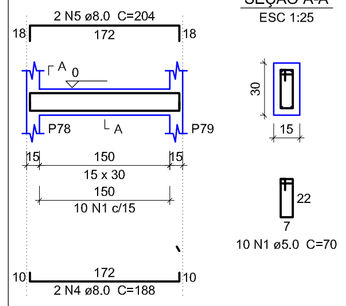
VIGAS BALDRAMES REFORMA

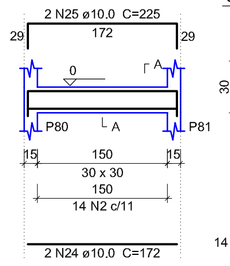
VB49
ESC 1:50



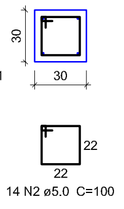
SEÇÃO A-A
ESC 1:25

10 N1 ø5.0 C=70

VB50
ESC 1:50

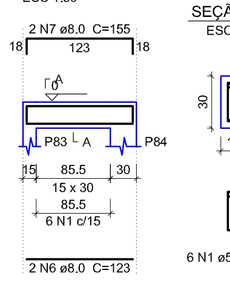


SEÇÃO A-A
ESC 1:25

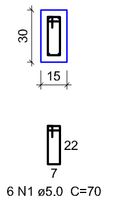


14 N2 ø5.0 C=100

VB60
ESC 1:50

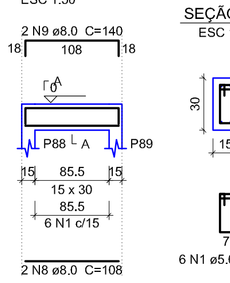


SEÇÃO A-A
ESC 1:25

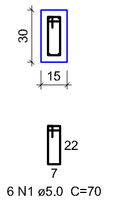


6 N1 ø5.0 C=70

VB70
ESC 1:50

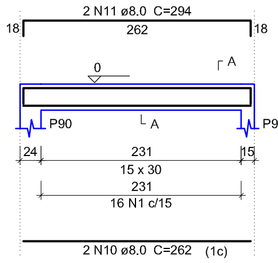


SEÇÃO A-A
ESC 1:25

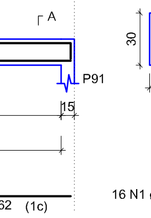


6 N1 ø5.0 C=70

VB71
ESC 1:50

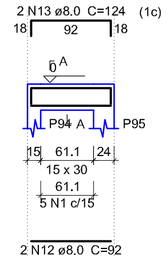


SEÇÃO A-A
ESC 1:25

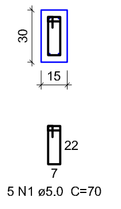


16 N1 ø5.0 C=70

VB72
ESC 1:50

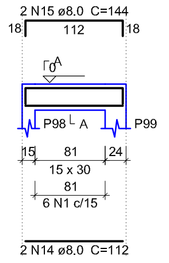


SEÇÃO A-A
ESC 1:25

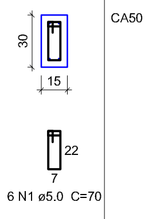


5 N1 ø5.0 C=70

VB73
ESC 1:50

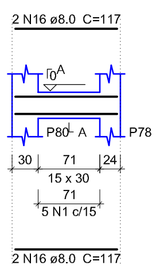


SEÇÃO A-A
ESC 1:25

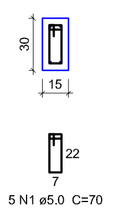


6 N1 ø5.0 C=70

VB74
ESC 1:50

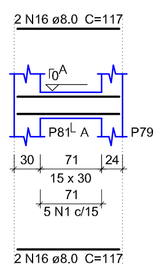


SEÇÃO A-A
ESC 1:25

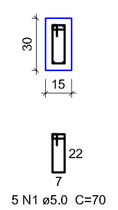


5 N1 ø5.0 C=70

VB75
ESC 1:50

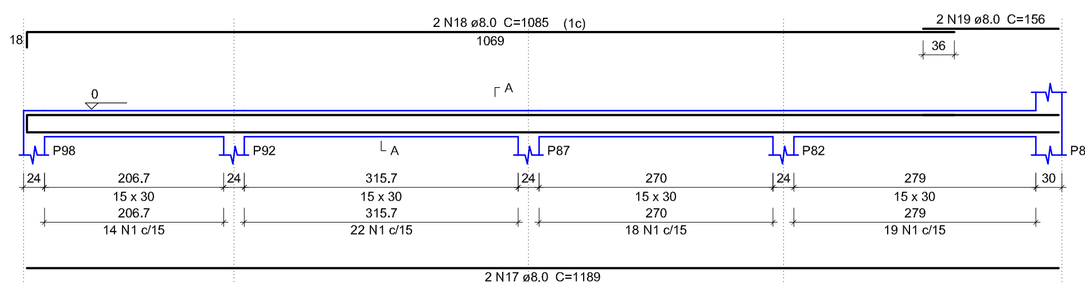


SEÇÃO A-A
ESC 1:25

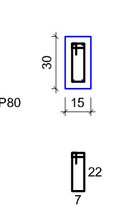


5 N1 ø5.0 C=70

VB76
ESC 1:50

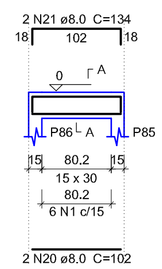


SEÇÃO A-A
ESC 1:25

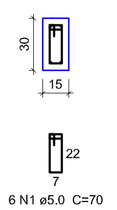


73 N1 ø5.0 C=70

VB77
ESC 1:50

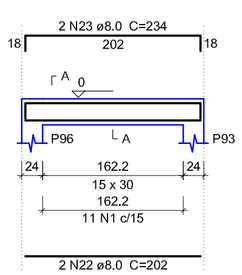


SEÇÃO A-A
ESC 1:25

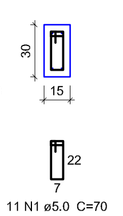


6 N1 ø5.0 C=70

VB78
ESC 1:50

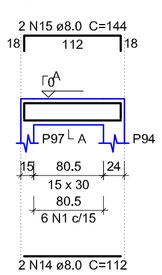


SEÇÃO A-A
ESC 1:25

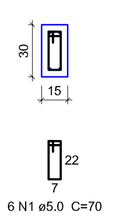


11 N1 ø5.0 C=70

VB79
ESC 1:50



SEÇÃO A-A
ESC 1:25



6 N1 ø5.0 C=70

Relação do aço

VB49	VB50	VB60
VB70	VB71	VB72
VB73	VB74	VB75
VB76	VB77	VB78
VB79		

AÇO	N	DIAM	Q	UNIT (cm)	C.TOTAL (cm)
CA60	1	5.0	155	70	10850
	2	5.0	14	100	1400
CA50					
	4	8.0	2	188	376
	5	8.0	2	204	408
	6	8.0	2	123	246
	7	8.0	2	155	310
	8	8.0	2	108	216
	9	8.0	2	140	280
	10	8.0	2	262	524
	11	8.0	2	294	588
	12	8.0	2	92	184
	13	8.0	2	124	248
	14	8.0	4	112	448
	15	8.0	4	144	576
	16	8.0	8	117	936
	17	8.0	2	1189	2378
	18	8.0	2	1085	2170
	19	8.0	2	156	312
	20	8.0	2	102	204
	21	8.0	2	134	268
	22	8.0	2	202	404
	23	8.0	2	234	468
	24	10.0	2	172	344
	25	10.0	2	225	450

Resumo de materiais TOTAL VIGAS BALDRAMES

AÇO	DIAM	C.TOTAL (m)	PESO + 10 % (kg)
CA50	8.0	939.84	408.45
CA50	10.0	301.64	204.83
CA60	5.0	1246.70	211.64
PESO TOTAL			
CA50	613.28		
CA60	211.64		

Vol. de concreto total (C-30) = 13.79 m³
Área de forma total = 228.79 m²

NOTAS

A. Confrontar medidas do projeto estrutural com projeto arquitetônico

B. Executar passagem de tubulação de água, esgoto e eletricidade

C. Molhar as formas antes da concretagem

D. Conservar úmida as peças concretadas durante o tempo de cura

E. Executar limpeza de formas ou partes da estrutura em contato com a concretagem

F. Usar apoio do tipo caranguejo para manter armaduras negativas em posição durante a concretagem

COBRIMENTO DAS ARMADURAS

ELEMENTOS ESTRUTURAIS	COBRIMENTO NOMINAL
Pilares	4,0 cm
Vigas	4,0 cm
Lajes	3,5 cm
Sapatas	4,0 cm
CLASSE DE AGRESSIVIDADE	III (FORTE) - CONTROLE RIGOROSO DAS DIMENSÕES

CARACTERÍSTICAS DO CONCRETO

Classe de Resistência	C-30
Módulo de Elasticidade	280 tf/cm²
Fator a/c	< 0,55

ENGEON ENGENHARIA
(45) engeonengenharia@gmail.com
330-6801

CMEI
NOSSA SENORA DOS NAVEGANTES

PROJETO ESTRUTURAL

PROJETO
ENGENHEIRO CIVIL
JEFFERSON MACIEL VALCANOVER CREA/PR 19.637/D

EXECUÇÃO

PROPRIETÁRIO
PREFEITURA MUNICIPAL DE PARANAGUÁ
CNPJ: 76.017.458/0001-15

ESCALA: INDICADA
CONTEÚDO: VIGAS BALDRAMES
CATEGORIA: INSTITUCIONAL
DATA: OUTUBRO/2018
PRANCHA: 05/19
DESENHO: MATHEUS I. SANTOS
LOCAL: ILHA DOS VALADARES - VILA BELA PARANAGUÁ - PR