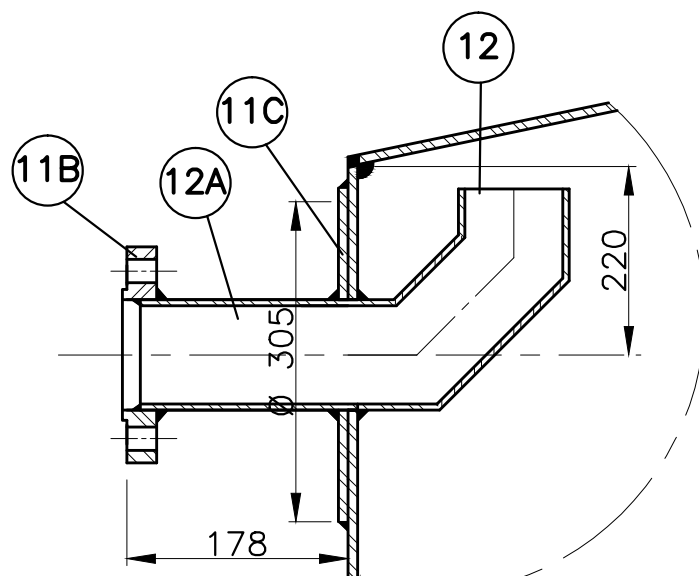
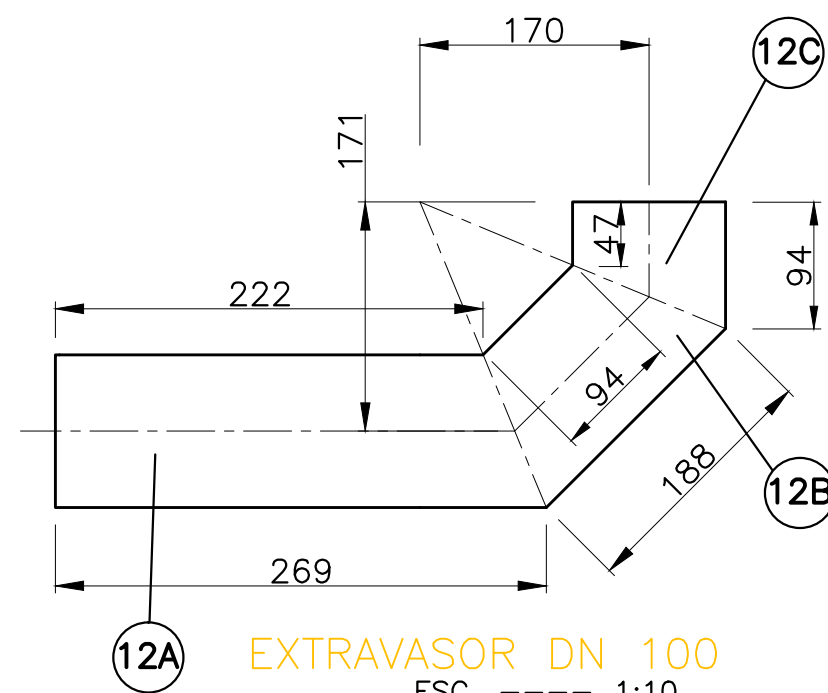


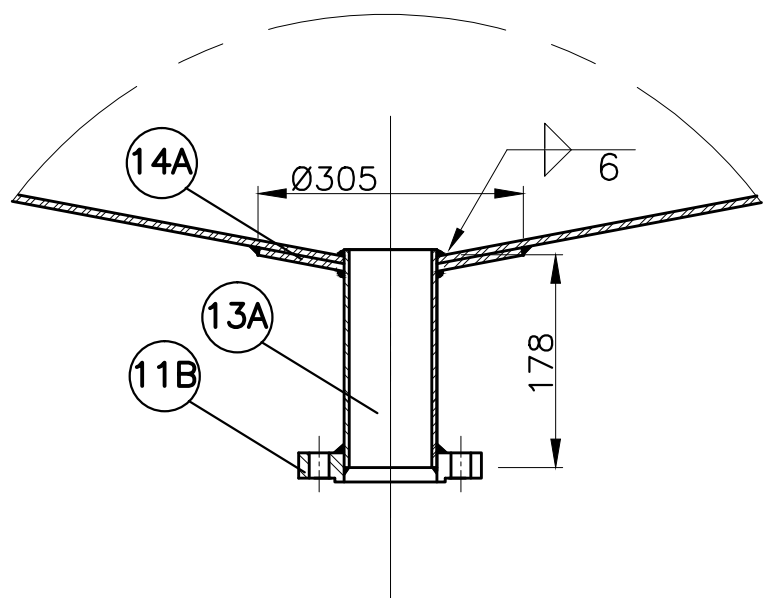
DET. ENTRADA
ESC. ---- 1:10



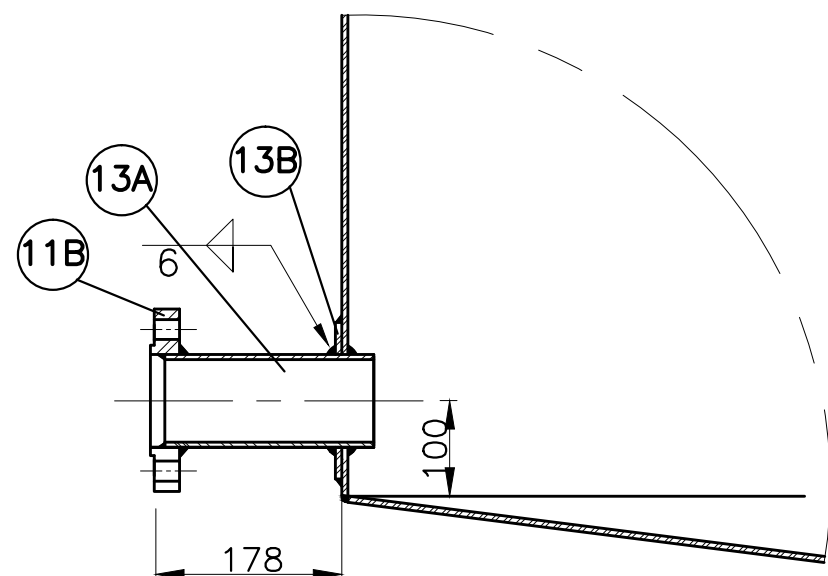
DET. EXTRASOR
ESC. ---- 1:10



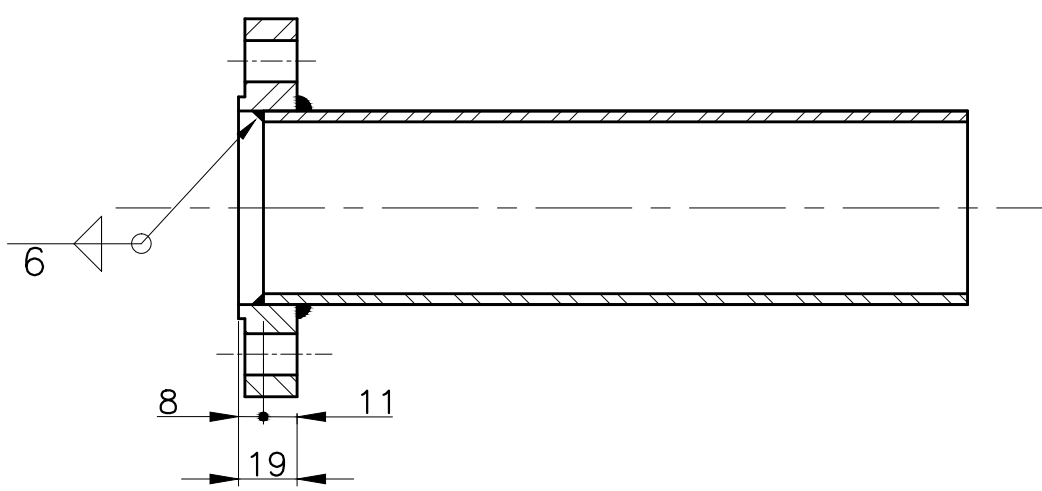
EXTRASOR DN 100
ESC. ---- 1:10



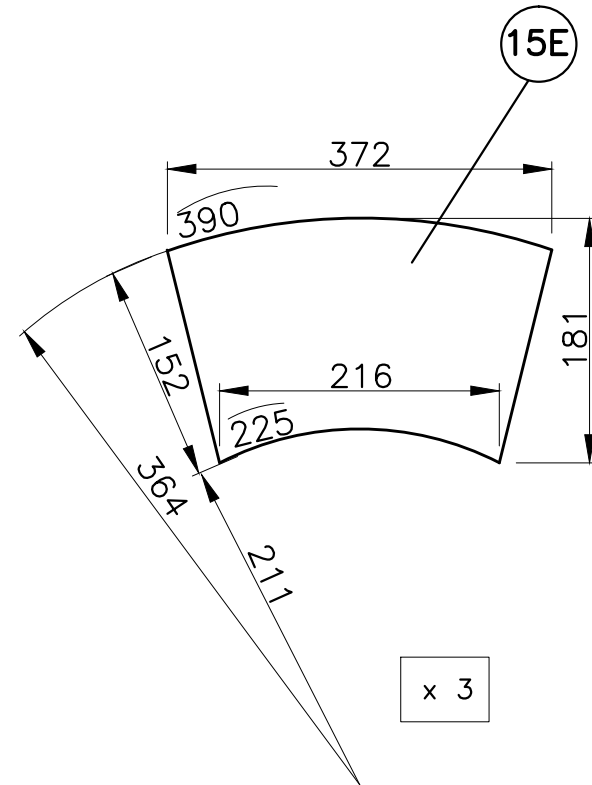
DET. DRENO
ESC. --- 1:5



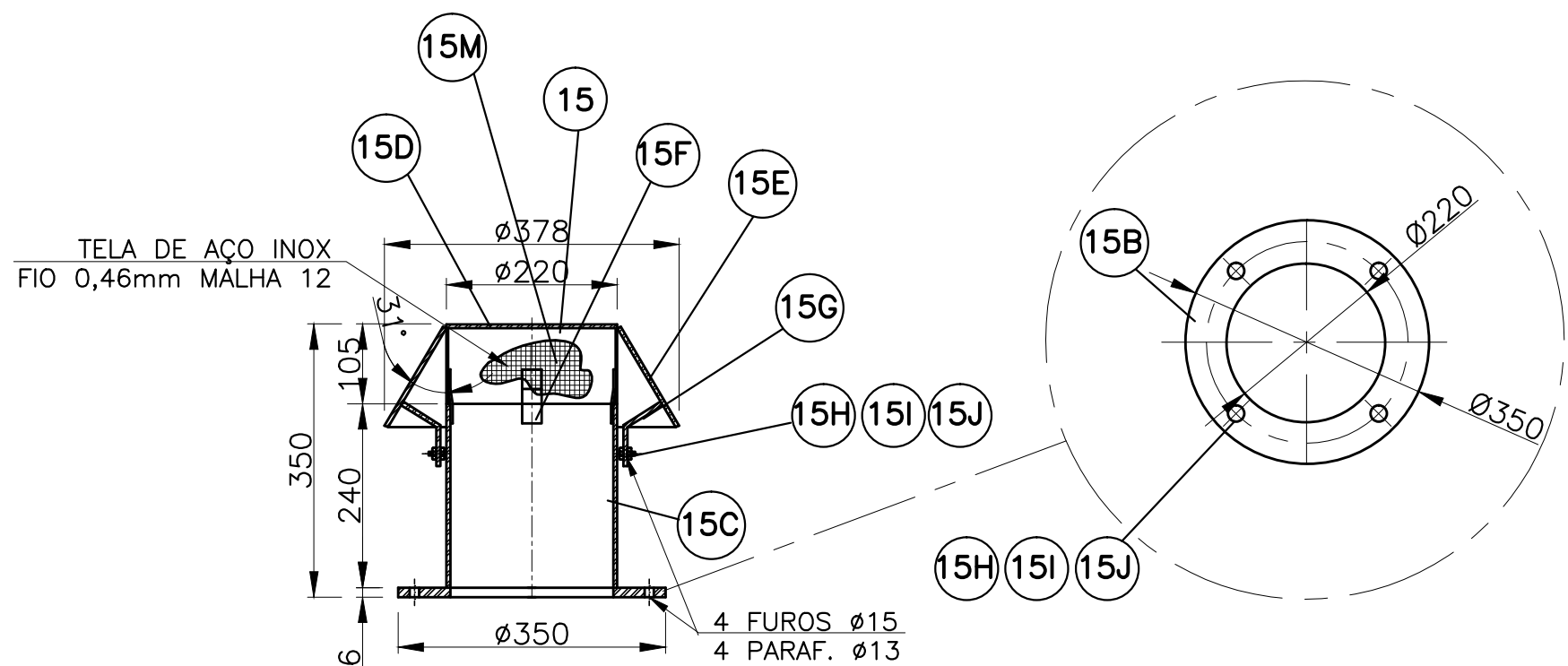
DET. SAIDA
ESC. --- 1:5



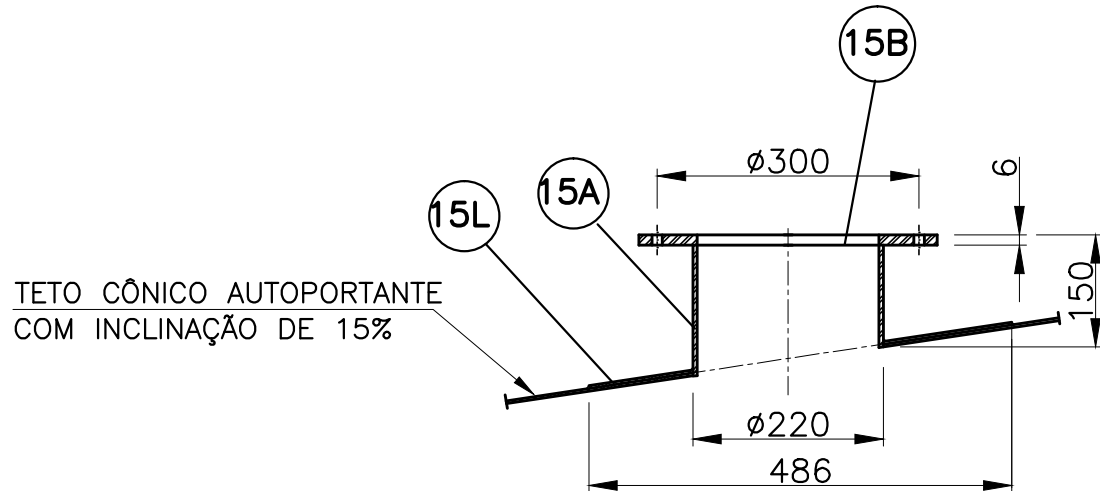
DET. TÍPICO
ESC. --- 1:5



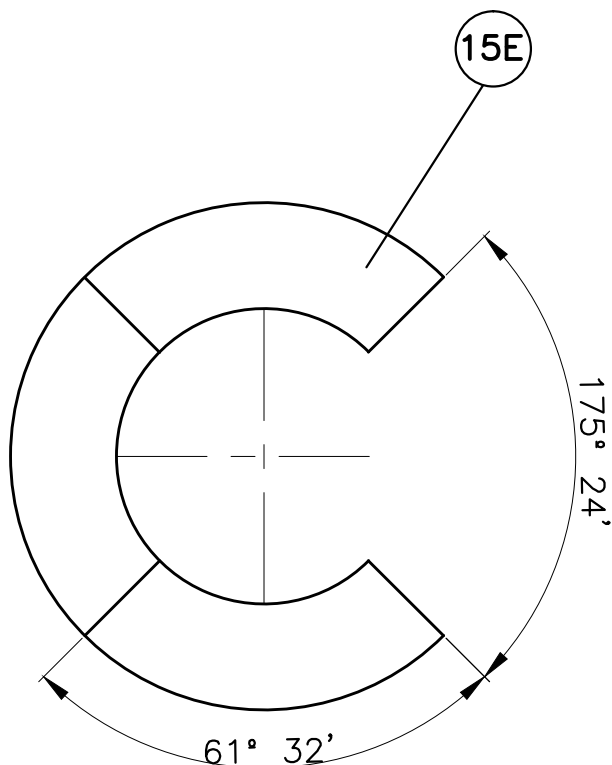
DET. CONE DO SUSPIRO
ESC. ---- 1:10



DET. DO SUSPIRO
ESC. ----- 1:7,5



DET. DO SUSPIRO
ESC. ----- 1:7,5



DET. DESENVOLVIMENTO
CHAPA PLANIFICADA DO CONE SUSPIRO
ESC. ---- 1:10

16	1	PLACA IDENTIFICAÇÃO	ALUMINIO	—	—
15M	1	TELA INOX	INOX	—	—
15L	1	# 1/4" X Ø 486 mm	SAC-300	5,6	5,6
15J	8	ARRUELA LISA GALVANIZADA	AÇO	—	—
15I	8	PORCA 1/2" GALVANIZADA	ASTM A-307	—	—
15H	8	PARAFUSO 1/2" X 1" GALVANIZADO	ASTM A-307	—	—
15G	4	# 1/4" X 1.1/2" X 100 mm	SAC-300	0,2	0,8
15F	4	# 3/16" X 25 X 80 mm	SAC-300	0,1	0,4
15E	3	# 3/16" X 182 X 372 mm	SAC-300	0,4	1,2
15D	1	# 3/16" X Ø 220 mm	SAC-300	1,4	1,4
15C	1	TUBO 8" X 240 mm — SCH. 40	SAC-300	10,2	10,2
15B	2	# 1/4" X Ø 350/220 mm	SAC-300	3,0	6,0
15A	1	TUBO 8" X 150 mm — SCH. 40	ASTM A-53	6,4	6,4
15		SUSPIRO			32,0
14A	1	# 3/16" X Ø 305/116 mm	SAC-300	2,4	2,4
11B	1	FLANGE DN 100 NBR 7675	ASTM A-283	4,0	4,0
13A	1	TUBO 4" X 200 mm — SCH. 40	ASTM A-53	1,8	1,8
14	1	DRENO			8,2
13B	1	# 3/16" X Ø 305/116 mm	SAC-300	2,4	2,4
11B	1	FLANGE DN 100 NBR 7675	ASTM A-283	4,0	4,0
13A	1	TUBO 4" X 200 mm — SCH. 40	ASTM A-53	3,0	3,0
13		SAIDA			9,4
11C	1	# 3/16" X Ø 305/116 mm	SAC-300	2,4	2,4
11B	1	FLANGE DN 100 NBR 7675	ASTM A-283	4,0	4,0
12C	1	TUBO 4" X 94 mm — SCH. 40	ASTM A-53	1,1	1,1
12B	1	TUBO 4" X 188 mm — SCH. 40	ASTM A-53	2,3	2,3
12A	1	TUBO 4" X 269 mm — SCH. 40	ASTM A-53	4,0	4,0
12		EXTRASOR			13,8
11C	1	# 3/16" X Ø 305/116 mm	SAC-300	2,4	2,4
11B	2	FLANGE DN 100 NBR 7675	ASTM A-283	4,0	8,0
11A	1	TUBO 4" X 345 mm — SCH. 40	ASTM A-53	2,1	2,1
11		ENTRADA			12,5
10J	2	ARRUELA LISA GALVANIZADA	AÇO	—	—
10I	2	PORCA 1/2" GALVANIZADA	ASTM A-307	—	—
10H	2	PARAFUSO 1/2" X 3/4" GALVANIZADO	ASTM A-307	—	—
10G	2	Ø 5/8 x 320 mm	SAC-300	0,5	1,0
10F	3	# 3/16" x 40 x 140 mm	SAC-300	0,2	0,6
10E	3	# 3/16" x 70 x 140 mm	SAC-300	0,2	0,6
10D	1	# 3/16" x Ø 1200 mm	SAC-300	23,8	23,8
10C	1	# 3/16" x 1.1/2" x 2592 mm	SAC-300	3,7	3,7
10B	1	# 3/16" x Ø 830 mm	SAC-300	20,6	20,6
10A	1	# 3/16" x 200 X 2500 mm	SAC-300	19,0	19,0
10		INSPEÇÃO SUPERIOR			69,3
8L	14	ARRUELA LISA GALVANIZADA	AÇO	—	—
8K	14	PORCA 1/2" GALVANIZADA	ASTM A-307	—	—
8J	14	PARAFUSO 1/2" X 3/4" GALVANIZADO	ASTM A-307	—	—
8I	7	# 3/16" x 40-48 x 100 mm	SAC-300	0,2	1,4
8H	7	# 3/16" x 40 x 100 mm	SAC-300	0,2	1,4
8G	14	# 3/16" x Ø 42 mm	SAC-300	0,5	7,0
8F	7	TUBO Ø 1.1/2" x 1000 mm — SCH. 40	ASTM A-53	3,7	25,9
8E	6	TUBO Ø 3/4" x 1300 mm — SCH. 40	ASTM A-53	2,2	13,2
8D	1	# 1/4" x 100 x 2110 mm	SAC-300	10,7	10,7
8C	2	# 1/4" x 100 x 3000 mm	SAC-300	15,2	30,4
8B	1	TUBO Ø 3/4" x 2020 mm — SCH. 40	ASTM A-53	3,4	3,4
8A	1	TUBO Ø 3/4" x 6000 mm — SCH. 40	ASTM A-53	10,2	10,2
8	1	CORRIMÃO			113,6
7C	8	BC 1/4" x 2.1/2" X 170 mm	ASTM A-307	0,2	1,6
7B	16	Ø 3/4" x 457 mm	ASTM A-307	1,0	16,0
7A	2	BC 1/4" x 2.1/2" X 4700 mm	ASTM A-307	14,9	29,8
7		ESCALADA INTERNA			47,4
6F	6	ARRUELA LISA GALVANIZADA	ASTM A-307	—	—
6D	6	PORCA 1/2" GALVANIZADO	SAC-300	—	—
6C	6	PARAFUSO 1/2" X 3/4" GALVANIZADO	ASTM A-36	—	—
6B	5	BC 1/4" x 1.1/2" X 3800 mm	ASTM A-36	7,4	37,0
6A	3	BC 1/4" x 2.1/2" X 2000 mm	ASTM A-36	6,3	18,9
6		GUARDA-CORPO	ASTM A-36		55,9
5F	2	BC 1/4" x 2.1/2" X 38 mm	ASTM A-36	0,1	0,2
5E	2	# 1/4" x 113,5 X 227 mm	ASTM A-36	0,8	1,6
5D	2	BC 1/4" x 2.1/2" X 1138 mm	SAC-300	3,6	7,2
5C	6	BC 1/4" x 2.1/2" X 186 mm	SAC-300	0,6	3,6
5B	12	Ø 3/4" x 457 mm	SAC-300	1,0	12,0
5A	2	BC 1/4" x 2.1/2" X 4300 mm	SAC-300	13,6	27,2
5	1	ESCALADA EXTERNA			51,8
4I	4	# 3/16" X 340 X 340 mm	SAC-300	3,5	14,0
4H	4	# 3/16" X 130 X 160 mm	SAC-300	0,8	3,2
4G	4	BC 1.1/2" X 1/4" X 860 mm	SAC-300	1,1	16,34
4F	4	L 2.1/2" X 2.1/2" x 5/16" X 200 mm	SAC-300	1,5	6,0
4E	4	# 3/16" X 60 x 150 mm	SAC-300	0,3	1,2
4D	4	# 3/16" X 300 X 400 mm	SAC-300	2,0	8,0
4C	4	# 3/16" X 350 X 500 mm	SAC-300	5,0	20,0
4B	4	PERFIL ENRUJECIDO 150 x 60 X 20 X 3,0 X 500 mm	SAC-300	3,5	14,0
4A	4	PERFIL ENRUJECIDO 150 x 60 X 20 X 3,0 X 700 mm	SAC-300	4,8	19,2
		PES			90,0
3B	6	# 1/4" x 407 x 1430 mm	SAC-300	17,5	105,0
3A	1	# 1/4" x Ø 2880 mm	SAC-300	331,0	331,0
3		FUNDO			436,0
2B	4	# 3/16" x 1200 x 2970 mm	SAC-300	135,4	541,6
2A	8	# 3/16" x 1200 x 3000 mm	SAC-300	136,8	1094,4
2		COSTADO			1636,0
1A	1	# 3/16" x Ø 2880 mm	SAC-300	247,5	247,5
1		TAMPA			247,5
—	1	RESERVATÓRIO METÁLICO CILINDRICO 30m3	—	—	2850,0
POS. QUANT.		DISCRIMINAÇÃO	MATERIAL	P. UNIT	P.TOTAL

c					
b					
a					
LETRA	DATA	EXECUT.	VISTO	APROV.	
ALTERAÇÕES					

NORMAS:

NBR — 7821	ASTM A-36	90.001
NBR — 8800	ASME Seção IX	T.181
NBR — 5008	ASME Seção II	T.188
NBR — 5920	API STD 650	T.189
NBR — 5921	AWS A5.1	T.190
NBR — 6123	AWS A5.5	
NBR — 6118	AWS A5.18	

OTAWA ENGENHARIA		Av. Pres. Tancredo Neves 3557 - sl 306/Casatel Belo Horizonte - MG CEP: 31330-430 Telefone: (31) 3418-2175 otawapeng@terra.com.br	
ASS.: RT	CREA: 48.318/0	VISTO:	
PROJ.: NOME: CARLOS MAURO NOVAIS GONÇALVES	APROV.: OLAVO NETO	MATR.: HUDSON ROCHA	
DES.: OLAVO NETO	DATA: JANEIRO/2015	MATR.: JANEIRO/2015	



COMPANHIA DE SANEAMENTO MUNICIPAL
JUIZ DE FORA - MG

S.A.A. — PENIDO
RAP 15m³
DETALHES CONSTRUTIVOS — PARTE 04
DETALHES

ESCALA:	INDICADAS	A1
Nº		
FOLHA	12	DE 15
ARG.		