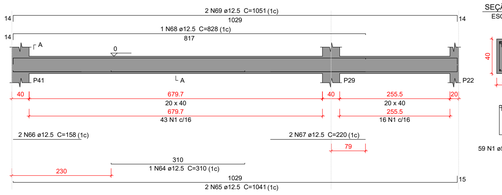
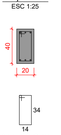
VT176
ESC 1:50

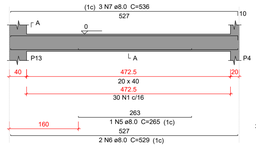


SEÇÃO A-A
ESC 1:25

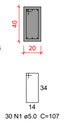


59 N1 ø5.0 C=107

VT177
ESC 1:50

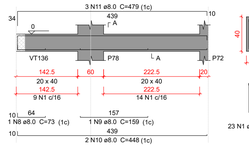


SEÇÃO A-A
ESC 1:25

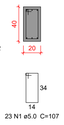


30 N1 ø5.0 C=107

VT178
ESC 1:50

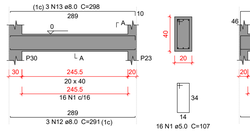


SEÇÃO A-A
ESC 1:25



30 N1 ø5.0 C=107

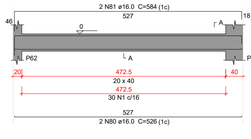
VT179
ESC 1:50



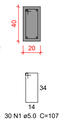
SEÇÃO A-A
ESC 1:25

16 N1 ø5.0 C=107

VT180
ESC 1:50

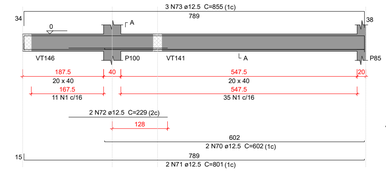


SEÇÃO A-A
ESC 1:25

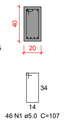


30 N1 ø5.0 C=107

VT181
ESC 1:50

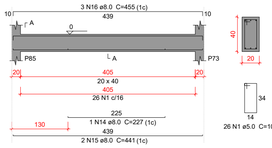


SEÇÃO A-A
ESC 1:25

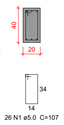


46 N1 ø5.0 C=107

VT182
ESC 1:50

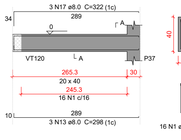


SEÇÃO A-A
ESC 1:25

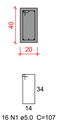


26 N1 ø5.0 C=107

VT183
ESC 1:50

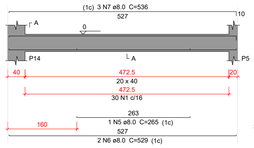


SEÇÃO A-A
ESC 1:25

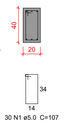


16 N1 ø5.0 C=107

VT184
ESC 1:50

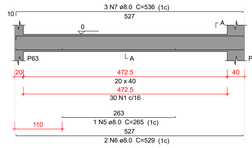


SEÇÃO A-A
ESC 1:25



30 N1 ø5.0 C=107

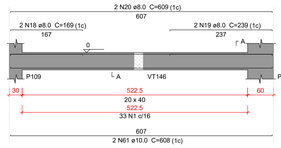
VT185
ESC 1:50



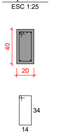
SEÇÃO A-A
ESC 1:25

30 N1 ø5.0 C=107

VT186
ESC 1:50

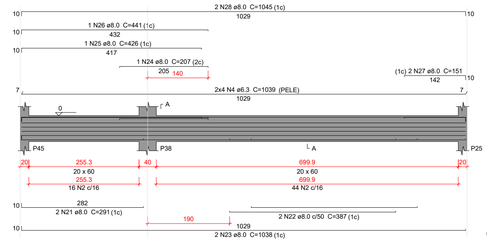


SEÇÃO A-A
ESC 1:25

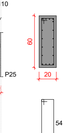


33 N1 ø5.0 C=107

VT187
ESC 1:50

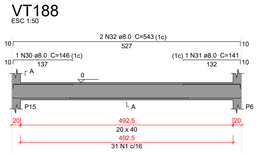


SEÇÃO A-A
ESC 1:25

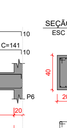


60 N2 ø5.0 C=147

VT188
ESC 1:50

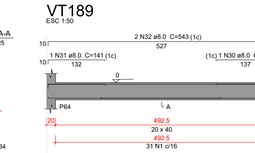


SEÇÃO A-A
ESC 1:25

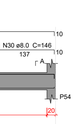


31 N1 ø5.0 C=107

VT189
ESC 1:50

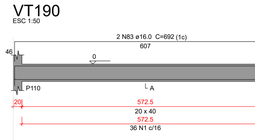


SEÇÃO A-A
ESC 1:25

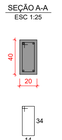


31 N1 ø5.0 C=107

VT190
ESC 1:50

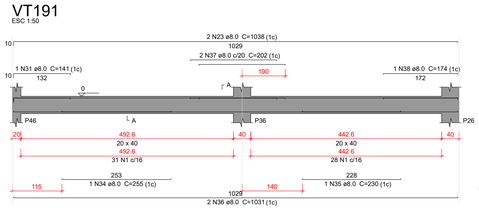


SEÇÃO A-A
ESC 1:25



36 N1 ø5.0 C=107

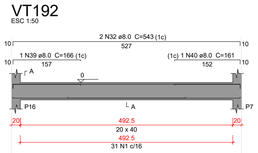
VT191
ESC 1:50



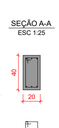
SEÇÃO A-A
ESC 1:25

59 N1 ø5.0 C=107

VT192
ESC 1:50

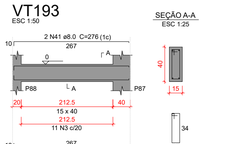


SEÇÃO A-A
ESC 1:25



31 N1 ø5.0 C=107

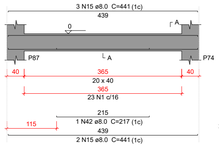
VT193
ESC 1:50



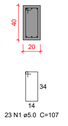
SEÇÃO A-A
ESC 1:25

11 N3 ø5.0 C=97

VT194
ESC 1:50

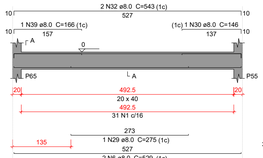


SEÇÃO A-A
ESC 1:25

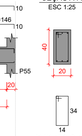


23 N1 ø5.0 C=107

VT195
ESC 1:50

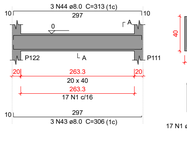


SEÇÃO A-A
ESC 1:25



31 N1 ø5.0 C=107

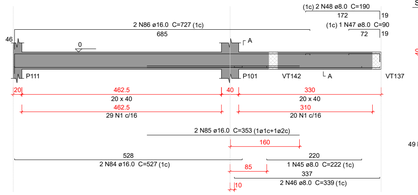
VT196
ESC 1:50



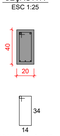
SEÇÃO A-A
ESC 1:25

17 N1 ø5.0 C=107

VT197
ESC 1:50

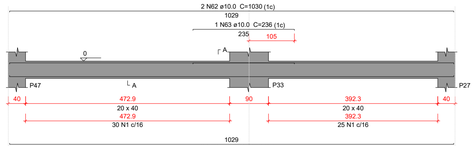


SEÇÃO A-A
ESC 1:25

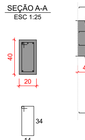


49 N1 ø5.0 C=107

VT198
ESC 1:50

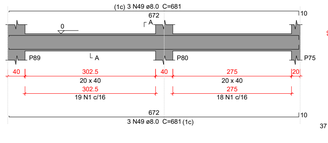


SEÇÃO A-A
ESC 1:25

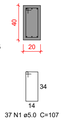


55 N1 ø5.0 C=107

VT199
ESC 1:50

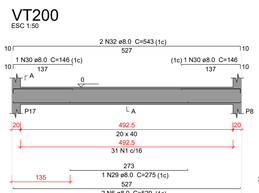


SEÇÃO A-A
ESC 1:25



37 N1 ø5.0 C=107

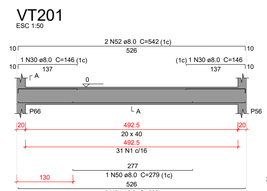
VT200
ESC 1:50



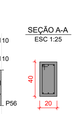
SEÇÃO A-A
ESC 1:25

31 N1 ø5.0 C=107

VT201
ESC 1:50

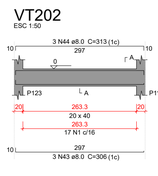


SEÇÃO A-A
ESC 1:25

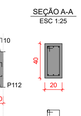


31 N1 ø5.0 C=107

VT202
ESC 1:50

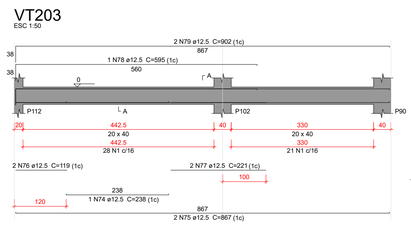


SEÇÃO A-A
ESC 1:25



17 N1 ø5.0 C=107

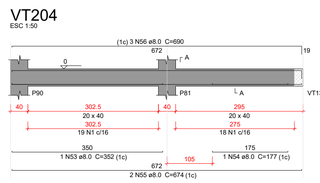
VT203
ESC 1:50



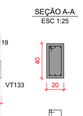
SEÇÃO A-A
ESC 1:25

49 N1 ø5.0 C=107

VT204
ESC 1:50

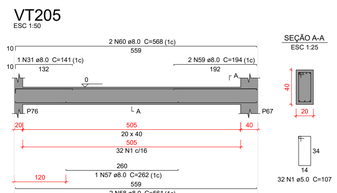


SEÇÃO A-A
ESC 1:25



37 N1 ø5.0 C=107

VT205
ESC 1:50



SEÇÃO A-A
ESC 1:25

32 N1 ø5.0 C=107

Relação do aço

VT176	VT177	VT178
VT179	VT180	VT181
VT182	VT183	VT184
VT185	VT186	VT187
VT188	VT189	VT190
VT191	VT192	VT193
VT194	VT195	VT196
VT197	VT198	VT199
VT200	VT201	VT202
VT203	VT204	VT205

AÇO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
CA60	1	5.0	936	107	100152
	2	5.0	60	147	8820
	3	5.0	11	97	1067
CA50	4	6.3	8	1039	8312
	5	8.0	3	265	795
	6	8.0	16	529	8464
	7	8.0	9	536	4824
	8	8.0	1	73	73
	9	8.0	1	159	159
	10	8.0	2	448	896
	11	8.0	3	479	1437
	12	8.0	3	291	873
	13	8.0	6	298	1788
	14	8.0	1	227	227
	15	8.0	7	441	3087
	16	8.0	3	455	1365
	17	8.0	3	322	966
	18	8.0	2	169	338
	19	8.0	2	239	478
	20	8.0	2	609	1218
	21	8.0	2	291	582
	22	8.0	2	387	774
	23	8.0	4	1038	4152
	24	8.0	1	207	207
	25	8.0	1	426	426
	26	8.0	1	441	441
	27	8.0	2	151	302
	28	8.0	2	1045	2090
	29	8.0	4	275	1100
	30	8.0	7	146	1022
	31	8.0	4	141	564
	32	8.0	10	543	5430
	33	8.0	1	280	280
	34	8.0	1	255	255
	35	8.0	1	230	230
	36	8.0	2	1031	2062
	37	8.0	2	202	404
	38	8.0	1	174	174
	39	8.0	2	166	332
	40	8.0	1	161	161
	41	8.0	4	276	1104
	42	8.0	1	217	217
	43	8.0	6	306	1836
	44	8.0	6	313	1878
	45	8.0	1	222	222
	46	8.0	2	339	678
	47	8.0	1	90	90
	48	8.0	2	190	380
	49	8.0	6	681	4086
	50	8.0	1	279	279
	51	8.0	2	528	1056
	52	8.0	2	542	1084
	53	8.0	1	352	352
	54	8.0	1	177	177
	55	8.0	2	674	1348
	56	8.0	3	690	2070
	57	8.0	1	262	262
	58	8.0	2	561	1122
	59	8.0	2	194	388
	60	8.0	2	568	1136
	61	10.0	2	608	1216
	62	10.0	4	1030	4120
	63	10.0	1	236	236
	64	12.5	1	310	310
	65	12.5	2	1041	2082
	66	12.5	2	158	316
	67	12.5	2	220	440
	68	12.5	1	828	828
	69	12.5	2	1051	2102
	70	12.5	2	602	1204
	71	12.5	2	801	1602
	72	12.5	2	229	458
	73	12.5	3	855	2565
	74	12.5	1	238	238
	75	12.5	2	867	1734
	76	12.5	2	119	238
	77	12.5	2	221	442
	78	12.5	1	595	595
	79	12.5	2	902	1804
	80	16.0	2	526	1052
	81	16.0	2	584	1168
	82	16.0	2	606	1212
	83	16.0	2	692	1384
	84	16.0	2	527	1054
	85	16.0	2	353	706
	86	16.0	2	727	1454

Resumo do aço

AÇO	DIAM (mm)	C.TOTAL (m)	PESO + 10 % (kg)
CA50	6.3	83.2	22.4
	8.0	677.5	294
	10.0	55.8	37.8
	12.5	169.6	179.7
	16.0	80.3	139.4
CA60	5.0	1100.4	186.6
PESO TOTAL (kg)			
CA50	673.3		
CA60	186.6		

Volume de concreto (C-35) = 13.1 m³
Área de forma = 163.27 m²

Características do Projeto

1 – COBRIMENTO DAS ARMADURAS – PILARES E VIGAS: 3 cm
2 – COBRIMENTO DAS ARMADURAS – LAJES E ESCADAS: 3 cm
3 – COBRIMENTO DAS ARMADURAS – FUNDAÇÃO: 4.5 cm
4– PREVER LASTRO DE CONCRETO MAGRO (5 cm) SOB AS ESTRUTURAS EM CONCRETO.

5 – OS VENTOS INCIDENTES NAS FACES X (90°) E Y (0°), RESPECTIVAMENTE, NÃO OCORREM SIMULTANEAMENTE.

NOTAS 1 : DURABILIDADE

1 – CLASSE DE AGRESSIVIDADE AMBIENTAL: II
2 – MÓDULO DE ELASTICIDADE > 35.42 GPa
3 – FATOR A/C < 0.4
4 – AÇO CA 50A e CA 60B
5 – CONCRETO CLASSE > 35 MPa
6 – CONSUMO DE CIMENTO > 350 Kg/m3

NOTAS 2 : NORMAS

– NBR 06118 – 2023 – Projeto de Estruturas de Concreto armado
– NBR 06120 – 2019 – Cargas para o Cálculo de Estruturas de edificações – Procedimento
– NBR 06123 – 2023 – Forças Devidas ao Vento em Edificações
– NBR 8681 – 2003 – Ações e Segurança nas Estruturas
– NBR 6122 – 2022 – Projeto e execução de Fundações

LEGENDA DA PLANTA DE LOCAÇÃO

Ⓐ ORIENTAÇÃO DOS EIXOS DOS PILARES
① ORIENTAÇÃO DOS EIXOS DOS PILARES

NOTAS 3 : GERAIS

1 – Dimensões em Centímetros e Níveis em metros
2 – Conferir as disposição das armaduras antes da concretagem.
3 – A Responsabilidade pela fiscalização da obra é do Engº resp Técnico.
4 – Aconselhamos moldagem de corpos de prova para cada caminhão betoneiro.
5 – Respeitar os prazos mínimos para retirada de formas e escoramentos.
6 – Evitar romper concreto após endurecido, com marreta e talhadeira.
7 – Toda e qualquer alteração no respectivo projeto, o Calculista deverá ser consultado e o mesmo deverá emitir seu parecer por escrito.

ASSINATURAS E CARIMBOS DO ENTE - APROVAÇÃO E EXECUÇÃO

PLANTA CHAVE DE SITUAÇÃO

REVISÃO	DATA	DESCRIÇÃO
R00	26/05/2025	EMISSÃO INICIAL

TÍTULO DO PROJETO
CENTRO ESPEECIALIZADO EM REABILITAÇÃO
ENDEREÇO
PREFEITURA DE JUIZ DE FORA
CER-IV
CNPJ
18.338.178/0001-02
ENDEREÇO
PROLONG. RUA RAUL PEDRO PETERS, S/N - SÃO PEDRO
CEP 36.037-680 - JUIZ DE FORA - MG

DISCIPLINA
ESTRUTURAL
ART

TÍTULO DA PRANCHA
PROJETO ESTRUTURAL
DESCRIÇÃO DA ETAPA
PROJETO CONCEITUAL REFERENCIAL

FOLHA: 23/33

NOME: PRANCHA - ARQUIVO	REVISÃO	UNIDADE	DATA	ESCALA
DETALHAMENTO DAS VIGAS EM CONCRETO ARMADO	R00	CM / M	26/05/20225	INDICADA
30-SILO-01-VIGAS-DETALHAMENTO				

KAYO HENRIQUE MOREIRA – CREA 190TMG – AUTOR(A) INTELECTUAL
BRUNA FERREIRA DA ROCHA – CREA 159564D – CO - AUTOR DO PROJETO

FOLHA A0 118.90 x 84.10

DIREITOS AUTORAIS RESERVADOS CONFORME LEGISLAÇÃO NACIONAL E INTERNACIONAL