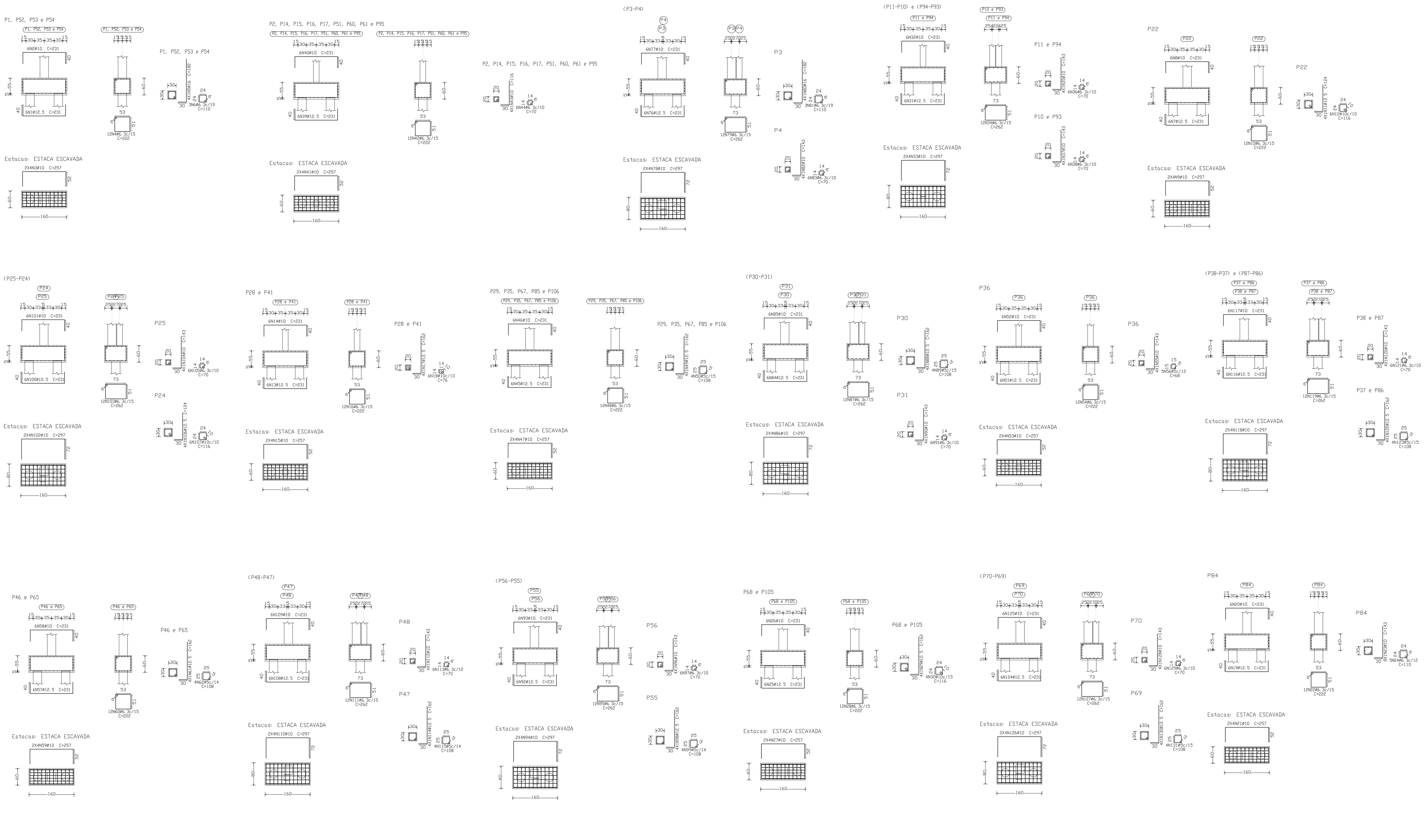
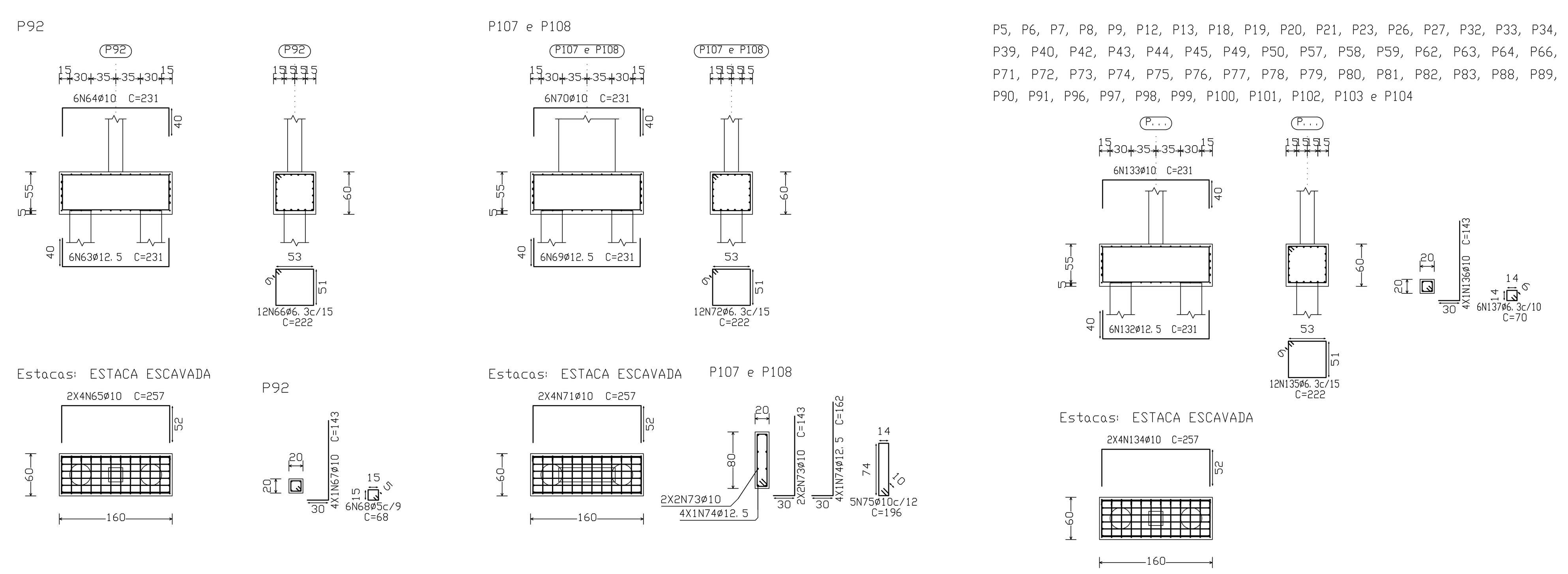
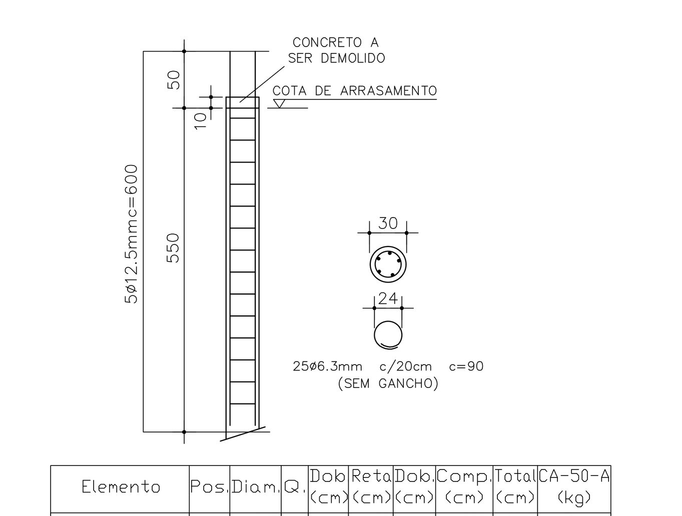




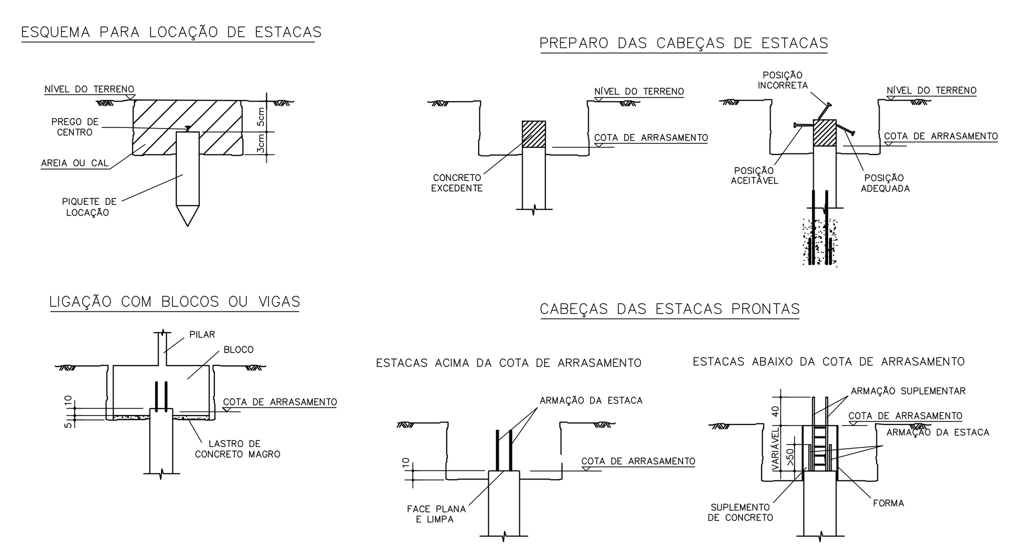
ARMAÇÃO DE BLOCOS DE COROAMENTO E ARRANQUES DE PILARES
(Fundação)
Escala 1/50

ESTACA ESCAVADA (BROCA)
DETALHE E ARMAÇÃO DAS ESTACAS (H=10,0M) – (196X)



Elemento	Pos.	Diam.	Q.	Dob (cm)	Reta (cm)	Dob. (cm)	Comp. (cm)	Total (cm)	CA-50-A (kg)
ESTACAS	-	ø12.5	5		600		600	3000	29.4
	-	ø6.3	28		90		90	2520	6.0
								Total+10%:	38.9
								(x196):	7604.8
								ø6.3:	1293.6
								ø12.5:	6311.2
								TOTAL:	7604.8

ARMAÇÃO DE ESTACAS ESCAVADA - TIPO BROCA
(Fundação)
Escala 1/50



Elemento	Pos.	Diam.	Q.	Dob. (cm)	Reta (cm)	Dob. (cm)	Comp. (cm)	Total (cm)	CA-50 (kg)	CA-60 (kg)
P1=P52=P53=P54	1	ø12.5	6	40	151	40	231	1386	13.3	
	2	ø10	6	40	151	40	231	1386	8.5	
	3	ø10	8		257		257	2056	12.7	
	4	ø6.3	12		222		222	2664	6.5	
	5	ø16	4	30	152		182	728	11.5	
	6	ø6.3	3		110		110	330	0.8	
								Total+10%	58.6	
								(x4)	234.4	
P22	7	ø12.5	6	40	151	40	231	1386	13.3	
	8	ø10	6	40	151	40	231	1386	8.5	
	9	ø10	8		257		257	2056	12.7	
	10	ø6.3	12		222		222	2664	6.5	
	11	ø12.5	4	30	94		124	496	4.8	
	12	ø10	6		116		116	696	4.3	
								Total+10%	55.1	
P28=P41	13	ø12.5	6	40	151	40	231	1386	13.3	
	14	ø10	6	40	151	40	231	1386	8.5	
	15	ø10	8		257		257	2056	12.7	
	16	ø6.3	12		222		222	2664	6.5	
	17	ø12.5	4	30	132		162	648	6.2	
	18	ø10	6		76		76	456	2.8	
								Total+10%	55.0	
								(x2)	110.0	
P84	19	ø12.5	6	40	151	40	231	1386	13.3	
	20	ø10	6	40	151	40	231	1386	8.5	
	21	ø10	8		257		257	2056	12.7	
	22	ø6.3	12		222		222	2664	6.5	
	23	ø10	8	30	113		143	1144	7.0	
	24	ø6.3	5		110		110	550	1.3	
								Total+10%	54.2	
P68=P105	25	ø12.5	6	40	151	40	231	1386	13.3	
	26	ø10	6	40	151	40	231	1386	8.5	
	27	ø10	8		257		257	2056	12.7	
	28	ø6.3	12		222		222	2664	6.5	
	29	ø12.5	4	30	132		162	648	6.2	
	30	ø10	4		116		116	464	2.9	
								Total+10%	55.1	
								(x2)	110.2	
(P11-P10)=(P94-P93)	31	ø12.5	6	40	151	40	231	1386	13.3	
	32	ø10	6	40	151	40	231	1386	8.5	
	33	ø10	8		297		297	2376	14.6	
	34	ø6.3	12		262		262	3144	7.7	
	35	ø10	4	30	113		143	572	3.5	
	36	ø6.3	6		70		70	420	1.0	
	37	ø10	4	30	113		143	572	3.5	
	38	ø6.3	6		70		70	420	1.0	
								Total+10%	58.4	
								(x2)	116.8	
P2=P14=P15=P16 P17=P51=P60=P61 P95	39	ø12.5	6	40	151	40	231	1386	13.3	
	40	ø10	6	40	151	40	231	1386	8.5	
	41	ø10	8		257		257	2056	12.7	
	42	ø6.3	12		222		222	2664	6.5	
	43	ø10	4	30	86		116	464	2.9	
	44	ø6.3	6		70		70	420	1.0	
								Total+10%	49.4	
								(x9)	444.6	
P29=P35=P67=P85 P106	45	ø12.5	6	40	151	40	231	1386	13.3	
	46	ø10	6	40	151	40	231	1386	8.5	
	47	ø10	8		257		257	2056	12.7	
	48	ø6.3	12		222		222	2664	6.5	
	49	ø12.5	4	30	132		162	648	6.2	
	50	ø5	4		108		108	432		0.7
								Total+10%	51.9	0.8
								(x5)	259.5	4.0
P36	51	ø12.5	6	40	151	40	231	1386	13.3	
	52	ø10	6	40	151	40	231	1386	8.5	
	53	ø10	8		257		257	2056	12.7	
	54	ø6.3	12		222		222	2664	6.5	
	55	ø10	4	30	113		143	572	3.5	
	56	ø5	5		68		68	340		0.5
								Total+10%	49.0	0.6
P46=P65	57	ø12.5	6	40	151	40	231	1386	13.3	
	58	ø10	6	40	151	40	231	1386	8.5	
	59	ø10	8		257		257	2056	12.7	
	60	ø6.3	12		222		222	2664	6.5	
	61	ø12.5	4	30	132		162	648	6.2	
	62	ø5	4		108		108	432		0.7
								Total+10%	51.9	0.8
								(x2)	103.8	1.6
P92	63	ø12.5	6	40	151	40	231	1386	13.3	
	64	ø10	6	40	151	40	231	1386	8.5	
	65	ø10	8		257		257	2056	12.7	
	66	ø6.3	12		222		222	2664	6.5	
	67	ø10	4	30	113		143	572	3.5	
	68	ø5	6		68		68	408		0.6
								Total+10%	49.0	0.7
P107=P108	69	ø12.5	6	40	151	40	231	1386	13.3	
	70	ø10	6	40	151	40	231	1386	8.5	
	71	ø10	8		257		257	2056	12.7	
	72	ø6.3	12		222		222	2664	6.5	
	73	ø10	4	30	113		143	572	3.5	
	74	ø12.5	4	30	132		162	648	6.2	
	75	ø10	5		196		196	980	6.0	
								Total+10%	62.4	
								(x2)	124.8	
(P3-P4)	76	ø12.5	6	40	151	40	231	1386	13.3	
	77	ø10	6	40	151	40	231	1386	8.5	
	78	ø10	8		297		297	2376	14.6	
	79	ø6.3	12		262		262	3144	7.7	
	80	ø16	4	30	152		182	728	11.5	
	81	ø6.3	3		110		110	330	0.8	
	82	ø10	4	30	113		143	572	3.5	
	83	ø6.3	6		70		70	420	1.0	
								Total+10%	67.0	
(P30-P31)	84	ø12.5	6	40	151	40	231	1386	13.3	
	85	ø10	6	40	151	40	231	1386	8.5	
	86	ø10	8		297		297	2376	14.6	
	87	ø6.3	12		262		262	3144	7.7	
	88	ø12.5	4	30	132		162	648	6.2	
	89	ø5	4		108		108	432		0.7
	90	ø10	4	30	113		143	572	3.5	
	91	ø6.3	6		70		70	420	1.0	
								Total+10%	60.3	0.8
(P56-P55)	92	ø12.5	6	40	151	40	231	1386	13.3	
	93	ø10	6	40	151	40	231	1386	8.5	
	94	ø10	8		297		297	2376	14.6	
	95	ø6.3	12		262		262	3144	7.7	
	96	ø10	4	30	113		143	572	3.5	
	97	ø6.3	6		70		70	420	1.0	
	98	ø12.5	4	30	132		162	648	6.2	
	99	ø5	4		108		108	432		0.7
								Total+10%	60.3	0.8
(P25-P24)	100	ø12.5	6	40	151	40	231	1386	13.3	
	101	ø10	6	40	151	40	231	1386	8.5	
	102	ø10	8		297		297	2376	14.6	
	103	ø6.3	12		262		262	3144	7.7	
	104	ø10	4	30	113		143	572	3.5	
	105	ø6.3	6		70		70	420	1.0	
	106	ø12.5	4	30	94		124	496	4.8	
	107	ø10	6		116		116	696	4.3	
								Total+10%	63.5	
(P48-P47)	108	ø12.5	6	40	151	40	231	1386	13.3	
	109	ø10	6	40	151	40	231	1386	8.5	
	110	ø10	8		297		297	2376	14.6	
	111	ø6.3	12		262		262	3144	7.7	
	112	ø10	4	30	113		143	572	3.5	
	113	ø6.3	6		70		70	420	1.0	
	114	ø12.5	4	30	132		162	648	6.2	
	115	ø5	4		108		108	432		0.7
								Total+10%	60.3	0.8
(P38-P37)=(P87-P86)	116	ø12.5	6	40	151	40	231	1386	13.3	
	117	ø10	6	40	151	40	231	1386	8.5	
	118	ø10	8		297		297	2376	14.6	
	119	ø6.3	12		262		262	3144	7.7	
	120	ø10	4	30	113		143	572	3.5	
	121	ø6.3	6		70		70	420	1.0	
	122	ø12.5	4	30	132		162	648	6.2	
	123	ø5	4		108		108	432		0.7
								Total+10%	60.3	0.8
								(x2)	120.6	1.6
(P70-P69)	124	ø12.5	6	40	151	40	231	1386	13.3	
	125	ø10	6	40	151	40	231	1386	8.5	
	126	ø10	8		297		297	2376	14.6	
	127	ø6.3	12		262		262	3144	7.7	
	128	ø10	4	30	113		143	572	3.5	
	129	ø6.3	6		70		70	420	1.0	
	130	ø12.5	4	30	132		162	648	6.2	
	131	ø5	4		108		108	432		0.7
								Total+10%	60.3	0.8
P5=P6=P7=P8=P9 P12=P13=P18=P19 P20=P21=P23=P26 P27=P32=P33=P34 P39=P40=P42=P43 P44=P45=P49=P50 P57=P58=P59=P62 P63=P64=P66=P71 P72=P73=P74=P75 P76=P77=P78=P79 P80=P81=P82=P83 P88=P89=P90=P91 P96=P97=P98=P99 P100=P101=P102 P103=P104	132	ø12.5	6	40	151	40	231	1386	13.3	
	133	ø10	6	40	151	40	231	1386	8.5	
	134	ø10	8		257		257	2056	12.7	
	135	ø6.3	12		222		222	2664	6.5	
	136	ø10	4	30	113		143	572	3.5	
	137	ø6.3	6		70		70	420	1.0	
								Total+10%	50.1	
								(x58)	2905.8	
								ø5:	0.0	11.7
								ø6.3:	809.6	0.0
								ø10:	2664.3	0.0
								ø12.5:	1572.5	0.0
								ø16:	63.1	0.0
								Total:	5109.5	11.7

1 - CONFERIR MEDIDAS NA OBRA "INLOCO"
2 - CONCRETO FCK= 30 MPa
3 - COTAS EM PLANTA EM CENTÍMETROS (CM)

MUNICÍPIO DE PATO BRANCO
Secretaria de Engenharia e Obras
Rua Caramuru, 271 - Centro
Fone/Fax (46) 3223-2509
engenharia@patobranco.pr.gov.br

PROJETO: PROJETO DE FUNDAÇÕES - CER IV
PRANCHA: 06/20
CONTRATANTE: MUNICÍPIO DE PATO BRANCO
REFERÊNCIA: ESTRUTURAL - CENTRO DE ESPECIALIDADES EM REABILITAÇÃO IV
DESENHO
ESCALA: INDICADA
DATA: SET/2023
ESPECIFICAÇÃO: ARMAÇÃO DE ESTACAS, BLOCOS E ARRANQUES
AUTOR DO PROJETO: Eduardo Bellei
ENG-CIVIL
CREA-PR 164.074/D