,55;
c. Abatimento entre 100 e 140 (10+-2);
d. Consumo mínimo de concreto por m³ será de 350kg;
e. O diâmetro máximo do agregado graúdo será de 19mm;
f. Cimento Portland CP II E-32 ou CP II F-32;
g. Módulo de Elasticidade médio de 28.000 a 32.000 MPa;

NOTAS

1- Todas as medidas devem ser conferidas no local.

REVISÕES		
R00	07/02/2025	EMISSÃO INICIAL - PROJETO NÃO APROVADO
R01	20/02/2025	AJUSTE ARQUITETURA
R02	24/04/25	AJUSTE ARQUITETURA
R03	27/06/25	REVISÃO PARA ADEQUAÇÃO AS NORMAS DO CBMMG
R04	11/08/2025	REVISÃO PARA COMPATIBILIZAÇÃO DE PROJETO

Ponto S
Projetos S/S
Rua Minas, 513 -
Bairro Gloria - Contagem-MG
somercia@pontosengenharia.com
Tel: (31) 9 8693-8131 / 9 9612-0812

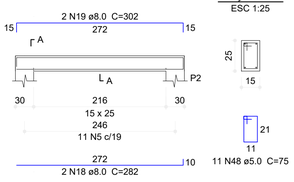
CLIENTE	CENTRO DE OPORTUNIDADES DO BRASIL - COB
PROPRIETÁRIO	PREFEITURA MUNICIPAL DE IGARAPÉ
LOCAL	RUA PARAÍBA, Nº136 - BAIRRO RESPLENDOR, IGARAPÉ - MG, 32900-000
TIPO/ESPECIFICAÇÃO DO DOCUMENTO	PROJETO ESTRUTURAL - FORMAS DE VIGAS DE COBERTURA
	CONSTRUÇÃO DE ESCOLA MUNICIPAL DE EDUCAÇÃO INFANTIL - EMEI

ART	PROJETISTA: FILEMON	DATA: 08/2025	AREA TOTAL: 1.542,86m²
RESPONSÁVEL TÉCNICO		FORMATO: A0	ESCALA: IND
POLEANA TAMIRIS RESENDE CREA - MG 282.137/D			LOTE/QUADRA: XX/XX
			FOLHA: 16/28

ARQUIVO: 173-2024-EST-EXEC-OS 42_EMEI RESPLENDOR_FNDE_R4-V1

V101 (15 x 25)

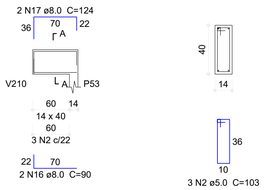
ESC 1:50



SEÇÃO A-A
ESC 1:25

V127 (14 x 40)

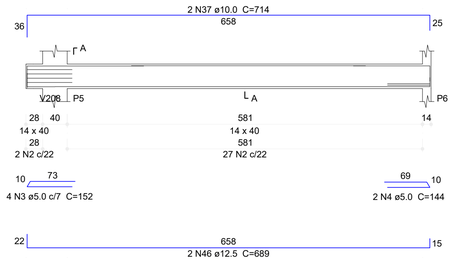
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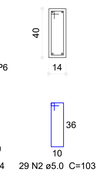
SEÇÃO A-A
ESC 1:25

V108 (14 x 40)

ESC 1:50

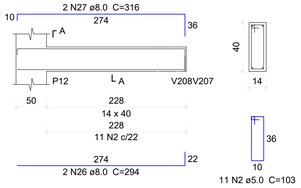


SEÇÃO A-A
ESC 1:25



V112 (14 x 40)

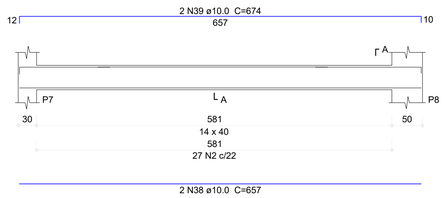
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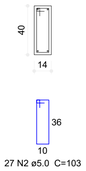
SEÇÃO A-A
ESC 1:25

V109 (14 x 40)

ESC 1:50

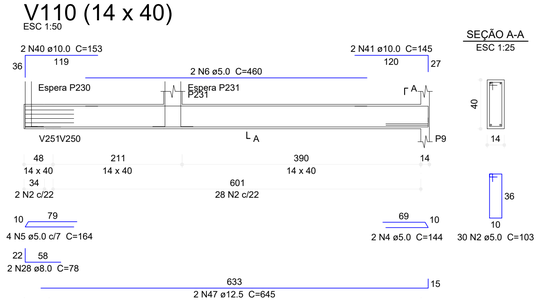


SEÇÃO A-A
ESC 1:25



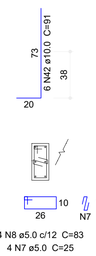
V110 (14 x 40)

ESC 1:50

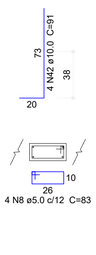


SEÇÃO A-A
ESC 1:25

ESPERA P230
ESC 1:25

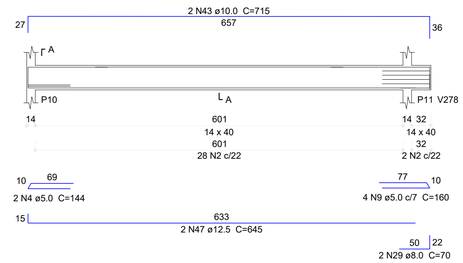


ESPERA P231
ESC 1:25

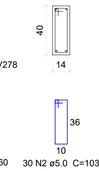


V111 (14 x 40)

ESC 1:50



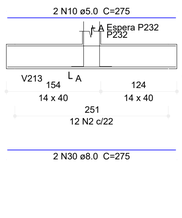
SEÇÃO A-A
ESC 1:25



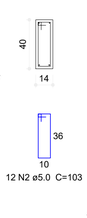
AÇO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
CA60	2	5.0	258	103	26574
	3	5.0	4	152	608
	4	5.0	6	144	864
	5	5.0	4	164	656
	6	5.0	2	460	920
	7	5.0	4	25	100
	8	5.0	16	83	1328
	9	5.0	4	160	640
	10	5.0	6	275	1650
	11	5.0	4	148	592
	48	5.0	11	75	825
CA50	16	8.0	4	90	360
	17	8.0	4	124	496
	18	8.0	2	282	564
	19	8.0	2	302	602
	26	8.0	4	294	1176
	27	8.0	4	316	1264
	28	8.0	2	78	156
	29	8.0	2	70	140
	30	8.0	8	275	2200
	31	8.0	2	303	606
	32	8.0	2	292	584
	33	8.0	2	314	628
	34	8.0	2	670	1340
	35	8.0	2	690	1380
	37	10.0	2	714	1428
	38	10.0	2	657	1314
	39	10.0	2	674	1348
	40	10.0	2	153	306
	41	10.0	2	145	290
	42	10.0	18	91	1638
	43	10.0	2	715	1430
	44	10.0	2	699	1398
	45	10.0	2	650	1300
	46	12.5	2	689	1378
	47	12.5	4	645	2580

V113 (14 x 40)

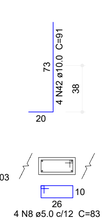
ESC 1:50



SEÇÃO A-A
ESC 1:25

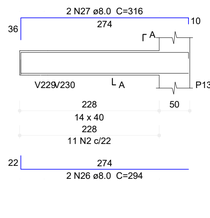


ESPERA P232
ESC 1:25

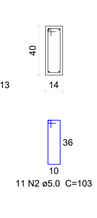


V114 (14 x 40)

ESC 1:50

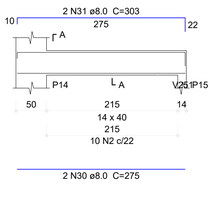


SEÇÃO A-A
ESC 1:25

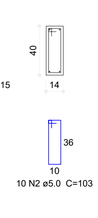


V115 (14 x 40)

ESC 1:50

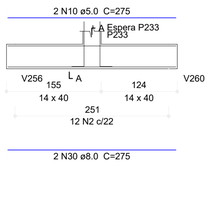


SEÇÃO A-A
ESC 1:25

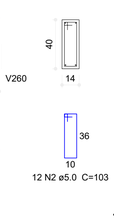


V116 (14 x 40)

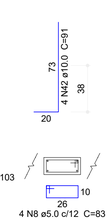
ESC 1:50



SEÇÃO A-A
ESC 1:25

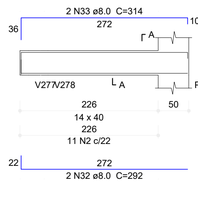


ESPERA P233
ESC 1:25

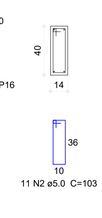


V117 (14 x 40)

ESC 1:50

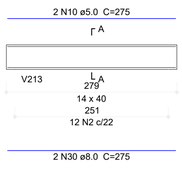


SEÇÃO A-A
ESC 1:25

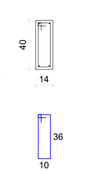


V118 (14 x 40)

ESC 1:50

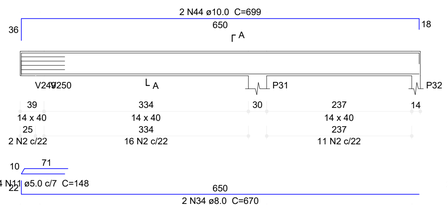


SEÇÃO A-A
ESC 1:25

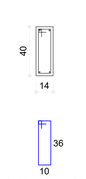


V121 (14 x 40)

ESC 1:50

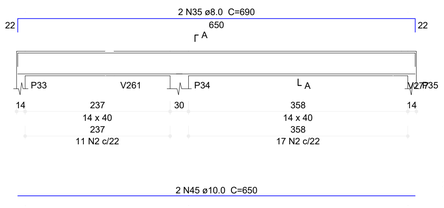


SEÇÃO A-A
ESC 1:25

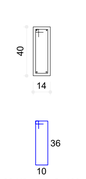


V122 (14 x 40)

ESC 1:50

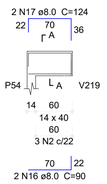


SEÇÃO A-A
ESC 1:25

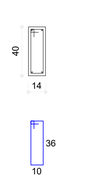


V128 (14 x 40)

ESC 1:50



SEÇÃO A-A
ESC 1:25



Resumo do aço

AÇO	DIAM (mm)	C.TOTAL (m)	PESO (kg)
CA50	8.0	114.96	45.40
	10.0	106	64.49
	12.5	39.6	38.1
CA60	5.0	384.11	53.53

PESO TOTAL (kg)	
CA50	148.8
CA60	59.15

Volume de concreto (C-30) = 2.6 m³
Área de forma = 42.7 m²

NOTAS

1- Todas as medidas devem ser conferidas no local.

REVISÕES		
R00	07/02/2025	EMISSÃO INICIAL - PROJETO NÃO APROVADO
R01	20/02/2025	AJUSTE ARQUITETURA
R02	24/04/25	AJUSTE ARQUITETURA
R03	27/06/25	REVISÃO PARA ADEQUAÇÃO AS NORMAS DO CBMMG
R04	11/08/2025	REVISÃO PARA COMPATIBILIZAÇÃO DE PROJETO

Ponto S ENGENHARIA
Rua Itália, 313
Bairro Glória - Contagem /MG
comercial@pontosengenharia.com
Tel: (31) 9.9593-8131 / 9.9672-0812

ART

PROJETISTA
FILEMON

RESPONSÁVEL TÉCNICO

POLEANA TAMIRIS RESENDE
CREA : MG 282.137/D

CLIENTE
CENTRO DE OPORTUNIDADES DO BRASIL - COB

PROPRIETÁRIO
PREFEITURA MUNICIPAL DE IGARAPÉ

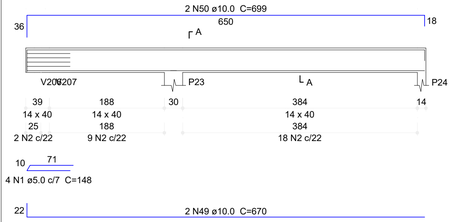
LOCAL
RUA PARAÍBA, Nº136 - BAIRRO RESPLENDOR, IGARAPÉ - MG, 32900-000

TIPO/ESPECIFICAÇÃO DO DOCUMENTO
PROJETO ESTRUTURAL - DETALHAMENTO DE VIGAS DA COBERTURA
CONSTRUÇÃO DE ESCOLA MUNICIPAL DE EDUCAÇÃO INFANTIL - EMEI

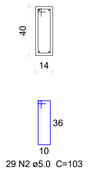
DATA:	ÁREA TOTAL	LOTE/QUADRA
08/2025	1.542,86m²	XX/XX
FORMATO: A1	ESCALA: IND.	FOLHA: 17/28

ARQUIVO: 173-2024-EST-EXEC-OS 42_EMEI RESPLENDOR_FNDE_R4-V1

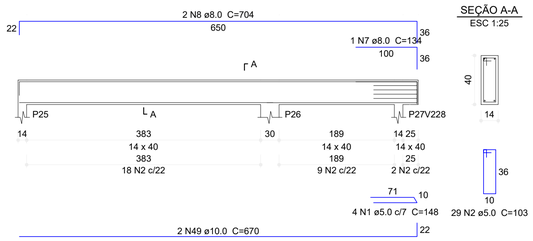
V119 (14 x 40)
ESC 1:50



SEÇÃO A-A
ESC 1:25

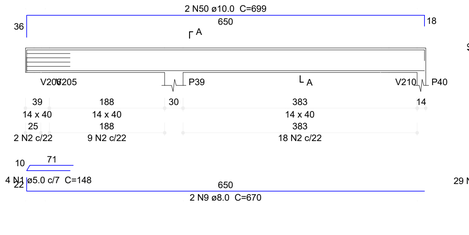


V120 (14 x 40)
ESC 1:50

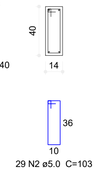


SEÇÃO A-A
ESC 1:25

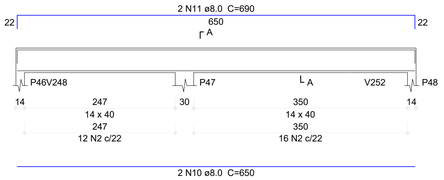
V123 (14 x 40)
ESC 1:50



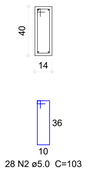
SEÇÃO A-A
ESC 1:25



V125 (14 x 40)
ESC 1:50



SEÇÃO A-A
ESC 1:25



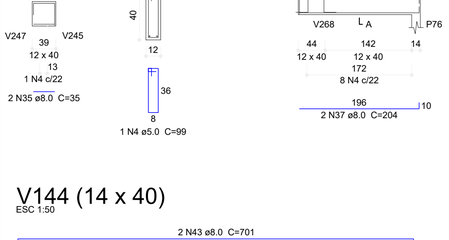
AÇO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
CA60	1	5.0	12	148	1776
	2	5.0	501	103	51603
	3	5.0	4	146	584
	4	5.0	13	99	1287
	5	5.0	8	79	632
	6	5.0	4	85	340
CA50	7	8.0	1	134	134
	8	8.0	4	704	2816
	9	8.0	4	670	2680
	10	8.0	4	650	2600
	11	8.0	4	690	2760
	12	8.0	1	174	174
	13	8.0	2	572	1144
	14	8.0	6	625	3750
	15	8.0	2	665	1330
	16	8.0	2	274	548
	17	8.0	2	302	604
	18	8.0	2	279	558
	19	8.0	2	299	598
	20	8.0	2	295	590
	21	8.0	2	317	634
	22	8.0	2	292	584
	23	8.0	2	314	628
	24	8.0	2	76	152
	25	8.0	2	127	254
	26	8.0	2	679	1358
	27	8.0	2	669	1338
	28	8.0	2	703	1406
	29	8.0	2	648	1296
	30	8.0	2	688	1376
	31	8.0	2	640	1280
	32	8.0	2	680	1360
	33	8.0	2	213	426
	34	8.0	2	229	458
	35	8.0	2	35	70
	36	8.0	2	86	172
	37	8.0	2	204	408
	38	8.0	2	247	494
	39	8.0	2	626	1252
	40	8.0	2	666	1332
	41	8.0	2	693	1386
	42	8.0	2	667	1334
	43	8.0	2	701	1402
	44	8.0	2	105	210
	45	8.0	2	137	274
	46	8.0	4	36	144
	47	8.0	2	906	1812
	48	8.0	2	934	1868
	49	10.0	4	670	2680
	50	10.0	4	699	2796
	51	10.0	2	530	1060
	52	10.0	8	91	728

Resumo do aço

AÇO	DIAM (mm)	C.TOTAL (m)	PESO (kg)
CA50	8.0	450	177.5
	10.0	72.7	44.8
CA60	5.0	562.3	86.7
PESO TOTAL (kg)			
CA50	222.3		
CA60	86.7		

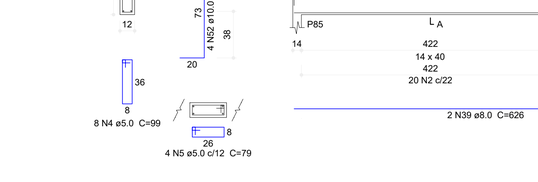
Volume de concreto (C-30) = 6.12 m³
Área de forma = 77.43 m²

V124 (14 x 40)
ESC 1:50



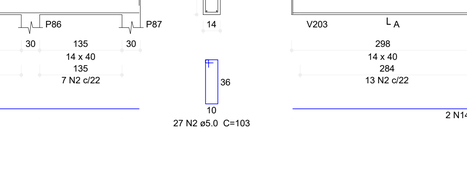
SEÇÃO A-A
ESC 1:25

V126 (14 x 40)
ESC 1:50



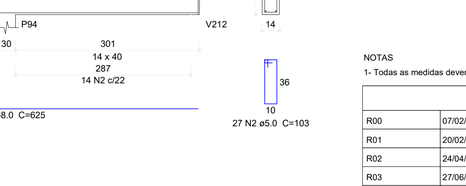
SEÇÃO A-A
ESC 1:25

V129 (14 x 40)
ESC 1:50

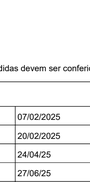


SEÇÃO A-A
ESC 1:25

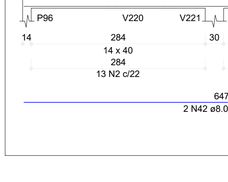
V130 (14 x 40)
ESC 1:50



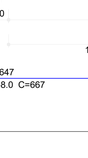
SEÇÃO A-A
ESC 1:25



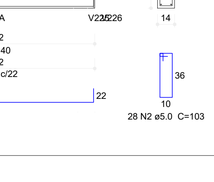
V131 (14 x 40)
ESC 1:50



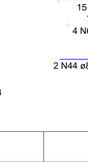
SEÇÃO A-A
ESC 1:25



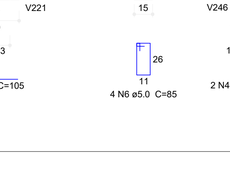
V132 (14 x 40)
ESC 1:50



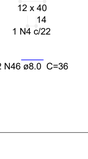
SEÇÃO A-A
ESC 1:25



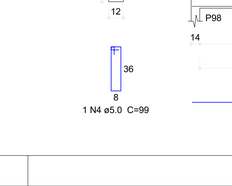
V133 (14 x 40)
ESC 1:50



SEÇÃO A-A
ESC 1:25



V134 (14 x 40)
ESC 1:50



SEÇÃO A-A
ESC 1:25



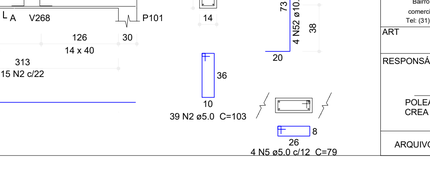
V135 (12 x 40)
ESC 1:50



SEÇÃO A-A
ESC 1:25



V136 (14 x 40)
ESC 1:50



SEÇÃO A-A
ESC 1:25



V137 (14 x 40)
ESC 1:50

SEÇÃO A-A
ESC 1:25

V138 (14 x 40)
ESC 1:50

SEÇÃO A-A
ESC 1:25

V139 (14 x 40)
ESC 1:50

SEÇÃO A-A
ESC 1:25

V204 (14 x 40)
ESC 1:50

SEÇÃO A-A
ESC 1:25

V140 (12 x 40)
ESC 1:50

SEÇÃO A-A
ESC 1:25

V141 (12 x 40)
ESC 1:50

SEÇÃO A-A
ESC 1:25

ESPERA P235
ESC 1:25

V142 (14 x 40)
ESC 1:50

SEÇÃO A-A
ESC 1:25

V143 (14 x 40)
ESC 1:50

SEÇÃO A-A
ESC 1:25

V144 (14 x 40)
ESC 1:50

SEÇÃO A-A
ESC 1:25

V145 (15 x 30)
ESC 1:50

SEÇÃO A-A
ESC 1:25

V146 (12 x 40)
ESC 1:50

SEÇÃO A-A
ESC 1:25

V147 (14 x 40)
ESC 1:50

SEÇÃO A-A
ESC 1:25

ESPERA P236
ESC 1:25

NOTAS
1- Todas as medidas devem ser conferidas no local.

REVISÕES		
R00	07/02/2025	EMISSÃO INICIAL - PROJETO NÃO APROVADO
R01	20/02/2025	AJUSTE ARQUITETURA
R02	24/04/25	AJUSTE ARQUITETURA
R03	27/06/25	REVISÃO PARA ADEQUAÇÃO AS NORMAS DO CBMMG
R04	11/08/2025	REVISÃO PARA COMPATIBILIZAÇÃO DE PROJETO

Ponto S ENGENHARIA
Rua Itália, 313
Bairro Glória - Contagem /MG
comercial@pontosengenharia.com
Tel: (31) 9.9593-8131 / 9.9672-0812

CLIENTE
CENTRO DE OPORTUNIDADES DO BRASIL - COB

PROPRIETÁRIO
PREFEITURA MUNICIPAL DE IGARAPÉ

LOCAL
RUA PARAÍBA, Nº136 - BAIRRO RESPLENDOR, IGARAPÉ - MG, 32900-000

ART | PROJETISTA: FILEMON

TIPO/ESPECIFICAÇÃO DO DOCUMENTO
PROJETO ESTRUTURAL - DETALHAMENTO DE VIGAS DA COBERTURA

RESPONSÁVEL TÉCNICO
POLEANA TAMIRIS RESENDE
CREA : MG 282.137/D

CONSTRUÇÃO DE ESCOLA MUNICIPAL DE EDUCAÇÃO INFANTIL - EMEI

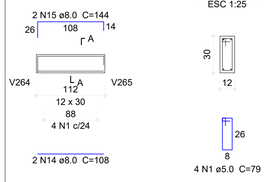
DATA: 08/2025 | ÁREA TOTAL: 1.542,86m² | LOTE/QUADRA: XX/XX

FORMATO: A1 | ESCALA: IND.

FOLHA: 18/28

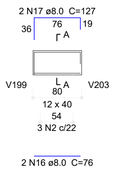
ARQUIVO: 173-2024-EST-EXEC-OS 42_EMEI RESPLENDOR_FNDE_R4-V1

V148 (12 x 30)
ESC 1:50



SEÇÃO A-A
ESC 1:25

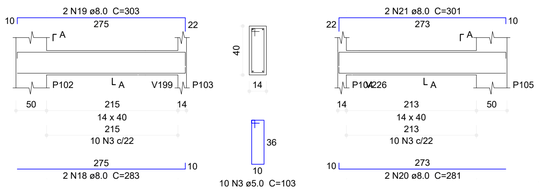
V149 (12 x 40)
ESC 1:50



SEÇÃO A-A
ESC 1:25



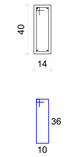
V150 (14 x 40)
ESC 1:50



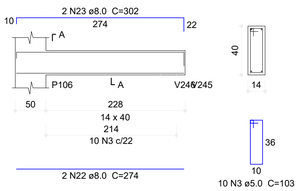
SEÇÃO A-A
ESC 1:25

V151 (14 x 40)
ESC 1:50

SEÇÃO A-A
ESC 1:25

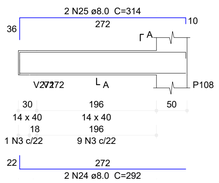


V152 (14 x 40)
ESC 1:50

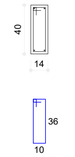


SEÇÃO A-A
ESC 1:25

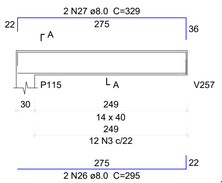
V153 (14 x 40)
ESC 1:50



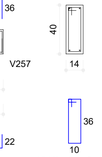
SEÇÃO A-A
ESC 1:25



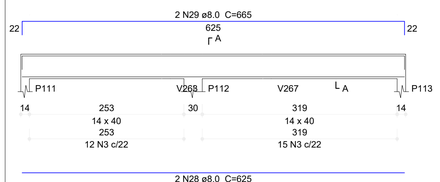
V155 (14 x 40)
ESC 1:50



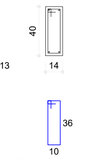
SEÇÃO A-A
ESC 1:25



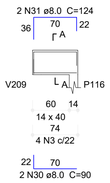
V154 (14 x 40)
ESC 1:50



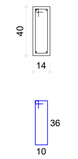
SEÇÃO A-A
ESC 1:25



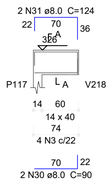
V156 (14 x 40)
ESC 1:50



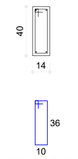
SEÇÃO A-A
ESC 1:25



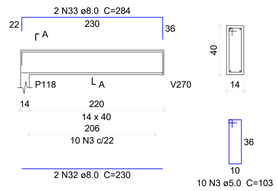
V157 (14 x 40)
ESC 1:50



SEÇÃO A-A
ESC 1:25

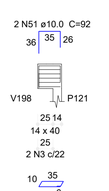


V158 (14 x 40)
ESC 1:50

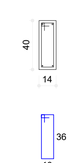


SEÇÃO A-A
ESC 1:25

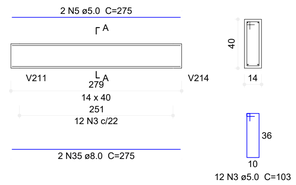
V159 (14 x 40)
ESC 1:50



SEÇÃO A-A
ESC 1:25

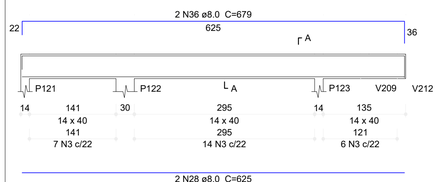


V166 (14 x 40)
ESC 1:50

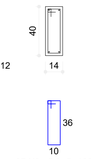


SEÇÃO A-A
ESC 1:25

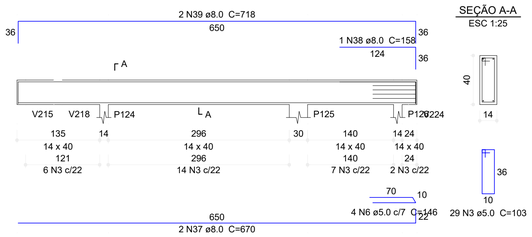
V160 (14 x 40)
ESC 1:50



SEÇÃO A-A
ESC 1:25

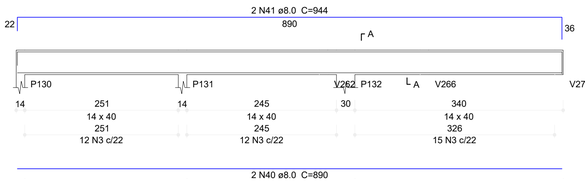


V161 (14 x 40)
ESC 1:50

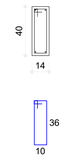


SEÇÃO A-A
ESC 1:25

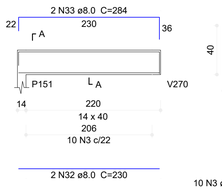
V162 (14 x 40)
ESC 1:50



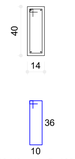
SEÇÃO A-A
ESC 1:25



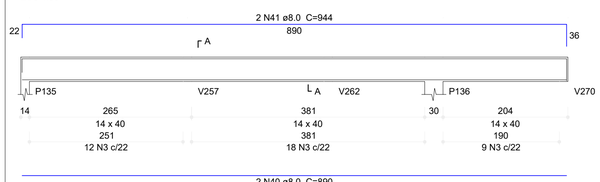
V167 (14 x 40)
ESC 1:50



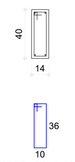
SEÇÃO A-A
ESC 1:25



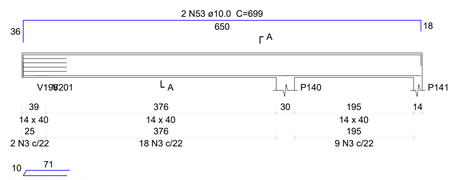
V163 (14 x 40)
ESC 1:50



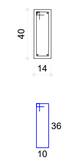
SEÇÃO A-A
ESC 1:25



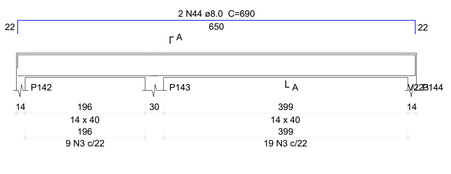
V164 (14 x 40)
ESC 1:50



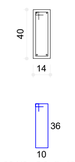
SEÇÃO A-A
ESC 1:25



V165 (14 x 40)
ESC 1:50



SEÇÃO A-A
ESC 1:25



V168 (14 x 40)
ESC 1:50

SEÇÃO A-A
ESC 1:25

V169 (14 x 40)
ESC 1:50

SEÇÃO A-A
ESC 1:25

ESPERA P238
ESC 1:25

V170 (14 x 40)
ESC 1:50

SEÇÃO A-A
ESC 1:25

V171 (14 x 40)
ESC 1:50

SEÇÃO A-A
ESC 1:25

V172 (14 x 40)
ESC 1:50

SEÇÃO A-A
ESC 1:25

ESPERA P239
ESC 1:25

V173 (14 x 40)
ESC 1:50

SEÇÃO A-A
ESC 1:25

V174 (14 x 40)
ESC 1:50

SEÇÃO A-A
ESC 1:25

ESPERA P240
ESC 1:25

V175 (14 x 40)
ESC 1:50

SEÇÃO A-A
ESC 1:25

AÇO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
CA60	1	5.0	4	79	316
	2	5.0	3	99	297
	3	5.0	437	103	45011
	4	5.0	4	88	352
	5	5.0	6	275	1650
	6	5.0	4	146	584
	7	5.0	4	148	592
	8	5.0	8	83	664
	9	5.0	4	166	664
	10	5.0	4	144	576
	11	5.0	4	73	292
	12	5.0	4	160	640
CA50	14	8.0	2	108	216
	15	8.0	2	144	288
	16	8.0	2	76	152
	17	8.0	2	127	254
	18	8.0	2	283	566
	19	8.0	4	303	1212
	20	8.0	2	281	562
	21	8.0	2	301	602
	22	8.0	4	274	1096
	23	8.0	2	302	604
	24	8.0	2	292	584
	25	8.0	4	314	1256
	26	8.0	2	295	590
	27	8.0	2	329	658
	28	8.0	4	625	2500
	29	8.0	2	665	1330
	30	8.0	4	90	360
	31	8.0	4	124	496
	32	8.0	4	230	920
	33	8.0	4	284	1136
	34	8.0	2	55	110
	35	8.0	8	275	2200
	36	8.0	2	679	1358
	37	8.0	2	670	1340
	38	8.0	1	158	158
	39	8.0	2	718	1436
	40	8.0	4	890	3560
	41	8.0	4	944	3776
	42	8.0	2	63	126
	43	8.0	2	227	454
	44	8.0	2	690	1380
	45	8.0	2	293	586
	46	8.0	2	315	630
	47	8.0	2	316	632
	48	8.0	2	272	544
	51	10.0	2	92	184
	52	10.0	2	416	832
	53	10.0	2	699	1398
	54	10.0	2	660	1320
	55	10.0	12	91	1092
	56	10.0	2	723	1446
	57	10.0	2	713	1426
	58	12.5	2	690	1380
	59	12.5	2	687	1374

Resumo do aço

AÇO	DIAM (mm)	C.TOTAL (m)	PESO (kg)
CA50	8.0	336.8	133.04
	10.0	77	47.5
	12.5	27.6	26.5
CA60	5.0	516.38	79.52
PESO TOTAL (kg)			
CA50	207.04		
CA60	79.52		

Volume de concreto (C-30) = 5.2 m³
Área de forma = 69.3 m²

NOTAS

1- Todas as medidas devem ser conferidas no local.

REVISÕES		
R00	07/02/2025	EMISSÃO INICIAL - PROJETO NÃO APROVADO
R01	20/02/2025	AJUSTE ARQUITETURA
R02	24/04/25	AJUSTE ARQUITETURA
R03	27/06/25	REVISÃO PARA ADEQUAÇÃO AS NORMAS DO CBMMG
R04	11/08/2025	REVISÃO PARA COMPATIBILIZAÇÃO DE PROJETO

Ponto S ENGENHARIA
Rua Itália, 313
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Tel: (31) 9.9593-8131 / 9.9672-0612

POLEANA TAMIRIS RESENDE
CREA : MG 282.137/D

ART
PROJETISTA
FILEMON

RESPONSÁVEL TÉCNICO

CLIENTE
CENTRO DE OPORTUNIDADES DO BRASIL - COB

PROPRIETÁRIO
PREFEITURA MUNICIPAL DE IGARAPÉ

LOCAL
RUA PARAÍBA, Nº136 - BAIRRO RESPLENDOR, IGARAPÉ - MG, 32900-000

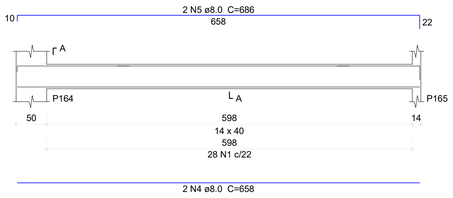
TIPO/ESPECIFICAÇÃO DO DOCUMENTO
PROJETO ESTRUTURAL - DETALHAMENTO DE VIGAS DA COBERTURA
CONSTRUÇÃO DE ESCOLA MUNICIPAL DE EDUCAÇÃO INFANTIL - EMEI

DATA:	ÁREA TOTAL	LOTE/QUADRA
08/2025	1.542,86m²	XX/XX
FORMATO: A1	ESCALA: IND.	FOLHA: 19/28

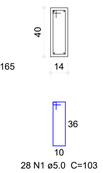
ARQUIVO: 173-2024-EST-EXEC-OS 42_EMEI RESPLENDOR_FNDE_R4-V1

V176 (14 x 40)

ESC 1:50

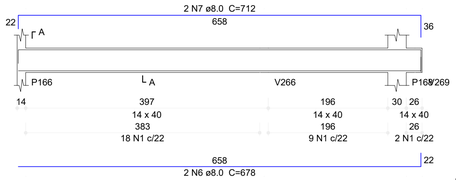


SEÇÃO A-A
ESC 1:25

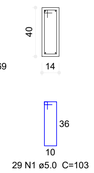


V177 (14 x 40)

ESC 1:50

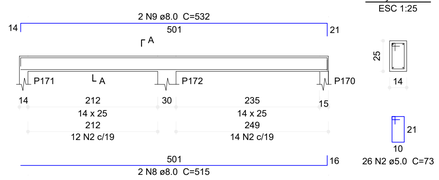


SEÇÃO A-A
ESC 1:25



V178 (14 x 25)

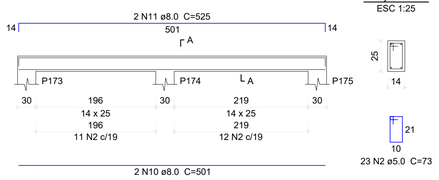
ESC 1:50



SEÇÃO A-A
ESC 1:25

V185 (14 x 25)

ESC 1:50



SEÇÃO A-A
ESC 1:25

AÇO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
CA60	1	5.0	138	103	14214
	2	5.0	49	73	3577
CA50	4	8.0	2	658	1316
	5	8.0	2	686	1372
	6	8.0	2	678	1356
	7	8.0	2	712	1424
	8	8.0	2	515	1030
	9	8.0	2	532	1064
	10	8.0	2	501	1002
	11	8.0	2	525	1050
	31	8.0	4	525	2100
	32	8.0	4	565	2260
	33	8.0	2	280	560
	34	8.0	2	320	640
	35	8.0	2	524	1048
	36	8.0	2	564	1128

Resumo do aço

AÇO	DIAM (mm)	C.TOTAL (m)	PESO (kg)
CA50	8.0	173.54	68.53
CA60	5.0	177.96	27.41

PESO TOTAL (kg)	
CA50	68.53
CA60	27.41

Volume de concreto (C-30) = 0.9 m³
Área de forma = 24 m²

V191 (14 x 40)

ESC 1:50

SEÇÃO A-A
ESC 1:25

V192 (14 x 40)

ESC 1:50

SEÇÃO A-A
ESC 1:25

V193 (14 x 40)

ESC 1:50

SEÇÃO A-A
ESC 1:25

V194 (14 x 40)

ESC 1:50

SEÇÃO A-A
ESC 1:25

NOTAS

1- Todas as medidas devem ser conferidas no local.

REVISÕES		
R00	07/02/2025	EMISSÃO INICIAL - PROJETO NÃO APROVADO
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CLIENTE
CENTRO DE OPORTUNIDADES DO BRASIL - COB

PROPRIETÁRIO
PREFEITURA MUNICIPAL DE IGARAPÉ

LOCAL
RUA PARAÍBA, Nº136 - BAIRRO RESPLENDOR, IGARAPÉ - MG, 32900-000

ART

PROJETISTA
FILEMON

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CONSTRUÇÃO DE ESCOLA MUNICIPAL DE EDUCAÇÃO INFANTIL - EMEI

RESPONSÁVEL TÉCNICO

POLEANA TAMIRIS RESENDE
CREA : MG 282.137/D

DATA:
08/2025

ÁREA TOTAL
1.542,86m²

LOTE/QUADRA
XX/XX

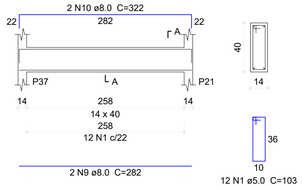
FORMATO
A1

ESCALA
IND.

FOLHA:
20/28

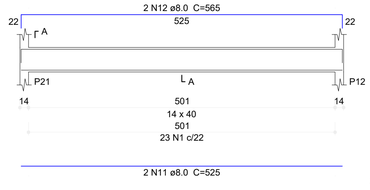
ARQUIVO: 173-2024-EST-EXEC-OS 42_EMEI RESPLENDOR_FNDE_R4-V1

V195 (14 x 40)
ESC 1:50



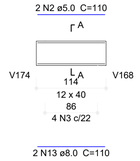
SEÇÃO A-A
ESC 1:25

V196 (14 x 40)
ESC 1:50



SEÇÃO A-A
ESC 1:25

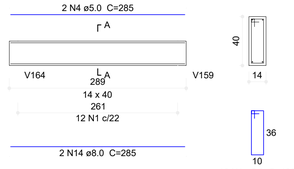
V197 (12 x 40)
ESC 1:50



SEÇÃO A-A
ESC 1:25

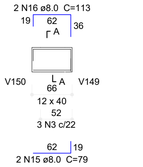


V198 (14 x 40)
ESC 1:50

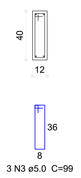


SEÇÃO A-A
ESC 1:25

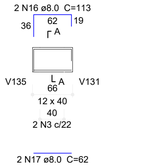
V199 (12 x 40)
ESC 1:50



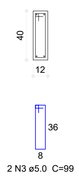
SEÇÃO A-A
ESC 1:25



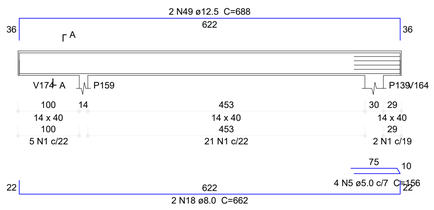
V200 (12 x 40)
ESC 1:50



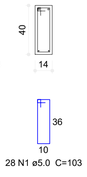
SEÇÃO A-A
ESC 1:25



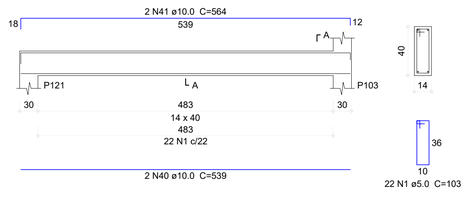
V201 (14 x 40)
ESC 1:50



SEÇÃO A-A
ESC 1:25

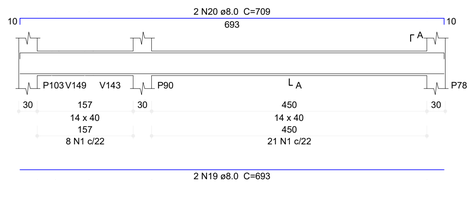


V202 (14 x 40)
ESC 1:50

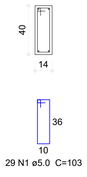


SEÇÃO A-A
ESC 1:25

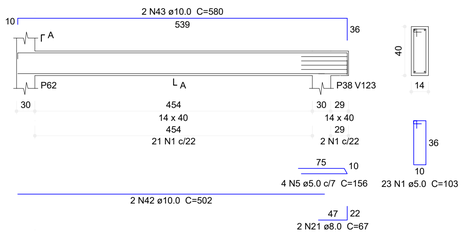
V203 (14 x 40)
ESC 1:50



SEÇÃO A-A
ESC 1:25

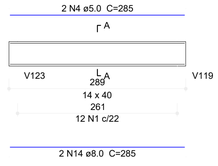


V205 (14 x 40)
ESC 1:50

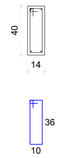


SEÇÃO A-A
ESC 1:25

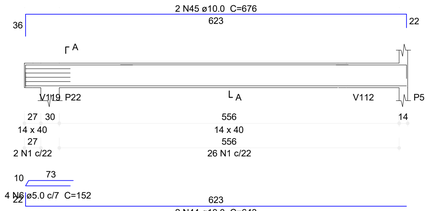
V206 (14 x 40)
ESC 1:50



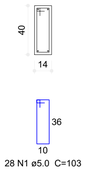
SEÇÃO A-A
ESC 1:25



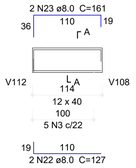
V207 (14 x 40)
ESC 1:50



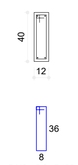
SEÇÃO A-A
ESC 1:25



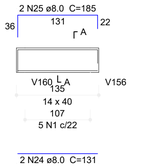
V208 (12 x 40)
ESC 1:50



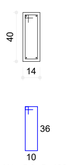
SEÇÃO A-A
ESC 1:25



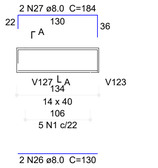
V209 (14 x 40)
ESC 1:50



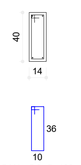
SEÇÃO A-A
ESC 1:25



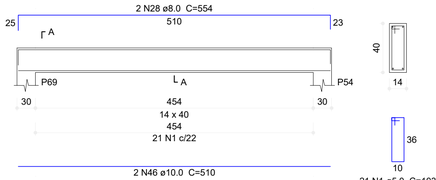
V210 (14 x 40)
ESC 1:50



SEÇÃO A-A
ESC 1:25

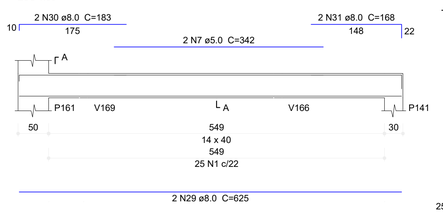


V216 (14 x 40)
ESC 1:50

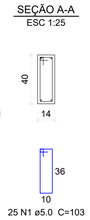


SEÇÃO A-A
ESC 1:25

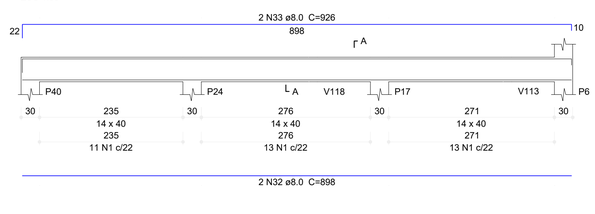
V211 (14 x 40)
ESC 1:50



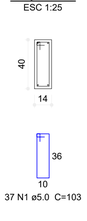
SEÇÃO A-A
ESC 1:25



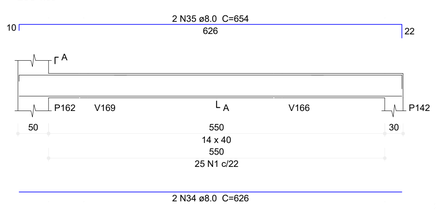
V213 (14 x 40)
ESC 1:50



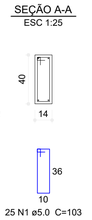
SEÇÃO A-A
ESC 1:25



V214 (14 x 40)
ESC 1:50



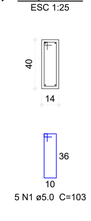
SEÇÃO A-A
ESC 1:25



V218 (14 x 40)
ESC 1:50



SEÇÃO A-A
ESC 1:25



V212 (14 x 40)
ESC 1:50

SEÇÃO A-A
ESC 1:25

V219 (14 x 40)
ESC 1:50

SEÇÃO A-A
ESC 1:25

V215 (14 x 40)
ESC 1:50

SEÇÃO A-A
ESC 1:25

V217 (14 x 40)
ESC 1:50

SEÇÃO A-A
ESC 1:25

V220 (15 x 30)
ESC 1:50

SEÇÃO A-A
ESC 1:25

V220

AÇO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
CA60	1	5.0	481	103	49543
	2	5.0	2	110	220
	3	5.0	14	99	1386
	4	5.0	4	285	1140
	5	5.0	8	156	1248
	6	5.0	4	152	608
	7	5.0	2	342	684
	8	5.0	2	85	170
CA50	9	8.0	2	282	564
	10	8.0	2	322	644
	11	8.0	2	525	1050
	12	8.0	2	565	1130
	13	8.0	2	110	220
	14	8.0	4	285	1140
	15	8.0	2	79	158
	16	8.0	4	113	452
	17	8.0	2	62	124
	18	8.0	2	662	1324
	19	8.0	2	693	1386
	20	8.0	2	709	1418
	21	8.0	2	67	134
	22	8.0	2	127	254
	23	8.0	2	161	322
	24	8.0	2	131	262
	25	8.0	2	185	370
	26	8.0	6	130	780
	27	8.0	4	184	736
	28	8.0	2	554	1108
	29	8.0	2	625	1250
	30	8.0	2	183	366
	31	8.0	2	168	336
	32	8.0	4	898	3592
	33	8.0	2	926	1852
	34	8.0	2	626	1252
	35	8.0	2	654	1308
	36	8.0	2	170	340
	37	8.0	2	938	1876
	38	8.0	2	55	110
	39	8.0	2	87	174
	40	10.0	2	539	1078
	41	10.0	2	564	1128
	42	10.0	2	502	1004
	43	10.0	2	580	1160
	44	10.0	2	643	1286
	45	10.0	2	676	1352
	46	10.0	2	510	1020
	47	10.0	2	918	1836
	48	10.0	2	949	1898
	49	12.5	2	688	1376
	50	12.5	2	1197	2394
	51	12.5	2	968	1936
	52	12.5	2	1200	2400
	53	12.5	2	993	1986

Resumo do aço

AÇO	DIAM (mm)	C.TOTAL (m)	PESO (kg)
CA50	8.0	260.4	102.7
	10.0	117.7	72.5
	12.5	101	97.2
CA60	5.0	550	84.8

PESO TOTAL (kg)
CA50 272.5
CA60 84.8

Volume de concreto (C-30) = 5.92 m³
Área de forma = 76.03 m²

NOTAS

1- Todas as medidas devem ser conferidas no local.

REVISÕES		
R00	07/02/2025	EMISSÃO INICIAL - PROJETO NÃO APROVADO
R01	20/02/2025	AJUSTE ARQUITETURA
R02	24/04/25	AJUSTE ARQUITETURA
R03	27/06/25	REVISÃO PARA ADEQUAÇÃO AS NORMAS DO CBMMG
R04	11/08/2025	REVISÃO PARA COMPATIBILIZAÇÃO DE PROJETO

Ponto S ENGENHARIA
Rua Itália, 313
Bairro Glória - Contagem /MG
comercial@pontosengenharia.com
Tel: (31) 9.9593-8131 / 9.9672-0612

CLIENTE
CENTRO DE OPORTUNIDADES DO BRASIL - COB

PROPRIETÁRIO
PREFEITURA MUNICIPAL DE IGARAPÉ

LOCAL
RUA PARAÍBA, Nº136 - BAIRRO RESPLENDOR, IGARAPÉ - MG, 32900-000

ART
PROJETISTA
FILEMON

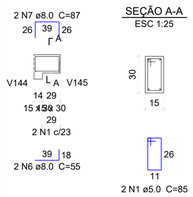
TIPO/ESPECIFICAÇÃO DO DOCUMENTO
PROJETO ESTRUTURAL - DETALHAMENTO DE VIGAS DA COBERTURA
CONSTRUÇÃO DE ESCOLA MUNICIPAL DE EDUCAÇÃO INFANTIL - EMEI

RESPONSÁVEL TÉCNICO
POLEANA TAMIRIS RESENDE
CREA : MG 282.137/D

DATA: 08/2025
ÁREA TOTAL 1.542,86m²
LOTE/QUADRA XX/XX
FORMATO A1
ESCALA IND.
FOLHA: 21/28

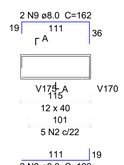
ARQUIVO: 173-2024-EST-EXEC-OS 42_EMEI RESPLENDOR_FNDE_R4-V1

V221 (15 x 30)
ESC 1:50

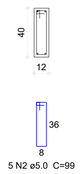


SEÇÃO A-A
ESC 1:25

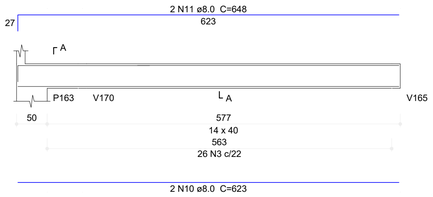
V222 (12 x 40)
ESC 1:50



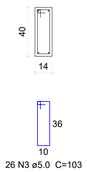
SEÇÃO A-A
ESC 1:25



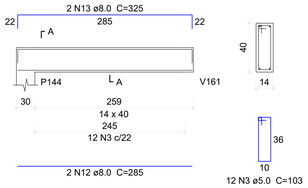
V223 (14 x 40)
ESC 1:50



SEÇÃO A-A
ESC 1:25

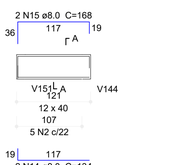


V224 (14 x 40)
ESC 1:50

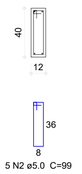


SEÇÃO A-A
ESC 1:25

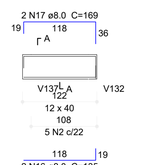
V226 (12 x 40)
ESC 1:50



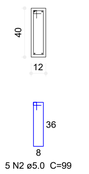
SEÇÃO A-A
ESC 1:25



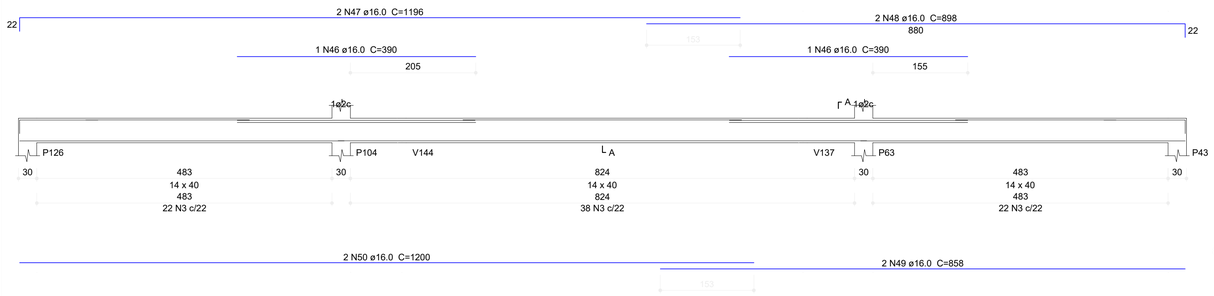
V227 (12 x 40)
ESC 1:50



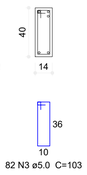
SEÇÃO A-A
ESC 1:25



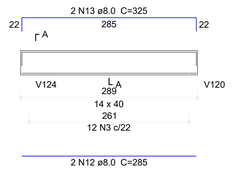
V225 (14 x 40)
ESC 1:50



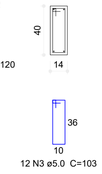
SEÇÃO A-A
ESC 1:25



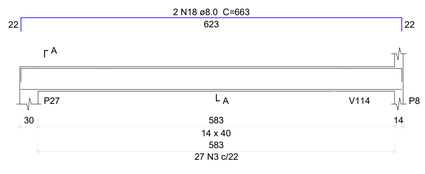
V228 (14 x 40)
ESC 1:50



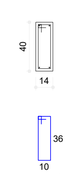
SEÇÃO A-A
ESC 1:25



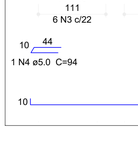
V229 (14 x 40)
ESC 1:50



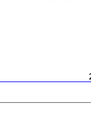
SEÇÃO A-A
ESC 1:25



V230 (12 x 40)
ESC 1:50



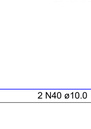
SEÇÃO A-A
ESC 1:25



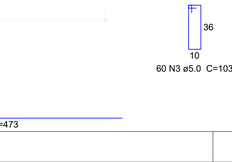
V231 (14 x 40)
ESC 1:50



SEÇÃO A-A
ESC 1:25



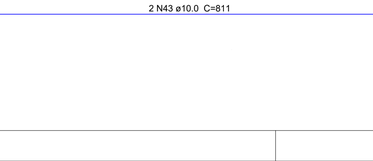
V232 (14 x 40)
ESC 1:50



SEÇÃO A-A
ESC 1:25



V233 (14 x 40)
ESC 1:50



SEÇÃO A-A
ESC 1:25

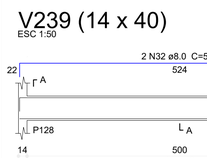
V234 (14 x 40)
ESC 1:50



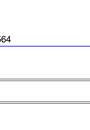
SEÇÃO A-A
ESC 1:25



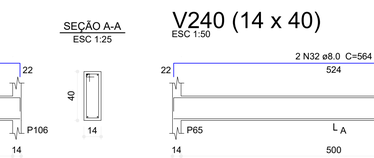
V235 (14 x 40)
ESC 1:50



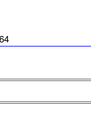
SEÇÃO A-A
ESC 1:25



V236 (14 x 40)
ESC 1:50



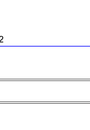
SEÇÃO A-A
ESC 1:25



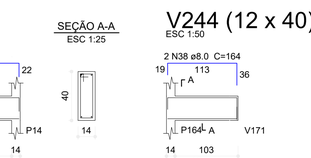
V237 (14 x 40)
ESC 1:50



SEÇÃO A-A
ESC 1:25



V238 (14 x 40)
ESC 1:50



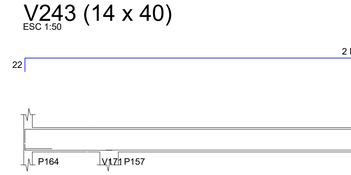
SEÇÃO A-A
ESC 1:25

V241 (14 x 40)
ESC 1:50

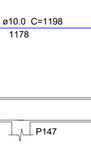


SEÇÃO A-A
ESC 1:25

V239 (14 x 40)
ESC 1:50



SEÇÃO A-A
ESC 1:25



V240 (14 x 40)
ESC 1:50

SEÇÃO A-A
ESC 1:25

V242 (14 x 40)
ESC 1:50

SEÇÃO A-A
ESC 1:25

V244 (12 x 40)
ESC 1:50

SEÇÃO A-A
ESC 1:25

V243 (14 x 40)
ESC 1:50

SEÇÃO A-A
ESC 1:25

V245 (14 x 40)
ESC 1:50

SEÇÃO A-A
ESC 1:25

ESPERA P237
ESC 1:25

Relação do aço

V221	V222	V223
V224	V225	V226
V227	V228	V229
V230	V231	V232
V233	V234	V235
V236	V237	V238
V239	V240	V241
V242	V243	V244
V245		

AÇO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
CA60	1	5.0	2	85	170
	2	5.0	25	99	2475
	3	5.0	485	103	49955
	4	5.0	1	94	94
	5	5.0	4	83	332
CA50	6	8.0	2	55	110
	7	8.0	2	87	174
	8	8.0	2	128	256
	9	8.0	2	162	324
	10	8.0	4	623	2492
	11	8.0	2	648	1296
	12	8.0	4	285	1140
	13	8.0	4	325	1300
	14	8.0	2	134	268
	15	8.0	2	168	336
	16	8.0	2	135	270
	17	8.0	2	169	338
	18	8.0	2	663	1326
	19	8.0	2	126	252
	20	8.0	2	160	320
	21	8.0	4	525	2100
	22	8.0	4	565	2260
	23	8.0	2	280	560
	24	8.0	2	320	640
	25	8.0	2	526	1052
	26	8.0	2	566	1132
	27	8.0	2	279	558
	28	8.0	2	319	638
	29	8.0	2	527	1054
	30	8.0	2	567	1134
	31	8.0	6	524	3144
	32	8.0	6	564	3384
	33	8.0	4	283	1132
	34	8.0	4	323	1292
	35	8.0	2	522	1044
	36	8.0	2	562	1124
	37	8.0	2	130	260
	38	8.0	2	164	328
	39	10.0	2	934	1868
	40	10.0	2	473	946
	41	10.0	2	1198	2396
	42	10.0	2	285	570
	43	10.0	2	811	1622
	44	10.0	2	850	1700
	45	10.0	4	91	364
	46	16.0	2	390	780
	47	16.0	2	1196	2392
	48	16.0	2	898	1796
	49	16.0	2	858	1716
	50	16.0	2	1200	2400

Resumo do aço

AÇO	DIAM (mm)	C.TOTAL (m)	PESO (kg)
CA50	8.0	330.4	130.4
	10.0	94.7	58.4
	16.0	90.9	143.4
CA60	5.0	530.3	81.7
PESO TOTAL (kg)			
CA50	332.1		
CA60	81.7		

Volume de concreto (C-30) = 6.12 m³
Área de forma = 84.59 m²

NOTAS

1- Todas as medidas devem ser conferidas no local.

REVISÕES		
R00	07/02/2025	EMISSÃO INICIAL - PROJETO NÃO APROVADO
R01	20/02/2025	AJUSTE ARQUITETURA
R02	24/04/25	AJUSTE ARQUITETURA
R03	27/06/25	REVISÃO PARA ADEQUAÇÃO AS NORMAS DO CBMMG
R04	11/08/2025	REVISÃO PARA COMPATIBILIZAÇÃO DE PROJETO

Ponto S ENGENHARIA
Rua Itália, 313
Bairro Glória - Contagem -MG
comercial@pontosengenharia.com
Tel: (31) 9.9593-8131 / 9.9672-0612

CLIENTE
CENTRO DE OPORTUNIDADES DO BRASIL - COB

PROPRIETÁRIO
PREFEITURA MUNICIPAL DE IGARAPÉ

LOCAL
RUA PARAÍBA, Nº136 - BAIRRO RESPLENDOR, IGARAPÉ - MG, 32900-000

ART | PROJETISTA: FILEMON

TIPO/ESPECIFICAÇÃO DO DOCUMENTO
PROJETO ESTRUTURAL - DETALHAMENTO DE VIGAS DA COBERTURA
CONSTRUÇÃO DE ESCOLA MUNICIPAL DE EDUCAÇÃO INFANTIL - EMEI

RESPONSÁVEL TÉCNICO
POLEANA TAMIRIS RESENDE
CREA : MG 282.137/D

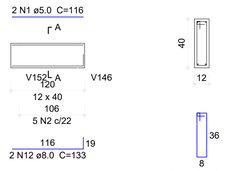
DATA: 08/2025 | ÁREA TOTAL 1.542,86m² | LOTE/QUADRA XX/XX

FORMATO A1 | ESCALA IND.

FOLHA: 22/28

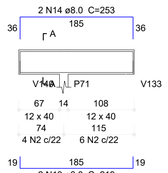
ARQUIVO: 173-2024-EST-EXEC-OS 42_EMEI RESPLENDOR_FNDE_R4-V1

V246 (12 x 40)
ESC 1:50



SEÇÃO A-A
ESC 1:25

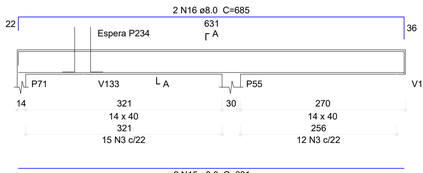
V247 (12 x 40)
ESC 1:50



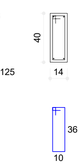
SEÇÃO A-A
ESC 1:25



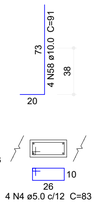
V248 (14 x 40)
ESC 1:50



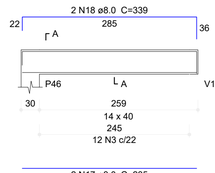
SEÇÃO A-A
ESC 1:25



ESPERA P234
ESC 1:25



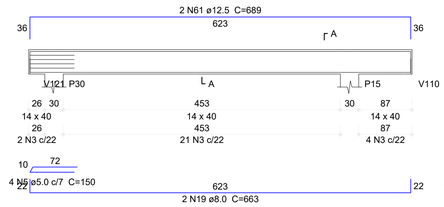
V249 (14 x 40)
ESC 1:50



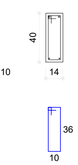
SEÇÃO A-A
ESC 1:25



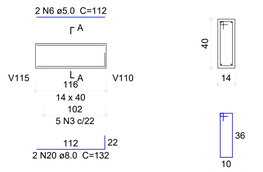
V250 (14 x 40)
ESC 1:50



SEÇÃO A-A
ESC 1:25

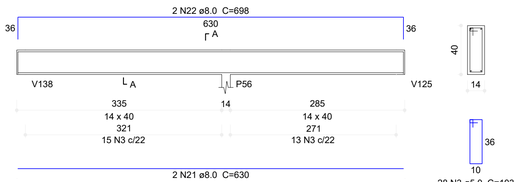


V251 (14 x 40)
ESC 1:50



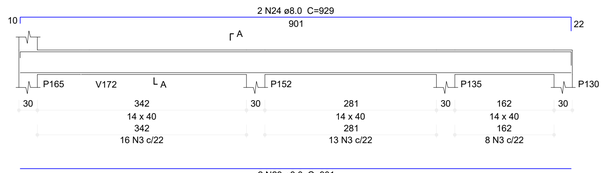
SEÇÃO A-A
ESC 1:25

V252 (14 x 40)
ESC 1:50

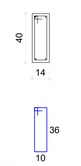


SEÇÃO A-A
ESC 1:25

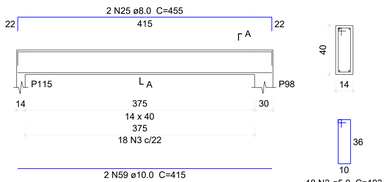
V253 (14 x 40)
ESC 1:50



SEÇÃO A-A
ESC 1:25

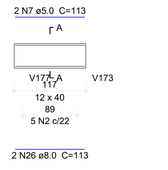


V254 (14 x 40)
ESC 1:50

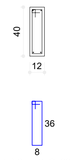


SEÇÃO A-A
ESC 1:25

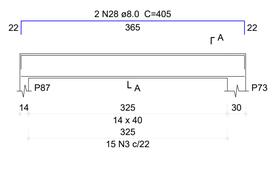
V269 (12 x 40)
ESC 1:50



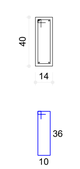
SEÇÃO A-A
ESC 1:25



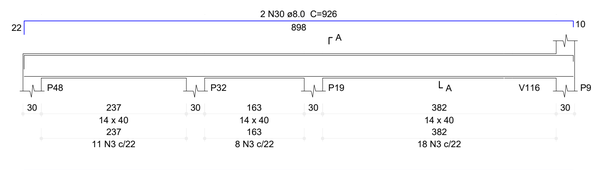
V255 (14 x 40)
ESC 1:50



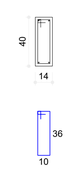
SEÇÃO A-A
ESC 1:25



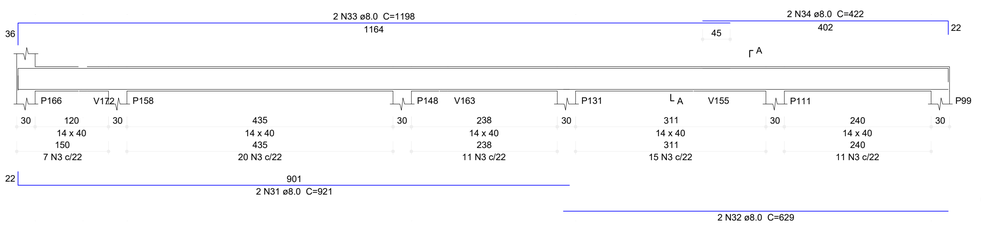
V256 (14 x 40)
ESC 1:50



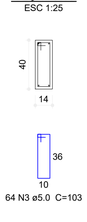
SEÇÃO A-A
ESC 1:25



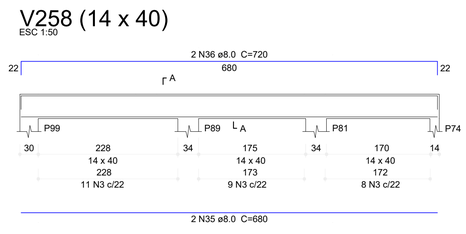
V257 (14 x 40)
ESC 1:50



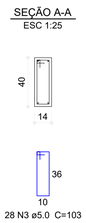
SEÇÃO A-A
ESC 1:25



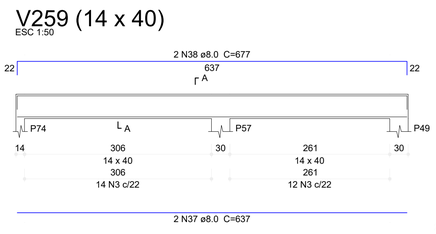
V258 (14 x 40)
ESC 1:50



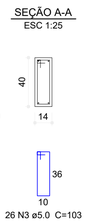
SEÇÃO A-A
ESC 1:25



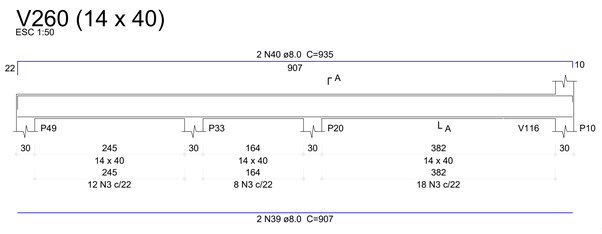
V259 (14 x 40)
ESC 1:50



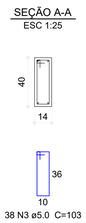
SEÇÃO A-A
ESC 1:25



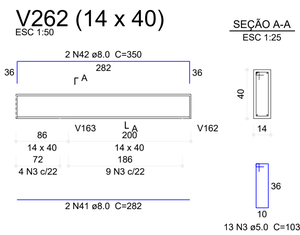
V260 (14 x 40)
ESC 1:50



SEÇÃO A-A
ESC 1:25

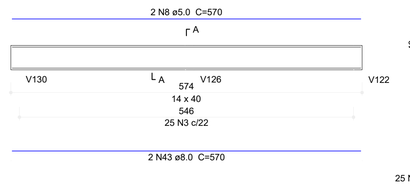


V262 (14 x 40)
ESC 1:50

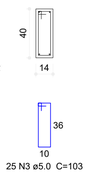


SEÇÃO A-A
ESC 1:25

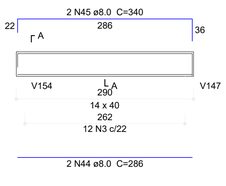
V261 (14 x 40)
ESC 1:50



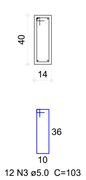
SEÇÃO A-A
ESC 1:25



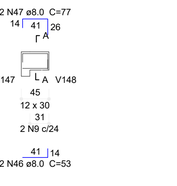
V263 (14 x 40)
ESC 1:50



SEÇÃO A-A
ESC 1:25



V264 (12 x 30)
ESC 1:50



SEÇÃO A-A
ESC 1:25

V265 (12 x 30)
ESC 1:50

SEÇÃO A-A
ESC 1:25

V267 (14 x 40)
ESC 1:50

SEÇÃO A-A
ESC 1:25

V104 (15 x 25)
ESC 1:50

SEÇÃO A-A
ESC 1:25

V266 (14 x 40)
ESC 1:50

SEÇÃO A-A
ESC 1:25

V268 (14 x 40)
ESC 1:50

SEÇÃO A-A
ESC 1:25

V271 (14 x 40)
ESC 1:50

SEÇÃO A-A
ESC 1:25

V272 (12 x 40)
ESC 1:50

SEÇÃO A-A
ESC 1:25

AÇO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
CA60	1	5.0	2	116	232
	2	5.0	25	99	2475
	3	5.0	503	103	51809
	4	5.0	4	83	332
	5	5.0	4	150	600
	6	5.0	2	112	224
	7	5.0	2	113	226
	8	5.0	2	570	1140
	9	5.0	4	79	316
	10	5.0	10	75	750
	11	5.0	4	138	552
CA50	12	8.0	2	133	266
	13	8.0	2	219	438
	14	8.0	2	253	506
	15	8.0	2	631	1262
	16	8.0	2	685	1370
	17	8.0	2	285	570
	18	8.0	2	339	678
	19	8.0	2	663	1326
	20	8.0	2	132	264
	21	8.0	2	630	1260
	22	8.0	2	698	1396
	23	8.0	2	901	1802
	24	8.0	2	929	1858
	25	8.0	2	455	910
	26	8.0	2	113	226
	27	8.0	2	365	730
	28	8.0	2	405	810
	29	8.0	2	898	1796
	30	8.0	2	926	1852
	31	8.0	4	921	3684
	32	8.0	2	629	1258
	33	8.0	2	1198	2396
	34	8.0	2	422	844
	35	8.0	2	680	1360
	36	8.0	2	720	1440
	37	8.0	2	637	1274
	38	8.0	2	677	1354
	39	8.0	2	907	1814
	40	8.0	2	935	1870
	41	8.0	2	282	564
	42	8.0	2	350	700
	43	8.0	2	570	1140
	44	8.0	2	286	572
	45	8.0	2	340	680
	46	8.0	4	53	212
	47	8.0	4	77	308
	48	8.0	2	229	458
	49	8.0	2	263	526
	50	8.0	2	209	418
	51	8.0	2	226	452
	52	8.0	2	665	1330
	53	8.0	2	733	1466
	54	8.0	2	294	588
	55	8.0	2	334	668
	56	8.0	2	135	270
	57	8.0	2	169	338
	58	10.0	4	91	364
	59	10.0	2	415	830
	60	10.0	2	968	1936
	61	12.5	2	689	1378

Resumo do aço

AÇO	DIAM (mm)	C.TOTAL (m)	PESO (kg)
CA50	8.0	473.1	186.7
	10.0	31.3	19.3
	12.5	13.8	13.3
CA60	5.0	586.6	90.4

PESO TOTAL (kg)	
CA50	219.2
CA60	90.4

Volume de concreto (C-30) = 6.26 m³
Área de forma = 80.59 m²

NOTAS

1- Todas as medidas devem ser conferidas no local.

REVISÕES		
R00	07/02/2025	EMISSÃO INICIAL - PROJETO NÃO APROVADO
R01	20/02/2025	AJUSTE ARQUITETURA
R02	24/04/25	AJUSTE ARQUITETURA
R03	27/06/25	REVISÃO PARA ADEQUAÇÃO AS NORMAS DO CBMMG
R04	11/08/2025	REVISÃO PARA COMPATIBILIZAÇÃO DE PROJETO

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comercial@pontosengenharia.com
Tel: (31) 9.9593-8131 / 9.9672-0612

CLIENTE
CENTRO DE OPORTUNIDADES DO BRASIL - COB

PROPRIETÁRIO
PREFEITURA MUNICIPAL DE IGARAPÉ

LOCAL
RUA PARAÍBA, Nº136 - BAIRRO RESPLENDOR, IGARAPÉ - MG, 32900-000

ART
PROJETISTA
FILEMON

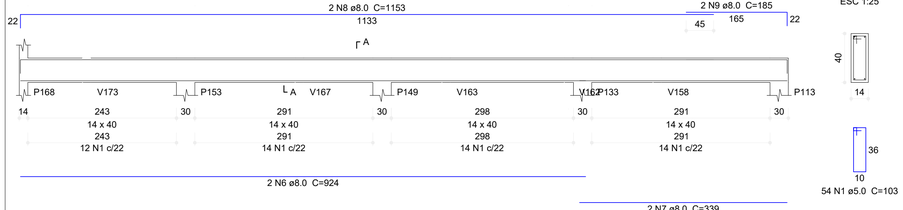
TIPO/ESPECIFICAÇÃO DO DOCUMENTO
PROJETO ESTRUTURAL - DETALHAMENTO DE VIGAS DA COBERTURA
CONSTRUÇÃO DE ESCOLA MUNICIPAL DE EDUCAÇÃO INFANTIL - EMEI

RESPONSÁVEL TÉCNICO
POLEANA TAMIRIS RESENDE
CREA : MG 282.137/D

DATA:	ÁREA TOTAL	LOTE/QUADRA
08/2025	1.542,66m²	XX/XX
FORMATO	ESCALA	FOLHA:
A1	IND.	23/28

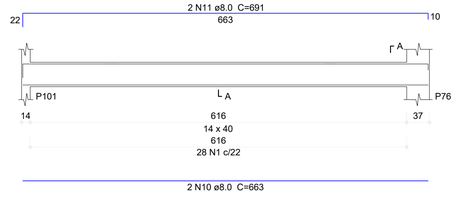
ARQUIVO: 173-2024-EST-EXEC-OS 42_EMEI RESPLENDOR_FNDE_R4-V1

V270 (14 x 40)
ESC 1:50

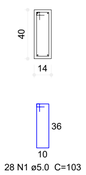


SEÇÃO A-A
ESC 1:25

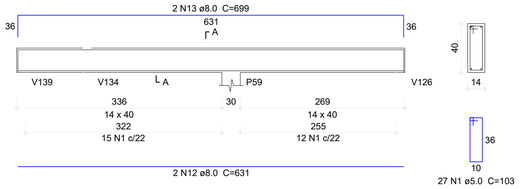
V273 (14 x 40)
ESC 1:50



SEÇÃO A-A
ESC 1:25

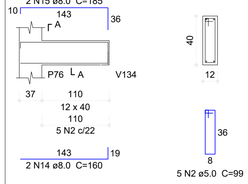


V274 (14 x 40)
ESC 1:50



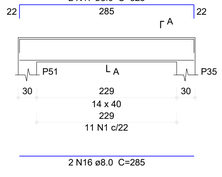
SEÇÃO A-A
ESC 1:25

V275 (12 x 40)
ESC 1:50

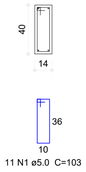


SEÇÃO A-A
ESC 1:25

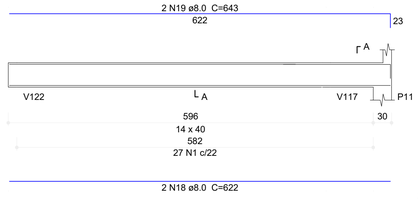
V276 (14 x 40)
ESC 1:50



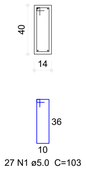
SEÇÃO A-A
ESC 1:25



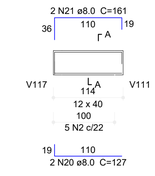
V277 (14 x 40)
ESC 1:50



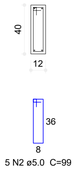
SEÇÃO A-A
ESC 1:25



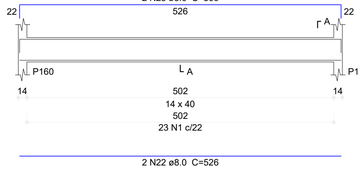
V278 (12 x 40)
ESC 1:50



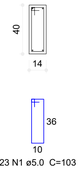
SEÇÃO A-A
ESC 1:25



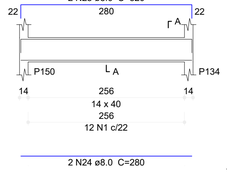
V279 (14 x 40)
ESC 1:50



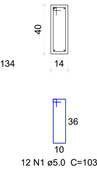
SEÇÃO A-A
ESC 1:25



V280 (14 x 40)
ESC 1:50



SEÇÃO A-A
ESC 1:25



V281 (14 x 40)
ESC 1:50

SEÇÃO A-A
ESC 1:25

V282 (14 x 40)
ESC 1:50

SEÇÃO A-A
ESC 1:25

V283 (14 x 40)
ESC 1:50

SEÇÃO A-A
ESC 1:25

V284 (14 x 40)
ESC 1:50

SEÇÃO A-A
ESC 1:25

V285 (14 x 25)
ESC 1:50

SEÇÃO A-A
ESC 1:25



V286 (14 x 25)
ESC 1:50

SEÇÃO A-A
ESC 1:25

V102 (15 x 25)
ESC 1:50

SEÇÃO A-A
ESC 1:25

V103 (15 x 25)
ESC 1:50

SEÇÃO A-A
ESC 1:25

AÇO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
CA60	1	5.0	263	103	27089
	2	5.0	10	99	990
	3	5.0	4	144	576
	4	5.0	12	73	876
	5	5.0	23	75	1725
CA50	6	8.0	2	924	1848
	7	8.0	2	339	678
	8	8.0	2	1153	2306
	9	8.0	2	185	370
	10	8.0	2	663	1326
	11	8.0	2	691	1382
	12	8.0	2	631	1262
	13	8.0	2	699	1398
	14	8.0	2	160	320
	15	8.0	2	185	370
	16	8.0	2	285	570
	17	8.0	2	325	650
	18	8.0	2	622	1244
	19	8.0	2	643	1286
	20	8.0	2	127	254
	21	8.0	2	161	322
	22	8.0	2	526	1052
	23	8.0	2	566	1132
	24	8.0	2	280	560
	25	8.0	2	320	640
	26	8.0	4	525	2100
	27	8.0	4	565	2260
	28	8.0	2	524	1048
	29	8.0	2	564	1128
	30	8.0	2	282	564
	31	8.0	2	322	644
	32	8.0	2	109	218
	33	8.0	2	134	268
	34	8.0	2	280	560
	35	8.0	2	298	596
	36	8.0	2	226	452
	37	10.0	2	145	290
	38	10.0	2	211	422
	39	12.5	2	127	254

Resumo do aço

AÇO	DIAM (mm)	C.TOTAL (m)	PESO (kg)
CA50	8.0	288.08	113.79
	10.0	7.2	4.4
	12.5	2.6	2.4
CA60	5.0	319.2	49.2

PESO TOTAL (kg)	
CA50	120.6
CA60	49.2

Volume de concreto (C-30) = 3.52 m³
Área de forma = 48.42 m²

NOTAS
1- Todas as medidas devem ser conferidas no local.

REVISÕES		
R00	07/02/2025	EMISSÃO INICIAL - PROJETO NÃO APROVADO
R01	20/02/2025	AJUSTE ARQUITETURA
R02	24/04/25	AJUSTE ARQUITETURA
R03	27/06/25	REVISÃO PARA ADEQUAÇÃO AS NORMAS DO CBMMG
R04	11/08/2025	REVISÃO PARA COMPATIBILIZAÇÃO DE PROJETO

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ART
PROJETISTA
FILEMON

RESPONSÁVEL TÉCNICO
POLEANA TAMIRIS RESENDE
CREA : MG 282.137/D

CLIENTE
CENTRO DE OPORTUNIDADES DO BRASIL - COB

PROPRIETÁRIO
PREFEITURA MUNICIPAL DE IGARAPÉ

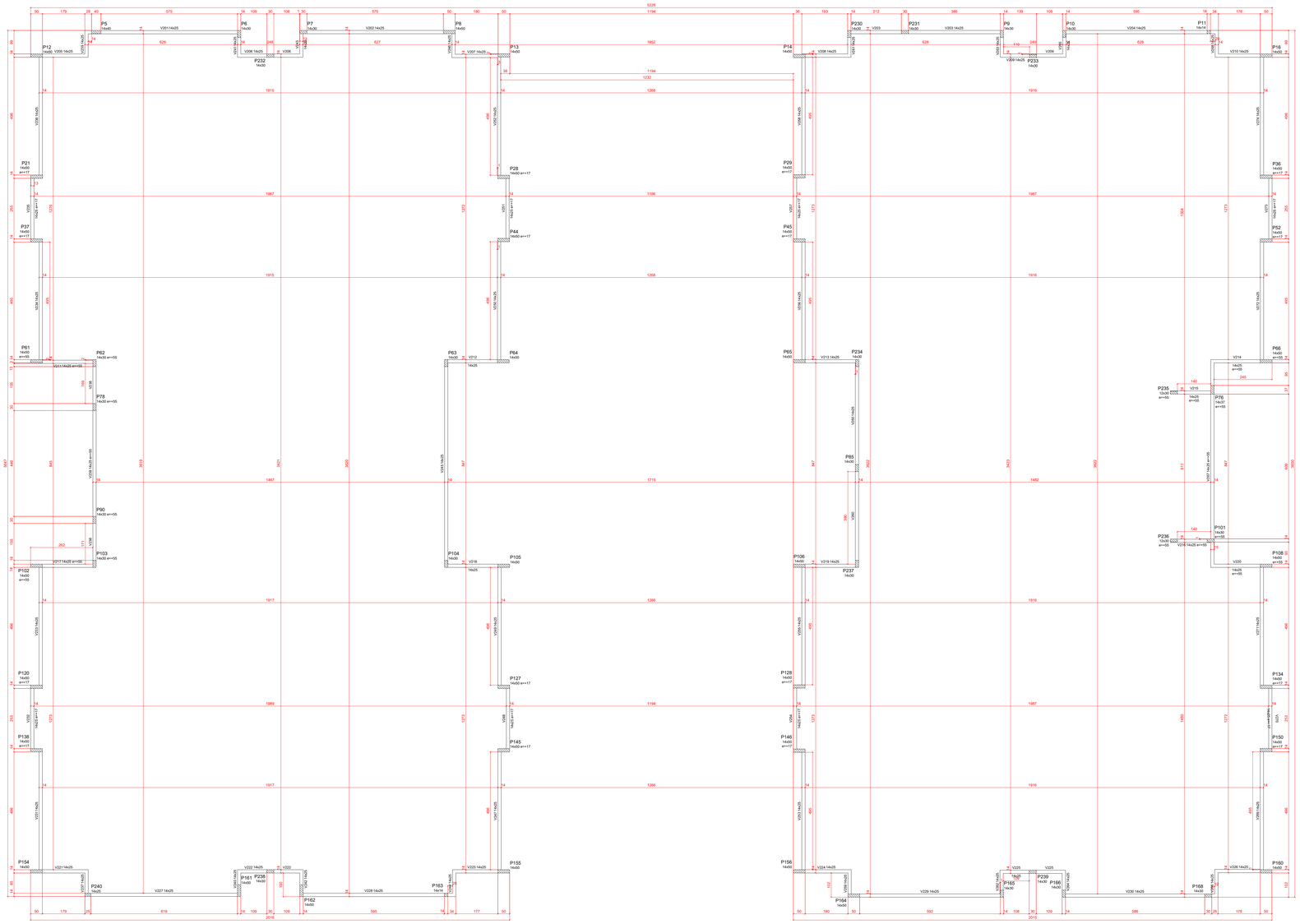
LOCAL
RUA PARAÍBA, Nº136 - BAIRRO RESPLENDOR, IGARAPÉ - MG, 32900-000

TIPO/ESPECIFICAÇÃO DO DOCUMENTO
PROJETO ESTRUTURAL - DETALHAMENTO DE VIGAS DA COBERTURA

CONSTRUÇÃO DE ESCOLA MUNICIPAL DE EDUCAÇÃO INFANTIL - EMEI

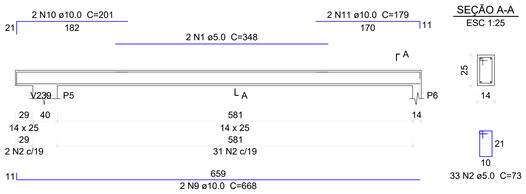
DATA:	ÁREA TOTAL	LOTE/QUADRA
08/2025	1.542,86m²	XX/XX
FORMATO: A1	ESCALA: IND.	FOLHA: 24/28

ARQUIVO: 173-2024-EST-EXEC-OS 42_EMEI RESPLENDOR_FNDE_R4-V1


P5 16x40
P6 16x30
P7 16x30
P8 16x40
P9 16x30
P10 16x30
P11 14x14
P12 16x40
P13 16x50
P14 16x50
P230 16x30
P231 16x30
P232 16x20
P233 16x20
P16 16x50
P21 16x50 a=+17
P28 16x50 a=+17
P29 16x50 a=+17
P36 16x50 a=+17
P37 16x50 a=+17
P44 16x50 a=+17
P45 16x50 a=+17
P52 16x50 a=+17
P61 16x50 a=+55
P62 16x50 a=+55
P63 16x50
P64 16x50
P65 16x50
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P236 10x30 a=+55
P108 16x50 a=+55
P120 16x50 a=+17
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1987
1196
1917
1266
1989
1194
1915
1268
1987
1915
1268
1917
1266
1989
1194
1915
1268
1987
1915
1268
1917
1266
1989
1194
1915
1268
1987
3647
448
845
3618
3421
3605
1467
1715
847
3473
3622
1482
847
3618
3421
3605
1467
1715
847
3473
3622
1482
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3618
3421
3605
1467
1715
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3473
3622
1482
847

V201 (14 x 25)

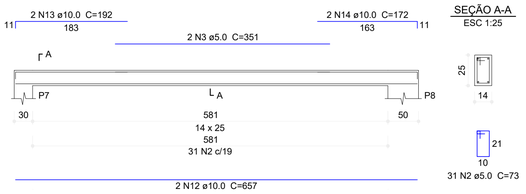
ESC 1:50



SEÇÃO A-A
ESC 1:25

V202 (14 x 25)

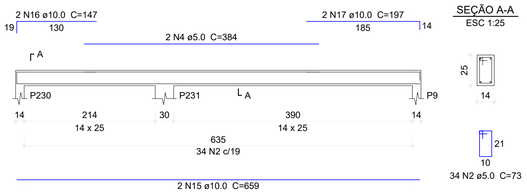
ESC 1:50



SEÇÃO A-A
ESC 1:25

V203 (14 x 25)

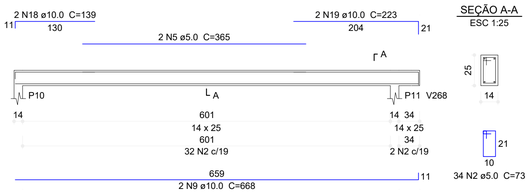
ESC 1:50



SEÇÃO A-A
ESC 1:25

V204 (14 x 25)

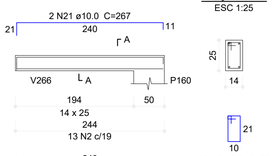
ESC 1:50



SEÇÃO A-A
ESC 1:25

V205 (14 x 25)

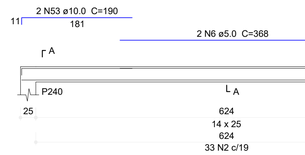
ESC 1:50



SEÇÃO A-A
ESC 1:25

V206 (14 x 25)

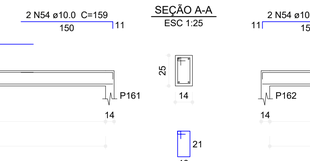
ESC 1:50



SEÇÃO A-A
ESC 1:25

V207 (14 x 25)

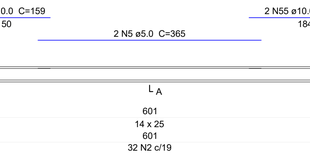
ESC 1:50



SEÇÃO A-A
ESC 1:25

V208 (14 x 25)

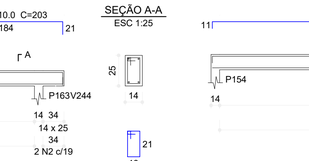
ESC 1:50



SEÇÃO A-A
ESC 1:25

V209 (14 x 25)

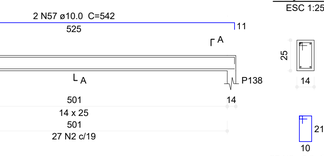
ESC 1:50



SEÇÃO A-A
ESC 1:25

V210 (14 x 25)

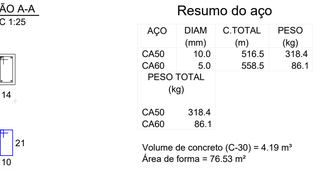
ESC 1:50



SEÇÃO A-A
ESC 1:25

V211 (14 x 25)

ESC 1:50

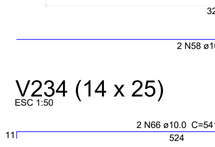


SEÇÃO A-A
ESC 1:25

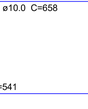
AÇO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
CA60	1	5.0	2	348	696
	2	5.0	683	73	49859
	3	5.0	2	351	702
	4	5.0	2	384	768
	5	5.0	4	365	1460
	6	5.0	2	368	736
	7	5.0	2	410	820
	8	5.0	2	404	808
CA50	9	10.0	6	668	4008
	10	10.0	2	201	402
	11	10.0	2	179	358
	12	10.0	2	657	1314
	13	10.0	4	192	768
	14	10.0	2	172	344
	15	10.0	4	659	2636
	16	10.0	2	147	294
	17	10.0	2	197	394
	18	10.0	2	139	278
	19	10.0	2	223	446
	20	10.0	4	249	996
	21	10.0	4	267	1068
	22	10.0	4	291	1164
	23	10.0	2	311	622
	24	10.0	4	251	1004
	25	10.0	4	269	1076
	26	10.0	4	250	1000
	27	10.0	4	268	1072
	28	10.0	2	293	586
	29	10.0	2	313	626
	30	10.0	2	247	494
	31	10.0	2	265	530
	32	10.0	2	274	548
	33	10.0	2	271	542
	34	10.0	2	288	576
	35	10.0	2	284	568
	36	10.0	2	302	604
	37	10.0	2	257	514
	38	10.0	4	284	1136
	39	10.0	2	182	364
	40	10.0	2	199	398
	41	10.0	2	191	382
	42	10.0	2	209	418
	43	10.0	6	275	1650
	44	10.0	4	292	1168
	45	10.0	2	273	546
	46	10.0	2	290	580
	47	10.0	2	283	566
	48	10.0	2	301	602
	49	10.0	2	266	532
	50	10.0	2	248	496
	51	10.0	2	266	532
	52	10.0	2	312	624
	53	10.0	2	190	380
	54	10.0	4	159	636
	55	10.0	2	203	406
	56	10.0	6	525	3150
	57	10.0	6	542	3252
	58	10.0	2	658	1316
	59	10.0	2	114	228
	60	10.0	2	667	1334
	61	10.0	2	134	268
	62	10.0	2	188	376
	63	10.0	2	280	560
	64	10.0	2	297	594
	65	10.0	2	524	1048
	66	10.0	2	541	1082
	67	10.0	2	282	564
	68	10.0	2	299	598
	69	10.0	4	119	476
	70	10.0	4	137	548

V212 (14 x 25)

ESC 1:50

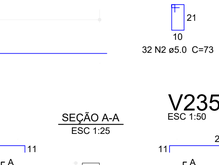


SEÇÃO A-A
ESC 1:25

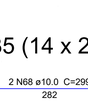


V213 (14 x 25)

ESC 1:50

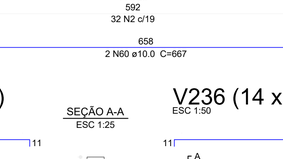


SEÇÃO A-A
ESC 1:25



V214 (14 x 25)

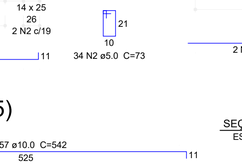
ESC 1:50



SEÇÃO A-A
ESC 1:25

V215 (14 x 25)

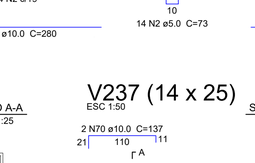
ESC 1:50



SEÇÃO A-A
ESC 1:25

V216 (14 x 25)

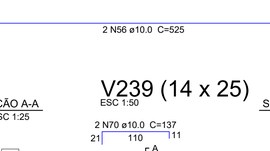
ESC 1:50



SEÇÃO A-A
ESC 1:25

V217 (14 x 25)

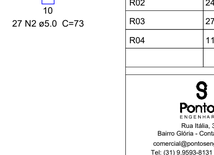
ESC 1:50



SEÇÃO A-A
ESC 1:25

V218 (14 x 25)

ESC 1:50



SEÇÃO A-A
ESC 1:25



V219 (14 x 25)

ESC 1:50

SEÇÃO A-A
ESC 1:25

V220 (14 x 25)

ESC 1:50

SEÇÃO A-A
ESC 1:25

V221 (14 x 25)

ESC 1:50

SEÇÃO A-A
ESC 1:25

V222 (14 x 25)

ESC 1:50

SEÇÃO A-A
ESC 1:25

V223 (14 x 25)

ESC 1:50

SEÇÃO A-A
ESC 1:25

V224 (14 x 25)

ESC 1:50

SEÇÃO A-A
ESC 1:25

V225 (14 x 25)

ESC 1:50

SEÇÃO A-A
ESC 1:25

V226 (14 x 25)

ESC 1:50

SEÇÃO A-A
ESC 1:25

V227 (14 x 25)

ESC 1:50

SEÇÃO A-A
ESC 1:25

V228 (14 x 25)

ESC 1:50

SEÇÃO A-A
ESC 1:25

V231 (14 x 25)

ESC 1:50

SEÇÃO A-A
ESC 1:25

Resumo do aço

AÇO	DIAM (mm)	C.TOTAL (m)	PESO (kg)
CA50	10.0	516.5	318.4
CA60	5.0	558.5	86.1
PESO TOTAL (kg)			
CA50	318.4		
CA60	86.1		

Volume de concreto (C-30) = 4.19 m³
Área de forma = 76.53 m²

V229 (14 x 25)

ESC 1:50

SEÇÃO A-A
ESC 1:25

V230 (14 x 25)

ESC 1:50

SEÇÃO A-A
ESC 1:25

V232 (14 x 25)

ESC 1:50

SEÇÃO A-A
ESC 1:25

V233 (14 x 25)

ESC 1:50

SEÇÃO A-A
ESC 1:25

NOTAS

1- Todas as medidas devem ser conferidas no local.

REVISÕES		
R00	07/02/2025	EMISSÃO INICIAL - PROJETO NÃO APROVADO
R01	20/02/2025	AJUSTE ARQUITETURA
R02	24/04/25	AJUSTE ARQUITETURA
R03	27/06/25	REVISÃO PARA ADEQUAÇÃO AS NORMAS DO CBMMG
R04	11/08/2025	REVISÃO PARA COMPATIBILIZAÇÃO DE PROJETO

Ponto S ENGENHARIA
Rua Itália, 313
Bairro Glória - Contagem -MG
comercial@pontosengenharia.com
Tel: (31) 9.9593-8131 / 9.9672-0612

ART | PROJETISTA FILEMON

RESPONSÁVEL TÉCNICO

POLEANA TAMIRIS RESENDE
CREA : MG 282.137/D

CLIENTE
CENTRO DE OPORTUNIDADES DO BRASIL - COB

PROPRIETÁRIO
PREFEITURA MUNICIPAL DE IGARAPÉ

LOCAL
RUA PARAÍBA, Nº136 - BAIRRO RESPLENDOR, IGARAPÉ - MG, 32900-000

TIPO/ESPECIFICAÇÃO DO DOCUMENTO
PROJETO ESTRUTURAL - DETALHAMENTO DE VIGAS DE RESPALDO DA PLATIBANDA
CONSTRUÇÃO DE ESCOLA MUNICIPAL DE EDUCAÇÃO INFANTIL - EMEI

DATA:	ÁREA TOTAL	LOTE/QUADRA
08/2025	1.542,86m²	XX/XX
FORMATO: A1	ESCALA: IND.	FOLHA: 26/28

ARQUIVO: 173-2024-EST-EXEC-OS 42_EMEI RESPLENDOR_FNDE_R4-V1

V234 (14 x 25)

ESC 1:50

SEÇÃO A-A
ESC 1:25

V235 (14 x 25)

ESC 1:50

SEÇÃO A-A
ESC 1:25

V236 (14 x 25)

ESC 1:50

SEÇÃO A-A
ESC 1:25

V237 (14 x 25)

ESC 1:50

SEÇÃO A-A
ESC 1:25

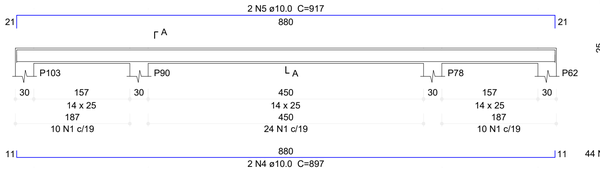
V239 (14 x 25)

ESC 1:50

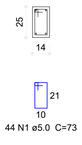
SEÇÃO A-A
ESC 1:25

V238 (14 x 25)

ESC 1:50

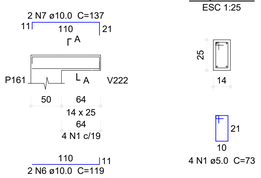


SEÇÃO A-A
ESC 1:25



V240 (14 x 25)

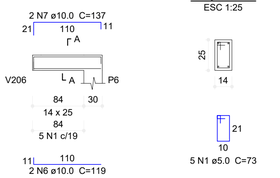
ESC 1:50



SEÇÃO A-A
ESC 1:25

V241 (14 x 25)

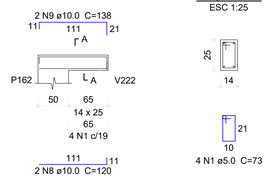
ESC 1:50



SEÇÃO A-A
ESC 1:25

V242 (14 x 25)

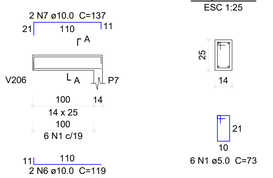
ESC 1:50



SEÇÃO A-A
ESC 1:25

V243 (14 x 25)

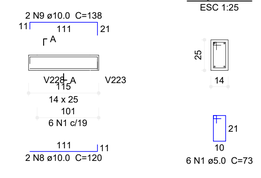
ESC 1:50



SEÇÃO A-A
ESC 1:25

V244 (14 x 25)

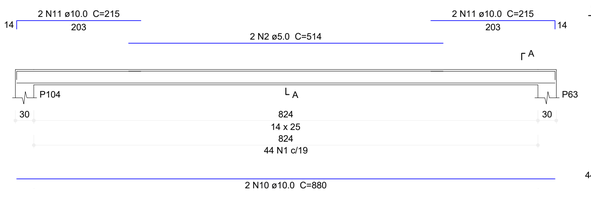
ESC 1:50



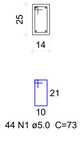
SEÇÃO A-A
ESC 1:25

V245 (14 x 25)

ESC 1:50

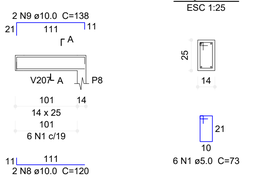


SEÇÃO A-A
ESC 1:25



V246 (14 x 25)

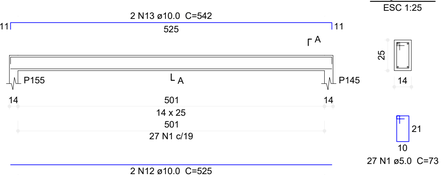
ESC 1:50



SEÇÃO A-A
ESC 1:25

V247 (14 x 25)

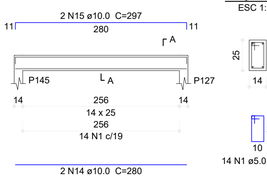
ESC 1:50



SEÇÃO A-A
ESC 1:25

V248 (14 x 25)

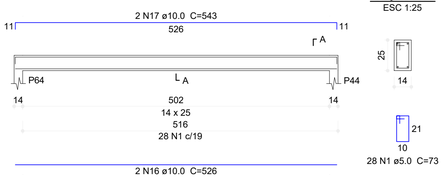
ESC 1:50



SEÇÃO A-A
ESC 1:25

V250 (14 x 25)

ESC 1:50



SEÇÃO A-A
ESC 1:25

AÇO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
CA60	1	5.0	661	73	48253
	2	5.0	2	514	1028
	3	5.0	2	406	812
CA50	4	10.0	6	897	5382
	5	10.0	2	917	1834
	6	10.0	10	119	1190
	7	10.0	12	137	1644
	8	10.0	10	120	1200
	9	10.0	10	138	1380
	10	10.0	4	880	3520
	11	10.0	4	215	860
	12	10.0	8	525	4200
	13	10.0	8	542	4336
	14	10.0	4	280	1120
	15	10.0	4	297	1188
	16	10.0	4	526	2104
	17	10.0	4	543	2172
	18	10.0	2	279	558
	19	10.0	2	296	592
	20	10.0	2	527	1054
	21	10.0	2	544	1088
	22	10.0	8	524	4192
	23	10.0	8	541	4328
	24	10.0	4	283	1132
	25	10.0	4	300	1200
	26	10.0	2	522	1044
	27	10.0	2	539	1078
	28	10.0	2	122	244
	29	10.0	2	140	280
	30	10.0	4	110	440
	31	10.0	2	127	254
	32	10.0	2	123	246
	33	10.0	2	141	282
	34	10.0	2	272	544
	35	10.0	2	281	562
	36	10.0	2	282	564
	37	10.0	2	299	598

Resumo do aço

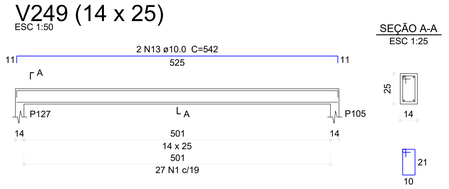
AÇO	DIAM (mm)	C.TOTAL (m)	PESO (kg)
CA50	10.0	524.1	323.1
CA60	5.0	501	77.2

PESO TOTAL (kg)
CA50 323.1
CA60 77.2

Volume de concreto (C-30) = 4.2 m³
Área de forma = 76.84 m²

V249 (14 x 25)

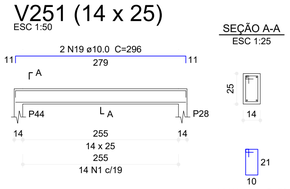
ESC 1:50



SEÇÃO A-A
ESC 1:25

V251 (14 x 25)

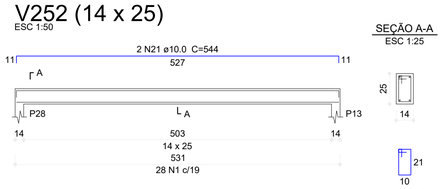
ESC 1:50



SEÇÃO A-A
ESC 1:25

V252 (14 x 25)

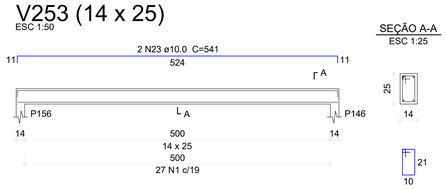
ESC 1:50



SEÇÃO A-A
ESC 1:25

V253 (14 x 25)

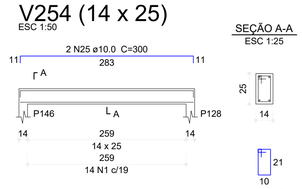
ESC 1:50



SEÇÃO A-A
ESC 1:25

V254 (14 x 25)

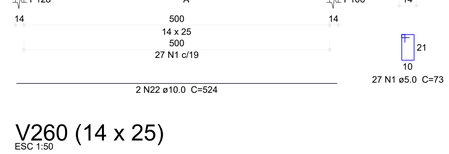
ESC 1:50



SEÇÃO A-A
ESC 1:25

V255 (14 x 25)

ESC 1:50



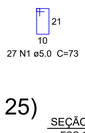
SEÇÃO A-A
ESC 1:25

V256 (14 x 25)

ESC 1:50

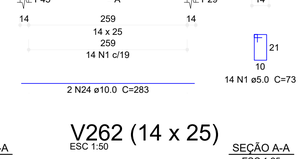


SEÇÃO A-A
ESC 1:25



V257 (14 x 25)

ESC 1:50



SEÇÃO A-A
ESC 1:25

V258 (14 x 25)

ESC 1:50



SEÇÃO A-A
ESC 1:25

V259 (14 x 25)

ESC 1:50

SEÇÃO A-A
ESC 1:25

V260 (14 x 25)

ESC 1:50

SEÇÃO A-A
ESC 1:25

V261 (14 x 25)

ESC 1:50

SEÇÃO A-A
ESC 1:25

V262 (14 x 25)

ESC 1:50

SEÇÃO A-A
ESC 1:25

V263 (14 x 25)

ESC 1:50

SEÇÃO A-A
ESC 1:25

V264 (14 x 25)

ESC 1:50

SEÇÃO A-A
ESC 1:25

V265 (14 x 25)

ESC 1:50

SEÇÃO A-A
ESC 1:25

V266 (14 x 25)

ESC 1:50

SEÇÃO A-A
ESC 1:25

V267 (14 x 25)

ESC 1:50

SEÇÃO A-A
ESC 1:25

V268 (14 x 25)

ESC 1:50

SEÇÃO A-A
ESC 1:25

V270 (14 x 25)

ESC 1:50

SEÇÃO A-A
ESC 1:25

V269 (14 x 25)

ESC 1:50

SEÇÃO A-A
ESC 1:25

V271 (14 x 25)

ESC 1:50

SEÇÃO A-A
ESC 1:25

V272 (14 x 25)

ESC 1:50

SEÇÃO A-A
ESC 1:25

V273 (14 x 25)

ESC 1:50

SEÇÃO A-A
ESC 1:25

V274 (14 x 25)

ESC 1:50

SEÇÃO A-A
ESC 1:25

NOTAS

1- Todas as medidas devem ser conferidas no local.

REVISÕES		
R00	07/02/2025	EMISSÃO INICIAL - PROJETO NÃO APROVADO
R01	20/02/2025	AJUSTE ARQUITETURA
R02	24/04/25	AJUSTE ARQUITETURA
R03	27/06/25	REVISÃO PARA ADEQUAÇÃO AS NORMAS DO CBMMG
R04	11/08/2025	REVISÃO PARA COMPATIBILIZAÇÃO DE PROJETO

Ponto S
ENGENHARIA
Rua Itália, 313
Bairro Glória - Contagem /MG
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CLIENTE
CENTRO DE OPORTUNIDADES DO BRASIL - COB

PROPRIETÁRIO
PREFEITURA MUNICIPAL DE IGARAPÉ

LOCAL
RUA PARAÍBA, Nº136 - BAIRRO RESPLENDOR, IGARAPÉ - MG, 32900-000

ART

PROJETISTA
FILEMON

TIPO/ESPECIFICAÇÃO DO DOCUMENTO
PROJETO ESTRUTURAL - DETALHAMENTO DE VIGAS DE RESPALDO DA PLATIBANDA

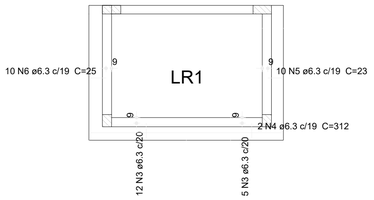
RESPONSÁVEL TÉCNICO

CONSTRUÇÃO DE ESCOLA MUNICIPAL DE EDUCAÇÃO INFANTIL - EMEI

POLEANA TAMIRIS RESENDE
CREA : MG 282.137/D

DATA:	ÁREA TOTAL	LOTE/QUADRA
08/2025	1.542,86m²	XX/XX
FORMATO: A1	ESCALA: IND.	FOLHA: 27/28

ARQUIVO: 173-2024-EST-EXEC-OS 42_EMEI RESPLENDOR_FNDE_R4-V1



Relação do aço

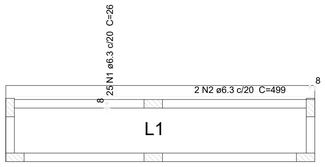
Positivos

AÇO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
CA50	1	6.3	25	26	650
	2	6.3	2	499	998
	3	6.3	17	VAR	VAR
	4	6.3	2	312	624
	5	6.3	10	23	230
	6	6.3	10	25	250

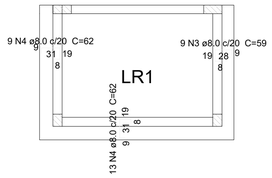
Resumo do aço

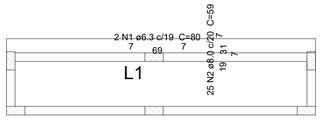
AÇO	DIAM (mm)	C.TOTAL (m)	PESO (kg)
CA50	6.3	31.8	7.8
PESO TOTAL (kg)			
CA50	7.8		

Volume de concreto (C-30) = 1.85 m³
Área de forma = 16.38 m²



Armação positiva das lajes do pavimento Térreo
escala 1:50





Armação negativa das lajes do pavimento Térreo
escala 1:50

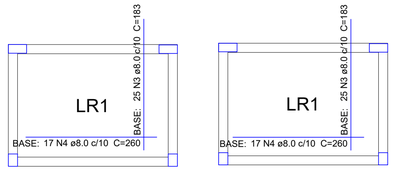
Relação do aço

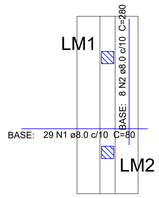
Negativos

AÇO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
CA50	1	6.3	2	80	160
	2	8.0	25	59	1475
	3	8.0	9	59	531
	4	8.0	22	62	1364

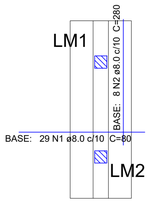
Resumo do aço

AÇO	DIAM (mm)	C.TOTAL (m)	PESO (kg)
CA50	6.3	1.6	0.4
	8.0	33.7	13.3
PESO TOTAL (kg)			
CA50	13.7		





ARMAÇÃO SUPERIOR DO RADIER DO PAVIMENTO VIGA BALDRAME
ESCALA 1:50



ARMAÇÃO INFERIOR DO RADIER DO PAVIMENTO VIGA BALDRAME
ESCALA 1:50

Relação do aço

Negativos Positivos

AÇO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
CA50	1	8.0	58	80	4640
	2	8.0	16	280	4480
	3	8.0	50	183	9150
	4	8.0	34	260	8840

Resumo do aço

AÇO	DIAM (mm)	C.TOTAL (m)	PESO (kg)
CA50	8.0	271.1	107
PESO TOTAL (kg)			
CA50	107		

Volume de concreto (C-30) = 1.38 m³
Área de forma = 4.36 m²





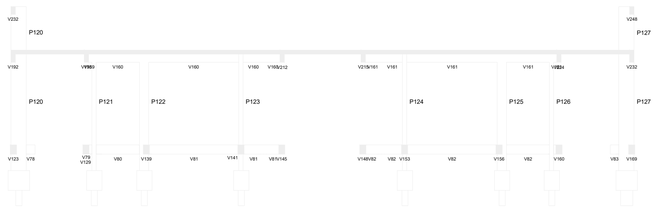


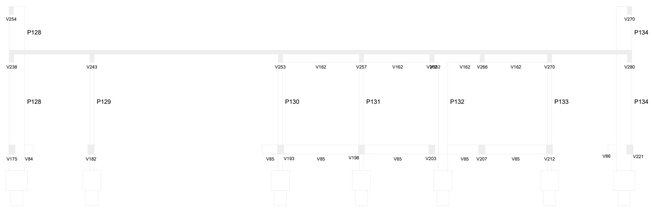
Corte A-A
escala 1:50





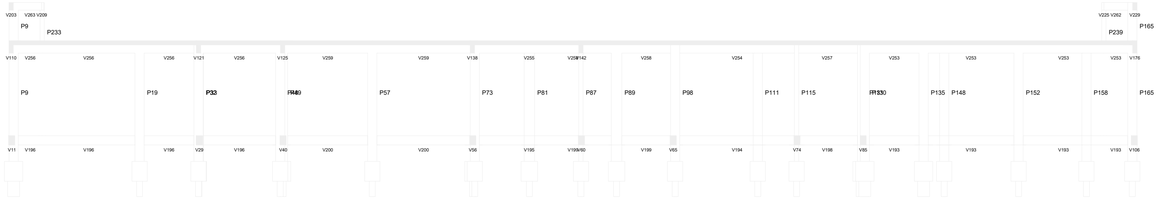
Corte B-B
escala 1:50







Corte C-C
escala 1:50





Corte D-D
escala 1:50

NOTAS
1- Todas as medidas devem ser conferidas no local.

REVISÕES		
R00	07/02/2025	EMISSÃO INICIAL - PROJETO NÃO APROVADO
R01	20/02/2025	AJUSTE ARQUITETURA
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R04	11/08/2025	REVISÃO PARA COMPATIBILIZAÇÃO DE PROJETO

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Rua Itália, 313
Bairro Glória - Contagem /MG
comercial@pontosengenharia.com
Tel: (31) 9.9593-8131 / 9.9672-0612

ART

PROJETISTA
FILEMON

RESPONSÁVEL TÉCNICO

POLEANA TAMIRIS RESENDE
CREA : MG 282.137/D

CLIENTE
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PREFEITURA MUNICIPAL DE IGARAPÉ

LOCAL
RUA PARAÍBA, Nº136 - BAIRRO RESPLENDOR, IGARAPÉ - MG, 32900-000

TIPO/ESPECIFICAÇÃO DO DOCUMENTO
PROJETO ESTRUTURAL - DETALHAMENTO ESTRUTURA CASA DE BOMBAS E GÁS
CONSTRUÇÃO DE ESCOLA MUNICIPAL DE EDUCAÇÃO INFANTIL - EMEI

DATA:	ÁREA TOTAL	LOTE/QUADRA
08/2025	1.542,86m²	XX/XX
FORMATO: A1	ESCALA: IND.	FOLHA: 28/28

ARQUIVO: 173-2024-EST-EXEC-OS 42_EMEI RESPLENDOR_FNDE_R4-V1