



Projeto: LOTEAMENTO URBANO
 Req: The Grey House, Property Management Lda
 Local: Casal da Mota - Famalicão - Nazaré

DIMENSIONAMENTO HIDRÁULICO DA REDE DE ABASTECIMENTO DE ÁGUA - CONDOTA DE DISTRIBUIÇÃO ABASTECIDA PELO RESERVATÓRIO

viscosidade	1.31E-06	m2/s
λ	0.02	
perdas carga localizada	10	%

Perda de carga calculada pela fórmula de Colebrook-White

NÓ MONTANTE	NÓ JUSANTE	COTA EIXO MONTANTE (m)	COTA EIXO JUSANTE (m)	DESNÍVEL GEOMÉTRICO (m)	DESNÍVEL GEOMÉTRICO ACUMULADO (m)	COMP (m)	POPULAÇÃO ANO 0 (hab)	POPULAÇÃO ANO 20 (hab)	CAPITAÇÃO (l/hab/dia)	FATOR PONTA $F_p=2+70/\text{srq}(P)$	CAUDAL DE PONTA INSTANTANEO (l/s)	DIAMETRO INTERIOR CÁLCULO (mm) $v=0,5\text{m/s}$	DIAMETRO COMERCIAL (mm)	DIAMETRO INTERIOR (mm)	VELOCIDADE (m/s)	Re	k (mm)	PERDA DE CARGA DISTRIBUÍDA j (m/m)	PERDA DE CARGA LOCALIZADA $D_{hi}=1.1*j*L$ (mca)	PERDA DE CARGA TOTAL NO TROÇO (mca)	PRESSÃO DISPONÍVEL NÓ DE JUSANTE Início=5.5(mca)
Reser	3A	76.8	69	-7.8	-7.8	4.00	76.00	76.00	200.00	10.03	1.764	47.397341	90	73.6	0.41	23301	0.10	0.00332	0.01	0.03	11.27
3A	11	69	66.47	-2.53	-10.33	26.86	76.00	76.00	200.00	10.03	1.764	47.397341	90	73.6	0.41	23301	0.10	0.00332	0.10	0.19	13.61
11	12	66.47	61.5	-4.97	-15.3	25.29	76.00	76.00	200.00	10.03	1.764	47.397341	90	73.6	0.41	23301	0.10	0.00332	0.09	0.18	18.41
12	13	61.5	54	-7.5	-22.8	38.32	76.00	76.00	200.00	10.03	1.764	47.397341	90	73.6	0.41	23301	0.10	0.00332	0.14	0.27	25.64
13	14	54	54	0	-22.8	0.80	72.00	72.00	200.00	10.25	1.708	46.636474	90	73.6	0.40	22559	0.10	0.00313	0.00	0.01	25.64
14	15	54	54	0	-22.8	0.80	68.00	68.00	200.00	10.49	1.651	45.848243	90	73.6	0.39	21803	0.10	0.00294	0.00	0.00	25.63
15	16	54	49.5	-4.5	-27.3	21.15	64.00	64.00	200.00	10.75	1.593	45.029867	90	73.6	0.37	21031	0.10	0.00275	0.06	0.12	30.01
16	17	49.5	44.5	-5	-32.3	24.50	64.00	64.00	200.00	10.75	1.593	45.029867	90	73.6	0.37	21031	0.10	0.00275	0.07	0.14	34.87
17	18	44.5	43.16	-1.34	-33.64	10.50	32.00	32.00	200.00	14.37	1.065	36.819325	90	73.6	0.25	14061	0.10	0.00133	0.02	0.03	36.18
18	19	43.16	43.16	0	-33.64	10.50	16.00	16.00	200.00	19.50	0.722	30.323808	90	73.6	0.17	9537	0.10	0.00066	0.01	0.01	36.16
19	20	43.16	43.16	0	-33.64	13.00	12.00	12.00	200.00	22.21	0.617	28.024931	90	73.6	0.14	8146	0.10	0.00050	0.01	0.01	36.15
20	21	43.16	43.16	0	-33.64	13.50	8.00	8.00	200.00	26.75	0.495	25.113259	90	73.6	0.12	6541	0.10	0.00034	0.01	0.01	36.14
21	22	43.16	45.5	2.34	-31.3	33.00	8.00	8.00	200.00	26.75	0.495	25.113259	90	73.6	0.12	6541	0.10	0.00034	0.01	0.02	33.78
22	23	45.5	46.5	1	-30.3	8.50	8.00	8.00	200.00	26.75	0.495	25.113259	90	73.6	0.12	6541	0.10	0.00034	0.00	0.01	32.77
23	24	46.5	46.5	0	-30.3	13.50	4.00	4.00	200.00	37.00	0.343	20.885136	90	73.6	0.08	4524	0.10	0.00018	0.00	0.01	32.77
24	25	46.5	46.5	0	-30.3	10.50	4.00	4.00	200.00	37.00	0.343	20.885136	90	73.6	0.08	4524	0.10	0.00018	0.00	0.00	32.76
18	26	43.16	43.16	0	-30.3	7.50	16.00	16.00	200.00	19.50	0.722	30.323808	90	73.6	0.17	9537	0.10	0.00066	0.01	0.01	32.75
26	27	43.16	43.16	0	-30.3	15.50	13.00	12.00	200.00	22.21	0.617	28.024931	90	73.6	0.14	8146	0.10	0.00050	0.01	0.02	32.73
27	28	43.16	40.74	-2.42	-32.72	17.50	8.00	8.00	200.00	26.75	0.495	25.113259	90	73.6	0.12	6541	0.10	0.00034	0.01	0.01	35.14
28	29	40.74	40.74	0	-32.72	12.86	4.00	4.00	200.00	37.00	0.343	20.885136	90	73.6	0.08	4524	0.10	0.00018	0.00	0.00	35.14
17	31	44.5	43.14	-1.36	-34.08	7.80	16.00	16.00	200.00	19.50	0.722	30.323808	90	73.6	0.17	9537	1.10	0.00096	0.01	0.02	36.48
31	32	43.14	43.14	0	-34.08	14.00	12.00	12.00	200.00	22.21	0.617	28.024931	90	73.6	0.14	8146	2.10	0.00087	0.01	0.03	36.46
32	33	43.14	41.93	-1.21	-35.29	9.90	8.00	8.00	200.00	26.75	0.495	25.113259	90	73.6	0.12	6541	3.10	0.00066	0.01	0.01	37.65
33	34	41.93	40.72	-1.21	-36.5	8.50	8.00	8.00	200.00	26.75	0.495	25.113259	90	73.6	0.12	6541	4.10	0.00074	0.01	0.01	38.85
34	35	40.72	40.72	0	-36.5	14.50	4.00	4.00	200.00	37.00	0.343	20.885136	90	73.6	0.08	4524	5.10	0.00039	0.01	0.01	38.84
17	37	44.5	43.14	-1.36	-37.86	18.86	16.00	16.00	200.00	19.50	0.722	30.323808	90	73.6	0.17	9537	6.10	0.00187	0.04	0.07	40.12
37	38	43.14	43.14	0	-37.86	19.86	12.00	12.00	200.00	22.21	0.617	28.024931	90	73.6	0.14	8146	7.10	0.00148	0.03	0.06	40.06
38	39	43.14	43.5	0.36	-37.5	20.86	8.00	8.00	200.00	26.75	0.495	25.113259	90	73.6	0.12	6541	8.10	0.00103	0.02	0.05	39.66
39	40	43.5	46.52	3.02	-34.48	21.86	8.00	8.00	200.00	26.75	0.495	25.113259	90	73.6	0.12	6541	9.10	0.00110	0.03	0.05	36.59
40	41	46.52	46.52	0	-34.48	22.86	4.00	4.00	200.00	37.00	0.343	20.885136	90	73.6	0.08	4524	10.10	0.00056	0.01	0.03	36.56