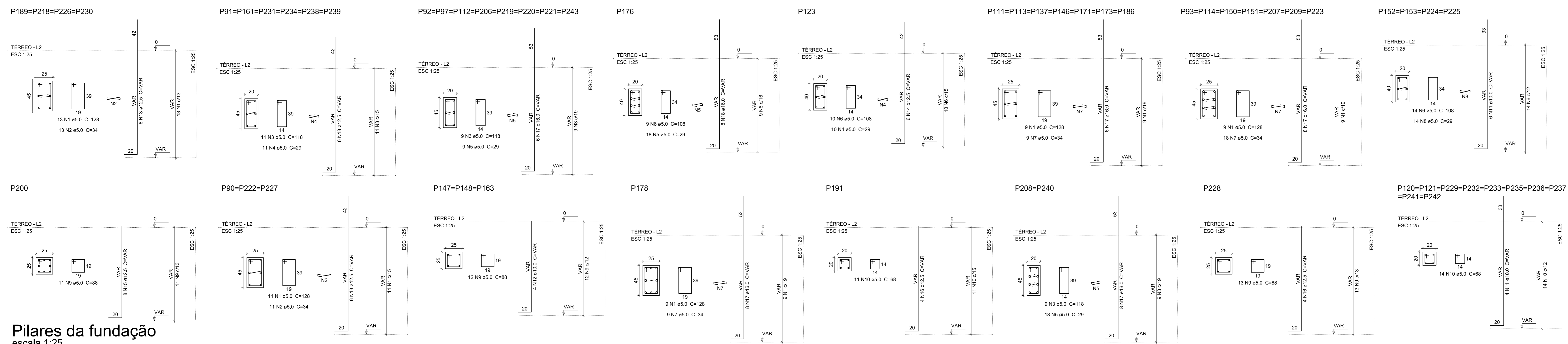


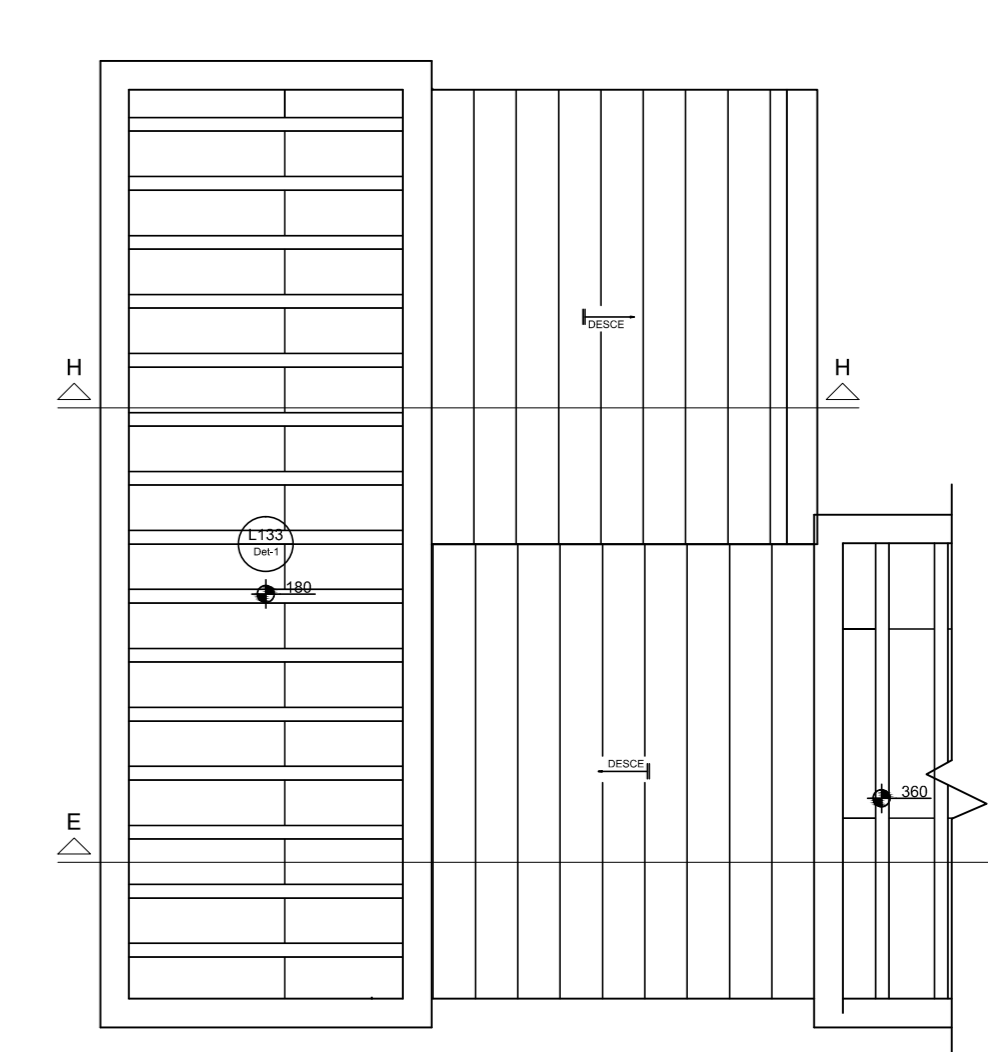
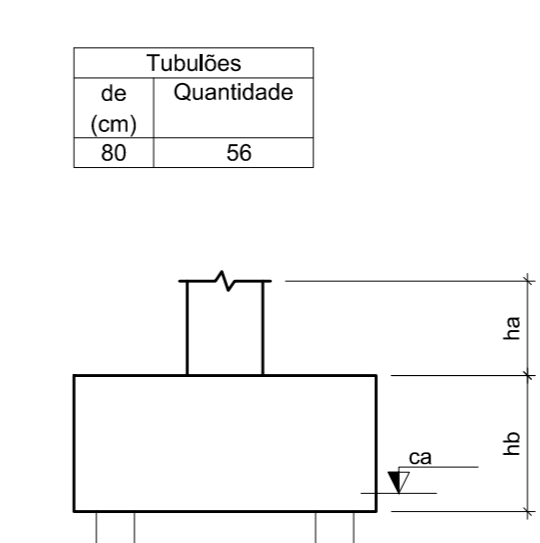
M	24206.97
N	23988.17
O	23859.47
P	23727.27
Q	23586.97
R	23462.10
S	23313.39
T	23201.02
U	23086.29
V	22946.47
W	22753.65
X	22626.97
Y	22495.65
Z	22394.31
AA	22292.22
AB	22174.06
AC	22044.17
AD	21913.12
AE	21810.57
AF	21709.89
AG	21601.67
AH	21498.22
AI	21313.68
AJ	21141.88
AK	21023.31
AL	20902.12
AM	20801.62
AN	20672.24
AO	20551.35
AP	20444.89
AQ	20285.85
AR	20168.37

Planta de locação  
escala 1:100

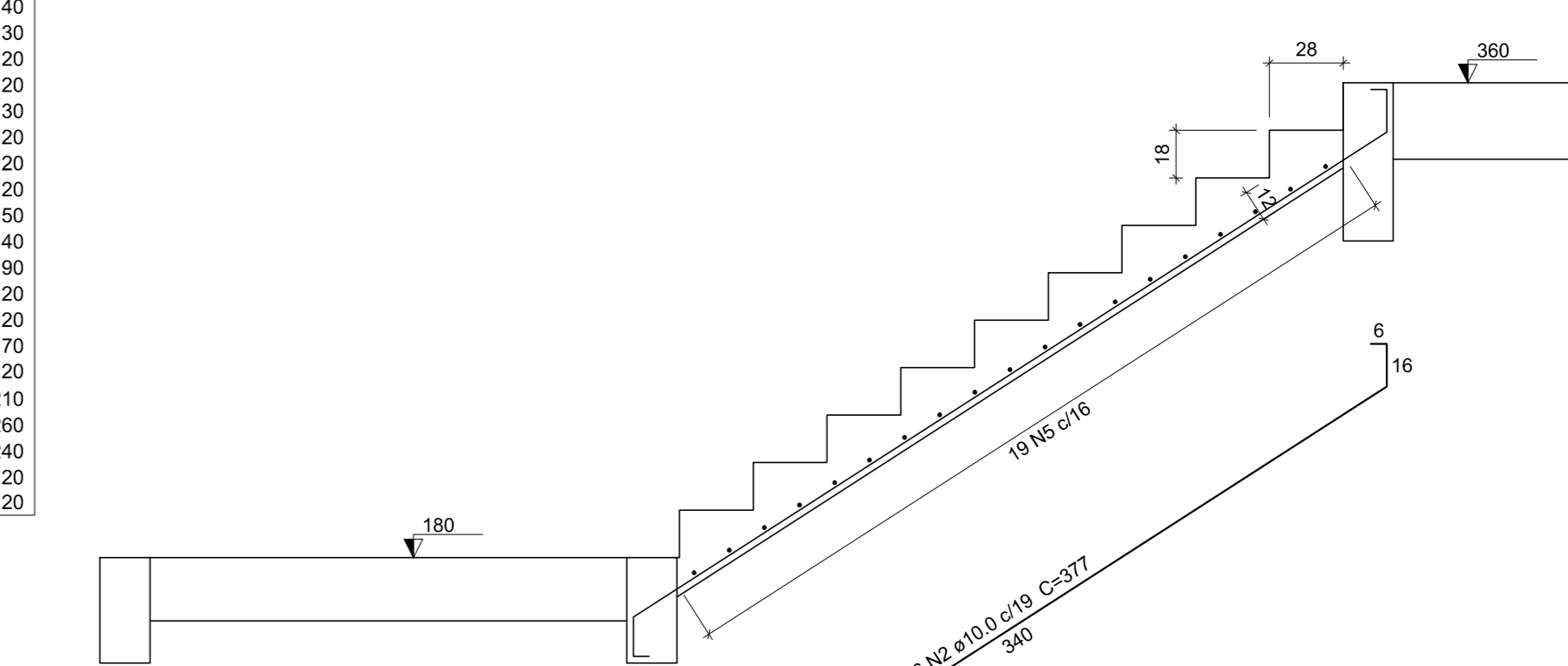


Pilares da fundação  
escala 1:25

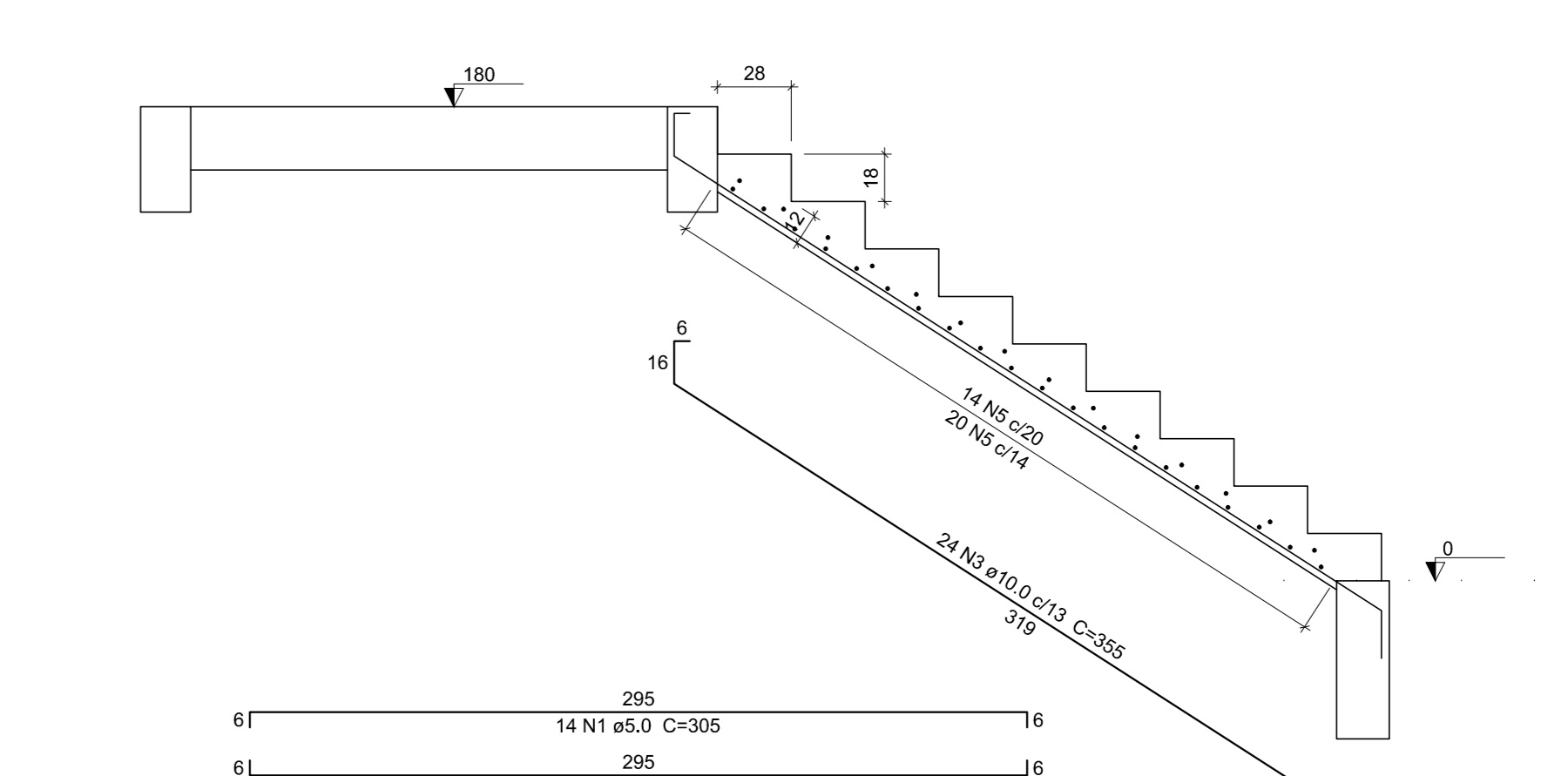
Nome	X (cm)	Y (cm)	Carga Max. (k)	nr	de	Base n.º
B90	-19304.34	24206.97	45.9	1	80	190
B91	-18744.34	24206.97	53.1	1	80	230
B92	-18184.34	24206.97	75.3	1	80	230
B93	-17624.34	24206.97	52.7	1	80	200
B94	-17064.34	24051.13	14.0	1	80	120
B97	-18626.54	23897.07	28.9	1	80	150
B111	-19304.34	23586.97	47.8	1	80	150
B112	-18626.54	23586.97	55.4	1	80	200
B113	-18136.84	23586.97	90.5	1	80	240
B114	-17296.64	23586.97	51.6	1	80	200
B120	-18626.54	23349.47	28.2	1	80	150
B121	-18448.82	23349.47	13.9	1	80	120
B132	-18149.34	23201.02	22.3	1	80	140
B161	-18136.84	22826.97	48.8	1	80	190
B163	-18264.34	22599.34	14.8	1	80	200
B171	-18291.84	22324.47	56.3	1	80	200
B173	-18461.84	22324.47	70.2	1	80	230
B176	-18149.34	22316.47	56.5	1	80	240
B178	-17296.64	22273.52	78.9	1	80	240
B186	-16573.84	22044.17	55.5	1	80	200
B189	-13846.84	22044.17	37.9	1	80	170
B191	-15181.84	21991.82	30.1	1	80	160
B200	-14518.84	21754.82	14.9	1	80	120
B206	-19304.34	21614.17	52.4	1	80	200
B207	-18448.82	21604.17	72.4	1	80	230
B208	-18149.34	21601.67	77.7	1	80	240
B209	-17296.64	21601.67	58.2	1	80	210
B216	-19304.34	21220.42	23.5	1	80	140
B219	-19304.34	21072.12	47.8	1	80	190
B220	-18744.34	21084.62	54.0	1	80	200
B221	-18149.34	21084.62	59.1	1	80	220
B222	-14234.82	21141.88	15.0	1	80	120
B223	-17296.64	21072.12	48.1	1	80	190
B226	-16573.84	21069.75	39.0	1	80	170
B227	-14844.82	21023.31	29.4	1	80	150
B228	-19304.34	20922.12	14.8	1	80	120
B229	-16098.41	20879.17	7.8	1	80	120
B230	-15581.89	20865.01	21.3	1	80	140
B231	-17296.64	20801.62	19.4	1	80	130
B232	-16984.65	20700.60	7.9	1	80	120
B233	-16098.38	20672.24	6.7	1	80	120
B234	-17466.84	20502.24	20.1	1	80	130
B235	-15890.58	20551.35	8.3	1	80	120
B236	-15951.69	20507.36	8.8	1	80	120
B237	-16946.51	20504.28	6.3	1	80	120
B238	-17827.42	20444.89	27.2	1	80	150
B239	-18149.34	20392.32	20.9	1	80	140
B240	-18590.58	20296.56	47.9	1	80	190
B241	-17276.49	20285.85	9.8	1	80	120
B242	-17050.49	20327.85	9.2	1	80	120
B243	-19304.34	20188.37	34.9	1	80	170
B120-123	-18626.54	23349.47	9.8	1	80	120
B137-146	-19301.84	22956.97	60.9	1	80	210
B147-148	-18568.16	22956.97	97.9	1	80	260
B152-151	-17296.64	22956.97	54.2	1	80	240
B152-153	-16573.84	22946.47	16.5	1	80	120
B224-225	-16573.84	21072.12	17.8	1	80	120



Armação positiva da escada E1  
escala 1:50



Corte E-E (LE9)  
escala 1:25



Corte H-H (LE4)  
escala 1:25

Relação do aço

CA60	N	DIAM	Q	UNIT	C.TOTAL
CA60	1	5.0	53	305	16165
CA60	2	10.0	16	377	6032
CA60	3	15.0	4	355	17265

Resumo do aço

CA60	DIAM	C.TOTAL	PESO + 10 %
CA60	10.0	234.3	158.9
CA60	5.0	191.7	27.4
CA60	15.0	8	27.4

Vol. de concreto total (C-30) = 2.97 m³  
Área de forma total = 21.12 m²

Relação do aço

CA60	N	DIAM	Q	UNIT	C.TOTAL
CA60	1	5.0	220	128	28160
CA60	2	5.0	85	34	2890
CA60	3	5.0	156	118	18468
CA60	4	5.0	76	29	2204
CA60	5	5.0	105	29	3854
CA60	6	5.0	75	168	8100
CA60	7	5.0	198	34	6732
CA60	8	5.0	96	29	1624
CA60	9	5.0	60	88	5280
CA60	10	5.0	151	68	10268
CA60	11	10.0	64	VAR	VAR
CA60	12	10.0	12	VAR	VAR
CA60	13	12.5	78	VAR	VAR
CA60	14	12.5	6	VAR	VAR
CA60	15	12.5	8	VAR	VAR
CA60	16	12.5	8	VAR	VAR
CA60	17	16.0	170	VAR	VAR
CA60	18	16.0	8	VAR	VAR

Resumo do aço

CA60	DIAM	C.TOTAL	PESO + 10 %
CA60	10.0	153.7	104.2
CA60	5.0	209	22.5
CA60	16.0	406.1	734.8
CA60	5.0	873.2	148

Vol. de concreto total (C-30) = 8.15 m³  
Área de forma total = 114.89 m²

**HB ENGENHARIA**  
PROJETOS E EXECUÇÕES DE OBRAS

ALEX SANDRO BOLIGON  
ENGENHEIRO CIVIL  
CREASC 06741-4

ALLAN FELIPE MELCHIORETTO  
ENGENHEIRO CIVIL  
CREASC 14117-4

RUA NORBERTO SILVEIRA JUNIOR, nº 191, SL. 05  
CENTRO - GUARABIRIM - SC  
47 3376-2317 / 99125-2649 / 96480-4518

**ESCOLA MUNICIPAL IRMÃ FILOMENA**

PROJETO ESTRUTURAL

DESCRIÇÃO: PLANTA DE LOCAÇÃO, PILARES DA FUNDAÇÃO, ESCADA

PROPRIETÁRIO: MUNICÍPIO DE TREZE TILIAS.

LOCAL: RUA DR. IVO DAQUINO Nº 220, BARRIO CENTRO, TREZE TILIAS/SC.

RESP. TÉCNICO: ALEX SANDRO BOLIGON  
ENGENHEIRO CIVIL  
CREASC 06741-4

CONTRATANTE: MUNICÍPIO DE TREZE TILIAS  
ENGENHEIRO CIVIL  
MARCOS DRESCH  
CPF: 465.485.605-00  
CARGO: PREFEITO

ESCALA: INDICADA

DESENHO: RAFAEL

DATA: ABRIL, 2018

FOLHA Nº: 14