汚水排水計算

　　汚水排水計算は、1宅地5人の1人最大1000ℓ/日で計算をし、排水量と勾配をもとに一番厳しいスパンで検討をすること。調整区域からの流入は特に注意をし、下流の既設管から検討を行うこと。

　　計算例
　　　・宅地数　　10宅地
　　　・管きょの材質　硬質塩化ビニル管
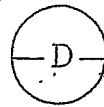　　　・管径　　　Φ200
　　　・管勾配　　10‰　　（流速　1.353m/sec　・　流量　0.0425㎥/sec）

$$Q = \frac{10 \times 5 \times 1㎥}{24 \times 60 \times 60} = 0.000578 ㎥/sec$$

　　　　　0.0425㎥/sec　＞　0.000578㎥/sec　　　OK

(内　径) D		.075		.100		.125		.150		.200		.250	
(断面積㎡) W A		.0044		.0079		.0123		.0177		.0314		.0491	
(潤辺長 m) W P		.2356		.3142		.3927		.4712		.6283		.7854	
(径　深) R		.0188		.0250		.0313		.0375		.0500		.0625	
	I (‰)	V	Q	V	Q	V	Q	V	Q	V	Q	V	Q
	150.0	2.434	.0108	3.068	.0241	3.666	.0451	4.216	.0745	5.250	.1649	6.202	.3044
(10/100)	100.0	1.987	.0088	2.505	.0197	2.993	.0368	3.442	.0608	4.286	.1347	5.064	.2486
	75.0	1.721	.0076	2.169	.0170	2.592	.0319	2.981	.0527	3.712	.1166	4.385	.2152
(5/100)	50.0	1.405	.0062	1.771	.0139	2.116	.0260	2.433	.0430	3.030	.0952	3.580	.1757
(4/100)	40.0	1.256	.0055	1.584	.0124	1.892	.0233	2.176	.0385	2.710	.0851	3.202	.1572
	35.0	1.175	.0052	1.481	.0116	1.770	.0218	2.035	.0360	2.535	.0796	2.995	.1470
(3/100)	30.0	1.088	.0048	1.371	.0108	1.638	.0202	1.884	.0333	2.347	.0737	2.772	.1361
	25.0	.993	.0044	1.251	.0098	1.495	.0184	1.720	.0304	2.142	.0673	2.530	.1242
(2/100)	20.0	.888	.0039	1.119	.0088	1.337	.0164	1.538	.0272	1.915	.0602	2.263	.1111
	18.0	.842	.0037	1.061	.0083	1.268	.0156	1.459	.0258	1.817	.0571	2.146	.1054
	16.0	.794	.0035	1.000	.0079	1.195	.0147	1.375	.0243	1.713	.0538	2.023	.0993
	15.0	.768	.0034	.969	.0076	1.157	.0142	1.331	.0235	1.658	.0521	1.959	.0962
	14.0	.742	.0033	.936	.0073	1.118	.0138	1.286	.0227	1.602	.0503	1.892	.0929
	12.0	.687	.0030	.866	.0068	1.035	.0127	1.190	.0210	1.483	.0466	1.752	.0860
(1/100)	10.0	.627	.0028	.790	.0062	.944	.0116	1.086	.0192	1.353	.0425	1.598	.0785
	9.0	.594	.0026	.749	.0059	.896	.0110	1.030	.0182	1.283	.0403	1.516	.0744
	8.5	.577	.0026	.728	.0057	.870	.0107	1.001	.0177	1.247	.0392	1.473	.0723
	8.0	.560	.0025	.706	.0055	.844	.0104	.971	.0172	1.209	.0380	1.429	.0701
	7.5	.542	.0024	.684	.0054	.817	.0100	.940	.0166	1.171	.0368	1.383	.0679
	7.0	.524	.0023	.660	.0052	.789	.0097	.908	.0160	1.131	.0355	1.336	.0656
	6.5	.504	.0022	.636	.0050	.760	.0094	.875	.0155	1.089	.0342	1.287	.0632
	6.0	.484	.0021	.611	.0048	.730	.0090	.840	.0148	1.046	.0329	1.237	.0607
	5.5	.464	.0020	.585	.0046	.699	.0086	.804	.0142	1.002	.0315	1.184	.0581
	5.0	.442	.0020	.557	.0044	.666	.0082	.766	.0135	.955	.0300	1.128	.0554
	4.5	.419	.0010	.528	.0041	.631	.0078	.726	.0128	.905	.0284	1.070	.0525
	4.0	.395	.0017	.498	.0039	.595	.0073	.684	.0121	.853	.0268	1.008	.0495
	3.5	.369	.0016	.465	.0037	.556	.0068	.640	.0113	.797	.0250	.942	.0463
	3.0	.341	.0015	.430	.0034	.514	.0063	.592	.0105	.737	.0232	.872	.0428
	2.8	.329	.0015	.415	.0033	.496	.0061	.571	.0101	.712	.0224	.842	.0413
	2.6	.317	.0014	.400	.0031	.478	.0059	.550	.0097	.686	.0215	.811	.0398
	2.5	.311	.0014	.392	.0031	.469	.0058	.539	.0095	.672	.0211	.795	.0390
	2.4	.304	.0013	.384	.0030	.459	.0056	.528	.0093	.658	.0207	.778	.0382
	2.2	.291	.0013	.367	.0029	.439	.0054	.505	.0089	.630	.0198	.745	.0365
	2.0	.277	.0012	.350	.0027	.418	.0051	.481	.0085	.600	.0188	.709	.0348
	1.9	.270	.0012	.340	.0027	.407	.0050	.469	.0083	.584	.0184	.691	.0339
	1.8	.262	.0012	.331	.0026	.396	.0049	.456	.0081	.568	.0179	.672	.0330
	1.7	.255	.0011	.322	.0025	.385	.0047	.443	.0078	.552	.0173	.653	.0320
	1.6	.247	.0011	.312	.0024	.373	.0046	.429	.0076	.535	.0168	.633	.0311
	1.5	.239	.0011	.301	.0024	.361	.0044	.415	.0073	.518	.0163	.612	.0301
	1.4	.230	.0010	.291	.0023	.348	.0043	.401	.0071	.500	.0157	.591	.0290
	1.3	.222	.0010	.280	.0022	.335	.0041	.386	.0068	.481	.0151	.569	.0279
	1.2	.213	.0009	.268	.0021	.321	.0040	.370	.0065	.461	.0145	.546	.0268
	1.1	.203	.0009	.256	.0020	.307	.0038	.353	.0062	.441	.0139	.522	.0256
	1.0	.193	.0009	.244	.0019	.292	.0036	.336	.0059	.420	.0132	.497	.0244
	0.9	.183	.0008	.231	.0018	.276	.0034	.318	.0056	.397	.0125	.470	.0231

.300		.350		D	.400		.450		.500		.600	
.0707 .9425 .0750		.0962 1.0996 .0875		W.A W P R	.1257 1.2566 .1000		.1590 1.1437 .1125		.1963 1.5708 .1250		.2827 1.8850 .1500	
V	Q	V	Q	I	V	Q	V	Q	V	Q	V	Q
7.090	.5012	7.927	.7626	100.0	7.120	.8947	7.738	1.2307	8.331	1.6357	9.450	2.6720
5.789	.4092	6.472	.6226	75.0	6.166	.7748	6.701	1.0657	7.214	1.4165	8.184	2.3139
5.013	.3543	5.604	.5392	50.0	5.034	.6325	5.471	.8701	5.890	1.1565	6.682	1.8892
4.092	.2893	4.575	.4402	40.0	4.502	.5657	4.893	.7782	5.268	1.0343	5.976	1.6896
3.660	.2587	4.092	.3937	35.0	4.211	.5292	4.577	.7279	4.927	.9674	5.590	1.5804
3.423	.2420	3.827	.3682	30.0	3.898	.4899	4.937	.6738	4.561	.8956	5.175	1.4631
3.169	.2240	3.543	.3409	25.0	3.558	.4471	3.867	.6151	4.164	.8175	4.723	1.3355
2.893	.2045	3.234	.3112	20.0	3.182	.3999	3.458	.5500	3.723	.7311	4.224	1.1944
2.587	.1829	2.892	.2783	15.0	2.755	.3462	2.994	.4762	3.224	.6330	3.658	1.0341
2.454	.1735	2.744	.2640	10.0	2.248	.2825	2.444	.3887	2.631	.5166	2.985	.8440
2.313	.1635	2.586	.2488	9.0	2.133	.2680	2.318	.3687	2.496	.4900	2.832	.8006
2.240	.1583	2.504	.2409	8.5	2.072	.2604	2.252	.3582	2.425	.4762	2.752	.7780
2.163	.1529	2.419	.2327	8.0	2.010	.2526	2.185	.3475	2.352	.4619	2.669	.7547
2.003	.1416	2.239	.2154	7.5	1.946	.2445	2.115	.3364	2.278	.4472	2.584	.7306
1.828	.1292	2.043	.1966	7.0	1.880	.2362	2.043	.3250	2.200	.4320	2.496	.7058
1.733	.1225	1.938	.1865	6.5	1.811	.2276	1.969	.3131	2.120	.4162	2.405	.6800
1.684	.1191	1.883	.1812	6.0	1.740	.2186	1.891	.3008	2.036	.3998	2.310	.6532
1.634	.1155	1.827	.1758	5.5	1.665	.2093	1.810	.2879	1.949	.3827	2.212	.6253
1.582	.1118	1.769	.1702	5.0	1.587	.1995	1.725	.2744	1.858	.3648	2.108	.5961
1.528	.1080	1.708	.1644	4.5	1.505	.1892	1.636	.2603	1.762	.3460	1.999	.5653
1.472	.1040	1.646	.1584	4.0	1.419	.1783	1.542	.2453	1.661	.3261	1.884	.5328
1.414	.0999	1.581	.1521	3.5	1.326	.1667	1.442	.2293	1.553	.3048	1.762	.4982
1.353	.0957	1.513	.1456	3.0	1.227	.1542	1.334	.2121	1.436	.2820	1.630	.4610
1.290	.0912	1.442	.1388	2.8	1.185	.1489	1.288	.2049	1.387	.2724	1.575	.4452
1.223	.0865	1.368	.1316	2.6	1.141	.1434	1.241	.1974	1.336	.2624	1.517	.4289
1.153	.0815	1.289	.1240	2.5	1.119	.1406	1.216	.1935	1.310	.2572	1.487	.4204
1.078	.0762	1.205	.1159	2.4	1.096	.1377	1.192	.1895	1.283	.2520	1.457	.4119
.997	.0705	1.115	.1073	2.2	1.049	.1318	1.140	.1814	1.228	.2411	1.394	.3941
.963	.0680	1.077	.1036	2.0	.999	.1256	1.086	.1728	1.170	.2298	1.328	.3756
.927	.0655	1.037	.0998	1.9	.974	.1223	1.059	.1684	1.140	.2239	1.294	.3660
.909	.0642	1.017	.0978	1.8	.947	.1190	1.030	.1638	1.109	.2178	1.259	.3561
.890	.0629	.996	.0958	1.7	.920	.1156	1.000	.1591	1.078	.2116	1.223	.3459
.852	.0602	.953	.0917	1.6	.892	.1121	.970	.1543	1.045	.2052	1.186	.3354
.811	.0574	.908	.0873	1.5	.863	.1085	.939	.1493	1.011	.1985	1.148	.3246
.791	.0559	.884	.0851	1.4	.833	.1047	.906	.1441	.976	.1917	1.109	.3134
.769	.0544	.860	.0828	1.3	.802	.1008	.873	.1388	.940	.1846	1.067	.3018
.747	.0528	.836	.0804	1.2	.770	.0968	.838	.1332	.902	.1772	1.025	.2898
.724	.0512	.810	.0780	1.1	.736	.0925	.801	.1274	.863	.1695	.980	.2772
.701	.0495	.784	.0754	1.0	.701	.0881	.763	.1213	.822	.1614	.934	.2640
.676	.0478	.757	.0728	0.9	.664	.0834	.722	.1149	.779	.1529	.885	.2501
.651	.0460	.729	.0701	0.8	.625	.0785	.680	.1081	.733	.1439	.833	.2354
.625	.0442	.699	.0673	0.7	.583	.0732	.634	.1009	.684	.1342	.777	.2197
.597	.0422	.669	.0643	0.6	.538	.0676	.585	.0931	.631	.1239	.717	.2029
.569	.0402	.637	.0613	0.5	.488	.0614	.532	.0846	.574	.1126	.652	.1845
.539	.0381	.603	.0580	0.4	.434	.0545	.473	.0751	.510	.1001	.580	.1640