

**SIMULAÇÃO HIDROLÓGICA-HIDRÁULICA DA GALERIA DE REFORÇO - REDE 01  
FAIXA 1 E 2 N - DRENAR DF**

Trecho Estruturas	Cota do Terreno		Área de Contrib. (ha)	Área Total (ha)	Coef. de Manning	Lag Time (min)	Extensão (m)	Vazão Estimada (m³/s)	Declividade do Terreno (m/m)	Diâmetro ou Seção (mm)	Declividade do Tubo (%)	Velocidade (m/s)	Altura da Lâmina (m)	Enchimento (%)	Profundidade		Cota Geratriz Inf. Tubo		Degrau (m)	Cobrimento Mín. (m)	Cobrimento Máx. (m)
	Mont. (m)	Jus. (m)													Mont. (m)	Jus. (m)	Mont. (m)	Jus. (m)			
PV-1->PV-2	1138.147	1137.584	0.61	0.61	0.015	9.00	68.57	0.14	0.008	TL 1200	0.82	1.24	0.18	15%	6.00	6.00	1132.147	1131.584	0.00	4.63	4.82
PV-2->PV-3	1137.584	1136.968	0.20	0.82	0.015	9.66	79.72	0.17	0.008	TL 1200	0.77	1.32	0.20	17%	6.00	6.00	1131.584	1130.968	0.00	4.71	4.92
PV-3->PV-6	1136.968	1136.298	1.04	1.86	0.015	10.31	28.32	0.36	0.024	TL 1200	2.37	1.94	0.30	26%	6.00	6.00	1130.968	1130.298	0.20	4.74	4.82
PV-4->PV-5	1141.657	1138.347	1.85	1.85	0.015	9.00	76.68	0.35	0.043	TL 1200	4.32	3.00	0.19	16%	6.00	6.00	1135.657	1132.347	0.00	4.76	5.64
PV-5A->PV-5	1141.160	1138.347	0.10	0.10	0.015	9.00	60.00	0.03	0.047	TC 600	7.36	2.01	0.06	10%	2.90	4.50	1138.260	1133.847	1.50	2.25	3.87
PV-5->PV-6	1138.347	1136.298	0.31	2.26	0.015	9.25	45.80	0.43	0.045	TL 1200	4.48	2.57	0.29	25%	6.00	6.00	1132.347	1130.298	0.20	4.74	4.98
PV-6->PV-7	1136.298	1135.941	0.56	4.68	0.015	10.43	45.14	0.90	0.008	TL 1200	0.79	2.23	0.45	38%	6.20	6.20	1130.098	1129.741	0.00	4.79	5.25
PV-7->PV-8	1135.941	1133.162	0.31	4.99	0.015	10.64	81.28	0.95	0.034	TL 1200	3.17	3.22	0.36	31%	6.20	6.00	1129.741	1127.164	0.00	4.62	4.96
PV-8->PV-9	1133.162	1130.236	0.84	5.83	0.015	10.87	171.38	1.10	0.017	TL 1200	1.71	3.06	0.41	35%	6.00	6.00	1127.162	1124.236	0.00	4.05	5.01
PV-9->PV-10	1130.236	1126.657	1.78	7.61	0.015	11.45	144.06	1.42	0.025	TL 1200	2.48	3.72	0.43	37%	6.00	6.00	1124.236	1120.657	0.00	4.05	5.16
PV-10->PV-11	1126.657	1120.827	0.62	8.24	0.015	11.84	261.93	1.53	0.022	TL 1200	2.23	3.80	0.45	38%	6.00	6.00	1120.657	1114.827	0.40	4.02	5.11
PV-11->PV-12	1120.827	1118.239	1.56	9.56	0.015	12.56	177.89	1.89	0.015	TL 1200	1.29	3.22	0.61	51%	6.40	6.10	1114.427	1112.139	1.22	4.15	5.47
PV-12->PV-13	1118.239	1115.346	36.32	45.88	0.015	13.11	122.08	7.42	0.024	TL 1800	1.76	4.56	1.09	61%	6.24	6.58	1110.919	1108.770	1.40	4.51	5.48
PV-13->PV-15	1115.346	1114.008	0.54	46.42	0.015	13.31	72.94	7.50	0.018	TL 1800	1.81	4.19	1.18	66%	7.98	7.96	1107.370	1106.048	1.39	5.80	6.36
PV-14->PV-15	1114.262	1114.008	15.09	15.09	0.015	11.40	30.03	2.72	0.034	TL 1200	3.21	3.64	0.75	63%	6.00	7.91	1107.062	1106.098	1.44	5.86	6.67
PV-15->PV-22	1114.008	1112.634	0.00	61.51	0.015	13.44	106.57	10.19	0.013	TL 2200	1.42	4.34	1.29	59%	9.35	9.49	1104.658	1103.141	1.50	6.87	7.25
PV-16->PV-17	1114.720	1114.122	20.95	20.95	0.015	11.40	10.37	4.47	0.058	TL 1400	4.49	3.37	1.13	80%	6.00	5.87	1108.718	1108.253	0.05	4.40	4.56
PV-17->PV-18	1114.122	1113.311	0.00	20.95	0.015	11.42	45.02	4.47	0.018	TL 1400	2.34	3.87	0.98	70%	5.92	6.16	1108.203	1107.151	0.09	4.41	4.87
PV-18->PV-19	1113.311	1113.000	0.00	20.95	0.015	11.50	185.75	4.47	0.002	TL 1600	1.05	3.46	0.98	61%	6.25	7.90	1107.061	1105.103	0.06	4.41	6.25
PV-19->PV-21	1113.000	1113.019	0.00	20.95	0.015	11.94	86.64	4.47	0.000	TL 1600	1.04	3.21	1.05	65%	6.00	7.96	1105.043	1104.139	0.64	6.31	7.34
PV-20->PV-21	1113.051	1113.019	20.39	20.39	0.015	11.40	5.40	4.35	0.006	TL 1400	2.35	3.44	1.07	77%	7.93	8.02	1105.123	1104.996	1.50	6.47	6.58
PV-21->PV-22	1113.019	1112.634	0.00	41.35	0.015	12.15	50.96	8.81	0.008	TL 2000	1.60	3.90	1.35	68%	9.52	9.95	1103.496	1102.681	1.04	7.48	8.52
PV-22->PV-23	1112.634	1110.749	0.00	102.86	0.015	13.62	150.00	18.88	0.013	TL 2800	1.00	4.43	1.82	65%	10.99	10.61	1101.641	1100.141	0.60	7.70	8.96
PV-23->PV-24	1110.749	1108.735	0.00	102.86	0.015	13.87	86.00	18.91	0.023	TL 2800	0.98	4.19	1.90	69%	11.21	10.04	1099.541	1098.701	0.85	7.19	8.42
PV-24->PV-28	1108.735	1105.950	0.00	102.86	0.015	14.02	126.00	18.86	0.022	TL 2800	0.94	4.16	1.91	69%	10.89	9.28	1097.851	1096.670	0.90	6.27	8.22
PV-25->PV-26	1111.450	1108.695	1.31	1.31	0.015	9.00	103.84	0.24	0.027	TL 1200	2.65	2.40	0.17	14%	7.00	7.00	1104.450	1101.695	1.10	4.60	5.84
PV-26->PV-27	1108.695	1107.136	3.07	4.38	0.015	9.45	167.71	0.69	0.009	TL 1200	0.76	2.05	0.39	33%	8.10	7.81	1100.595	1099.326	0.40	6.43	8.02
PV-27->PV-28	1107.136	1105.950	4.82	9.20	0.015	10.01	95.95	1.28	0.012	TL 1200	1.21	2.76	0.60	50%	8.21	8.18	1098.926	1097.770	2.00	6.59	7.29
PV-28->PV-29	1105.950	1104.992	8.55	120.60	0.015	14.24	40.80	21.07	0.023	TL 2800	0.99	4.07	2.17	78%	10.18	9.63	1095.770	1095.365	1.50	6.75	7.37
PV-29->PV-31	1104.992	1103.781	0.00	120.60	0.015	14.31	56.80	21.05	0.021	TL 2800	1.00	4.15	2.12	77%	11.13	10.48	1093.865	1093.299	1.50	7.64	8.28
PV-30->PV-31	1103.956	1103.781	18.58	18.58	0.015	9.00	15.19	3.15	0.012	TL 1600	1.83	2.85	0.86	54%	7.59	7.69	1096.366	1096.089	4.29	5.95	6.05
PV-31->PV-32	1103.781	1102.941	0.43	139.61	0.015	14.40	48.58	23.94	0.017	TL 3000	0.88	4.11	2.29	77%	11.98	11.57	1091.799	1091.369	1.50	8.48	8.94
PV-32->PV-33	1102.941	1102.245	0.00	139.61	0.015	14.48	54.94	23.93	0.013	TL 3000	0.90	4.14	2.27	76%	13.07	12.87	1089.869	1089.377	1.50	9.39	10.38
PV-33->PV-34	1102.245	1100.005	0.00	139.61	0.015	14.58	51.64	23.93	0.043	TL 3000	0.89	4.12	2.27	77%	14.37	12.59	1087.877	1087.419	1.50	9.50	11.32
PV-34->PV-35	1100.005	1099.050	0.00	139.61	0.015	14.66	51.59	23.93	0.019	TL 3000	0.90	4.13	2.27	76%	14.09	13.60	1085.919	1085.455	1.50	10.53	11.87
PV-35->PV-36	1099.050	1096.895	0.00	139.61	0.015	14.75	100.23	23.93	0.022	TL 3000	0.90	4.35	2.14	73%	15.10	13.84	1083.955	1083.051	1.50	10.80	12.10
PV-36->PV-37	1096.895	1094.245	0.00	139.61	0.015	14.92	71.20	23.91	0.037	TL 3000	0.95	4.27	2.18	74%	15.34	13.37	1081.551	1080.877	1.50	10.32	12.30
PV-37->PV-38	1094.245	1092.944	0.00	139.61	0.015	15.04	40.00	23.90	0.033	TL 3000	0.90	4.08	2.27	77%	14.87	13.93	1079.377	1079.017	1.50	10.88	11.82
PV-38->PV-39	1092.944	1091.366	0.00	139.61	0.015	15.11	40.00	23.90	0.039	TL 3000	0.90	4.08	2.27	77%	15.43	14.21	1077.517	1077.157	1.50	11.17	12.38
PV-39->PV-40	1091.366	1089.959	0.00	139.61	0.015	15.18	39.93	23.90	0.035	TL 3000	0.90	4.08	2.26	77%	15.71	14.66	1075.657	1075.297	1.50	11.62	12.67
PV-40->PV-41	1089.959	1088.602	0.00	139.61	0.015	15.24	39.93	23.90	0.034	TL 3000	0.90	4.08	2.27	77%	16.16	15.16	1073.797	1073.440	1.50	11.93	13.12
PV-41->PV-42	1088.602	1085.429	0.00	139.61	0.015	15.31	80.00	23.90	0.040	TL 3000	0.90	4.26	2.18	74%	16.66	14.21	1071.940	1071.220	1.50	11.16	13.75
PV-42->PV-43	1085.429	1084.567	0.00	139.61	0.015	15.45	43.18	23.89	0.020	TL 3000	0.90	4.09	2.27	77%	15.71	15.24	1069.720	1069.391	1.50	12.19	13.43
PV-43->PV-44	1084.567	1082.821	0.00	139.61	0.015	15.52	37.20	23.89	0.047	TL 3000	0.91	4.08	2.29	77%	16.74	15.33	1067.831	1067.491	1.50	12.29	13.69
PV-44->PV-45	1082.821	1081.792	0.00	139.61	0.015	15.58	29.25	23.89	0.035	TL 3000	0.84	4.00	2.33	79%	16.83	16.05	1065.991	1065.745	1.50	13.00	13.79
PV-45->PV-46	1081.792	1080.319	0.00	139.61	0.015	15.64	32.63	23.89	0.045	TL 3000	0.85	4.02	2.33	78%	17.55	16.35	1064.245	1063.968	1.50	13.31	14.50
PV-46->PV-47	1080.319	1079.344	0.00	139.61	0.015	15.69	25.00	23.89	0.039	TL 3000	0.96	4.05	2.31	78%	17.85	17.12	1062.468	1062.229	1.50	14.07	14.81
PV-47->PV-48	1079.344	1078.415	0.00	139.61	0.015	15.73	25.00	23.89	0.037	TL 3000	0.90	4.02	2.33	78%	18.62	17.91	1060.729	1060.504	1.50	14.87	15.57
PV-48->PV-49	1078.415	1076.987	0.00	139.61	0.015	15.78	35.00	23.89	0.041	TL 3000	0.91	4.07	2.30	77%	19.41	18.30	1059.004	1058.686	1.50	15.26	16.37
PV-49->PV-50	1076.987	1075.355	0.00	139.61	0.015	15.84	40.00	23.89	0.041	TL 3000	0.89	4.07	2.30	77%	19.80	18.53	1057.186	1056.831	1.50	15.48	16.77
PV-50->PV-51	1075.355	1073.505	0.00	139.61	0.015	15.91	20.00	23.89	0.092	TL 3000	0.85	3.98	2.36	79%	20.03	18.35	1055.331				

**SIMULAÇÃO HIDROLÓGICA-HIDRÁULICA DA GALERIA DE REFORÇO - REDE 01**  
**FAIXA 1 E 2 N - DRENAR DF**

Trecho Estruturas	Cota do Terreno		Área de Contrib. (ha)	Área Total (ha)	Coef. de Manning	Lag Time (min)	Extensão (m)	Vazão Estimada (m³/s)	Declividade do Terreno (m/m)	Diâmetro ou Seção (mm)	Declividade do Tubo (%)	Velocidade (m/s)	Altura da Lâmina (m)	Enchimento (%)	Profundidade		Cota Geratriz Inf. Tubo		Degrau (m)	Cobrimento Min. (m)	Cobrimento Máx. (m)
	Mont. (m)	Jus. (m)													Mont. (m)	Jus. (m)	Mont. (m)	Jus. (m)			
PV-57->PV-58	1074.358	1072.330	0.53	3.17	0.015	10.21	90.71	0.98	0.022	TL 1200	1.16	2.59	0.44	37%	7.46	6.49	1066.896	1065.842	0.00	5.24	6.22
PV-58->PV-59	1072.330	1070.179	0.27	3.44	0.015	10.54	61.35	1.05	0.035	TL 1200	2.63	3.40	0.37	32%	6.49	5.95	1065.842	1064.229	7.85	4.68	5.44
PV-59->PV-63	1070.179	1066.465	0.11	3.55	0.015	10.70	54.41	1.07	0.068	TL 1200	4.16	4.02	0.34	29%	13.80	12.35	1056.379	1054.115	4.94	11.11	12.82
PV-60->PV-61	1068.998	1068.777	0.24	0.24	0.015	9.00	68.41	0.08	0.003	TL 1200	0.50	1.01	0.19	16%	6.00	6.12	1062.998	1062.656	0.11	4.61	4.88
PV-61->PV-62	1068.777	1070.308	3.20	3.44	0.015	9.68	99.62	0.61	-0.015	TL 1200	1.10	2.24	0.34	29%	6.23	8.86	1062.546	1061.448	3.93	4.99	7.62
PV-62->PV-63	1070.308	1066.465	0.00	3.44	0.015	10.11	75.19	0.60	0.051	TL 1200	4.51	3.70	0.24	20%	12.79	12.34	1057.518	1054.125	4.95	9.58	12.39
PV-63->PV-64	1066.465	1058.714	0.00	191.18	0.015	16.36	290.11	32.26	0.027	TL 3400	0.77	4.92	2.29	67%	17.29	11.77	1049.176	1046.946	1.50	8.33	13.87
PV-64->PV-65	1058.714	1056.628	0.00	191.18	0.015	16.85	60.00	32.06	0.035	TL 3400	0.76	4.27	2.62	77%	13.27	11.64	1045.446	1044.992	1.50	8.19	9.82
PV-65->PV-66	1056.628	1054.092	0.00	191.18	0.015	16.95	80.00	32.06	0.032	TL 3400	0.77	4.34	2.58	76%	13.14	11.21	1043.492	1042.879	1.50	7.46	10.62
PV-66->PV-67	1054.092	1052.028	0.00	191.18	0.015	17.09	70.00	32.05	0.029	TL 3400	0.76	4.30	2.60	76%	12.71	11.18	1041.379	1040.848	1.50	7.73	9.69
PV-67->PV-68	1052.028	1049.877	0.00	191.18	0.015	17.21	54.34	32.05	0.040	TL 3400	0.75	4.25	2.63	77%	12.68	10.94	1039.348	1038.939	1.50	7.49	9.24
PV-68->PV-70	1049.877	1044.330	0.00	191.18	0.015	17.30	157.73	32.05	0.035	TL 3400	0.79	4.63	2.41	71%	12.44	8.13	1037.439	1036.199	0.98	3.90	9.49
PV-69->PV-70	1047.006	1044.330	34.88	34.88	0.015	20.11	69.65	6.00	0.038	TL 1800	2.10	4.22	0.98	54%	6.33	5.12	1040.672	1039.209	3.99	3.17	5.25
PV-70->PV-71	1044.330	1047.805	0.00	226.06	0.015	20.24	123.91	37.97	-0.028	TL 3400	1.19	4.87	2.70	80%	9.11	14.06	1035.219	1033.750	0.16	5.67	10.61
PV-71->PV-72	1047.805	1045.211	0.00	226.06	0.015	20.45	180.42	37.96	0.014	TL 3400	1.06	5.25	2.49	74%	14.22	13.53	1033.590	1031.686	0.64	10.04	11.33
PV-72->PV-73	1045.211	1040.643	0.00	226.06	0.015	20.75	141.14	37.96	0.032	TL 3400	1.07	4.94	2.61	80%	14.17	11.10	1031.046	1029.540	0.80	7.66	10.72
PV-73->PV-74	1040.643	1037.161	0.00	226.06	0.015	20.99	81.19	38.04	0.043	TL 3400	1.15	4.91	2.62	79%	11.90	9.36	1028.740	1027.804	0.80	5.91	8.46
PV-74->PV-75	1037.161	1036.589	0.00	226.06	0.015	21.12	49.10	37.98	0.012	TL 3400	2.41	5.16	2.50	76%	10.16	10.77	1027.004	1025.823	0.70	6.71	8.56
PV-75->PV-76	1036.589	1034.931	0.00	226.06	0.015	21.21	49.10	37.99	0.034	TL 3400	2.00	5.03	2.57	77%	11.47	10.79	1025.123	1024.143	0.72	7.29	8.02
PV-76->PV-77	1034.931	1034.841	0.00	226.06	0.015	21.29	48.00	37.99	0.002	TL 3400	2.02	4.81	2.69	82%	11.51	12.39	1023.423	1022.452	0.85	7.92	8.95
PV-77->PV-78	1034.841	1032.049	0.00	226.06	0.015	21.37	48.00	38.00	0.058	TL 3400	2.01	5.21	2.53	75%	13.24	11.41	1021.602	1020.635	0.70	7.97	9.97
PV-78->PV-79	1032.049	1029.966	0.00	226.06	0.015	21.45	48.00	37.97	0.043	TL 3400	2.23	5.73	2.31	69%	12.11	11.10	1019.935	1018.865	0.37	7.60	8.67
PV-79->PV-80	1029.966	1028.784	0.00	226.06	0.015	21.53	48.54	37.97	0.024	TL 3400	2.22	5.26	2.50	74%	11.47	11.36	1018.495	1017.420	1.07	7.57	8.03
PV-80->PV-82	1028.784	1026.783	0.00	226.06	0.015	21.61	53.41	37.95	0.037	TL 3600	1.45	5.11	2.48	69%	12.43	11.21	1016.350	1015.578	0.00	7.56	9.58
PV-81->PV-82	1028.440	1026.783	29.88	29.88	0.015	22.20	21.00	4.86	0.079	TL 1200	4.14	4.95	0.97	81%	7.94	7.15	1020.500	1019.631	4.05	5.91	7.12
PV-82->LANÇ. - RES. 01	1026.783	1019.995	0.00	255.94	0.015	22.24	165.94	42.72	0.041	TL 3600	0.67	4.89	2.86	78%	11.21	5.52	1015.578	1014.474	0.00	1.84	7.56

**QUANTITATIVOS - REDE GERAL 01**

Item	Quant.	Unidades
<b>Tubos</b>		
TC 600	60.00	m
TL 1200	2,407.69	m
TL 1400	60.79	m
TL 1600	287.58	m
TL 1800	264.67	m
TL 2000	74.36	m
TL 2200	106.57	m
TL 2800	459.60	m
TL 3000	925.27	m
TL 3400	1,757.05	m
TL 3600	219.35	m

Item	Quant.	Unidades
<b>Poços de Visita (PVs)</b>		
TC 600 (PV 600)	1	Unid.
TL 1200 (SHAFT 2200)	25	Unid.
TL 1400 (SHAFT 2400)	3	Unid.
TL 1600 (SHAFT 2600)	3	Unid.
TL 1800 (SHAFT 2800)	3	Unid.
TL 2000 (SHAFT 3000)	2	Unid.
TL 2200 (SHAFT 3200)	1	Unid.
TL 2800 (SHAFT 3800)	5	Unid.
TL 3000 (SHAFT 4000)	21	Unid.
TL 3400 (SHAFT 4400)	17	Unid.
TL 3600 (SHAFT 4600)	2	Unid.