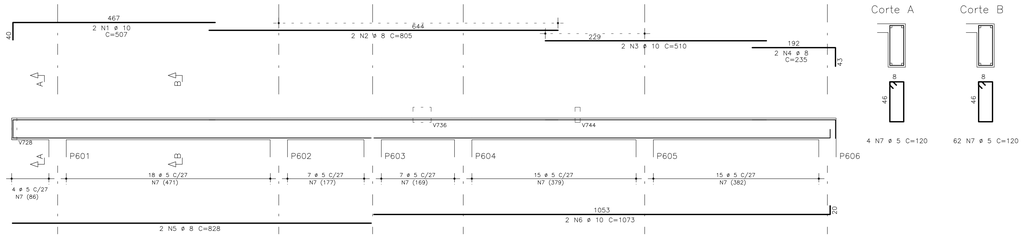
V701 12X50



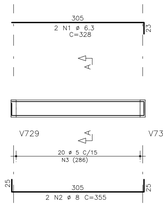
Corte A

4 N7 ø 5 C=120

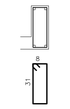
Corte B

62 N7 ø 5 C=120

V704 12X35

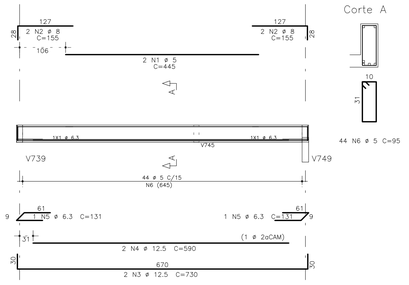


Corte A



20 N3 ø 5 C=90

V705 14X35



Corte A

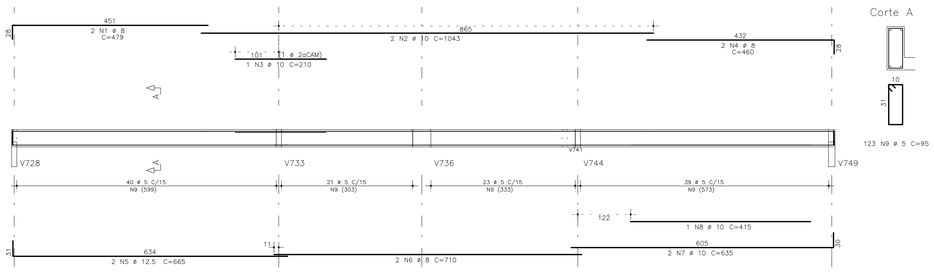
44 N6 ø 5 C=95

	AÇO	POS	BIT (mm)	QUANT	COMPRIMENTO UNIT (cm)	COMPRIMENTO TOTAL (cm)
V701						
	50A	1	10	2	507	1014
	50A	2	8	2	805	1610
	50A	3	10	2	510	1020
	50A	4	8	2	235	470
	50A	5	8	2	828	1656
	50A	6	10	2	1073	2146
	60B	7	5	66	120	7920
V702						
	50A	1	8	2	479	958
	50A	2	10	2	1043	2086
	50A	3	10	1	210	210
	50A	4	8	2	460	920
	50A	5	12.5	2	665	1330
	50A	6	8	2	710	1420
	50A	7	10	2	635	1270
	50A	8	10	1	415	415
	60B	9	5	123	95	11685
V703						
	50A	1	8	2	405	810
	50A	2	10	2	619	1238
	50A	3	12.5	2	800	1600
	50A	4	12.5	1	205	205
	50A	5	8	2	276	552
	50A	6	10	2	1057	2114
	50A	7	12.5	2	375	750
	50A	8	12.5	1	255	255
	50A	9	8	2	495	990
	50A	10	6.3	2	131	262
	60B	11	5	118	95	11210
V704						
	50A	1	6.3	2	328	656
	50A	2	8	2	355	710
	60B	3	5	20	90	1800
V705						
	60B	1	5	2	445	890
	50A	2	8	4	155	620
	50A	3	12.5	2	730	1460
	50A	4	12.5	2	590	1180
	50A	5	6.3	2	131	262
	60B	6	5	44	95	4180
V706						
	50A	1	8	2	331	662
	50A	2	8	2	355	710
	60B	3	5	19	95	1805
V707						
	50A	1	6.3	2	355	710
	50A	2	8	2	315	1260
	50A	3	10	2	235	470
	50A	4	10	2	230	460
	50A	5	16	2	890	1780
	50A	6	16	1	585	585
	60B	7	5	38	190	7220
	50A	8	8	6	823	4938
V708						
	50A	1	10	2	587	1174
	50A	2	12.5	2	285	570
	50A	3	12.5	2	190	380
	50A	4	10	2	235	470
	50A	5	12.5	2	610	1220
	50A	6	12.5	1	345	345
	50A	7	8	2	270	540
	60B	8	5	53	95	5035
V709						
	50A	1	8	2	290	580
	50A	2	8	2	325	650
	60B	3	5	16	95	1520
V710						
	50A	1	8	2	355	710
	50A	2	10	2	335	670
	50A	3	10	1	225	225
	60B	4	5	2	495	990
	50A	5	10	4	325	1300
	50A	6	12.5	4	100	400
	50A	7	8	2	735	1470
	50A	8	12.5	2	715	1430
	50A	9	12.5	2	545	1090
	50A	10	6.3	1	131	131
	60B	11	5	89	95	8455
V711						
	50A	1	8	2	638	1276
	50A	2	8	2	508	1016
	50A	3	12.5	2	375	750
	50A	4	12.5	1	245	245
	50A	5	12.5	4	100	400
	50A	6	8	2	735	1470
	50A	7	10	2	710	1420
	50A	8	10	2	550	1100
	50A	9	6.3	1	131	131
	60B	10	5	91	95	8645

RESUMO AÇO CA 50-60			
AÇO	BIT (mm)	COMPR (m)	PESO (kg)
60B	5	714	114
50A	6.3	22	5
50A	8	247	99
50A	10	201	126
50A	12.5	136	136
50A	16	24	38
Peso Total	60B =		114 kg
Peso Total	50A =		405 kg

	Eixo	Faces
Volume de concreto de VIGAS (m3)	6.5	6.1
Taxa de armadura (kg/m3)	79.9	85.6

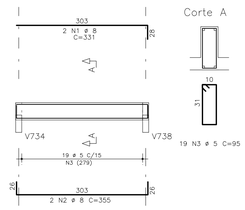
V702 14X35



Corte A

123 N9 ø 5 C=95

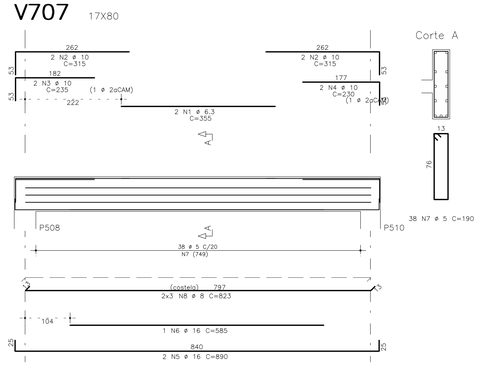
V706 14X35



Corte A

19 N3 ø 5 C=95

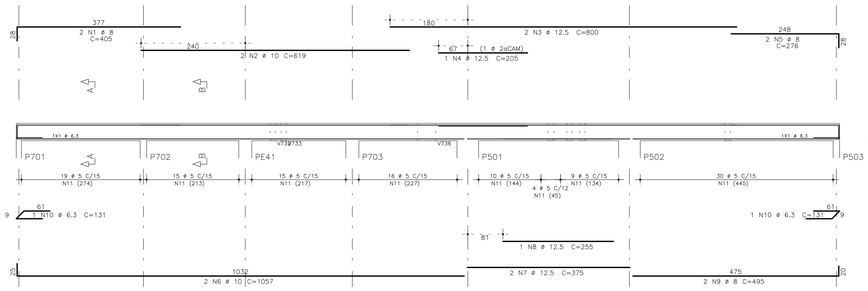
V707 17X80



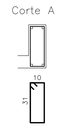
Corte A

38 N7 ø 5 C=190

V703 14X35

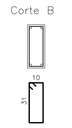


Corte A



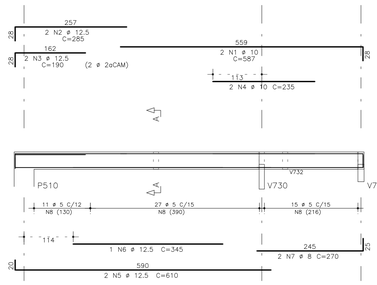
35 N11 ø 5 C=95

Corte B



83 N11 ø 5 C=95

V708 14X35



Corte A

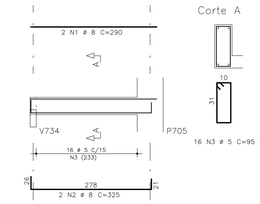


38 N8 ø 5 C=95



15 N8 ø 5 C=95

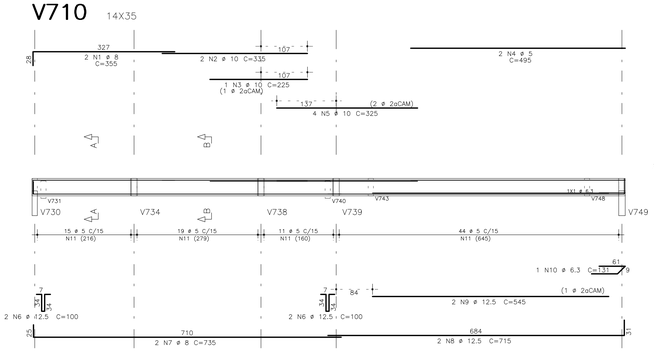
V709 14X35



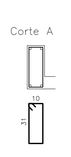
Corte A

16 N3 ø 5 C=95

V710 14X35

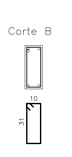


Corte A



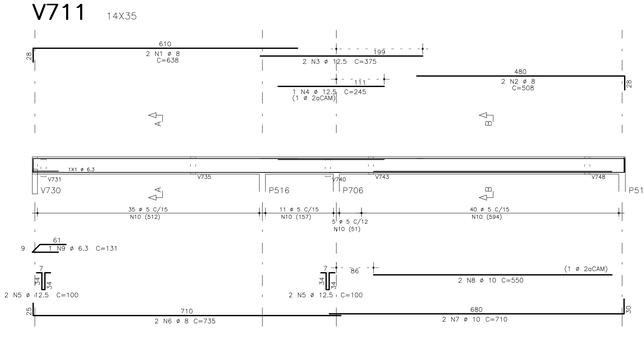
70 N11 ø 5 C=95

Corte B

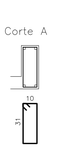


19 N11 ø 5 C=95

V711 14X35



Corte A



91 N10 ø 5 C=95

Corte B



CM	PENA	ZERO
1	7	0,05
2	7	0,20
3	7	0,30
4	7	0,40
5	7	0,50
6	7	0,60
7	7	0,70
8	7	0,10
9	7	0,20
10	7	0,30
11	7	0,40
12	7	0,50
13	7	0,60
14	7	0,70
15	7	0,80
16	7	0,90
17	7	0,10
18	7	0,20
19	7	0,30
20	7	0,40
21	7	0,50
22	7	0,60
23	7	0,70
24	7	0,80
25	7	0,90
254	254	0,20
255	255	0,20
256	256	0,20

NOTAS IMPORTANTES:

FATOR ÁGUA CIMENTO MÁXIMO = 0,6

CONCRETO: **fck = 25 MPa**

- CONSUMO MÍNIMO DE CIMENTO = 350 kg/m3
- DIÂMETRO CARACTERISTICO DO AGREGADO:
  : vigas e lajes – brita 1 com ø < 19 mm
  : pilares – brita 1 e brita 2 com ø < 25 mm
  : blocos = brita 1, brita 2 e brita 3 com ø < 38 mm
- MÓDULO DE ELASTICIDADE MINIMO NA IDADE DA DESFORMA – E > 21 GPa

COBRIMENTO DA ARMADURA:

Classe de agressividade ambiental 2

- CORTINAS:
  : face externa – 3 cm
  : face interna – 2 cm
- LAJES MACIÇAS – 2 cm
- NERVURAS DE LAJES NERVURADAS – 2 cm
- VIGAS – 2,5 cm
- PILARES – 2,5 cm
- BLOCOS E BALDRAMES – 3 cm

* ESSES COBRIMENTOS TERÃO RIGIDO CONTROLE. DEVERÃO SER GARANTIDOS COM O USO DE ESPAÇADORES

NORMAS UTILIZADAS:

- NBR 6118 – PROJETO DE ESTRUTURAS DE CONCRETO – PROCEDIMENTO
- NBR 6120 – CARGAS PARA O CÁLCULO DE ESTRUTURAS DE EDIFICAÇÕES
- NBR 6123 – FORÇAS DEVIDAS AO VENTO EM EDIFICAÇÕES
- NBR 12655– CONCRETO– CONTROLE , PREPARO E RECEBIMENTO

Nº	MODIFICACAO	DATA	FEITO	VISTO	APROVO	DATA	APROVO
NA4							
NA3							
NA2	MODIFICAÇÃO.02	20/10/13					
NA1	MODIFICAÇÃO.PARECER.Nº68/13	20/08/13					
			CONTRATADA			METRO-DF	

METRO-DF / Metroquattro	453
SETOR	ÁGUAS CLARAS-DF
ENDEREÇO	ESTAÇÃO 16 LINHA 01
PROPRIETARIO	METRO-DF
AUTOR DO PROJETO	Luiz Cesar M. Gottschall
RESPONSAVEL TECNICO	

PROPRIETÁRIO	METRO-DF		
AUTOR	Luiz Cesar M. Gottschall	CREA – 3575/D DF	
RESPONSAVEL			

METRO-DF

VISTO	DATA
APROVO	DATA
ESCALA 1:50	ETAPA DE PROJ. EXECUTIVO
Nº MICROFILME	FOLHA EST-042

UNIDADE DE CONSTRUCAO	ESTAÇÃO ARNIQUEIRAS
LOCAL	ÁGUAS CLARAS
ESPECIALIDADE/SUBESPECIALIDADE	PROJETO ESTRUTURAL
TIPO/ESPECIFICACAO DO DOCUMENTO	ARMAÇÃO VIGAS DA COBERTURA (01/03) FCK - 25.0 MPa
AREA DE CONSTRUCAO	m²
DATA	20/10/13
CODIFICACAO	DE.6/16.3M/H1.042
REVISAO	0A