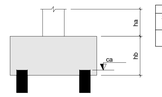
Vigas			
Nome	Seção (cm)	Elevação (cm)	Nível (cm)
V1	20x40	0	0
V2	20x40	0	0
V3	20x40	0	0
V4	20x40	0	0
V5	20x40	0	0
V6	20x40	0	0
V7	20x40	0	0
V8	20x40	0	0
V9	20x40	0	0
V10	20x40	0	0
V11	20x40	0	0
V12	20x40	0	0
V13	20x40	0	0
V14	20x40	0	0
V15	20x40	0	0
V16	20x40	0	0
V17	20x40	0	0
V18	20x40	0	0
V19	20x40	0	0
V20	15x40	0	0
V21	20x40	0	0
V22	15x40	0	0
V23	15x40	0	0
V24	20x40	0	0
V25	15x40	0	0
V26	20x40	0	0
V27	20x40	0	0
V28	20x40	0	0
V29	15x40	0	0
V30	20x40	0	0
V31	20x40	0	0
V32	20x40	0	0
V33	20x40	0	0
V34	20x40	0	0
V35	20x40	0	0

Pilares			
Nome	Seção	Elevação (cm)	Nível (cm)
P1	15x40	0	0
P2	20x40	0	0
P3	20x40	0	0
P4	20x40	0	0
P5	20x40	0	0
P6	40x40	0	0
P7	20x50	0	0
P8	20x40	0	0
P9	20x40	0	0
P10	20x40	0	0
P11	20x40	0	0
P12	20x40	0	0
P13	15x40	0	0
P14	15x40	0	0
P15	15x40	0	0
P16	40x40	0	0
P25	20x40	0	0
P26	20x20	0	0
P27	20x30	0	0
P28	15x40	0	0
P29	30x40	0	0
P30	30x40	0	0
P31	40x40	0	0
P36	20x20	0	0
P37	20x30	0	0
P38	20x30	0	0
P47	20x40	0	0
P49	20x40	0	0
P50	20x40	0	0
P51	15x40	0	0
P52	30x40	0	0
P53	30x40	0	0
P54	40x40	0	0
P60	20x40	0	0
P61	20x40	0	0
P62	20x40	0	0
P63	20x50	0	0
P64	40x40	0	0
P70	20x20	0	0
P71	20x50	0	0

Pilar									Fundação					Bloco			
Nome	Seção (cm)	X (cm)	Y (cm)	Carga Máx. (tf)	Carga Mín. (tf)	Mx Máximo (kgf.m) Positivo	Mx Máximo (kgf.m) Negativo	My Máximo (kgf.m) Positivo	My Máximo (kgf.m) Negativo	Fx Máximo (tf) Positivo	Fx Máximo (tf) Negativo	Lado B (cm)	Lado H (cm)	h0 / ha (cm)	h1 / hb (cm)	ne	Estaca	ca	Base tub. (cm)
P1	15x40	656.43	1299.47	8.4	2.8	0	0	0	0	0.0	-0.2	0.2	-0.3	80	80	0	75	1	C30 -60 -
P2	20x40	856.43	1299.47	11.2	9.2	0	0	0	0	0.0	-0.2	0.2	0.0	80	80	0	70	1	C30 -55 -
P3	20x40	1056.43	1299.47	17.7	13.0	0	0	0	0	0.0	-0.2	0.3	-0.3	80	80	0	70	1	C30 -55 -
P4	20x40	1376.43	1299.47	17.8	16.1	0	0	0	0	0.0	-0.3	0.4	0.0	80	80	0	70	1	C30 -55 -
P5	20x40	1696.43	1299.47	13.2	12.0	0	0	0	0	0.0	-0.2	0.3	-0.2	80	80	0	70	1	C30 -55 -
P6	40x40	1951.43	1299.47	18.0	12.7	0	0	0	0	0.3	-0.5	0.3	-0.3	80	80	0	55	1	C30 -40 -
P7	20x50	2281.43	1294.47	26.1	17.5	0	0	0	0	0.4	-0.6	0.3	2.4	-2.9	80	80	0	70	1	C30 -55 -
P8	20x40	2676.43	1299.47	16.4	9.1	0	0	0	0	0.4	-4.7	0.6	-0.5	80	80	0	70	1	C30 295 -
P9	20x40	3076.43	1299.47	15.5	9.7	0	0	0	0	0.5	-3.1	0.5	0.0	80	80	0	70	1	C30 295 -
P10	20x40	3356.43	1299.47	13.0	11.2	0	0	0	0	0.3	-3.3	0.0	-0.2	80	80	0	70	1	C30 295 -
P11	20x40	3636.43	1299.47	21.2	17.4	0	0	0	0	0.0	-3.2	0.0	-0.7	80	80	0	70	1	C30 295 -
P12	20x40	4036.43	1299.47	13.1	7.1	0	0	0	0	0.0	-1.9	0.0	-0.7	80	80	0	70	1	C30 295 -
P13	15x40	656.43	1079.47	13.2	9.3	0	0	0	0	0.0	-0.2	0.3	-0.2	80	80	0	75	1	C30 -60 -
P14	15x40	1056.43	1069.47	24.6	18.7	100	0	100	0	0.0	-0.2	0.3	-0.3	80	80	0	75	1	C30 -60 -
P15	15x40	1596.43	1069.47	24.9	20.3	100	0	100	0	0.0	-0.2	0.3	-0.1	80	80	0	75	1	C30 -60 -
P16	40x40	1951.43	1069.47	32.5	24.8	100	0	100	0	0.0	-1.4	0.3	-0.3	170	80	0	50	2	C30 -35 -
P17	20x60	2281.61	1079.47	5.3	2.0	0	0	0	0	0.0	-4.5	0.2	-4.0	80	80	0	70	1	C30 295 -
P18	15x40	2676.43	1086.97	23.6	17.0	0	0	0	0	0.0	-0.9	1.1	-0.7	80	80	0	75	1	C30 290 -
P19	15x40	3076.43	1086.97	36.5	28.0	0	0	0	0	0.2	-0.4	0.8	-0.4	170	80	0	60	2	C30 305 -
P20	15x40	3636.43	1099.47	5.6	5.2	0	0	0	0	0.1	-0.6	1.4	-1.3	80	80	0	75	1	C30 290 -
P21	20x40	4036.43	1099.47	13.9	11.8	0	0	0	0	0.3	-0.3	1.0	-1.3	80	80	0	70	1	C30 295 -
P22	20x40	3356.15	899.40	7.8	7.5	0	0	0	0	0.6	-0.1	1.8	0.0	80	80	0	70	1	C30 295 -
P23	15x40	3636.42	899.05	33.7	27.8	0	0	0	0	0.0	-0.6	1.7	0.0	170	80	0	60	2	C30 305 -
P24	20x40	4036.43	899.47	17.3	13.5	0	0	0	0	0.0	-1.0	1.0	-1.0	80	80	0	70	1	C30 295 -
P25	20x40	279.47	679.47	6.2	-0.1	0	0	0	0	0.0	-0.3	0.4	-0.6	80	80	0	70	1	C30 -55 -
P26	20x20	419.39	689.47	3.5	1.6	0	0	0	0	0.0	-0.2	0.1	0.0	80	80	0	70	1	C30 -55 -
P27	20x30	556.43	689.43	5.4	4.0	0	0	0	0	0.0	-0.3	0.1	0.0	80	80	0	70	1	C30 -55 -
P28	15x40	656.43	699.43	18.6	15.5	0	0	0	0	0.0	-0.2	0.2	-0.4	80	80	0	75	1	C30 -60 -
P29	30x40	1056.43	704.47	43.1	36.0	100	0	100	0	0.0	-0.7	0.4	-0.4	170	80	0	55	2	C30 -40 -
P30	30x40	1596.43	704.47	54.2	44.0	100	0	100	0	0.0	-0.7	0.2	-0.4	170	80	0	55	2	C30 -40 -
P31	40x40	1951.43	704.47	33.6	27.4	100	0	100	0	0.0	-0.9	0.2	-0.3	170	80	0	50	2	C30 -35 -
P32	20x40	2281.92	706.87	38.6	29.5	0	0	0	0	0.0	-1.7	2.5	-3.7	170	80	0	55	2	C30 310 -
P33	15x40	2676.43	706.97	23.8	18.7	0	0	0	0	0.0	-0.9	0.1	-1.7	80	80	0	75	1	C30 290 -
P34	15x40	3076.43	706.97	32.6	22.5	0	0	0	0	0.0	-1.0	0.7	-2.7	170	80	0	60	2	C30 305 -
P35	20x40	4036.43	638.44	13.5	11.7	0	0	0	0	0.7	0.0	0.8	-1.1	80	80	0	70	1	C30 295 -
P36	20x20	279.43	554.51	4.7	0.0	0	0	0	0	0.0	-0.2	0.1	-0.1	80	80	0	70	1	C30 -55 -
P37	20x20	419.39	554.51	5.6	3.5	0	0	0	0	0.0	-0.2	0.1	-0.2	80	80	0	70	1	C30 -55 -
P38	20x30	556.43	554.51	13.7	9.6	0	0	0	0	0.0	-0.4	0.1	0.0	80	80	0	70	1	C30 -55 -
P41	40x40	1951.43	521.97	36.3	28.6	100	0	100	0	0.0	-1.3	0.4	-0.1	170	80	0	50	2	C30 -35 -
P42	20x40	2281.91	534.47	8.1	3.5	0	0	0	0	0.0	-2.0	4.4	-3.0	80	80	0	70	1	C30 295 -
P43	15x40	2688.93	534.47	26.0	19.5	0	0	0	0	0.0	-4.6	0.6	-0.5	80	80	0	75	1	C30 290 -
P44	15x40	3076.42	546.97	33.4	22.4	0	0	0	0	0.0	-1.5	1.8	-1.0	170	80	0	60	2	C30 305 -
P45	15x40	3636.43	536.37	33.4	27.2	0	0	0	0	0.4	-0.3	0.0	-0.8	170	80	0	60	2	C30 305 -
P47	20x40	279.43	366.47	7.5	-1.3	0	0	0	0	0.0	-0.1	0.5	-0.8	170	80	0	55	2	C30 -40 -
P48	20x40	4036.43	394.47	18.6	15.4	0	0	0	0	0.6	0.0	0.9	-1.1	80	80	0	70	1	C30 295 -
P49	20x40	279.47	241.47	8.4	0.0	0	0	0	0	0.0	-0.1	0.4	-0.6	80	80	0	70	1	C30 -55 -
P50	20x40	409.43	231.47	8.3	3.3	0	0	0	0	0.0	-0.6	0.1	-0.2	80	80	0	70	1	C30 -55 -
P51	15x40	656.43	221.47	17.8	13.7	0	0	0	0	0.0	-0.2	0.3	-0.4	80	80	0	75	1	C30 -60 -
P52	30x40	1056.32	169.46	30.6	25.6	100	0	100	0	0.0	-0.5	0.3	-0.4	170	80	0	55	2	C30 -40 -
P53	30x40	1596.43	169.47	38.4	31.6	100	0	100	0	0.0	-0.7	0.1	-0.7	170	80	0	55	2	C30 -40 -
P54	40x40	1951.43	159.46	30.4	20.8	100	0	100	0	0.0	-0.9	0.3	-0.3	170	80	0	50	2	C30 -35 -
P55	15x60	2281.88	159.47	30.3	23.9	0	0	0	0	2.1	-10.7	1.0	-1.8	170	80	0	60	2	C30 305 -
P56	15x40	2688.93	159.46	25.2	21.7	0	0	0	0	0.0	-4.0	0.8	0.0	80	80	0	75	1	C30 290 -
P57	15x40	3063.93	159.47	26.2	21.5	0	0	0	0	0.1	-2.8	0.2	-0.5	80	80	0	75	1	C30 290 -
P58	15x40	3636.43	159.47	28.5	22.9	0	0	0	0	0.3	-2.7	0.1	-0.7	80	80	0	75	1	C30 290 -
P59	20x40	4036.43	171.97	13.4	10.7	0	0	0	0	0.2	-1.3	0.9	-1.2	80	80	0	70	1	C30 295 -
P60	20x40	658.93	20.91	6.7	3.7	0	0	0	0	0.0	-0.3	0.3	-0.4	80	80	0	70	1	C30 -55 -
P61	20x40	1061.43	10.91	7.4	4.7	0	0	0	0	0.0	-0.5	0.1	-0.3	80	80	0	70	1	C30 -55 -
P62	20x40	1364.76	10.91	8.4	7.7	0	0	0	0	0.0	-0.4	0.0	-0.3	80	80	0	70	1	C30 -55 -
P63	20x50	1648.09	10.91	8.5	7.2	0	0	0	0	0.0	-1.0	0.0	-0.1	80	80	0	70	1	C30 -55 -
P64	40x40	1951.43	20.91	20.5	10.2	0	0	0	0	0.0	-0.9	0.3	-0.4	80	80	0	55	2	C30 -40 -
P65	20x40	2291.88	10.91	11.0	6.1	0	0	0	0	0.0	-4.1	1.6	-1.4	80	80	0	70	1	C30 295 -
P66	20x40	2942.04	10.91	12.7	10.7	0	0	0	0	0.0	-2.4	0.2	-0.4	80	80	0	70	1	C30 295 -
P67	20x40	3306.43	10.91	12.3	11.3	0	0	0	0	0.0	-2.7	0.1	-0.2	80	80	0	70	1	C30 295 -
P68	20x40	3636.43	10.91	10.7	8.4	0	0	0	0	0.0	-2.5	0.4	-0.2	80	80	0	70	1	C30 295 -
P69	20x40	4026.35	10.91	12.4	5.6	0	0	0	0	0.0	-1.1	0.4	-0.8	80	80	0	70	1	C30 295 -
P70	20x20	419.43	366.47	2.6	0.9	0	0	0	0	0.0	-0.2	0.1	-0.2	80	80	0	70	1	C30 -55 -
P71	20x50	607.43	306.47	9.1	4.7	0	0	0	0	0.0	-0.2	0.5	-0.9	80	80	0	70	1	C30 -55 -

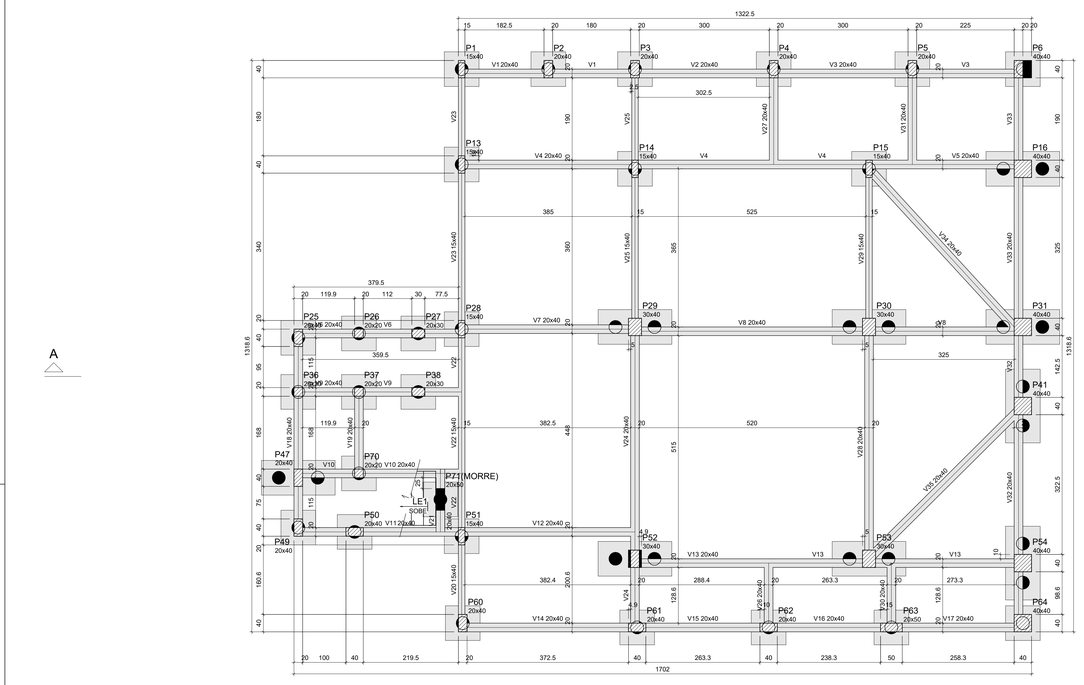
Os esforços indicados nesta tabela são os valores máximos obtidos pela envoltória de todas as combinações definidas para as fundações. Para análises complementares, deve-se consultar o relatório de esforços na fundação, que apresenta os valores calculados para cada combinação.



Estacas			
Simbologia	Nome	d (cm)	Quantidade
	C30	30.00	84

Locação no eixo X	
Coordenadas (cm)	Nome
279.43	P36, P47
279.47	P25, P49
409.43	P50
419.39	P26, P37
419.43	P70
556.43	P27, P38
607.43	P71
656.43	P1, P13, P28, P51
658.93	P60
856.43	P2
1056.32	P52
1056.43	P3, P14, P29
1061.43	P61
1364.76	P62
1376.43	P4
1596.43	P15, P30, P53
1648.09	P63
1696.43	P5
1951.43	P6, P16, P31, P41, P54, P64
2281.43	P7
2281.61	P17
2281.88	P55
2281.91	P42
2281.92	P32
2291.88	P65
2676.43	P8, P18, P33
2688.93	P43, P56
2942.04	P66
3063.93	P57
3076.43	P9, P19, P34
3076.42	P44
3306.43	P67
3356.15	P22
3356.43	P10
3636.43	P11, P20
3636.42	P23
3636.43	P45, P58, P68
4026.35	P69
4036.43	P12, P21, P24, P35, P48, P59

Locação no eixo Y	
Coordenadas (cm)	Nome
1299.47	P1, P2, P3, P4, P5, P6, P8, P9, P10, P11, P12
1294.47	P7
1099.47	P20, P21
1086.97	P18, P19
1079.47	P13, P17
1069.47	P14, P15, P16
899.47	P24
899.40	P22
899.05	P23
706.97	P33, P34
706.87	P32
704.47	P29, P30, P31
699.43	P28
689.47	P26
689.43	P27
679.47	P25
638.44	P35
554.51	P36, P37, P38
546.97	P44
536.37	P45
534.47	P42, P43
521.97	P41
394.47	P48
366.47	P70
356.47	P47
306.47	P71
241.47	P49
231.47	P50
221.47	P51
171.97	P59
169.46	P52
169.47	P53
159.46	P54
159.47	P55
159.46	P56
159.47	P57, P58
20.91	P60, P64
10.91	P61, P62, P63, P65, P66, P67, P68, P69



Forma do pavimento TERREO (Nível 0)

escala 1:50

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

Legenda das vigas e paredes
Viga

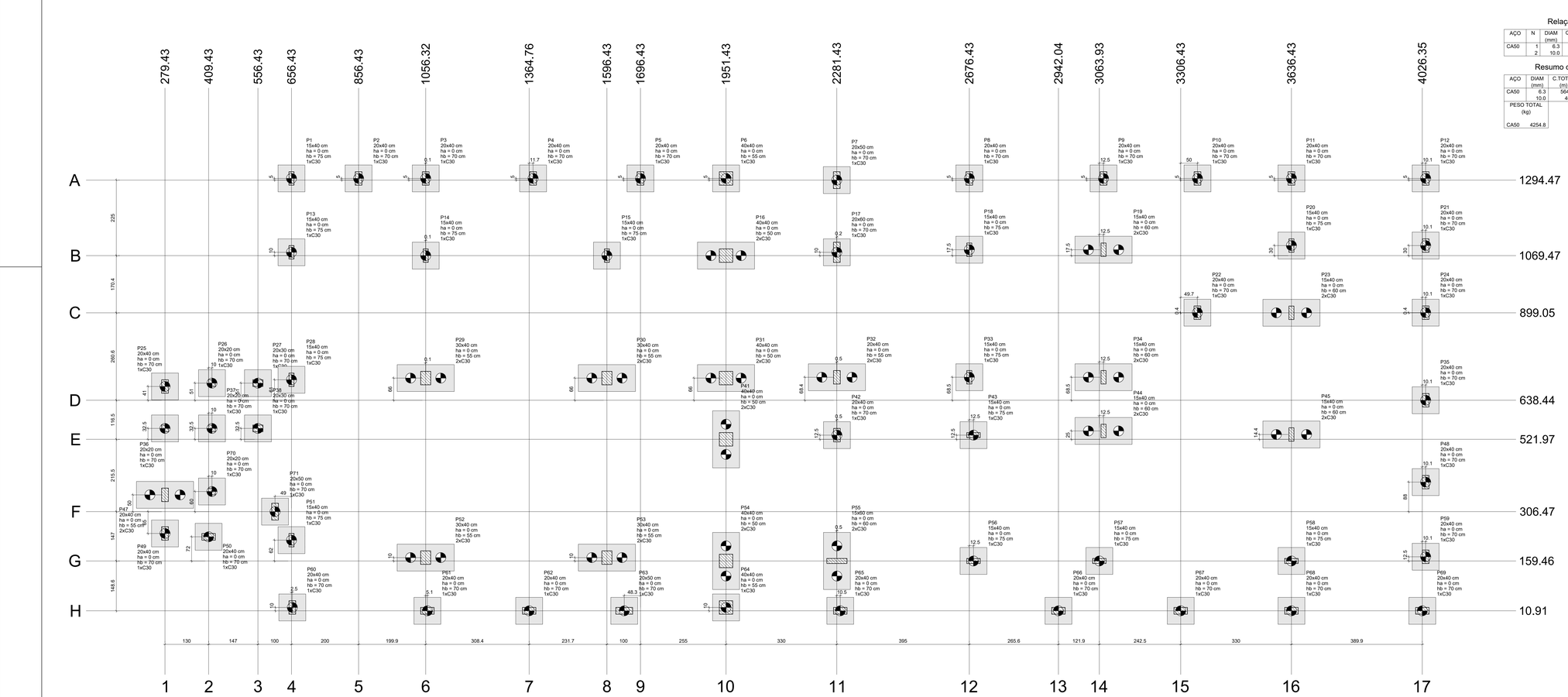
Características dos materiais	
fck (kgf/cm²)	Ecs (kgf/cm²)
250	241500

Relação do aço

AÇO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
CA50	1	6.3	6888	82	564816
	2	10.0	504	800	403200

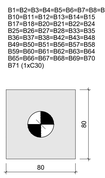
Resumo do aço

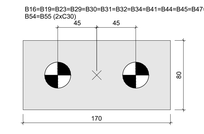
AÇO	DIAM (mm)	C.TOTAL (m)	PESO + 10 % (kg)
CA50	6.3	5648.2	1520.3
	10.0	4032	2734.5
PESO TOTAL (kg)			
CA50	4254.8		



Planta de locação

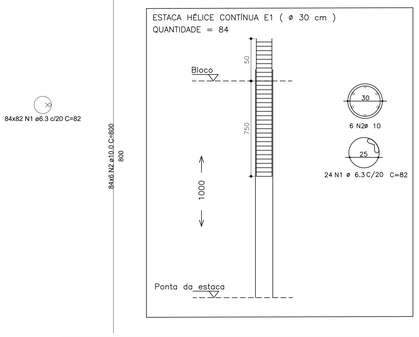
escala 1:50





Legenda dos blocos

escala 1:25



CONSÓRCIO REGIONAL DE SANEAMENTO BÁSICO - CONSANE	
AUTORIA DO PROJETO:	Eng. Civil Felipe Vinícius Oliveira Silva CREA nº 209726/D-MG
RESPONSÁVEL TÉCNICO:	Eng. Civil Felipe Vinícius Oliveira Silva CREA nº 209726/D-MG
ENDEREÇO:	RUA QUINTINO BOCAIÚVA
PROPRIETÁRIO:	Município de Ekxi Mendes/MG
PROJETO ESTRUTURA DE CONCRETO ARMADO	
OBRA: SECRETARIA DE EDUCAÇÃO	
ASSUNTO: LOCAÇÃO E FORMA TERREO	
ETAPA DO PROJETO: EXECUTIVO	
REVISÃO: R00 / FORMATO: A0 / FOLHA: 01/16 / DATA: 24/08/2026	